



INSIGHT

Tank storage provides an essential interface between sea, road, rail and pipeline logistics.

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MANAGING THE 'NEW NORMAL'

The quarterly
magazine from
the Tank Storage
Association

Also in this issue, we shine a spotlight
on roles, training and career options in
the bulk liquid storage sector.



Insight is published by the Tank Storage Association, the voice of the UK's bulk liquid storage sector.

To contact the editorial team, please email info@tankstorage.org.uk

TSA Insight Team

Peter Davidson, Barrie Salmon, Nunzia Florio

CONNECT WITH US



CONTACT

Tank Storage Association
Devonshire Business Centre
Works Road
Letchworth Garden City
Herts. SG6 1GJ
United Kingdom

Telephone: 01462 488232
www.tankstorage.org.uk

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Peter Davidson

Executive Director, TSA

Welcome to the Summer edition of TSA Insight. In this issue of the magazine, we shine a spotlight on the successes and challenges facing our sector. Bulk liquid storage plays a vital role in the UK's economy, supporting growth and prosperity by importing, exporting, storing and blending liquid products that are integral to our everyday lives. As much as any other sector, bulk liquid storage has also felt the impact of the coronavirus (COVID-19). During this extraordinary period, the sector has been working tirelessly to keep liquid supplies flowing. And our industry is not standing still. From apprenticeships to infrastructure upgrade programmes and more, we explore the successes and dynamism of bulk liquid terminals and storage in the UK. I hope you enjoy our second edition of the magazine and don't forget to follow us on Twitter and LinkedIn to keep up to date with all our latest news.

A handwritten signature in black ink, appearing to read 'Peter Davidson'.

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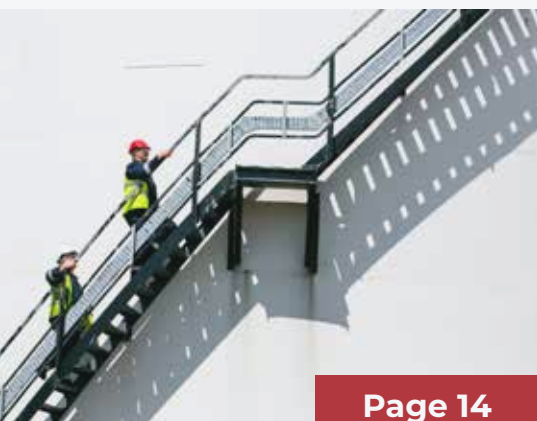
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The Tank Storage Conference and Exhibition will return on 23 September 2021 at the Ricoh Arena, Coventry.

Online meetings and webinars

The COVID-19 pandemic has challenged our model of face-to-face meetings. To adapt and respond to the current situation, all of the following meetings will now take place online .

- 23 June 2020: TSA Council
- 24 June 2020: TSA SHE Committee
- 7 July 2020: TSA HR Committee
- 27 August 2020: TSA Customs & Excise Expert Committee
- 8 September 2020: TSA Technical Committee

For more information on TSA's meetings, write to info@tankstorage.org.uk

TSA News:

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TSA's Annual Review of the UK's Bulk Liquid Storage Sector will be published on 23 June 2020.



WELCOME TO TSA INSIGHT

TSA continues to develop a suite of significant indicators for bulk liquid storage.



Welcome to the second edition TSA Insight, the magazine for the UK's bulk liquid storage sector.

Inside this issue, we hear from TSA members and the wider bulk liquid storage industry on the latest news, projects, successes and challenges facing the sector.

Against a background of increased demand for petroleum storage and a decline in oil demand due to the COVID-19 pandemic, the critical importance of bulk liquid storage terminals in responding

to market fluctuations and in improving the flexibility of the entire supply chain has undoubtedly come to the fore.

During this time, the TSA team has continued to provide up-to-date support, information and intelligence to members and the wider tank storage community. TSA will continue to monitor the situation closely and provide updates where appropriate.

We have also recently made the difficult decision to cancel the Tank Storage Conference and Exhibition, originally scheduled for 24 September 2020. Protecting the health, safety, and well-being of our members, exhibitors and attendees is paramount and serves as the reason for our decision. The Tank Storage Conference and Exhibition will return on 23 September 2021 at the Ricoh Arena in Coventry [p.12].

In exploring the successes and dynamism of bulk liquid terminals and storage in the UK,

TSA's brand-new terminals fact sheet is now available at www.tankstorage.org.uk/publications



we hear from Inter Terminals on the recently completed multi-million pound infrastructure upgrade programme at Grays terminal on the River Thames [p.8]. We also hear from Reynolds Training Services on roles, training and career options in the bulk liquid storage sector [p.24].

Also in this issue, we get an in-depth insight into the Prax Group [p.14] and learn more from Adler and Allan about five environmental considerations when making a fire response plan [p.18]. Ramboll, meanwhile, write about Environmental Cost Benefit Analysis (ECBA) for COMAH compliance purposes and WSG introduce innovative Leak Detection and Repair Services [p.28].

During these unprecedented times, RAS, tell us about managing the 'new normal' [p.10]. We also speak to Ian Travers, Director of Ian Travers Ltd, who tells us why returning to work under Covid-19 will be challenging [p.21].

In other important news, TSA has recently welcomed the appointment of Michael Derbyshire (PRAX Petroleum Ltd) and Graham Hipkin (Coryton Advanced Fuels Ltd) as Chair and Vice Chair, respectively, of the Safety, Health and Environment (SHE) Committee [p.7].

