James Fisher and Sons plc
Marine Services Worldwide

Pelican

Summer 2014

Nuclear pond clean-up progresses

Pioneering Remotely Operated Vehicles (ROVs) help move over 4,500kg of fuel rods in clear-up of Sellafield's First Generation Magnox Storage Pond.

When the team tasked with decommissioning Sellafield's First Generation Magnox Storage Pond (FGMSP) in Cumbria faced the challenge of locating and clearing waste materials they called on James Fisher Nuclear (JFN) for specialist help.

The pond was constructed in the 1950s and 60s to receive and store irradiated fuel, but over the years it has accumulated significant quantities of waste materials, sludges from corrosion of fuel cladding, fuel fragments and other debris which has blown into the pond, and approximately 1,200 skips containing irradiated fuel. The contents of the pond needed to be characterised, sorted and retrieved, but all work had to be done remotely to minimise exposure to radiation.

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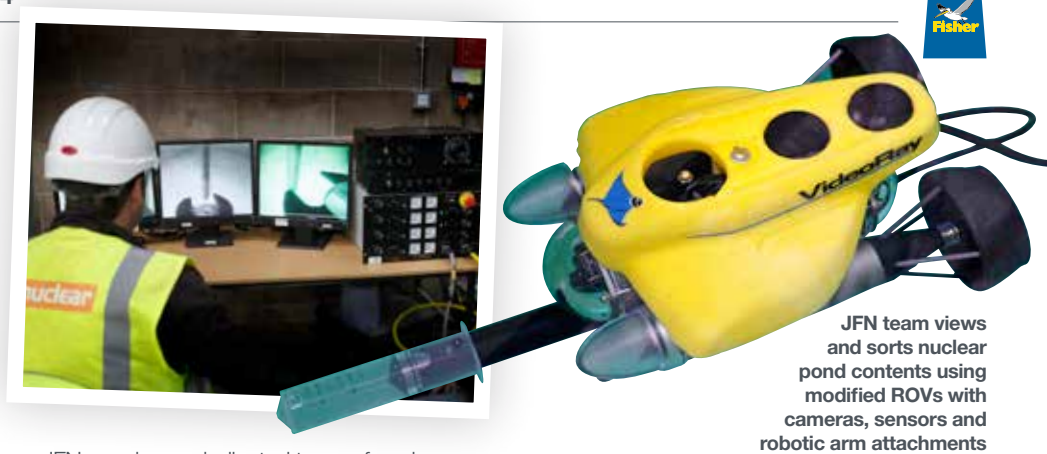
Also in this issue

If you have any comments or suggestions for the Pelican editorial team or would like to contribute to the next edition, please email **pelican@james-fisher.com**



JFN team views and sorts nuclear pond contents using modified ROVs with cameras, sensors and robotic arm attachments

The team at JFN, working closely with Sellafield, was able to develop special tooling and services for submersible remotely operated vehicles (ROVs), which can be controlled from a safe distance of 15 to 20 metres from the pond site to minimise the risk of radiation exposure.

The ROVs deploy cameras, sensors, sludge and liquor samplers, grabs, cutting tools and manipulators to carry out a wide variety of tasks, from characterising the pond environment through to routine maintenance tasks and material retrievals. Using ROVs has proven to be safer, more efficient and cost-effective than available alternative technologies, and has made a significant impact on one of the most complex challenges of Sellafield's decommissioning programme.

Commenting on the latest achievements of this long-running and very important project, JFN's project manager for Sellafield, Phil Toomey said: "The ROV trials have demonstrated that we can successfully sort, segregate and consolidate fuel between containers as well as from the floor to containers. We've moved more than 4,500kg of fuel rods using ROV technology, and some 50kg of spent fuel has been recovered from the pond floor and placed into containers ready for export."

JFN now has a dedicated team of engineers and project managers to work on the Sellafield pond project, as well as a custom-built dive tank for ROV development, testing, and operator training based at its Egremont facility, near the Sellafield site.

