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INCORPORATING SALVAGE NEWS

January/February 2017



Australian Focus – powerful tugs for LNG project
Asian Marine Casualty Forum preview – key issues addressed
Deck Machinery – manufacturers rise to industry challenges

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FRONT COVER

Pacific Titan: Gladstone, Queensland, Australia-based East Coast Maritime's (ECM) twin-screw, shallow-draft utility tug **Pacific Titan** was built at the owner's Malaysian shipyard. The vessel's concept was developed by ECM's operations manager and director, Lindsay Toy, inspired by modern European workboats, but with a hull designed to be more suited to Australia's offshore conditions.



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Enterprise alive and well



Welcome to our first issue of 2017 and thank you to all of you who sent messages and greetings heralding in the new year.

What I found especially pleasing was the underlying optimism to be found in many of them. Yes, times continue to be extremely tough and look set to remain that way for some time, but there is definitely a more positive atmosphere to be found in more than a few quarters. This is no doubt reflected in the survey by Moore Stephens, the international accountant and shipping adviser, that found confidence up in all maritime sectors, including ours, in the three months to the end of November 2016. In our News pages Hassan Abouraya of Saudi Arabia-based Zamil Offshore argues that market changes may be more structural, but opportunity remains for companies able to be both innovative and flexible.

Meanwhile, our Australian Focus section shows that the spirit of enterprise is alive and well in this important market, and our section on deck machinery clearly shows manufacturers rising to the challenges created by seemingly ever bigger vessels and harsher operating conditions.

In our News section, we also mark the retirement of Coen Boudesteijn, Damen's long-term product director tugs, under whose leadership the company built around 2,000 vessels, some 600 of them ASD and ATD tugs. He has been at the heart of the tug industry for 40 years and has a career résumé that reads like a text book account of the huge leaps forward in tug design, safety and operational ability over recent decades. The need to continue to strive for improvements to operational safety will, quite rightly, never go away however many improvements are made. In this issue Dr Ugo Savona, chief designer of Giano, and Dr Sotiris Skoupas, senior surveyor, stability load line and tonnage for Lloyd's Register, discuss increasing the stability of escort, harbour and anchor-handling tugs. We also preview the Asian Marine Casualty Forum which, among other things, will debate ways of improving best practice to reduce, as far as possible, the risks involved in salvage operations.

Other special features in this issue are Fire-fighting & Pollution Control and LNG Operations & Innovations.

For our regular At The Helm feature, contributing editor Joceline Bury talks to MD and owner of motion monitoring services specialist Siri Marine, Capt Albert Lenting, whose career began in his teens and has since taken him around the world and back, while our In The Spotlight page focuses on Arie Nygh, director of Australia-based Seaways Consultants and founder president of the International Tugmasters Association, whose advice is: "Don't be over confident – or believe your own press releases."

Inside this issue you will also find a special section previewing Tugology '17, our unique two-day technical conference focusing on tugs and tugs alone, which this year will take place in Rotterdam on 23 and 24 May. As you can imagine, plans are well underway for the event which will not only feature the presentation of thought-provoking, in-depth technical papers, but also provide the opportunity to network with industry leaders and decision-makers.

I look forward to seeing you there.

John McCready, Editor




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THE BETTER OPTION



By Rotortug.

In brief

The Government of British Columbia (BC), the Canadian Manufacturers & Exporters and *Business in Vancouver* magazine have presented the 2016 BC Export Award for Professional Services to Vancouver-based naval architects Robert Allan Ltd. The honour is presented annually "to a company that has provided expert advice, technical support or educational programmes to international customers". Mike Fitzpatrick, president and CEO of Robert Allan Ltd, accepted the award on behalf of the company.

The Sener Group division in Shanghai presented the company's FORAN CAD/CAM/CAE software system to students at Dalian Ocean University in China. Sener technical consultant, Zhi Jiang, gave a lecture, entitled '3D Ship Digital Design with FORAN System', to more than 40 students from the School of Navigation and Naval Architecture. The lecture was the first of a planned series aimed at showing state-of-art design technology to students before they enter their professional career.

Rolls-Royce is to shed a further 800 jobs from its worldwide marine business as it looks to save up to £50m a year in the face of continuing weakness in the maritime market. However, the company is also planning to invest in an R&D centre for the development of new ship engines and an expanded services hub for northern Europe, both based in Ulsteinvik, Norway. The job cuts are in addition to 1,000 others announced in 2015.