TSA's Council has also committed to signing the COMAH Strategic Forum charter for good safety leadership – reconfirming our commitment to the original Principles of Process Safety Leadership. Finally, we continue to develop our suite of significant indicators for bulk liquid storage, and hope to trial these later in the year.

If you'd like to be featured in the next issue of TSA Insight, we welcome any positive news and stories from your organisation at info@tankstorage.org.uk.

In the meantime, feel free to share TSA Insight with any interested colleagues within your organisation and beyond.



Appointment of new SHE Committee Chair and Vice Chair

TSA has announced the appointment of Michael Derbyshire (PRAX Petroleum Ltd) and Graham Hipkin (Coryton Advanced Fuels Ltd) as Chair and Vice Chair, respectively, of the Safety, Health and Environment (SHE) Committee for a period of two years.

SHE Committee members expressed their gratitude to the outgoing Chair, Andy Dickinson for his leadership of the Committee over the past two years.

TSA's Executive Director, Peter Davidson, said: "I look forward to working together with Michael and Graham on the important issues ahead for our sector in the areas of safety, health and environment. I have already enjoyed working with them both as members of the SHE

Committee and we all share the same commitment and passion to provide excellent support to members in these important areas of operation. I would also like to take this opportunity to thank Andy Dickinson for his leadership and dedication to the SHE Committee over the past two years."

For more information, visit www.tankstorage.org.uk



OPTIMISATION AT GRAYS FUELS FUTURE GROWTH FOR INTER TERMINALS

A multi-million pound infrastructure upgrade programme has been successfully completed at Grays terminal on the River Thames.



A multi-million pound infrastructure upgrade programme has been successfully completed at Grays terminal on the River Thames, which is part of Inter Terminals' comprehensive bulk liquid storage network.

The optimisation project has increased throughput capacity, enabling the receipt and dispatch of increased volumes of petrol and diesel at significantly faster rates than previously possible at the terminal.

A key regional supply point, Grays provides cost-effective access to London's fuel distribution network. Product can be received into the facility from sea and road, and redelivered by road. As part of the major infrastructure improvements, the terminal's

two existing jetties have been upgraded to accommodate larger vessels. With an improved depth up to 12.8m, max LOA of 244m and unrestricted beam the jetties can now receive vessels up to 40,000 tonnes.

In addition, new marine loading arms and mild steel pipelines have been installed which allow faster discharge of cargoes into storage. As a result, discharge rates from vessels have more than doubled to 1,600 cbm/hr, thereby substantially reducing vessel turnaround times at the jetties.

Road loading facilities at Grays have also been improved. Retail loading gantries have been increased to seven, together with additional commercial loading capacity. Additionally, new five-arm gantries now allow different products to be loaded at each loading bay for enhanced flexibility and increased throughput, saving both time and cost for customers.

Combining strategic locations with specialist product handling capabilities, Inter Terminals' UK storage facilities handle a significant percentage of the UK's imported fuel



requirements and are designed to enable seamless flow of petrol, diesel and other fuels to retail outlets. The optimisation project at Grays has further strengthened Inter Terminals' position in this competitive market.

Grays terminal specialises in the storage and handling of high and low flash petroleum products, including diesel, gas oil and kerosene. The facility has a total storage capacity of 310,489m³ across 51 mild steel tanks in a range of capacities to suit individual storage requirements. Grays occupies a prime position on the River Thames with access to highly developed transport links such as the M25, which minimises road freight rates for customers.

The strategic investment in Grays terminal will contribute to the provision of a reliable fuel supply to the south east of England, which is essential to the region's economy, says David McLoughlin, Inter Terminals' Managing Director and Country Manager for the UK and Ireland. Summing up, he comments: "Following the upgrade, larger cargoes of hydrocarbons are now being received at Grays and the terminal is currently handling in excess of 300 loads per day."

The optimisation project has increased throughput capacity, enabling the receipt and dispatch of increased volumes of petrol and diesel at significantly faster rates than previously possible at the terminal.



For more information about Inter Terminals, visit www.interterminals.com



MANAGING THE 'NEW NORMAL'

Unprecedented times are not an excuse to forget or to compromise the activities that ensure our major accident hazards are properly managed. We already have the tools to manage new measures and changes to our operations. Now is the time to remind ourselves of the intentions and the scope of our management of change processes.



here are very few organisations that can say they are running business as usual during this COVID-19 pandemic, yet the COMAH Competent Authority (CA) have made it clear that regulatory activities will continue, as far as possible, as normal. Of course, process safety doesn't wait so it is clear why there are no excuses for compliance, but, as operators try to strike a balance between COVID specific measures and maintaining production, where does that leave process safety?

Maintaining operations with measures like social distancing, reduced manning and limited access to contractors requires quick decision making, whether an organisation has contingency plans in place or not. Those in process safety have the tools to make sure any decisions made

are not going to compromise how our major accident hazards are managed, but in light of recent circumstances, it might be tempting to bypass the management of change process or to fail to identify where the MoC process is needed at all.

Some of the changes we have been seeing on high hazard sites have an obvious requirement for management of change to be carried out, just as it would be if COVID-19 measures were not in place. For example, a number of operators are installing portable buildings on their sites to enable employees to continue to work while social distancing. Any changes that have the potential to directly impact on the safety of personnel, such as location and building vulnerability, are considered to be critical and are generally being well managed.

