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MAGAZINE

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Publisher
Duvel Media
www.tankcontainermedia.com

Editor
Leslie McCune
leslie@tankcontainermedia.com

Advertising
Ed Andrews
ed@tankcontainermedia.com

Production Editor
David Badger
david@tankcontainermedia.com

Design
ginko design
hellostudio@ginkodesign.co.uk

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Registered office
53 Grove Hill, London E18 2JB, UK

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Europe's tank sector is lively

Indecision and delays breed failure and for the years when the oil price hovered around \$110 a barrel, Europe's chemical industry delivered poor returns against a backdrop of weak demand. Difficult decisions were taken, especially by producers of commodity polymers, and many plants were closed. Those tank container providers exposed to these producers saw demand fall away significantly.

More positively, Europe accelerated its natural focus on specialty chemicals and differentiated polymers and continues to be by far the world's largest exporter of chemicals, many of which are moved in tank containers. Intense competitive pressure is fuelling the trend to outsource specialty chemical logistics, reducing producers' capital expenditure and making their land use more effective. Intermodal usage has been spurred by the increasing use of rail.

In the specialty chemical niche, demand is surprisingly robust, given the doom-laden headline news on economic growth and prices have not collapsed to the same extent as commodity prices. This is due to several factors - freight is a much smaller element in the cost structure of specialty chemicals so the substantial reduction in bunkers has had far less cost impact than for commodities. In addition, end markets for specialties are less volatile as they meet tightly-defined needs that cannot easily be substituted by other products.

The oil price collapse - and currency weakness - seem therefore to be more like magic potions than mortal poisons for Europe's specialty chemical tank container trade. Both, of course, will inevitably reverse in the medium term so, while exploiting today's favourable breezes, tank container players might usefully plan for heavier weather.

This issue of *Tankcontainer Magazine* focuses on Europe and we look at the region's chemical revival. Today, Europe's predominantly naphtha-based petrochemical industry continues to benefit from sustained lower oil prices with the competitive gap between other global regions closing markedly - gas-based producers in the US and Middle East will suffer as their margins are squeezed by lower selling prices. European competitiveness has been significantly improved by the weak euro, resulting in the busy export of products in tank containers across the Atlantic.

A shift of activity in the major global tradelanes is under way, amid a general increase in supply chain flexibility. The danger is to avoid being left with stranded tank container assets when

supply chains change their configuration.

As we see in this issue, new research has identified the 'Top 1,000 deepsea chemical movements in tank containers' in the main tradelanes. The research identified the individual products being moved in each direction. One highlight was the buoyancy of transatlantic tank container activity - supported by a 10% depreciation of the euro against the US dollar - and the strength of intra-Asia movements.

Within Europe, the logistics infrastructure is in need of repair in places but the tank container infrastructure is being strengthened. Amid a flurry of investments by many in the industry, Bertschi invested in the chemical logistics hub at Schwarzhede, Germany, which is a major gateway for intermodal chemical product flows between western Europe and eastern Europe/Russia. It also helped make the intermodal land bridge between Europe and western China a reality. Although traffic volumes on the route will always be a niche, the 50% reduction in transit time - compared with the deepsea shipping of tank containers - offers important savings.

According to several pan-European chemical producers, their intra-European north-south intermodal flows are more developed than the west-east opportunities their intermodal service providers can offer. Systems integration and the leverage of IT as an operational tool still seem under-deployed, they say.

Also in this issue, we reflect on the changing dynamics of the industry in the '2015 Review of the Year'. The headlines in newspapers might have suggested that 2015 would be a low-joy year for tank container operators and lessors. There was structural overcapacity in the industry, made worse by the widescale purchasing of tank containers at rock-bottom prices - and competition intensified.

However, more positively, consolidation among tank container lessors (Cronos/Bohai) and operators (Den Hartogh/InterBulk) eliminated some competition, finance remained low-cost and freely available, global chemical trade increased markedly and tank container prices remained close to historic lows.

Other positives included anecdotal evidence suggesting the gas tank container market delivered particularly strong growth and, in January, the industry leader reported healthy operating profits of 12% and an EBITDA of 17% for its last 12 months. As an industry then, more reasons to be satisfied than gloomy.

Leslie McCune, Editor

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Van Den Bosch opts for Quintiq for optimisation

Quintiq, a global leader in supply chain planning and optimisation (SCP&O), has announced that Van den Bosch Transporten has selected the Quintiq planning and optimisation software platform to optimise its logistics operations.

Van den Bosch Transporten is an international logistics service provider that transports liquid and dry bulk for food and non-food industries. It offers its customers intermodal cargo transport, and operates worldwide with a fleet of 350 trucks, 1,000 trailers and chassis, and over 4,000 containers.

The Van den Bosch Transporten planning puzzle is one of the most complex in the intermodal bulk container business. Planners need to manage product contamination, meet equipment cleaning requirements, match requirements to equipment, balance resource stock and decide on optimal modes of transport.

The company previously relied on a transport management system (TMS) as well as several other systems to address requests and calculate routes. It needed an integrated solution that could take into account the complexities of its business to optimise operations, improve delivery performance and increase customer satisfaction.

The Quintiq planning and optimisation software platform was implemented at Van den Bosch Transporten's liquid chemical road unit, and is set to expand to other business units worldwide.

The single, integrated platform replaces Van den Bosch Transporten's multiple planning systems.



Covering every planning horizon, Quintiq offers the company end-to-end transparency in operations and visualization of the impact of decisions on business goals. It incorporates all rules specific to the company so that the right equipment can be assigned to the right customer orders.

It ensures optimal allocation of orders to containers and containers to trucks and trailers, and defines optimal paths for load units in the intermodal networks.

Freed from manual planning, Van den Bosch Transporten planners can now focus on higher-value activities.

"Quintiq proved to be a true partner in the implementation process. Business benefits became visible shortly after our first

business unit switched its systems to the Quintiq planning software platform," said Marcel Wouterse, a director at Van den Bosch.

"By giving us real-time insights into our operations, Quintiq enables us to respond more quickly and easily than before. We can now cut costs, better support our customers in their logistics goals and ultimately, elevate our core process of bulk transport to the next level."

"We are honored to be chosen as a partner for Van den Bosch Transporten," said Rob van Egmond, CEO at Quintiq.

"Our intuitive software solution will help them achieve their goals and further reinforce the business value Quintiq has to offer in the bulk industry."

BDP expands into Egypt

BDP International, a leading privately held global logistics and transportation services company, is opening an office in Cairo, Egypt this month.

The new office is overseen by Country Manager Emad Tawfik, reporting to Fikret Ersoy, BDP's head of North Africa and Turkey. Ersoy reports to BDP Managing Director Europe Yves Letange in Antwerp, Belgium.

The Cairo office will serve the chemical/ petrochemical, healthcare, energy, retail and automotive sectors with a range of services. These include ocean/ air export and import, import/ export customs clearance, project logistics, ground transport and warehousing/ distribution.

In addition to the Cairo location, BDP plans to open a second Egypt-based office in Alexandria. The Alexandria location is scheduled to open in March.

"Egypt is strategically located between the Middle East and North Africa, and is geographically close to European markets as well," said BDP's Letange.

"The country is also home to a large, well-trained workforce, and its strong productivity growth underpins its potential. Significantly, a number of our largest clients already have operations there. We are bullish on Egypt."

Port Said and Damietta are among the largest ports in the Mediterranean, Africa and Middle East regions. In addition, the Suez Canal is strategically located for international trade lanes,

which include the U.S., Germany, Turkey, China, India, Saudi Arabia, Russia and France.

BDP is also studying the expansion of its Africa footprint in Kenya and Morocco.

Transicold acquires TRS Transportkoeling

Carrier Transicold, an industry leader in the transport refrigeration business, has announced the acquisition of TRS Transportkoeling, a Dutch manufacturer and service provider of sustainable transport refrigeration systems for trailers, trucks and containers.

Carrier Transicold, which operates in the Netherlands as Carrier Transicold Netherlands, is a part of UTC Climate, Controls & Security, a unit of United Technologies Corp.

"The acquisition of TRS enables Carrier Transicold to enhance its range of engineless transport refrigeration, strengthening our efforts toward achieving a sustainable cold chain," said Victor Calvo, vice president and general manager, Carrier Transicold Truck Trailer, EMEA, Russia, Asia.

"We have seen the emergence of a number of regulations to limit noise and environmental impact in the recent years. We believe TRS' innovation and technology will further help our customers meet their efficiency and sustainability goals."

Founded in 1981, TRS has grown from a local service organisation to an international producer of sustainable transport refrigeration systems for trucks, containers and controlled atmosphere refrigerated transport. It designs, produces and services engineless refrigeration systems using hydro-electric technology.

Sourcing power from the truck engine improves fuel efficiency, lowers noise levels and reduces maintenance.

Carrier Transicold is committed to providing refrigerated road transport operators with sustainable solutions to ensure cold chain integrity. This strategic acquisition will allow Carrier Transicold to deliver new offerings and technologies to its customers.

Bertschi takes SQAS to Russia

Suretank has won a four-year deal to supply all of Halliburton's offshore equipment in Latin America.

The deal covers containers, baskets, tanks, skids, workshops and tool boxes, which will be supplied from Suretank's South American facility in Caxias do Sul in southern Brazil.

"The favourable exchange rate means that products manufactured in Brazil for the local market are much more competitively priced than those sourced in Europe or Asia," notes Marco Pfeiffer, CEO of Suretank Latin America.

All equipment at Suretank Latin America is manufactured to the highest international safety standards including DNV 2.7-1, EN 12079, ASME, Achilles FPAL and NSAIDs.

Jan Remmers new MD at Anker Schiffahrt

Jan Remmers was aAnker Schiffahrt has appointed Jan Remmers as managing director of Anker Schiffahrts-Gesellschaft GmbH.

Remmers has a long history at the company having joined in 1985. In 1995 he was granted power of attorney and in 2007 he was made an authorised signatory. He took over the operational management of Anker Schiffahrt in 2013.

Owner of the Leschaco Group and formerly sole managing partner of the Anker Schiffahrts-Gesellschaft mbH, Jörg Conrad said: "I am pleased, to have Mr Remmers at my side as managing director

in future. We have set ourselves ambitious targets and we will pursue and achieve them as a team.

"I wish Mr Remmers a lucky hand, continued success and exciting tasks for the future."

Tank Service revamps 'friendly' website

Tank Service Inc., the leader in quality, high end repair and modification of new and used portable ISO tanks for bulk liquid storage and transportation, has launched a newly revamped web site at www.TankService.com.

The new site engages visitors with a mobile friendly platform, bold imagery and videos, and quick and easy access to essential information.

The new responsive Tank Service site allows users to access a knowledge base of information from practically any device, mobile or otherwise, on bulk liquid ISO tanks, container and tank container chassis, satellite monitoring equipment, and related spare parts for ISO tank containers.

The site also features in-depth product information including downloadable specification sheets all in a clean, easy-to-navigate layout offering a more comprehensive understanding of various tank sizes, capacities, working bar pressure limitations, frame sizes, tare mass weights, and explanations of various openings and valves that may be utilized.

