

EM&I's Research and
Development Centre

In a regular series, *Wireline* catches up with two more UK oilfield service companies about their strategies to survive and indeed flourish during the recent tough times for the industry. Here we speak to EM&I and Lokring Northern.

Lokring Northern consultants
visiting offshore client sites

Taking bold decisions has always been the central plank of Lokring Northern and EM&I's strategies for growth. Both companies were started by lone entrepreneurs who had a vision and the determination to succeed. The downturn has not dampened this drive – if anything, it's made both businesses more resolute to strengthen their positions.

EM&I started out as an Aberdeen-based non-destructive testing business set up by chief executive Danny Constantinis in the 1980s. The company's portfolio has broadened over subsequent years to encompass engineering, management and inspection – hence the initials EM&I.

"Even in those early years, it became clear that the world we wanted to be in was floating rather than fixed," explains Danny. "We could see the future was in deepwater drilling and production and we grew our understanding of what the associated inspection world would look like."

By the early 2000s, the business – which today provides asset integrity, inspection and specialist repair and maintenance services – was firmly established in the FPSO (floating, production, storage and offloading vessel) market. The business employs around

170 people worldwide with offices in Dyce (Aberdeen) and Wilmslow (Cheshire) in the UK; Singapore; Perth (Australia); Macaé (Rio de Janeiro, Brazil); Halifax (Canada); Houston (USA); and Kuala Lumpur (Malaysia).

The hull picture

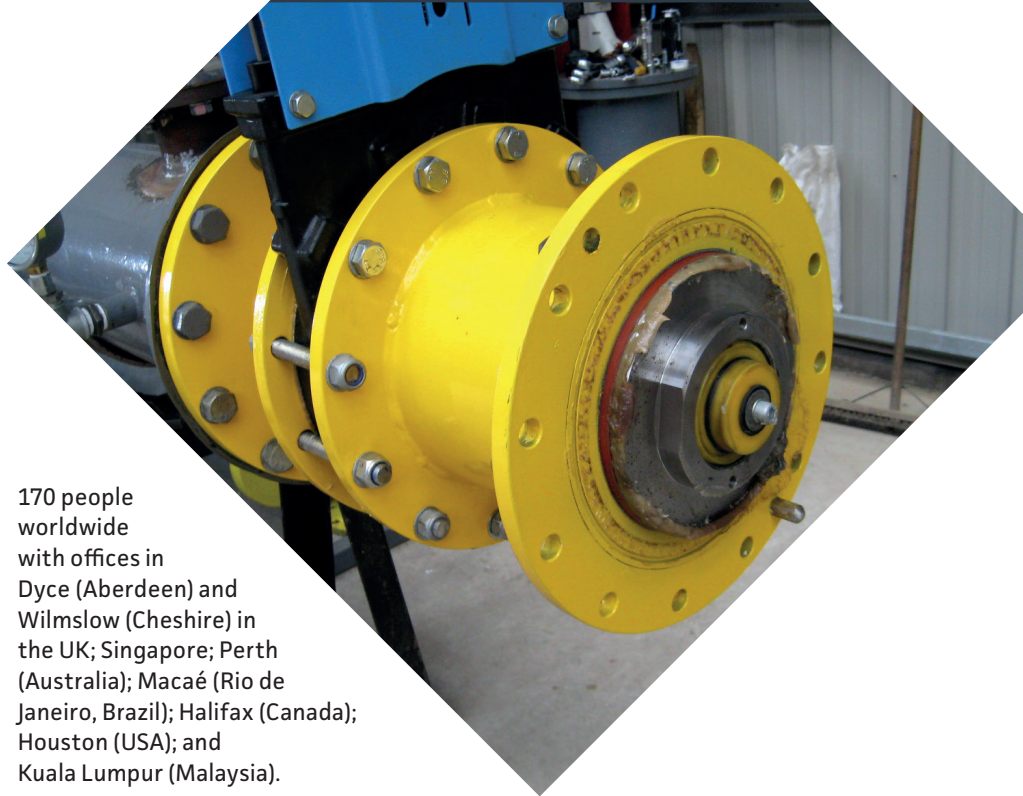
But with an eye to continually innovate and move forward with the market, EM&I changed tack ahead of the most recent downturn. This turned out to be a smart move in securing continued success at home and abroad in the much tougher climate that has followed.