With limited access to contractors who may be furloughed and social distancing measures preventing many of them from working on sites, keeping up with maintenance, inspection and testing intervals for equipment has proven difficult. Changes to maintenance schedules, particularly for safety critical equipment, should be carefully

As operators try to strike a balance between COVID specific measures and maintaining production, where does that leave process safety?



considered and continuing operations with affected equipment well justified. The longer that tests are left overdue, the less reliable the equipment is, with implications for risk calculations and tolerability. It may be tempting to continue to run the equipment based on historical integrity data, but any credit taken as a risk reduction measure is unfounded once maintenance becomes overdue. Compliance with the ALARP principle (whereby barriers are implemented to control risk to a level that is As Low as Reasonably Practicable), can therefore be compromised significantly if the risks of changes to maintenance tasks are not identified and sufficiently managed.

Some changes, however, might not be so readily recognised as requiring a formal management process. In many cases, we have had to adapt



the way that we operate, but are the less tangible changes such as updates to procedures considered to be critical? As the time spent operating under COVID-19 measures increases, activities that have so far been delayed until things return to normal become more urgent. Take, for example, HAZOP (Hazard and Operability) studies for projects. Time and money are important, and so in some cases rather than continuing to delay processes such as HAZOP, some operators are electing to carry them out remotely via video conference calls. Where it is strongly recommended that full studies are done in person, project HAZOPs can be carried out successfully remotely, provided that the risks associated with doing so are identified and managed. Are procedures compatible with remote working? How can we make sure that the resources required for a successful study are available to all participants, and that participants are able to communicate freely?

Unprecedented times are not an excuse to forget or to compromise the activities that ensure our major accident hazards are properly managed. We already have the tools to manage new measures and changes to our operations. Now is the time to remind ourselves of the intentions and the scope of our management of change processes.

Carolyn Nicholls, Operations Director, and Jennifer Hill, Risk and Hazard Management Consultant, RAS Ltd. For more information, write to enquiries@ras.ltd.uk.



2021 Tank Storage Conference & Exhibition

The Tank Storage Conference and Exhibition is the UK's leading event for the bulk liquid storage sector. The event has a proven track record of successfully bringing together people who care about safe and effective bulk liquid storage operations.

The Tank Storage Conference and Exhibition will return on 23 September 2021 at the Ricoh Arena in Coventry.

Raise your profile at TSA's industry-leading event.

For more information about the Tank Storage Conference and Exhibition, visit www.tankstorage.org.uk/conference-exhibition



TANK STORAGE CONFERENCE AND EXHIBITION

**The Tank Storage Conference and
Exhibition will return on 23 September
2021.**



Giacomo Boati, Executive Director - Oil
Markets Midstream & Downstream,
IHS Markit, presenting at the 2019 Tank
Storage Conference and Exhibition.

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ue to the global
C O V I D - 1 9
(Coronavirus)
pandemic, the

Tank Storage Association has announced that it has no choice but to make the necessary decision to cancel the 2020 Tank Storage Conference and Exhibition originally scheduled for 24 September 2020, at the Ricoh Arena in Coventry.

Protecting the health, safety, and well-being of our members, exhibitors and attendees is paramount and serves as the reason for our decision.

In a statement, Peter Davidson, TSA's Executive Director, said: "It is with great regret that we have had to cancel this year's conference and exhibition. We have not taken this decision

lightly and we understand that it may come as a great disappointment. However, with the health, safety and well-being of all involved our number one priority, I am sure you will appreciate that cancelling the event is the right thing to do as we make our way through this challenging time. On behalf of the TSA, I would also like to thank our exhibitors, sponsors and delegates for the enormous support they have already shown us. We look forward to welcoming all at TSA 2021,

which we will work to make even better than before."

The Tank Storage Conference and Exhibition will return on 23 September 2021 at the Ricoh Arena, Coventry.

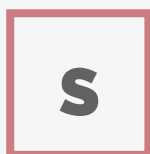
For more information about the Tank Storage Conference and Exhibition, get in touch with the TSA team on 01462 488232 or by writing to tsa@tankstorage.org.uk

**The conference programme
regularly features presentations
from Government, Regulators and
industry experts on topics which
are of key interest to those who
operate in this sector.**



AN INSIGHT INTO THE PRAX GROUP

Operating solely as a fuel distribution terminal under the name “Prax Terminals”, and with a focus on gate-to-gate times, the teams based at Jarrow carry out a wide range of process operations to import, store and export fuel and chemical products.



Situated by the mouth of the River Tyne, not far from the idyllic shores of Sandhaven Beach, the Jarrow Terminal has been a mainstay of the North East skyline since the 1930s. Acquired by the Prax Group in 2016, the Terminal is used for the storage and distribution of a range of fuels including gasoline, diesel, gasoil and kerosene, as well as offering co-mingled storage and fuel distribution for other fuel suppliers.

Operating solely as a fuel distribution terminal under the name “Prax Terminals,” and with a focus on gate-to-gate times, the teams based at Jarrow carry out a wide range of process operations to import, store and export fuel and chemical products. Key to the success of the business is the Terminal's highly experienced management team, based on-site. Collectively, the management team has over

110 years' experience in the petrochemical industry.

The team professionally manages all aspects of safety, operations and engineering. Their dedication has contributed to the Prax Group achieving a Gold Award in the internationally renowned and highly respected RoSPA Health & Safety Awards – the longest-running awards scheme in the UK for health and safety performance – for the qualifying 2019 period. This prestigious award was achieved within two years of joining the scheme.