A mobile-friendly online quote request form also allows users to input project specifics saving time, even while out in the field.

"We hope our new site is an invaluable resource for people in the industry looking for a new or used tank or chassis," says Erick Garcia, Vice-President of Sales.

"We want anyone in the market to know that they can come to our site, review the technical information, and receive personalized service to find exactly what they need for their

Liquid Concept expands tank fleet



Liquid Concept has acquired an additional 20 tank containers.

After having established its IBC business within a short time, Liquid Concept is now responding to an increase in demand for integrated logistics services by investing heavily in its pool of tank containers. The current purchases amount to an investment of €500,000.

With the addition of the new tanks containers, the Hamburg-based company now has a total of 50 on offer. Of the 20 new

tanks acquired, 15 have already been rented out to customers.

They can be used, not just for transport, but also where additional storage capacity is needed short term. The tanks can be configured to adapt to individual clients' requirements.

Foodstuffs producers will use the tanks primarily for filling with chocolate, cacao products, fruit juices and glucose, to be delivered mainly to companies in Germany, Austria and Switzerland for onward processing.

specific application, even if this is the first tank they've ever ordered."

One of the highlights of the site is Tank Service Inc. President Russell Harrison's Portable Tank Q&A 'Tank Guru' blog, featuring an extensive knowledge base on the ISO tank industry in a friendly question and answer format, enabling users to submit their own inquiries. The Tank Guru Blog will also feature guest posts from many of the Tank Service partners, providing access to a wealth of technical product information.

Another prominent feature of the new site is an industry news

blog highlighting trending topics and social media feeds, and an area that will feature the latest before and after tank projects.

"We pride ourselves on being the industry leader in high end repair and modification of ISO tanks and chassis", says Russell Harrison. "Our new web site really showcases the unique level of customization that goes into each project. We can sometimes save customers thousands of dollars repurposing an older model tank, while offering highly customized options at the same time."

The Tank Service web site

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will be updated regularly with relevant industry news, company milestones, new product offerings, featured case studies and fresh, relevant blog content.

Phase II of the web launch will include roll out of a highly interactive ISO tank spare parts ecommerce website catering to depots as well as anyone needing parts for shipment or pickup, and a revamped National Chassis site, both scheduled for later this year.

Kevin Singh appointed VP at CS Leasing

CS Leasing, which offers a wide range of container types and lease products, including ISO Tanks and dry freight specials, has appointed Kevin Singh as Vice President - Europe to oversee its expansion into European and African markets.

Kevin joins the company from Fort Vale Engineering, a precision manufacturer of valves and fittings for the bulk liquid transportation industry.

During his 10 years at Fort Vale, Kevin rose to become Sales and Marketing Director and a board member. He has extensive contacts in the tank container industry, in-depth experience of the current manufacturing environment and a deep understanding of the issues that operators and logistics providers are facing.

"Kevin's extensive network and business knowledge will make a valuable contribution to our business," said Tim May, part of the management team at CS Leasing.

"His strong commercial and operational expertise, combined with his experience in managing overseas expansion, was extremely attractive for us."

"I'm delighted to be joining CS Leasing," said Kevin Singh.

"I have known the management team here for a long time and I was attracted to their commitment to provide world class, flexible and

customer-oriented service. This is an exciting opportunity and I look forward to creating a customer-focused leasing company."

Westerwaelder Eisenwerk insolvent

WEW Westerwaelder Eisenwerk GmbH has registered for insolvency. Around 100 employees of the long established company, which manufactures special containers for military and civilian uses, are fearing for their jobs over the medium term.

Apparently the background for WEW's difficulties, which celebrated its 75th anniversary barely two years ago, lies in a slump in military sales.

Alongside its traditional chemical business, WEW has since 2000 developed special mobile potable water and fuel systems for military and civilian use and has been the market leader in this area since 2006.

Annual turnover doubled to €30m until 2011. Since 2007, WEW has invested around €12.5m in new production facilities and equipment. More recently, the company survived some difficult years:

"We suffered from unpredictable planning of defence spending in 2013 and 2015" CEO Dr Ulrich Bernhardt told the media. He said highly volatile domestic and export turnover, coupled with project-based sales had caused a slump despite WEW's market-leading position. This could not be offset by sales to the civilian chemical sectors.

The planned turnover for this year was €16m, divided roughly equally between civilian and military sectors.

In the previous year, a turnaround concept involving optimisation and cost-reduction was developed with the banks.

Since summer 2015, the company slimmed down by about 30 jobs, achieved without the necessity for redundancy, said the CEO.

"Until January, we were heading in the right direction" said Dr Bernhardt, the company's sole shareholder and CEO since the exit of Jan Gerhard de Vries (in summer, 2015) and who now also owns the vast majority stake in the company.

The situation has been exacerbated by a late payment. According to Dr Bernhardt, the company is still waiting for €600,000 in outstanding receivables from a government sale in the Middle East.

"This created a gap that we could no longer plug".

In spite of a greatly improved interim order book, the company could no longer sustain the legacy debts. A turnaround is now only possible through the insolvency process.

The insolvency administrator, Dr Ortmueller took an initial overview of the business and prospects. In his view, the company can continue until at least May due to the current order-book.

Further discussions will continue with the banks in the coming days in order to keep the company going. During this time, the management will try and secure the long-term future of the company with potential investors.

The fact that the first investor interest was expressed less than two days after the notice appears to be a "good sign", advises Ortmueller.

Dr Bernhardt is also optimistic that in spite of current circumstances, the WEW brand has a future. He promised the workforce "we are working hard on it".

Local mayor Karl-Heinz Kessler said: "This is a terrible thing, but I hope it will not be too terrible."

He said his thoughts were with the 100-or-so employees

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VTG sets a milestone with its 2015 results



VTG Aktiengesellschaft (WKN: VTG999), one of Europe's leading wagon hire and rail logistics companies, considerably increased its result in 2015.

Based on preliminary, unaudited figures released today, revenue rose by 25.6% to €1,027.5bn and operating profit (EBITDA) rose by 76.2% to €336.5m. In addition to the successful development of all divisions, the acquisition of Ahaus Alstätter Eisenbahn Holding AG – AAE in 2015 has clearly had a positive impact on VTG revenue and earnings.

"VTG opened a completely new chapter in 2015", affirmed Dr. Heiko Fischer, CEO of VTG AG, and added, "We expanded our wagon fleet, successfully developed our business in all divisions and realized the first synergies by way of simplified processes and structures.

"The substantial headway made in integrating AAE played a considerable role in this progress. Furthermore, the effective, comprehensive refinancing measures we have undertaken represent an important component in achieving our profitability objectives. In this way, we can

continue to offer both our shareholders and customers a very attractive overall package".

The Rail Logistics Division has successfully been pursuing the repositioning path which was set in 2015. Revenue has developed positively as a result, increasing by 0.6% to €324m (previous year: €322m), despite the continuing tension in Russia and Ukraine and being subject to consistently high competitive pressure.

EBITDA rose significantly to €3.4m, following the slight loss of €200,000 reported for the previous year. This result demonstrates that the division is once again making a positive contribution to the Group's consolidated earnings.

At the end of the year, the remaining 30% from the joint venture with Kuehne + Nagel were acquired. VTG has therefore become the sole shareholder of the largest private rail logistics company in Europe, VTG Rail Logistics, whose restructure is swiftly being pursued.

The Tank Container Logistics Division recorded a considerable upward trend over the last year. This was primarily attributable

to the rise in the US dollar exchange rate and growth in overseas transport volumes, in addition to one-time earnings.

Revenue consequently rose by 10.2% to €166.3m (previous year: €150.9m). EBITDA improved by 6.5% to €13.6m (previous year: €12.8m).

VTG 4.0 is at the heart of development until 2018.

For 2016, the VTG AG Executive Board has committed itself to consistently following the route it has already embarked upon. Overall, it anticipates that the business will continue to develop positively.

Revenue is expected to reach between €1.03bn and 1.07bn and EBITDA between €345m and €355m. Moreover, the board intends to propose the payment of a dividend of €0.50 per share for the 2015 fiscal year at the 2016 Annual General Meeting, which is 11% higher than the previous year.

The growth and profitability objectives specified in 2015 demonstrate VTG's intention to strengthen its market position in the years ahead. Under the heading VTG 4.0, the company



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has been actively involved with the topics innovation, digitalisation, the simplification of processes and structures and additional selective growth. Due to the current low level of interest rates and improved creditworthiness, significantly better conditions could be concluded as part of the refinancing measures in 2015.

The group's average interest rate has fallen significantly which will consequently lead to noticeable relief in the financial result and increased profitability for the years ahead. By 2018, the Board is striving to generate an overall increase in earnings per share (EPS) to €2.50.

Quala opens new facility in Dallas

Quala, North America's leader in bulk transportation container cleaning, has announced the opening of its newest container cleaning facility in Hutchins, Texas.

The facility will include four trailer cleaning bays servicing various types of containers, including ISO tank containers, Frac tanks, IBC's and tank trailers.

President of Quala, Terry O'Brien said: "We're excited to expand our footprint. We can now offer the Dallas-Ft. Worth market a premier facility that is significantly closer to Dallas than any other service provider."

The new facility is located off of I-45, the main interstate highway connection between Houston and Dallas, and will complement Quala's existing cleaning facility in Ft. Worth.

Suttons appoints new Chairman

Logistics and supply chain specialists Suttons Group has today announced the appointment of Graeme McFaull as Chairman (pictured). Mr McFaull takes over following the untimely death of the former longstanding Chairman, Michael Sutton, in May 2015.

John Sutton, Suttons Group CEO, said: "Graeme's leadership abilities, coupled with his significant board experience and knowledge of our dynamic industry will be invaluable to the ambitious, competitive, global group that Suttons has become.

"Graeme has significant experience in the management and chairmanship of logistics and supply chain businesses. He understands the competitiveness of our industry and also has a strong empathy with our culture and commitment to serving our customers."

Formerly, Graeme was chief executive of European logistics company, Wincanton Plc, where he



was instrumental in securing their position as a major force in European logistics.

Meanwhile, Suttons Group has taken delivery of a fleet of new, food grade, 20ft tank containers.

The containers have gone into operation serving lanes between North America and Europe.

Steve Lonsdale, Regional Director for Suttons Americas explains: "The food tanks are the latest addition to Suttons' global fleet of more than 6,000 tank containers and were built in partnership with Singamas of China, whose engineers worked with Suttons' own in-house team to build these specialised tanks.

"The tanks are fitted with the very latest leading-edge GPS and telematics systems, which provide real time data to both Suttons and its customers."

The CEO of Suretank, John Fitzgerald, has been selected as one of the top 100 most influential Chief Executives in Ireland. The list, published in *Business and Finance* magazine highlights individuals including veterans of the Irish business world and new high flyers, with selection based on successes throughout their career.

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'Being small is just a state of mind'

Philip van Rooijen, Managing Director of Trifleet Leasing, talks to Tankcontainer Magazine Editor Leslie McCune

LM: What is Trifleet's position in the market?