"We saw that FPSOs were now being used for more and more deepwater and extended field life projects," says Danny. "We realised that as these vessels are going to be on station for perhaps 25 years or more, the industry could no longer rely on existing,

periodic, hull inspection techniques and technologies that involve moving the FPSOs to sheltered waters or dry dockings."

To tackle this, EM&I took a leading role in forming the Hull Inspection Techniques and Strategies Joint Industry Project (HITS JIP) in 2011, involving vessel owners, operators, leaseholders and classification organisations in the UK and internationally. The JIP has proved pivotal in identifying the top three inspection challenges: minimising diving operations; avoiding personnel entry into confined spaces; and reducing the need to take vessels offline to clean the oil tanks for inspection.

The group has since met regularly to monitor, validate and promote prospective new solutions that overcome those issues. It has already been the catalyst for several technology-led solutions, including ODIN – launched in 2015. This diverless inspection method has been devised and introduced by EM&I for inspecting hulls, isolation valves and other underwater infrastructure. It also incorporates a diverless isolation valve repair or replacement method. A mix of technologies are integrated, including mini ROVs (remotely operated vehicles), miniature cameras and ultrasonic techniques to inspect the inside of the hull.



Lokring flanges installed on site

“Avoiding putting people into high risk situations to carry out inspections underwater or in confined spaces is safer,” notes Danny. “Remote inspections overseen by personnel are used extensively in the nuclear, aerospace and other industries so we decided to adapt these technologies to our sector.”

“Also, in recognition of the industry’s approach to the continuing low oil price environment, we realised we needed to deliver sustainable long-term savings to our clients by changing the approach to long established techniques and ways of working. We can now quantify cost reductions of over 50 per cent over a five-year inspection cycle compared with conventional underwater inspection methods, as well as allowing improved availability of equipment and assets, offering even greater cost and safety advantages.”

“It’s always been our strategy to be technically ahead and disruptive; to do things that haven’t been done before. When the market is down, people are ready to try new solutions.”

Inspector gadget

While ODIN is a new way of inspecting the underwater hull and isolation valves, EM&I’s NoMan technology addresses the challenge of putting inspectors into confined spaces such as cargo and ballast tanks, which also takes tanks out of service for extended periods.

The UK North Sea was the first to use NoMan commercially. It deploys advanced camera technology on a robotic arm allowing inspection data to be gathered, while reducing costs and downtime for vessels by more than 60 per cent.

So far EM&I’s ODIN and NoMan systems have been used around the world including: the UK, Bay of Bengal (India),

Nigeria, Angola, Singapore and the Gulf of Mexico (USA) with 14 successfully completed projects under its belt (and counting). EM&I conservatively anticipates at least the same number in 2017, with significant recent contracts won with clients including Seadrill and Ensco.

“These methods have created significant growth increasing our UK team to around 55,” enthuses Danny. In 2017, we will launch HullGuard, a diverless system that protects the outside of the underwater hull using an electrical field.”

To support these high-tech activities, EM&I has developed a new Hull Inspectors Competency Training programme as part of the HITS JIP. Pat Lawless, deputy chief executive officer and chief operating officer, adds: “It’s rather like when surgeons had to get to grips

with keyhole surgery. We recognised that we had to invest in additional specialist skills for our team. We are also working through the HITS JIP to create a new hull inspector competency standard and expect that this will evolve into an industry-wide requirement.”

Strong connections

At Lokring Northern, established a decade ago by managing director Ross Millar, there’s similar confidence in the future.

The business – one of a network of exclusive international distributorships for US-based manufacturer Lokring Technology – now has bases in Aberdeen and Leeds supplying advanced, cold-worked, weld-equivalent pipe and tube connectors. It includes Ireland in its operational territory and has recently been appointed the distributor for the Middle East.