AHTS vessels from Farstad Offshore's fleet have a new role after the Norwegian company secured a contract for the complete mooring installation and hook-up of a semi-submersible fish farm owned and operated by Ocean Farming. Commercial terms of the agreement are being kept confidential.

CEO of the Norwegian Shipowners' Association, Sturla Henriksen, has forecast no let-up in the present depressed offshore oil & gas market during 2017, predicting that three out of four rigs operating in the Norwegian North Sea sector could be idled by the end of the year, with no upturn in sight.

Vessels are green milestone

US-based Horizon Shipbuilding is in the process of installing the first production EPA Tier 4 certified units of its 3516E EPA Cat Marine engines on a pair of tugs it is building for New York-based McAllister Towing & Transportation.

The pair of 30m ASD escort and rescue tugs will each be powered by two of the Cat Marine engines, rated at 3,386bhp, supported by three Cat C7.1 EPA Tier 3 generator sets rated at 118ekW and two Cat C18 EPA Tier 3 803bhp fire pump engines. The equipment was delivered to Horizon by Cat Marine dealers Thompson Cat and Foley Cat.

McAllister says the new tugs will be among the largest operating in its fleet, and on the US East Coast. The first tug, *Capt Brian A McAllister*, named after the company's chairman, will be delivered in April 2017. The second, *Rosemary McAllister*, named after his wife, will follow in July. The vessels will increase the McAllister fleet to 32 ASD units and will be its first Tier 4 tugs.

To meet the US Environmental Protection Agency (EPA)'s more stringent Tier 4 Final emissions standards, which came into effect last year, each 3516E engine is paired with a selective catalytic reduction (SCR) after-treatment system. SCR uses a urea-based solution to reduce the NO_x contained in diesel exhaust down to nitrogen and water vapour. The compact urea tanks on each tug have a capacity of 9,500ltr.

Caterpillar's SCR technology was specifically designed to comply with EPA Tier 4, as well as satisfying IMO Tier III emissions level requirements while minimising customer integration impact and

maximising operating efficiencies.

On delivery, the tugs will be classified ABS ✕ A-1 Towing, Escort Service, Fire-fighting (FiFi1) and ✕ AMS. With a bollard pull of 80 tonnes, the hull is designed for enhanced ship assist in addition to direct and indirect escorting. The hull design was simulator tested to assist post-Panamax and ultra-large vessels. The 3516E's electronic governing control unit minimises fuel consumption and monitors engine operating parameters. For user-friendly operation, the engine features an instrument panel with cold mode start strategy and programmable low idle.

First engines from China plant ready

The first Cat Marine engines and generator sets to be produced at the company's plant in Tianjin, China, are being prepared for delivery.

Caterpillar Tianjin Ltd, which began turning out generator sets for power market customers from early 2014, will become the group's second global centre for marine engines and gen-set production from February 2017.

The 100 per cent Caterpillar-owned facility is the result of a US\$300m investment by Caterpillar, with mainstream engine production for electric power and the oil & gas segment having commenced at Tianjin in March 2015.

Multi-purpose tug for harsh climate



An Arctic class multi-purpose tug and salvage vessel ordered by the Russian federal government was launched at Nevsky shipyard near St Petersburg towards the end of last year.

Kalas is an 80m LOA shallow-draft 2.5-

3MW vessel designed by CJSC Marine Engineering Bureau. Additional roles will include fire-fighting, search and rescue, cargo delivery and passenger transportation.

With a range of 4,000 miles, *Kalas* will be able to remain at sea for 30 days.

Crewless vessel a step closer



UK-based Automated Ships, a subsidiary of M Subs, and Norway's Kongsberg Maritime have signed a memorandum of understanding to build the world's first unmanned and fully-automated vessel for offshore operations.

In January 2017, Automated Ships was due to contract *Hrønn*, which will be designed and built in Norway in co-operation with Kongsberg. Sea trials will take place in Norway's newly designated automated vessel test bed in the Trondheim fjord and will be conducted under the auspices of DNV GL and the Norwegian Maritime Authority (NMA). *Hrønn* will ultimately be classed and flagged, respectively.

Currently, only small unmanned boats are being utilised for near shore operations, but the companies say there are no technical limitations to constructing large, unmanned and automated systems. The only impediments are regulatory, but with the participation of DNV GL, the NMA, Norwegian and UK companies and institutions, it will be possible to rapidly and at low cost be the first to market with a full-size unmanned ship.