PvR: 'Striving for excellence, in everything we do' describes us best. We focus on the quality of our tanks and services.

Trifleet is the fifth largest tank container lessor worldwide and we are an owner-managed company leasing out over 11,500 tank containers (excluding financial leases). In 2015 we achieved gross revenues – purely from tank container management – of over €30 million.

By the standards of our customers, many of which are multinational corporations, we are small. We employ only 35 people but those people are spread over six locations – in addition to our main office in Dordrecht (Main Port Rotterdam), we work from Houston, Singapore, Hamburg, Shanghai and Paris. Together, it makes us a player that is small in size and that matters in our industry – some would call that 'lean and mean'.

LM: But doesn't being the fifth largest lessor worldwide make you a big player?

PvR: Size matters most because major companies tend to do business with other major companies of a

similar size. We believe that it's about what you can achieve for your customers that is important.

I look at us through the eyes of our customers that are part of larger organisations. Compared with those, we may not have a big staff but we use this to our advantage.

Being small is a state of mind; it just makes us work harder.

We take decisions fast; we use state-of-the-art IT and enterprise resource planning to make a difference for our customers.

To achieve this, we help make all our 35 people – regardless where they are in the world – part of a close team working seamlessly together. We emphasise the importance of our internal communication, development possibilities for our staff and business efficiency.

Furthermore, we extend our team with a worldwide network of agents, depots and surveyors. With this we make sure, that our tank containers and services are available across the world. We try to act like a major while still being as agile and committed as only smaller-sized companies can be.

LM: What meaning does Trifleet's relationship with Textainer have in this context?



PvR: It has a similar meaning as with our other partners. Textainer offers us a view to what happens in the dry container markets and enables us to handle big numbers.

Since our incorporation, we have worked with tank container investors, and developed a close relationship. Working and investing shoulder to shoulder, you can do more and spread the risk. Textainer's culture and values are comparable to ours. We believe in the same approach of markets, the same way of working.

LM: Is company culture an important topic for you?

PvR: We believe that company culture drives differentiation. Last year, we celebrated Trifleet's 25th anniversary and launched our new brand promise 'Committed to Sustainable Excellence'. Those are not just nice marketing



words for us. It is a promise that we developed looking into our values and our ambitions.

We have always been striving for excellent tank containers and services. We noticed that this is in our genes, but that we had to make it more visible to our stakeholders. Of course, not everything we do is always excellent. We are humans and make mistakes. It is the way you deal with those mistakes that sets you apart. We are alert and always question ourselves before we take decisions, make offers, or start communicating: 'Is what I'm doing really excellent?'

If you challenge yourself on this every day, you also develop a higher level of commitment to your work, your customers, your suppliers and your colleagues. You try to do things first time right. This is an important element of our identity.

LM: Are you suggesting that success is simply a question of culture?

PvR: Culture is the basis of success. Our colleagues deliver it. There are

many reasons that make our staff stay with Trifleet, be committed, and work as a team. For example, we have professional programmes in place for training and education, to provide our staff with the right tools, expertise and skills, to be a committed tank manager.

Right now, we are working to move our training programmes up one level and structure these into a Trifleet Academy. With this we want to provide our staff with information, training, and coaching to do an excellent job, take the right decisions and feel comfortable in their area of responsibility. Furthermore, as part of the academy, our people will be offered a look into the disciplines and skills of their colleagues in other departments. In doing so, we build a better companywide understanding.

It is not easy for us to offer job rotations as big companies can, but it is essential that our employees continuously develop their skills and qualifications. For us, culture supports our staff delivering our brand promise.

LM: Your brand promise is

"committed to sustainable excellence". Where does sustainability come in?

PvR: For me, in simple words, sustainability is in particular the bridge between today and tomorrow. You always have to ask yourself: 'Is what I'm doing today also good for tomorrow?' If the answer is 'yes', go for it.

Sustainability is about the quality and safety of the tank containers that we lease and the processes that support those leases. It is about commercial decision-making that supports future company development. For instance, we scrap old tanks rather than selling them.

Sustainability also covers the transparency and ethics of the way we do business. For many years, Trifleet has lived by a code of conduct developed with – and for – our employees. The code is basically about running a sustainable business. It is also a reflection of the expectations of our customers.

Just last month, we launched our new "Supplier Code of Conduct"

in order to share our ideas about sustainability with our partners. We encourage them to discuss this code with us. After all, we are all in one value chain. We can't deliver on our brand promise, if suppliers don't support us, and if customers don't appreciate it.

LM: Are these codes of conduct the guarantee for more responsibility?

PvR: Our industry still has a chance to develop an environment – laid down in written guidelines – that proves our responsibility to our stakeholders. The recently launched ITCO Corporate Responsibility (CR) code of practice is a good step in this direction, as it was developed by our industry and not imposed on us by others. However, we must be willing to commit to it and develop it further, and mature as players in a sustainable market.

What concerns me is a potential inflation of codes if a company develops these just to protect the company and the management from claims. Corporate responsibility is not about form but about substance and too important to be left to lawyers.

As an industry, we need to find a sustainable way to handle all these codes. To achieve this, Trifleet incorporated the knowledge that we have about global standards such as the Global Reporting Initiative.

We did an internal sustainability audit, started improvement processes. We actively participate in the ITCO CR Workgroup, study our customers' codes, and develop our own values. Our goal is to have an always up-to-date, aligned approach that we discuss with our partners.

LM: Is sustainability a driving force for the technical specifications of tanks?

PvR: Sustainability is a key factor for technical specifications. Already



today, tank containers have a lifetime of over 20 years, they are part of the cradle-to-cradle approach and the material is reused by up to 90%.

In addition to safety when building and operating tank containers, the quality, health and environmental aspects have always been a focus in our industry. Furthermore, there is the everlasting quest for building lighter tank containers and in doing so reduce emissions.

Last year Trifleet was the first lessor to offer the new lightweight Oddy swapbody tank containers on lease. These new swapbodies not only reduce transport costs, but also the environmental impact.

Another initiative is Tankwell's composite swaptank container, which has been constructed with an innovative fibre-reinforced vessel.

As a lessor we want to stay tuned with these developments, although today we still have some doubt as to whether our customers are prepared to pay the extra cost for this added value.

LM: Is the purchasing power of your customers increasing or decreasing?

PvR: We all know that we have a challenging time in our market. The world economy is not doing well, the number of tank containers in the market keeps increasing to levels above demand and the low lease rates are difficult for most fleet owners.

Of course, in times of overcapacity, our clients' purchasing power increases, just as it was lower during the tank container shortage a few years ago. Trends do fluctuate and do not last forever. New demand will develop and our clients will increase their production accordingly.

Trifleet uses these times to think about future scenarios and look at market and technology trends. You don't have the time to focus on those strategic aspects when your business is rocketing. We wish to manage this now and avoid losing time when the market is growing again.

Den Hartogh on a roll

Den Hartogh's acquisition of InterBulk makes it the world's fourth-largest tank container operator, reports Editor Leslie McCune

In December, Den Hartogh and rival logistics provider InterBulk agreed on the acquisition by Den Hartogh of InterBulk. The deal was completed on 9 March, making Den Hartogh a global 'Top 3' chemical logistics provider.

With rates low, the tank container market over-supplied and global growth anaemic, industry consolidation was inevitable – it was just a question of when and where.

Den Hartogh offered shareholders a 125% premium to the closing price on 22 December 2015, and a 10% premium to the average closing price over the past year.

The transaction's consideration was £42.1m for InterBulk's issued share capital, making the enterprise value £95.3m (including net debt of £53.2m).

The announcement stated: 'Family-owned Den Hartogh, headquartered in The Netherlands and led by third generation family member Pieter den Hartogh, through this acquisition, continues the successful growth path it started in 1920. Joining forces with InterBulk, with its strong global footprint, will enable Den Hartogh to make a step-change and acceleration in its international strategy, in important growth markets such as China and the US'.

January's share register showed five InterBulk directors owning 3.96% of AIM-listed InterBulk's issued share capital. Hoyer owned 15.02% and Den Hartogh owned 6.58%.

Following the integration process, Den Hartogh will be better-positioned 'to facilitate



Joining forces with InterBulk will enable Den Hartogh to make a step-change

customer demand with its worldwide presence and dense European network. The combination will create a stronger, global organisation and offer enhanced service portfolio and significant operational benefits to customers. In particular, Den Hartogh should be able to benefit from InterBulk's relationship with Sinotrans, one of China's largest logistics companies' which has a 35.28% stake in InterBulk'.

The new company's assets include 25,800 liquid, gas and dry bulk containers, 550 trucks, 400 road barrel tankers and 47 offices in 23 countries.

InterBulk has been on a slide

All well and good and, to many in the industry, unsurprising. InterBulk's vision was to be a leading supplier of intermodal logistics solutions to customers in

the chemical, polymer and food industries, spanning both dry and liquid bulk supply chains.

The results were poor – 2015 profit before tax was a mere £3.2m on turnover of £225.3m with revenue declining 12%.

InterBulk's debt pile of £53.2m remained unaffected by the \$9.4m sale-and-leaseback of some of the fleet to TAL in July 2015, the proceeds of which repaid early an element of the group's bank term loans.

Liquid bulk accounted for 62% of revenue but revenue from InterBulk's liquid division declined 9% to £139.6m, driven down by a 6% decline in movements. On dry bulk polymer, the results were worse – revenue collapsed 17%, made worse by a weaker euro/sterling exchange rate.

The extent to which InterBulk was exposed to the painfully weak

European dry bulk polymer logistics market was unique among tank container operators. Low regional demand and imports from more cost advantaged regions has led to numerous polymer plant closures. This, combined with tough dry bulk competitors made the dry bulk business a liability rather than an asset according to industry sources.

What happens to dry bulk?

Where InterBulk's dry bulk business fits into 'Den Hartogh Liquid Logistics' - which focuses on liquids and gases - remains to be seen. A post-closure spin off or trade sale seems a distinct possibility for the acquired dry bulk business.

The tank container side of the transaction looks intriguing. It combines InterBulk's fleet of 11,200* tank containers - the world's sixth largest - with Den Hartogh's smaller global fleet of 7,250 tank containers - the world's tenth largest. The combined fleet

of 18,450 units catapults Den Hartogh into fourth position, between Bulkhaul's 20,500 tank containers but ahead of NewPort/Sinochem's fleet of 15,000.

More important is what happens below the headline tank container numbers. InterBulk's deepsea tank container fleet is said by industry sources to be two-to-three times the size of Den Hartogh's deepsea fleet. The resulting increase in global tank container density that the acquisition brings is one of the key drivers of the transaction since it should lead to lower repositioning costs for empty containers, stronger marine freight and tank container purchasing power, a greater ability to respond to opportunities and lower maintenance and repair costs. The other key driver is the leverage Sinotrans should give Den Hartogh in Asia, especially in China.

