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INCORPORATING SALVAGE NEWS
September/October 2016

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September/October 2016
Volume 21 Issue 5

International Tug & OSV
INCORPORATING SALVAGE NEWS

FRONT COVER

Maritime services company ALP Maritime has taken delivery of its latest anchor-handling salvage tug, **ALP Striker**. *The vessel has recently completed sea trials after construction at Niigata Shipbuilding & Repair in Japan, and is pictured undergoing FiFi2 testing. The SX157 vessel, part of the ALP Future class, was developed in close collaboration between Ulstein Design & Solutions and ALP Maritime Services, the latter a subsidiary of Teekay Offshore Partners*

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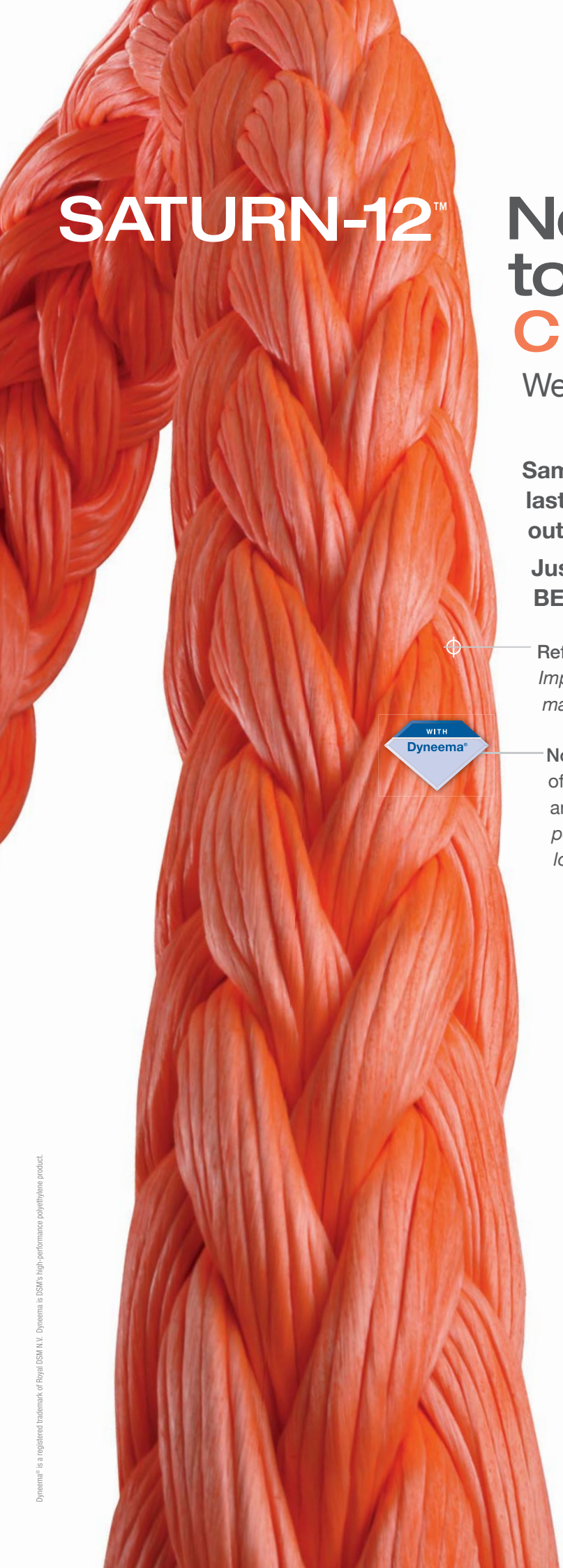

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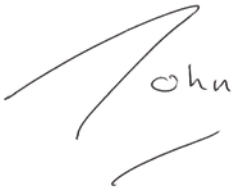
Looking over the horizon

When I told people that I would be travelling to Columbus, Indiana, almost all of them replied: "Don't you mean Columbus, Ohio?" No, I didn't. I suspect there are places called Columbus in most, if not every, state in the US. If it ever felt the need to differentiate itself from its namesakes, Columbus, Indiana, might well change its name to Cumminsville. This was where engine manufacturer Cummins was born, grew up and matured into a global business employing more than 55,000 individuals. Despite the company's expansion to become an international operator, Columbus, Indiana, remains Cummins' home town – benefitting from investment in sports and leisure facilities, modern architectural delights and art installations on many a street corner – and there is a definite buzz of excitement in the air about the new QSK95 engine, now being launched into the marine sector. Top executives say they've bet the company on it, but it's a bet based on confidence and a long-term vision. I visited in July and became the first marine journalist to be shown the purpose-built QSK95 test centre and production line. While there, it was good to hear that the company is actively making moves to position itself to take share when the market returns – as it inevitably will. Times may still be tough, but Cummins is by no means alone in now watching, waiting and preparing for the upturn. Throughout this issue we find major – and not so major – players looking ahead, rising to new challenges, responding to new realities and anticipating better times around the corner. Some tough decisions are continuing to be made, but there are more than a few chinks of optimism starting to shine through.

Among the special features in this issue is our focus on the Middle East, which has statistically performed better than other regions during the present downturn, and from where commentator Roy Donaldson argues that the OSV sector needs to detox. Meanwhile, we look at the latest news, views and advice from the maritime insurance sector and also focus on anchor-handling. In our News section, deputy editor Chris Wraight interviews Dr Jens-Erk Bartels, who retires as director of sales and marketing at Schottel in October, after a career that has spanned major technological advances and political change, not least the reunification of his native Germany. Tom Woolley, managing director of Targe Towing, is interviewed by contributing editor Joceline Bury for our latest At The Helm feature and EDDY Tug partner Baldo Dielen describes playing football in the engine room of **EDDY 1** *with two police officers who came to inspect the vessel, on our In The Spotlight question and answer page. Regular columnist Simon Tatham unravels the Gordian Knot of claims and counter claims which often result from the collision of a tugboat, its tow and a third vessel, and Bury also reports from the SeaWays training centre in Portsmouth, UK, where, in a first for the industry, courses have recently been accredited by classification society, ClassNK.*

And finally, we look ahead to Tugnology '17 *in Rotterdam on 23 and 24 May next year. Significant 'early-bird' discounts are available to those who sign up now to attend the popular technological conference about tugs, more tugs and nothing but tugs.*



John McCready, Editor

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Salvage team tow stricken rig to safe haven

***Transocean Winner*, the semi-submersible rig that grounded on a picturesque beach on the west of the Isle of Lewis after breaking free of its tow in a storm, has been refloated and towed 54 miles to a more protected part of the Scottish island.**

Operated by Boskalis, parent company of Smit Salvage, the salvors at the scene, the AHTSs ***Union Bear*** and ***Union Princess*** towed the 17,000-tonne structure to more sheltered waters following its refloating after two weeks stranded on the beach at Dalmore, a beauty spot popular with surfers.

Other large ocean tugs sent to support the salvage operation were Boskalis' ***Olympic Orion*** and the coastguard tug, ***Herakles***.

Hugh Shaw, the Secretary of State's Representative for Maritime Salvage and Intervention, who was overseeing the salvage operation, said the ***Transocean Winner*** would be secured by eight anchors in Broad Bay on the east coast of the island.

He said the salvage operation had been a great success and that personnel on board the tugs and the rig had done a fantastic job.

The beach at Dalmore remained off limits to the public until checks had been made for debris and other pollution.

Tonnes of diesel oil were removed from the ***Transocean Winner***'s fuel tanks, although several thousand gallons of fuel were lost from two tanks during the rig's grounding.

Shaw said there were no pollution concerns at this stage, but added that monitoring for pollution was ongoing.

Transocean Winner was expected to remain in Broad Bay until the middle of September while divers check for damage, and the rig's owners, Transocean, make a decision on what to do with it.

▲ *Tugs with the stricken* **Transoacean Winner** *at Dalmore prior to it being refloated and towed to safer waters*

CEO confident of future growth

In highly challenged shipping and salvage markets, Svitzer delivered an underlying profit of US$23m for the second quarter of 2016, down from US$30m for the same period last year.

In the first six months of 2016, Svitzer expanded its market share in key markets. It is also in the midst of implementing several long-term contracts in its terminal towage segment.

The startup costs of new operations, including a subsequent newbuilding programme, has impacted the company's return on invested capital, which for the first six months of 2016 was satisfactory at 8.6 per cent, compared to 11.3 per cent in the first six months of 2015.

Svitzer highlights the fact that it continues to financially outperform many of its local towage competitors, not least in Europe and Australia. The company's salvage activities remain under pressure, with low activity because of a weak salvage market.

Robert Uggla, Svitzer CEO, said: "We are operating in very challenging shipping, salvage and offshore markets. In this environment, I am encouraged to see that we enjoy strong customer support coupled with satisfactory returns.

"Equally important, we are about to implement several long-term contracts in terminal towage, which will provide important future growth and income."

ITS 2016 Boston goes on the record

The book of Complete Papers and Discussions from the 24th *ITS* Convention, held in Boston, will be published in September.

As well as all the papers presented at the 2016 conference, the book contains a full record of the opening address by Thomas A Allegretti, president and CEO of American Waterways Operators, along with transcripts of the lively discussions that followed each paper.

A colourful pictorial review, and comprehensive lists of delegates and exhibitors, are also included in the book, which is available from The ABR Company, priced at £125 plus postage and packing.

Centre to produce full thruster line

Caterpillar Marine is establishing a new marine centre in Singapore in the facility previously occupied by Caterpillar Remanufacturing, which will bring almost 200 people together in one location.

It will feature new capability for its propulsion business to build the company's range of MTA azimuth thrusters and will have the capability to produce the full line of thrusters, including additional capacity to produce the new MTA 9 with rated power exceeding 3.5MW, as well as Caterpillar's expanded series of thrusters dedicated to the tug market.

The centre, expected to be fully operational later this year, will also house members of Caterpillar Marine's propulsion systems solutions team, who work on the development of advanced and innovative marine propulsion system concept designs.

The location already functions as the company's sales and service hub covering MaK, Caterpillar Marine and EMD branded medium speed diesel engines for the marine, power generation and oil & gas markets throughout the Asia Pacific and Oceania region.

The new centre will allow the Caterpillar Marine Asia Pacific dealership to expand its workshop space and capabilities and consolidate its extensive off-site spare parts inventory. In addition, it will enable an expansion in Cat medium speed engine training services for customers in the region, and establish a new Caterpillar Propulsion Training centre for customers and dealers.

From sailboats to the Rudderpropeller

Dr Jens-Erk Bartels, director of sales and marketing at Schottel, retires in October. He talked to deputy editor Chris Wraight about his long career in the industry

► *Dr Jen-Erk Bartels, director of sales and marketing, Schottel*

Perhaps Jens-Erk Bartels was always destined for a career in the maritime world. His family origins are on the North Sea island of Sylt, where in the 19th century the sailing industry dominated the local economy. Even when steamers changed the viability of sail and the Bartels family moved to the Baltic coast, a young Jens-Erk remained fascinated by the sea.

"We were a family of three boys," Bartels recalled, "always looking to do things. Sailing was always one of these things. We sailed in fishing boats, oak-made, heavy, very robust and comfortable to sail – but only when you had a good wind."

Bartels' father, a teacher, wanted him to go into medicine, but the love of all things nautical meant that on graduation from secondary school in 1972 he ended up studying engineering instead, with a preference for naval architecture.

"In those days the University of Rostok was very advanced. They had good facilities for naval architecture, model tank test facilities and tanks for hydrodynamic investigations, and the level of education was very high. It was a tough selection process: the course started with 120 people, and by the end only 30 or 35 were left."

The early days of naval architecture were based on traditional skills of draughtsmanship and model-making. Computers existed, but their use was rather limited: "We had machines in the central computer room, where you had to go every morning with a box of cards with data on. You gave these to the administrator and were invited to come back in the early afternoon. If you were lucky you got a print-out and a big folder of results, and if you were unlucky you got a small case containing your mistakes."

Bartels enjoyed the course, and received his diploma in naval architecture in 1976. This was followed by a stint working at the Mathias-Thesen-Werft (MTW) shipyard in Wismar, on Germany's Baltic coast.

"I joined the design office working on structural strength analysis," Bartels recalled. "In those days we were building the first ro-ro vessels. They were complicated, because they had no transverse structure to support them, like an open tube. It was hard to calculate the load, especially in sea-state."

This work on ship design took Bartels back to the University of Rostok on a three-year placement, followed by a further nine years at MTW working on a range of design issues.

"I continued my work on optimising the internal structure of ro-ro vessels," he recalled, "making them strong without adding too much weight. When I returned to MTW, I was dedicated to hydrodynamics. In the late 1970s the oil crisis was going on, and there were lots of developments concerning the 'ship of the future', focusing on all possible fuel savings, including the use of nozzles to homogenise the inflow into the propellers."

By 1990, the reunification of Germany – divided into East and West during the Cold War – beckoned, bringing opportunities to work in the west for the first time.

> *"I always enjoyed the special community we work in – when you dealt with customers the positive experience would remain, even if you met them again in 10 years' time"*
>
> **Dr Jen-Erk Bartels, Schottel**

"I discovered that Voith were looking for a naval architect," said Bartels. "I sent an application – more or less for fun – and then soon after I got an invitation. My initial concern was that they were only interested in propulsion, but instead they were looking very much at the whole ship design with reference to the characteristics of the Voith Schneider Propeller (VSP). This was very much my expertise, so I thought I'd give it a try."

The move was a success, and Bartels worked at Voith for the next 18 years, initially in a design capacity, but then with growing responsibility for sales.

"I was used to presenting technical solutions at MTW," said Bartels, "but at Voith I started to become a true sales engineer. It was a case of 'learning by doing', and now, after so many years in the industry, I strongly feel that when you want to sell a high-cost product it is important that you have a good engineering background, so that everyone in front of you – captain, harbour engineer, technical fleet director – realises that you know what you're talking about."

Eventually this focus on sales took him from Voith to rival propulsion manufacturer Schottel, which involved a move from selling VSPs to Rudderpropellers.

"Moving to Schottel was a personal decision," Bartels said. "With the unique VSP, you are selling the whole ship concept. This means you have to talk to your customers at the very early stage when the project is still on the drawing board – in fact, the GA plans became part of the tender of our customers. With Rudderpropellers it is different. There you are in competition with other firms, and you have to differentiate yourself by creating a close customer contract. Most importantly, you have to offer service and support for the lifetime of the vessel. This is what we have done at Schottel over the past few years, I feel very successfully."

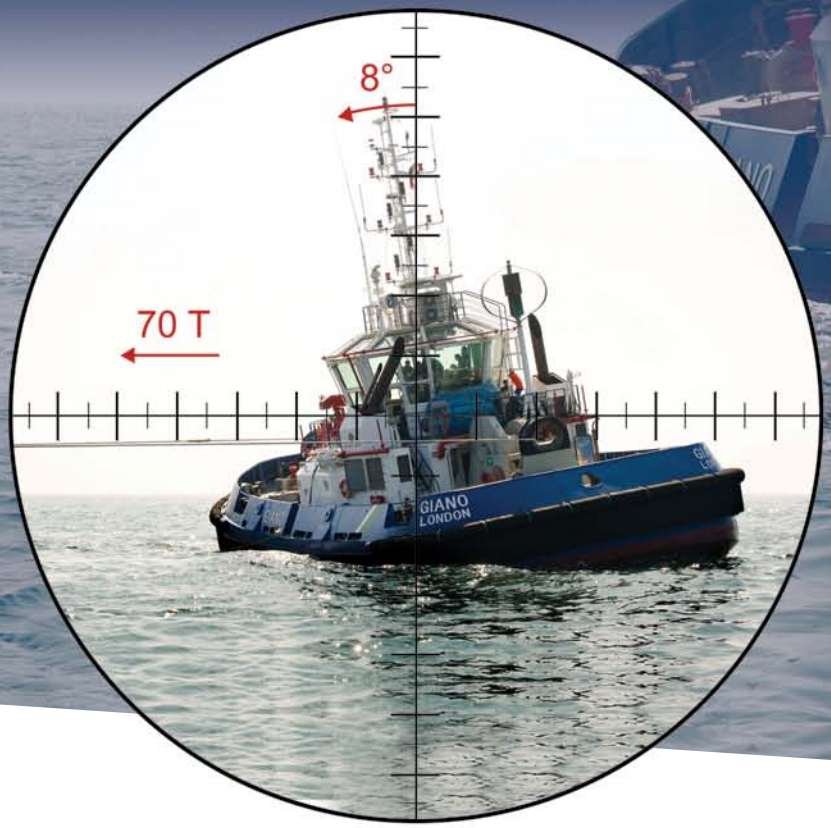
It is this focus on long-term customer relationships that Bartels feels is the defining quality of the maritime propulsion industry.

"I always enjoyed the special community we work in, which creates long-lasting relationships. Whenever you dealt with customers the positive experience would remain, even if you met them again in 10 years' time. The connections were open and very fair. This is a speciality of our business, and is not common in other industries – maybe it is an aspect of shipping, where the emotional aspect is somehow stronger."

After so many years working in various areas of maritime business, though, the time has now come to take a break. For Bartels and his family – his wife Sylvia and newly-married daughter Susanne – that means returning to their roots.

"Professional life has always been exciting," said Bartels, "but to some extent family life lost out. I come from the Baltic Sea, and we recently found a very old house on the coast. Our challenge is to get this renovated for the summer trips for the family, where we can rest and enjoy the art, museums and a little bit of travel and sports."

And so, after a long and successful career in industry, it's back to the Baltic to enjoy the sea once again – and perhaps even time for some more sailing.



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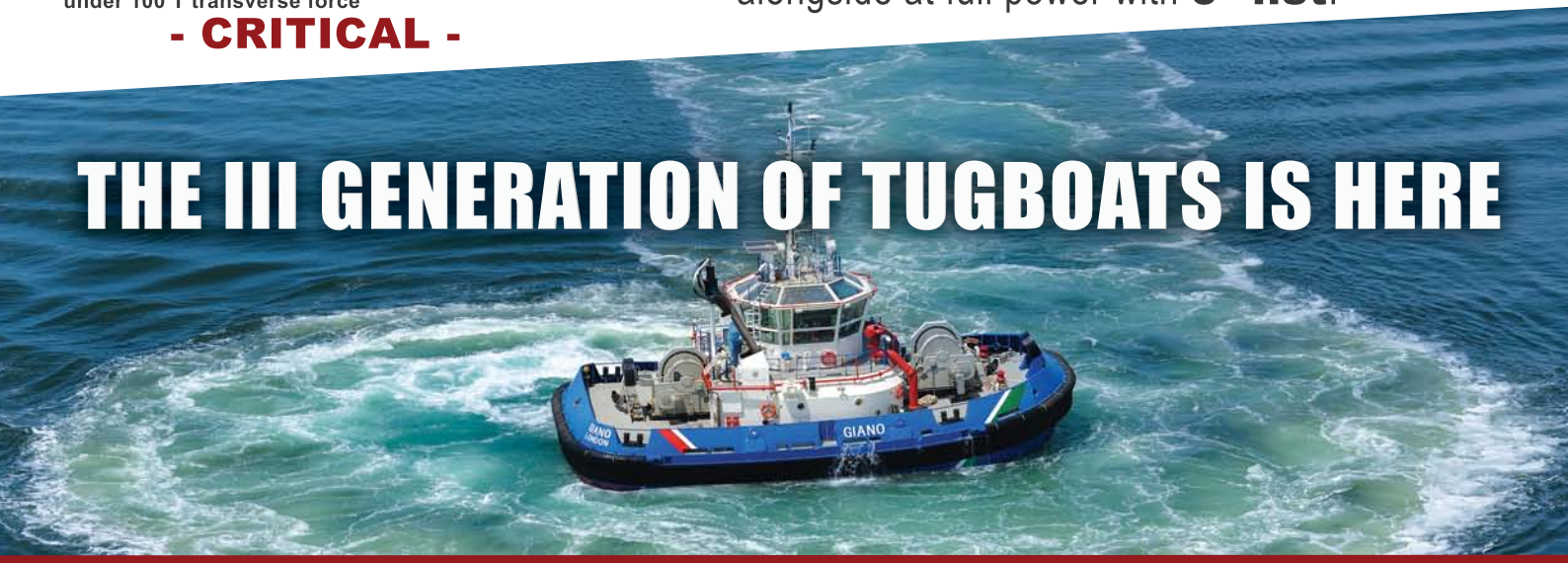

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Essential reading for tug masters

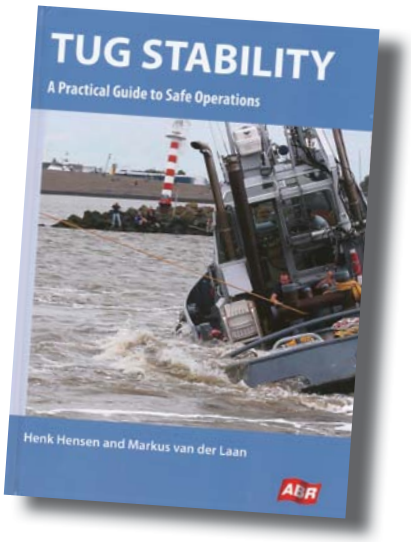
► *Jack Gaston*

Marine author and photographer Jack Gaston reviews *Tug Stability – a Practical Guide to Safe Operations* by Capt Henk Hensen and Dr Markus van der Laan

A practical, readable, expert handbook, *Tug Stability – a Practical Guide to Safe Operations* is essential reading for all tug masters, who experience the effects of their vessel's stability every day, whether free sailing or assisting ships.

During tug operations, a number of forces and combinations are working on a tug – such as towline, hydrodynamic, steering and propulsion forces – often at or near their maximum with respect to the tug stability.

It is, therefore, not just desirable but necessary for tug masters to have at least a basic idea of the elements of stability. They need to know where the limits are, and what the consequences could be if the tug or tug handling practices don't conform to the rules of stability – not only in normal circumstances but also when extreme conditions, such as dense fog and storms, occur.



"This educational guide to stability ... is written in a manner readily understood by all tug masters, regardless of their education, formal qualifications, nationality or operational backgrounds"

Jack Gaston, marine author and photographer

The consequences can be very dramatic. Numerous harbour tugs have capsized, often with tragic results. In the tug capsizes known to have occurred between 2010 and 2015, more than 45 people have drowned.

This educational guide to stability, specifically for tugs, aims to provide this important information to tug masters. It is written in a manner readily understood by all tug masters, regardless of their education, formal qualifications, nationality or operational backgrounds.

The text is accompanied by numerous illustrations and photographs.

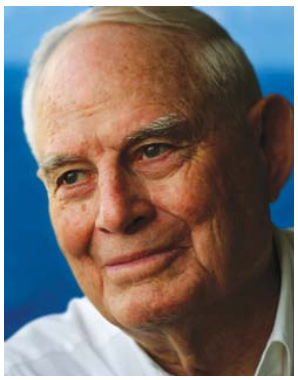
In writing this handbook, the authors – master mariner and pilot Capt Henk Hensen and naval architect Dr Markus van der Laan – have focused on the practical aspects of stability, tug design and equipment and also on the consequences of unsafe procedures. Their emphasis is on harbour tugs, although several of the topics covered apply equally to sea-going tugs.

● Tug Stability – a Practical Guide to Safe Operations *(106 pages, hardback) is available from The ABR Company, publisher of* IT&O*, at £25. To order online, visit www.tugandosv.com*

Offshore pioneer and entrepreneur dies at age of 98

Alden James 'Doc' Laborde, who revolutionised offshore oil drilling with innovations that made it possible to drill farther from the coast and in deeper waters, and later co-founded Tidewater Inc, which became the world's largest offshore vessel operator, has died at his home in New Orleans. He was 98.

Laborde, the son of two teachers, attended Louisiana State University for two years before entering the US Naval Academy in 1934. He was commissioned as a Navy ensign after graduating in 1938, but was released from military service early because of problems with his vision.



◄ *Alden James 'Doc' Laborde*

He returned home and opened a business in Lafayette, but he was back in uniform once the US entered World War II eventually leaving the Navy with the rank of commander.

Offshore oil drilling, which began in the 1930s, resumed after the war. At the time, the industry was dominated by people who knew their way around a land-based rig, but not much about drilling in deep water.

"All these Oklahomans and Texans were having a heck of a time with how to work things offshore," Laborde said in a 2012 interview with *Offshore* magazine.

While he was working for Kerr-McGee Oil Industries in Morgan City, Laborde came up with the idea of a movable, submersible drilling rig, but quit the company after it refused to build it. He set up Ocean Drilling and Exploration Co (ODECO), partnering with Murphy Oil Co and John Hayward, who held the patent on a submersible-barge method for offshore drilling. The first rig ODECO built could drill in water as deep as 12m, while Hayward's barge was limited to depths of 6m.

This first rig has been recognised as a Historic Mechanical Engineering Landmark by the American Society of Mechanical Engineers and is on permanent display at the International Petroleum Museum.

In an interview with *Offshore*, Laborde recalled how "a young man named George (HW) Bush came by to see me. He owned an onshore drilling company, and he wanted to build an offshore rig. So I helped him get started, and he launched a company called Zapata Offshore. He sold it a few years later and got a few million dollars and used that to go into politics."

Later, Laborde turned his attention to designing oil industry support vessels, and with partners, including two of his brothers, formed Tidewater, which became the world's largest OSV operator. Laborde retired in 1977 but returned to work in the mid-1980s to form Gulf Island Fabrication, the third NYSE-listed company he had a part in creating.

Laborde served on the boards of numerous public and private educational and philanthropic institutions and was involved in Catholic Church affairs in particular. His wife, Margaret, died in 2009. He is survived by two brothers, a sister, two sons, three daughters, 18 grandchildren and 35 great-grandchildren.

Salvors tackle blaze after 511 are evacuated

All 511 passengers and crew were successfully evacuated when fire broke out on the passenger ferry *Caribbean Fantasy* off San Juan, Puerto Rico.

A unified command was established to co-ordinate the multi-agency operation. Ardent responded to the incident as ***Caribbean Fantasy*** is covered under its OPA-90, salvage and marine fire-fighting programme.

◄ *Tugs tackle the* **Caribbean Fantasy** *blaze and, below, passengers are evacuated*

Prior to Ardent operations, the US Coast Guard (USCG) responded and successfully evacuated the passengers and crew members. The blaze is believed to have started in the engine room.

Ardent salvage master, Guy Wood, said: "We did a dive survey of the vessel at sea, found that there was minimal damage to the hull, and brought her to port with the USCG's approval. Our fire team then went onboard to extinguish the fire."

Puerto Rico Towing and Barge and Moran Towing also provided tugs for the operation.

Salvage and fire-fighting teams who boarded the 171m vessel found the remains of two missing pets near the vessel's disembarkation area.

Capt Robert Warren, the incident response commander, said: "Our thoughts and prayers go out to the owners of the pets. Many of us are also pet owners who love our animals and consider them part of our family."

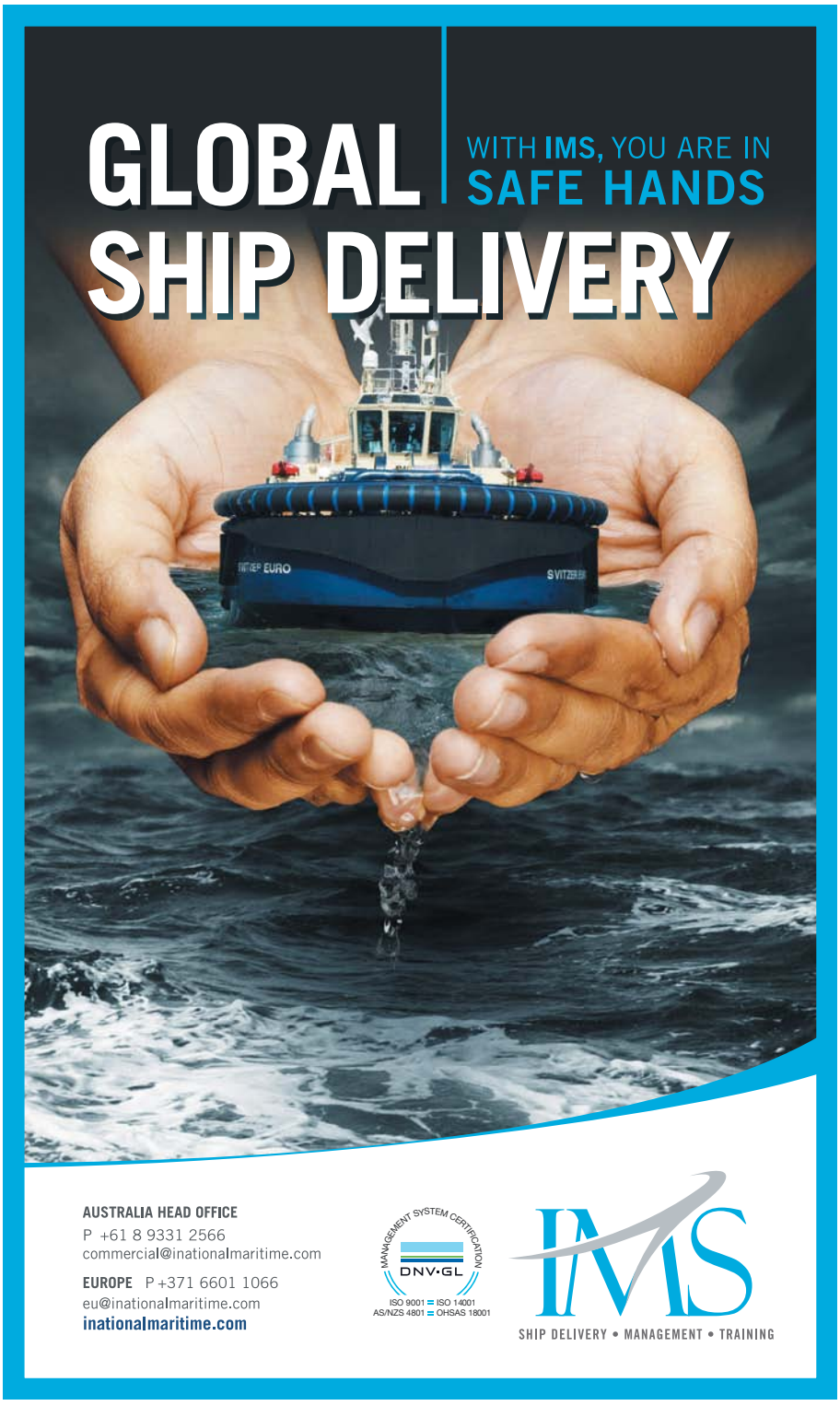
As *IT&O* went to press, the unified command was developing an assessment and disposal plan for potential hazardous and non-hazardous waste, and a joint marine casualty investigation with the USCG, the National Transportation Safety Board, RINA Services and the flag state, Panama, was underway.

The ***Caribbean Fantasy*** was towed to San Juan Harbor, where an exclusion zone was put in place along with an air monitoring plan in the vicinity of the vessel to ensure the safety of responders and the local community.

The ***Caribbean Fantasy*** response unified command consisted of the Coast Guard, the Puerto Rico Environmental Quality Board, the Puerto Rico Department of Natural and Environmental Resources and the vessel's owner, Baja Ferries.

Ardent demobilised emergency response personnel and equipment one week after the successful operation, and handed the vessel back to the ship owner. Wood said: "It was a smooth job. We berthed at the port and implemented our heavy weather mooring plan, then returned the vessel to her owner."

Ardent operates a network of dedicated marine emergency response capabilities worldwide. The salvage company has a strong history with unique marine incidents that require fire-fighting response activities.



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Offshore operator confident it is ready for upturn

The impact of the oil market cycle reaching its lowest point is felt in Bourbon's first half of 2016 adjusted revenues of €599.2m, a 21 per cent decline year on year and 11.7 per cent reduction compared to the second half of 2015.

OSV operator Bourbon has been impacted, albeit less and later, by the deep reduction in the level of activity of the oil companies following the sharp and sudden reduction of the oil price.

The company's performance during 2016 will reflect the full impact of the down cycle, as illustrated by the quarter-on-quarter reduction of its adjusted revenues.