Lokring Technology is a mechanically attached pipework connection that the company says is a faster and lower cost alternative to welded and flanged pipework, eliminating the need for hotwork and the associated health and safety considerations.

Since its inception in 2007, Lokring Northern (UK) has seen significant progress and uptake of the concept



Pacific Sharav Drill Ship. The location of the seventh ODIN project for EM&I. Image courtesy of Pacific Drilling

in the oil and gas, refining, chemical, petrochemical, nuclear, shipbuilding and pharmaceutical industries, resulting in a 15-fold increase in turnover since then.

And despite the recent downturn in the oil and gas market, Ross was determined to keep up the momentum behind this growth so that the firm can consolidate its position in the North Sea and extend into the Irish market. He and his team saw the challenges facing their clients as a chance to promote the value they can add. >

He explains: "I was confident that we could work through the downturn by highlighting the commercial advantages of our products and technologies as customers look to tighten their belts. In doing so, we can grow our market share."

Senior technical sales consultant Tom Brown adds: "When we arrived in Aberdeen, there was limited familiarity around the technology. It's a very safety-critical, highly technological sector and innovations are understandably heavily scrutinised and critiqued."

"We spent a lot of time demonstrating our capabilities and, before the downturn, our clients' key interests centred on technical acceptance. However, cost savings have increasingly become a factor, so focusing on the significant efficiency opportunities has proved very successful."

Following a challenging but stable couple of years for the company in the oil and gas sector, the strategy is paying off. This year, the firm saw its best-ever quarter one results. The company has also increased its footprint in Aberdeen with continued recruitment and doubling of office space in Altens at the end of last year.

"Aberdeen has been, and remains, critical to our growth," insists Ross. "We do consistently well in other industries and geographical areas, but the Aberdeen market has undoubtedly helped us to expand and to invest in the business."

"Our office expansion will offer improved facilities for our client installer training programmes, for supplying overseas territories, and additional space to steadily increase staff numbers in our offices and workshops."

On site

To give customers the best value possible, Lokring Northern has also introduced long-term rental models for tooling to install its connectors. These packages are more financially attractive than one-off hires for customers who are using the tools frequently. With some clients also now holding connector stocks offshore, it's an approach that has helped to minimise downtime and maximise production output as operators have

all the elements they need to complete work quickly and efficiently on site.

A southern North Sea operator, for example, made cost savings of over 28 per cent and time savings of over 26 per cent during a diesel ring main replacement programme on an installation. Instead of the required spools being fabricated onshore and tied-in offshore using flanges, Lokring Northern's products and technology were deployed to construct the entire system quickly and efficiently on the platform.

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The work involved installing 250 Lokring fittings on around two kilometres of pipe. Tom says: "We made huge savings in offshore construction hours, which could have been even higher if the personnel involved did not have other workscopes to progress at the same time."

Big ambitions

Looking ahead, Ross believes the future is bright and that closer partnership with the industry over time will bear yet more fruit. The latest development as exclusive distributor to the Middle East presents huge potential; the challenge being to replicate the progress that has been made to date in Aberdeen. "We've had a fantastic response and are very optimistic," he says. "When you consider how much we've achieved in Aberdeen, we think the Middle East is ripe ground for us."

EM&I also plans to continue capitalising on the opportunities afforded by being a global player. EM&I (UK) Ltd has been

Ross Millar (left) and Tom Brown (right) of Lokring Northern providing training in Qatar

designated an export champion and star SME in the north west of England by the Department of International Trade (DIT), and has participated in several

DIT trade missions including a successful visit to Mexico in February.

Danny notes: "We have a big focus on research and development. Our centre in Cumbria in the UK is being used to adapt nuclear inspection techniques and other specialised technologies from other industries with support from the nearby nuclear plant at Sellafield. That is how ODIN, NoMan and HullGuard came about and we're exporting those technologies and services. It's always been our strategy to be technically ahead and disruptive; to do things that haven't been done before. When the market is down, people are ready to try new solutions." 🗨️



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