A rule-of-thumb is that deepsea tank container operations should generate over \$100,000 of annual revenue but no generalisation can be made about margins. Some operators

generate much better margins per day on their European short sea operations, where transit times may be a matter of hours.

Integration skills will be needed

The acquisition follows Den Hartogh's acquisition of Sitra's bulk liquid chemicals business unit, strengthening Den Hartogh's European road and intermodal network.

Integrating the assets and IT systems of the businesses will be a key challenge in Den Hartogh's bold strategic repositioning.

The interesting questions remain: 'What will happen to InterBulk's dry bulk business?' and 'Will this deal catalyse further industry consolidation?'

Leslie McCune is a global expert on the tank container market lm@chemicalmanagement.co.uk (+44 7783 042 664)

* Figures from ITCO's 2015 annual survey

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The Star going from strength to strength

To boost its position in the domestic and global arenas, Star Marcevaggi is eyeing membership of ITCO, reports Angelo Scorza

Deeply-rooted in Genoa's economic history, transport group Star Marcevaggi may become a member of ITCO. The news was confirmed by Alberto Remondini, who belongs to the third generation of the owning family and who, together with his father Emanuele and his sisters Elena and Carola, is currently steering the group.

"In 2015 our turnover exceeded €120m, we employ about 400 staff directly and the same number indirectly and we have offices throughout Europe. We are satisfied from our return on equity, which is higher than the sector's average".

"Our group was born in 1934, when Mario, my grandfather, asked for a loan from his mother, who was born into the well-known and respected Genoese family, Parodi. The loan went towards buying a small transport company in Genoa called Marcevaggi, a contraction of the founder's name, Marcello Vaggi.

"Marcevaggi went on to become the LPG transport sector leader, a position that eventually gained my grandfather the Italian Order of Merit of Labour, equivalent to a knighthood", recalls CEO Alberto Remondini.

"His son - my father, Emanuele - was already an employee of Marcevaggi at the age of 18 was working at the standard entry wage before climbing up company's ladder. They shaped the company towards a more European



Emanuele and Alberto Remondini

and Mediterranean outlook and pioneered intermodal growth."

The group operates with three distinct brands, each one dedicated to its own segment of market and for the past 80 years, the company has operated in the chemical and petrochemical transportation business.

The 'mother' company is Star Chemical - which claims to be among the sector's leaders in Italy and among the top 15 in Europe - has its core market in the Euro-Med area and focuses on the import flows from Northern Europe to the South, with Italy the obvious hub, and Central

Europe pivoting around Poland.

The company has over 800 swapbodies and tank containers and has branches in Northern (Germany), Central (Poland & Romania) and Southern Europe (Italy).

Star Mediterranea Srl focuses on the maritime sector and includes two business units - the transport of seagoing containers from the ports of the Tyrrhenian Sea and through its inland terminals of Milan and Turin, and the forwarding of chemicals.

Lastly, Levorato Marcevaggi Srl was created by the merger of two transport companies (Levorato G Autotrasporti and Star Trasporti

Internazionali SpA). It was active in logistics and in the forwarding of LPG and other oil products. The company has a fleet in Southern Europe of 400 vehicles, including state-of-the-art tank lorries for the supply of petrol stations and tank containers for the road or intermodal delivery of refrigerated and liquefied gases.

The group's latest member is Star Terminal, which focuses on container handling, repair and storage at its inland terminals in Carmagnola, Turin and in Locate di Triulzi, Milan.

Two years ago, the company acquired aviation fuels supplier Rifornimenti Aeroporti Italiani (RAI), employing 90 people, thereby widening its oil logistic services to the country's major airports. The group now carries on aircrafts refuelling operations in Venice, Treviso, Bergamo's Orio al Serio, Milan's Malpensa and Linate, and Rome's Fiumicino.

Annual sales growth in the last three has been 15%. "There have been substantial investments in the last three years and the opening of three synergistic sectors: dry bulk transport, which is mainly intermodal, chemicals forwarding (extended the service by sea to the whole Mediterranean) and aviation refuelling".

The group's fleet is now over 2,000 units including road tractors, trailers, and containers, which are mostly owned. Chartered units do not exceed 15% of the total.

With its fleet of swapbodies, trailers and tractors, the company claims to be one of the top five intermodal operators on international trades to and from Italy.

The company also has partnerships with other operators, setting up over 40,000 shipments per year on behalf of the main oil, chemical, and marine sector operators.

"We buy the most demanding and sophisticated equipment in Europe, while for more standard and lower added value equipment, we go for the cheaper markets in Africa and the Far East. Every year, we



invest €10m in human resources and IT. We have more than 400 gas tanks in the LPG sector and almost 50 in the cryogenic sector," says Remondini. "I would say today's market is unstable, which does not allow planning for the medium or long term."

"Star Marceviaggi operates as a European carrier and tries to be close to customers, either via IT systems or by having branches and agents in Marseilles and Le Havre in France, Rotterdam for

the Low Countries, St Petersburg for Russia, Helsinki in Finland, Manchester in the UK, Barcelona in Spain, Tunis in Tunisia, Casablanca in Morocco, Istanbul in Turkey, Ljubljana in Slovenia, and Zagreb in Croatia" notes Remondini.

It owns the offices of subsidiaries in Essen for Germany (Star Internationale Transporte Deutschland), in Brzeg Dolny for Poland (Star Polska Transport Miedzynarodowy), and in Bucharest for Romania (Star Romania International Transport).



European tank container

To paraphrase Mark Twain, the death of European manufacturing has been greatly exaggerated. James Graham reports

As Europe remains one of the world's most important manufacturing and engineering locations, the demand for tank containers remains high. Tank containers bring in imports of raw materials for chemical and food manufacturing processes while others are used ship finished liquid products to markets overseas.

Raw materials and finished products are also moved in large volumes. This activity demands a network of tank container depots that are available to tank owners, lessors and owners.

One example of a location that has developed depots to store and service tank containers is the port of Rotterdam. Altogether there are 22 general purpose box container and reefer depots and more than 120ha of storage. However, there are only nine depots at Rotterdam that specialise in the storage, cleaning and maintenance of tank containers.

Since 2011, the transport of liquids, powders and gases through the port in tank containers has almost doubled and, as a consequence, demand for supporting depot services has increased accordingly. There are now nine companies specialising in tank containers

One is Tank Cleaning Europoort, part of the ITT (In't Veen Total maintenance and Tanksilo) site. According to commercial manager Leon van der Meij, the site is a 'full service' location for tank operators using one of Europe's busiest ports.

The ITT site is roughly 120,000sq metres and contains nine cleaning bays (three for food products and six for chemicals), storage for

over 3,000 empty and 350 loaded containers, a tank container transport company, workshops specialising in repair and maintenance for trucks, trailers and containers and several other tank related firms.

Offering efficiency

Van der Meij says: "We're not a typical terminal, but dedicated to clients that use one or more facilities at the ITT site. We are able to offer tank operators efficiency by combining the different services at the ITT site."

Tank Cleaning Europoort takes care of tank cleaning, heating, transferring and purging with carbon dioxide or nitrogen. In 2015, the company cleaned more than 50,000 tanks, with the cleaning time ranging from 15 minutes for easy food products, like wine and beer, to up to three hours for heavy chemical products such as resins and latex.

"Our target is to keep the waiting

times for cleaning, but also for handling, within 15 to 30 minutes. The fast turnaround speed is one of our unique selling points in order to save time and money for customers," says van der Meij.

The ITT site will be expanded this year by the addition of four more cleaning bays (dedicated for high-quality food products), 14 heating places, a utility building and extra capacity for the waste water treatment plant.

"The forecast is to complete the activities within the next 12 months. With this expansion we are ready for the future, especially for the food market where we see a lot of opportunities. Quality standards for the food market will be higher and higher. All leading producers become stricter yearly with their cleaning procedures. With quality as our main unique selling point, we look confident forward to the future."

An interesting method of attracting and retaining business has been the company's development of a 'loyalty scheme' to reward drivers for frequent visits. Described as a "personal saving card" by van der Meij, the company offers



There is storage for more than 3,000 empty tank containers at the ITT site

depots

a stamp after every cleaning.

Van der Meij says: "With five stamps they can take a free snack on the ITT site. With 10 stamps they can have a free meal at five different local roadhouses."

Lack of manpower

An ageing population in much of Europe, including the Netherlands, is creating a shortage of personnel due to the increasing age of the workforce. Tank Cleaning worries about sourcing and retaining labour, says van der Meij.

"Obtaining skilled and trained staff is one of the biggest challenges. Motivated and experienced people are rare because they don't move from employer to employer. At the same time, there is a shortage of young, motivated people. It is clear that office jobs are much more popular than physical jobs in the logistics and cleaning sector. If the motivation is right, we are able and very willing to invest in education and training so staff can reach the skills required in our business."

The nature of tank containers and their cargo – often materials for human consumption – means that most depots in Europe focus as much on cleaning the tanks as they do on storing the equipment.

Certified for high-quality foods

In 2015, Tank Services Pernis (TSP) was certified by IOI Loders Croklaan-Wommerveer for high-quality food tank cleaning at Rotterdam.

TSP has two locations in The Netherlands, at Rotterdam and Groningen – and specialises in cleaning, heating and maintenance and repair services for tank containers

Like ITT, managers at TSP have invested in comfort and administrative



Tank cleaning at the ITT site

facilities for customers and hauliers, and, just over two years ago, built a new reception area, cafeteria and toilets/showers block

Meanwhile, Mannheim-based Cotac Europe has depots in Germany, Belgium, France and The Netherlands. Last year, its four sites in Germany received, for the second time in a row, the recognition of Berlin-based industrial standards body Bundesanstalt für Materialforschung und-prüfung (BAM). This certification followed a complete audit of the company's documentation and the condition of the test area.

The audit standards for the depots includes a quality assurance programme for the production of packaging for the transport of dangerous goods and the repair, inspection, testing and regular maintenance of IBCs. The recognition is valid for three years.

The Cotac depots are planned for the storage, empty container handling as well as, at certain depots, loaded container handling. At a number of locations, the storage of hazardous goods is possible. Ancillary tank handling equipment, such as pumps and hoses, can be rented by clients and hauliers. Heating by steam, warm water or electricity

is available at all locations. All Cotac locations are certificated to provide Kosher tank cleanings.

Third-party depot locations

Trifleet Leasing, the largest owner-managed tank container leasing company in the world, relies on a network of third-party depot locations with expert staff, says Esther Slager, manager staff services.

She says: "We work with a strong network of 30 depots with expert staff worldwide. All of those are third-party locations that follow our stringent quality assurance procedures. In Europe, we work with nine depots. This is 30% of our global depot network, but in terms of the number of tank containers in depots, it equals around 55%."

The largest Trifleet works with are similar in size: ATSL (Group van Loon) in Antwerp, and NTC in Rotterdam.

She adds: "While we are very satisfied with our current depot network, we believe that there are areas to be improved to reach a higher level of excellence in the depot network. In addition we believe in the necessity of ongoing training and qualification of technical experts in the depots."