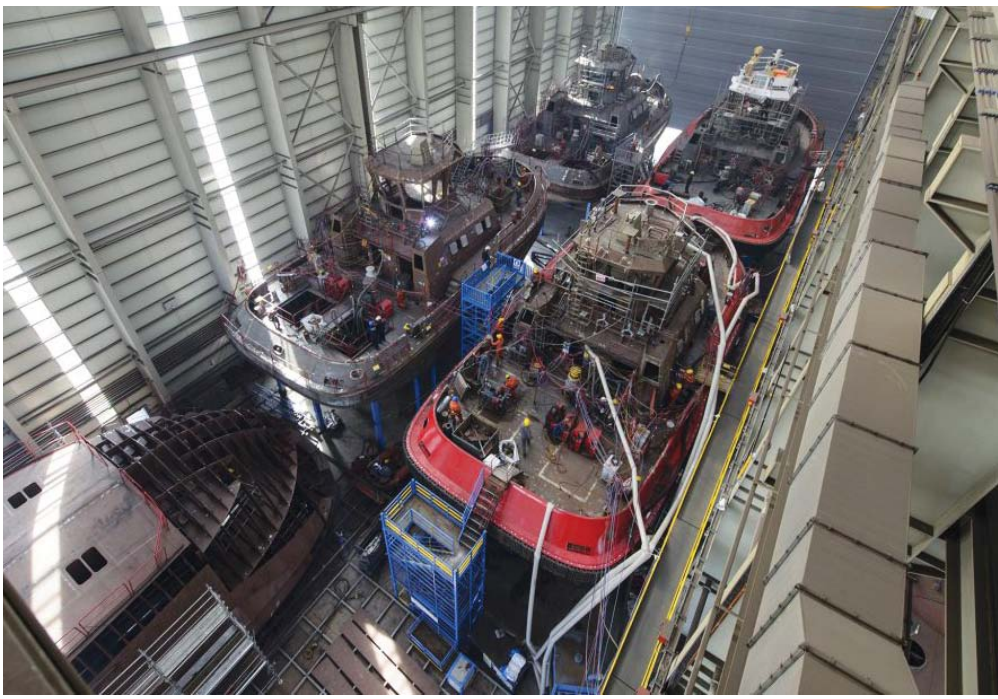
Jacques de Chateauvieux, chairman and CEO of Bourbon Corporation, said: "More than ever, Bourbon is focusing on safety, reliability, cost control and improved efficiency to the customers benefit. We think the crude oil market has bottomed and are ready to benefit from the market recovery when it materialises."

Applicability added

Engineering and technology group Sener is launching a new update of its FORAN shipbuilding CAD/CAM/CAE system.

Version V80R1.0, which was launched on to the market when FORAN celebrated its 50th anniversary in 2015, was a revolutionary change. A year later, version V80R2.0 has added significant features, such as a new geometric core and the ability to manage a series of ships (applicability), in addition to other improvements in all of its disciplines.

Tug designer and builder on verge of another landmark



▲ *Robert Allan Ltd designed tugs under construction at Sanmar's shipyard*

Robert Allan Ltd and Sanmar Shipyards have reached a significant milestone in their ongoing relationship. Scheduled to be launched later this year, a RAstar 2800 will mark the 150th tug that Sanmar has built to a Robert Allan Ltd design.

This milestone tug, the first of six custom designed for Svitzer's current and upcoming projects, reinforces the position of Sanmar and Robert Allan Ltd as world leaders in tug design and construction.

The co-operation between the two companies began in 1995 with a series of small 18m tugs designed and built for Sanmar's own fleet.

It is also noteworthy that Sanmar's rate of deliveries has escalated dramatically, as they delivered their 80th tug to a Robert Allan Ltd design just six years ago on the occasion of the latter's 80th anniversary in business.

The collaboration has since grown to include several classes of tugs, from the high performance RAstar escort tugs, through the workhorse RAmparts class, to the innovative VectRA VSP tug design. Ranging in size from 15m to 34m, these tugs have been delivered all over the world, from Australia to Canada to Europe, the Middle East and all points between.

Robert Allan Ltd says it is extremely proud of the relationship which has been fostered with Sanmar over the past 20-plus years, with both companies sharing the common goal of delivering the best possible quality of tugs to the world market.

New ATB tug reflects 40 years' experience in commercial vessel design

An artist's impression of Castleman's new ATB tug

Castleman Maritime, based in Florida, US, has completed the design of a new class of ATB tugs that will be built for the Vane Brothers Company of Baltimore by Conrad Industries in Texas.

This design for the Assateague class ATB tugs has been developed using the regulations of the American Bureau of Shipping.

The 500gt tugs feature raised forecastles and will be powered by two Cummins QSK60 diesel engines driving open propellers through Reintjes reduction gears.

Two 125kW Cummins gen sets and a 60kW Cummins emergency generator will power the tugs' electrical systems.

The design features the Beacon Finland JAK-700 coupling system.

Castleman Maritime's president, Gregory E Castleman, said: "I am pleased with Vane Brothers' confidence in our design capabilities, and we are proud to be a part of their impressive new construction programme. It has been a pleasure to work with their talented and experienced team to develop this new class of tugs."

The design reflects Castleman's 40-plus years of experience in the design of many types of service and commercial vessels, including tugboats, barges, crew boats, and OSVs.

In brief

Gunmen, believed to be Islamist militants, have kidnapped three Indonesian members of a seven-man tugboat crew off Malaysia's eastern state of Sabah. The incident is the latest in a string of abductions in the region. Police say the gunmen, who arrived by speedboat and spent half an hour on the tug, are likely to be members of Abu Sayyaf, a group linked to Islamic State that is responsible for recent beheadings of western hostages and the extortion of millions of dollars in ransoms. Police are also investigating the disappearance of a tug crew after fishermen off Sabah came across a tugboat with its engine running, but nobody on board.

Marlink, the leading maritime communication and maritime VSAT operator, has signed a strategic alliance with Inmarsat that will see Inmarsat's new Fleet Xpress service integrated into Marlink's existing service portfolio. Through the agreement, Marlink will bring more than 2,000 vessels to the Fleet Xpress service over a five-year period.

Braemar Adjusting has announced a strategic partnership with Calm Sea Culture Marine Services (CSC) to act as its local resource partner in Iran. Braemar Adjusting provides loss adjusting, risk assessment, legal/expert witness and dispute resolution services.

Navico – a leading provider of marine electronics and parent company to the Lowrance, Simrad, B&G and GoFree brands – has been acquired by a partnership of Goldman Sachs Merchant Banking Division and Altor Fund IV.

Indonesia is considering deploying marshals on board coal-exporting tugs and barges to strengthen security for the slow-moving vessels that have been hit by a spate of hijackings in the Southern Philippines.

The US Customs and Border Protection Agency is beefing up its enforcement of the Jones Act with the creation of a special division strictly to handle Jones Act issues.

Atlas Winch & Hoist Services, based in Lanarkshire, UK, has received ISO 9001:2015 accreditation.

Maritime day theme aims to forge closer partnerships

World Maritime Day 2017 will have the theme *Connecting Ships, Ports and People,* following a proposal by IMO secretary-general Kitack Lim to the IMO Council.

Lim said the theme would provide an opportunity to work with developed and developing countries, shipping and public and private sector ports, with a view to identifying and promoting best practices and building bridges between the many diverse actors involved in these areas.

Key objectives will include:

- improving co-operation between ports and ships, and developing a closer partnership between the two sectors
- raising global standards and setting norms for the safety, security and efficiency of ports, and for port and coastal state authorities
- standardising port procedures through identifying and developing best practice guidance and training materials.

World Maritime Day will be celebrated by the UN on 28 September 2017, but individual nations are welcome to choose alternative dates if they wish.

Lim said: "The maritime sector can and should play a significant role helping UN member states to create conditions for increased employment, prosperity and stability ashore through promoting trade by sea, enhancing the port and maritime sector as wealth creators both on land and, through developing a sustainable blue economy, at sea. The aim is to build on this year's theme, *Shipping: Indispensable to the World*, by focusing on helping member states to develop and implement maritime strategies to invest in a joined-up, inter-agency approach that addresses the whole range of issues.

◄ *IMO general-secretary Kitack Lim*

"Ultimately, more efficient shipping, working in partnership with a port sector supported by governments, will be a major driver towards global stability and sustainable development for the good of all people."

- The European Tugowners Association has issued a statement welcoming the theme and aims of World Maritime Day 2017.

Never run away from a pack of lions

If your ship sinks, can you answer the questions the public wants answered? Are you and your team prepared should the unthinkable happen? Could a perfect media storm happen on your watch? These were the questions posed to an audience of shipowners, brokers and other key members of the maritime community by Lars Rhodin, managing director of The Swedish Club at its 144th annual meeting.

The theme of the meeting was: *What can be done when the damage is done? Can you make a bad case better?* It was aimed at reminding members and guests that loss prevention doesn't stop when there is an incident. The damage to a company's reputation, and a loss of faith as a consequence of a badly handled media situation can result in even more damage to the balance sheet than has already been caused by the incident itself.

Roger Harrabin, environment analyst at BBC News, supplied the voice of the national media and compared his own colleagues to lions, reminding the audience that to turn and run away from such a beast generally has a less than positive outcome. Meanwhile Martin Baxendale, managing director of MTI Network, and Sean Moloney, managing director of Elaborate Communications played 'good cop, bad cop', showing conflicting examples of how media control of a casualty could be won or lost by even the biggest players.

◄ *Julian Bray of Tradewinds, speaking, alongside Martin Baxendale of MTI Network, Roger Harrabin of BBC News, Sean Moloney, of Elaborate Communications, and Rob Grool of Vroon at The Swedish Club AGM*

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MED MARINE

Boldly going where no chair has gone before

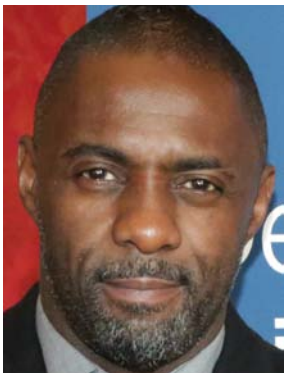
Set faces to stunned. Norway-based Alu Design is once again hitting the silver screens this year, as its MH OCH 300 operator chair follows up its appearance in the 2014 hit *Transformers: Age of Extinction* with a new role in *Star Trek Beyond*. The film, released globally on 22 July, features the state-of-the-art moulded aluminium chair in a host of key scenes.

Alu Design created the MH OCH 300 marine chair in 2012, combining comfort, durability, ease of installation and maintenance, with an intuitive access to controls. However, its appeal has since proven much wider than originally intended.

Alu Design CEO, Einar Ulrichsen, said: "We were first contacted by Paramount Pictures, which produces films for both the Transformers and Star Trek franchises, in 2013. It was looking for set furniture with breath-taking, futuristic designs to help bring stories to life. During an online search the MH OCH 300 caught their eye.

"Paramount's people were so pleased with how it looked on film – and the actors were so happy with how it felt – that it became the natural choice for this new, space age cinematic experience.

"We are of course somewhat blown away by all this. To have our product in two productions, with such a massive global appeal, is, quite literally, out of this world."



The company supplied six MH OCH 300s to Paramount for a duration of 10 weeks. During filming in the US the chairs shared the sets with actors such as Chris Pine, Simon Pegg and Idris Elba.

Frank Robertsen, Alu Design's marketing director, is similarly star struck, but is also clear that the film appearances are 'a side show rather than the main event'.

He said: "It's fantastic to have this kind of exposure, but the original purpose of the chair is still our main concern.

"It was developed to provide an optimum working environment for demanding everyday tasks – that is what we're really proud of. We offer world-class pilot chairs and deck rails to the marine, navy, offshore and commercial industries. Our product range can be customised to meet individual customer needs."

► *Alu Design's MH OCH 300 tug and OSV operator chair has played a supporting role to* Star Trek Beyond *actors, from left to right above, Idris Elba, Chris Pine and Simon Pegg*

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New chapter started in US tugboat design

▲ *An artist's impression of the new Damen Stan Tugs 1907 ICE vessels in action*

A keel-laying ceremony has taken place for the first tugs to be designed and built to comply with the new Subchapter M coastguard regulations in the US.

It was held at Great Lakes Shipyard in Cleveland, Ohio, for 10 Damen Stan Tugs 1907 ICE to be operated by the yard's affiliate company, The Great Lakes Towing Company, replacing existing tonnage.

Damen's Houston-based manager for North America, Jan van Hogerwou, confirmed that under the licence, Great Lakes Shipyard will receive full construction, design and engineering support from Damen.

He said: "To achieve the best possible result, Damen will also provide expert assistance based on its experience having constructed around 200 Damen-designed vessels in the US over the years."

The 10 Ice Class 1907 tugs will be the first in the US to be designed and built to comply with the US Coast Guard Subchapter M regulations under ABS classification. These came into effect in June this year and set new standards of seaworthiness for the towage industry and also established new rules for safety management, including protocols and inspection requirements.

In addition to the Ice Class specification, the tugs will be treated with special high endurance paint capable of withstanding the abrasion that comes with moving through ice.

Stan Tugs 1907 can be found operating in locations around the world including Russia, Qatar and the Netherlands.

The partnership with Damen has provided Great Lakes Shipyard with a portfolio of proven vessel designs for customers in the US. Most of the designs have been refined to meet the needs of US operators through a process of feedback and continuous development, and the new Stan Tug 1907 ICE design is a continuation of this.

While these are among the first tugs to be built in the US under Damen's Technical Co-operation programme, more than 200 Damen vessels have been built under licence in the US since the mid-1990s. These include 80 26m patrol boats for the US Coast Guard, built by Bollinger Shipyards; 55 fast crew supplier 1204 class, built at Horizon Boat Builders and Trinity Shipyard and 25 fast crew supplier 1605 class vessels built by Blount Boats. Licences for 58 Sentinel-class fast response cutters based on Damen's 47m Stan patrol 4708 have also been sold.

► *A Damen Stan Tug 1907 under construction in Cleveland, Ohio*

Putting safety first

Bollinger Shipyards has proudly announced that its new Lockport construction facility has worked 6m man-hours without a lost time accident, while its Fourchon facility has worked 15 years without such an accident.

Bollinger president and CEO, Ben Bordelon, said: "Our management and employees have once again demonstrated their dedication in making our safety programme successful. Bollinger continues to be one of the safest shipyards in America."

EU approval gained

The Indian Register of Shipping (IRClass) has joined the elite group of classification societies recognised by the EU.

This recognition confirms IRClass meeting the stringent EU requirements and having a "performant and well-established quality system in place, certified as compliant with relevant statutory and industry standards, currently implemented throughout the organisation."

The approval paves the way for IRClass to access the European market.

Charity blends in

Maritime charity Sailors' Society has launched BySea coffee, 100 per cent of the profits from which will support its work with seafarers and their families around the world.

Ethically sourced and socially responsible, the first two blends from India and Brazil were specifically chosen as the charity is expanding its work in these countries.

Meanwhile, P&I club Steamship Mutual has agreed a one-year sponsorship of the charity's Wellness at Sea coaching programme.

rolls-royce.com

Rolls-Royce

Powered by natural gas

Rolls-Royce is widely recognised for its system solutions for a broad range of vessels. Systems comprising propellers and thrusters, engines, stabilisers, deck machinery, rudders, steering gear, automation and control systems. Rolls-Royce supply gas-powered propulsion solutions that reduce emissions significantly. Compared to diesel engines that meet IMO Tier 2 emission levels, Bergen gas engines give E2 weighted emission reductions of 92% NOx, close to 22% in CO_2 and virtually eliminate SOx and particulates, already meeting enforced IMO and EPA Tier 3 requirements and are subject to EPA Tier 4 certification. Clean efficiency by Rolls-Royce.

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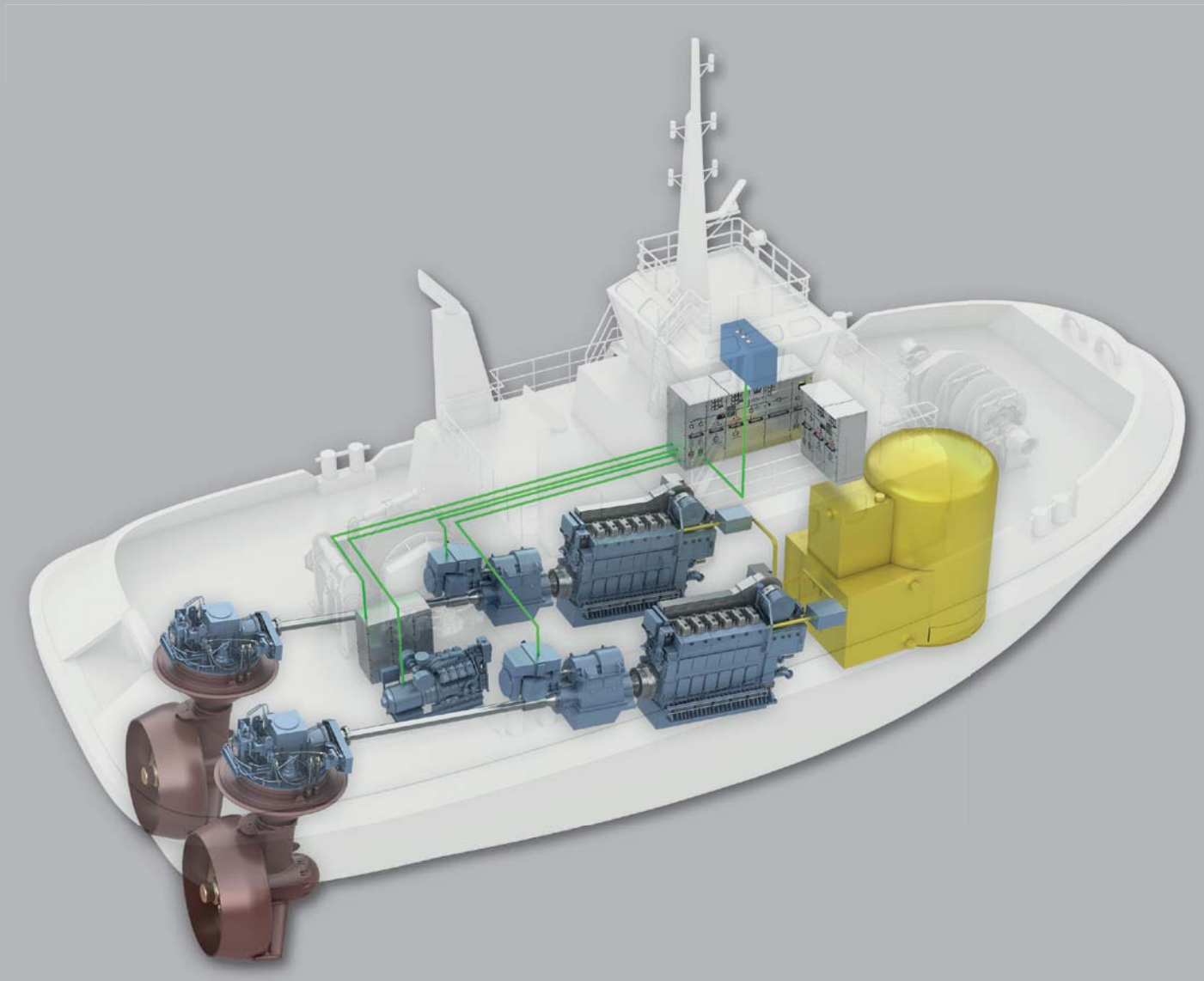

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Call for an international standard for W2W

Wagenborg's award-winning DP2 W2W **MSV Kroonborg** *was developed in co-operation with Conoship and Niestern Sander for maintaining Shell's unmanned gas platforms off the Netherlands*

► *Gijsbert de Jong*

Gijsbert de Jong, market segment director for OSVs and tugs at Bureau Veritas, discusses mitigating the risks involved with offshore access systems

During the past few years a growing number of innovative offshore access systems (OAS) have been developed to enable walk-to-work (W2W) solutions for the offshore energy industry. Initially driven by rising demand for personnel transfer for offshore wind farms, the oil & gas sector is increasingly deploying W2W vessels for the maintenance of unmanned offshore platforms as a reliable and cost effective alternative to helicopter transfers.

As the market for OAS is growing and new products are being launched, it is important to acknowledge that new technologies also introduce new risks. Currently there is no international technical standard for OAS and certification is usually based on traditional standards for offshore lifting appliances with limited applicability.

◄ *Acta Marine's DP2 W2W WFSV* **Acta Orion**, *delivered by CIG in 2015, is operating on the Dutch Gemini offshore wind farm project*

Special consideration is required for the type of transfer operation, the environmental conditions, the compatibility between vessel and gangway in terms of operating envelope, and the relevant safety systems including redundancy principles, emergency procedures and control systems. In fact, appropriate safety standards are needed before accidents happen that could jeopardise the entire W2W concept. To that end Bureau Veritas has developed guidance note *NI 629, Certification of Offshore Access Systems*, which was published in May 2016.

The guidelines cover active gangways, which are motion compensated during transfer, and passive gangways, which operate in free-flow mode during transfer. Distinction is made between routine transfer, with limited direct control over the number of people on the gangway, and non-routine transfer, with full control of the number of persons on the gangway through the permanent presence of an operator.

The latter is typically the case for short duration offshore inspection, maintenance and repair activities.

Requirements cover the design, construction, testing and in-service inspection of OAS, specifically taking into consideration its integration on the support vessel. Compliance with the safety principles is to be demonstrated by means of a risk analysis. Failure modes and effects analysis (FMEA) is an effective and powerful tool to assess new technologies and address risks not covered by traditional prescriptive regulation.

The functional requirements ensure that the operating envelope of the OAS allows for the maximum anticipated vessel motions. For DP vessels the motion amplitudes of the gangway are to be consistent with the DP system offset.

Installation of an emergency disconnection system and a function to return the gangway to a safe position in case of loss of contact or power are required for active systems. Mechanical and control systems are to be designed such that a single failure approach does not lead to a dangerous situation.

The guidelines pay specific attention to control and monitoring systems, including system availability, evacuation and emergency disconnection alarms and a traffic light system to control personnel transfer. Control software is considered as safety critical for active OAS and is therefore to be subjected to testing and certification in order to ensure system reliability.

The Bureau Veritas guidelines are intended to contribute to an enhanced level of safety and reliability for W2W operations and also to support regulators in their efforts to develop a pragmatic and harmonised regulatory framework.

DIARY DATES

Meet us at these global events:

International Salvage Union AGM
Livorno, Italy
26-30 September 2016
www.marine-salvage.com

Maritime Middle East
Dubai, UAE
31 October-2 November 2016
www.seatrade-middleeast.com

International WorkBoat Show
New Orleans, USA
30 November-2 December 2016
www.workboatshow.com

Salvage & Wreck Conference
London, UK
7-8 December 2016
www.informamaritimeevents.com

Australasian Oil & Gas Exhibition & Conference
Perth, Australia
22-24 February 2017
www.aogexpo.com.au

Sea Asia
Singapore
25-27 April 2017
www.sea-asia.com

Offshore Technology Conference
Houston, USA
1-4 May 2017
www.otcnet.org

Tugnology '17
Rotterdam, The Netherlands
23-24 May 2017
www.tugandosv.com

Nor-Shipping
Oslo, Norway
30 May-2 June 2017
www.messe.no/nor-shipping

Seawork
Southampton, UK
13-15 June 2017
www.seawork.com

Offshore Marine & Workboats ME
Abu Dhabi, UAE
25-27 September 2017
www.seatrademaritimeevents.com

Europort
Rotterdam, The Netherlands
7-10 November 2017
www.europort.nl

Firm celebrates test success

Ballast water treatment (BWT) system specialist Optimarin has successfully completed the US Coast Guard's (USCG) environmental test and all land-based and shipboard testing for marine, brackish and fresh water.

It is understood to be the first supplier of UV-based BWT technology to satisfy the USCG's stringent CMFDA testing criteria – a development that it believes can be 'a springboard for global success'.

Optimarin is a pioneer of the BWT segment, having specialised in environmentally friendly UV treatment technology for the past 22 years, installing the world's first commercial system in 2000 on the cruise ship ***Princess Regal***. Fuelled by its success with the USCG, the firm is currently enjoying its best year ever, with close to 100 systems ordered so far in 2016.

Optimarin CEO Tore Andersen said: "The conclusion of the USCG approval testing marks an important evolutionary step for our business." Full USCG Type Approval is now expected in the third quarter of this year, once all necessary documentation has been completed.

Andersen said: "With the ratification of the IMO's BWM convention finally on the horizon – just a further 0.13 per cent of global tonnage is required to bring it into force – our total compliance is a real strength. That, along with the fact our technology is market proven and simple to maintain, with no moving parts, puts us in pole position for a segment that is predicted to be worth in excess of US$3bn by 2023."

Optimarin sees a potential market for its system of 25,000 ships worldwide, with Andersen believing that his team – in conjunction with global engineering partners Goltens and Zeppelin – can take "a very significant share" of the retrofit market.

He said: "We know retrofit. Of the approximately 500 systems we've sold, more than 100 have been retrofits. Our modular systems and expert engineering partners mean the solutions we offer are flexible and easy to install on to any ship, of any type. Shipowners appreciate this, laying the foundation for the growing number of framework fleet agreements we are now signing. We've spent over two decades, and many millions of dollars, in our quest to develop the best, most compliant BWT technology on the market. That dedication is now paying off. We have an excellent order book, stable finances and management, and a very bright future ahead – with what we believe should be five to seven years of exponentially rising revenues."

Tugboat designed for cold climate

▲ *The first dual fuel tug built in Europe is launched at Gondan Shipyard in Spain. When finished it will work in the far north for Statoil*

The first dual fuel tug built in Europe, first of a series of three being constructed for the Norwegian shipowner Østensjø Rederi, has been successfully launched at Gondan Shipyard in Figueras, Spain.

Designed by the Canadian company Robert Allan Ltd, the new escort tug, with a 40.2m length and 16m beam, will provide tug services to Norwegian state-owned energy company Statoil at the far-north terminal situated at Melkøya.

Built to withstand freezing cold, the vessel is shaped specifically to grant full operational availability at temperatures of -20 degrees C and combines environmental sustainability through the use of LNG in most of its operations, with the flexibility of diesel power for a high level of operational security.

The vessel was due to be moored at the yard's quay for several months while being outfitted, after which it will be ready for thorough sea trials and delivery in 2017.

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In brief

Two men in charge of a tug carrying cocaine worth £512m have been jailed. Mumin Sahin, 47, and Emin Ozmen, 51, from Turkey, were caught after ***Hamal*** was stopped in the North Sea east of Aberdeen, UK, in April 2015. A total of 3.2 tonnes of cocaine was hidden in a ballast tank. Sahin was jailed for 22 years and Ozmen for 20.

Rolls-Royce has blamed the weak offshore market for a 25 per cent drop in revenue in its marine business during the first half of 2016 when compared to the same period last year. Its half year results show that the sector generated a loss of £13m.

Svitzer Peru has been awarded Peruvian Company of the Year by La Asociación Civil Empresa Peruana del Año for its excellence in management and quality services.

The UK Marine Accident Investigation Branch (MAIB) received 1,057 reports of accidents (casualties and incidents) to UK vessels or vessels in UK coastal waters, during 2015, according to its annual report.

International ship registry, Maritime Cook Islands, has authorised the China Classification Society to conduct the survey and certification of ships flying the Cook Islands flag.

The Nautical Institute has published the 10th edition of its guide *The Shipmaster's Business Self-Examiner.*

Management company adds lay-up services to portfolio

In a sign of the times, Bernhard Schulte Shipmanagement (BSM) is further expanding the scope of its services with the addition of lay-up and green recycling.

Both services have been developed to meet changing needs amid the tough economic environment that the shipping industry is experiencing at present.

BSM's lay-up services have been designed to support customers where continued operation of the vessel is deemed uneconomical. BSM will advise the owner of the best options for lay-up and the appropriate procedures that need to be followed for different types of lay-up, whether warm or cold. From its nine ship management centres around the world, BSM will manage the lay-up process, performing duties such as location selection, declaration for shareholders, ship inspections and onboard watches.

With both warm or cold lay-up options, the objective is to ensure that the vessel remains secure and well preserved during the idle period while reducing shipowners' costs.

BSM's green recycling service supports customers with the responsible demolition of their assets. Fully complying with the IMO's Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009, the service will be provided by BSM's project focused business, Schulte Marine Concept.

Meanwhile, around 300 people gathered in Tokyo to attend a ship recycling seminar held by ClassNK at which industry experts from Asia and Europe discussed the current challenges of vessel recycling and what the industry can do to support safe and environmentally sound practices.

Koichi Kato, deputy director-general for engineering affairs, maritime bureau of Japan's Ministry of Land, Infrastructure, Transport and Tourism, opened the seminar with a keynote address supporting international standards on vessel recycling.

In conclusion, ClassNK said that it was important for the industry to take a collective approach to better ship recycling, including the development and maintenance of the Inventory of Hazardous Materials and an increase in compliant recycling facilities around the world.

Firm celebrates 50 years in Pacific

Twin Disc, the marine and industrial transmission technologies company, is celebrating 50 years in Australia, New Zealand and the South Pacific. The company established Twin Disc (Pacific) (Twinpac) in 1966, triggering its global expansion to 250 distributor sales and service locations in 83 countries.

During its first 15 years of operation, Twinpac focused on land-based industrial applications and axle manufacturing, but in the 1980s the subsidiary began to leverage the burgeoning commercial and recreational marine markets within the region. Its success led Twin Disc to expand into Asia with an office in Singapore. Today, Twinpac markets and distributes the complete line of Twin Disc marine and land-based power transmission products.

While global markets have evolved, the subsidiary's core values of quality, integrity and responsive customer service continue to be its strong foundation. For nearly 100 years, Twin Disc – headquartered in Wisconsin, US – has brought innovative marine and land-based industrial technology to market.

Oil price continues to hit supply sector hard

Solstad Offshore has reported a drop in operating profit to NOK98m in the second quarter of 2016 compared to NOK219m during the same period last year as low oil prices continue to take a toll.

In its financial report the Norway-based company, which owns or part owns 44 vessels, highlights that the market for platform supply vessels (PSVs) is weak and that it has 13 vessels laid up.

CEO Lars Peder Solstad said: "We are in three segments today (PSVs, AHTSs and subsea) and they all desperately need consolidation. We want to take an active role and are chasing tonnage in all of these segments. We would prefer the subsea and anchor-handling segments, but we will look at all opportunities. Consolidation will obviously give synergies on the cost side, but I also believe it can have a positive effect on rates."

Investment firm Aker injected cash in Solstad and is now the main owner ahead of the Solstad family. The CEO predicted further consolidation in the market in the near future. Solstad Offshore has already made a merger with smaller firm Rem Offshore.

► *Solstad Offshore's AHTS vessel* **Nor Chief**

People in the news

Sheila McClain

Braemar Shipping Services Group has appointed Sheila McClain, executive vice president of Braemar Engineering, as new managing director. Based in Houston, Texas, she will have management responsibility for global operations, as well as developing and promoting Braemar Engineering's expertise in marine, offshore and land-based LNG projects, dynamic positioning and engineering consultancy. Geoff Green, the company's MD for the past 15 years, will remain within Braemar Engineering as chairman and non-executive board member.

Brent Bruun

KVH Industries has promoted Brent Bruun from executive vice president of mobile broadband to the newly created position of chief operating officer. He assumes direct responsibility for KVH's corporate development, and operational responsibility for mobile communications products and services for maritime and land markets. His role covers the 'customer lifecycle' from sales and manufacturing to long-term services, support and customer retention.

Hans Laheij will take over as vice president, sales and marketing, at **Schottel**, assuming the responsibilities of Dr Jens-Erk Bartels, who retires in October (see page 8). Laheij has extensive experience and expertise in the area of ship propulsion. He began his career with Lips BV in the Asia/Pacific region. On his return to the Netherlands, and following the takeover by Finnish competitor Wärtsilä, he steadily took on greater responsibilities, assuming a management position in Singapore in 2005 and, as of 2011, serving in Shanghai as area sales director for the Middle East and Asia.

Andrew Buchmann

International law firm **Hill Dickinson** continues to strengthen its growing commodities team with the return of partner Andrew Buchmann. After qualifying in South Africa, Buchmann joined Hill Dickinson's London office in 2003. He returned to South Africa in 2008, where he established a commodities consultancy, advising on commodity trading transactions and contentious issues in relation to physical trades, shipping, finance and insurance.

BIMCO has opened a new regional office in Singapore in order to increase services to its members in the Southeast Asia region and boost collaborations with regional maritime associations. General manager is Maite Bolivar Klarup, who brings 16 years of commercial maritime experience to the role.

In a move to strengthen its senior management structure, **The Indian Register of Shipping (IRClass)** has made significant changes at its top level – realigning the position of chairman and managing director and creating two new senior positions. Executive chairman Arun Sharma will focus on broader policy, overall strategy and mentoring. Suresh Sinha becomes managing director, with Vijay Arora as joint managing director. Sinha, a marine engineer with more than 39 years of experience, will lead operations, marketing and day-to-day functioning of the organisation. Arora, also a marine engineer, with more than 33 years' experience including representing IRClass at forums such as IACS and IMO, will be responsible for all technical and allied functions.

Suresh Sinha

Vijay Arora

The **Sustainable Shipping Initiative (SSI)**, a pioneering coalition of companies from across the global shipping industry, has appointed Ian Petty as its first general manager. The new appointment reflects the SSI's strengthening in depth and wealth of industry experience, as well as its commitment to providing further resource to delivering its vision of creating a truly sustainable shipping industry by 2040.