JFN's business development manager, Simon Pyne, recognises how this close relationship gives JFN unique expertise in the remote clearance of nuclear ponds. "The team built strong relations with Sellafield and it's the excellent levels of communication and collaboration that has facilitated successful delivery of reduced risk, operational efficiency and cost savings to our client." ■

> "We've moved more than 4,500kg of fuel rods using ROV technology, and some 50kg of spent fuel has been recovered from the pond floor and placed into containers ready for export"
>
> **Phil Toomey, JFN's project manager for Sellafield**

Inspection and monitoring

SmartLoad® takes the strain

Intelligent new load cell system heralds new era of load monitoring.

A leap forward in load monitoring is promised by SmartLoad®, an innovative intelligent system that develops the concept of a simple load cell into a comprehensive load monitoring system. SmartLoad® is a market-leading innovation, using the latest wireless technology to provide a flexible solution giving improved reading ranges while also being simple and intuitive to use.

Developed collaboratively over the past year by James Fisher group company Scotload, the new load cell system builds on tried-and-tested products, but adds an unprecedented level of flexibility.

SmartLoad® applications are diverse, ranging from load testing of cranes through to ensuring the safe rigging of stage lights for temporary concert venues. The technology is built into "load links" (physical devices fitted between the load to be weighed and the lifting equipment) to monitor load and verify it is within safe working limits. The new system can also be easily retrofitted to a range of manufacturers' equipment.

"By working closely with our customers we identified that the load monitoring market has changed in recent years and existing technology was cumbersome and inefficient, making monitoring work challenging," explains Jonathan Harris (Scotload's business development manager), who started the project. "Through understanding the needs of the industry we have developed a unique system which addresses the issues for both end users and hire fleet operators."

Existing systems, while technically competent, are difficult to set up and made worse because data collecting handsets are wirelessly paired 'one to one' to load cells, meaning that if users have more than one load cell they need multiple handsets. What's more, readings are in real time, so there's no history of what the load cell has done or whether it has been overloaded.

Ben Gribble, the software developer who designed the interface, says: "The Smartload® solution has uniquely added intelligence to the load cell itself giving much greater flexibility and importantly stores data directly onto the load cell giving historic readings for a complete overview of load performance." ■

The Scotload team at the Liftex exhibition where SmartLoad® was showcased at its innovation trial

Subsea

Game changers

RMSpumptools poised for expansion after the successful launch of two innovative products set to create new industry standards.

Following the success of its widely used Automatic Diverter Valve (ADV™), RMSpumptools has launched its new ground-breaking SWITCH® product. Conceived in-house by senior design engineer Jonny Murty, it provides the ability to run dual electrical submersible pump (ESP) systems with a single cable to surface without the need of additional costly equipment.

Installing the SWITCH® in the well dispenses the need for dual power cables controlling separate ESPs, saving production and planning time, capital outlay and operating costs. What's more, it includes factory-prepared cable terminations to proprietary RMSpumptools plug-and-socket connectors, to enhance safety during installation.

Other exciting new developments include RMSpumptools' wellhead and packer penetrators for extremely hot environments, such as Steam Assisted Gravity Drainage (SAGD) - a means of injecting steam into bitumen reserves to decrease the viscosity and allow production of hydrocarbons via an electrical submersible pump to surface - and Geothermal applications. These industry first products utilise new patented materials which are capable of operating in temperatures exceeding 320°C.

Currently in the final stages of production, the new generation penetrators look set to create a new industry standard for ESP artificial lift - the process of extracting hydrocarbons using an electrical submersible pump - in ultra-high temperature applications and have the potential to open global SAGD and Geothermal market opportunities.

> "With our track record of work with oil and gas industry operators and service companies, together with our new products that will help facilitate production in deep water, extreme high pressure and high temperature environments, the timing for this expansion is right"
>
> **Stan Foster-Rooke, managing director, RMSpumptools**

To cope with anticipated demand for its new products, RMSpumptools is building a new 12,000sq ft workshop at its headquarters in Oldmeldrum, Aberdeenshire, and taking on new staff.