In 2019, Prax Terminals supplied over 476 million litres of fuel to a range of retail, commercial and industrial customers. This includes the Prax Group's own retail forecourts, which operate under the Harvest Energy brand, and the Total branded forecourt in Thirsk that the Prax Group re-branded, following the signing of a Fuel Network Agreement with the energy major last year. The Prax Group has fostered a strong link with Total, and Jarrow is now the only Terminal in the UK that supplies TOTAL EXCELLIUM fuel.

The Prax Group itself was founded as a start-up oil trading company over 20 years





ago. Today, the Group is made up of 44 companies within the global Prax family, spread across upstream and downstream operations. Headquartered in London and with trading offices in Houston and Singapore, the Group specialises in the trading of crude oil and is one of the world's largest traders of petroleum products.

The Group imports products including diesel, fuel oil, gas oil, gasoline, kerosene, Jet A1, Avgas, bio-fuels and additive products into strategically located global storage facilities, including the Jarrow Terminal, from which it supplies wholesale volumes, moving products by ship, rail, road and pipeline to customers right across the world. The Group's Derivatives teams in London and Singapore carry out trades to ensure that products are bought and sold at the best possible price, taking into account market instabilities and pricing fluctuations and they even trade in used cooking oil!

The Prax Group's supply of Jet A1 and Avgas is the responsibility of Harvest Energy Aviation, one of the organisation's newest divisions, with provision of dedicated storage and an into-plane service. Within a short space of time, Harvest Energy Aviation has already attained a reputation for high quality products and customer service, supplying

airports, private airfields, private jet owners, and corporate jet and helicopter operators.

The Group is also a leading marine fuel supplier, servicing ports in strategic locations around Northwest Europe as Harvest Energy Marine, managed by a dedicated and highly experienced team. A number of ocean-going tankers on period time charter are used to effect ship-to-ship bunker supplies, providing an efficient and reliable service to ship owners and operators, including car carriers, cruise ships, container lines and RORO (roll-on/roll-off) vessels. Harvest Energy Marine offers highly competitive prices for marine fuels and gas oil, providing customers with support and expert knowledge throughout the decision-making and supply process.

Despite the nature of its operations, the Prax Group takes its environmental responsibilities very seriously, and manages its activities to minimise, wherever practicable, their effect on the environment. In response to a rising demand for more sustainable products, the Group supplies a range of blended biofuels, including hydrotreated vegetable oil (HVO), and is ranked the number one supplier of renewable fuels, with the highest greenhouse gas savings in the UK.

The Group's Corporate Social Responsibility (CSR) is firmly embedded within its company culture, with philanthropy at its very core. Particular attention is given to the Prax charitable Foundation, called Roots, with staff donating their time to various fundraising initiatives and raising



significant funds. Long-term, the intention is to develop and extend these charitable activities to a number of employee-driven initiatives worldwide.

Formally established as a UK charity in 2010, the aim of the Roots Foundation is to relieve poverty and sickness, and advance the education of girls in particular, and children in general. The charity's first projects are centred on two orphanages in Sri Lanka, located in Adampan and Murunkan, with responsibility for the welfare of 80 girls – a number that is increasing all the time.

The preservation, protection and health of these children are paramount to the charity's trustees – members of the Prax Group's senior management team – who visit every year.

The Prax Group achieved a Gold Award in the internationally renowned and highly respected RoSPA Health & Safety Awards.



The Group's Corporate Social Responsibility (CSR) is firmly embedded within its company culture, with philanthropy at its very core.



Aside from extending the scope of its charitable initiatives, the Group's senior management team continuously looks at innovative ways to grow business in the upstream and downstream oil and gas sector to support its ambitions of becoming a fully integrated global oil conglomerate. The Group is committed to continuing its ethos of diligence and innovation, and to building an extraordinary business that commands respect for the quality of its products, the sincerity of its values and the integrity of its people.

Prax is ready to respond and adapt to the current rapidly changing environment. As part of their natural evolution as a leading player in the global oil market, the Prax Group's strategic objective is to move into the next stage of accelerated investment, growth and development in order to meet the demands of its customers and the expectations of its distributors.

For more information about the Prax Group, visit www.prax.com



The Prax Group itself was founded as a start-up oil trading company over 20 years ago

Key to the success of the business is the Terminal's highly experienced management team, based on-site.



FIVE ENVIRONMENTAL CONSIDERATIONS WHEN MAKING A FIRE RESPONSE PLAN

Risk assessment and emergency planning is key to minimising damage and getting your operation back up and running quickly and compliantly after a fire.



In the year ending June 2019 there were just over 11,000 fires in non-domestic buildings annually in the UK. Risk assessment and emergency planning is key to minimising damage and getting your operation back up and running quickly and compliantly after a fire.

We know from previous incidents (such as the Buncefield fire) that there is a risk of severe pollution from fires caused by firewater run-off into groundwater and spills of hazardous materials. The legal consequences of this and the clean-up bill, not to mention the bad PR and loss of business, can be very costly.

Site operators should therefore develop robust incident response plans. These can be

shared with the fire service, who can sometimes hold these on their systems, so they know what to do when they get to site.

Here's five environmental considerations when making a fire response plan.

1. Risk assessment

Site operators should first carry out a risk assessment to identify areas where all three of the below are present:

Source – Pathway – Receptor

The source might be firewater, the pathway may be a surface water drain and the receptor a local river.