Tatham Macinnes, the firm of specialist maritime solicitors, has announced two new appointments. James Hickland has joined the firm as a partner. He joins from Ince & Co, where he has spent more than 10 years developing a successful commercial litigation and arbitration practice, encompassing high value shipping contract disputes, international trade, aviation and insurance matters. Nick Phillips has joined the firm as a solicitor consultant. Previously with Hill Dickinson, Phillips has spent more than 30 years as a solicitor and partner in the maritime sector and has an impressive track record dealing with charterparty disputes and all aspects of ship construction.

James Hickland

Nick Phillips

Crowley Maritime Corporation has promoted veteran company executive Eric Evans to vice president of strategy, a newly-created position that will focus on facilitating long-term growth through external business partnerships, including mergers and acquisitions. Evans, who most recently served as vice president of finance and planning for several of the company's business units, will continue to be based in Crowley's Jacksonville HQ, and will report to Carl Fox, senior vice president of corporate services.

Eric Evans

Deal is a step towards opening Cuba market

Rimco, a privately-held Puerto Rico dealership formed in 1981 by the McConnie family, has been selected to be the Caterpillar dealer for Cuba. The company is already also the exclusive Cat dealer for the US Virgin Islands, British Virgin Islands, Barbados and the eastern Caribbean islands.

Caterpillar sees Cuba as an important emerging market and has run a long campaign to lift US sanctions, imposed in 1962 when Cuba nationalised US assets without compensation.

President Obama also called on the US Congress to lift the sanctions when he made a historic visit to Cuba earlier this year.

Caterpillar chairman and CEO Doug Oberhelman, along with company executives and representatives from Rimco, also travelled to Cuba earlier this year to meet government representatives in a bid to enhance Caterpillar's already established strong relationship.

Oberhelman said: "We believe in the power of engagement, and our goal is to be both a business and cultural partner in Cuba for many years to come. For nearly 20 years, Caterpillar has called for an end to the unilateral embargo.

"Our visit laid important groundwork for Caterpillar and Rimco to serve the Cuban market once remaining trade restrictions are lifted. We are grateful for the courteous and warm reception we have received."

During the visit at an event held at the Cuban home of the late writer Ernest Hemingway, Caterpillar announced that it will add to its previous US$500,000 donation to the Finca Vigía Foundation, with the donation of a Cat skid-steer loader. This will be used to support the construction of a conservation laboratory with archival storage facilities at the Hemingway House.

Oberhelman said: "We are pleased to be able to provide a Cat machine to help in the construction work; the house is part of the cultural heritage shared by the American and Cuban people."

ASD designed for harsh climate

▲ *A Pella Shipyard-built ASD 90600*

Russia's Pella Shipyard is carrying out a contract to build one of its popular 90600 model ASD tugs for the Grifon Company, which will operate it in the port of St Petersburg.

The 25.4m long, 8.8m wide tug has been designed for operational reliability in severe ice conditions. Its below water hull design at the stern protects Z-drives from ice damage, while the bow is designed for ice-breaking.

The vessel has fire-fighting capability and its double chine hull and slightly extended keel fore and aft have been designed to provide directional stability while not limiting manoeuvrability.

Propulsion will be provided by a pair of Cummins K50-M diesels with each engine delivering 1,193kW (1,600hp) at 1,800 rev/min in a continuous duty rating.

The engines drive Rolls-Royce Z-drives giving the tug a free running speed of 12 knots and a bollard pull between 23 and 35 tons depending on owner specifications.

Electrical power will be provided by two Cummins 6B-CP80DMS gen sets, each providing 80kW of electrical power for ship's use, including an electro-hydraulic anchor winch and deck crane.

Innovative diving systems aim to reduce costs

Unique Group's diving and life support team has announced orders for two of its Hydra ABS Nitrox Surface Dive-ROV systems to a client in Nigeria.

The systems each comprise a Dive-ROV control and chamber container, machinery container, air and nitrox 3m HP gas storage containers, two single basket LARS and a SRP boat.

Bob Elshove, South Africa-based sales director at the group's Hydra division, said: "Through engagement with our client we are producing innovative diving systems that will reduce our client's operational costs."

In brief

Svitzer has signed a new order for two 24m-long, 70 tonne bollard pull, Robert Allan Ltd designed Ramparts 2400 SX Bogaçay Class ASD tugs from Sanmar Shipyards in Turkey. Both vessels are in-build at the Altinova facility to be delivered in October. A pair of 80 tonne bollard pull, 28m Sanmar terminal ASDs (RAstar 2800E design) are also under construction for Svitzer at the same shipyard. These larger, more powerful, vessels are destined for the Ichthys LNG project, located about 220km off Western Australia. Ichthys represents the largest discovery of hydrocarbon liquids in Australia in 40 years.

Leading international energy logistics provider Peterson has been awarded two long-term contracts with Norway's Statoil to provide logistics support for the Dudgeon offshore wind farm in the southern North Sea. The company will work closely with the operator to deliver comprehensive logistics services including stevedoring, ship agency services, provisions delivery and transportation of personnel for walk to work security. It will also be responsible for the supply of fuelling services from its facility in Great Yarmouth, UK.

MISC Berhad, one of the world's leading energy-related maritime solutions and services provider, has made inroads into Thailand's offshore oil & gas market for the first time by signing a US$30m 10-year contract for the lease and operation of a floating storage and offloading vessel with Chevron Offshore (Thailand) Ltd.

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Order to provide propulsion for new multi-purpose tug

Rolls-Royce has won an order for US 255 FP Z-drives from San Francisco-based Vessel Chartering, a wholly owned division of Baydelta Navigation.

The thrusters will provide the propulsion for a new high performance omni-directional tug, designed by Jensen Maritime – Crowley Maritime's Seattle-based naval architecture and engineering firm – due for delivery in the second quarter of 2017.

The multi-purpose tug, which is being built by JT Marine of Vancouver, was jointly developed by Vessel Chartering and Jensen. The 33.5m long vessel will feature the ship assist and escort capabilities of smaller harbour tugs, while delivering the improved towing performance and increased range of larger ocean-going tugs. The escort capability was enhanced to provide support for assisting large 18,000 TEU containerships due to an increased future demand in US West Coast ports of call. The design offers the flexibility to support ship escorts, assists and towing.

Johan Sperling, vice president of Jensen Maritime, said: "The development of this tug demonstrates our commitment to innovative, environmentally friendly design, while continuing to deliver powerful, high-quality performance. This tug will meet our industry's demands for strong, yet nimble vessels with the quality design people expect from us."

Erik Larsen, Rolls-Royce, general manager – merchant, said: "Rolls-Royce and Baydelta have been working together since the '90s. The company has supplied Rolls-Royce Z-drives to Baydelta's entire fleet of tractor tugs as well as providing azimuth thrusters to more than 100 ship assist and escort tugs in North America.

"Rolls-Royce US 205 and US 255 azimuth thrusters are ideally suited to provide the manoeuvrability and bollard pull needed for operations in larger harbours, terminals and escort applications. One of the reasons for success is the product's ability to provide bollard pull of 90-plus short tons for tugs."

Rolls-Royce azimuth thrusters have ducted fixed pitch propellers and can be rotated 360 degrees around the vertical axis, providing omni-directional thrust and superior manoeuvrability, giving the ability to direct thrust and turn on the spot as well as improved crash stop. Flexibility in design provides freedom in location and shafting, and can reduce building costs.

Offshore hotel will support gas project

Offshore marine services provider PACC Offshore Services Holdings (POSH) has been awarded a contract by Technip Oceania, through its subsidiary POSH Semco, to support Shell's *Prelude* floating LNG (FLNG) facility using its semi-submersible accommodation vessel (SSAV) *POSH Arcadia*.

It will be deployed to provide accommodation support for the hook-up and commissioning phase of the FLNG project in Browse Basin, off the north-west coast of Western Australia.

This is the company's second contract for the project. In January 2016, a joint venture comprising POSH and Terasea was appointed to provide towage and positioning services for the facility.

POSH Arcadia is the company's second state-of-the-art SSAV. Among the world's largest, it is designed to offer first class safety and comfort for operations in deep water and harsh environments. It is certified Clean Comfort Class by classification society DNV.

Rapid delivery proves key to securing deals

Rapid delivery of off-the-shelf vessels has proved a significant contract-winning business model for the Netherlands-headquartered Damen Shipyards Group.

Recent examples include Rimorchiatori Augusta signing a contract for an ASD 2810 tug for operations in the Sicilian port of Augusta. Rimorchiatori Augusta is a new venture for the Rimorchiatori Riuniti group formed following the purchase by Rimorchiatori Riuniti of Augustea Imprese Marittime and Salvataggi, together with its fleet of 16 vessels. The company provides towage services in Augusta, Siracusa Santa Panagia, Catania and Pozzallo.

The ASD Tug 2810 will operate in and around the port of Augusta. As well as managing regular cargo and passenger traffic, Augusta is one of the Mediterranean's main oil hubs, serving a number of oil refineries.

With 60 tonnes of bollard pull, the ASD 2810 will bring a new level of capability. It will also be fitted with FiFi1 fire-fighting equipment, upgraded towing hooks and have the necessary modifications required to meet Italian flag standards.

The vessel is already in build at Damen Song Cam Shipyard in Vietnam and will be handed over to Rimorchiatori Augusta in Italy at the end of this year. The Rimorchiatori Riuniti Group and Damen know each other well, with recent orders from the Italian tug operator including a pair of ASD Tugs 2913 and before that an ASD Tug 2411.

Another example of the successful business model is the recent order by Fratelli Neri, the family-owned, Livorno-based harbour towage company, for three new off-the-shelf Damen vessels. They are an ASD Tug 2913, a Stan Tug 1606 and a Stan Launch 1305, the last for its subsidiary company Labromare, which is 50 per cent owned by Tripmare.

All three vessels will operate in and around the port of Livorno, one of the busiest in the Mediterranean. Delivery is scheduled to take place in November this year.

This order takes to six the number of Damen vessels ordered by Fratelli Neri in the past year. In January 2016 the company took delivery of an ASD Tug 3212, the first in the Mediterranean to be fitted with a render recovery winch. Several months earlier it also purchased two used Stan Tugs 2608, via Damen Trading.

As well as its positive experience with its existing Damen vessels, the ability to guarantee rapid delivery was a significant factor in Damen winning this latest order. The ASD 2913 is currently in build at Damen Shipyards Galati, Romania, and will now undergo modifications to ensure full compliance with Italian flag requirements. This will include FiFi1, oil recovery capability and an aft bridge. Fratelli Neri selected the ASD 2913 based on its powerful yet compact design with 80 tonnes of bollard pull giving it all the power it will need for operations in the busy port of Livorno.

The Stan Tug 1606 has been ordered for operations on the coastal and inland waters around Livorno. Currently being held in stock at Damen Shipyards Gorinchem, the Netherlands, the vessel will be brought up to Italian flag standard with modifications including fire-fighting apparatus and an aft towing winch.

The Stan Launch 1305 is also currently in stock at Gorinchem and will be used by Labromare to deliver a range of environmental services in Italy and will be fitted with a bow thruster and an aft towing hook.

▲ *Left to right from top, a Damen ASD 2913, an ASD 2810, a Stan Launch 1305, and a Stan Tug 1606*

Cable-laying vessel contract extended

OSV company, Topaz Energy and Marine, has announced the renewal of its long-standing contract with ABB for its specialised cable laying vessel *Topaz Installer*.

The vessel will provide ABB with cable-laying services in support of wind farms in the North Sea for a period of one year with options of at least a further 12 months. The contract was first signed in 2010.

René Kofod-Olsen, CEO of Topaz Energy and Marine, said: "We are pleased to be renewing our partnership with ABB, which is built on many years of close co-operation.

"We are looking forward to continuing our work with ABB and the continued provision of exceptional and cost-effective services."

Agreement to develop use of LNG

Wärtsilä and Finland-based Gasum have signed a joint co-operation agreement aimed at developing the use, distribution, and service solutions for natural gas in marine and onshore applications.

Wärtsilä provides the gas value chain technology know-how, while Gasum has the expertise in distributing and selling natural gas and biogas. The development work regarding LNG for marine applications will also utilise the expertise of Gasum subsidiary Skangas, the leading LNG player in the Nordic market. Natural gas fuel is increasingly being used for marine engines and in power plant generators, primarily for reasons of environmental compliance. Exhaust emissions from gas-fuelled engines are notably lower than from diesel and coal-fired prime movers.

The project will be divided into work streams, covering areas such as smart power generation, LNG and liquefied biogas, gas as a marine fuel, operations and maintenance, and biogas.


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First-of-type rescuer built for endurance

North Star Shipping Ltd of Aberdeen, UK, a subsidiary of the Craig Group, awarded a contract back in September 2013 for six emergency response and rescue vessels to the Spanish shipyard of Astilleros Balenciaga, located on the Bay of Biscay. The contract was won following a strict tender evaluation process involving yards in Singapore and Turkey as well as Spain. Balenciaga, a long term partner of the customer, was finally selected, and with the delivery of these vessels a total of 27 ships will have been constructed for this owner by the shipyard.

The contract was for two different designs – four IMT950 designs, known as the D-Class (four of this type had already been delivered to the same owner in 2012), and two IMT 958 designs, also from OSD-IMT Offshore Ship Designers, which are denominated as the F-Class. The first vessel of this type, named ***Grampian Fortress***, is described here.

The new class has dimensions of 58.2m LOA and 13.2m beam and represents an evolution on the earlier design, with a diesel-electric propulsion system, and the additional functions of cargo carrying capacity and back loading operations.

In line with most of North Star's fleet, this vessel will be engaged in standby and emergency response and rescue duties, primarily supporting oil rigs in the northern sector of the North Sea, where it will spend around 28 days of every month, only returning to port for crew changes, loading fuel, stores and spares. It is a Group B standby rescue vessel, designed and outfitted to rescue up to 300 people in the UK sector.

To withstand North Sea conditions, the ship has been designed with a high and covered bow area and wheelhouse shifted as far aft as practical. The hull lines are fine forward with a semi-bulbous bow lengthening the waterline length to improve hull performance.

Diesel-electric propulsion was selected as this offers several advantages. It provides the necessary propulsion redundancy in accordance with the rules for this vessel type, and also offers further flexibility with the number of generator sets firing up (or cutting out) depending on the power demanded by the ship, which in turn improves fuel economy.

To achieve enhanced comfort levels for the crew, a diesel-electric plant also offers the advantage of having smaller engines, more in number, which reduce the level of vibration transferred to the vessel's structure. In addition, the shipyard subcontracted a noise and vibration specialist to perform a study which recommended corrective measures in the vessel's structure.

The accommodation layout is for a complement of up to 20 crew, eight in single cabins, with six cabins being for double occupancy. All cabins have en-suite facilities and have connections to the vessel's TV and radio antenna system as well as internet. The dedicated survivor spaces and treatment area have been incorporated at main deck level, for easy access of survivors into the accommodation. On the outside deck, the hot water rinsing showers are next to the entrance, after which able survivors make their way to the reception area for registration. From here they would be directed to treatment room, waiting area (for treatment), recovery area outfitted with beds or to the sitting area below deck, depending on their physical state.

The vessel has four main gen sets of 599kW each, driven by high speed engines to generate the vessel's electrical power for propulsion and all consumers on the ship. This number of generators allows for a high level of redundancy and the vessel will remain fully operational even with a gen set out of action.

Each gen set is comprised of a Caterpillar C18 engine. A power management system allows for the system to operate automatically and provide an optimal generator combination by starting up or cutting out gen sets upon

load demand, and sharing the load equally between the generators.

The diesel-electric plant has been supplied by Elkon, and comprises main switchboard, alternators, electric motor and drives, power management system and integrated automation system. The main 690V switchboard is fitted with a bus tie breaker prepared for possible future installation of a DP2 system. Four water-cooled AVK alternators of 550kW are the vessel's main source of electrical power. There is a combined harbour and emergency generator of 200kW fitted on the upper deck.

The main propulsion system is comprised of two Steerprop azimuthing thrusters aft and two ZF tunnel thrusters forward. The stern thrusters are driven by horizontal motors rated at 800kW. All four motors driving the propellers and their frequency converters are fresh water cooled, and are supplied by ABB.

Below decks there are a number of tanks which are dedicated to cargo, freshwater and fuel oil, with their corresponding discharge pumps of 75m³/hr capacity. The vessel is also capable of carrying deck cargo on the 200m² deck, with a load bearing capacity of 5 tonnes/m². The deck is surrounded with a cargo railing and there are container lock fittings, pad eyes, lashing fittings, rollers, rings and stanchion sockets. A 5-ton pull tugger winch is provided aft of the superstructure for dragging loads around deck.

For handling of provisions, spares and equipment while in harbour and handling the rescue basket and scoop in rescue situations, the vessel is fitted with a Heila crane of electro-hydraulic folding telescopic type, capable of lifting 1.5 tons at 15m outreach.

Below decks, the vessel is subdivided by watertight bulkheads into the bow thruster compartment aft of the fore peak, then the survivor seating area and the engine control room compartment separated by means of a watertight remote-operated hydraulic door. All machinery spaces are flanked by wing tanks effectively forming a double hull throughout the length of the vessel.

For rescue operations, the vessel is provided with a Delta Phantom daughter craft and one SOLAS-approved Avon Searider 6.5m fast rescue craft, which are deployed and recovered by suitable hydraulically operated davits supplied by Cargotec. Other appliances for rescuing survivors from the water are the Dacon scoop and a rescue basket, both of which are operated from onboard the vessel and do not require any of the ship's crew to leave the safety of the vessel.

In compliance with the ERRV regulations, since the ship is not fitted with an external fire-fighting system, there is a large 300m³/hr electric pump for supplying the vessel's topside protection deluge system, with jet nozzles distributed around the superstructure and the whole perimeter of the vessel. There is additionally a dispersant system installed, with spray boom deployed from the side passageways aft. Dispersant is fed from stainless steel tanks using a dedicated proportioning pump.

Andy Smith

SOV named after wind industry innovator

On 30 June, godmother Sophie Schulte named the first wind farm service vessel of Windea's shareholder company Bernhard Schulte as *Windea La Cour*. Poul la Cour was a Danish meteorologist and a wind turbine industry innovator. The vessel is set to work at the Gemini wind farm off the Netherlands for Siemens Wind Power Service to ensure the production of green energy from 150 wind turbines.

The usage of the service operation vessels (SOVs) will improve the efficiency of service operations at offshore wind farms. The vessel functions as a reliable and environmentally sound platform for wind farm operations and maintenance support, technician accommodation and transport, and the provision of exceptional levels of safe reliable access to installations offshore.

Matthias Müller, managing director of Windea and Bernhard Schulte Offshore, said: "With the Ulstein SX175, the collaborative design team of Ulstein Design & Solutions, Windea, Bernhard Schulte Offshore and Siemens have created a vessel which perfectly fits the needs of the offshore wind industry. These SOVs are the first vessels with the new X-Stern hull shape. This enables the vessel to be positioned with the stern faced towards the weather, leading to improved weather resilience, greater operability and reduced power and fuel consumption while on DP mode adjacent to the wind turbine."

The DNV-classed ***Windea La Cour*** is the first of two SOVs to be completed at Ulstein Verft in Norway, which Bernhard Schulte Offshore will deliver to Siemens. Each ship measures 88m in length with a beam of 18m and a draft of 6.4m. It has a maximum speed of 13.9 knots (bow first), and accommodation for 60 people – all in single cabins of which 40 are dedicated to the wind turbine technicians. The vessel is equipped with a motion compensated gangway system supplied by Uptime International of Norway to transfer personnel to the turbines.

In addition to being the end user of the SOV for offshore wind service purposes, Siemens

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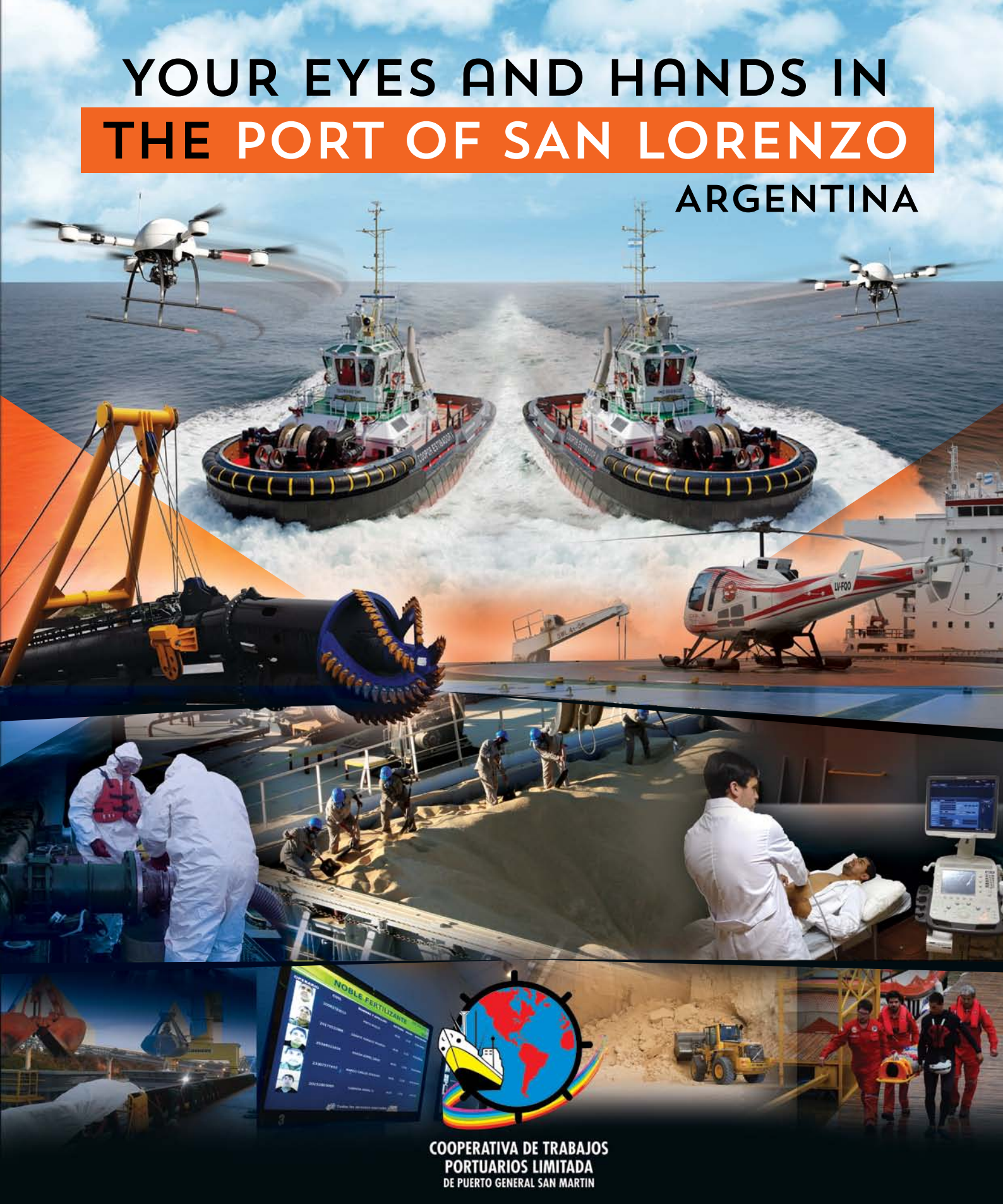

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Windea La Cour *was named after this image was taken, hence the different name shown here*

was also a supplier for a key system aboard the vessel. The Siemens BlueDrive™ propulsion system helps reduce CO_2 emissions and fuel consumption. The arrangement features four main generator engines supplied by Pon Power, each developing 1,700ekW at 1,200 rev/min.

Two electrical propulsion motors controlled by frequency converters drive two Rolls-Royce azimuthing thrusters for main propulsion with nozzles and controllable pitch propellers. In addition there is an air-cooled emergency generator set of 240ekW.

Other Rolls-Royce items include two CPP tunnel thrusters and one retractable azimuth thruster, all located forward. Marine Technologies supplied the DP2 system and the integrated bridge. Red Rock Marine supplied a 1 ton, 20m outreach offshore knuckleboom crane, while Maritime Products provided the helideck.

"We considered several yards worldwide, but Ulstein Verft was our final choice," said Müller. "We saw the benefit of having the designer and the yard in one place. Ulstein has the same approach as us – always going the extra mile to delight the final customer."

Tore Ulstein, deputy CEO and head of market & innovations in the Ulstein Group, said: "Together, we have developed a flexible and effective ship solution for the offshore wind service market."

During extensive sea trials, the bridge crew noted the vessel's smooth motions and the very low levels of noise and vibration. All these are considered important factors aboard a vessel in which one of the main tasks is to transport service technicians to the wind farm site, located some 85km north of the Dutch province of Groningen and a five-hour trip from shore.

The load capacity of the vessel is well exploited with a cargo deck area of 380m^2. Spare parts and equipment can be transported in containers, of which six can be placed on deck and six under deck. The vessel provides excellent workshop facilities and has tanks to accommodate 1,150m^3 of fuel oil (cargo and domestic), 1,200m^3 of fresh water, 2,400m^3 of ballast water, 44m^3 of urea and 40m^3 of oil (lube and hydraulic). **AS**

Sister fire-fighting PSVs bring fleet up to 10

The fire-fighting PSV *Ievoli Amber* has been delivered by Selah Shipyard, Tuzla, Turkey, to owners Marnavi, an international shipping company founded in Italy. The BV-classed vessel measures 83.8m x 16.8m and is a type 879 CD design from MMC Ship Design & Marine Consulting Ltd of Gdynia, Poland. Delivery of a sister ship, *Ievoli Cobalt*, the 10th vessel from this yard for the same customer, is imminent.

Equipped for fire-fighting (FiFi1), supply, ROV, diving and subsea activities, the vessel is powered by a diesel-electric system comprising four MTU type 16V40000M33S diesel driven generators, each developing 2,080kW at 1,800 rev/min. These power Rolls-Royce azimuthing thrusters with 2,800mm diameter fixed pitch propellers in Kort nozzles. Roll-Royce also supplied two 900kW tunnel thrusters fitted at the bow. In addition there is a 375kVA emergency/harbour generator.

On A-deck are located a large changing room, a two bed hospital with adjoining treatment room, gymnasium, quarantine room with bed, and a laundry. The mess with seating for 35 people is on B-deck alongside a generous galley and numerous dedicated food stores. There are also two offices, a meeting room, several heads and a smoking room on this level.

All the cabins have en suite facilities and are distributed throughout C and D-decks. There are 28 twin rooms and four single cabins, giving a total of 60 berths. The captain and chief engineer both enjoy the benefit of generous suites with separate bedrooms. These are at the forward end of D-deck close by another office and an additional laundry.

The bridge (E-deck) has controls fore and aft, and just behind the forward position is a bank of three desks with various electronic items. The central casing is flanked by the staircase, head compartment, and L-shaped desk with three more work positions. In both bridge wings is a coffee table and four chairs.

The vessel is DP 2 classed and has a C-joy joystick-controlled Kongsberg system with three Navigat Mark 1 gyrocompasses, three DGPSs, Cyscan laser and both acoustic and motion references. Other navigation items include a pair of JRC radars together with an ECDIS, two GPSs, Navtex, echosounder and AIS from the same manufacturer. The autopilot is supplied by Navitron. The communication equipment is built around

a Thrane & Thrane Sailor V-Sat together with Inmarsat-C, GMDSS and JRC MF/HF. There is CCTV coverage for all key areas.

A main engine driven external fire-fighting system has been supplied by Jason Engineering, consisting of two type OGF250X350 Combi centrifugal pumps each with a capacity of 1,650m³/hr. These feed two single/dual flow joystick-controlled monitors and a water spray system.

Considerable cargo carrying capacity is provided, including 1,533m³ of water ballast/drill water, 1,688m³ of potable water, 1,757m³ of fuel oil, 1,269m³ of liquid mud, 1,261m³ of brine, 206m³ of methanol and 956m³ of base oil. The dry bulk capability is almost 300m³ and some 636m³ of recovered oil can be held. The cargo deck area is 720m² and is capable of carrying 1,300 tonnes.

Ievoli Amber is equipped with a 3m diameter circular moon pool and a 50 tonne MacGregor knuckleboom subsea crane. Other deck machinery includes two 10 tonne capstans, a pair of 10 tonne tugger winches and a 2 tonne deck crane.

Selah Shipyard was established as a private sector shipyard in Tuzla in 1982 by Selah Industries Inc which is a group well known in the auto and machinery sectors since 1954. Marnavi Spa (Plc) is a shipping company operating on the world chemical product and foodstuff transportation market, and was founded in 1910 by Dominico Ievoli, the grandfather of the current president. It owns and manages some 40 vessels including an offshore fleet of 16 vessels, of which six are AHTSs. Builder and owner have, over the years, established a close working relationship resulting in the construction of 10 ships. **AS**

Anchor-handler class is firm's largest order

Maritime services company ALP Maritime has taken delivery of its latest anchor-handling salvage tug, *ALP Striker*. The vessel has recently completed sea trials after construction at Niigata Shipbuilding & Repair in Japan.

The vessel, which is part of the ALP Future class, was developed in close collaboration between ship designer Ulstein Design & Solutions and ALP Maritime Services, the latter a subsidiary of Teekay Offshore Partners. The SX157 design delivers a service speed of 13 knots and a top speed of 19 knots. Utilising a fuel capacity of more than 3,500 tonnes, the tugs can tow at full power for 45 days, sufficient for non-stop trans-Atlantic/Indian, Pacific Ocean towing operations without fuel calls.

A vessel of this type typically tows oil rigs or FPSOs from the building yards to the installation site at the oil field. In addition, the vessels are outfitted with a Kongsberg DP2 system and anchor-handling capacity in order to assist during the installation/hook-up phase for the towed objects.

ALP Striker is 88.9m long, 21m wide with a design draft of 7m. Power is provided by 4 x MaK engines delivering a total of 18,000kW at 600 rev/min. Propulsion comes from two Berg 5,000mm diameter CPP propellers in nozzles, supplemented by two 1,500kW bow tunnel thrusters at 228 rev/min and two 1,050kW stern tunnel thrusters at 316

rev/min. Three Caterpillar auxiliary gen sets provide approximately 940ekW each, with an emergency set giving 200ekW at 1,800 rev/min.

ALP Striker has storage for 2,900m^3 of ballast water, 300m^3 freshwater, 240m^3 MGO and 3,200m^3 HFO. On deck, a Rolls-Royce SL400-3T three-drum towing winch delivers a pull of 402 tonnes at 13m/min. The vessel's stern roller has a SWL of 650 tonnes. There are two cable lifters for 76m rig chains, two gog winches with 30 tonnes pull at 12m/min, and one tugger winch with 15 tonnes pull at 30m/min, also supplied by Rolls-Royce. A Palfinger travelling service-crane has a maximum SWL of 5 tonnes at 10m and an outreach of 15m with a SWL of 3 tonnes.

The vessels are classed with DNV's Clean Design and Ice Class 1B notations, which allow operation also in restricted zones. The ships have a comfortable and spacious accommodation for 35 persons reflecting long periods at sea, including 27 single cabins for officers and crew.

At the time of the contract signing, the ocean-going tug market was a new design area to Ulstein, and the largest single contract so far for Ulstein Design & Solutions. When developing the design Ulstein had to ensure that each vessel has the sufficient bollard pull and operational reliability to handle even the heaviest tows by only two vessels. The environment and fuel efficiency have also been important criteria.

Ulstein was also responsible for the deliveries of main components, such as engines, thrusters and propellers, winch, power distribution and thruster drives, control system and communication system.

The three sister vessels are in different phases of construction. The second vessel, ***ALP Defender***, will be the next one to be completed, while the third, ***ALP Sweeper***, was launched on 7 May 2016. The final vessel will be named ***ALP Keeper***.

Chris Wraight

Owner input drives design of compact ASD

Med Marine has recently accepted into its fleet the sixth example of a RAmparts 2500W tug built at the Eregli Shipyard, Turkey. The RAmparts designs have been developed by Robert Allan Ltd in Vancouver, Canada, in response to a worldwide demand for a highly efficient class of ship-assist/terminal tug geared more towards economical series production.

In particular, the design of this latest vessel, named ***Med Izmit***, addresses the increasing demand for a very compact, economical tug with high power. The design has been widely acclaimed for its manoeuvring, sea-keeping, and stability performance.

Med Izmit and its sister ***Yılport M***, also currently operating at Izmit, are diesel-powered ASD tugs, designed for maximum efficiency in the performance of ship-handling duties for tankers, bulk carriers, and container ships in particular. The hull form and layout have evolved over several years through the extensive knowledge of the designers working with Med Marine's experienced technical team and crews in developing truly high-performance tugs for this challenging service.