The company's new workshop will mean higher levels of production and faster turnaround of product for customers. It will also provide a more integrated working environment for the development and testing of new products, alongside improved facilities for staff and customers.

RMSpumptools' managing director Stan Foster-Rooke says: "With our track record of work with oil and gas industry operators and service companies, together with our new products that will help facilitate production in deep water, extreme high pressure and high temperature environments, the timing for this expansion is right." ■

Fendercare MoD success

Fendercare Marine has secured a three-year Ministry of Defence contract to supply Yokohama fenders, building on a 15 year record of equipping the ministry with dedicated marine hardware. The new fenders have a protective coating that avoids marking the hull of the vessel, on which Fendercare has worked with the MoD to develop.■

Strainstall Saudi subsidiary

Following a run of successful contract wins totalling some £1.3m, Strainstall Monitoring is setting up a wholly owned subsidiary in Saudi Arabia, one of the fastest growing construction markets in the world. The new company – provisionally called Strainstall Saudi Arabia – will operate as a partnership with Mr Abdullah Al Bassam, a highly respected engineer who previously worked for the petrochemicals company Sabic.■

Testconsult joins James Fisher group

Market-leading provider of material, pavement and foundation testing services Testconsult, is the latest addition to the James Fisher family. Located in Warrington close to the group's northwest heartland, Testconsult makes specialist testing equipment that is used in over 70 countries – complementing existing capabilities and enabling the group to leverage its collective offering globally.

James Fisher CEO Nick Henry says: "We are delighted to welcome Testconsult into the James Fisher group. We look forward to benefitting from the enlarged opportunities this will present, expanding our testing and monitoring activities with complementary skills, products and services."■

ROV support

James Fisher Defence (JFD) has been awarded a new four-year contract to provide Remotely Operated Vehicle (ROV) support services to the Ministry of Defence's Salvage and Marine Operations team. A dedicated team of eight, based at JFD's new headquarters in Inchinnan, near Erskine in Scotland, will offer on-demand technical support and advice.■

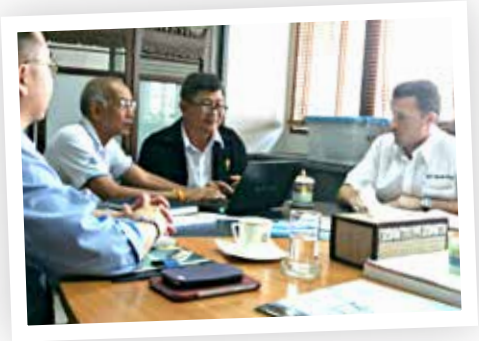
UNDER THE SURFACE WITH:
Damian Griffiths

Introducing Damian Griffiths, 26, structural engineering manager at Strainstall, Malaysia.

Can you tell us a bit about your job?
I work in Strainstall's office in Kuala Lumpur as part of a team of 25 people responsible for the business development of structural monitoring applications in South East Asia.

When did you move to Malaysia?
I've been here since September 2013, but I joined Strainstall in 2011, not long after finishing my civil engineering degree. I've always been impressed with the diverse markets Strainstall operates in, and I was keen to expand my knowledge and experience of structural analysis and on-site surveying.

How have you adapted to ex-pat life?
The first few months of hotel living wasn't easy, but I've got my own apartment now, and the social life here is great. I love the fact that the weather is so predictable (it's a constant 30C and it rains every day between 3 and 4pm). My greatest challenge is the traffic as it's so erratic. I never know how long it'll take to get to work – it can be anything from 20 minutes to two hours!



What do you like most about your job?
I work as part of a great team – everyone is really friendly and English is the main language spoken. Back in the UK I worked as an on-site engineer, but here I have more of an all-round role. I've had to beef up my knowledge of electrical engineering and I find I now have to look at the work more commercially, from a sales point of view and I've learned to see the bigger picture. It's really satisfying to be involved with the whole project package each time.