2. Risk reduction strategies

Where an environmental risk is identified, site operators need to consider ways to reduce the risk. These fall into four categories:

- Prevention – prioritising preventing fire on site
- Detection – ensuring fast detection and action if a fire does start
- Containment – site operators should consider installing facilities for containing firewater such as bunds, storage lagoons or chambers, shut-off valves and isolation tanks or areas
- Mitigation – develop suitable firefighting strategies with the fire service such as a controlled burn



In the year ending June 2019 there were just over 11,000 fires in non-domestic buildings annually in the UK.

3. Firewater containment

The first and easiest strategy to ensure firewater doesn't enter a receptor is to identify where surface water drains are. Guidance suggests painting drain covers a different colour on plans to differentiate surface drains from foul water drains.

Then site operators need to make a plan for where firewater will go. The first thing to do is consider the topography of your site. Firewater will find its way to the lowest point of your site. The simplest option is to designate this area as a sacrificial lagoon. In the event of a fire sandbags could be deployed around this area to contain the firewater so it can be disposed of compliantly. Other options for containing firewater are:

- Containment lagoons
- Tanks
- Pits and trenches
- Portable tanks

Each option should be considered in relation to the site and its potential effectiveness. Consideration should be given to whether another form of containment is required in the event of an emergency to prepare them (such as moving portable tanks into place).

4. Reducing risk from spills

If your site has hazardous materials stored on it, spillages caused in the event of a fire can have significant environmental impact. It is not just materials like chemicals and oil that can pose a threat, non-hazardous

products such as milk, fruit juice and beer can cause significant environmental damage if allowed to escape.

The importance of ensuring secondary containment bunds around tanks storing hazardous materials is key to reducing the risk of spills during a fire. Should a breach occur, temporary tanks or containment lagoons can be used to contain spills until the material can be assessed and either removed and disposed of or returned to its original tank.

Shut-off valves or penstocks can isolate part or the whole of a site to retain spillages. You need to consider the capacity of the drainage system and ensure they are regularly maintained to guarantee their effectiveness in the event of a fire.

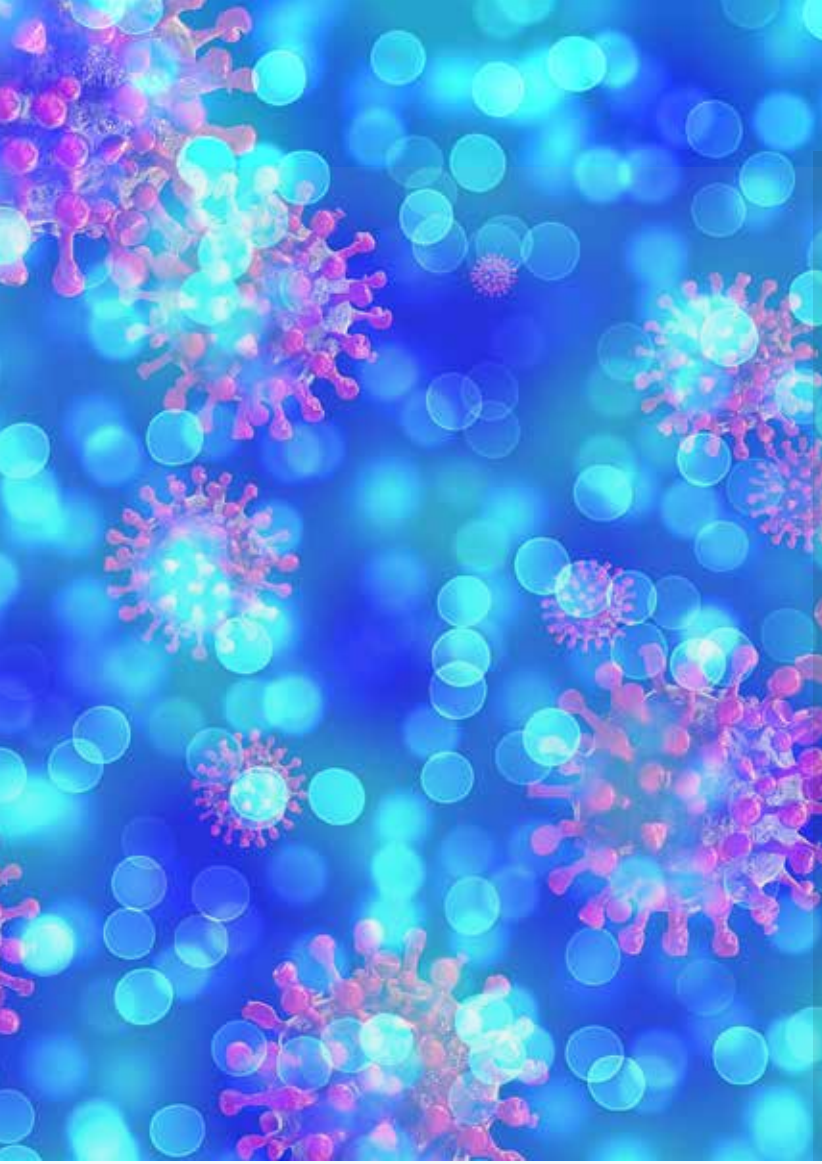
Automatic sensors and closure devices may be used on sites where an incident might not be immediately noticed.

5. Check your separators

Don't forget to have your separators serviced after a fire to ensure firewater hasn't entered into the system. The presence of degreasing agents or detergents in firefighting foam can significantly reduce the efficiency of separators in treating hydrocarbon contaminated water.