The latest vessel, which measures 25.3m overall with a beam of 12m, is powered by a pair of Wärtsilä 9L20 main engines, each developing 1,800kW at 1,000 rev/min. These drive Rolls-Royce US 205 type azimuthing Z-drives with CP propellers of 2,400mm diameter. The arrangement gives a bollard pull of 60 tonnes and a free-running speed of approximately 12 knots. Various propulsion options are, however, available to give up to 70 tonnes bollard pull.

Two sets of Perkins 84ekW generator sets provide the auxiliary power. Engine-driven FFS fire-fighting pumps feed two bridge deck mounted monitors to meet the requirements of RINA class FiFi1 notation.

DMT has supplied an electrical forward winch with chain lifter. Its single drum is capable of holding 200m of 48mm diameter rope, while the similar aft winch from the same manufacturer has a single drum carrying 600m of the same rope. The vessels are heavily fendered with D type and W type good quality fenders. The cylindrical bow fender is installed for easy and safe operation.

The vessel's accommodation area is designed to meet the requests of Med Marine crews. Heinen & Hopman's heating, ventilation and air-conditioning system is selected and all the floors are covered with IMO-approved imitation teak covering.

The living quarters are decorated and outfitted with high-quality furniture and are laid out for a total of six people in two twin and two single cabins. All have wash basins and on each deck there is a generous sanitary space, with separate WC and shower compartments.

AS

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ATB is 11th vessel for long-term customer

Vigor Shipyard in Seattle, Washington, recently delivered *Dale R Lindsey*, a 29m x 11.6m twin screw ATB tug to Harley Marine Services. This is the 11th vessel built by Vigor for its long-time customer, Harley Marine. Two 83,000bbl, double-hull ATB tank barges were also recently completed at one of the shipbuilder's other yards in Portland, Oregon.

Designed by the Elliot Bay Design Group (also of Seattle) for primary operation in Alaska, the ATB tug utilises an Articouple type FRM-43M coupler system to pair with the 20,000bbl oil barge, ***Petro Mariner***. It features a raised aluminium pilothouse for optimal visibility, built by Kvichak.

The tug component of the articulated tug barge combination is powered by a pair of Caterpillar 3512C Tier 3 main engines, each developing 1,500hp at 1,600 rev/min. These turn four-bladed, 2,438mm diameter stainless steel props via Reintjes type WAF 675 gearboxes with a 7.091:1 reduction ratio. Auxiliary power is supplied by two John Deere generator sets, each of 99kW.

All the accommodation is above main deck, with the forecastle deck containing a single master's cabin and three twin bunk crew cabins. Main deck houses a laundry and dry store forward of the coupler pin room, a combined galley and mess. There is an additional head on main deck with two further twin bunk crew cabins. The extended stairway to the high level pilothouse also features a head compartment for the convenience of wheelhouse personnel.

The pilothouse has a main control console against the forward bulkhead with a winch control station cantilevered out from the aft starboard quarter with a direct sight line to the winch itself. The steering control position is central and other items include a computer desk and chart table to port and a central settee. A watertight door leads to an all round grating walkway.

Just aft of the superstructure is a Markey type TYS-32 towing winch and there is a Smith Berger type 12T324 three tow pin/hook/roller assembly. The vessel is protected by Schuyler fendering.

"Repeat business is one of the best compliments a builder can receive," said Keith Whittemore, Vigor executive VP of business development. "Even better is when the confidence of our customers extends into new areas. Vigor has worked hard to expand its capabilities and has steadily grown from a barge builder to a construction portfolio that includes ferries in Seattle, Alaska and San Francisco, fishing vessels, fireboats, tugs, high performance craft and now an ATB tug. We're excited about the future of our new build programme and proud to have earned the opportunity to help Harley expand its Alaskan fleet."

Harley Marine is a leading provider of marine transportation service and an important resource in Alaska.

Harley Franco, founder, president and CEO of Harley Marine, said: "We've had a longstanding relationship with Vigor, built on their ability to consistently deliver a quality product to serve the needs of our customers. Their knowledge of the unique construction needs of vessels operating in the demanding Alaskan environment will be an added benefit in helping us maintain our unswerving commitment to both safety and the environment in the communities we serve." **AS**

Most powerful ship-handler goes to work

In May of this year, the Argentinian-designed and built 28.8m x 10.2m ASD tug named *Brutus* went to work in the harbour at Buenos Aires. This marked a milestone in Argentinian maritime affairs, as it is – at 5,400hp – the most powerful ship-handling tug in the country.

The LR-classed tug was designed by Ing Emilio Noël and built by Unidelta Shipyards, which has a well-established reputation in a wide range of steel and aluminium workboats. The yard has a plant located in Buenos Aires with a large area of open work space and a construction shed of 4,000m^3. The shipyard also has an engineering office located within the city itself.

Brutus has joined a fleet of pilot boats and tugs owned by the SIP Pilotale & Practicaje, a firm providing pilotage in the Port of Buenos Aires and on the Rio de la Plata. The

company also has a research and training maritime centre providing a wide range of training including the use of a simulator.

The vessel is driven by two Rolls-Royce azimuthing Z-drives of type US 205/P20 with fixed pitch propellers turning inside Kort nozzles. Each of these stern-mounted thrusters is powered by a 16-cylinder Cummins QSK60M main diesel engine generating 2,700hp (2,013kW) at 1,900 rev/min.

With a design speed of 12 knots, the 5,400hp tug delivers a measured 75 tonnes of bollard pull. On the foredeck, a combination Rolls-Royce hydraulic towing and anchor winch has been installed. On the aft deck is a Mampaey quick release disc-type towing hook of type DCX50/65 with a 65-ton load release. Other aft-deck equipment includes a three-ton capstan.

The tug is also fitted with a diesel driven pump-set powered by a Cummins 6BT5.9-D(M) capable of delivering 200m³/hr to two fire monitors, each capable of discharging 100m³/hr. Two 80kW generator sets powered by Cummins 6B-CP engines are installed in the engine room.

Accommodation is provided for up to 10 crew members. Tankage includes 107.4m³ of fuel, 15.8m³ of water and 6.5m³ of lube oil.

AS

Eighth and ninth ASD tugs for local owner

The Scottish-based naval architecture practice Macduff Ship Design has announced the delivery of *T Damla 6* and *T Damla 7*, two 19m LOA shallow draft ASD tugs. The vessels were completed after an 18-month collaboration between MacDuff and RMK Marine of Tuzla, Turkey.

This association has already seen the successful completion and delivery of seven new vessels to two different designs. All nine of the contracted vessels have been built for the same local owner.

The tug has been built to ABS Class with the notation +A1, +AMS, +ABCU, Towing Vessel, QR, BP(21), UWILD. On trials it has proven to possess exceptional performance for a vessel of this size, having achieved the contract requirements with a bollard pull in excess of 24 tonnes.

Designed as a multi-role, omni-directional harbour tug with the unusually shallow draft restriction of just 3m, the vessel is propelled by two Berg (Cat Propulsion) MTA 316 ASD units which are driven by Caterpillar C32 main engines, each developing 746kW at 1,800 rev/min.

The vessel has a half height raised wheelhouse which gives excellent all round visibility when conducting towing operations. Below deck there is accommodation for four people. This is arranged in two twin cabins forward of a linked mess and a galley spanning the full vessel width. There is also a common head and shower space.

On deck the tug is fitted with 'substantial H' bitts both forward and aft of the wheelhouse, and to each of these is swung a 30 tonne SWL disc type towing hook. The aft deck is fitted with a Toimil type T-10500 marine crane for cargo operations as well as a capstan, with an electric windlass forward.

In addition, there is a fire monitor fed by a 600m³/hr fire pump fitted to the front end of the port main engine.

AS

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First of AHTS series heads for Thailand

Netherlands-based Vroon Offshore Services (VOS) has announced that *VOS Challenge* has been handed over to the company. The vessel left Fujian Southeast Shipyard (FSES) in Fuzhou, China on 23 June at the start of its journey to Thailand, where it has been delivered to charterers PTT Exploration and Production Public Company (PTTEP).

The ship is a 65m x 16.4m anchor-handling tug supply (AHTS) vessel – the first in a new series of six under construction at the shipyard for this customer, and was designed by Khiam Chuan Marine in collaboration with Vroon.

The propulsion system features two MaK type 8M25C main engines, each developing 2,400kW. These turn controllable pitch propellers inside Kort nozzles to give a predicted bollard pull of 65 tonnes. Three Caterpillar diesel driven generator sets of 450kW and two main engine driven shaft generators supply the electrical requirements. These include a pair of 550kW Kawasaki Wuhan super-silent electric driven bow thrusters and a similarly powered and driven stern thruster. There is also an emergency diesel driven generator of 130kW in a dedicated room on the forecastle deck.

The ABS-classed ***VOS Challenge*** boasts DP2 capabilities with a Kongsberg supplied system and has improved noise and vibration enhancements. FiFi1 notation is achieved with the installation of a main engine driven system supplied by FFS, terminating in two 1,200m³/hr monitors mounted on a monkey island above the bridge roof.

There is 425m² of clear deck area with a MacGregor double-drum anchor-handling/towing winch holding 1,500m of 64mm wire on each drum. The brake holding load is 250 tonnes. Other deck machinery items include two 10 tonne tugger winches, two 5 tonne capstans, also from MacGregor, plus a 3 tonne at 10m deck crane, Karm forks and a stern roller. The vessel is SPS2008-compliant and has an optimised hull design.

Tanks below main deck give a cargo carrying capability of 413m³ of fresh water, 1,299m³ of drill water, 557m³ of fuel, 39m³ of liquid mud, 12m³ of foam and there are four dry bulk tanks each accommodating 186m³.

The deck can support 700 tonnes of cargo. The vessel has living quarters for 39 people, arranged in 11 single cabins and 14 twin cabins.

The bulk of the communication equipment has been supplied by Furuno, although McMurdo provided the portable VHFs, SART and EPIRB. Two Furuno radars are installed along with the usual array of electronic navigation electronics and an ECDIS. **AS**

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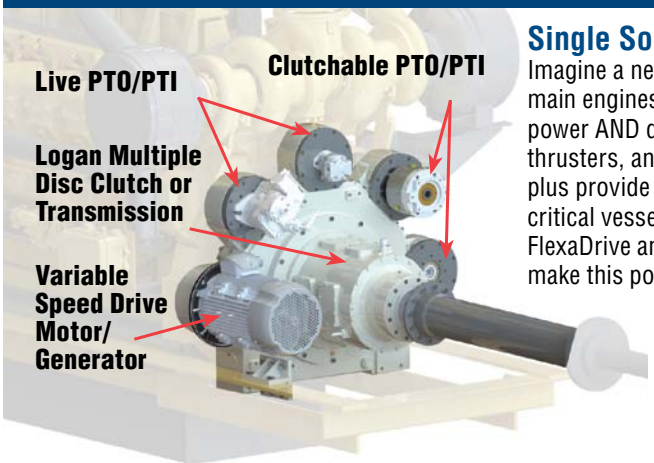

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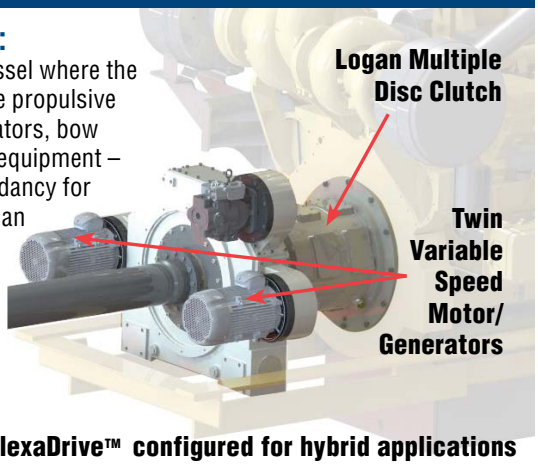

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Deliveries in brief

Two Damen ASD Tugs 2810 have set sail from **Damen Shipyards Galati** in Romania to Puerto General de San Martín for operations in the Argentinian region around Rosario on the Paraná River, having met the expectations of new owner Cooperativa de Trabajos Portuarios Limitada de San Martín.

The company's current large rescue centre will be able to expand its Maritime Division with the tugboats ***Estibador I*** and ***Estibador II***. Measuring 28.7m long with a beam of 10.4m, they are equipped with state-of the-art FiFi1 capability. Powered by Caterpillar main engines driving Rolls-Royce US 205 azimuth thrusters, these compact tugs have a maximum bollard pull of 60.2 tonnes and are easy to manoeuvre at speeds of 13 knots.

Damen Services will continue to provide Cooperativa de Trabajos Portuarios with proper operation and maintenance of the vessels as well as crew familiarisation and training.

Bugsier, the German towage and maritime service provider, has boosted its already extensive fleet with the addition of a Damen ASD 2411 tug. The tug represents the first purchase of a Damen vessel for Bugsier, which is celebrating its 150-year anniversary this year.

"Damen is experienced in building tugs, and we are very experienced in operating them," said Bugsier business development manager Sven Schröder. "Therefore, we know what we want and we have ideas on how to improve things."

Bugsier 22 was built at **Damen Shipyards Sharjah (DSSh)** in the United Arab Emirates. DSSh is one of the newest additions to Damen's worldwide network of shipyards and boasts the highest standards of modern ship construction and repair. The yard recently won the Best New Build Yard award at the International Maritime Awards, held at the Shiptek 2016 conference.

The power-to-length ratio of the Damen ASD 2411 is worth a special mention: this 24m-long vessel provides a bollard pull of 70 tonnes from a propulsion plant comprising two Caterpillar 3516C TA main engines, developing a total of 4,200kW at 1,600 rev/min, driving Rolls-Royce type US 255 Z-drives.

Wilson Sons Ultratug Offshore, a joint venture between Wilson Sons and the Chilean maritime services provider Ultramar, has taken delivery of a Damen PSV 5000. The vessel was built at the **Wilson Sons** shipyard in Guarujá, Brazil. The delivery is the first of a two-vessel contract, with the second vessel due for completion later in 2016.

"For this vessel, and the one still under construction, we provided the full engineering package in addition to certain key materials," said Damen sales manager Americas, Rutger Dolk. "A key point is that the engineering package takes into account the yard using local equipment and materials. We will also play a supporting role during the commissioning of both vessels."

At 85.3m long with a 19m beam, this Damen PSV 5000 is named ***Larus***. To give optimal use of the 920m^2 deck area, the vessel is equipped with a travelling gantry crane along the work deck.

This contract reiterates the success of the working relationship between Damen and Wilson Sons. The Brazilian shipbuilder constructs vessels with local content, using Damen design and engineering support.

"We have been working with Wilson Sons for more than 20 years now," said Dolk. "And, with many vessels constructed for diverse clients, it has been a very productive relationship."

In July, Marquette Transportation took delivery of a new 2,000hp Z-drive towboat from **Master Marine** of Bayou La Batre, Alabama, USA. Named ***St Matthew***, the 23.8m x 10.4m vessel was designed by Entech Designs for the owner's river division, based in Paducah, Kentucky.

Master Marine is continuing to build Z-drive towboats, with two more underway for Marquette with an increased crew capacity of nine in five cabins. ***St Matthew*** is powered by a pair of Caterpillar C32 Tier 3 1,000hp engines connected to ZF Marine Z-drives with 1,650mm 4-bladed propellers in nozzles.

The package gives the boat a running speed of 10 knots. For ship's service power the towboat has a pair of 80kW John Deere generators. Cooling for all the engines and Z-drives was provided by Duraweld coolers.

Rubber fender systems were provided by Schuyler and, to secure barge tows, a pair of Patterson 40-ton deck winches has been fitted.

A month earlier, **Horizon Shipbuilding**, also of Bayou La Batre, USA, delivered ***Marty Cullinan***, a 36.6m x 10.7m towboat with a retractable pilot house, to its home port of New Orleans. The vessel will be owned and operated by Florida Marine Transportation (FMT).

Jeff Brumfield, senior manager of Boat Construction and Engineering for FMT, said: "We are thoroughly pleased with the boat, and when I talk to the ***Marty Cullinan*** crew they are quick to note that she is smooth and very quiet. The sound dampening package has exceeded our expectations."

Travis Short, president of Horizon Shipbuilding, said: "Horizon has been building FMT boats for almost a decade and in that time we have been able to assemble a team of master craftsmen that produce a superior product."

The new towboat has an ABS Load Line Certificate to operate in the waters between Chicago and Burns Harbor for fair weather voyages. It is of all-steel construction, and powered by two Caterpillar 3512 engines developing 2,011hp at 1,600 rev/min.

Power is transmitted via Twin Disc gearboxes. With the pilothouse fully retracted, the maximum air draft is 5.4m. The boat is outfitted with two 175kW John Deere generator sets. Accommodation is provided for eight people, and sound dampening systems have been implemented throughout the main deck house.

Two more 35.6m FMT towboats, one standard and the other with a retractable pilothouse, are in production at Horizon. They will bring the total number of FMT deliveries by the yard to 20.

BAE Systems of Jacksonville, Florida, USA, has delivered the tug ***Sea Power*** to Seabulk Tankers. The vessel will be used to enhance Seabulk Tankers' Jones Act coastal operation, powering barges that safely transport chemical and petroleum products between US ports.

The new twin-screw tug is a 43m long, 12,000-bhp vessel that will work in tandem with a high-specification, 30,000dwt chemical tank barge as an articulated tug and barge unit. BAE Systems and Guido Perla & Associates of Seattle, Washington, designed the vessel.

BAE Systems is a leading provider of

ship repair, maintenance, modernisation, conversion, and overhaul for the US Navy, other government agencies, and select commercial customers. The company operates seven full-service shipyards in Alabama, California, Florida, Hawaii and Virginia, and offers a highly skilled workforce, eight dry docks, and significant pier space and ship support services.

Seabulk Tankers, headquartered in Fort Lauderdale, Florida, operates and leases US-flagged petroleum and chemical carriers. Its fleet transports crude oil, petroleum products and speciality chemicals in both the domestic and foreign trades.

Sanmar has a broad portfolio of designs covering all aspects of harbour and towing work and sizes of craft. Rapidly gaining an international reputation is the compact but powerful for its size Yenicay series of ASDs. Recent deliveries to New Zealand and Abu Dhabi illustrate the advantages of Sanmar's flexible working practices in a global market.

Based on the same Robert Allan Ltd Rascal 1800 design, ***Arihi*** (for Port Otago New Zealand, see *IT&O* July/August, page 47) and ***Safeen*** (for Abu Dhabi Ports), both measure 18.7m long x 9.2m and have a bollard pull of 32 tonnes. This is derived from a pair of Caterpillar C32 main engines, each developing 970kW at 1,800 rev/min, driving Veth type VZ900 Z-drives.

However, there are numerous differences between the boats to suit local needs and owners' requirements. ***Safeen*** has been constructed with the intense Middle East climate in mind. The HVAC system has been upgraded with a split system serving all accommodation spaces. In addition, the insulation thicknesses have been increased. Fan capacities are also improved as part of an overall hot climate package. Furthermore, an external fire-fighting system by FFS is incorporated.

Eastern Shipbuilding Group announced the delivery of the escort tug ***Oceanus*** on 29 July 2016. The vessel is the third in a series of four identical Robert Allan Ltd designed Z-Tech 2400 Class terminal and escort tugs currently under construction for Suderman & Young Towing Company at Eastern's Nelson Street facility. ***Triton*** and ***Neptune***, the first and second vessels of the series, have already been delivered.

Oceanus is 24.4m long, with a beam of 11.7m and a 4.8m draft. Two Caterpillar 3516C main engines deliver 5,150hp at 1,600 rev/min, driving a pair of Schottel SRP 1215FP Z-Drives in nozzles. Two John Deere 4045AFM85 Tier 3 generators provide 99kW at 1,800 rev/min.

A Markey Machinery DEPCF-48S electric hawser winch with a 914mm-wide drum has a mid-drum brake holding capacity of 136 tonnes. The vessel is classified by ABS with A1, Towing Vessel, AMS and Escort Service ABS Loadline (SoC) notation. **AS**

Nakilat Damen Shipyards Qatar has delivered five vessels as part of an 11-vessel order for New Port Project (NPP). Built entirely at the Erhama Bin Jaber Al Jalahma Shipyard in Ras Laffan Industrial City, the vessels were launched and delivered to NPP after successful completion of their sea trials.

Two Damen Stan Pilot 1505 pilot boats ***Um Alhoul 1*** and ***Um Alhoul 2***, measuring 15.4m x 5m with a speed of 25 knots, will be used to carry out pilot duties and personnel transfer. Three Damen Stan Tug 1606 mooring boats, ***Mwani 1***, ***Mwani 2*** and ***Mwani 3***, 16.7m long, with a beam of 5.9m and a bollard pull capacity of 13.7 tonnes, will be used to assist ships entering and departing the port. **CW**

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Bulker sinks while under tow

International salvage company, Five Oceans Salvage, which is headquartered in Greece, reports that the refloated bulk carrier *MV Benita*, which was under tow en route from Mauritius to India, sank around 93.5nm from Mauritius.

No crew were aboard the 44,183 dwt bulker at the time. ***Benita*** turned over by its stern and subsequently sank in a depth of 4,400m.

The tug ***Ionian Sea FOS*** had to activate its tow line quick release system in anticipation of the incident, the salvage company told the media, adding that all the crew from the tug 'are safe and accounted for'.

It also reported that no debris or pollution was seen around the vessel, but ***Ionian Sea FOS*** remained on site to monitor further for signs of any pollution.

Built in 1998, ***Benita*** ran aground on 17 June 2016 off Mahebourg, Mauritius, as a result of a fight which broke out between the vessel's crew. It was carrying 145 tons of oil at the time.

The bulker, owned by Greece-based Unit Maritime, was refloated following extensive repair works and was being towed to Alang, India, when it sank.

The tug ***Coral Sea FOS*** was also involved in the salvage operation, but was released after ***Benita*** was refloated.

Prior to the refloating, the vessel's bunker fuel, lubricant oil and other pollutants on board were removed. Cargo tanks and void spaces were sealed by the salvage crew before being pressurised.

◄ *Bulker* **MV Benita** *being towed by* **Ionian Sea FOS**
Photo: Five Oceans Salvage

Data is recovered from sunk vessel

▲ *Ocean tug* **USNS Apache**

The voyage data recorder from *El Faro*, the US-flagged cargo ship that sank during Hurricane Joaquin in October 2015, has been successfully recovered from the ocean floor, the US National Transportation Safety Board (NTSB) reports.

The recovery of the capsule caps a 10-month effort to retrieve the recorder, which investigators hope will reveal information about the final hours of ***El Faro***'s voyage and the circumstances leading up to the sinking. The recovery was conducted from the Military Sealift Command's fleet ocean tug ***USNS Apache***. Technicians used CURV-21, a deep ocean ROV, down about 4,600m to the sea floor, where the wreckage of ***El Faro*** rests.

Salvage firms sign a formal co-operation agreement

Global maritime services firm, Ardent and Ardentia Marine Group, a Spanish salvage, engineering and commercial diving company, have formally partnered for future operations by signing a co-operation agreement.

Ardentia Marine Group maintains a strong presence in Spain and Portugal.

Oliver Timofei, Ardent's director of emergency response, said: "Ardentia's strong capabilities mean we are able to provide prompt actions to any emergency response and wreck removal operations in the area with dedicated personnel and equipment."

Jose Prat, technical director and naval architect at Ardentia Marine, said: "We have not failed on a single job since our company's formation in 2009."

Ardentia has been the emergency response and underwater services provider for the Spanish Coast Guard since 2009, and has intervened in nearly 100 operations with marine casualty control, fuel and bunker removal, refloating and wreck removal.

Timofei said: "With this co-operation, Ardent is able to provide a two-tier response network of providing a joint approach between the two companies. We can also provide tailor-made services for governments and shipowners."

Prior to signing the co-operation agreement, the companies worked together in 2015 on the fishing trawler ***Oleg Naydenov***.


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How the blame game gets resolved

► *Simon Tatham*

Regular columnist Simon Tatham unravels the Gordian Knot of claims and counter claims which often result from the collision of a tugboat, its tow and a third vessel

Collisions between tug and tow and other ships do occur. There are numerous scenarios of course, and it can get complicated, but let's keep it reasonably simple. Let's assume we are dealing with the tow of a vessel or craft that is unmanned or otherwise unable to manoeuvre of its own accord and that a collision occurs with a third vessel. Let's also assume that the tow is in collision without damage to the tug. Claims and cross claims will follow for repair costs and detention. How are these resolved and what bearing does the contract under which the towage is being performed affect the outcome?

As between the towing flotilla and the third vessel, the normal rules of liability apply so that pursuant to international convention and applying the Colregs, blame is to be apportioned according to fault: 50:50, 70:30, and so on. The monetary claims are then offset one against the other in accordance with this division, and the balance is payable. If one side's claim is much bigger than the other, it may well follow that the party less to blame will end up as the net paying party.

The third vessel will probably bring its claim against a negligent tug even though the collision is with the tow. That is because a collision action is for a claim in the tort of negligence and a dumb barge or other unmanned vessel under tow is unlikely to be negligent. If, however, the operators of the tow were responsible for and failed to fit an operative stern light and that was causative, they might hedge their bets and pursue both.

The damaged tow has a right of action and its operators, who may well be the hirers, may also have incurred delay and detention costs which may be claimed, including the costs of maintaining the tug on a delay rate, as that would be a foreseeable loss.

If the incident occurs in international waters, there is no natural jurisdiction for an action. The aggrieved party may decide to arrest the offending vessel in a convenient location to establish jurisdiction.

With many ocean-going tugs and other vessels operating under flags of convenience, it makes little sense to bring the action where the owner is registered or in the vessel's home port. Often the threat of an arrest is enough to secure not only security, but also a collision jurisdiction bringing the claims and counterclaims agreement into a mutually acceptable legal regime, and it is for that reason that parties often end up referring their claims to the High Court in London which has a specialist judge to deal with such cases, although most cases settle before trial.

One recent case that did not settle involved a collision at night with a seismic spread that extended over four miles in length and one mile in width, lit only by stern buoys, giving rise to novel questions, such as the imposition of an exclusions zone around the unit that the Colregs do not address directly (*The West Neptune and The St Louis Express [2010] 1 Lloyd's Rep 158*).

Such rights of action are unaffected by the provisions of the towage contract. How then do these claims unravel under the contract for towage? For this purpose let's assume the tug has been held one third to blame for the collision and the third ship two thirds.

Under TOWCON or TOWHIRE, physical loss to the tow and detention loss is for the account of the hirer (ie the tow) irrespective of the negligence of the tug. Moreover, the hirer has to indemnify the tug in relation to the claims of the third ship. The tow thus recovers two thirds of its loss from the third ship. Once the tug has settled and paid one third of the third vessel's claim, it can recover this expense back from the hirer. But if the tug was itself also damaged, it would have to bear its own loss.

If the UK Standard Conditions of Towage apply, then the tug is in a better position and can recover all of its collision liabilities from the hirer. However the tug would have a duty to reasonably mitigate its loss and claim two thirds of its damages from the third vessel giving credit for the recovery to the hirer.

If the collision occurred during a salvage operation, perhaps while towing a stricken ship that veered heavily, causing damage to the tow as well as to a third vessel, the salvor has no contractual protection and could face not only a collision claim from the third vessel, but also potentially a claim for salvorial negligence such as that under 18 of the Salvage Convention 1989, with the potential to deprive him of all or part of his award. The point would also be taken under Art.13(c) that his 'measure of success' was reduced by the misfortune of a collision. Moreover, the salved fund out of which an award is payable would be reduced, reflecting the damage sustained to the tow. The salvor would no doubt contend in his defence that he used his best endeavours and the difficulty of towing a stricken vessel into collision is a 'risk of liability run by the salvor', which is an award-enhancing factor. The arbitrator would then have to grapple with all that to achieve a fair and balanced outcome.

● *Simon Tatham is a partner at Tatham Macinnes LLP and founder member of the TugAdvise.com service. He has more than 30 years' experience of shipping law.*

A tug for the future

Japan's first LNG-fuelled ship "Sakigake"

Keihin Dock Co., Ltd.

WMS Wing Maritime Service Corporation

Contact us: business@keihindock.co.jp
kikaku@wingmsc.co.jp

Robust industry rising to new challenges

The ISU has published its statistics for 2015 and they show a robust industry continuing to provide essential services in the face of a challenging economic climate.

Safer ships and better operating practice have generally reduced the amount of emergency response work for salvors, but individual cases may be more complex and wreck removal activity continues to be an important source of income.

Gross revenues for ISU members in 2015 from all activities fell slightly to US$717m compared to US$775m in 2014. The statistics are for income received in the given year, but may, in some cases, relate to operations from a preceding year. The total number of services recorded in 2015 was 212. It is the second highest since 1999 – there were 249 services in 2014.

Wreck removal income has grown during the past decade and accounts for more than half of gross revenue with US$397m in 2015 (US$394m in 2014). This trend may indicate the increasingly stringent requirements of the coastal state authorities and the increasing complexity of some wreck removal jobs. The 2015 statistics record 64 wreck removal jobs compared with 91 in 2014.

Revenue from LOF cases at US$83m was the lowest in more than a decade. The lowest annual number of LOF cases on record (37) was recorded in 2014 and this may be reflected in the 2015 ISU statistics.

At the same time, revenue from operations conducted under contracts other than LOF was the second highest, at US$98m, and shows a gently rising trend.

Revenue from LOF cases has fallen to below 50 per cent of the total of all 'dry' salvage revenue for the first time – 46 per cent in 2015 (55 per cent in 2014). Similarly, the number of LOF cases as a percentage of all 'dry' salvage cases is the lowest at 16 per cent in 2015 (23 per cent in 2014), reflecting the increasing trend to use other commercial contracts and terms in place of LOF.

Revenue derived from the Special Compensation P&I Club clause (SCOPIC) in LOF cases increased significantly to US$139m in 2015. Total salved values (ship and cargo) in LOF cases has fallen to US$638m in 2015 from US$1.2bn in 2014. However, the average values salved in LOF cases has remained reasonably consistent at US$19m. The figure has stayed within the US$15-25m band since 2010.

The statistics show a significant drop in all 'dry' salvage revenues (LOF and non-LOF) to US$181m (US$327m in 2014) – the lowest figure since 2010.

ISU president John Witte said: "Our members are proud to serve the shipping community and they make a major contribution each year to mitigating potential loss, but the statistics again show the variability of our industry and the fluctuations in the sources of revenue.

► *ISU president John Witte*

"There has been a decline in the contribution of income from traditional LOF cases. That is offset to some extent by increased SCOPIC revenue and steady wreck removal income which, over the years, has become increasingly important for our members, and, indeed, our clients.

"We know the days of more than 100 LOFs each year are gone, but nevertheless the ISU believes it remains the best contract in many emergency response situations.

"Using the right contract in the right situation is very important and owners, insurers and salvors are committed to improving their understanding of each other's needs and preferences which will improve trust on both sides."

● The ISU AGM is due to take place on 27-30 September in Livorno, Italy, and will include the formal business of the annual meeting, an executive committee meeting, reception and gala dinner.

In brief

In a nine-day operation, Argentina-based salvage, pollution control and diving company, Raul A Negro y Cia, successfully raised the 40m long, 600 tonne pusher tug ***Cavallier III***, after it sank to a depth of 15m in the Paraná River during a storm, while conducting a barge convoy. Nobody was injured during the incident. After the vessel was raised, temporary repairs were carried out before it was moved to Paraguayan waters and handed back to its owners.

Malayan Towage and Salvage, in partnership with Nippon Salvage Corporation, successfully refloated ***Belle Rose***, a 50,472dwt bulk cargo vessel registered in Panama, which was fully laden with 48,000 tonnes of cement in bulk. The vessel had been heading for Cebu in the Philippines from Tsukumi in Japan when it went aground off Monad Shoal in Northern Cebu.

Resolve has expanded its operations by opening a base in Cape Town, South Africa, employing nine salvage experts, including senior salvage master Nick Sloane, who brings more than 34 years of experience, along with a team of salvage engineers and a dive team.

Braemar (incorporating The Salvage Association) has opened an office in Brisbane, Australia, and appointed Gary Owens as its principal surveyor in Australia.

Market leads to change of focus

Ardent CEO, Peter Pietka, says the current oil & gas market has provided a large opportunity to focus on offshore sector decommissioning.

Speaking as the company celebrated the first anniversary of its formation by the merger of Svitzer Salvage and Titan Salvage, Pietka said: "One year ago, we set off with our business plans, and today we are pleased that the merger has progressed in line with these plans, although the market has been weaker than expected."

◄ *Ardent CEO Peter Pietka*

In its first year, Ardent won and executed more than 50 contracts with a strong safety performance, and no loss-time incidents.

Pietka said: "The current markets in the shipping and offshore sectors have affected our margins. Looking from a different perspective, the current oil & gas market provides us with a large opportunity to focus on offshore decommissioning. With the amount of knowledge and diversity between our partners and staff, and with a successful integration behind us, we look forward to the exciting years ahead."