Hrønn will be a light-duty, offshore utility ship servicing the offshore energy, scientific/hydrographic and offshore fish-farming industries. Its intended uses include, but are not limited to: survey, ROV, autonomous underwater vehicle launch and recovery, light intermodal cargo delivery and delivery to offshore installations, and open-water fish farm support. The vessel can also be utilised as a standby vessel, able to provide fire-fighting support to an offshore platform working in co-operation with manned vessels.

Hrønn will initially operate and function primarily as a remotely piloted ship, in man-in-the-loop control mode, but will transition to fully automated, and ultimately autonomous operations as the control algorithms are developed concurrently during remotely piloted operations.

Automated Ships will be the primary integrator, project manager and shipowner of the world's first fully automated and unmanned ship for commercial use. The project will leverage existing technology to develop a robust, flexible and low-cost ship aimed at becoming the market leader and

▲ An artist's impression of *Hrønn* at sea

offering not only a capable work-boat, but provide an unparalleled R&D asset for the furtherance of this emerging industry sector.

Kongsberg's role in the project is to deliver all major marine equipment necessary for the design, construction and operation of *Hrønn*. The global maritime technology manufacturer will deliver all systems for dynamic positioning and navigation, satellite and position reference, marine automation and communication. All vessel control systems – including K-Pos dynamic positioning, K-Chief automation and K-Bridge ECDIS – will be replicated at an onshore control centre, allowing full remote operation of *Hrønn*.

Automated Ships managing director, Brett A Phaneuf, said: "The advantages of unmanned ships are manifold, but primarily centre on the safeguarding of life and reduction in the cost of production and operations. Removing people from the hazardous environment of at-sea operations and re-employing them on-shore to monitor and operate robotic vessels remotely, along with the significantly decreased cost in constructing ships, will revolutionise the marine industry. Automated Ships will be at the forefront of that revolution, along with its many Norwegian partners."

Bjørn Johan Vartdal, head of DNV GL maritime research, said: "Research, innovation and technology development are at the core of DNV GL's business development philosophy. In general, we are widely involved in the qualification of new shipping technology. Increased automation combined with remote monitoring and control is an inevitable trend and has the potential to create safer and more efficient transport and operations at sea. This may lead to unmanned ships, as in this case, and the technologies involved also have the potential to improve the safety and efficiency of manned ships in the form of increased decision support and operational assistance. This contract is a brave initiative and a major step towards the realisation of these technologies, and we look forward to moving technology frontiers together with all those involved."

In brief

Northern Lights Inc (NLI), the Seattle-based marine generator set manufacturer, has announced a partnership with HUG Engineering of Switzerland to provide complete IMO III-certified clean air power generation solutions. HUG Engineering is a leading manufacturer of exhaust after-treatment equipment. The partnership will allow customers to purchase Northern Lights' line of marine gensets and HUG's selective catalytic NO_x reduction (SCR) systems or particle filter (DPF) systems as a single integrated solution.

Seakeeper Inc, the California-based specialist in marine stabilisation, has launched the Seakeeper HD line, developed specifically for commercial and military vessels. By reducing up to 95 per cent of boat roll, each Seakeeper HD gyroscope improves crew members' safety and helps increase profitability by enabling vessels to work in rougher conditions for longer periods of time.

Netherlands-headquartered Radio Holland Group has celebrated its 100th anniversary in the maritime shipping industry with an event on board the historic ship *SS Rotterdam* in the port of Rotterdam. Paul Smulders, CEO of Radio Holland, welcomed the mayor of Rotterdam, Ahmed Aboutaleb, and presented him with the first edition of the book *A century Radio Holland, 1916-2016*.

With the sale of the 7,200hp tug *Jimmy Smith* to private US West Coast buyers, Marcon International, of Coupeville, Washington, has over the past 35 years brokered 322 tugs for sale or charter totalling 1,005,657hp. *Jimmy Smith* was the ninth tug sold by Marcon during 2016.

More than 70 per cent of maritime leaders in Asia now believe the persistent volatility in oil prices represents a structural rather than cyclical change, according to new data released by Sea Asia 2017.

Damen Services Brisbane, the Australian service hub for the international Damen Shipyards Group, held a two-day technical seminar that took an in-depth look at technologies that underpin vessel automation.