An environmental risk reduction specialist such as Adler and Allan will be able to work with you to assess the risks on your site and produce a suitable fire response plan. Being prepared will reduce the risk to the environment and your operation.

For more information about Adler and Allan, visit www.adlerandallan.co.uk



Find out more

For more information, write to
Ian Travers Limited at
ian_travers06@btinternet.com or
visit www.iantravers.co.uk

To download a copy of the
'Covid-19 Return to Working
Occupational Health and
Safety Guidance', visit www.covid19ohsguidance.com

Figure 1: Covid-19 control measures based on their relative effectiveness in preventing the spread of infection in the workplace.

Tier 1	Avoid all personal contact			
Tier 2	Health surveillance and exclusion	Social distancing	Personal hygiene	Workplace cleaning
Tier 3	PPE (except in medical / care activities, when dealing with known cases)			
Tier 4	Workplace ventilation			

WHY RETURNING TO WORK UNDER COVID-19 WILL BE CHALLENGING



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W

ith so much uncertainty over risk and safety lots of people are asking 'will it be safe for me to return to work'? Safety is, of course, a relative concept. For lots of reasons, beyond Covid-19, you are much safer staying at home rather than venturing out, travelling, or going to work.

I was asked by the Organisation for Economic Cooperation and Development (OECD) to prepare occupational health and safety guidelines to help businesses in northern Italy to get back to work. I published my free guidelines at: www.covid19ohsguidance.com. The guidance sets out the seven main control measures available to combat the spread of the virus in the workplace together with rational explanations of what each measure achieves, where its best applied and who should adopt the measure. They are set out in the diagramme enclosed [Figure 1: Covid-19 control measures based on their relative effectiveness in preventing the spread of infection in the workplace, p.20], based on their relative effectiveness. These are the only real options available and apart from working at home, employers have to select combinations of these control measures based on an assessment of the risks of their work activities and workplaces.

So, it is clear there is no one size fits all solution and I recently developed individual risk assessment templates for employers to use for the eight sectors outlined in the UK Government's guidelines. But there also some other challenges associated with managing occupational health and safety, OHS, risks.

To begin with the hazard, unlike conventional OHS risks, is not from a work activity but from the people at work and with whom workers come into contact with. Then there is considerable uncertainty about the effectiveness of the control measures available. Hence to move by default, to familiar controls such as PPE and yet using face masks at work provides little protection to the person at risk. Instead wearing of face masks should be considered as community protection equipment, CPE, as only when a large percentage (90-95%) of people within a work area or space wear once is there a reduced chance of the spread from an infected person. But, above all, control of Covid-19 is by far the largest workplace behavioural safety programme we have seen. Changing behaviours takes time and commitment and above all involves understanding and acceptance by everyone of the reasons why the desired behaviour is necessary. People returning to work will be anxious and sceptical about their safety.

So, my conclusion in this is that the most effective control measure is not listed above but is actual effective communication and engagement. We need to constantly remind people of the need for the precautions and support them where they are struggling to adapt. Employers should share their risk assessments with employees and discuss and explain their control decisions.

ENVIRONMENTAL COST BENEFIT ANALYSIS FOR COMAH COMPLIANCE PURPOSES

Environmental cost benefit analysis (ECBA) is becoming an established tool for demonstrating compliance in relation to the Control of Major Accident (COMAH) regulations.

Environmental cost benefit analysis (ECBA) is becoming an established tool for demonstrating compliance in relation to the Control of Major Accident (COMAH) regulations. This follows on from the publication of the 'All Measures Necessary' guidance for the Competent Authority Inspectors and officers, relating to the prevention and mitigation of environmental aspects of major accidents. This guidance was published in 2016 and was linked to the Chemicals and Downstream Oil Industry Forum (CDOIF) Guidelines for "Environmental Risk Tolerability for COMAH Establishments".

Together these documents set out a framework for demonstrating that "All Measures Necessary" (AMN) are in place at a COMAH establishment in relation to environmental risk. The 'All Measures Necessary' guidance documents that the Competent Authority (CA) considers AMN

to be in place when the risks are demonstrated to be either Broadly Acceptable or As Low As Reasonably Practicable (ALARP); and that demonstration has been accepted and verified. In the Broadly Acceptable Region, the CA starts with the expectation that "good practice" will be implemented (so far as is reasonably practicable). However, in the Intolerable Region (where there is a higher risk), the CA would expect measures to be implemented to ensure risk is reduced ALARP. In these situations, expenditure is required almost regardless of cost, although often relatively simple solutions can reduce risk outside of this region.

For any risks that fall within the TifALARP region, the Operator will adopt "good practice" (so far as is reasonably practicable) and carry out an ALARP assessment to determine what more could be done to reduce risk. These are based on the key question, what more can I do to reduce the risks? And also, why have I not done it?

These discussions lead onto the question of whether potential upgrades are practicable and whether they are grossly disproportionate. Assuming that



the option is practicable, the next step would be to understand whether the environmental benefit is justifiable or grossly disproportionate. Importantly, the process for undertaking this is emerging and the draft AMN guidance included worksheets that set (what appears to be) a relatively simple equation to determine Justified Spend (i.e. a monetary value below which an upgrade spend would be justifiable, and above which is grossly disproportionate). This can be worked out by the following equation: Justified Spend (in £ Sterling) = Risk Gap x Benefit x Disproportion Factor x Plant Life.