The IoT: transforming

Corry Brennan, Simplex Regional Sales Manager for EMEA at Globalstar, explains how the latest satellite-enabled asset tracking is helping SABIC and B United maximise performance

The Internet of Things (IoT), or machine-to-machine (M2M) as it has until recently been known, is the network of physical objects – devices, vehicles, buildings and other items embedded with electronics, software, sensors, and connectivity – that enables them to collect and exchange data. Essentially, the IoT allows objects to be sensed and controlled remotely.

Recently, the big mobile telecoms providers have been publicising their M2M/IoT achievements, and with good reason. The blue-chip players are developing services, and forming heavyweight partnerships, with an eye on the virtually endless commercial applications for IoT in areas with good land-based infrastructure.

For IoT to be of value it needs reliable communications. The mobile network is simply too patchy, or often non-existent, to be completely effective in areas including North Africa, the Nordics and across the Eurasian landmass.

The marketplace is waking up to the fact that to stay connected in sparsely populated and inhospitable terrain – as well as at sea – satellite communications are needed.

The latest IoT technologies feature integrated sensors that provide businesses with environmental data detailing vital information on cargo condition which, in turn, can affect the supply chain operations. One valuable metric is movement, with sensors instantly reporting when an asset such

as a rail tank car or tank container has experienced damage or shock.

IoT asset monitoring that is both ubiquitous and reliable has the potential to transform the supply chain, as manufacturers, freight and logistics businesses gain a better understanding of the location and condition of their assets or cargo.

Great strides have been made in satellite M2M and IoT with its early adopters using it to track and monitor assets that range from cargo to trucks, oil pipelines, reservoirs, rail cars, cattle and sheep (as well as some of the world's most endangered species).

At the heart of the system

The key enabler is the satellite chip at the heart of the tracking device. The smaller the chip, the easier it can be integrated into discrete energy-efficient monitoring devices cost-effectively for satellite-only or dual-frequency support.

As well as reducing operating costs, satellite-enabled IoT tracking enables partners in the supply chain to more effectively collaborate using near, real-time data for better and faster decision-making. Delivery times can be more predictable and reliable, and the amount of unproductive 'downtime' of any particular asset is minimised.

With governments encouraging more transparency in the transport industry, and a constant motivation to

improve safety, there is an increase in regulation requiring cargo-carrying vehicles to have trackers installed. Innovative technology providers are creating new IoT solutions to help their customers meet these regulations while improving operational efficiency.

Petrochemical, oil and gas companies in particular are already seeing the business benefits of IoT to monitor potentially hazardous materials in unpowered environments including rail tank cars and tank containers.

For example, leading global supplier of petrochemicals, such as Saudi Arabian-headquartered SABIC, is equipping its entire European fleet of 500 chemical rail tank cars with the ATEX-certified Ovinto Sat tracking and monitoring technology to reduce risk and optimise its supply chain.

The new solution enables SABIC to track each vehicle on its journey in real time and supports SABIC in its constant focus on safety. This helps SABIC to maximise the value and efficiency of its assets, while partners and customers can reliably know when the materials they require will arrive.

Judith Kleinen, Category Manager Land Transport & Spot Shipping Supply Chain, Chemicals at SABIC, explains: "SABIC is a major provider of petrochemicals and customers use our chemicals and plastics for many different applications. One of the transportation methods we use is our fleet of rail tank cars. Keeping track of a large fleet, dispersed all over Europe, is crucial," she said. "The cars contain all sorts of materials, so it is absolutely critical that we have the ability to track and monitor their status and their contents at all times."

The Ovinto Sat solution provides details about the chemical being

the supply chain



Globalstar next-generation satellite
Photo courtesy of Thales Alenia Space

transported and its condition, including pressure and temperature, whether it is in the correct location and whether it has been impacted due to a crash or derailment. Satellite is the preferred option for such communications due to its availability, reliability and low

power consumption compared to GSM. Importantly, Ovinto Sat is ATEX-certified, which means it is reliable and safe even in dangerous, potentially explosive, environments.

If an accident occurs, Ovinto Sat's continuous satellite connectivity

ensures everyone in the supply chain – including the emergency services – knows the location of the rail car, whether it has been impacted due to a crash, is leaking or whether it is at a safe pressure and temperature.

"It sometimes can be challenging to get real-time information regarding our rail tank cars," Kleinen added. "The fact that Ovinto guaranteed global coverage via satellite, combined with the highest ATEX level makes it unique, and for us, the best solution," she said.

Not only are supply-chain relationships enhanced through such IoT deployments, operational efficiencies improve and relationships are strengthened.

It is increasingly apparent that the number and diversity of ways in which the IoT can be applied is limited only by the imaginations of people who need to monitor 'things'.

"We're eager to discover and support new advances which will see IoT enhanced by the reach and reliability of satellite communications, increasingly leveraged to help people and organisations both large and small."

CASE STUDY: US beer distributor, B United International, was established in Connecticut over 20 years ago to import beers from around the world and distribute them to bars, pubs and restaurants across the US.

The company uses Ovinto's technology to monitor the location, temperature and pressure of hundreds of beer, cider and mead brands as they are shipped in tank containers from breweries around the world.

Unlike commercial beers, craft beers very often use complex yeast strains and are notoriously difficult to transport, because natural re-fermentation can increase the carbon dioxide level and turn the beer to foam.

Previously, brewers have had to simply hope that their containers of beer arrive at their destination delivering the highest possible taste and aroma. Alternatively, they would resort to processes such as forced carbonation, an industrial process which emphasises efficiency at the expense of flavour and aroma.

Matthias Neidhart, Founder of B United, says: "From a

flavour and aroma perspective, natural re-fermentation and forced carbonation are like day and night."

"Forced carbonation creates giant carbon dioxide bubbles that completely overpower the flavour/aroma profile of any brew. Natural re-fermentation, on the other hand, is an intrinsic part of true artisanal workmanship."

In October 2015, B United fitted Ovinto's satellite-enabled sensors in a 14,000-litre tank container full of beer to carefully monitor the temperature, pressure and location. The trial was a success, resulting in improved quality while nearly eliminating waste.

"Thanks to this first 'Internet-of-Beer' technology, our customers and partner breweries can see that the assumed trade-off between quality, freshness, cost, waste and distance can be eliminated. This new paradigm allows us to give all our customers brews of the highest flavour and aroma complexity with absolutely no compromise," Neidhart adds.

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New reference book talks technical

Tankcontainer Magazine reviews the recently published *The TankContainer 2016*

Iris Murdoch once said: 'A bad book review is even less important than whether it is raining in Patagonia'. Our view is that a good review may make the author want to go on holiday to Patagonia as a reward, so what do we make of the latest addition to the very limited canon of reference books on tank containers?

It updates the original 2011 edition and is authored by Loek Maagdenberg, who has over 40 years' experience in the ports, dangerous goods (DG) and transport sectors.

According to Maagdenberg: 'The book contains easy-to-read information and visuals for users of tank containers and provides practical, technical, chemical and safety knowledge. It gives an update on the latest developments and changes in technology, working methods, the IMDG Code and the European legal transport systems for road (ADR), rail (RID) and inland waterways (ADN)'.

It addresses both the IMDG Code and the ICAO-TI (International Civil Aviation Organization-Technical Instructions), which cover the safe transport of goods by air.

The target group is said to be those using or repairing tank containers on a daily basis. The book is designed to be used as reference book, a study book or as a user manual for DG training courses and – in

the workplace – by shippers, logistics transporters, 3PLs, forwarding agents and NVOCCs.

The update is timely, given the many changes to European and global regulations in the intervening years since the first edition was published. Although Maagdenberg admits the book "might not be complete", it answers many everyday questions, such as:

- How are tank containers correctly filled and discharged?
- Which tank container types should be used for which product?
- What is a 2½ and 5-yearly periodic inspection?
- Why and when must coated tank containers be used?
- What types are linings are there?
- How can tank container shell pitting be safely repaired?
- How can damaged tank containers be repaired?
- What are the effects of corrosive cargoes on the tank container shell?
- What danger does static electricity pose?
- Is polymerisation dangerous in tank containers?

There is a useful glossary and photographs and graphics helpfully illustrate technical points.

Understandably, many of the



examples are drawn from various operations in the Netherlands, although these obviously fall within the purview of European regulations. Europe's 510 cleaning depots could, for example, usefully have a copy on their shelves.

The book would greatly benefit from a more rigorous editing process and, although more focused on technical issues, could usefully include a section summarising the current global tank container fleet and market dynamics. As a minimum, the International Tank Container Organisation's authoritative and well-researched tank container fleet data could be included. Readers understand that this is out of date as soon as it is published but it would nevertheless provide useful additional context.

That said, the book is a worthy addition to the surprisingly small library of publications focused exclusively on tank containers. For Mr Maagdenberg, it is time to pack his bags for a well-earned holiday!

The TankContainer 2016 is available, in English only, from loekwise@kpnplanet.nl for €79 plus delivery. (ISBN number is 90-815243-1-5; NUR 977)

Review of the year 2015

Editor Leslie McCune reflects on a year of overcapacity, anxious growth, price pressure and consolidation

In the business world, the rear-view mirror is always clearer than the windscreen. So said Warren Buffet, a man who should know a thing or two about the tank container industry.

What then is in our rear-view mirror when we look back at 2015? The headline figures might suggest it was a low-joy year for the tank container industry – overall demand growth was less than forecast (and fell in certain regions), structural overcapacity was made worse by the wide-scale purchasing of tank containers at rock-bottom prices, competition intensified, supply chains changed increasingly quickly and profit margins for many stayed stubbornly low – pressurised by rate reductions, sought by customers urgently looking to minimise their supply chain costs and conceded by tank container owners looking to increase their fleet utilisation.

More positively, consolidation in both the tank container leasing and operator sectors eliminated some of the competition, finance remained low-cost and freely available, global chemical trade increased markedly and tank container prices remained close to historic lows thanks to chronic overcapacity at some manufacturers.

There were other positives – anecdotal evidence suggested the gas tank container market delivered particularly strong growth, the intra-Asia and North Atlantic tank container trade routes were very active (buoyed by a strong US dollar) and the industry leader reported a healthy operating profit.

In the tank container leasing sector, consolidation was the name of the

game in 2015 as Bohai Leasing, parent company of Seaco, the world's sixth biggest container leasing company, completed its acquisition of Cronos, the world's eighth largest box lessor and second largest tank container leasing company.

The combined tank container fleet of Seaco/Cronos matched Exsif, the market leader. The top four lessors, including Eurotainer and Trifleet, now account for approximately two-thirds of the global tank container leasing fleet.

More corporate action might follow in the form of management buyouts among smaller players with disinterested or distracted corporate owners, or, conceivably, a financial player acquiring and aggregating smaller tank container lessors to build an entity of sufficient scale that it can be repositioned for subsequent sale to institutions or pension funds.

A string of acquisitions

In the operator sector, there was a string of acquisitions designed to extend 3PL credentials, move into attractive logistics segments or develop geographic footprint and fleet density.