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In brief

After receiving the tug *Florida* in a transfer of assets, US-based Seabulk Towing outfitted it with a JonRie Series 230 assist winch. The bow winch enhances the operation of the ASD for ship docking and harbour work. The winch has the capacity to spool 450ft of 8in hawser, and has brakes rated at 350,000lbs.

Viking Supply Ships (VSS) of Norway has entered into a strategic co-operation with Sevnor Ltd, a company with extensive presence in the Russian Arctic and sub-Arctic offshore market. As a result, VSS is closing its own offices in Moscow and Sakhalin.

A new exhibition in the Netherlands is giving visitors a taste of life on an offshore platform and 3km under the sea. The Offshore Experience at the Maritime Museum in Rotterdam is an interactive exhibition funded by more than 50 leading maritime companies.

Nordic LNG supplier Skangas has started a contract to supply fuel to LNG bunkers in Norway for PSVs operated by energy group Statoil. Under the agreement Skangas will also be delivering LNG to Statoil's tugs at Kårstø.

Tokyo-based marine transport group, Mitsui OSK Lines has ventured into the offshore vessel support field by purchasing the subsea support vessel *Skandi Santos* with fellow Japanese company Mitsui & Co and the Norwegian AKOFS Offshore.

HydroComp, the US-headquartered vessel performance prediction and analysis software provider, has appointed Red Offshore Industries to represent it in the India market, with the aim to better serve the growing marine market in Asia.

US-based inland towboat and barge designer, The Shearer Group, has moved into a new office at 3118 Harrisburg Blvd, Suite 100 Houston, Texas 77003.

Leaders of 43 African nations have signed a deal to boost security off the continent's coasts in a bid to shore up development.

New off-the-shelf range gets customers' seal of approval

Wärtsilä has unveiled its new Enviroguard SLR water lubricated seal which is aimed at providing cost-effective reliability for small workboats.

Launched at the International Workboat Show in New Orleans at the end of last year, the seal is the result of more than a year's worth of research and product development with key stakeholders, including customers, shipyards and engineers.

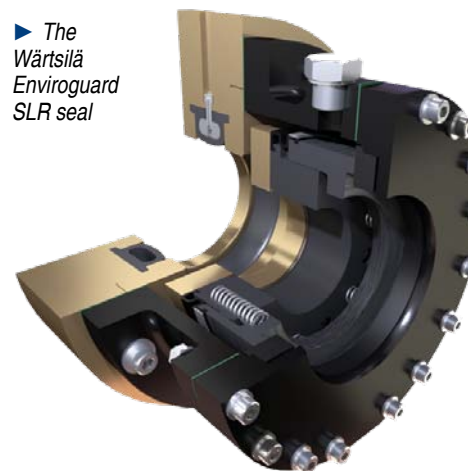
Available off-the-shelf, the Enviroguard SLR comes in nine standard sizes that suit any shaft size between 75 and 306mm, and has been developed to tolerate aggressive waters that may be heavy with silt or sand. Its water lubrication also ensures that there is no risk of polluting the marine environment.

Robust and tough, the seal has been designed to withstand large shaft movements without affecting the performance of the equipment.

Wärtsilä has a long history of producing seals, but not in this market. Speaking in New Orleans, Simon Kill, the company's inland waterways and coastal sales manager, said: "We weren't trying to make a better seal in terms of the performance, because what we already had was excellent. What I spent my time doing was speaking with stakeholders in the workboat, fishing and yacht sectors.

"As a result, our main priority was to design something that we could easily put on the shelf, because the biggest factor when it comes to seal products in this market is availability, to be able to support the customer quickly with a product that they know and trust from suppliers that they know

► The Wärtsilä Enviroguard SLR seal



and trust. People told us that they trusted us as a manufacturer, but that we didn't have the products on the shelf when they needed it. So, to combat that issue, we developed the SLR to cover as big a range of shaft size as possible with one product."

Unlike traditional seals, 60 per cent of the SLR is made from marine-grade composite which makes it lightweight, corrosion-free and economical.

One of the many stakeholders consulted was Dale Lively of Louisiana-based Dale's Welding and Fabrication, who said: "It was pretty neat to be in on the ground floor to be able to input on the design of a new seal. We wanted them to make it more user-friendly and a seal that crews on the boat can maintain without having to call on special technicians. It's definitely come out as a good product that we feel will do well in this market."