What's your proudest achievement?
In 2013 we were asked to do a comprehensive load test on an approach ramp for the new Penang Bridge (the longest bridge in South East Asia). It had been big news when the bridge ramp collapsed, burying a car and two motorbikes, so there's been a massive political reassurance exercise to prove to the public that the bridge is now safe. The place was buzzing with government officials and there were live news teams filming. We set up sensors to collate all the information in real time and display it on graphs, and we monitored the results to ensure any stress or displacement did not exceed the calculated maximums. The whole thing was a great success.

> "It's important to be constantly on the ball with all aspects of my work – whether it's a proposal, a report or general information on a project's status."

What are the key lessons you've learned from your work in Malaysia?
It's important to be constantly on the ball with all aspects of my work – whether it's a proposal, a report or general information on a project's status. I've also found that an email will rarely get answered unless you follow it up with phone calls and reminders. But I've learned that showing respect and gratitude goes a long way – possibly further than it does back home – when meeting clients in South East Asia. ■

Sensor sensation

Strainstall develops cross-brand ATEX wireless solution (Zone 1 & 2).

Strainstall makes a wide range of load sensors that go into a range of hazardous (ATEX) environments to collect and transmit data. Typically, these are hardwired (fully cabled) systems and this presents routing and cable-protection difficulties, as well as limiting flexibility when moving or adding additional sensors.

During the development for the SmartLoad® wireless product range for their sister company Scotload in Aberdeen, the Strainstall team realised there was a gap in the market for an ATEX wireless telemetry solution that acquires and transmits data wirelessly, and that can be adapted to be used with any sensor, not just Strainstall's.

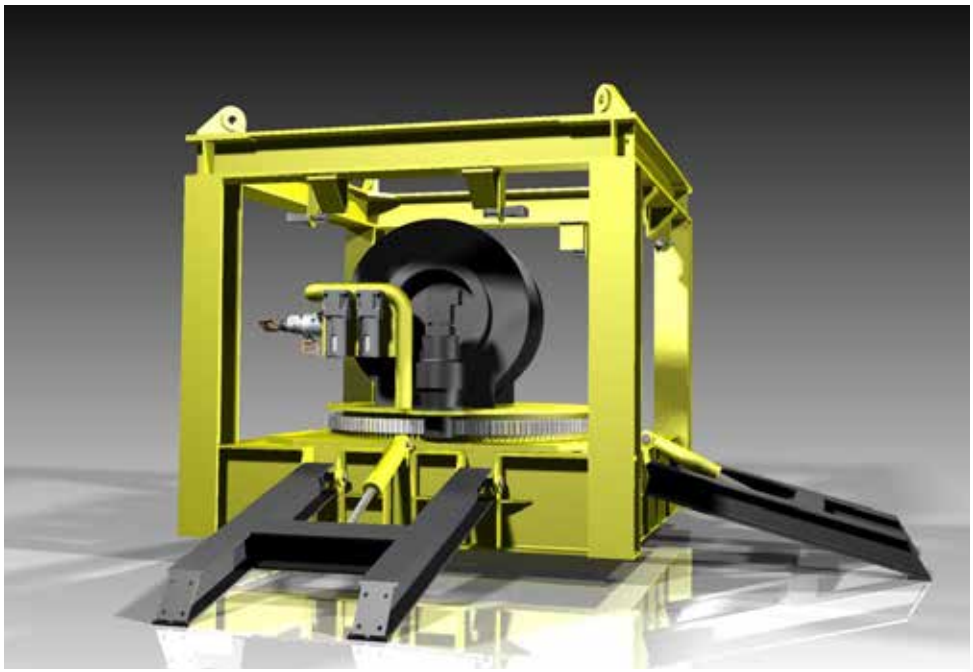
Adrian Coventry, who led the project from concept to delivery of the first ATEX wireless prototype, says: "It's been a real team effort and shows how our unique skills and capabilities can be applied to the whole spectrum of sensing and data transfer, no matter how challenging the environment."