Around the world – and back – in 40 years

Celebrating 40 years in the tug industry, and 25 as managing director of Targe Towing, Tom Woolley talks to contributing editor Joceline Bury about a career that has taken him around the world and back

This is a big year for Tom Woolley, managing director of Targe Towing Ltd. The company marks 25 years of successful operation in north-east Scotland, and Tom himself is celebrating 40 years in the tug industry – a career that began with one ambition: to drive a naval destroyer.

Although he was born in Kent, Tom's earliest memories are of living in Malta. "My father was in the Royal Navy and was squadron navigating officer of the First Destroyer Squadron based in Sliema Creek. It was at the time Lord Louis Mountbatten was there as commander-in-chief of the Mediterranean Fleet; Princess Elizabeth and Prince Philip were there as well. With ships everywhere, the only thing I wanted to do was to drive a destroyer, and I've been messing around in boats ever since."

The family returned to England in 1953, two days before Queen Elizabeth II's coronation. "We watched on a rented television set at my grandfather's house."

By 1958, Tom was at boarding school in the Wirral, Cheshire – a long way from home in Hampshire, but close to his father's posting as navigating officer of ***HMS Ark Royal***, then being built at the Cammell Laird shipyard in Birkenhead. "That meant the school had a liaison with the ship and I visited frequently, which cemented my desire to join up," said Tom.

As for early education, Tom describes himself as having been "useless at exams but good at sport: an enthusiastic member of the first teams and captaining cricket". School in Cheshire was followed by five years at Pangbourne Nautical College: "I remained useless at exams, but sailed (!) through navigation, seamanship and signals, parade training and again captaining cricket.

"When Dad was not overseas, the family would holiday at Newton Ferrers, near Plymouth, where we had a 14ft clinker-built dinghy. My former Wren mother and I would contrive to spend as much time on the boat as possible. My sister preferred to visit ponies on Dartmoor, and Dad would take time out to spot steam trains.

"This boating habit – together with time spent on the Thames at Pangbourne, serving as a deck hand on the British Railways car ferries between Portsmouth and the Isle of Wight for a holiday job, and a general interest in all things nautical – probably convinced the selection board to allow me to go to Dartmouth: my exam results certainly did not."

So, in September 1965, Tom, together with many other post-war 'baby boomers', marched up the hill to the Britannia Royal Naval College. The cohort included *ITS* chairman Mike Allen and no fewer than 13 future admirals: it became known as the 'golden term' – and so it proved for Tom.

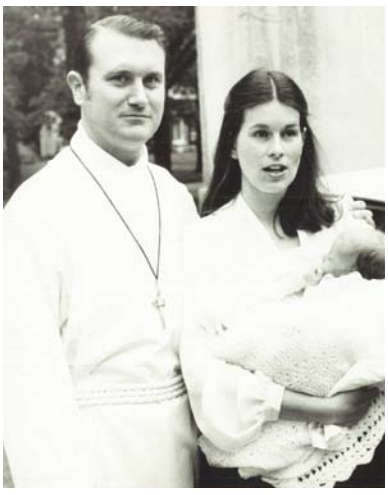
"Ironically, the lucky break for me was that my A-level results were so poor I had to join on the short service commission, so I continued at sea while my classmates returned to Dartmouth after the midshipman year. This meant that in a relatively short time I managed to serve in every major command before they closed down, including South Africa, South America, the Mediterranean and the Far East. In fact I sailed in every ocean except the Antarctic. The furthest south was South Georgia, en route to the Falklands, where we exercised with our then good friends, the Argentine Navy."

Sub-specialising in anti-submarine warfare and diving led to three varied and interesting frigate appointments within NATO and SEATO, taking Tom from the Iceland-Faroes gap and the North Cape to several deployments in the Med, the West Indies and Far East. He was then selected to transfer to the permanent commission and sent to the junior officer staff course at the Royal Naval College, Greenwich.

Shortly before that, on what Tom describes as 'one glorious day' filled with coincidence in the summer of 1971, he had met his future wife. "My Scottish-based ship was unexpectedly in Portsmouth for the weekend, so I went to visit my parents, who were still living in Hampshire. That evening, Jo, who had just left a ship as well, walked into the village pub. Having graduated from university in America, she'd made a leisurely crossing and was visiting her father and his young family, who were living locally, before taking up a music therapy appointment in Boston.

"Seventeen days later, we were engaged, and we married in January 1972."

▲ *Above, Tom Woolley, at the helm, and below from the left, serving with NATO on anti-submarine operations; commanding* **HMS Camperdown**; *with Jo at the christening of elder daughter Kirsty*



Tom describes the Greenwich experience as 'amazing' – partly because of Jo's influence. "She caused me to really apply myself and, for the first time in my life, I enjoyed the experience of learning: reading, writing, debating. Then it was back to Scotland as first lieutenant of a fishery protection minesweeper.

Having parked Jo and a trailer of their goods and chattels in Army quarters in Edinburgh he began disappearing off to sea for three months at a time, returning periodically for brief and unscheduled visits. It was then he decided that a variation on his current maritime career might not be a bad idea.

The die was cast when Jo's father – who failed to convince Tom to stay in the RN, and who ran a thriving cruise ship business from his home in Scotland – offered his son-in-law a job running ancillary services on cruise ships. On resigning from the Royal Navy, Tom joined the Royal Naval Reserve (RNR) where he was almost immediately appointed in command of ***HMS Montrose***.

That was the beginning of a parallel naval career, running alongside his work in the towage industry. Tom said: "During 25 years as a reservist, I commanded several Ton and River Class minesweepers and squadrons in NATO exercises during some really very interesting times in the development of mine warfare.

"In a relatively short time, I managed to serve in every major command ... including South Africa, South America, the Mediterranean and the Far East"

"I was also the last CO of ***HMS Camperdown***, training centre for Tay Division RNR, before it was axed during the 1995 defence cuts. However, I was fortunate enough to stay on to become head of mine warfare (reserves), and my last appointment as a captain was director, personnel and specialist branches, responsible for the recruiting, retention and career development of 7,000 reservists.

"A career in the reserve forces is very rewarding but the balance between that and family, while trying to establish a towing company, brought its challenges and I am hugely indebted to Jo and my wonderful daughters, Kirsty and Jess, for their tolerance and support."

A year after leaving the regular Navy and joining his father-in-law's company, the cruise ship business took a sudden downturn, and Tom embarked on the next stage of his career. A friend of his father-in-law, Keith David, was the principal owner of Nassau Towing, a Bahamas-based towage company that had just been awarded a 20-year contract to provide tugs and marine services to Burmah Oil's transhipment terminal in Grand Bahama. "He had a sudden and urgent need for a Port Captain in Nassau, where the company had two tugs engaged mostly in berthing cruise ships: "The job was mine, provided I could join the next day. That was April Fool's Day 1976 – 40 years ago this year."

▲ *Targe Towing's tugs assisting the Royal Navy aircraft carrier* **Queen Elizabeth** *at Rosyth in September 2014*

The sudden appearance of a former British naval officer was initially treated with suspicion by the other, Belgian partners and Bahamian seafarers. "But delivering three newbuilding workboats from the Mississippi delta for the Burmah Oil terminal, and getting the experienced masters to teach me how to drive tugs, helped to gain their confidence and respect. Then, to my surprise, my immediate Belgian boss nominated me to take over his operations manager's appointment in Grand Bahama after just three months."

But it wasn't all sunshine and plain sailing: the Bahamas immigration authorities decided they didn't want expats working at Burmah's terminal – and Tom, another British captain and a Belgian engineer were thrown into jail for overstaying their work permits.

Jo, who had avoided the police when they called, managed to arrange legal representation, which resulted in an escorted release to the US for the three commercial detainees. She also arranged an unheralded exit on the same plane for their respective wives and the cat she'd homed while volunteering with the Humane Society. Tom added that, "Ice cold beer never tasted as good as it did when we arrived in Fort Lauderdale after two nights in police cells in the company of rats and cockroaches, in 95 degree heat and 90 per cent humidity.

"During the wait to clear my name and obtain another work permit, Jo and I travelled up the US eastern seaboard from Miami to Searsport, Maine, visiting every major towing company en route and riding their tugs whenever possible. I learned a massive amount as well as gaining confidence in opening doors.

"Even after being forgiven by the Bahamas authorities, it seemed impossible to obtain work permits for more than three weeks at a time – so the company transferred me to the New York office. From there, while continuing the role of operations manager, I was able to assist in creating and setting up new towage projects in the Bahamas, Aruba and Mexico.

"In the case of Aruba, I delivered a bareboat chartered tug from Quebec Tugs, returning her three years later. Both voyages took place in mid-winter in dreadful conditions. The return trip included a fire on-board, having shipped green water and causing the loss of all electronic navigation aids 100nm off Cape Hatteras. We had to enter Halifax without radar in the middle of the night, in a blizzard in a force 10 gale – too rough for a pilot."

For the best part of the following decade, Tom and Jo continued to live in New

► *With the crew of NATO minesweeper* **HMS Spey**

England: first New Jersey, then Connecticut. Tom became a lay reader in the Episcopal Church, and the couple started a family. They returned to the UK in 1985 with their daughters – Kirsty, four and Jess, just one – where Tom took up a position as general manager of Milford Docks, in west Wales.

Arriving at Milford Docks in October 1985, Tom was given six months to turn around an ailing business that had not seen a profit for 10 years. "In the first month I was there we had just one cargo, 600 tonnes of fertiliser; the place was dead. But then a Libyan freighter, ***Ebn Magid***, caught fire off the Dorset coast. We went down to inspect it and discovered that a lot of the cargo on the lower decks was intact, although everything in the tween decks was severely damaged. We put in a bid to discharge the cargo, and won against fierce competition – this was the catalyst and suddenly the docks were alive again, humming with activity, new clients and new cargoes.

◀ **MT Hopetoun** – *the world's largest docking tug, at 124 tonnes bollard pull*

"But the management wanted us to reduce the docks to a care and maintenance facility, and requested I lay off all the stevedores who had worked so hard on the ***Ebn Magid*** job. So I resigned with them and we returned to our cottage in Scotland, where I found myself out of work on my 40th birthday."

It was a low point for Tom and his family, but he rejoined the Navy for a year, running a training programme, before an opportunity arose to help set up a towing business in Peterhead, in northeast Scotland, supported by the former Belgian partners of Nassau Towing.

Peterhead Towage Services ran successfully until the owner decided to sell. The new proprietors were not enthusiastic about the towing business, so Tom suggested that he should leave and take the towing business with him – setting up another new company, called Peterhead Tugs Limited.

"Almost immediately, the firm I had been working for brought another towing company into Peterhead and accused me of conducting myself against fiduciary law."

A court case – the first of several – ensued, and Tom's lawyers advised a rapid name change. "At that point, we were on the defensive, so Jo's suggestion of 'Targe' as a company name seemed to fit, a targe being a Highland warrior's round shield. And that was how the name came about, and Targe began – 25 years ago."

The new company quickly took over port towage services in Dundee and Aberdeen, as well as those in Peterhead. Initially, Tom and Jo ran the business from a room in their family home, together with fellow RNR officer, Nick Dorman. Then came the big break, when Targe won the towing contract against international competition for BP Exploration Forties Pipeline System – a contract the company has held for 22 years and which is being expanded to include marine services from next spring.

Targe also managed a 20-year contract for towage services for Rio Tinto Zinc in Indonesia. On the Thames, Targe provided towage for BP's refinery, then Petroplus, until 2012, when the latter liquidated. Concurrently with this, Targe enjoyed working with Smit, assisting ships up-river. "That was fun," Tom said. "We provided the first competitive towage service on the river in 100 years."

Headquartered at Montrose, Targe provides dedicated towage to Aberdeen, Dundee and Peterhead. On the Firth of Forth, the company operates four tugs at BP's Hound Point marine terminal, including the mighty ***MT Hopetoun*** – at 124 tonnes bollard pull, the most powerful docking tug in the world.

"So, we go on," Tom says. "Enjoying what we do and always looking forward."

OSV industry needs to heal, not lick wounds

There has to be a compete 'detox' of how the industry values and depreciates its assets, writes Roy Donaldson, senior consultant for Global Management Academy

► *Roy Donaldson, senior consultant, Global Management Academy*

Last year I wrote that oil prices and charter rates needed to improve significantly through 2015/16, otherwise impairments on vessel values would be inevitable and this would deter investors, giving cause to deepen and entrench the critical problems already facing the OSV industry.

Over a year later, this scenario is now unfolding. The Middle East market has been historically stable. In a less challenging financial environment, both international and national oil companies (IOCs and NOCs) were prepared to accept older, technologically challenged vessels, while being compensated with lower charter rates. There was a step change post-2008, with younger vessels entering the region, many supplied by Middle East operators.

Southeast Asian operators have now entered the market, some reportedly offering vessels at below operating cost, but in reality the rates are still higher than expectations elsewhere, and vessels from the region have been mobilised to the Middle East for many years. Present low rates make it likely that the Saudi NOC Aramco's strategy of replacing older tonnage is likely to be expedited. Due to the immediate availability of newer tonnage, Southeast Asian operators are better equipped to benefit from this.

No matter the geography, operating OSVs is a challenge, with one of the largest being the legislative requirements of cabotage. The Middle East has always been an inviting environment with few obstacles (apart from the quality expectations of NOCs such as Aramco, where penalties are applied for non-compliance). The well organised, efficient OSV operator has nothing to fear, and will ultimately benefit through better charter rates.

So Middle East activity is holding up well when compared to other regions, but utilisation for many is suffering, with additional vessels being mobilised from other less promising parts of the world.

There are currently more than 1,000 vessels laid up, with a further 500 under construction in China – more than 30 per cent of the worldwide fleet. At the time of going to press, oil prices had reached US$50bbl, which is optimistically considered to be the threshold for recovery. My own opinion is that oil prices may well fall again, and will require many years of stability before the IOCs regain their appetite for investment.

> *"It is difficult to see where the cash will come from to repay bonds or loan bullet payments on maturity"*
> **Roy Donaldson**

Devaluation of assets, though not specific to the Middle East, remains the biggest challenge to the industry today. New and secondhand vessel values have dropped by 40-50 per cent since 2014. The result is that companies have lost up to 50 per cent of their net worth, which is not cash related and, post impairments, does make the company more competitive with lower valued vessels.

The bad news is that it does not relieve the costs and responsibilities in terms to amortisation through loans and bonds. Highly leveraged operators will breach covenants such as debt-to-equity, putting them at the mercy of their financiers.

For the companies that are able to continue servicing loans and bond coupons, banks have little choice but to work in unison, but in the future the fall in asset values dramatically impairs the flexibility of refinancing options for growth – or indeed, in some cases, survival. Many operators claim to have sufficient working capital to continue for a limited period, but it is difficult to see where the cash will come from to repay bonds or loan bullet payments on maturity.

Larger companies have blended their borrowings with multiple banks and investors, be they bilateral, Islamic or bonds. As was evident with the consolidation forced upon Solstad and Rem in July this year by majority bond holders, should more stormy waters lie ahead there will be competition between investors for the pickings or method of restructuring.

Presently companies are trying to offload not-so-old tonnage rather than pay lay-up costs, which exaggerates the problem by attracting operators with equivalent lower value assets to compete. Private equity firms are even now on the lookout for the opportunities that will inevitably arise.

Consolidation and partnerships are key, and while this may be a relatively simple process in Europe, it is far more complicated within the fragmented markets of the Middle East. It is unfortunately inevitable that many companies previously considered strong candidates for growth will not survive this recession, but those that do will emerge stronger and more sustainable. While some companies will thankfully emerge intact, though, all will be bruised.

• *Roy Donaldson has been involved in the marine industry for 47 years – 27 of them in the OSV sector. For the past 19 years he has worked in senior management positions with companies such as Seabulk and Topaz Marine.*

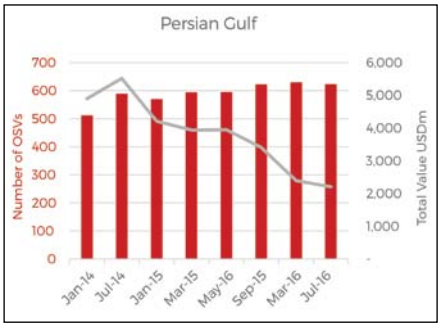
Persian Gulf sees rise in vessel numbers

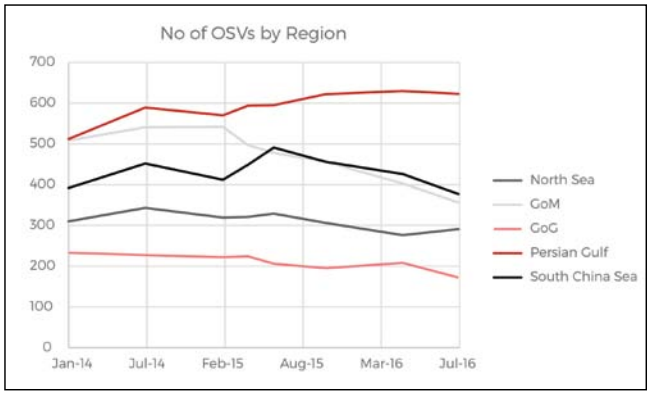
Maritime analyst VesselsValue has released a report covering OSV utilisation in the Middle East during the past year.

In the current downturn, the authors write, optimism has centred on the Middle East as a potential growth area for OSV work. Sanctions against Iran have been eased, and new Middle Eastern and Indian players have looked at distressed older tonnage as a way into the market, such as Hind Offshore (***Lady Grace***), Ocean Sparkle (***OSL Triumph***), Halani Shipping (***Halani 6***) and Tag Offshore (***Tag 20***). In addition, nations such as Saudi Arabia are maintaining oil production levels in fear of losing market share.

VesselsValue's AIS data shows that between January 2014 and July 2016 there was a 22 per cent increase in the number of vessels in the Persian Gulf area. This has resulted in a significant oversupply, with many vessels now laid up in the area. The excess supply has come mainly from the South China Sea and has resulted in intense competition for contracts. VesselsValue expects Middle Eastern competition to increase, with around 70 vessels set for delivery in the area over the next two years.

Looking globally, analysis of the VesselsValue AIS data shows a total 7 per cent decrease in the number of vessels in the five regions covered between June 2014 and July 2016. With the exception of the Persian Gulf, which has seen a notable increase in vessels since March 2015, all four other regions have seen a decline during the same period. There have been fluctuations to these numbers in each region: the South China Sea suffered this reduction in vessel numbers slightly later than the other regions (May 2015), while there has been a slight increase in the North Sea since March 2016.





► *OSV numbers in the Persian Gulf remain strong, but total value declines (above right); analysis in context of global regions (right)*

Solution provider expands reach

Sharjah-based Unique Group, an integrated subsea and offshore solution provider, through its subsidiary Unique Maritime Group (UMG), has completed the acquisition of Oceanvision and Oceanvision Equipment Services. Oceanvision will now be part of the Unique group of companies.

Oceanvision specialises in manufacturing and supplying imaging and intervention products for sub-ocean, marine, offshore and petrochemical industries for use in hazardous areas and harsh environments.

"Opening an office in Singapore is an important milestone for the business," said UMG CEO Harry Gandhi. "The team at Oceanvision provide us an immediate presence in the area and with this company's strong reputation and history, their fit within Unique Group is excellent. We will invest significantly (circa £5m) and quickly so that we can give our customers access to the full offering across our group divisions and companies."

Svein Gunderson, engineering manager at Oceanvision, said: "This is an exciting time for Oceanvision as we become part of the globally respected Unique Group. I, and the team, look forward to working with our new colleagues at Unique. The additional products and services we can now offer will be advantageous for our current customers and provide new opportunities that exist in the area."

As an independently owned global company, Unique Group provides engineering expertise, sales and rental equipment, and the latest technology for the marine, diving, survey, pipeline and subsea market sectors. The company employs more than 500 people worldwide.

Class society signs MoU with shipbuilder

Tasneef, the first certified Arab classification society, and Abu Dhabi Ship Building (ADSB), a leading provider of construction, repair and refit services for naval, military and commercial boats, have signed an MoU creating a framework for future collaboration to strategically develop the naval construction and services industry across the region.

The agreement includes classification and technical consultation services as well as the issuing of classification certificates for systems, employees, products and naval fleet safety. Collaboration between the two companies will also be seen in technical areas to increase safety, security, best environmental practices and naval policy development.

Rashed Al Hebsi, CEO, Tasneef, said: "Signing this memorandum is in line with Tasneef's strategy to strengthen collaboration with different official authorities, specifically those that are specialised in the naval industry."

Dr Kahled Al Mazrouei, CEO, ADSB, said: "ADSB adopts the highest quality and safety standards in construction and repair of ships in the region. The collaboration with Tasneef will contribute to ensuring efficiency of our high standard products, supporting the region's naval industry and diversification of the UAE economy."

Deals show Iran open for business

Italy-based shipbuilder Fincantieri has signed a number of framework agreements with Iranian companies. The preliminary understandings are prior to the accomplishment of several contracts worth some hundred million euros.

In particular, Fincantieri has reached a co-operation and development agreement with Azim Gostaresh Hormoz Shipbuilding Industry, a modern shipyard located on the Persian Gulf. The agreement provides for construction of new offshore units, ship repairs and conversions, and refitting already operating units. The co-operation will affect the development of detailed engineering, optimisation of the construction processes, technical consultancy and assistance in all production phases, and personnel training. To this end, the two companies will shortly create specific working groups engaged in activities to establish a solid business partnership in the area.

Moreover, Fincantieri, through its subsidiary Isotta Fraschini Motori, has signed a further agreement with Arka Tejarat Qeshm, an Iranian trading company, for the set-up of a joint proposal for the supply to the Iranian government of 600 marine engines for smaller vessels.

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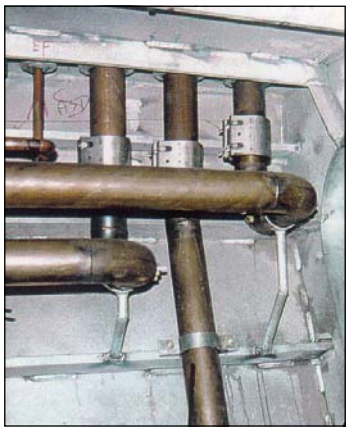

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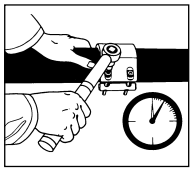

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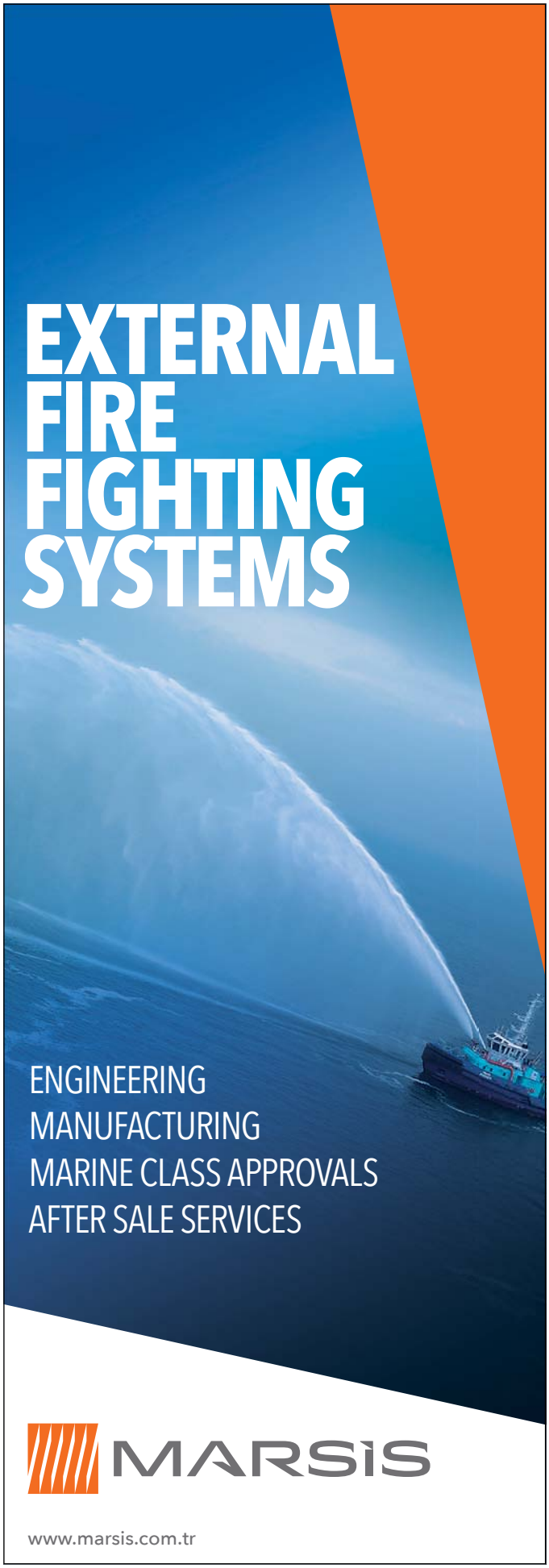

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Joint venture repair yard reaps rewards

Nakilat-Keppel Offshore & Marine (N-KOM), the joint-venture shipyard of Keppel Offshore & Marine and Qatar Gas Transport Company (Nakilat), has reported significant growth in its small vessel repair business since it started operations five years ago.

► *Panoramic view of the N-KOM shipyard and (inset) the 2,608dwt PSV* **POSH Radiant** *at N-KOM for repairs*

Located close to the Arabian Gulf oil fields and next to the Ras Laffan loading terminal, the shipyard deals with gas carriers, tankers, bulk carriers, containers and jackup rigs but also services all types of small vessels include tugboats, OSVs, AHTS, dive support vessels (DSVs), research vessels, as well as both multi-purpose and general PSVs.

The total number of small vessels repaired for 2016 has slightly increased compared to the same period last year. Repair works were carried out for both repeat and new clients, such as Bourbon Offshore, Stanford Marine, PACC Offshore Services Holdings (POSH), Boskalis, Halul Offshore, Trelco Marine Services, Topaz Marine, the Qatar Navy, Swire Pacific, SMIT International, Pacific Radiance and Halliburton Worldwide.

Within the 50.8-hectare state of the art shipyard is a dedicated 7.8-hectare facility for the repairs of smaller vessels. This includes four 25-tonne tower cranes, a dry berth area of over 30,000m^2 and two mobile boat hoists of 300 tonnes and 1,100 tonnes capacity. N-KOM is one of the few shipyards in the region also able to undertake the bollard pull test up to 150 tonnes.

In addition to this, the shipyard has two VLCC-sized graving docks as well as a Q-Max sized floating dock, an overall berthage capacity of 3,150m and 15 cranes of varying capacities (30, 50 and 100 tonnes) to support the yard's operational need.

Recently in the yard for repairs are vessels from Trelco Marine Services, the 2,819dwt supply vessel ***Markabi Guide*** and the 4,606dwt supply vessel ***Paterson Tide*** from Schlumberger Overseas. ***Markabi Guide*** underwent major steel repairs such as main deck steel renewal, bridge deck port and starboard side remove-fabricate and install new bridge deck plates, and deck wood removal. In the same way ***Paterson Tide*** repairs include fabrication coating and installation of pipes for the seawater line, the fire water system line on the main deck, and main deck cleaning and painting.

With a wealth of experience handling all types of marine repairs, a strategic location and strong track record for safety, quality and timeliness, N-KOM is gaining the reputation as the preferred regional destination for small vessel repairs.

Shipyard secures top spot

Grandweld has secured its position as the number one regional shipyard for the offshore segment, completing construction of a total of 17 vessels in the last year. Latest projects include advanced crew boats, dive maintenance and support vessels, and work crane boats for Middle East energy firms and offshore contractors.

Grandweld, which has been operating from its Dubai base since 1984, specialises in vessels custom built to conduct complex operations in the region's challenging offshore environment.

These range from three recently delivered work crane boats for Kuwait Oil Company – optimised for duties such as heavy lifting, oil-pollution control, SPM hose handling, and supply to remote areas – to two modified 42m crew boats, ***FNSA-3*** and ***FNSA-4***, for the Fujairah National Shipping Agency. The latter vessels are capable of speeds in excess of 30 knots and customised to execute operations such as security duties, fast transportation of offshore personnel and cargo, and the rapid supply of fuel and freshwater.

Jamal Abki, general manager, Grandweld Shipyards, said: "The Middle East is a unique environment, with unique challenges and opportunities. We have a history of producing vessels that excel here. We use that understanding to continually enhance our offering, while building new relationships with international clients who can benefit from our expertise when it comes to meeting their own exacting requirements.

"Our integrated proposition is efficient, flexible and modern, while our in-house engineers and project managers are world class. In addition, we invest heavily in research and development to enhance our own designs, as well as using respected external designers when desired. This ensures our vessels are leading the way in operational efficiency, reliability and performance – something the industry clearly appreciates."

Further noteworthy deliveries over the last months include three 34.3m aluminium crew boats to Jana Marine Services, a 50m dive maintenance and support vessel to Abu Dhabi National Oil Company (ADNOC), and the 42m crew boats ***Stanford Volga*** and ***Stanford Niger***, which are capable of carrying 83 people at speeds of 25 knots.

"It's an exciting time for the business, and our customers," said Abki. "As the offshore trend points towards more optimised, complex vessels, our knowledge and experience allows us to respond with advanced newbuilds that deliver added performance and competitiveness for our clients. We're now looking forward to building on our leading market position over the space of the next 12 months, and beyond."

Long term charter validates strategy

Offshore marine services provider PACC Offshore Services Holdings (POSH), has announced it has been awarded long term charters for eight OSVs with a combined value of approximately US$167.5m by a Middle Eastern national oil company.

The group will supply eight anchor-handling, supply and safety standby vessels, of which six will be newbuilds. The vessels, on a firm five-year charter with two one-year extension options, will support the national oil company's operations in the Arabian Gulf. The charters will commence progressively following delivery, with vessels to be handed over to the client starting from December 2016.

The contracts awarded are in addition to the earlier four newbuilds awarded in February this year.

CEO of POSH, Capt Gerald Seow, said: "We are pleased to have been awarded eight more vessel contracts in the Middle East. This further validates our strategy to pursue pockets of growth in key markets that exist despite the challenging industry conditions."

Port voted top for 22nd year in a row

Jebel Ali Port has been voted 'Best Sea Port – Middle East' for the 22nd consecutive year at the recent Asian Freight, Logistics and Supply Chain Awards (AFLAS).

The award was received by Rashid Abdulla, senior vice president and managing director, DP World, Asia-Pacific Region, on behalf of DP World at a gala ceremony in Shanghai to celebrate excellence in the freight, logistics and supply chain sector.

Sultan Ahmed Bin Sulayem, DP World Group chairman and CEO, said: "Our flagship port has been recognised as the Best Sea Port in the Middle East for more than two decades and this award again demonstrates its role as a gateway hub in the region, reinforcing our role as a leading enabler of world trade."

► **Halul 63**, *an AHTS vessel built by Grandweld Shipyards*

Firm sets record for contract wins

Vallianz Holdings, an established provider of OSVs and integrated marine solutions to the oil & gas industry, has set a new record of US$1.2bn for its order book, following contract wins worth up to US$210m in total.

The company secured new long-term charter contracts for the supply of 13 OSVs to a national oil company (NOC) in the Middle East. The OSVs will be chartered to the NOC for up to seven years. Vallianz expects the OSVs to be deployed progressively at the NOC's oil fields from the second half of 2016 in accordance with the project schedule.

These latest contract wins will boost Vallianz's chartering services order book to US$1.2bn, which comprises mainly long-term charters that stretch up to 2025.

Vallianz CEO Ling Yong Wah said: "This new award speaks volumes of the group's operational capabilities, as the award of an entire tender comprising a large number of vessels to a single offshore marine service provider is rare and normally reserved for a contractor that has an exceptional and proven track record. Our ability to secure contracts for 13 OSVs in a single tender is a testament to our customer's continued trust and confidence in the group's core competencies."

These contracts come on the heels of the award of a US$63m contract from the NOC for the charter of two AHTS vessels for up to seven years.

Ling said: "With the addition of these new charter contracts in the Middle East, we have further strengthened our order book and improved the group's future revenue visibility. Vallianz will continue to reinforce our superior market position in the Middle East where offshore oil & gas projects remain active. We are presently bidding for charter contracts with a combined value of US$1.5bn, mainly for projects located in the Middle East."

Powerful game-changer set to make waves

_IT&O_ editor John McCready is the first marine journalist to visit the Cummins production facility near Columbus, Indiana, and had exclusive access to senior managers involved in the development of the new QSK95 engine, designed to challenge market leaders and take the company to a new level

Jim Schacht, Cummins general manager marine and oil & gas, is extremely candid about the importance of its new QSK95 engine, saying: "Without question, we have bet the company."