Versatility fed into the design brief

Offshore energy support vessel operator, Seacat Services, is preparing to launch its first high speed utility vessel (HSUV), *Seacat Enterprise*.

The 27m South Boats IoW catamaran is a new category of vessel for the offshore wind market, designed to provide both rapid crew transfer and wide-ranging logistical support for extended periods at sea.

The modern support vessel works seamlessly around the clock in conjunction with larger floatels and installation vessels to transfer both technicians and cargo to and from all project-critical infrastructure.

Within this demanding operational scope, availability and versatility are critical, and these attributes are being fed into the design and development of the next generation of offshore wind workboats.

Scheduled for launch in January 2017, *Seacat Enterprise* is the latest product of a long-term collaborative R&D programme

with boat builder South Boats IoW and Alicat Marine Design.

The vessel benefits from a number of structural modifications that substantially enhance cargo and fuel carrying capacity and set it apart from the more traditional workboat designs currently serving the offshore wind sector. These features enable it to carry up to four 20ft containers, along with a full complement of 24 safety-trained personnel and six crew.

A new stern fender system allows cargo to be unloaded from the aft deck via crane, increasing the range of options available for the transfer of key equipment at port and at sea. This system is coupled with an all new dynamic bow fender design that ensures the safe and efficient transfer of technicians to and from the vessel.

With an extremely large fuel capacity, *Seacat Enterprise* can remain operational for extended periods between port calls.

Leadership team shaken-up



▲ Marc Niederer



▲ Kasper Friis Nilaus



▲ Steffen Risager

Svitzer has appointed Marc Niederer as MD of Svitzer Americas and Kasper Friis Nilaus as MD of Svitzer Europe.

CEO Henriette H Thygesen said: "After evaluating Svitzer's opportunities in the current challenging business environment, we have chosen to make a few changes to our leadership team."

"Our objectives are firstly to set the strongest team to take Svitzer forward and continue our success despite difficult markets. Secondly, we want to ensure continuity. Thirdly, we would like to allow some of our most talented colleagues to develop in new and exciting roles."

Niederer, 49, holds a master's degree in economics from the University of Groningen

Confidence still rising

Confidence improved for the third successive quarter in the three months to end-November 2016, according to the latest Shipping Confidence Survey from international accountant and shipping adviser Moore Stephens.

In November 2016, the average confidence level expressed by respondents was 5.6 out of 10, equalling the highest rating since August 2015. All main categories of respondent were more confident than in August 2016, when the overall rating was 5.4.

and an MBA from the University of Chicago. He was born in the Netherlands and has lived and worked in the UK, Kenya, Australia, Russia, Greece and the US.

He has successfully turned around Svitzer's business in Europe and has significant experience in harbour towage operations. Niederer joined the Maersk Group with Maersk Line in 2005. He has been with Svitzer for five years, most recently as managing director of Svitzer Europe.

Nilaus, 41, who has been appointed group vice president and managing director of Svitzer Europe, holds a master of law degree from Copenhagen University and an MBA from Nottingham University Business School. He joined Svitzer in 2007 as business development manager and was later appointed head of business development. Since 2015, he has been CCO of Svitzer. A new CCO for Svitzer will be announced in due course.

A new role for former regional MD for North America, Martin Helweg, within the Maersk Group was expected to be announced as *IT&O* went to press.

Meanwhile, Steffen Risager, 40, has been appointed group vice president. He will continue in his role as MD of Svitzer Australia, *see page 54*.

All the changes have been scheduled to take place in the first quarter of 2017.

In brief

Canada-based Thordon Bearings has successfully completed the oil to water-lubricated tailshaft bearing conversions of the first five of 15 Impala Terminals Colombia-operated tug/towboats. *Impala Zambrano*, the first of the 15 vessels scheduled for oil-to-water conversion, was retrofitted in July 2015 with a Thordon RiverTough bearing and TG100 shaft seal combination. Three triple-screw and one twin-screw pusher vessels have since been converted and Thordon's Colombian distributor, Delta Marine and River Services, will now work on the next vessels in the series.

Nigeria is open for business and is committed to becoming a regional maritime hub, Sabiu Zakari, permanent secretary to the Nigerian ministry of transport told a meeting held in London, UK, co-hosted by the Commonwealth Enterprise and Investment Council and the Ship Owners Association of Nigeria, adding that the country needs private sector investment, partnership and expertise to realise its vision.