The system has already generated significant interest among major oilfield service companies. The next stage is a full scale launch of this newly developed ATEX telemetry solution with an oil and gas sector partner, once IECex and UL certification have been achieved. ■

Offshore support

Star performer

Two major contracts see significant developments in the Scan Tech AS service offering.



Scan Tech AS has successfully finished its first contract to install energy cables and to provide offshore labour to a key North Sea oil concern, project managing the process from start to finish. The contract represents a significant development of the company's previous service offering, which was based on renting out its offshore equipment and project planning from its base in Stavanger.

"Becoming more involved with how our equipment is used is the logical next step in the development of our service," says Scan Tech AS's Kjell Gjerdrum, business manager for the winch, crane and lifting department.

As if this wasn't challenge enough, the company is also close to completing its most significant Engineering, Procurement and Construction (EPC) oilfield project to date, worth just over £4million. Working closely with Norwegian oil and gas company Aker Solutions, Scan Tech AS has designed high pressure water and utility systems for a new oil platform, which is situated on the Edvard Grieg field in the North Sea. At full capacity, the field is expected to yield 90,000 barrels of oil per day.

Scan Tech project manager Shan Gnanavel, who led the team, says: "We have never engineered and produced 55 utility station units in such a short time, so it's been a challenge. But happily, one of the Aker Solutions guys said we were their star supplier."

To celebrate their success the Scan Tech AS team will be shortly departing for Ibiza, although there won't be much time for sunbathing. They are about to start their next major cable installation contract between the islands. ■

Scan Tech's HW60 winch *(below)* **is used for cable pull-ins top side while the subsea winch** *(above)* **is used for retraction on the seabed**

Safety first for Ruth

Fisher Offshore's QHSE (quality, health, safety and environment) advisor, Ruth Pirie, has been named Most Promising Individual at the 2014 Offshore Oil and Gas Industry Safety Awards.

Fisher Offshore provides the offshore, subsea and marine industries with a comprehensive range of equipment for sale and hire. Ruth, 30, who works at the company's Aberdeen office, beat off stiff competition from the two other finalists in her category to win the Petrofac-sponsored award for the health and safety environment training pack she and her team created for Fisher Offshore.

The judges at the event, which was held at Aberdeen Exhibition and Conference Centre in April, praised Ruth for actively embracing a health and safety culture, and for ensuring Fisher Offshore used the training pack to expand its safety culture, making safety a priority every day.

Thrilled with her award, Ruth said: "I'm so proud to work for a company that puts health and safety, and operational efficiency at the forefront of everything it does. With its support, I've been able to build on processes that were already in place."■

Safety and control systems

Right on track

Prolec's new rail maintenance system means fewer disrupted journeys for train travellers

With rail usage in the UK increasing at an unprecedented rate, a major objective for Network Rail – which manages the country's railway infrastructure – is to complete its upgrade and replacement programme with minimal temporary line closures.

Now, thanks to Prolec, a new software system for 'Adjacent Line Open' (ALO) working that will allow Network Rail to do just that, is being rolled out across the UK.

ALO working means trains can run next to the maintained track while maintenance is carried out, thereby avoiding the need for extra line closures and the consequent inconvenience to passengers. The system is used in road-rail excavators, which carry out many maintenance operations on railways and have retractable steel wheels so they can work on rail lines as well as normal terrain.

The first rail system for road-rail excavators was designed by Prolec 20 years ago. Aware of the company's extensive experience with excavator safety technology, in May 2013 Network Rail approached Prolec with a request to develop a solution that would increase the use of ALO working during maintenance operations.

"They were looking for a system that would accelerate the uptake of ALO working, due to the perceived benefit to the network of fewer line 'possessions' or closures," says Gary Tuffy, sales and marketing director.