A strong understanding of the environmental risk tolerability status is still required, given that the Risk Gap takes this into account and could be the difference between implementing or not implementing an upgrade. Additionally, it is also important to factor in health and safety benefits that potential upgrades may provide, so the decision is not solely based on environmental risk.

One of the challenges in undertaking ECBA is the ability to define an environmental 'benefit' value that represents the environmental harm that would be avoided by implementing additional upgrades. Whilst the Health and Safety Executive has set monetary values for risks to people, this is not the case

for the environment.

Environmental receptors vary widely in their sensitivity and environmental value, and while there are some available examples of spill clean-up and habitat restoration, these often relate to crude oil tanker spills that typically result in more widespread impact and longer term harm than light to mid distillate spills. Thus, there are few 'off the shelf' options for deriving environmental 'benefit' values.

Rather than using potentially overly conservative spill costs, Natural Capital techniques provide an alternative approach to generate environmental 'benefit' values (in £ Sterling) that can take into account the natural recoverability of the environment. For example in a sensitive coastal setting we have seen lower end TifALARP tolerability outcomes result in Justified Spend from £20,000 (where limited risk reduction was provided) to c. £200,000, discounting a number of £1M+ options.

Ultimately, through careful evaluation of environmental risk and appropriate use of ECBA, it may be possible to demonstrate that targeted and proportionate upgrades can yield significant environmental risk reduction and support the demonstration of compliance. This process should not be feared, and the output can inform businesses long term site improvement plans and capital expenditure decisions.

Jon Eudall, Managing Consultant, Ramboll
For more information, visit uk.ramboll.com/



ROLES, TRAINING AND CAREER OPTIONS IN THE BULK LIQUID STORAGE SECTOR



he bulk liquid storage sector evokes images of tanks rising from a high hazard site.

Of course, our sector is diverse, the fuels, foods and chemicals we take stewardship of reaching far across the land.

They are the lifeblood of society. We store, import, export and distribute them, pumping prosperity around the nation and beyond, fuel-injecting the economy with life.

Take the aviation sector where fuel quality and supply is paramount in achieving safe and timely flights. Airports can reach 20 to 30 million litres throughput daily. The Tank Storage Association's annual review notes how the UK's "diverse" bulk liquid storage sector represents a "critical component in the supply chain for many industries, from transport fuels to animal feeds".

The report underscores a number of key industry contributions, including:

- 3,790 employees in the UK
- £3 billion revenue in 2019

Clearly our industry, which houses diverse roles, training options and careers, has never been more important. So, with £607 million investment planned over the next five years, let's take a deeper look at the industry.

1. What makes up the bulk liquid storage sector

The bulk liquid and gas storage sector comprises a wide range

of sites fulfilling different needs, including:

- **Refinery Storage:** With 6 refineries across the UK, it is vital they have the facilities to receive products that flow through the refining, storing and distribution process.
- **Fuel Storage Companies:** For example, BP, Valero and Greenergy, storing and distributing a range of core fuels countrywide, keeping us on the road.
- **Third Party Storage Companies:** Companies such as UM and Inter Terminals which store and deliver a wide range of products from refined chemicals to fuels.
- **Aviation Fuel Storage:** Key component of airport infrastructure, these sites receive aviation fuels providing specialist storage and distribution to the network of 'aircraft stand' refuelling points.
- **The Process Sector:** A wide variety of process companies who receive discrete batches of raw feed products and process these into a range of everyday products we often find on supermarket shelves.
- **Fuel Distributors:** Vast range of satellite sites, many of which sit sub COMAH, but with a range of hazards and risks that require the same level of competence, allowing that network of distribution to be extended to more remote areas.

2. Import/export

As a sector, we receive and deliver

petrochemical and products in a range of ways, including:

- **Pipeline:** From refinery to terminal or terminal to process unit, the vast network of pipes which provide a constant feed to maintain supply.
- **Ship:** Single to multi grades, shipping operations provide that requirement of close coordination between a vessel and the storage facility to ensure the safe and efficient transfer of products.
- **Road:** Multipot, single pot, to multimodal units predominantly hauled by third party hauliers, some linked to specific long term contracts, with a range of skills needed that go beyond driving!
- **Rail:** This provides the ability to haul large volumes of product often inland, from refineries through to holding depots for onward transportation to aviation fuel storage, for example.
- **Drums and IBCs:** From process operations through to bespoke units that specialise in batching operations.

3. Role of facilities

The role of facilities is fundamentally the same, focussing on the safe receipt, storage and onward delivery of products. These actions must be taken in line with procedures and regulatory controls to maintain safety and environmental standards.

Careers within these facilities are varied, from engineering and maintenance through to operations and administrative personnel who coordinate stock, financial

accounts, and any relevant customs requirements.

4. Careers

Those looking to work in the sector have a host of career pathways to traverse. These can range from:

Operational positions in the field and control room to engineering, maintenance and management posts, all of which are supported by:

- HR, accounts and administration.
- Safety, environmental and compliance roles.
- External roles such as surveyors, tank cleaning, maintenance contractors and drivers.

In the next edition of Insight, we'll look in more depth at these roles, qualifications for entry and career progression.

In the meantime, check out our industry-first apprenticeship specialism for the Bulk Liquid Storage Sector at www.reynoldstraining.com/apprenticeships



Find out more about the industry-first apprenticeship specialism for the Bulk Liquid Storage Sector at www.reynoldstraining.com/apprenticeships



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WSG INTRODUCE INNOVATIVE LEAK DETECTION AND REPAIR SERVICES

In addition to their current support services to storage tank operators, which includes infrastructure projects, maintenance and UHP tank cleaning services, WSG are further growing their offering as a Leak Detection and Repair specialist (LDAR) with the addition of WSG Enviro to the WSG Group.