Most noteworthy was the announcement at the end of 2015 of Den Hartogh's acquisition of rival InterBulk Group for £42m plus the assumption of InterBulk's £53m debt pile. InterBulk's net debt had been unaffected by the \$9.4m sale-and-leaseback of some of the fleet to TAL in July 2015, the proceeds of which went to repaying early an element of the group's bank term loans.

InterBulk's demise was unsurprising

to many – recent results were poor, with the 2015 accounts showing a mere £3.2m profit before tax on turnover of £225.3m. Group turnover declined 12% on the previous year.

The value in the deal was InterBulk's deepsea tank container fleet – two to three times that of Den Hartogh's – and its strategic operational relationship with shareholder Sinotrans, which owned 35.28% of InterBulk.

Where InterBulk's dry bulk business fits into Den Hartogh Liquid Logistics, which focuses on liquids and gases, remains to be seen. Industry sources see a post-closure spin-off or trade sale as a distinct possibility.

Some tank container operators acquired other liquid logistics assets. Although the deal logic may have been strong, it forced some to pare back or delay investments in their tank container business.

Tradelane strength

Global chemical production in 2015 did not exceed the 2.8% growth of 2014, which was the highest since the dramatic rebound of 8.8% in 2010.

The headline figure inevitably masks a more complex picture. Year-on-year European output grew just 0.2% in the first ten months of 2015, but tank container demand was surprisingly robust.

Encouragingly, deepsea chemical trade continues its long term growth – according to ExxonMobil Chemical, the volume of chemicals traded between regions will increase to nearly 20% of global production capacity by 2020 (from 5% in 2004).

Research by Chemical Management Resources Ltd identified the 'Top 1,000 deepsea chemical movements in tank containers' in the main tradelanes. The research identified individual products being moved in tank containers in each

direction within each tradelane and the chemical producer/shipper.

One highlight was the buoyancy of transatlantic tank container activity - supported by a 10% depreciation of the euro against the US dollar - and the strength of intra-Asia movements.

Demand growth in the Middle East slackened at the end of 2015 but will be boosted by the start-up of liquids production later this year at the huge \$20bn Sadara complex (the Saudi Aramco/Dow Chemical joint-venture and the world's largest single phase petrochemical project). Fourteen of Sadara's 26 production units will produce products never before produced in the region. Many are specialties, 400,000 tonnes a year will move in tank containers or drums. Tank containers are also being used for raw materials such as hydrogen peroxide, glycerine and propylene glycol ethyl ether.

Changing market dynamics

Anecdotal evidence suggests that freight forwarders typically operating on a pier-to-pier basis are increasingly assuming an intermediary role between shipping lines and tank container operators.

The debate continues on the extent to which the tank container industry is gaining efficiencies through commoditisation and how far that can improve profitability. Economies of scale undoubtedly help but last year increasingly saw firms offering customer value propositions, focused on service and specialisation, instead of the more limited Unique Selling Proposition.

The infrastructure on which tank container growth depends also expanded. There are now 510 cleaning depots in Europe. Basic cleans can be up to €185 per tank, although cleaning difficult products like MDI may cost over €1,000 (depending on residuals).

In 2015, the International Tank Container Organisation developed its new structure and continued its important drive to develop a

Corporate Responsibility Code of Practice. @tco continued its good work in raising Asian tank container depot standards.

In Saudi Arabia, KTS (Kanoo Terminal Services) sold its tank cleaning division but still operates as normal as a joint-venture between YBA Kanoo and APM Terminals. The new tank cleaning company, known as Kanoo Tank Services (Sahreej), is a joint-venture between YBA Kanoo and Stolt Tank Containers Saudi Arabia. Stolt also owns 40% of the JTS (Joint Tank Services) depot in Jebel Ali, UAE.

2016 will see new tank container depots in Jebel Ali (RSA-TALKE) and Jubail. Both will have MDI cleaning capability (meeting Sadara's needs) and full off-hire maintenance and repair capabilities, including major structural work and shell grinding/polishing. The latter is not currently available in the region and its availability will help open up the under-developed tank container leasing market in the region.

Looking to fill lines

Tank container manufacturers increased capacity and were very active trying to keep line utilisation high. Those with high utilisation moved away from specials for a time as the additional requirements slow down line speeds.

A number of new modifications and designs came onto the market, including a composite swapbody tank container weighing only 2,230kg.

How then to summarise 2015? It could have been better; it could have been worse. The important message for the tank container industry to assert to its customers is, as Mr Buffet says: "Price is what you pay; value is what you get".

Leslie McCune is Editor of Tankcontainer Magazine and is an independent tank container market expert (lm@chemicalmanagement.co.uk)



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Chemical bonding and splitting

Editor Leslie McCune sees the Dow Chemical-DuPont merger and split shrinking DuPont to a third of its current size



The chemical industry knew there was a blockbuster deal being worked on by Dow Chemical and tank container operators who knew the chemical industry well had inklings that there was news coming.

When the deal saw the light of day, it was an elegant piece of corporate restructuring by two of the chemical industry's heavyweights. Dow Chemical and DuPont have agreed a \$130bn merger and probable subsequent three-way split. The deal will be largest in the sector for many years and completion is planned for the second half of 2016.

The deal comes after activist investors had been gnawing away at both Dow Chemical and DuPont. Dow has been resisting attempts by Daniel Loeb of Third Point for fundamental restructuring to "release value", while DuPont had been resisting calls from Nelson Peltz at Trian Fund Management for representation on the board.

DuPont CEO Ellen Kullman successfully resisted Trian, but it was a somewhat pyrrhic victory given her abrupt resignation in October 2015, when DuPont's stock value plunged and a profit outlook that looked bad suddenly turned worse.

The merger will spawn three independent businesses within two years: agriculture, material science and specialty products. Each will be listed and each will be among the largest players in their respective markets. The material science

entity, comprising performance plastics, performance materials and coatings, had revenue of \$51bn in 2014. Specialty products brought in \$13bn and agriculture \$19bn.

So what is the deal logic? The primary driver was the opportunity to create a major agrochemicals producer to compete in terms of scale with the likes of Monsanto, Bayer and Syngenta (which will probably be acquired by ChemChina for \$43bn). Dow Chemical never established the scale and critical mass necessary to successfully compete against the global agrochemical leaders.

DuPont's Pioneer agriculture arm is a stronger player, but will benefit significantly from Dow's portfolio. The cost and revenue synergies are said to be substantial.

Not so strong for specialties

The rationale for the materials and specialty spin-offs seems more elusive. The performance materials business will not be substantially different from Dow Chemical's current operations with, perhaps, more plastics emphasis.

The specialties business will have three elements: electronic materials, Kevlar fibres and Tyvek, and the so-called biologics.

What will be left of the two original companies? Once DuPont has lost its agriculture business, it will be half its original size. Once its high-performing performance materials business is hived off, it will be left

with only about one-third of its current global revenue and EBITDA (Earnings Before Interest Tax, Depreciation and Amortisation).

It is too early to define the impact on the tank container sector. Both companies are among the top users. Dow Chemical nearly quadrupled its use of tank containers following its \$15bn acquisition of Rohm & Haas in 2009. In Asia, for example, Dow Chemical was using only 1,000, but the acquisition boosted this to over 5,000 units in the region.

The business model at the time was to leverage the company's global purchasing power to secure attractive lease rates. Transporters would then use these leased tank containers. In contrast, BASF paid for the use of tank containers only when used.

In December, Dow Chemical started up its Sadara joint-venture in Jubail, Saudi Arabia, the largest single-phase petrochemical complex in the world. JV partner Saudi Aramco leases several hundred tank containers for its desert operations alone.

In the region, the merger and split will result in few major changes but, globally, three smaller companies will be created rather than a \$130bn behemoth (which might have leveraged its purchasing power to reduce tank container rates). That is good news for tank container players. The inevitable rationalisation of supply chain service providers will be good for some, bad news for others.

The draw of vacuum

Jaap Huigen, Managing Director of Tankformator in Singapore, shares personal insights into the potential for vacuum service

Innovation is currently the buzz word in business communities everywhere. Some go as far as to say that, today, a company's long term survival depends on it.

It is claimed by some that standard specification T11 tank containers could be approaching the end of the engineering cycle, except perhaps in the margin. As a result, the scope to innovate will likely be found outside the traditional 'envelope'.

In this article, I explore something new to most and exciting to some – tank containers for vacuum service. Firstly, the basics - what is vacuum? It is often described as a space from which all or most of the air has been removed. That, as we know for bulk liquid transport, can be important.

The first thing that is looked for when comparing tank container design, specification and unit type is the test pressure as this ties in with the regulations. An external pressure of 0.41 bar - together with the vacuum setting of the safety valve - is meant to avoid implosion of the vessel. But it also tells us that if a tank is to be designed for vacuum service, we are nearly halfway there!

In the early days of the industry tank implosions frequently occurred. Often these occurred directly after interior cleaning at 'drive through' cleaning facilities serving both road tankers and tank containers. Drivers, in haste to make their way to the loading point, erred in closing the

manlid - as soon as the steam clean had been completed - and drove off. Implosions happened shortly thereafter. What was happening was that during steam cleaning, water particles disperse air and with that the air pressure drops. This was not a problem as long as the manlid remained open. Closing the manlid, however, separates the tank interior from the outside atmosphere and the prevailing atmospheric pressure.

The good news

The good news is that when we design tank containers for vacuum service we no longer have to worry about implosions.

To most of us working in the tank container industry the concept of vacuum technology is limited to what we know about UN Portable tank type T75 vacuum-insulated cryogenic tank containers. But there are other industries benefitting from vacuum technologies and applications.

The vacuum component market alone is worth US\$4.2 billion, almost half of which is in Asia. Components include manufacture of vacuum pumps such as rotary vane and liquid ring pumps, which are essential to vacuum conveyance. Year-on-year growth is 8% according the working group of the International Statistics on Vacuum Technology.

Vacuum technology therefore

plays a vital role in research in the fields of chemistry, pharmaceuticals and physics and it has become indispensable in many industrial processes. It features in our everyday lives, from the humble vacuum cleaner to the dentist suction tube and blood transfusion. Vacuum has therefore been, and continues to be, part of our lives and is growing in importance.

Growing demand for supply chain integration will drive tank container product development

Tank containers have become the packaging of choice for shippers of intermediate-sized bulk liquid parcels worldwide on the strength of its concept. However, outside the present scope of services, there may be additional demands placed on the design of tank containers, such as to better integrate with the loading and discharging installations.

In 2012, the European Commission launched an initiative to develop 'Factories of the Future.' It was recognised that the nature of manufacturing is changing, becoming more performance-oriented, environmentally-friendly and more people-centered. Increasingly, it involves the deployment of smart technologies.

One of the questions raised impacted the supply chain: "How can the supply chain be seamlessly integrated into manufacturing with minimum or no disruption?" Could this have implications for the tank container industry? If so, could it mean that we could see demands placed on the specification of tank containers beyond the transportation? Could we expect that the 'factories of the future' might begin to measure and qualify operators for their equipment's

capacity to adequately interface with the installation, the processes, safety, security, and the installation's operational requirements? There are a growing number of factories that deploy inter-factory vacuum conveyance. Eventually those factories might like to use the same system and technology to load and discharge bulk transport tanks. In the food industry reportedly vacuum is deployed to load and discharge road tankers this to preserve the composition texture and taste of the product.