Working with major rail contractors and machine builders, Prolec took just nine months to design and test the new software system, PMERail "Ultra", which builds on the company's highly versatile and modular PME hardware platform.

Innovative control hydraulics and feedback loops provide crucial back-drive capability, preventing the machine from moving into danger zones and actively driving it the other way.

Gary adds: "The clever part is the software's ability to monitor all movement and to use the excavator's own hydraulic power to ensure 25 tonnes of load and excavator doesn't slew into an oncoming train!"

> "As the name implies, PMERail Ultra is the ultimate in safety solutions for road rail operations"
>
> **David Menon, managing director, Prolec**

"As the name implies, PMERail Ultra is the ultimate in safety solutions for road rail operations," explains David Menon, managing director of Prolec. "We are now in the final phase of post-install testing and will be rolling this out to more machines across Network Rail's road-rail excavator fleet during the coming months." ■

Galway Fisher wins award for safety

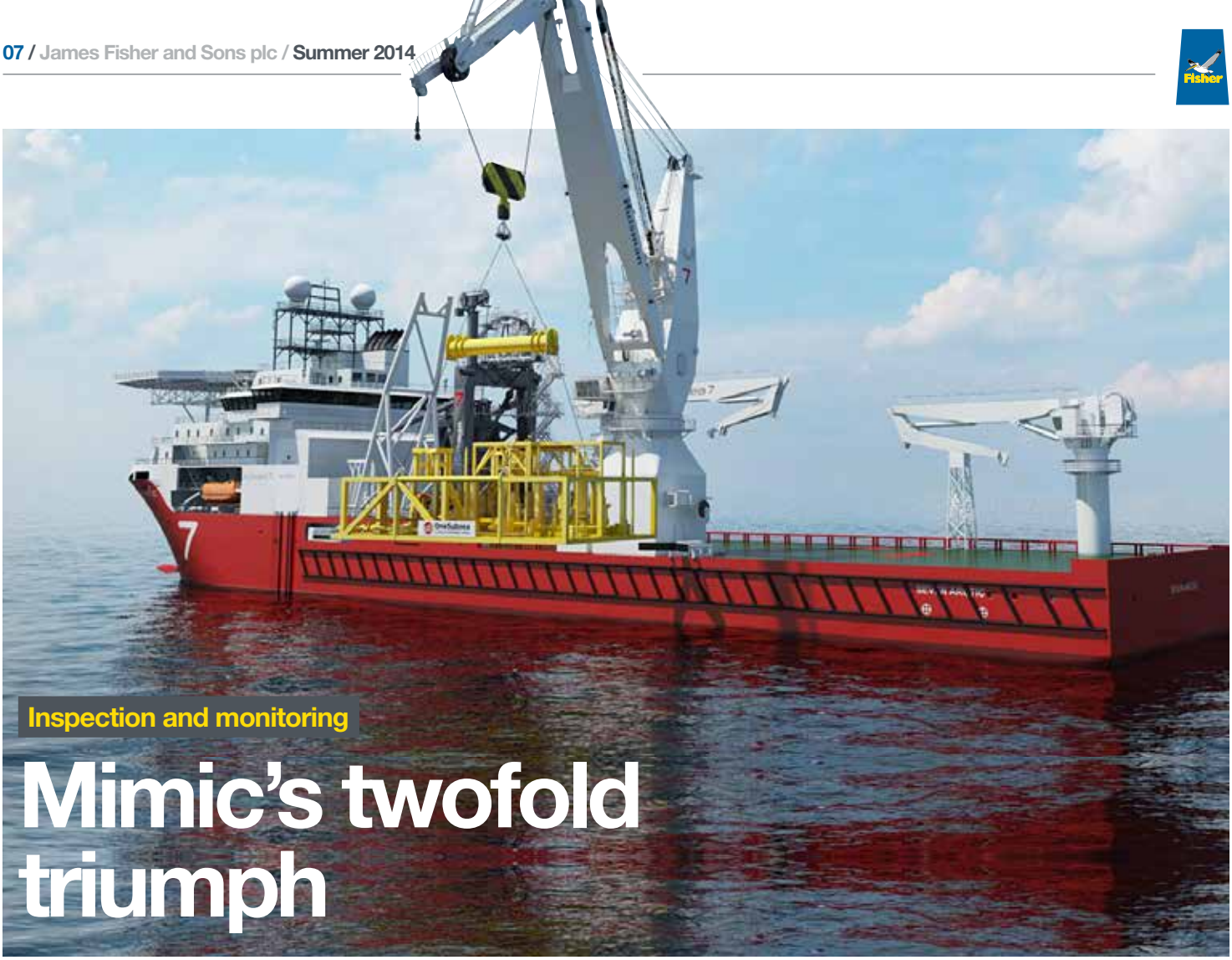
The Master and Chief Engineer of James Fisher Everard (JFE) tanker Galway Fisher have been awarded a certificate by global engineering and technical services organisation, Lloyds Register, for 4,000 days of Lost Time Injury (LTI)-free operation.