Seagoing tug, *Sergei Bulk*, the lead in a series of five vessels ordered by the Russian Federation defence ministry, has been launched at Yaroslavl Shipbuilding Plant in Russia.

Ulstein Verft has signed a contract on building a yacht for a private owner. This will be the first vessel for Ulstein within this segment.

Kongsberg has opened its first South African office and warehouse facility, in Cape Town's airport zone.

Third dual-fuel tug built in Europe is launched at yard

The third dual-fuel tug to be built in Europe has been launched. It is the last of a series of three currently under construction at Gondan Shipyard in Figueras, Spain, for the Norwegian shipowner Østensjø Rederi.

The event was attended by representatives from the shipowner, from the charterer of the vessels, Norwegian state-owned energy company Statoil, and from the Canada-based naval architects Robert Allan Ltd.

This new escort tug, with 40.2m

length and 16m beam, will provide tug services to Statoil at the far-north terminal 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 to ensure operational security.

► *The third dual-fuel tug to be built in Europe at Gondan Shipyard*



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Tug stalwart retires after 40 years

Coen Boudesteijn, product director, tugs at Damen Shipyards Gorinchem, has announced his retirement after 40 years' service at the heart of the tugboat industry.

Colleagues held a farewell reception at Gorinchem on 6 January.

Under Boudesteijn's leadership, Damen built around 2,000 vessels, including approximately 600 ASD and ATD tugs.

Boudesteijn has been a regular attendee at the *ITS* conventions organised by The ABR Company, publishers of *IT&O*.

ABR chairman, Allan Brunton-Reed, said: "I have known Coen for more than 25 years – in fact, ever since he attended his first *ITS* convention in Halifax, Nova Scotia, in 1990, and I don't think he has missed one since."

Boudesteijn became Damen's product director tugs and workboats, later renamed product director tugs, in 1988. He officially retires on 27 May and will continue to work two days a week between now and then. After that date he will be active as an independent consultant for ship handling tugs.

He is succeeded by Dirk Degroote, who was formerly Damen's manager design and proposal tugs, who started his new role at the beginning of January.

Graduating as a naval architect in Dordrecht, in the Netherlands, Boudesteijn began his early career at another Dutch shipbuilder, IHC, in the design department.

He stayed with IHC for five years, but admits he was always much more interested in what was happening at Damen Shipyards.

He said: "I was fascinated by Damen's entrepreneurial way of doing business and how our chairman Kommer Damen developed series building and standardisation well before any other company had started to look at it. A vacancy came up. Unfortunately I failed the first time but was lucky on my second attempt."

Boudesteijn began in the drawing office in 1976 when Damen's current headquarters in Gorinchem had just opened. Then Damen was headquartered in Hardinxveld. The drawing 'office' was a mixture of temporary wooden buildings.

He said: "It was freezing in winter and

boiling hot in the summer. There were perhaps 15 people in research and the central engineering offices and around 200 people in the whole organisation, compared to the 9,000-strong workforce, including 600 research and engineering people, today.

"When I started, Damen was really dominant in the dredging industry as a supplier of auxiliary vessels such as Pushy Cats, Stan Tugs, Multi Cats and Poly Cats. These were quality vessels, built in a series, with basic hulls for stock."

The ever popular Pushy Cat 42 and Stan Tug 1 were the best-sellers in the 1970s. Alongside these Damen was building bigger vessels such as the Stan Tug 4, a 22m vessel, which ultimately led to the development of the standard Stan Tug 2600.

"We have been working on a compact RSD tug of 25m that has the performance of a tug of 32m. Because of the innovative twin fins it has 50 per cent more efficiency during escorting, resulting in an extremely long line pull."

Coen Boudesteijn, Damen

When not building tugs for Damen, Boudesteijn can usually be found on his own classic motor yacht *Bruiser*, which he built himself some 20 years ago. From the keel laying to the trials, Coen and his wife Nel were fully involved in the construction process. Boudesteijn travels the waterways of the Netherlands and Belgium, and visits the Dutch Wadden Islands.

In the period 1982-1995, Damen started to make a mark worldwide and this was particularly the case in the Middle East. Boudesteijn said: "We won many tenders for dedicated ship handling tugs in Saudi Arabia, Iran, Kuwait and the United Arab Emirates. Up until then many of our vessels were related to the dredging industry, but this was a different world."