Scope for vacuum service in bulk food transport?

Consider integration within the supply chain in bulk food transport? Could vacuum service have a role to play? Vacuum is widely used by the food industry, both for inter-factory processes and packaging.

A vacuum condition slows down the process of spoilage by reducing atmospheric oxygen and by creating an anaerobic environment that limits the growth of aerobic bacteria or fungi, thereby preventing the evaporation of volatile components. Furthermore, the absence of air ends oxidative product degradation.

Hence, vacuum can be expected to contribute to the conditions required for food preservation and security. Both food security and quality are important for obvious reasons. As food directly impacts our health, there is a wide platform of international and national regulation that governs food safety and such regulations are generally well-enforced.

Tank containers are often referred to as the 'moving pipeline' i.e. the integrity of products from loading to discharge remains unchanged.

When operating standard-specification tank containers in the food sector, this could present a challenge for it involves delicate food products where hygiene standards, quality, consistency



A spill tray housing safety valve provision second safety valve, airline and nozzle for agitator or level gauge

and even texture are important.

Products that are typically carried in aseptic tank containers include concentrated fruit juice, food and beverage colorants, dairy products such as yeast and milk, alcoholic beverages, sweeteners such as sorbitol and a wide variety of edible oils. Tomato pulp can be expected to be added to the bulk transport cargo manifest soon.

Tomato pulp presents an extra challenge as the texture needs to be preserved. The pulp is widely used in the production of ketchup and pastes.

The global tank container bulk food transport sector includes a variety of tank container operators. However, for aseptic tank container bulk food transportation, there appear to be few. AsepTrans LLC of Florida, USA is a leading provider in this highly specialised field. AsepTrans and associated company, Hawaii Intermodal Tank Transport, were acquired by 3PL and 4PL provider, Odyssey Logistics & Technology, in May 2013.

AsepTrans offers tank containers with 100 mm super-insulation designed to minimize product heat gain throughout a shipping cycle. AsepTrans tank containers reportedly experience as little as 0.5° F heat loss per day, enabling their customers to ship temperature-sensitive products over long distances without the additional costs of refrigeration.

For products requiring temperature control, AsepTrans offer tank containers with refrigeration and temperature sensors.

The challenges associated with aseptic tank containers include sterilisation of the tank container interior and all its valves and fittings. 'Sterile' means the absence of living organisms and the sterilisation process is done with steam and additionally sterilising agents such as hydrogen peroxide.

However, the sanitisation processes for tank containers are challenged by the number of valves and fittings on the tanks.

The benefits of vacuum loading

Among the main challenges to achieving aseptic conditions is the filling process. Could vacuum-filling possibly ease this challenge? The benefits are as follows:

1. Reduction of the risk of contamination, especially when the fluid passes through the pump
2. Avoiding the shear of the pump; the product quality and texture remain unchanged.

Regular tank containers operate using pressure or pressure/suction to load and discharge. Unless tanks are emptied under air or inert gas pressure, the cargo inevitably travels through pumps. This is where there is a higher risk of contamination and damage to the product.

Dead space in pumps could potentially trap product which, with associated bacterial growth, could result in contamination. There have been incidents where salmonella bacteria developed in food products due to inadequate cleaning of the pump, not least because sanitizing the impellers of the pump is a difficult task.

Because it takes a minor trace of salmonella bacterium in the impeller to taint a subsequent cargo, there is a lot of reliance



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- Identified tank container acquisition targets
- Produce the quarterly 'Middle East Tank Container Market Review'

Leslie McCune, Chemical Management Resources Limited

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on cleaning the pumps. In addition, the impellers of the pump and their shear can alter food consistency, texture, taste and product appearance. Such change is obviously undesirable as maintaining product integrity is vital in the food industry. Conveyance with vacuum can eliminate the need for a pump, avoiding the problems cited.

Operational safety risks

There is no doubt that in the bulk liquid transport industry vacuum service could offer important safety benefits over pressure, especially pneumatic or inert gas pressure.

The containment of cargo during pressure discharge is contingent on the fitness of the tank container, its valves, fittings and seals. In the event of failure, cargo emissions external of the tank container are likely to result. Such emissions will elevate the risk for collateral damage and injury. With vacuum however, the risk of emissions is all but eliminated when loading under vacuum because the direction of the fluid escape only goes into the tank container.

There are circumstances during pressure discharge when valves and fittings such as the manlid could become projectiles, potentially leading to injury. Such an accident occurred last year in South East Asia. The accident occurred during discharge of a lined tank container carrying hydrochloric acid.

The Pressure Relief Valve (PRV) was of the 2½ inch variety with bsp male thread. It was subsequently found that the hydrochloric acid, or its vapor, had corroded the thread of the PRV, leading to failure. The manlid became airborne after the swing bolts failed under pressure. In this case, cracking caused by stress corrosion played a part in the failure.

Thankfully there were only minor personal injuries. When it comes to the carriage of



A Fort Vale safety valve

corrosives and the risk of failure of metal parts as described, vacuum service could arguably enhance operational safety.

Where does vacuum equipment rule the day?

There are two key markets – the environmental sector and the US oil and gas industry (especially, hydraulic fracking). The former market involves the collection of fluid sludge and waste materials of every kind, including septic waste. The latter involves the extraction of sour water from hydraulic fracking production sites.

The mantra of the environmental industry has always been: 'Someone has got to do the dirty work!' There are over 30 industrial sectors where waste is a continuous byproduct of manufacture and processing activity. The leading sectors are refineries, and oil and fuel storage terminals. Others include water treatment, pulp and paper mills, the marine industry and mines. Waste handling is often outsourced in these industries.

Environmental companies offer a wide variety of services including tank container cleaning (using hydro jets). Tank containers are also used for collecting waste, often in the form of sludge or slurry and often as a thick viscous mixture of liquid and solids. By default vacuum trucks are deployed to collect such sludge.

Here, tank containers could play a role. The September issue of *Tankcontainer Magazine* featured

Finland-based Hans Langh. The company operates a sizeable number of tank containers for vacuum service to support their marine cleaning services. Some are equipped with electrical heating to sustain operation during the winter time with sub-zero temperatures.

Following more stringent MARPOL requirements, there is growing demand for the stripping of ocean-going vessel tanks and for the collection of the sludge and slop from deep well sump sand bilges. (MARPOL is the International Convention for the Prevention of Pollution from Ships).

As the saying goes: "Where there's muck, there's money". Globally, the market for waste management was approximately \$475 billion in 2015.

Vacuum service in the US shale oil and gas sector

The US 'fracking' revolution has been well-reported. Hydraulic fracturing is deployed after a hole is drilled at a given production site. To extract the oil and/or natural gas, hydraulic fracturing is used whereby water is injected at pressures that exceed the natural fracture stress pressure of the shale rock formation.

The fractured rock is held open with fluid pressure and a proppant (usually sand or ceramics) is introduced into the fluid to keep open the fractures.

After the shale formation is fractured, the fluids are recovered. The hydrocarbons trapped inside the rocks can now flow more easily through the cracks to the wellbore. Vacuum trailers play a large part in hauling fresh water to the fracking sites and are used in the collection of sour water.

Tankcontainer Magazine Editor, Leslie McCune, reported on the involvement of tank container operators in hauling fracking chemicals in the December issue ('Fracking on the rack?').

Data the driving force

DataOnline, one of the world's leading tank monitoring companies, has been around right from the beginning of the most rapid technological changes in history. Wendy Pascoe reports

Twenty-six years is a long time in the rapidly changing world of technology and data tracking. A quarter of a century ago, the typical computer was the size of a large old fashioned TV, wireless was something you listened to and dial-up dominated. So it is astonishing to think that one of the world's leading tank monitoring companies has been around right from the beginning. And like so many other successful American businesses, it all began in a garage.

DataOnline, based in New Providence, New Jersey, and with a worldwide network of offices, not long ago celebrated its 26th year in business, and for 15 of those years it has been monitoring ISO tank containers for its customers. Currently it monitors in excess of 150,000 tank containers in more than 65 countries.

Richard Adams, the company ISO Tank & Mobile Asset Solution Specialist, says: "The first remote monitoring units were all phone line based units utilising 110v power. All our units had modems in them and would dial out and transmit data this way.

"During the very late '80s - when we were designing and engineering our first monitoring devices - the cellular world was still in its infancy. The networks were there, they were being built, but only a very small number were using it.

"Data Online's founders believed

that remote asset tracking could be using these networks before the general public were using it to make phone calls. But it was amazing how quickly things changed. At this point we knew we needed to develop remote monitoring solutions utilising the mobile networks. There were customers' tanks which didn't have access to a phone line or power. This was the market we wanted to go after."

Home working – in the garage

In the late 1980s, DataOnline co-founder Martin Adams was working for BOC in New Jersey by day. By night – in the family's garage – he and company co-founder Rob Barnacle were working on the first monitoring unit which was called the Infact, a unit still sold today.

In time, the first major contract came along and they supplied thousands of Infacts to a company in the industrial gas tanks sector. This led to more introductions, and more orders, from the chemicals industry.

Richard Adams says early problems forced them to look at the wireless issue probably earlier than they would otherwise have done. They were facing opposition from the unions about running power to some units and started working on a remote solar-powered cellular device – so easy to apply that Adams calls it a 'lick it and stick it' unit. By the time the millennium came along, they were working with satellite

technology. All could be installed by tank container technicians, bypassing onsite electricians.

Today, DataOnline approaches much of its core business from a slightly different angle. From its first major contract, it says it now has every major industrial gas company in the world as a customer.

Adams says: "Every one of these companies has a relatively small fleet of special ISO tank containers and we got into ISO tank containers this way. We didn't get into them to solve the problem of "where are they?" We got into them to solve the problem of "how safe are they?" and 'how much product do I have?'"

He continues: "Industrial gases like helium and hydrogen vent as pressure and temperature change. It's not like squirting orange juice in a tank container and it remains constant through its travel. These tanks are very expensive vacuum-sealed pressured vessels. Our customers were constantly challenging us to monitor levels and pressures of these tanks and location.

"Today, we are monitoring a few thousand tank containers. However, even though this is a small number of tanks to us, it is still a large market share in this particular market. We are now looking to utilise our 25 years of refining our product to offer it to all sorts of tanks containers whether pressurised or whether they transport orange juice or milk.

"Typically we monitor level, pressure, temperature, flow, pH, dew point, etc, but we can actually monitor anything the customer wants. Location came into effect when we started working on tank containers. Everyone and their mother can monitor location. There



are thousands of companies out there can tell you where something is. That's easy. We need to decide if that is a market we want to get into. LNG is a new market for us and we have been the only show in town with regards to monitoring LNG tank containers.