LTI injuries are defined as any injury that prevent workers from reporting for their next shift. Their absence on any vessel in the shipping industry would be impressive, but on the Galway Fisher – which operates as part of a fleet of 18 tankers carrying highly flammable cargoes of petrol, diesel, kerosene and biofuels along the challenging coastlines of Europe – this absence is truly remarkable.

The award follows last year's record-breaking safety achievement for Galway Fisher's sister vessel, the Milford Fisher, for completing more than 1,000 voyages without a single Lost Time Injury. Several other vessels in the JFE fleet have similar LTI-free track records, showing customers that their cargo is managed by one of the best operators in the industry.

As Derek Gallagher, of Lloyd's Register, says: "The operation of a busy coastal vessel, in sometimes hostile waters, for over ten years without a single Lost Time Injury, is an extraordinary achievement, and this award is well deserved."

The award was presented at the Senior Officers Workshop in Manchester. Afterwards, Neil Burns, fleet director of JFE, commented: "This award is a testament to Galway Fisher's crew and to James Fisher Everard's commitment to safety and operational efficiency. The team continually strives to provide a dedicated, responsive and reliable service to the company's customers." ■



Inspection and monitoring

Mimic's twofold triumph

Mimic, the condition-based monitoring software and services arm of the James Fisher group, has just been awarded two great new contracts.

The first new contract is with the Ministry of Defence (MoD), and will see Mimic providing annual thermographic (infrared) surveys on the thirteen vessels of the Royal Fleet Auxilliary (the civilian-manned fleet which performs a support role for the Royal Navy) as well as on eight small Royal Navy vessels.

Shaun Rowe, the operations manager at Mimic who led the successful MoD bid, explains: "The detailed survey analysis reports that we create from infrared inspections of electrical and mechanical components provide digital and thermographic images of potential problems on board, and outline recommended repair actions."

In parallel with the MoD contract, Mimic has also won a significant order from world-leading ship-building company, Hyundai Heavy Industries (HHI). This big vote of confidence from HHI means that from March 2015, Mimic will be charged with installing and commissioning the Mimic condition monitoring system onto a SubSea 7 Heavy Construction and Flexible Pipelay vessel, currently being built at Hyundai's yard in Korea.

This system monitors performance, vibrations (which can determine the root cause of mechanical problems), and oil conditions of critical machinery, including pumps, motors and gear boxes.

> "Innovation is at the heart of everything we do. I am excited by what the future holds for Mimic."
>
> **Cecilia Lindstrand, Mimic general manager**

"Innovation is at the heart of everything we do," says Cecilia Lindstrand, the company's newly appointed general manager, responsible for overseeing the expansion of Mimic's market share and client base. "I am excited by what the future holds for Mimic." ■

Major defence contract win

James Fisher Nuclear (JFN) and James Fisher Defence (JFD) join forces to win major defence-support contract

The latest win – a major design and integration contract to support a strategic defence programme – follows hot on the heels of a number of successful collaborative projects for clients. Indeed, it is the team's highly praised attention to detail and its ability to execute complex design programmes that has led to opportunities in this new market sector.