Larger Damen Stan Voiths, with Voith

► **Coen Boudesteijn, outgoing product director tugs at Damen**



Schneider propulsion and 40 tonnes of bollard pull, and Stan Tugs with conventional twin screw DMC nozzle propulsion and a bollard pull of up to 100 tonnes were favoured. These twin-screw tugs ranged between 30m and 50m and were often built in a large series.

Boudesteijn said: "These were dedicated ship handling tugs. They were handling the giant oil tankers of 300,000dwt. This is real ship assisting!"

In the 1990s came the industry contribution that Boudesteijn is most proud of. As Damen started to develop the true ship handling tugs, traditional rudder propeller propulsion led to the now renowned azimuth stern drive (ASD) tug.

Boudesteijn said: "When we started with the new ASD tug 3110, it was a multi-discipline approach – a team with the tug's design and propulsion guys, Damen research, the CE drawing office, shipbuilders and mechanical engineers. I think it took at least two years to develop."

Damen has improved on them generation after generation and today has built more than 600 new ASD tugs. And although Boudesteijn loves each and every tug, if pushed he admits that the ASD tug 2810 is his real favourite. Production started in 2002 and the 2810 is now the most popular Damen ASD tug with more than 210 built.

As well as the tractor tug, ATD series, another milestone development is the Damen-patented, reverse stern drive (RSD) tug 2513.

Boudesteijn said: "We have been working on a compact RSD tug of 25m that has the performance of a tug of 32m. Because of the innovative twin fins it has 50 per cent more efficiency during escorting, resulting in an extremely long line pull. The Damen RSD tug is the only ship handling tug in the world designed for always sailing forward because it has two bows. I think it will be the commodity of the coming decade."

This new ship handling tug will be built with diesel and gas engines and presented at *ITS* 2018 in Marseille.

More details about *ITS* 2018, including how to submit a paper, are available at www.tugandosv.com

• This article is partly based on an interview which first appeared in *Damen Magazine*, available at www.magazine.damen.com

◀ **Boudesteijn's favourite, the ASD 2810**



Partners to design viable crewless vessels

Rolls-Royce and VTT Technical Research Centre of Finland have announced a strategic partnership to design, test and validate the first generation of remote and autonomous ships. The new partnership will combine and integrate the two companies' expertise to make such vessels a commercial reality.

Rolls-Royce is pioneering the development of remote-controlled and autonomous ships and believes a remote-controlled ship will be in commercial use by the end of the decade. The company is applying technology, skills and experience from across its businesses to this development.

VTT has deep knowledge of ship simulation and extensive expertise in the development and management of safety-critical and complex systems in demanding

environments such as nuclear safety. It combines physical tests, such as model and tank testing, with digital technologies, such as data analytics and computer visualisation. The company will also use field research to incorporate human factors into safe ship design. As a result of working with the Finnish telecommunications sector, VTT has extensive experience of working with 5G mobile phone technology and wi-fi mesh networks. VTT has the first 5G test network in Finland.

Working with VTT will allow Rolls-Royce to assess the performance of remote and autonomous designs through the use of both traditional model tank tests and digital simulation, allowing the company to develop functional, safe and reliable prototypes.

Karno Tenovuo, Rolls-Royce, vice

president ship intelligence, said: "Remotely operated ships are a key development project for Rolls-Royce Marine, and VTT is a reliable and innovative partner for the development of a smart ship concept. This collaboration is a natural continuation of the earlier user experience for complex systems projects, where we developed totally new bridge and remote control systems for shipping."

Erja Turunen, executive vice president at VTT, said: "Rolls-Royce is a pioneer in remotely controlled and autonomous shipping. Our collaboration strengthens the way we can integrate and leverage VTT's expertise in simulation and safety validation, including the industrial Internet of Things, to develop new products and in the future, enable us to develop new solutions for new areas of application as well."

In brief

The International Energy Agency, which represents 29 energy-producing nations, has warned that the oil industry faces another boom-and-bust cycle if the current reduction in new investment is not reversed. It fears that unless more money is spent exploring for, and developing, new oil fields, demand is likely to outstrip supply early next decade. Investment in 2015 was the lowest since the 1950s.