This could be considered more than a little bit scary, but Schacht adds: "We have done this confidently and with eyes wide open. We have spent well over US$1bn. It is without question the biggest investment in a new engine platform that we have ever made, and we're really, really excited about it."

Cummins has a history of long-range planning and very patient investment. Founded in 1919, it was 18 years before the company became profitable. Today it is a major player on the world stage, with 55,000 employees operating in more than 190 countries and territories across six continents.

Schacht said: "The QSK95 is a game-changer for us. It's a big bet and we have a very long perspective on it. We have invested that money in it and we are methodically going through the introduction in various markets, starting with power generation, then rail and now marine."

Cummins' largest and most powerful engine to date, the unveiling of the QSK95 (*IT&O*, July/August 2016, page 84) is the result of extensive research and development dating back to 2008. It was a clean sheet exercise, purposely not a further development based on existing products, but something that was entirely new. Limited production of the marine version is scheduled for late 2017 with full production in mid-2018.

Schacht said: "We decided to take a step back and start with a clean slate. Most of our development has been based on legacy, taking existing products to the next level. The QSK95 was started from scratch."

The project team, now numbering 100, listened to 3,000 customer voices, hired and listened to 45 large engine experts and identified 20 items as key to market and customer needs. The marine drivers identified were: lower up-front capital, more power, more stringent emission controls and serviceability. Hugely experienced mechanical engineer, Jim Trueblood, vice president power systems engine programme, has led the QSK95 project since its conception.

◀ *Jim Schacht, Cummins' general manager, marine and oil & gas*

▲ *Work underway on a QSK95 engine at Cummins' Seymour Engine Plant*

> *"Right now we have 21 different QSK95 programmes. It is the largest investment we have made on one new platform"*
> **Jim Trueblood, Cummins**

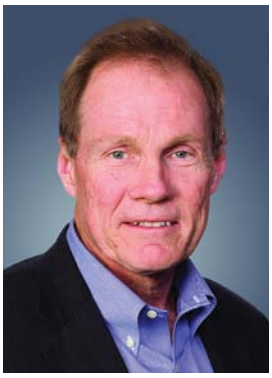
He said: "Back in 2006/7, we were hearing customers from all our different segments saying: 'we're ready for more'. They called for more power, ease of service, simple installation, fuel economy and a reduction in the whole cost of ownership. We achieved board approval for the project at the end of 2008. The company was doing really well at the time, so we had the appetite and we also had the ability for such a major investment. We realised that we may have to have a haircut or two further down the road, which we've obviously had to do.

"We put the team together in January 2009. It's not very often that engineers get to create something brand new from a clean sheet, so it was simple to get the 100 or so folk I wanted really quickly. One of the keys for success, at least in my experience, is staffing a programme early with the right people in the right quantity so you stay ahead of the game and you're able to achieve what you've promised the company.

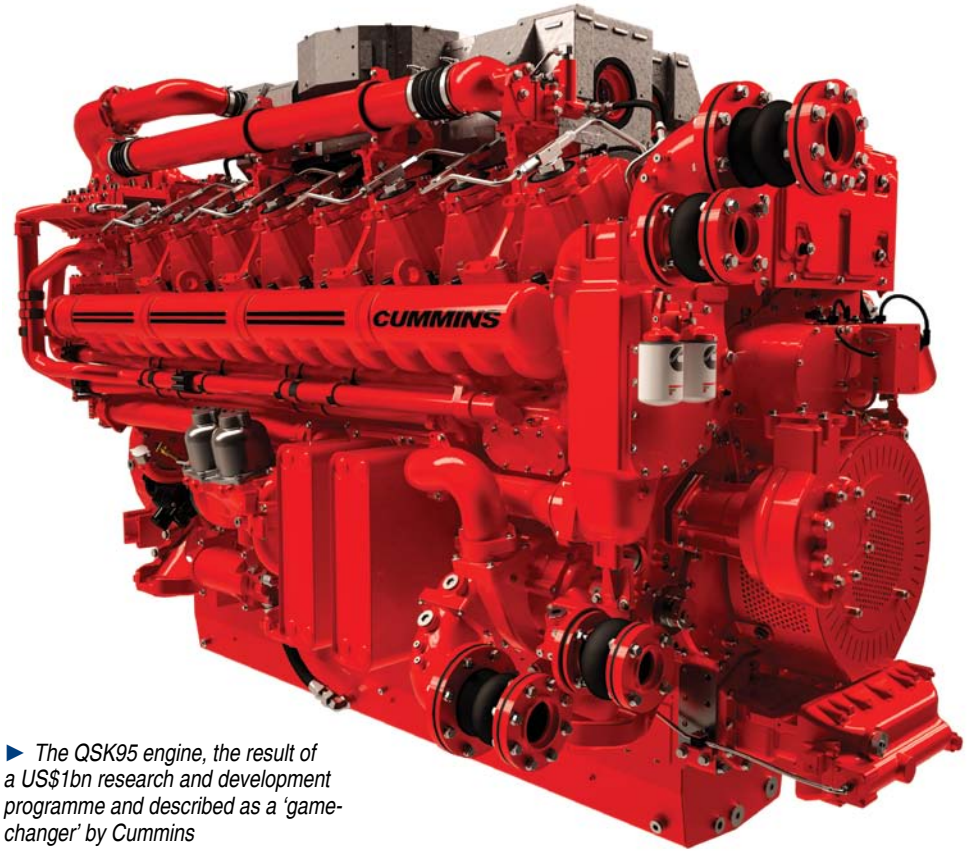
"Right now we have 21 different QSK95 programmes. It is the largest investment we have made on one new platform – US$900m-plus in development and US$450m in capital.

"I'll be retired and on the golf course before we stop developing this product. We're in for the long haul. Getting into the marine sector is just the start of a very long journey. We were six years in the development phase, that's reference to the V16 diesel that was our base. We did a lot of analysis up front. It was about three years before we built a single cylinder engine, not for commercial use, but for test purposes, before going to a six-cylinder model. It makes a lot of economic sense at the early prototype stage to go small, get it right and go up the scale."

The Seymour Engine Plant, Cummins' production and test cell facility a few miles from its headquarters in Columbus, Indiana, is currently building one QSK95 a day and has capacity for many more. The state-of-the-art facility underwent a complete refit in preparation for the new engine, with purpose-built production lines with computerised quality control opened in 2012.



◄ *Jim Trueblood, Cummins' vice president, power systems engine programme*



► *The QSK95 engine, the result of a US$1bn research and development programme and described as a 'game-changer' by Cummins*

A range of plant and tools for technicians specifically designed for the QSK95 has also been a part of the project's development.

Serviceability was identified as a major customer requirement during the early stages of the QSK95 project and now forms a central theme in the company's marketing strategy.

Both in-house and out-of-company service technicians are trained at Cummins' Woodside facility, again a few miles from the company headquarters. A second training centre is due to come on line shortly in Dubai, with a third planned in the Far East. Students complete an online programme before taking part in a seven-day course at the training centre, which is very much hands-on.

Andy Elsner, service engineering manager for the QSK95 platform, speaking during a tour of Woodside, said: "We don't want an engine to break. However, if it does, we want to get it back into service as quickly as possible. Back when the project started thousands of voices were captured around the globe and the number one voice, time and time again, was for serviceability.

"Pleasingly, the feedback from the around 100-plus technicians who have been through here so far is that this is the most serviceable engine that they have ever seen.

"The mindset from the start was that this is a 13-tonne product, so you can't just pick it up and move it. You have got to be able to service it in situ. We have demonstrated that we can do a complete rebuild with the engine remaining in place.

"Also, from a safety perspective, there are no sharp edges. There is no risk of a technician cutting their arm when he or she puts their hand inside the engine. Every component on this engine – and there are literally thousands of them when you boil it down to the individual pieces – has been through a 72-step design review. Ease of access to service and maintain various parts of the engine has been paramount to the design."

Elsner pointed out that there are part markings on every component, so that technicians can easily identify them and, if necessary, get a replacement.

He said: "We have spent hundreds of hours developing service tools to make servicing quick and more simple. Our aim has been to promote the safety of technicians and reduce service cycle times."

Examples of tools developed to make servicing the QSK95 safer, swifter and easier include a hydraulic tensioning tool, a power cylinder replacement tool, oil pan lifting and lowering mechanism, a lifting eye for every part weighing more than 23kg and an engine-mounted lifting winch.

The marine version of the engine is targeted at AHTS vessels, harbour tugs, high power OSVs and PSVs, dive support vessels and large push boats. It is also aimed at fish processing vessels, 3,000 to 6,000-passenger cruise ships (emergency sets), and super yachts.

> *"Large companies with healthy balance sheets, such as Cummins, are now making moves to take share when the market turns"*
> **Jim Schacht, Cummins**

The QSK95 offers its target audience the benefits of smaller size, lower weight – at just more than 13,000kg, between 20 and 70 per cent less than medium speed platforms of similar power output – and better transient response, while achieving power output previously available only from larger medium-sized marine engines. The QSK95 can power tugs up to 105 tons bollard pull using twin arrangements. Before the QSK95, the company could only power tugs up to 65 ton BP with twin QSK60 engines.

As a high speed engine, Cummins believes the QSK95 has advantages over its medium speed rivals in the battle to gain market share. These include lower initial cost and competitive operating costs, plus lower shipping and transportation costs to site. The company is also convinced, as are others, that tighter emissions rules will curtail the use of heavy fuels in many parts of the world.

Asked whether the present economic climate was impacting on the launch of QSK95 into the market, Schacht said: "Large companies with healthy balance sheets, such as Cummins, are now making moves to take share when the market turns.

"We're a classic core market company leveraging an adjacent market. Lots of big companies do that. We think of marine as an adjacent market that could become core to us and the QSK95 is a big piece in that jigsaw.

"During the next 10 years we want to be earning a reputation in the market with a highly competitive product. We're out there now introducing ourselves all over again. With QSK95 we have found that we are in conversations that we haven't been in before. We have looked really hard at this and we think there is a big opportunity for us."

► *A stripped down QSK95 at Seymour*

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Podded thruster has reached quarter-century milestone

ABB is celebrating the 25th anniversary of the first installation of an Azipod unit. During a quarter of a century of service the podded thrusters have clocked up more than 12 million hours of running time, helping save the maritime industry 700,000 tons of fuel.

The story started 25 years ago. The Finnish vessel ***Seili*** may not have the prestigious reputation of some of its larger peers but it heralded one of the most exciting innovations in recent maritime history. After its conversion in December 1990 it was fitted with a propulsion system which went against conventional wisdom: an Azipod.

The vessel, owned by the Finnish Board of Navigation, was the starting point for a new generation of azimuthing propulsion which, over the next 25 years, would power some of the world's most complex vessels.

Today, the majority of large new cruise ships and ice-going vessels are fitted with Azipod propulsion units, along with large numbers of offshore and construction vessels. The development of the Azipod propulsion was a response to the need from the maritime industry. Icebreaker owners wanted manoeuvrability without compromising on power. Meanwhile, cruise ship companies wanted more space onboard for their customers rather than existing shaft line propulsion. Everybody was looking for more fuel-efficient technology, and so ABB worked closely with the shipyards and ship owners to find a solution.

Only five years after the successful trial on ***Seili***, the first order for a cruise ship was received. New models were developed over the years including the CRP Azipod, Azipod C and Azipod X.

In 2015 the Azipod D was launched and the Azipod propulsion continues to be at the heart of some of the most exciting projects in the maritime industry, such as the world's most advanced port icebreaker, to be built by Vyborg shipyard.

▲ **Seili**, *the first vessel to be powered by Azipod thrusters*

The benefits of the Azipod propulsion are as relevant today as they were a quarter of a century ago: high hydrodynamic efficiency, superior manoeuvrability, space savings, low noise and vibration, good maintainability and the various benefits in the ship building process. Some shipowners have even recorded more than 20 per cent fuel savings compared to conventional systems, benefiting their bottom line while also reducing emissions.

Nozzle improvements boost speed and efficiency

The new VarioDuct SDV45 high-performance nozzle is now available in the Rudderpropeller range from the German propulsion specialist Schottel. The nozzle offers higher efficiency at open-water speeds combined with very good bollard pull values.

In conjunction with optimally designed propeller geometries, the outstanding performance characteristics of the nozzle come to the fore. Given the same propulsive power, it has a greater bollard pull than the thrust of previous nozzles and, at the same time, offers considerably greater efficiency in the medium and high speed range.

The combined system, consisting of a Rudderpropeller and the new nozzle, thus contributes significantly to fuel savings.

The new nozzle, with its compact geometry, offers considerably greater power than standard nozzles, and it can also be optimally adapted to different vessel designs and applications. The small outer diameter also makes the nozzle ideally suited to shallow-water operation.

Customers profit from state-of-the-art CFD (computational fluid dynamics) methods which Schottel applies for flow simulation. During the development of new products, CFD calculations are used to investigate hundreds of geometry variants and thus determine the optimum design. This geometry is then tested by means of model trials to demonstrate the operating characteristics.

Schottel uses CFD and other computer-based, three-dimensional calculation methods for the in-house development of custom-tailored and optimally co-ordinated propulsion systems for virtually all vessel types and applications. On the basis of extensive experience, hydrodynamics specialists optimise the systems in terms of power, durability, compactness and fuel savings in accordance with customer project requirements.

- Schottel has introduced new type designations, starting from 1 September 2016. These replace current product names developed over the past 65 years since the invention of the Rudderpropeller.

The new nomenclature will ease orientation among the variety of products. The products themselves remain the same. For all SRP, STP, SCD and SRE propulsion units, the SRP or STP abbreviation will be followed by a three-digit sequential number (for example, the former SRP 1515 will be referred to as SRP 460).

◀ *The new VarioDuct SDV45 nozzle, shown with Rudderpropeller*

In brief

Alfa Laval has announced Alfa Laval PureSOx Global, part of a major expansion of the PureSOx platform. PureSOx Global will be introduced for 0.5 per cent sulphur compliance, taking its place beside the PureSOx ECA system for 0.1 per cent sulphur compliance. In addition, there will be a PureSOx Flex system offering compliance at both levels.

Antwerp-based Subsea Industries has introduced a filler coating for use with its Ecoshield hard coat system. Ecofix, formulated to provide a cost-effective solution for the repair of corroded or pitted steel surfaces, returns the thruster or rudder to its original state prior to protecting the repaired area with Ecoshield.

Taking human error out of fuel monitoring

With oil companies putting more emphasis on fuel management in OSV contracts, diesel power specialist Royston has extended the capability of its enginei monitoring system with the introduction of a new auto-mode detection capability.

The enhanced system now provides more accurate monitoring of fuel consumption and emissions, enabling operators to identify the most economic 'ecomode' operational procedures. The Royston enginei system uses volumetric and mass flow measurement to give vessel owners and operators detailed engine performance data, fuel optimisation rates and mission critical information.

As part of the system, the specific operational mode of the vessel has previously been indicated by manual notification into the system by a crew member. Some modes, such as standby and transit, are common to all vessels, while others are specific to certain types of craft, including dynamic positioning by OSVs. Fuel consumption and emissions levels are influenced by the specific activity being undertaken, along with speed and weather conditions. The accurate monitoring of performance during different modes can therefore have a significant impact of the economic operation of the vessel.

To meet this need, working with marine engineering specialists from Newcastle University, Royston has developed an upgraded version of the enginei fuel management system that utilises sophisticated data processing and statistical analysis to automatically identify the vessel's operational mode.

By identifying individual operational modes automatically, the auto-mode capability removes the risk of human error, enabling more reliable vessel and engine performance data to be produced. This means that on board engineers and offshore fleet management staff have the ability to make more informed and accurate decisions based on trusted information on fuel consumption.

On board the vessel, touchscreen monitors on the bridge and in the engine control room show all aspects of key vessel criteria using displays and presentations of trending graphs against voyage data. The information captured on board is also available for remote interrogation by onshore management and supervisory staff through a secure online portal and web dashboard.

▲ *Using the new enginei fuel monitoring system via its touchscreen interface*

Development of the advanced new auto-mode system included trials undertaken in partnership with offshore fleet services company GulfMark, using its ***Highland Prince*** OSV which has a diesel electric propulsion system with four main Caterpillar engines and two auxiliary engines.

In tests undertaken with the vessel, engine and fuel data enabled performance comparisons to be made between crew-activated operational modes and the automatic predicted mode.

Engine and other sensor data were collected and analysed by the system to develop control limits for different operational modes, and these profiles were used to automatically identify changes in the operational behaviour of the vessel as they occurred.

Jim Bradford, general manager of operations for GulfMark, said: "The tests we have undertaken on the new enginei auto-mode detection capability have been very successful. Auto mode identification was very accurate, enabling close correlation of different vessel operational activities with specific fuel consumption rates. The automatic logging of vessel activity type will mean that the crew and onshore staff can identify not only the mode of operation but the time spent in each mode."

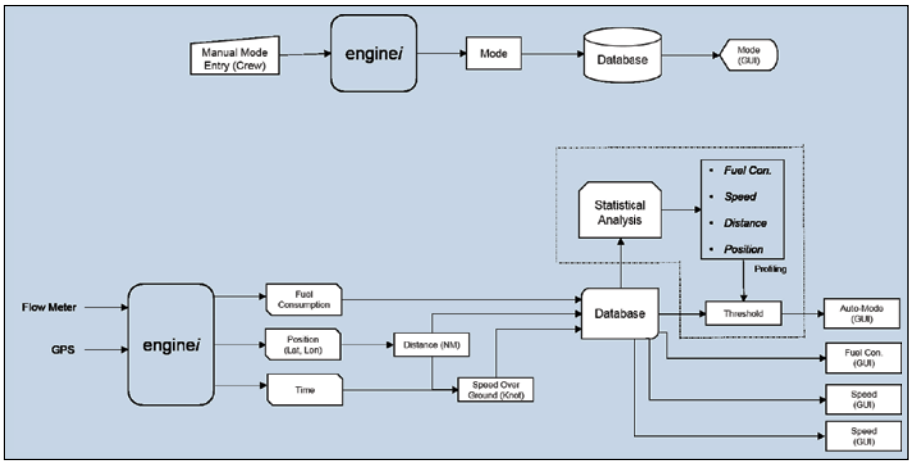
For example, ***Highland Prince*** voyage data showed that 52 per cent of vessel time was spent in transit, 5 per cent in port, 23 per cent in dynamic positioning mode and 20 per cent spent in standby mode waiting to access the offshore installation.

Bradford said: "Auto-mode will allow better voyage planning with optimum speeds and fuel consumptions achieved during transit. By arriving on time at eco speeds this will ultimately contribute to reducing not only the transit consumption but also the standby time at the installation and consequently the fuel burnt when in standby mode. In addition, the conversion of the fuel consumption data will also enable accurate CO_2 and other emissions levels to be calculated and operational adjustments to be made.

"Importantly, having more accurate performance data will also enable us to look at the actual working hours of individual engines, enabling us to more effectively balance their use at optimal levels of power output and to prioritise service and condition-based maintenance requirements."

The enginei fuel management system is compatible with all marine engine types and can be interfaced with newbuild engine installations or retrofitted to operating vessels.

▼ *A schematic of* **Highland Prince***'s monitoring system, incorporating enginei*



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Rapid design time achieved

Responding to customer feedback and demand, marine propulsion company Nautican has completed the pre-engineering of standardised components for its range of integrated propulsion units (IPUs), for propeller diameters from 1,626mm (64in) to 3,962mm (156in). These components form the core of the new Nautican Ocean Series IPUs, and allow Nautican to rapidly design a complete system for each customer.

Since implementing the Ocean Series, Nautican has been able to cut down significantly on the time it takes to show customers exactly what system best meets their specific vessel needs.

Elizabeth Boyd, president of Nautican, said: "For most projects, we can tell the customer on the first phone call what system will work best for them and how it will perform. In addition, the pre-engineering of the series has decreased – by an order of magnitude – the amount of time and effort required to get the project from drawings into production."

The push towards standardised components also means that manufacturing is smoother, faster and more predictable. Nautican is now better equipped to work with suppliers in providing the most accurate and achievable delivery dates to customers, which allows the firm to schedule projects more accurately, with less slack time in the schedule. This has helped Nautican to respond to increasing demand from customers while also cutting down on lead times.

Nautican recently filled their last available production slot for 2016, with a delivery in mid-December. Space is currently available for deliveries in February to March 2017.

◄ *Nautican Ocean Series IPU*

Americas dealer network expands

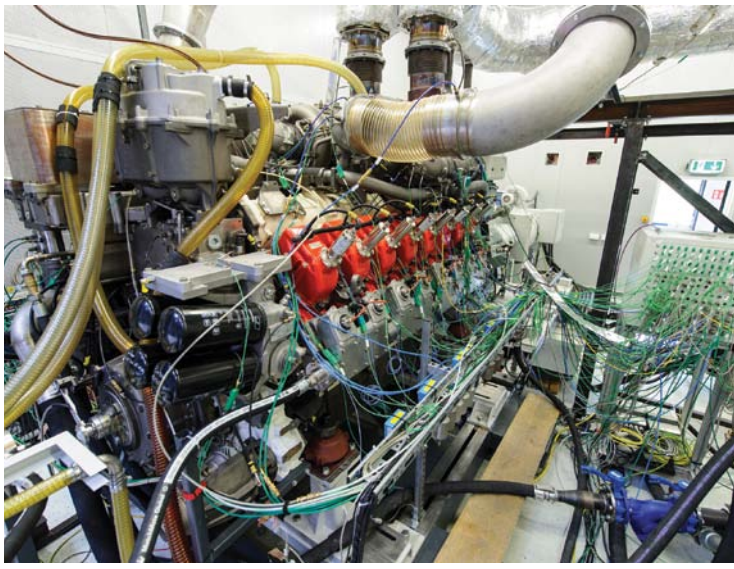
Service technicians from five countries have completed a two-week training class conducted by Volvo Penta of the Americas in Panama, as part of a programme to expand and upgrade its marine dealer network in Mexico, Central America and the Caribbean.

Volvo Penta holds similar training schools for dealer technicians several times a year in the region. The classes give practical hands-on instruction in diagnosis and repair of Volvo Penta marine engines and drives.

Ed Monacchio, vice president of distribution development for Volvo Penta of the Americas, said: "We've invested heavily to improve local support for marine customers in Central America and the Caribbean, and technical training is an important element in this strategy. In the last two years we more than doubled the number of dealers in this region to meet rising demand. We are also taking steps to standardise service and warranty policies and procedures to harmonise with those in North America."

Gas engine takes a step closer to delivery

Engine maker MTU, a brand of Rolls-Royce Power Systems, has announced that its new gas marine engine has successfully completed 3,000 hours on the test bench. The company intends to deliver the first certified series production gas engines for commercial vessels in 2017.



► *The MTU gas marine engine undergoing testing*

Dr Ulrich Dohle, CEO of Rolls-Royce Power Systems, said: "We can now confirm that the engine meets both our requirements and those of our customers: its performance and its acceleration behaviour are similar to the excellent characteristics of a diesel engine. It is economical, reliable and clean."

On the test bench, it was possible to simulate real-life manoeuvres that represented the dynamic acceleration behaviour of a diesel engine. The successfully completed 3,000 hours demonstrate that the gas engine matches the reliability of the MTU Series 4000 diesel engine.

"We are convinced that gas engines will become increasingly more important as supplements to our proven diesel engines for marine applications," said Dohle. "Natural gas is an important fuel of the future. It will be available longer, it is cheaper to obtain in many regions of the world and has a better environmental footprint than heavy oil or diesel."

Future emission regulations will demand even more environmentally friendly propulsion systems than are currently available. In the case of the gas engine, health-threatening substances in the exhaust gas have been reduced by 80-100 per cent compared with the diesel engine, and greenhouse gases by up to 11 per cent. The new MTU gas engine will meet the IMO III emission standards (in force since 2016) with no additional exhaust gas treatment required.

The 16-cylinder gas engine will have a power range of 1,500-2,000kW and will be based on MTU's proven 16V 4000 M63 diesel engine for workboats. At the end of 2017 the first engines will be used to power a tug built by Damen Shipyards for Svitzer towage and salvage company. The two companies have entered into collaboration with MTU to jointly put the world's first tug powered by high-speed gas engines into service, which will feature high performance in addition to reduced fuel costs and emissions. As a result of the engine's dynamic acceleration behaviour, low environmental impact, reliability and economy, it is ideally suited to tugboats, ferries, pushboats and special purpose vessels such as research vessels.

The new gas engines will be equipped with a multi-point gas injection system, a dynamic motor management system and an advanced turbocharger. The multipoint gas injection system is designed to provide the engine's dynamic acceleration behaviour, increased performance and reduced emissions. The competition concept ensures that IMO III emission standards are met without the need for additional exhaust gas treatment.

Controlled combustion ensures that fuel is used efficiently. The safety concept, which has been optimised for gas operation, includes double-walled gas supply lines, which means that no additional complex safety precautions are required in the engine room.

In its development of the new gas marine engine, MTU has benefited from the 30 years' experience it has gained to date with stationary gas engines for power generation and the experience available within the Rolls-Royce Group, which has equipped ferries with medium-speed pure-gas propulsion systems for some 10 years.

Green technical development award for LNG-powered tug

Japanese companies NYK Line, Wing Maritime Service Corporation and Keihin Dock Co Ltd have jointly received the Technological Development Award at the 17th annual Logistics Environment Awards sponsored by the Japan Federation of Freight Industries (JFFI). The award recognised the environmental load reduction achieved by Japan's first LNG-fuelled tugboat, *Sakigake*.

NYK conducted technical research and development on the use of LNG to fuel ships in order to meet the tightened regulations on CO_2 emissions from vessels. ***Sakigake***, which was delivered in August 2015 and comes equipped with dual-fuel engines that can use either LNG or diesel oil, was highly evaluated by the JFFI because LNG fuel has much less of an environmental impact compared with heavy fuel oil.

The NYK Group has implemented a number of similar solutions, such as the construction of the world's first LNG-fuelled car carrier and LNG bunkering vessel. NYK has also teamed up with Engie and the Mitsubishi Corporation to develop the LNG bunkering business, and will contribute to the continuing promotion and development of LNG fuel for ships for reduced environmental loads. Use of LNG almost completely eliminates SO_X and particulate matter (PM) emissions, and the operation of LNG-fuelled vessels can result in a reduction of nearly all SO_X and PM emissions compared to emissions by vessels powered with conventional heavy fuel oil. Use of LNG can also reduce CO_2 emissions by approximately 30 per cent and can reduce NO_X emissions by up to 80 per cent.

▲ *The LNG-powered tug* **Sakigake**

Organisations and individuals are recognised by the JFFI for efforts to protect the environment and enhance environmental awareness in the sphere of logistics. The awards were founded in 2000 and are presented annually. This is the third time since 2009 that NYK has been honoured at the annual awards ceremony.

DC development signals a change of power

ABB global product manager, John Lindtjørn, talks about the creation of the company's radical Onboard DC Grid, which promises significant operational cost savings for OSV operators

◄ *John Lindtjørn, right, with the Onboard DC Grid*

Diesel-electric propulsion continues to be superior in vessel efficiency terms to conventional plant for specific ship types, but varying operational demands do not always make optimal use of AC's need for generators to run at constant revs/min.

This was the starting point for the development of Onboard DC Grid, the radically different power distribution solution enabled by developments in DC protection methods, and first proposed by ABB in 2011.

Five years later, despite shipping's sustained slump, Switzerland-headquartered ABB has quietly been securing orders in such numbers and across such a range of vessel types, including OSVs, that the company sees the solution as a modular offer whose merits demand attention across the industry.

Operating at a nominal voltage of 1,000V, Onboard DC Grid allows power sources/power levels to match vessel needs, integrating battery power/energy storage as one of those sources.

Rather than being locked at a specific frequency (usually 60Hz on vessels), each power source and consumer is an AC or DC 'island' controlled and optimised independently, allowing the grid to combine smart DC distribution with the advantage of AC components.

When a marine engine is operated at constant speed, fuel consumption is typically minimised at around 85 per cent load. In general, diesel electric solutions have always involved variable propulsion drive/propeller speeds. DC Grid, in addition, allows generators to be run optimally anywhere on the engine's power curve, offering a further means of fuel consumption optimisation.

The first Onboard DC Grid installation, on PSV ***Dina Star*** in 2013, saw owner Myklebusthaug Offshore confirm significant fuel savings – with savings in low load conditions reported of up to 27 per cent. In addition, even when undertaking dynamic positioning in challenging weather conditions, the owner confirmed achieving 14 per cent fuel savings.

ABB admits this argument appeared to lose some force when oil prices nose-dived, but adds that, with shipping in turmoil through 2014-2015 also hindering, it is all the more notable that Onboard DC Grid orders have powered on.

This, according to John Lindtjørn, ABB global product manager for Onboard DC Grid and energy storage, is because the product offers owners far more than fuel savings and improved dynamic response. He says that the sheer variety of vessel types specifying Onboard DC Grid have highlighted other telling benefits. Heading the list is the way DC Grid comes into its own in terms of energy storage, but there are others: more space for payload, fewer components, reduced weight, easier cable installation, lower maintenance, and even more effective use of shore power.

> *"The approach simplifies the process of exploiting stored energy as a source for power in a way that is functionally integrated with the other sources on board"*
>
> **John Lindtjørn, ABB**

Lindtjørn said: "Variable speed engines and shaft generators will naturally benefit the ferry market because they will help lower engine fuel consumption and emissions. However, in this case the main driver for DC Grid has been the addition of energy storage which can be fully integrated."

In other cases, too, Lindtjørn says energy storage capability has quickly become an increasingly significant driver for uptake. He said: "It is much easier to integrate energy storage using a DC system than it is for AC, and customers are coming to see that what they get is more functionality for the same investment."

Exemplary, Cefront Technology's concept for a ship-to-ship oil cargo transfer vessel, is one of the most innovative vessels currently under construction in the offshore sector. The 90m LOA vessel is being built by COSCO Nantong and COSCO GuangZhou. Here, says Lindtjørn, Onboard DC Grid will allow the ship's four 3,600kW ABB generators to operate at variable and optimum speeds, with a DC Grid-compatible 350kWh battery used for energy storage, back-up, enhanced dynamic support and peak shaving.

Lindtjørn said: "The approach simplifies the process of exploiting stored energy as a source for power in a way that is functionally integrated with the other sources on board. An integrated power and energy management system (PEMS) lets each of the power sources play to its own strengths, thereby coaxing the most out of the system overall."

Onboard DC Grid, Lindtjørn adds, is also integral to the power, propulsion and automation systems for the world's most advanced port icebreaker, built by Russia's Vyborg shipyard for heavy harbour ice conditions. Its ability to allow diesel engines to optimise efficiency while running at variable speeds is a compelling advantage when managing ice conditions.

He said: "These are vessels that can take particular advantage of variable speed generators, which already make widespread use of frequency convertors. To be able to deliver that within a lean, more space efficient convertor configuration really counts. I also see clear benefits for applying Onboard DC Grid in combination with a battery in the coastal tanker segment."

Lindtjørn says one of the obstacles to the uptake of environmentally-friendly shore-power as an option for ships in port has been that limited power ratings alongside force vessels to run onboard engines to cover peak onboard loads.

He said: "If you need to run a parallel system anyway, some vessels choose not to use shore power at all. Storing energy in a battery can overcome this issue. The ship can draw the current steadily from shore and adapt to peak loads using the battery."

To illustrate his point, Lindtjørn cites ABB's own selection of DC Grid for its advanced cable-laying vessel, due to be delivered from Norway's Kleven shipyard in 2017. He said: "DC Grid's integrated power management plus energy storage is once more expected to cut fuel consumption significantly; but this ship will also exploit shore power to spool cables from a dock side production facility. It would be possible to use a conventional AC solution for this, but the point is that this is another example of how DC Grid's lack of complexity makes dock side spooling not so much possible as integral to the ship's capabilities."