"A typical customer for us is anyone within the industrial gas supply chain, companies with air separation units selling gas in bulk. In the tank container world, that would be anyone who is moving helium, hydrogen, LNG, etc. Typically they want to be alerted immediately if something spikes. So we have an automated alert and alarm notification to our customers should one of their parameters cross a given threshold. They demand that their data is secure and confidential."

"In the tank container world, one concern for our customers is not losing their asset or the product. Take helium for example. A helium tank container can cost up to \$1m and it can have \$1m of product in it. They use and release nitrogen to keep the helium super cool. This nitrogen sacrifice is paramount. On these tanks we monitor level and pressure for both helium and nitrogen. If the nitrogen runs out and the temperature of the helium goes up, the tank starts to vent product.

"Some tanks perform better than others and by monitoring these four parameters we can determine which tank containers are suited for longer journeys around the world. In some

cases when these tanks vent it looks and sounds like something is wrong. It can be loud and look violent.

"In the early days some ship's captains would see this and think the worst. To keep his cargo ship and crew safe he would order it be thrown in the sea, losing an expensive asset. With satellite technology our customers can warn of these events and let the ship operator know before they happen. This is the analytical part. Once we have the data we can do anything with it."

Online logging and tracking

DataOnline uses satellite, GPRS, GSM, CDMA and telephone lines technology, depending on customer requirements. They have their own software so all the data comes through it and is then transferred on the web for customers to log on and track it. They can incorporate their platform with customers' existing software suites.

Adams says they need to get more sophisticated with the data and how they present it, and how they can get that to their customers, their customers' customers or anyone else in the supply chain to save on costs, in order to break into new markets. Data is a massive driving factor.

"In the tank container world a niche area would be LNG. When the price of oil rises and the availability of LNG has increased," says Adams, "then we are going to see an influx of tank containers used to

transport this form of energy. A lot of the island nations, where it's impossible to get gas by pipeline and with waters too shallow for massive ships, will rely on tank containers to get the fuel there.

"This market as it grows will become highly regulated and this is where we come in. We can do this well. This application will be more than just location, it will be to monitor the LNG level pressure, maybe temperature and maybe even shock and impact that the ISO tanks endure on their travels."

DataOnline has seen massive changes in its 26 years. It has more first-hand experience than most of where the business has come from and where it is likely to be heading. So what does it predict for the next quarter of a century?

Adams says that as price comes down from a point of view of moving data from one place to another, more and more remote assets and objects are going to be equipped with some sort of device to capture and transmit data. He adds: "It may not even be objects, it could even be people. I could see a whole host of applications within the M2M (machine to machine) world."

"These devices are for the most part individual devices. However I soon see these devices talking to each other and becoming a network. You may have two completely different tank containers on a ship, two different customers, two different products. One may be buried in the stack and the other on the top. The one on the bottom can therefore not get its data out while in the middle of the ocean, so it may talk and communicate with the one at the top of the stack to transmit its data out.


"We are trying to stay ahead of everyone else in this respect. It's a good question, and we are certainly excited to see what the next 25 years bring."

SUPPORTING DOWNSTREAM DEVELOPMENT

CREATING INTEGRATED SUPPLY CHAIN LINKAGES

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Upstream and downstream linkages; the potential for leveraging the GCC rail network for downstream products; regulations for cross border trading and a series of other supply chain related opportunities and challenges for the petrochemical and chemical industry in the GCC will be discussed during the 8th GPCA Supply Chain Conference, which will be held from 2-4 May 2016 in Dubai.

The conference serves as a platform for the chemical industry and supply chain professionals to discuss key developments within the industry and to meet with national transportation authorities and regulators. Last year, 400 supply chain executives from the Arabian Gulf Region and beyond attended the conference. The GPCA Supply Chain Conference will also host the first edition of the GPCA Supply Chain Excellence Awards.

For more information: www.gpcasupplychain.com

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Do you really know your customers' industry?

Editor Leslie McCune answers the 10 questions posed in the December issue of *Tankcontainer Magazine*

Last issue, we considered how well the tank container sector served its chemical customers. Central to this was the need to understand the chemical sector better, not least because many supply chain companies have become so inward-facing, system-orientated and operationally-driven that they have become blind to the market dynamics changing their customers' needs.

Many of the industry's more successful players are, however, looking beyond today's unsustainably low lease rates and rock-bottom tank container prices to develop in their staff, at all levels, a deeper knowledge and awareness of their customers' industry - the chemical industry.

The obvious benefit from this increased knowledge is an improvement in the quality of

discussions with customers, who usually respect the new-found ability of their supply chain service provider to talk knowledgeably about their business and its market environment.

In the process of these mutually respectful discussions, new business opportunities often come to light and/or better ways of meeting each parties needs are revealed.

How much did you know? *Tankcontainer Magazine* provides the answers

1. Organic specialty chemicals like MDI, TDI and acrylates come from hydrocarbon oil and/or gas reserves. Which major, industrialised Asian country - which has a strong chemical industry - has no oil and no gas reserves?

Answer: Korea, where the chemical sector accounts for 25% of GDP (second only to the electronics sector).

2. Organic specialty chemicals are produced by refineries and petrochemical crackers. Which three petrochemicals - which are the building blocks of downstream value chains - are produced by a refinery?

Answer: Benzene, PTA (Purified Terephthalic Acid) and propylene.

3. Which two gases are mixed together to make LPG (Liquefied Petroleum Gas)?

Answer: Propane and butane

4. Do all 'associated' natural gases go into a petrochemical cracker?

Answer: No, Methane (CH₄) has only one carbon atom and therefore cannot be cracked. It accounts for 85-97% of the chemical composition of natural gas.

5. Ethylene is often used as a proxy or benchmark for the chemical industry. Polyethylene is ethylene's biggest volume derivative. What is the second biggest ethylene derivative product?

Answer: Ethylene oxide, which accounts 13% of ethylene (polyethylene accounts for 61% of ethylene demand).

6. Where is the lowest cost place in the world to produce ethylene today?

Answer: The US, not Saudi Arabia.

7. Petrochemical crackers have a number of feedstocks, each of which yields varying amounts of ethylene, propylene, butadiene, etc. If you only wanted propylene, which feedstock would you crack?

Answer: Butane or LPG.

8. Saudi Arabia has the largest proven reserves of crude oil in the world. Based on its current extraction rate of 10.2 million barrels a day - and assuming there is no change to its proven reserves - when does Saudi Arabia run out of oil?

Answer: Based on 2014 proven oil reserves, the oil runs out in 64 years. On this very simplistic calculation, one in two Saudis alive today will therefore live in a Saudi Arabia that has no oil income. Petroleum accounted for 90% of government revenues, according to an Al-Monitor article in March 2015.

9. China's petrochemical industry is increasingly based on coal, not least because China has the largest proven reserves of coal in the world. Based on its current extraction rate, when does China run out of coal?

Answer: Based on 2015 proven coal reserves, the coal runs out in just 30 years.

10. In real (inflation-adjusted) terms, which was higher: oil at \$39 a barrel in 1979, or when it was at its highest-ever numerical peak price of \$147.30 a barrel on 11 July 2008?

Answer: Oil at \$39/bbl in 1979.

How well did you do? 3/10 or fewer correct is rated as very poor. It may be time to consider a training course on the rapidly-changing chemical industry, and what it means for tank container opportunities.

GPCA conference update

Tankcontainer Magazine looks forward to the Middle East's premier petrochemical supply chain conference

The much-anticipated GPCA Supply Chain conference takes place in Dubai on 2-4 May. Now in its eighth year, the conference's theme will be 'Supporting Downstream Development - Creating Integrated Supply Chain Linkages'. Over 400 supply chain and logistics professions are expected to attend.

The petrochemical and chemical industry is a cornerstone in the GCC's economic diversification drive and the industry's next phase of growth revolves around the development of its downstream industries. A world standard supply chain is critical to making this strategic imperative successful.

Using advanced planning techniques and project management systems, the GCC countries are integrating supply chain linkages as important logistics infrastructure additions come on stream. Among other benefits, these are creating an increasingly efficient intermodal capability that is reducing delivery times and costs.

With 80% of output exported, the industry is leveraging the GCC's proximity to burgeoning global markets to open up new routes and markets. The GCC member states are rapidly investing in solid and liquid bulk chemical transport and port infrastructure, as the region adds yet more capacity and newer products to its petrochemicals production base.

The increase in the GCC's petrochemical production capacity has been remarkable and is well reported – production capacity trebled from 38m tonnes in 2004 to 136m tonnes in 2014.

The region's annual growth rate over this period of 9.5% was exceeded only by China, making the GCC a pivotal region on the global stage.

Chemical imports and exports totalled 87m tonnes in 2014, including 67m tonnes of chemical exports.

The huge increase in the capability and scope of the region's petrochemical supply chain infrastructure is under-reported. The expansion has been driven by both the rapid increase in export volumes and an expanding product portfolio. The proliferation of products has itself been driven by the region's three strategic imperatives – capturing the added-value potential of downstream derivatives; providing locally available derivative products to meet the needs of the region's economic and industrial diversification; creating employment opportunities for GCC nationals.

The results have been impressive: 85 chemical products were produced in 2013 and 157 products will be produced in the GCC by 2020.

As usual, the GPCA Supply Chain conference provides an opportunity to network with the GCC's most important petrochemical and chemical supply chain leaders and to gain an insight into the supply chain strategies of the region chemical and petrochemical producers.

Speakers will include Mohammad Husain, CEO of EQUATE and Chairman of the GPCA Supply Chain Committee; the Director General of MODON; the CEO of Al Majdouie Logistics; the CEO UAE Region of DP World; the Director of Supply Chain

Project Management at SABIC; the Global Head of A.T.Kearney's Energy Practice; the Logistics Director of Qatar Rail; TALKE's Middle East & Africa Director and the Commercial Manager for Stolt Tank Containers.

Day 0 will feature a case study on Damman port and a presentation on ISO tank containers/bulk from Melroy Nazareth of Stolt Tank Containers. Dr Abdulwahab Al Sadoun, Secretary General of the GPCA, and Saleh Al Shabnan, the Vice Chairman of the GPCA Supply Chain Committee, will facilitate a special round table session for students.

Day 1 will open with presentations highlighting the importance of supply chain excellence in creating downstream success. International best practices in downstream supply chains will be addressed by Moneef Al-Moneef, Director – Supply Chain Project Management, Global Supply Chain Centre of Excellence at SABIC. Richard Forrest, AT Kearney's Global Head of its Energy Practice will present on the implications of cost pressures on downstream activities and will consider how to maximise downstream value.

Day 2 starts with a presentation from Ahmed Al Kowski, Logistics Director at Qatar Rail. He will share his thoughts on how upstream activities promote downstream industries. This will be followed by a Saudi Arabian perspective on government initiatives and regulations that promote downstream industries. Richard Heath, TALKE's Middle East & Africa Director – and Vice Chairman of the Gulf SQA T&A Committee – will present on 'Sustainable downstream supply chains – SQAS Dangerous Goods'.

Further details are available from www.gpcasupplychain.com.



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