WSG are pleased to introduce innovative Leak Detection and Repair Services – LDAR

In addition to their current support services to storage tank operators, which includes infrastructure projects, maintenance and UHP tank cleaning services, WSG are further growing their offering as a Leak Detection and Repair specialist (LDAR) with the addition of WSG Enviro to the WSG Group.

WSG's aim was to make regular maintenance or maintenance during outages and shutdowns seamless, efficient and productive with minimum downtime required.

WSG already had an extensive track record as a Leak Detection and Repair Specialist, supplying services from the existing core business lines within WSG, such as Nitrogen Helium Leak Detection, Flange Management, Onsite Machining and WSG's

Valve Service and Repair business, WSG Provalve. With the inclusion of WSG Enviro's market leading Optical Gas Imagery, WSG can now offer clients the unique opportunity to assess and inspect their assets up front of planned maintenance, or at agreed inspection intervals, to include any necessary repair work identified at the next scheduled maintenance interval.

Emerging regulatory requirements around fugitive emissions mean asset owners can partner with WSG to quantify and report emissions to atmosphere and meet and exceed regulatory requirements. Adoption of this upfront asset inspection and assessment will provide the plant owner with real time data on the integrity of their plant, simultaneously reducing downtime on their assets by efficient scheduling of repair works for leaks detected. WSG OGI cameras, which are the world's most sensitive OGI





City & Guilds Confined Space Training



About Us

WSG Industrial Services are trusted service suppliers to storage tank operators.

Our services include industrial cleaning, environmental services and waste management.

Based at our purpose built Immingham training centre, our best in class training draws from our own industrial experience.

City & Guilds courses cover legislative compliance for working with confined spaces.
WJA Courses also available.

WSG's Industrial Services training centre is ideal for those involved in work on tanks, vats, silos, pits, flues or any similar environment.

Contact us for course availability.

Accredited Training Courses

Confined Space Training (City & Guilds Approved)

Level 2 Awards for working in Low, Medium and High Risk Confined Spaces

Level 2 Awards for working in Low, Medium and High Risk Confined Spaces: Water

Level 3 Awards in understanding, planning, supervising and managing work at height

WJA - Water Jetting Association


Safety Awareness
Surface Preparation
Drains and Sewers
Tube, Pipe and Bundle
Hydro Demolition



WSG Industrial Services
Queens Road
Immingham
DN40 1QR

+44 (0)1924 898250

uksales@wellservices-group.com



camera, not only identify leak points, but also provide quantification of leakage within bespoke software, this allows customers to determine criticality of the leaks reported for remedial work at client discretion. The cameras are certified to EPA regulations and are ATEX and UL certified for operation in hazardous environments and WSG can provide a wide and ranging inspection service complimented with a final Leak report tailored to customer requirements. These services are delivered and managed by leak detection experts, supported by a competent and highly trained team of personnel.

WSG incorporates WSG Enviro, WSG Process & Pipeline, WSG Industrial Services and WSG Provalve. WSG LDAR capabilities are further supported by their in-house and Specialist Valve Service and Repair Business, WSG Provalve, which offers state of the art testing, machining and ball grinding equipment, aimed at servicing high integrity pipeline valves, in particular ball valves, large bore isolation valves, control valves and safety relief. Coupling both the WSG Joint Integrity and Flange Management Services with WSG Provalve, WSG are able to

offer bespoke solutions for leak remediation works identified during the Leak Detection campaign.

WSG Asset Integrity Management (AIM) Software further supports the service with an integrated and comprehensive software solution for management and record keeping of all WSG work fronts, including leak identification and reporting, onsite flange management and valve service and repair, offering a true Blind to Blind solution.

WSG also recognise the importance of verifying the leak repair implemented has been successful, ensuring the client has peace of mind when they successfully restart their asset and eliminating potential future downtime.

To do so, WSG are able to offer a secondary leak test, either by reuse of the primary Optical Gas Imaging Camera or by implementation of specialised pressure testing. WSG are able to offer a wide range of pressure testing services from within the core WSG business, ranging from Hydrostatic, Pneumatic or Nitrogen and Helium Leak Detection.

WSG assess all projects to find the most suitable solution considering the size, structure and requirements of the client. Any combination of these services can be integrated and managed through one of our experienced industry specialists who work with our clients to select the most appropriate application to suit the asset characteristics and operation.

For more information, contact a member of the WSG Team on 01924 898250 or write to uksales@wellservices-group.com



Join the voice of the bulk liquid storage sector

TSA champions the UK's bulk liquid storage sector and its role in supporting growth and prosperity.

We have several membership levels available for bulk liquid terminals, distribution terminals and hubs, as well as equipment and service suppliers.

Join us. Choose your membership at www.tankstorage.org.uk/join-us

TSA offers a range of membership benefits, including weekly political and media updates sent directly to your inbox.

To receive all the latest information, news and guidance, visit www.tankstorage.org.uk/join-us.



To find out more, write to info@tankstorage.org.uk.





The voice of the bulk liquid storage sector



CONTACT US



Tank Storage Association
Devonshire Business Centre
Works Road
Letchworth Garden City
Herts. SG6 1GJ
United Kingdom

www.tankstorage.org.uk



T. +44 (0)1462 488232



info@tankstorage.org.uk

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