"We are proud to have been selected for this exciting new project," says Paul Reid, managing director of JFN. "This is a challenge for the whole team as we will be applying our skills to this new solution. However, there are many parallels with the safety-critical nature of our work in both James Fisher companies." ■

View from the helm

Introducing Mike Howarth, the new managing director of Divex and James Fisher Defence.

A recent recruit from QinetiQ, Mike Howarth started his career as a mechanical and electrical engineer. After a secondment to the army he went to work for defence company Babcock International Group, before moving to Serco's Defence Science and Nuclear Division.

Just a few months into his new role at James Fisher, Mike gave *Pelican* an update…

What are your plans for Divex and James Fisher Defence (JFD)?
When I was appointed it was announced that we would be looking at how to merge the two businesses. My challenge is to harness the talent and best practice within each whilst fulfilling our customer obligations and shaping us as a learning and progressive organisation for the future.

Describe your visions for the future.
I want to attract, develop and retain the best people to deliver market-leading services and products. I want us to be the organisation people want to work for, and work with. I also want us to be recognised as thought leaders, easy to work with and with a "can do" reputation.

What does the merger [of Divex and JFD] mean for customers?
In the short term it's business-as-usual and the priority is that we continue to deliver. Going forward, I'd like to think our customers will feel there's an even greater focus, and that we have more flexibility in our delivery and solutions as a result of having combined resources and expertise.

How will the merger affect employees?
The merger isn't as a result of weaknesses in either business but because we can do more by working together. Right now, both businesses are busy and winning new work. Those who embrace the merger will find opportunities for personal and professional growth through more varied and challenging work.

What is the future strategy?
The starting point has to be our core business and customers, and to ensure we deliver a flawless service. If we make our core customers into "raving fans" we'll get follow-on work. We also have to adapt to changing customer and market needs and proactively shape the thinking. The key is to focus on targeted opportunities, rather than spread ourselves too thinly. ■

Near real-time x-ray technology

James Fisher Nuclear (JFN) is the first UK company to get official accreditation for its digital radiography inspection process.

James Fisher Nuclear (JFN) Non-Destructive Testing (NDT) division has received ISO/IEC 17025 and NADCAP [the worldwide, industry-managed cooperative for conformity assessment for special processes within the aerospace and automotive industries] accreditation for the inspection of critical components.

These accreditations, the first to be achieved by a company within the UK, come as JFN NDT experiences rapid growth following investment of £1.5 million.

With facilities in Deeside, Queensferry, Worcester and Sittingbourne, the JFN NDT team are on course to become one of the top providers of outsourced non-destructive testing (NDT) services to the UK manufacturing, process and structural inspection industries. In addition Rolls Royce has certified JFN's digital radiography process for checking safety-critical aerospace components at its Worcester site.

"These developments continue JFN's track record of establishing new conventions in how critical components are processed in high volume," says Alec Morton, director of NDT and instrumentation at JFN. "It will mean greater efficiency and cost savings for clients."

Radiography is an essential NDT process for verifying the structural integrity of critical components, such as engine parts.

Dispensing with radiographic film, JFN's digital radiography inspection process is faster than its conventional alternative and cheaper because there isn't the same outlay on materials. Using near real-time X-ray technology, it allows for more efficient processing, accurate inspection, information-sharing and data traceability. It also eliminates the environmental impact of conventional film processing chemicals.

"This challenge was similar to the one we faced (when supplying radiological protection to the Olympic Games) in 2012: How do we process a large number of subjects and assets without causing unnecessary delays?" Alec continues. "We resolved the component-inspection issue using the same technology and ironed out a few pinch points." ■