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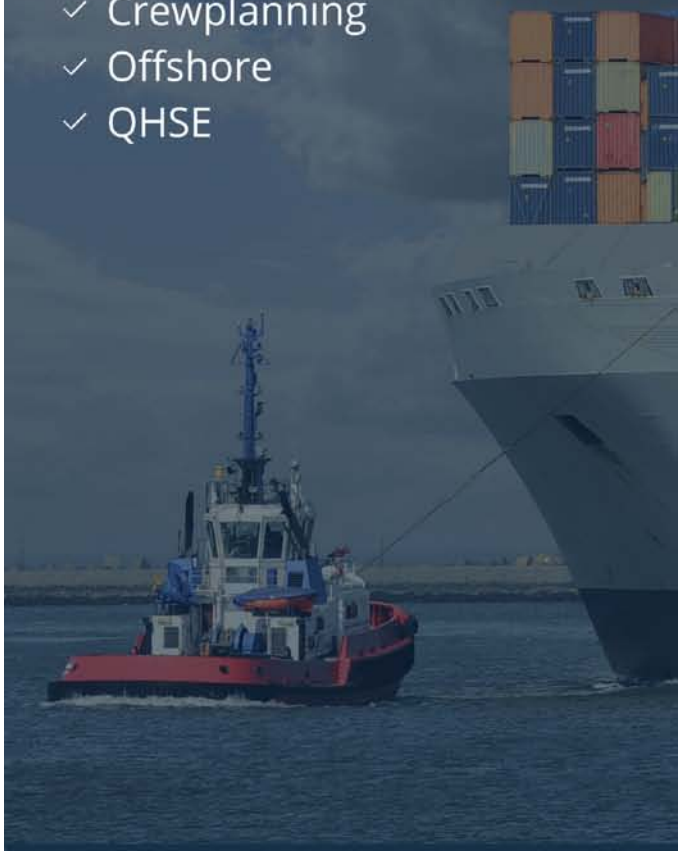

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Automation: tugs will lead the way

► *Oskar Levander*

Rolls-Royce vice president of innovation – marine, Oskar Levander, talks exclusively to *IT&O* about his vision for the remotely operated and autonomous tugs of the future

"Tugs, along with road ferries, are likely to be one of the first places we will see the commercial use of remotely operated and autonomous vessels." So says, Oskar Levander – Rolls-Royce, vice president of innovation – marine, who has been a prominent advocate of the technology to make these vessels a reality.

He said: "The technology building blocks to make this happen already exist. The sensor technology is sound and commercially available. The current development task is to find the optimum way to combine them cost effectively in a marine environment and add some intelligent features such as automatic object detection."

Rolls-Royce, as part of the Advanced Autonomous Waterborne Applications (AAWA) Initiative is conducting a series of tests of the sensor arrays in a range of operating and climatic conditions in Finland. Tests are taking place now on board Finferries' 65m double-ended ferry ***Stella,*** operating between Korpo and Houtskär.

The aim of such sensor fusion is to create an enhanced situational awareness for the vessel's operator. As well as for remote and autonomous control, this has potential benefits for conventional shipping operations, such as the offshore and cruise sectors, where the driving factor would be improved safety.

But the rules and standards for remote and unmanned vessel operation are still being developed by regulators and classification societies. It will take some time before the IMO has introduced an international set of rules for unmanned operation.

Levander said: "Tugs and road ferries are most likely to fall under the control of individual flag states. These have the capacity to make special dispensation for their operation."

With a number of countries around the world keen to create some form of national competitive advantage in this area, he expects to see a vessel of this type to be the first in operation and in the near future.

Another factor, according to Levander, that is likely to drive the development of remote and autonomous tugs and road ferries is a by-product of the nature of their operation. Both types of vessels come frequently into port. This will make operation easier by ensuring that any reliability issues can be quickly and easily addressed.

> *"It is likely that at the beginning vessels will be under remote control before potentially moving to a blend of autonomous and remote control"*
>
> **Oskar Levander, Rolls-Royce, VP innovation – marine**

The geography in which both operate will also help. It is clearly defined and well known. This makes the development of the decision-making algorithms needed for robust decision support systems much more straightforward. This constrained geographic operation may even lead to the development of local rules allowing their operation.

A final factor which convinces Levander that the time is ripe for this development also results from the geography the vessels operate in. The transfer of data from ship to shore will benefit from the ability to harness existing land-based communication infrastructure, such as mobile phone signals, to transfer the data required from ship to shore quickly, cheaply and easily without the need for a satellite link.

By extension, this argument also points the way for the adoption of remote and autonomous technology by operators of inland waterway vessels and tow boats. This sector also has the potential for regulations to adapt to remote and autonomous operations more quickly.

Levander said: "It is likely that at the beginning vessels will be under remote control before potentially moving to a blend of autonomous and remote control." He envisages tugs operating autonomously, while awaiting assignment (possibly using a weather optimal positioning system which maintains the vessel's ideal position in relation to the prevailing weather using the minimum number of thrusters and consequently saving fuel) and in transit, before being taken under remote control where more advanced manoeuvres are required.

As a consequence, one or a small number of experienced tug masters will be able to operate multiple vessels from a state-of-the-art control room. Such control rooms will have an array of technology to help captains maintain a real-time overview of shipping traffic along with status reports on individual vessels. In the event of a malfunction the master can review the available options and recommend the appropriate measures to be taken.

At the heart of such a system will be DP technology controlling the movement of the vessel. DP is a well proven technology in use since the 1960s. Companies such as Rolls-Royce have extensive, proven experience of designing and operating in exacting environments, such as the offshore sector, where any loss of position has the potential to result in fatal accidents, severe pollution or damage with major economic consequences.

All the controlling communications technology will be designed to have redundancy, allowing the vessel to continue to operate safely in the event of a failure of any one part. Ultimately any vessel will 'fail safe' in the event that communication with it is lost. The vessel will act autonomously, defaulting to a pre-defined safe state, such as holding position, or moving away from the fairway to a predefined safe area, until a fix can be effected.

As with remote and autonomously operated vessels of other types, the principal reasons for adoption will be the cost, efficiency and

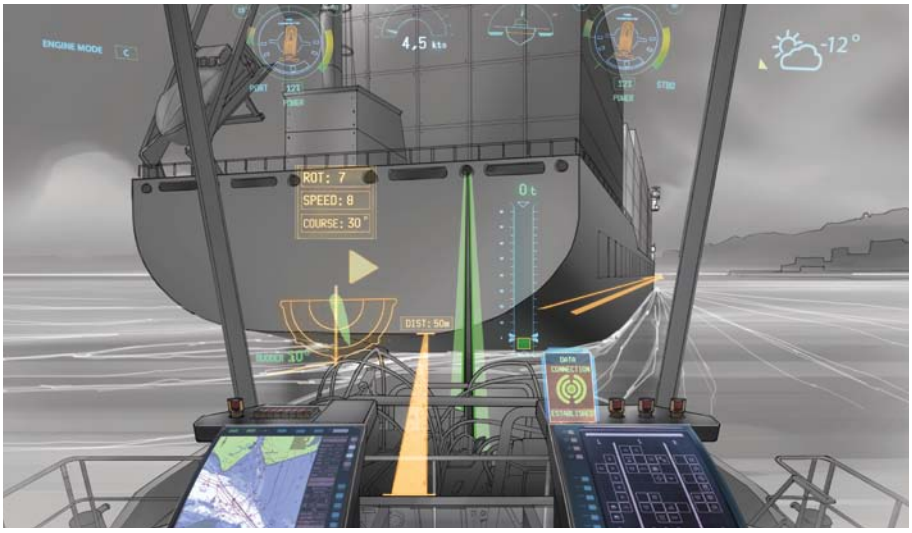
◄ *An artist's impression of the remotely working tug master of the future*

safety gains on offer. Reduced crew costs, which are a significant proportion (between 50 and 70 per cent for a tug) of a vessel's operating costs, are likely to be an attractive proposition for operators.

With no crew to accommodate, certain features of today's tugs that exist for the benefit of the crew – for example the deckhouse – can be removed. This will give a slightly smaller and lower profile tug, which has the potential to be lighter, cutting energy and fuel consumption. Operating costs will also be reduced as a consequence of better hydrodynamics. But, in the beginning, Levander warns, it may be that we will see a hybrid version of such a vessel, still allowing the potential for on board steering if needed.

According to a report published by insurance company Allianz in 2012, between 75 and 96 per cent of marine accidents are a result of 'human error'. This is often as a result of fatigue. A remote-controlled or autonomous vessel will reduce the risk of injury and even death among ships' crews and the potential loss of, or damage to, valuable assets. To secure regulatory approval and the support of ship owners, operators and seafarers, as well as wider public acceptance, the operation of remote and autonomous ships will need to be at least as safe as existing vessels. The marine industry has some experience of systematic and comprehensive risk assessments.

However, when new or emerging technology is involved, a wider and deeper understanding of a new and changed risk portfolio – with a variety of known and unknown hazards – is needed.



▲ *An artist's impression of the remote operation of a tug of the not-so-distant future*

The AAWA project is identifying and exploring these hazards and developing approaches to tackle them.

Compared to a bulker, the role of a tug is much more complex. The principal challenge for a remotely operated or unmanned vessel will come with the performance of the rope handling to connect to the vessel being towed.

Levander said: "If we were starting from scratch, this would be easier. We could design a solution at ship level that would make this simpler – for example, putting the bollards in a lower position outside the ship."

However, he admits this is not a commercial option, as a tug must be able to assist all existing vessels as well. As a consequence the company is using its extensive experience of the development of deck machinery to explore solutions to the problem as it exists today. Despite this challenge Levander restated his much quoted view, that: "This is happening. It's not if, it's when."

Veteran icebreaker getting new lease of life

Veteran icebreaker *Voima*, part of the Finland-headquartered Arctia fleet, has been undergoing comprehensive dry docking and life extension at the Turku Repair Yard in Naantali, Finland.

Work, due to be finished in September 2016, includes extensive renewal of the vessel's hull steel structures, machinery, deck equipment and accommodation.

The oldest vessel in Arctia's icebreaker fleet, ***Voima*** has seen service for more than half a century. The sturdy-hulled vessel has demonstrated its reliability on the Baltic Sea over the decades and has served as a model for many subsequent four-thruster icebreakers.

Commissioned in 1954, the 83.5m long, 4,159gt ***Voima*** was the first of the new icebreakers to emerge from Finland's post-war rebuilding programme.

At the time of its launch, the vessel was a special case, even from an international perspective. For the first time in the world, an icebreaker had been fitted with fore propellers with opposite rotation.

Voima was designed for use in the open sea, with a wide 19.4m beam that allowed 10,000dwt cargo ships and 16,000dwt tankers to travel in the channel it had broken. The vessel's great engine power and excellent manoeuvrability (it is able to turn completely around in place and is capable of sideways movement) aroused considerable interest outside Finland. For the builder of this speciality of its time, the Hietalahti shipyard, the vessel was a showcase of design and craftsmanship. Wärtsilä proceeded to build three sister ships for ***Voima*** that were delivered to the Soviet Union (***Kapitan Belousov*** in 1954, ***Kapitan Voronin*** in 1955 and ***Kapitan Melehov*** in 1956), and one that was delivered to Sweden (***Oden*** in 1957).

▲ *Arctia's veteran icebreaker* **Voima** *which is undergoing a major life extension*

Voima was renovated in 1978–79. Its machinery was replaced and the interior was refurbished to meet modern standards. All deck structures were entirely rebuilt, resulting in a vessel that bore some resemblance to Arctia's other icebreakers, ***Urho*** and ***Sisu***. The sides of the ***Voima*** were strengthened with new plates to provide protection against pressure from ice, and the vessel was fitted with a completely new Wärtsilä 16V-22 main engine, new electric devices, new quarters for the 21-person crew, and a new bridge. Its thruster engines were also modernised.

Kari Patrakka, SVP for Technology at Arctia, said: "This life extension will ensure ***Voima***'s operational capability for at least another 10 years. The extension is part of our fleet's upgrade and renewal programme. ***Voima*** continues its important work assisting merchant vessels in Finland's coastal waters."

Ice Class vessels to work in Caspian

Lukoil has contracted with Bumi Armada Berhad to put three Ice Class vessels into service in the Caspian Sea.

Bumi Naryan-Mar is a standby/rescue vessel equipped with oil spill response equipment and fire-fighting system, which can take up to 125 people onboard during rescue operations. OSVs ***Bumi Uray*** and ***Bumi Pokachi*** will deliver cargo and personnel as well as remove industrial and household waste from platforms.

The vessels' design allows them to pass through the Volga-Caspian canal and their Ice Class makes them suitable for year-round operation. Lukoil, the largest privately-owned Russian company, employs more than 110,000 people and accounts for more than 2 per cent of global crude oil production.

EU: 'Future of Arctic in our hands'

The European Commission has adopted a policy proposal to guide the actions of the European Union (EU) in the Arctic region.

The EU will step up its existing engagement throughout the region, with 39 actions focusing on climate change, environmental protection, sustainable development and international co-operation.

The particular importance of research, science and innovation to enable sustainable development is reflected across these areas.

EU commissioner for environment, fisheries and maritime affairs, Karmenu Vella, said: "We impact on the Arctic and the Arctic impacts on us. Global weather patterns, our oceans' ecosystems and local biodiversity – the Arctic influences them all. While increasing human development is inevitable, it is in our hands to do it in a sustainable way. We have to do this in full respect of the livelihoods of those who live in the region and by protecting its most valuable resource: the environment."

The proposed actions will now be discussed with the EU member states in the council and the European Parliament.

► *The EU aims to reduce environmental impacts, such as the melting polar icecap*

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TUGNOLOGY '17

The *Tugnology* ethos – a 'no frills', two-day technical conference, dealing solely with tugs – continues to be as popular as ever, and we are delighted to be holding our 6th biennial event in 2017. The *Tugnology* conference started in 2007 due to popular demand and has so far been held in Southampton, Amsterdam, Antwerp and London, with ever-increasing numbers of delegates at each event.

Concentrating on the design, construction, operation and economics of tugs, the conference is just what our delegates asked for, and the lively forum sessions and subsequent feedback tell us we have got it right. Alongside the conference are simple, to-the-point tabletop displays, which are also extremely popular with delegates.

CONFERENCE

The paper selection committee is currently in the process of choosing the papers that will make the final programme. Information will be made available in the coming weeks in the Conference Programme pages of the *Tugnology '17* section at www.tugandosv.com.

As with previous *Tugnology* events, these technical papers will reflect the experience, research and knowledge of some of the leaders of our industry, and the emphasis will be very much on discussion of the ideas, initiatives and technical developments they highlight. To this end, pre-prints of the majority of papers will be made available to registered delegates, via www.tugandosv.com, two weeks prior to the start of the conference, so they can prepare questions in advance if they so wish. Delegates can also print out hard copies of the papers that most interest them. Folders containing complete print-outs of all the papers will be supplied when delegates register and collect their name badge at the event.

The conference will be chaired by Mike Allen, longstanding regular chairman of the influential and highly-respected biennial *ITS* conventions.

TABLETOP EXHIBITS

There are a limited number of tabletop display spaces available on the conference level of the convention centre, in between the conference room and lunch area. These are an ideal way of displaying your company literature or showing a video during the coffee, tea and lunch breaks. The 180cm x 90cm tables are covered with a tablecloth, and come with two chairs, an electrical socket and a name sign identifying your company. Tables cost €2,400 and include one delegate registration to the event. Please visit tugandosv.com for the most up-to-date version of the floorplan, showing companies that have already reserved space. Should you require more space, please let us know as we may be able to alter the floorplan accordingly. Tabletop displays are only available to registered delegates. Space is limited and demand is expected to be high, so early booking is recommended.

VENUE

Tugnology '17 will take place at World Trade Centre (WTC), Beursplein 37, 3011 AA Rotterdam, The Netherlands, in the vibrant heart of Rotterdam. WTC Convention Centre is located in the city centre, with excellent transport links, both by car and public transport – the Metro station is just a few minutes' walk away. On the WTC's doorstep you will find plenty of restaurants, a wide variety of shops and an art gallery. There is also ample car parking space available.

ACCOMMODATION

We have chosen six hotels that are all no more than a short walk from the World Trade Centre and will offer preferential rates to delegates. Room prices vary for each hotel so there should be something to suit all budgets – from €99 to €179 per night. You can view further details of the hotels via our dedicated booking link, which can be found on our website – please visit the *Tugnology '17* section of www.tugandosv.com and click on the 'Venue & Accommodation' page.

REGISTRATION INFORMATION

Early Bird (fees paid in full before 31January 2017)	**Euros**
Single delegate	€1,125.00
2 or more delegates from the same company	€1,012.50
***ITS Club* member and Early Bird discount**	
Single delegate	€1,068.75
2 or more delegates from the same company	€961.88
Registration fees after 31 January 2017	
Single delegate	€1,250.00
2 or more delegates from the same company	€1,125.00
***ITS Club* member after 31 January 2017**	
Single delegate	€1,187.50
2 or more delegates from the same company	€1,068.75

All the above prices exclude Dutch VAT @ 21%

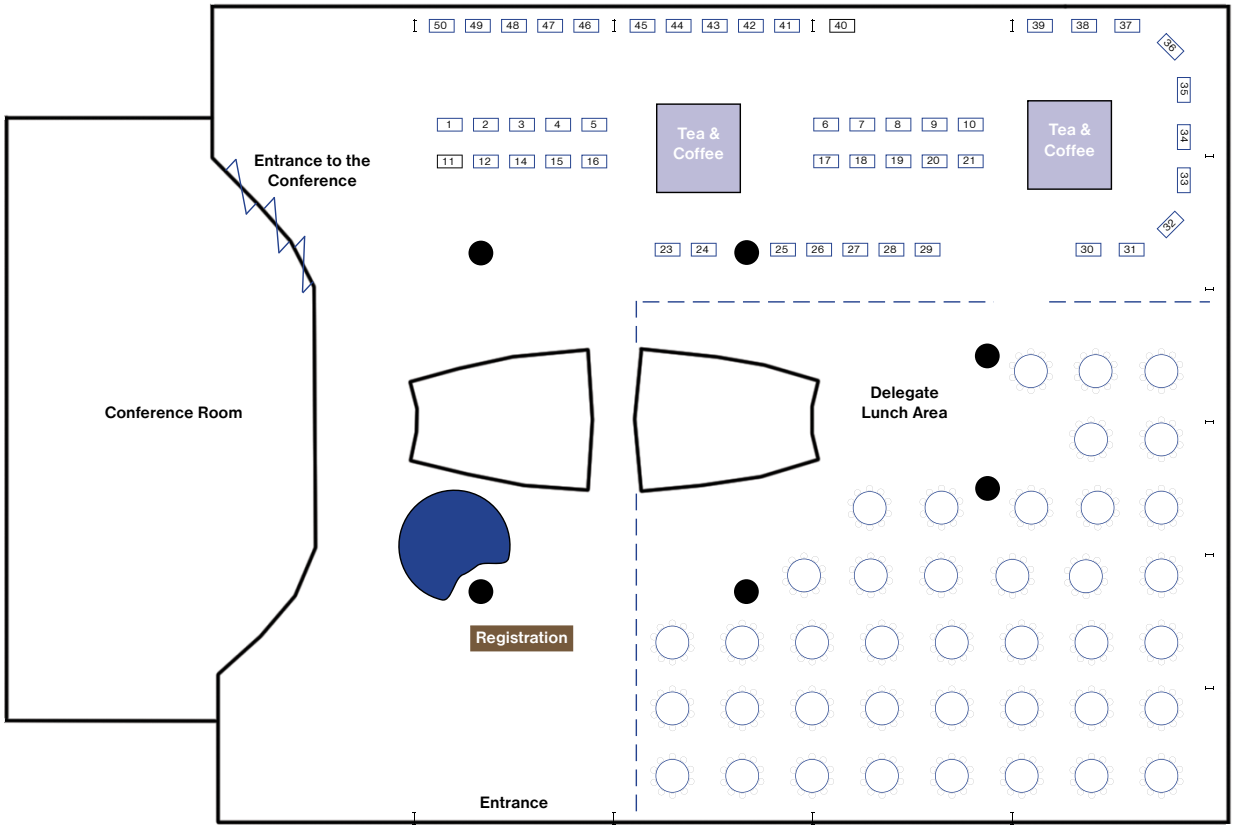
For full terms and conditions and to register, visit the *Tugnology '17* section at www.tugandosv.com

TUGNOLOGY '17

23-24 May 2017, World Trade Centre, Rotterdam

FLOORPLAN

The floorplan below shows the location of the tabletop exhibits in relation to the conference room. Coffee and tea breaks will all be served in and around the tabletop display area. These tables are only available to registered delegates and their companies, at a cost of €2,400 plus Dutch VAT, which includes one delegate registration. The floorplan is subject to change. Please visit our website for the most up-to-date layout.



WHAT THEY THOUGHT ABOUT TUGNOLOGY '15...

"Excellent papers, networking allowed enough time to not be rushed. Very strong turn-out."
P. Jaime Tetrault, Caterpillar Marine Power Systems, Germany

"The Tugnology *and* ITS *conferences are the most highly regarded in the marine industry."*
Paul Jamer, Breakwater Group, Canada

"Congratulations to the organisation team of Tugnology *for another successful conference. Nice wide selection of papers and top level discussions."*
Thiago Lemgruber, EASA - Estaleiros Amazonia SA, Brazil

"Nobody brings tug enthusiasts together as well."
Buckley McAllister, McAllister Towing, US

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Cranes get US seal of approval

The American Petroleum Institute has awarded Italian crane firm Sormec the right to use the API monogram on offshore cranes for the second time.

Nearly 4,200 companies in 78 countries are licensed to use the API monogram mark on their products, which is a warranty by API monogram licensees to the API and its purchasers that the marked products comply in every aspect with the applicable product specification in effect at the time of manufacture. For the second time, Sormec is among these companies, having been awarded the right to use the monogram on cranes under conditions set out in the official publications of the American Petroleum Institute, *API Spec Q1* and *API Spec 2C*. *API Spec Q1* meets all of the ISO 9001 requirements plus additional elements deemed valuable by the oil & gas industry.

Sormec operates in the five continents as global offshore crane manufacturer. The firm has consistently increased its global market share in the past 25 years by delivering innovative, tailor-made cranes for marine and offshore customers all over the world. The firm's range of offshore cranes are designed to lift on the open sea, with sea conditions ranging from sea state 1 (slightly ruffled) to sea state 6 (high and long waves).

In the offshore sector Sormec has invested to provide customers with different types of systems too, including active heave compensation (AHC), constant tension (CT), manual overload protection system (MOPS) and automatic overload protection system (AOPS).

Complex subsea operations require lift and handling equipment that gives precise and reliable load control. The last AHC crane to be delivered to BP Azerbaijan was installed on a DSV. The crane, which had a double class certification from DNV GL and RMRS, has a main winch with AHC, MOPS, a 50-tonne AOPS and 650m of rope. The auxiliary winch comes with Man-Riding, a 10-tonne MOPS and 350m of rope. There is also a 5-tonne tugger winch. The crane is able to compensate by +/-2m (4m total displacement) at a peak speed of 80m/min.

Another new project worthy of note is an offshore elbow crane, M4500/EL. This AHC crane will be able to lift 50 tonnes at 25m outreach down to 600m below sea level. The design follows DNV Lifting Appliance 2.22, EN 13852-1 and FEM. The heart of the plant is a drive and control system of the main winch driven by five hydraulic motors controlled electronically. This project represents the latest stage of the company's evolution in terms of construction capabilities and design.

▲ *Sormec offshore cranes will benefit from the API monogram*

Acquisition grows company's range

At the end of June this year, deck machinery manufacturer Palfinger Group acquired lifesaving solutions supplier Harding Safety. Harding's offerings complete Palfinger Marine's product range of lifeboats and broadens the company's portfolio into rescue boats and davit systems.

Palfinger Marine already had a boat business: in July, the company launched its new workboat design PB 950 A, which has a bollard pull of 3 tons and is designed to perform multi-purpose towing operations, such as towing oil booms. The military sector is a growth area for this kind of product. Together with Harding, Palfinger Marine is now also a leading supplier of life-saving equipment.

With a product portfolio consisting of cranes, life-saving solutions and a broad range of winches and handling equipment, the company aims to develop into a 'full deck' supplier.

The company has supplied the towing and offshore sector with winches and cranes for years. Anchor-handling and towing winches in various sizes and configurations are offered, from single drum winches to larger double and triple drum winches ranging from 20-500 tonnes pull. Most winches are available with either electrical or hydraulic drives.

Winches are designed according to the customer's requirements with numerous features and options. Recently, a major contract for the supply of complete winch packages to 15 module carrier vessels was announced. In close co-operation with Palfinger Marine's offshore cranes department, the first active heave crane has also been developed and sold.

Solution developed in record time

At the end of 2015, DMT Marine Equipment was awarded a contract to support the development of a PSV with deck machinery. The company has now delivered an electrically driven escort towing winch, type ETW-E500kN, to Australian ship owner MMA Offshore.

The winch completes the vessel ***Mermaid Inscription***, an 87m DP2 PSV, which will operate offtake duties in the Timor Sea area for a multinational oil & gas company.

The diesel-electric vessel was modified in such a way as to provide both platform supply and static tow services. The modifications include an additional deck over the existing forward mooring deck, which accommodates the DMT escort towing winch built to operate in both escort and rendering mode.

The tailor-made winch operates in render and recovery, and is part of a turnkey solution, being delivered together with an automatic electric and hydraulic system, bridge and local control, and a length and force measuring system.

Bogdan Broasca, business development manager at DMT Marine Equipment, said: "There was a great challenge in this specific project, as we had to design and manufacture a solution to fit exactly the requirements of MMA. Working closely together with their technical team, we developed a solution in a record time, managing to successfully deliver the entire system in only five months."

Jamie Hulme, vessel manager at MMA Offshore Vessel Operations, added that DMT's vast experience in winch manufacture, and the technical solutions provided, made the company ideal for this bespoke project.

DMT Marine Equipment will continue to develop innovative and creative solutions dedicated to fulfil even the harshest operational expectations, and keep close to its partners through custom-made advice and support.

► *A DMT escort winch, at work in the Timor Sea*

Winch series prepared for increased tonnage

► *The new tugboat delivered to Petchem is fitted with JonRie Container Master series winches*

US-based operator Petchem has taken delivery of a new Farrell & Norton 24.4m, 5,000hp ASD tugboat from Gulf Coast Steel Boat Builders' shipyard in Bayou La Batre, Alabama. The vessel features JonRie Marine Winches' new Container Master series of winches.

The winch was designed with increased braking capability and rope capacity to deal with the larger container ships calling on US East Coast ports. The Container Master series is a heavy-duty design, capable of dealing with increased loading due to the increased sail area of today's container ships.

The winch system features JonRie's new Gen-X controls, including Hall Effect foot pedal and joystick operation to provide proportional control of the line haul and line out modes of the winch. The controls also feature JonRie's state-of-the-art message screen to allow the engineers access to the parameters of the winch. If a malfunction were to occur then the cause would appear on the screen.

The system also features a bypass control to negate the SCRs when running, allowing the operator to just monitor the winch load across the line of the buss to help reduce heat. The controls also feature JonRie's new Auto Abort system, giving the operator a one-move system to abort the hawser.

The tug itself has a unique design, with tapered windows for increased line of sight of the winch and safer operation using JonRie's foot pedal control for hands-free operation.

JonRie's standard feature systems are also included on the new tug, including a tension readout system with a red back light and dimming controls for better night vision for the master, while still displaying the load on the tug and winch.

Petchem's new equipment prepares East Coast ports for the increased tonnage coming through the canal in the near future.

Windlass joins firm's product range

MacGregor, part of Cargotec, has added to its Pusnes product range with the Pusnes RamWindlass. The new windlass is based on a chain-jack design and employs similar technology used in MacGregor's successful range of Pusnes RamWinches.

Torbjörn Rokstad, director, MacGregor Pusnes Mooring Systems, said: "The Pusnes RamWinch is well known in the industry for its compact size and low weight. It can be found on most of the spar platforms in the Gulf of Mexico and also on several other types of floating production units. However, over recent years, market demand has seen the need for an even more compact, chain-jack type design, resulting in the development of our new RamWindlass."

Current RamWinch designs have a main cylinder that extends below the winch foundation plates to exert the stroke or 'jacking' movement and each stroke moves the chain two links at a time. The Pusnes RamWindlass features some significant advances over current RamWinch designs. For example, it locks the chain on every chain link, instead of every second link. Locking one link at a time translates into a shorter stroke for the ram, which therefore requires less space. Also jacking occurs on the cable lifter, not on the chain.

"Space is at a premium on floating production units," said Rokstad, "and with the new RamWindlass operators will benefit from an even more compact design, which requires less height clearance in the mooring arrangement."

The Pusnes RamWindlass has an all-in-one foundation requiring no deck penetration and its simple design leads to low maintenance requirements and high levels of reliability.

▼ *The MacGregor Pusnes RamWindlass*

Flexible approach opening up new markets

Spanish manufacturer Ferri has been awarded a contract with Dutch shipbuilder Damen for the supply of main deck machinery to a new fisheries research vessel (FRV) being built for Angola's Ministry of Fisheries.

The FRV is designed for various functions such as hydrographic operations, acoustics research, pelagic and demersal trawling, environmental and geographical sampling, oil recovery and emergency towage operations. Ferri will supply the new FRV with an 8-tonne SWL knuckleboom crane with a reach of up to 15m in sea state 5 conditions, a fixed crane, telescopic beams, a stern A-frame of 25 tonnes, plus winches for trawling, pelagic and net among other deck equipment for mooring and anchoring. According to Damen, the 74m vessel represents the cutting edge of technology of its type and will help to develop and preserve the important Angolan fishing economy.

Rubén Hermida, business development director at Ferri, said: "We are really proud to be chosen as the supplier for this amazing project from a very prestigious firm such as Damen, and it shows once again our ability to work closely with our customers to tailor-make the best possible and most cost-effective equipment solution for all the deck machinery."

Ferri will deliver the equipment in early February and May 2017 to Damen Shipyards Galati. In August, Ferri will also launch the first 12m unmanned surface vehicle (USV) built in Spain, with a top speed of 50 knots. Ferri's ultimate aim is to provide software and hardware to enable shipyards and shipowners to convert any kind of vessel, regardless of size and type, into an unmanned vehicle.

Ferri has been operating for more than 50 years. Its customer-oriented strategy has helped it to move into new markets and stay closer to the client through a better understanding of their needs.

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Fifth tug for long-term client

Multi-task AHTS Seaways 24

Shipbuilder Keppel Singmarine, a wholly owned subsidiary of Keppel Offshore & Marine, is on track to deliver its fifth AHTS to Seaways International on time and with a perfect safety record.

The vessel was named ***Seaways 24*** at a ceremony held at the Keppel Singmarine yard in Singapore.

Seaways 24 is a multi-task AHTS designed to carry out an array of offshore activities. The vessel is equipped with Class 1 and 2 fire-fighting capabilities, Class 1 oil recovery capabilities and a host of other equipment, and comes with a bollard pull of 120 tonnes.

Abu Bakar, managing director of Keppel Singmarine, said: "We are pleased to deliver our fifth anchor-handling tug to our long-standing client Seaways. Given our years of extensive experience in constructing and designing a wide variety of ships, we are confident that ***Seaways 24*** will prove to be another valuable addition to their fleet."

Capt Ashish Nijhawan, director of Seaways, said: "We have built a strong partnership with Keppel over the years. As we continue to grow our presence in the global offshore marine industry, we look forward to working even more closely."

Three-year charter extended further

▲ *Solstad Offshore's AHTS* **Normand Ferking** *which is under contract to Statoil*

Norwegian oil company Statoil has extended its charter of Solstad Offshore's AHTS *Normand Ferking* for a further year. The value of the contract extension has not been disclosed by either company.

The vessel's current three-year contract was signed in February 2013 and includes two further one-year extension options.

Normand Ferking was built in 2007 to a VS 490 design and has an overall length of 89.4m. Its deck is 760m^2 and its 15,200kW engine produces a bollard pull of 239 tonnes. The vessel has been working with Statoil since its delivery from the shipyard in 2007. It can accommodate 32 people.

AHTS operator awards 10-vessel contract

▲ *New ALP Future Class vessel* **ALP Striker**

Radio Holland has been awarded a 10-vessel managed service agreement (MSA) from Netherlands-headquartered ALP Maritime Services. Established in January 2010, ALP is a specialist in ocean towing, offshore positioning and mooring of floating platforms, heavy transport and salvage operations. The company is part of the Teekay Offshore group.

ALP chief operating officer Leo M Leusink, one of the founders of the company, explained why it chose Radio Holland as its service partner. He said: "Our ships sail all over the world. We need a good, reliable partner for our NavCom equipment to help us serve our customers in the oil & gas industry.

"We chose this contract because we are active in the tramp trade. Our ships go everywhere, we never know exactly which ports they will call at. As a result, we need a high level of support and maintenance and global coverage. We believe Radio Holland can provide that."

Leusink said that ever since ALP began, the company had dreamed about building its own ships. Together with Ulstein Design, it started designing the ALP Future Class – anchor-handling and tugboats with a bollard pull of around 300 tonnes and dynamic positioning capability – in September 2011.

Leusink said: "When we started designing the ALP Future Class we asked Radio Holland to equip the vessels with NavCom."

In February 2014, with the help of its new owners, Teekay Corporation, ALP awarded Niigata Shipbuilding & Repair a contract to build the four vessels. The first was scheduled to be delivered in August 2016 (see *Tug & OSV Deliveries*, page 35), the second in December 2016 and the following two in mid-2017. In 2015 ALP took over six traditional-style tugs (200-300 tonnes bollard pull) from Harms Offshore and got in touch with Radio Holland. Leusink said that the six tugs, as well as the four newbuild vessels, are covered by the MSA.

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ASD tug simulator training is a Class act

The SeaWays Group has gained ClassNK accreditation for its world class training programme – a first in the towage sector. Contributing editor Joceline Bury visited the UK tug simulator to find out more

▲ *Darren Nutt takes the controls during his time spent at the SeaWays Tug Master training course*

It's Day Two on the SeaWays Europe Tug Master training course in Portsmouth, UK, and the tension is building. Capt Neil Sadler is taking trainee Darren Nutt through a harbour manoeuvre for the nth time, and... he nails it. The Damen 2411 ASD tug is safely parked at ladder 6. Darren's fellow trainee Carrick Robinson steps up to the controls.

They have been at it since 8.30am and it's now late morning – but intensive, repetitive training is what makes SeaWays' courses so successful, says Sadler. "They need to get all this into their subconscious, so they don't have to think twice about how to carry out a manoeuvre or deal with a problem when they are operating a real ASD tug."

To say the simulator is state-of-the-art is something of an understatement. The simulation facility, which is part of the Transas Academy, is recognised as the most advanced in the world.

As well as the tug simulator, where Darren and Carrick are being put through their paces, the centre also has a full mission bridge that can be used in joint operations with the tug sims to train pilots and tug masters together.

The Damen 2411 tug sim bridge is equipped with latest in Rolls-Royce combi controls and electronics, and ASD/ATD/CTS/VSP controls. It is remarkably realistic: it runs on real time – so light and weather conditions change during the day – using 44 LED screens and 50 computers to run the advanced software. And although the floor doesn't really move, so convincing is the view from the bridge that one trainee recently fell over during a spell of computer-generated stormy weather.

The two-week training takes place in and around 'Port SeaWays' – a virtual environment that includes a comprehensive array of harbour and open sea conditions, allowing the trainees to experience a full range of manoeuvres, building up to complex circuits. Sadler says: "It's all about developing competence and increasing confidence. And these two have made great progress in their first two days."

Darren and Carrick – both experienced tug masters – are here because the SeaWays ASD course is becoming something of a prerequisite for employment within harbour towage in their native Australia. Sadler adds: "We have had direct feedback from employers and employees alike that the SeaWays standard is becoming the preferred standard within the industry there, and the message is spreading across the globe – so much so that the training has recently been endorsed by classification society ClassNK."

After a year-long process, the SeaWays Group has gained ClassNK accreditation for its tugmaster training programmes: an industry first within the towage sector, and a source of great pride for Sadler and fellow directors Capt Arie Nygh and Capt Steve Sandy.

The accreditation process included a complete rewrite of a number of the SeaWays training manuals, a full review of all training material, and scrutiny of training masters' qualifications and experience.

In addition to ClassNK accreditation, SeaWays has also been accredited as being RTO compliant for delivery of training in Australia and the course programmes are also currently being accredited by the Nigerian Maritime Administration & Safety Agency.

The next set of trainees at the centre will be officers in the Bangladesh Navy. Sandy explains: "All the harbour tug crews in Bangladeshi ports are commanded by naval officers – and they're about to update their tug fleet with Damen ASD tugs, so they're coming to us for training."

Back on the bridge, Darren and Carrick have moved on to side-stepping. Tomorrow, they will be starting to complete full circuits. By the end of the course, they will be competent, and confident, in their new skills.

'Confidence and competence'

Capt Brendan Cooley, COO of Western Australia-based ship delivery specialist IMS, completed module 1 and 2 of SeaWays Europe's ASD tug training course earlier this summer.

Cooley, who attended the course along with his colleague Shannon Bentley, explained: "IMS sea trials and delivers ASD tugs on a regular basis and we are positioning the company to increase our involvement in the industry.

"Although we are both experienced masters, neither Shannon nor I had any previous experience in commanding vessels with azimuth propulsion. Our objective was to increase our knowledge and skillset of how to handle vessels with these propulsion systems.

"Despite our lack of experience in driving vessels with azimuth propulsion, the structure of the course was easy to follow and enabled us to quickly gain some confidence in manoeuvring the tug.

"As we advanced through the course, we pieced the various exercises together to perform more complex manoeuvres, either free running, or in a towage environment.

"Neil and Steve's style of delivering the well-structured training was professional, and of a very high standard.

"After two weeks of training, SeaWays increased our levels of confidence and competence far beyond our expectations, and we look forward to putting our new skills to use. I highly recommend this course for any masters who want to either learn how to drive ASD tugs, or those who wish to hone their skills."


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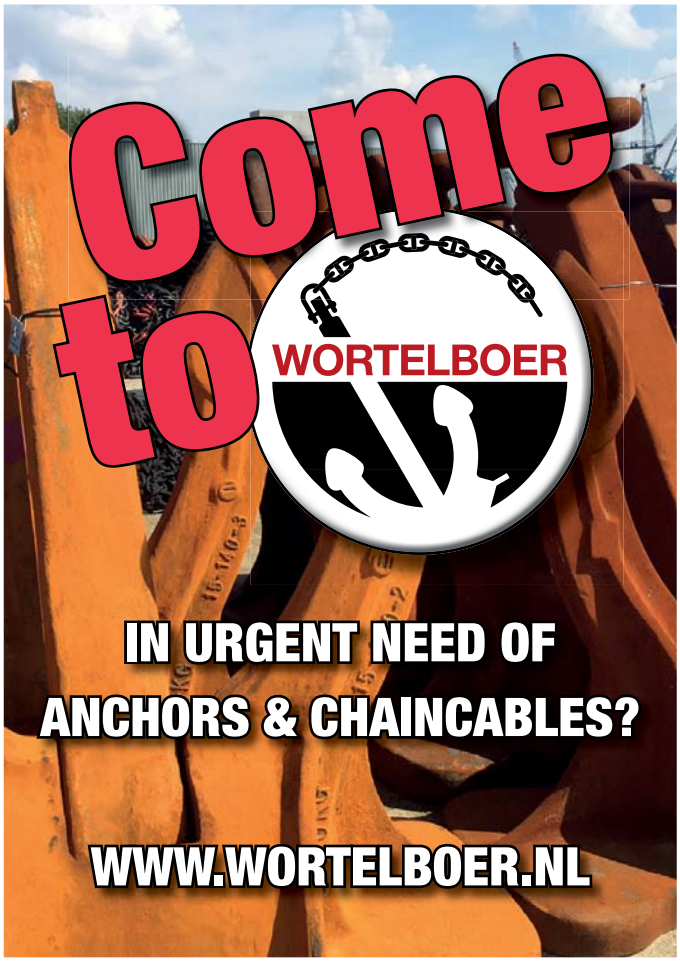

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Meeting the 'walk to work' safety challenges

As 'walk to work' crew transfer systems increase in popularity, guidelines for safe operation have become a neccessity. Mike Sano and Zhifa Dong, of the American Bureau of Shipping, look at the options

► *Vroon's subsea support walk to work vessel,* **VOS Start**, *which is to be ABS classed, is outfitted with a DP2 positioning system*
Photo: courtesy of Vroon

In the early days of offshore drilling in shallow-water, near-shore operations, it was relatively simple to transport work crews, but as developments have moved farther offshore, delivering, accommodating and supporting work crews has become significantly more challenging. The need for new types of personnel transfer systems became evident, giving rise to systems that can safely and efficiently deliver work crews with tools and spare parts in tow, even in high winds and elevated seas.

Personnel safety is a paramount concern, but economics is a compelling driver. When workers cannot access the offshore work platform due to bad weather, downtime translates into lost productivity and potentially high consequential losses.

One of the key enablers for offshore access systems (OAS) is dynamic positioning on the vessel. A principal element of safety and efficiency is the fact that crew transfer vessels do not need to anchor or attach themselves to the offshore tower or platform. When sea conditions change rapidly, the OAS can be shut down and stowed, and the vessel can move off station and away from potential problems.

OASs with passive motion compensation systems are deployed and connected to the delivery point, maintaining the connection via telescoping features that maintain a flat, inclined walking surface between the offshore support vessel and the tower or structure. Telescoping gangways are relatively simple to deploy and recover. When sea conditions become challenging, active motion compensated systems are needed. These systems are technically sophisticated, requiring power and in most cases, a trained operator. Active motion compensation systems include motion sensing devices that compensate for heave, pitch and roll while maintaining the end point position of the gangway, creating a safe and stable walkway crews can use to 'walk to work' (W2W).

Increasingly, companies are discovering the benefits of using W2W vessels and OASs, which has introduced the need for guidelines for safe operations. *The ABS Guide for Offshore Access Gangways* provides requirements for OAS certification, including structural strength, machinery systems, contingency management, system recovery and redundancy, safety and communications, and regulatory requirements. The guide applies to both active and passive motion compensated systems and to OASs designed for both controlled and uncontrolled flow of personnel.

As offshore operations change, classification societies have the responsibility to create guidance that helps industry to maintain safe operations. This guide is one of the ways in which ABS is meeting that vital obligation.

All change: an alternative to immersion suit servicing

Improperly serviced immersion suits pose a potentially costly threat to crew safety and the vessel's ability to operate. What are the underlying issues – and how can the risks be mitigated?

Shipowners have plenty of critical issues to attend to, from vessel utilisation to crew management. Making sure immersion suits are in perfect working order is just a drop in an ocean of operational tasks. Yet failure to do so can be a painful showstopper.

Ten-year-old immersion suits must be serviced more frequently instead of every three years. That's an extra, often unforeseen cost. Perhaps more importantly, it also introduces the risk that the vessel will not pass inspection, potentially becoming delayed in port. There is, however, an easier, more cost-effective and lower-risk solution: an immersion suit exchange programme.

Søren Hansen, PPE product manager at Viking Life-Saving Equipment, said: "Vessels under a Viking Shipowner Agreement, for example, simply swap suits due for servicing at the pier with serviced, approved and vacuum-packed suits in a single, time-saving transaction.

"Exchange suits are upgraded with the latest, high-quality products long before they become old enough to require more frequent servicing. For vessels carrying lower-quality brands, this is a bonus for crew safety, vastly reducing the likelihood of emergency malfunctions and inspection issues."

According to regulations, immersion suits must be checked each month to see if they are intact – and pressure-tested every three years until the 10th year, when the requirement for more frequent checks kick in. Shipowners who have their crew perform this servicing on board often believe they are saving money despite the difficulties of testing, drying and re-packing. Yet these checks seldom ensure 100 per cent compliance and safety. And, with more than 200 suits aboard larger OSVs, that's a chilling liability. Experience shows, too, that quickly checking the seams is rarely enough, as just 500ml of icy water entering a suit at sea may reduce its insulation value by up to 30 per cent[1].

Vacuum-packed suits have many advantages, including better protection from the elements during storage. But can any brand of suits be made part of an exchange programme? Not necessarily, as it turns out. In fact, a recent investigation by Fleetwood Test House has shown that vacuum-packed suits subjected to fluctuating temperatures can stick together and become dysfunctional.

Hansen added: "Viking's own equipment has been tested in the EU by a notified body to be free of this problem – an alarming reminder of the need to purchase high-quality suits designed to perform above and beyond regulatory requirements from the beginning."

[1] Transport Canada, 2003, *Survival in Cold Waters: Staying Alive*

Integrated bridge concept takes next steps

The maritime world first became familiar with the AlphaBridge concept in 2007 when Alphatron Marine introduced a compact, modular bridge solution based on standard control panels in a neat, simple design. Now more than 850 vessels worldwide are equipped with the AlphaBridge, designed on the principle that technology should make bridge operation easier – even for the highest class notations for vessels undertaking complex, sometimes hazardous operations.

The ergonomic design of the AlphaBridge follows regulations and enables intuitive, comfortable operation, enhancing vessel safety. The ability to adjust the height of monitors and the work shelf in eight increments means that AlphaBridge is the first system to enable navigation and communication equipment operation from both a seated or standing position.

Everything begins with the design. In close contact with the shipyard, owner and naval architect, a full 3D proposal is created before the actual bridge layout is taken into production. As a result of this flexible and modular approach, multiple variants based on the core AlphaBridge concept can be put together to ensure the best solution for each vessel.

Design has become increasingly important, given the constant increase in the complexity of maritime technology and the drop in the number of able seamen on board vessels.

JRC and Alphatron Marine recommend starting the design of the bridge at the earliest possible stage of a newbuild. This gives the vessel owners plenty of time to consider the best possible configuration. By devoting time and attention to the design stage, problems can be averted before they even arise.

In 2014, JRC and Alphatron Marine established a far-reaching strategic partnership. This unique combination of expertise offers a one-stop-shop concept for navigation, communication, automation and complete ship's bridges. Customers can take advantage of the best in maritime electronics from multiple manufacturers, supplied from a single source, along with JRC/Alphatron's role as a total system integrator.

▲ *AlphaBridge on the Robert Allan Ltd designed hybrid RotorTug RT Evolution built by Damen Shipyards Hardinxveld*

JRC and Alphatron Marine are also successfully delivering tugboat consoles for the new generation of Rotor®tugs.

Offering full control from a sitting position and exceptional all-round visibility through full height windows, the Robert Allan Ltd-designed ART 80-32 hybrid tugs ***RT Evolution*** and ***RT Discovery*** have been fitted with the AlphaBridge tugboat console concept of tomorrow – a design study performed by JRC/Alphatron Marine together with some of the biggest tugboat operators in the world.

The AlphaBridge comprises two ergonomic and dynamically designed consoles with a central captain's chair mounted on rails.

The consoles contain the majority of controls and instruments required to operate the tug. At each end of both consoles is a semi-retractable screen, one with the radar display, switchable for the river and sea sets, and the other a multi-function screen displaying navigation and other data.

The captain's chair can be turned and positioned to face in either direction and the displays are arranged to ensure that the screen functions are always in the same position.

Alongside the tug bridges, JRC/Alphatron Marine have also developed a unique pushboat bridge concept designed specifically for US river and inland waterways. Harnessing 25 years of European inland waterways experience, a careful balance has been struck between the latest technological advances and the unique operating requirements for some of the world's largest rivers.

Building on the synergies of both companies, the industry-specific Centres of Excellence will combine the operating offices of each as necessary.

Presenting a seamless integration and streamlining these functional strengths will immediately allow Alphatron Marine and JRC to provide ship owners and shipyards what they require, both now and in the future.

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Insight into most frequent claims – and how best to minimise risk

The Swedish Club has launched its latest publication, *Claims at a Glance*, which provides an insight into the full range of claims it has handled during the past five years, and is intended as a tool to reduce the frequency of incidents for both P&I and H&M claims.

With prevention at its heart, it covers the key lessons learned across a range of real life situations, and provides a useful update of data contained in its most recent loss prevention titles: *P&I Claims Analysis*; *Main Engine Damage*; *Navigational Claims*; *Ice – Advice for Trading in the Polar Regions*; *Heavy Weather*, and *Wet Damage to Cargo*.

Claims at a Glance investigates the causes of a wide range of incidents and makes practical recommendations on how to prevent them. It makes full use of interactive root cause analysis (IRCA) to analyse the root cause of a variety of claims, demonstrating that despite the seeming differences between incidents, the root causes are often similar.

Lars A Malm, director, strategic business development and client relations, explains: "The Swedish Club uses the IRCA process widely in our organisation to help us see behind a problem, and identify key learnings that we can apply in our loss prevention activities. Like all insurers we handle a great many claims and have identified that many of the causes of these claims are recurring.

> *"The main focus should be on training personnel both at sea and ashore in understanding and recognising when a vessel or person is exposed to an unacceptable risk"*
>
> **Lars A Malm, The Swedish Club**

"The importance of establishing a good loss prevention culture in an organisation cannot be underestimated – we acknowledge that this is a time consuming process requiring great commitment. However when you consider that the average cost for a P&I claim is US$80,000 and for H&M it is more than US$500,000, then the benefits of preventing even a single casualty can be considerable."

Claims at a Glance provides a broad insight into the claims landscape, using case studies to reveal the stories behind the statistics. It looks at the most common and expensive claims across all vessel sectors, in addition to the profile of injury and illness claims, and provides practical advice on how to minimise exposure to risk across a wide range of operating conditions.

Malm said: "Prevention is all about evaluating one's own organisation, knowing how people act and understanding what is needed to assist all personnel to perform safely in a safe environment.

"The main focus should be on training personnel both at sea and ashore in understanding and recognising when a vessel or person is exposed to an unacceptable risk."

To read a copy of *Claims at a Glance* visit: http://tinyurl.com/zctdgxr

Half-year results show club steering steady course

The Swedish Club demonstrated a solid performance in the first six months of the accounting year, according to its half-year results.

With balanced underwriting, the club delivered an operating surplus of US$11.2m, resulting in a combined ratio of 100 per cent – an outcome of stable claims frequency and severity.

Club investment returns encountered substantial volatility during the period, particularly in the first quarter of the year and in connection with the UK Brexit outcome, but delivered a return of 3.0 per cent. Free reserves stood at US$194.2m, reinforcing the strong position of the club in its ability to meet members' needs while securely allowing for further growth of the business.

Entered tonnage in P&I has been stable-to-growing since renewal in line with plan. The club's overall claims frequency for both P&I and marine was on a par with 2015 levels and claims severity was stable.

Lars Rhodin, managing director of The Swedish Club, said: "The Swedish Club has maintained its focus on achieving a balanced underwriting performance and steering a steady course. We have continued to concentrate on controlled growth, service to our members and innovative loss prevention initiatives."

Visit http://tinyurl.com/zdqn79b for a copy of the report.

Marine insurance conference to discuss new risks and sustainability

Asia Insurance Review's 4th Asia Marine Insurance Conference will take place from 24 - 25 October 2016 at the Renaissance Harbour View Hotel, Hong Kong. The theme will be *Managing New Risks While Ensuring Sustainability*.

Organisers say the marine insurance industry is dealing with greater challenges as shipowners and their affiliates operating in one of the worst economic environments, with weak freights, while insurers are faced with very volatile and complicated marine risks, higher claims and soft premium rates.

In recent years, other hazards have started creeping into the sector – risks that are less familiar – including cyber risks affecting the safety of navigation on the high seas. And then there are the various domestic, regional and international rules and regulations to be complied with at whatever costs.

The 4th Asia Marine Insurance Conference is organised in conjunction with The Hong Kong Federation of Insurers (HKFI) and, according to organisers, provides a premium peer networking and dialogue event for shipowners, ship managers, cargo operators and underwriters to come together to discuss the common threats and issues facing them, as well as find sustainable solutions of mutual interest for insurers and the marine community. High-powered addresses have been planned and include Hong Kong's Secretary for Transport and Housing, Professor Anthony BL Cheung. Areas under discussion will include: the latest evolving, emerging risks awaiting the marine industry and how the market players should respond to these challenges; underwriting, salvage and claims for large vessels and complex projects and shipping in the current recession.

This event is supported by distinguished international partners including BIMCO, Asian Shipowners' Association, the Hong Kong Shipowners Association and the Hong Kong Confederation of Insurance Brokers.

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Contract reviews up 30 per cent

Joseph Divis, underwriter, offshore, at Charles Taylor & Co, agents for the managers of The Standard Club Europe, looks at the impact of oil price cycles

► *Joseph Divis*

The Standard Club has witnessed the impact of a number of oil price cycles since commencing underwriting offshore risks in 1975. Our contract review service, offered to more than 80 operators across the offshore arena (including more than 600 entered OSVs), provides an insight into industry contracting trends.

This service advises members of the effect of contractual arrangements in relation to their liability exposures and is designed to provide the member with certainty of cover and the club with a greater understanding of our members' operations. The number of non-knock-for-knock contracts reviewed each year has increased by 30 per cent since 2013/14 to an anticipated 800 in the current year. This increase is not simply a reflection of the club's growth, and has occurred despite an increase in the number of lay-ups.

Much of this change can be attributed to the low oil price affecting the number of contracts produced, for two reasons. First, with less work available more contractors are bidding for each contract – we have heard from our members that certain North Sea contracts have received in excess of 50 different bids.

Secondly, charterers are increasingly tendering shorter-term, spot market jobs. Clarkson's Research Services has reported that the number of North Sea PSV years fixed is at its lowest level since 2009.

"With less work available more contractors are bidding for each contract – we have heard from our members that certain North Sea contracts have received in excess of 50 different bids"

Joseph Divis, Charles Taylor & Co

These factors highlight fierce competition resulting in marginal day rates. Inevitably this has forced operators to seek opportunities outside traditional oil & gas support work. For example, we have seen an increase in the number of decommissioning related contracts in the North Sea, Africa, UAE and Asia. Wind farm associated work continues to provide opportunities for those willing to adapt, with so called 'walk to work' contracts becoming more frequent for both specialist vessels and more traditional OSVs installed with motion compensated gangways. More recently we have seen a number of contracts for the towage and installation of offshore fish farms which suggests that aquaculture is an alternative revenue stream.

The current climate remains extremely challenging for members and the club will continue to provide support during this period and beyond.

● *The Standard Club is a specialist marine and energy insurer and member of the International Group of Protection and Indemnity clubs, owned by its shipowner members and controlled by a board of directors drawn from the membership.*

Beware email on front line of cyber crime

Robert Hodge, senior account executive with mutual insurer ITIC, warns that the maritime industry has become an attractive target for cyberspace fraudsters

► *Robert Hodge*

It is a fact that violent crime has significantly reduced over the past few years. Why is this? Criminals have not changed; they still want to get their hands on your money.

The answer is that it is easier stealing money in cyberspace than robbing a bank in the real world.

The maritime sector will always be an attractive target for fraudsters because of its international focus. ITIC has seen this trend of cyber fraud ever increasing, particularly involving fraudulent emails.

The classic scenario involves the payment of invoices and the subsequent transfer of funds from one account to another. The background communication and the invoice are usually by email.

A fraudster will learn that a transfer of funds will be made, either from insider knowledge or by hacking into your company's or your contractor's network. They will set up a new, but very similar email address to the one that the vessel manager was previously responding to. For example the suffix of the email address will change from .com to .uk. The fraudster will advise the ship manager that the account where payment was to be made is no longer in operation and a new account must be used, as the account has changed or is under audit. In fact, businesses very rarely change an account nor do they close an account when under audit.

"A fraudster will learn that a transfer of funds will be made, either from insider knowledge or by hacking into your company's or your contractor's network"

Roger Hodge, ITIC

A further scenario involves the theft of 'cash to master' funds. In one case a vessel manager received a message asking if the money could be sent directly to the agent's foreign exchange broker who could secure banknotes which were in short supply in that part of the world.

A member of staff queried the instruction and replied to the email: "As we don't know the broker, would it be possible to remit CTM to your bank account as usual?" Of course they received confirmation of the new arrangement from the same email address.

ITIC is recommending that if there is anything unusual about payment instructions that you telephone the counter party to verify, but a further word of warning – don't use the reply button as it will be the fraudster you are communicating with.

● *ITIC is the mutual insurer for the transport industry, offering a unique professional indemnity policy to a wide range of companies in the marine, offshore, aviation and rail industries. For more information visit www.itic-insure.com*

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In the Spotlight

On a regular basis, we put one *ITS* Club member under the spotlight. This time, we talk to EDDY Tug partner Baldo Dielen, who lists playing football with Dutch police officers in the aft engine room of *EDDY 1* as among his most memorable moments from *ITS*

How long have you been an *ITS* Club member?
Three years.

And how many *ITS* conventions and Tugnology events have you attended?
Tugnology in Antwerp was my first, followed by *ITS* conventions in Barcelona, Hamburg and Boston. I enjoyed all four, so Rotterdam and Marseille are on the agenda!

What is your most memorable moment from an *ITS* convention?
To receive the Hamburg Water Police on board the tug ***EDDY 1*** early Saturday morning on 14 June 2014, after having arrived from our sailing trip from Rotterdam, was certainly memorable. We pushed the limits to have the tug at *ITS* on time. The police officers initially didn't quite understand this *verrückte Maschine* ('weird tug'), so we had to show them around. The World Cup soccer was going on at the same time and we ended up playing ball with them in the aft engine room. They cleared us quickly afterwards… ready to receive many *ITS* delegates on board over the following days and to stir up the River Elbe a little.

Which one person had the biggest influence on you during your career, and why?
I owe gratitude to many people who helped and influenced me during my career. However, the one person who made the biggest impact was John Huff, chairman of Oceaneering International (Houston). He gave me the opportunity to run a Smit-Oceaneering joint-venture company at a relatively young age, while he also ensured that the necessary support was put in place.

John is a brilliant person who taught me (among others) that, despite technical and operational issues being very important, a business really thrives on good commercial management and solid administration.

What is the most important piece of advice you would give to anyone entering the industry today?
The maritime industry is extremely interesting, but it is also cyclical and demanding. If you're after 'easy money' perhaps it is not for you. However, if you love ships and the sea and are not afraid of a challenge and are prepared to work beyond 'nine-to-five', this industry can be highly rewarding and satisfying. Wherever you end up, make sure you find work which you enjoy. The rest will come.

If you could invent one thing that would make life in your segment of the maritime world easier, what would it be?
A solution for high-capacity, safe and affordable energy storage. Energy storage will play a key role when it comes to simplified, higher-performance and more efficient future propulsion systems.

As a kid, I experimented with my father with solar panels and wind turbines which hardly delivered 1kW. One of the first shipyards I worked on in the late 1980s was experimenting with, as we called it, 'huge' 50kW turbines, while today a single wind turbine can deliver 8MW. That's 8,000 times more than the first ones.

Renewable (electrical) energy is definitely coming, but in the maritime business we cannot use it well yet because we don't know how to store it in sufficient quantities. Besides storage, maybe we can move from AC to DC grids in a couple of decades for both land and sea usage. Thomas Edison couldn't win his DC battle at the end of the 19th century because direct current didn't transport well over long distances. Today that problem is solved, but now we're waiting for somebody who'll give us high-capacity energy storage. I don't expect to be its inventor, but for sure I'd want to use it.

What would you like to be remembered for within the industry?
As a person who made a contribution to safer seas and cleaner air.

The *ITS* Club

ITS Club membership has many benefits, including a discount on registration for *ITS* conventions and Tugnology conferences, a discount on a wide range of *International Tug & OSV* titles, and an airmail subscription to the magazine, ensuring that you never miss a copy. You can join at www.tugandosv.com

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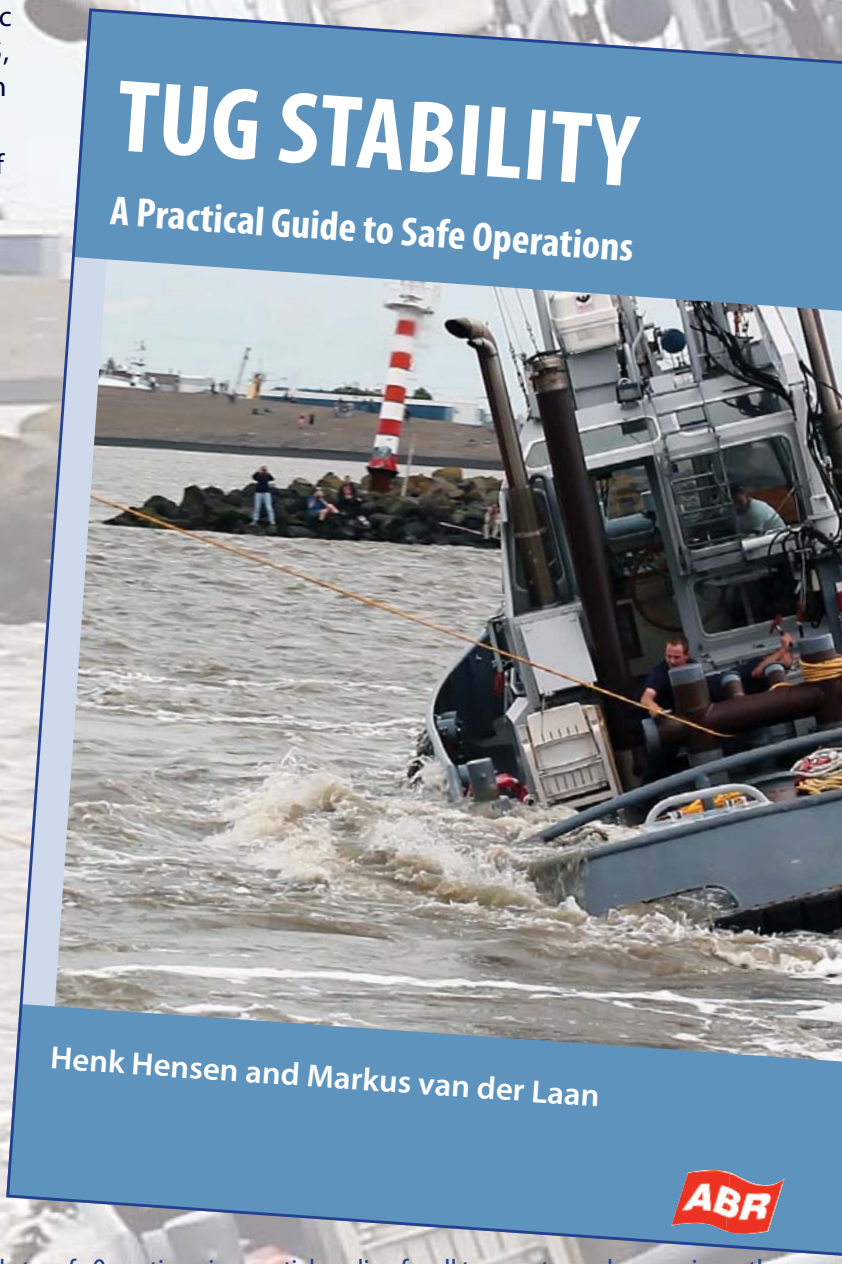
Numerous harbour tugs have capsized, often with tragic consequences: during the five-year period 2010-2015, more than 45 people are known to have drowned in capsizing incidents.

Stability is a complex subject and mainly a specialism of naval architects. Tug masters seldom have this detailed knowledge – yet they experience the effects of a tug's stability every day when manoeuvring their tug, either free sailing or when assisting ships.

Tugs will often be working with towline forces, hydrodynamic forces, steering and propulsion forces at or near their maximum with respect to the vessel's stability. It is, therefore, not just desirable but necessary for tug masters to have at least a basic idea of the elements of stability. They need to know where the limits are, and what the consequences could be, if tug handling practices don't conform to the rules of stability in normal circumstances and also when extreme conditions such as dense fog and storms occur.

Furthermore, a tug's stability is not a static condition but can change with every moment. Alterations in the amount of bunkers or stores, water on deck, slack tanks and ice accretion, all complicate the stability situation. These various factors could combine to affect stability in a negative way and may even culminate in a very dangerous situation for the tug.

In writing this handbook, master mariner and pilot Captain Henk Hensen and naval architect Dr Markus van der Laan have focussed on the practical aspects of stability, tug design and equipment and also on the consequences of unsafe procedures. Their emphasis is on harbour tugs, although several of the topics covered apply equally to seagoing tugs.



A practical, readable, expert handbook, Tug Stability – a Practical Guide to safe Operations is essential reading for all tug masters, who experience the effects of their vessel's stability every day, whether free sailing or assisting ships.
MarEx Review - 17 June 2016

"This tug stability book will greatly contribute towards safer towage operations by enhancing the working knowledge of tug masters. It is an important publication for all tug masters and towage managers, no matter what facet of the towage industry they are engaged in."
Arie Nygh, *ITA Patron; Managing Director, SeaWays Consultants*

".....it appears that you have once again done the industry a great service by compiling such a useful document for vessel operators. We have multiple copies in our office and will ensure that our designers also read it and understand thoroughly so that we can do our best as designers to achieve our mutual long term goal of much safer tugs!"
Robert Allan, *Executive Chairman of the Board, Robert Allan Ltd.*

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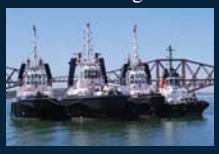

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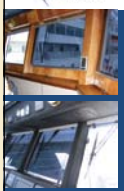

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King of the Rivers

Crocodiles sit on the top of the food chain in and around rivers and wetlands in warm climates and are unquestionably the king of both shallow and deep waters for their highly gifted ability of movement and swimming skills. Sharp and strong rows of teeth certainly make their jaws invincible. The snap their powerful jaws around their prey - exerting a force of up to 200 kg - and dive into the depths of water to drown them. Crocodiles move at a speed of up to 12m/s when hunting, with their sturdy bodies, hind legs and muscle-bound tails.

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WORKBOAT AND TUG FACTORY
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Legend, Through the Eyes of Technology

Throughout history, mankind has been inspired by the creatures of nature, in the continuous process of development and transformation of human civilizations. Traces of this inspiration can be seen all around us – from cavemen's drawings to temples, from ancient legends to the reality of the modern world today. Among the most prominent examples, is Noah's Ark... We as UZMAR, are inspired in the same way by the excellence and uniqueness of nature in our quest for flawless technology in each tug we build.

Noah's Ark UZMAR's Tug