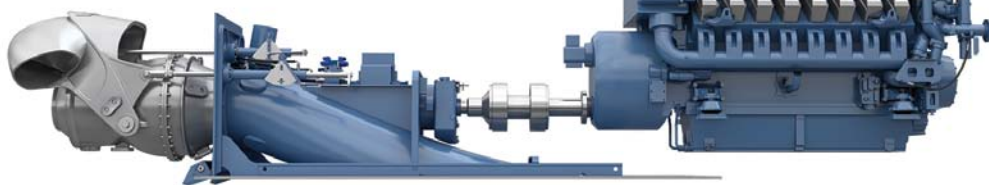
More shore-based employees in the maritime industry are concerned with their job security than ever before, according to research by international maritime jobs specialist Halcyon Recruitment and online training provider Coracle. The survey, based on nearly 3,000 responses, found that 63 per cent of participants were concerned about their jobs.

Alphatron Marine has moved into a new office and warehouse in Zwijndrecht, Belgium, near the port of Antwerp; its former office in Meerdonk has closed. Alphatron has also opened an office in Le Havre, France.

The Swedish Club held its latest marine insurance seminar for shipowners and brokers in China. Guest speakers included Dave Wisse from Smit Salvage (Asia).

Greece-based Five Oceans Salvage has removed three sunken fishing vessels from the harbour of Port Louis, Mauritius.

Deal sets up single source for propulsion parts



Rolls-Royce has signed a deal with Pacific Power Group to distribute and service Kamewa steel and aluminium series waterjets in the western US mainland, Alaska and Hawaii.

Washington state-based Pacific Power Group, a longtime distributor for Rolls-Royce MTU diesel engines, provides a wide range of products to various industries and has a strong market position in the tug, defence, commercial fishing, ferry and yacht markets.

It has been providing sales, service and engineering solutions for the marine industry for more than 30 years. By joining forces with Pacific Power Group, Rolls-Royce customers will have access to a single source provider for a complete range of propulsion components including engines, control systems, and waterjets.

With access to Pacific's engineering expertise and 24/7 customer support, marine customers across the western US will benefit from a streamlined procurement and building process. Customers will now have access to an expanded service network improving the availability of service engineers and spare parts needed to keep their vessels working.

Tommi Viiperi, Rolls-Royce, general manager waterjets sales and marketing, said: "Pacific Power Group is an existing distributor for Rolls-Royce MTU engines, which are the perfect complement to our range of waterjets. This partnership with Pacific Power Group will allow us to support our



▲ A Rolls-Royce 56A3 waterjet, top, and above, from left to right, signing the contract are Tommi Viiperi, Rolls-Royce, general manager waterjets sales and marketing; Tor-Gunnar Hovig, Rolls-Royce, senior vice president offshore & merchant solutions; and Bill Mossey, vice president of marine at Pacific Power Group

existing customers better, improving services and parts availability as well as introducing the Rolls-Royce brand to new ones."

Bill Mossey, vice president of marine at Pacific Power Group, said: "We've seen increasing demand from customers looking for a single-source propulsion provider that offers technical expertise on all propulsion components. The addition of Rolls-Royce Kamewa waterjets to our product lineup allows us to better meet the needs of customers in the western US."

In brief

The Liberian Registry has launched operational trials for electronic certificates covering both statutory and class regulations. Having initiated the practice of issuing electronic statutory certificates such as minimum safe manning, civil liability convention and registration certificates, the registry has now started trials on ships classed by ClassNK for the statutory certificates that it issues on behalf of Liberia.

The latest edition of the UK government's Marine Accident Investigation Branch's *Safety Digest* contains insightful examples of poor risk awareness demonstrated by the crews of vessels from the commercial, fishing and recreational sectors. The document highlights the disconnect that sometimes occurs between a company's official safety culture and the actual operation of the vessel.

Trojan Marinex has simplified the installation and operation of its ballast water treatment system. The Trojan Marinex BWT system – already up to 50 per cent smaller than the industry norm – has been further reduced by up to 30 per cent thanks to the inclusion of inline lamp drivers, enabling a substantial reduction in cabling and electrical panels.

A survey by Moore Stephens reveals that the biggest perceived barriers to women playing a greater role in the shipping industry are: workplace attitude or corporate culture (31 per cent), travel implications in day-to-day roles (21 per cent) and lack of career progression (19 per cent).

KVH Media Group has expanded its market-leading NEWSlink portfolio for seafarers with the launch of two new daily local language editions in Japanese and Korean.

Tugboats herald in new era



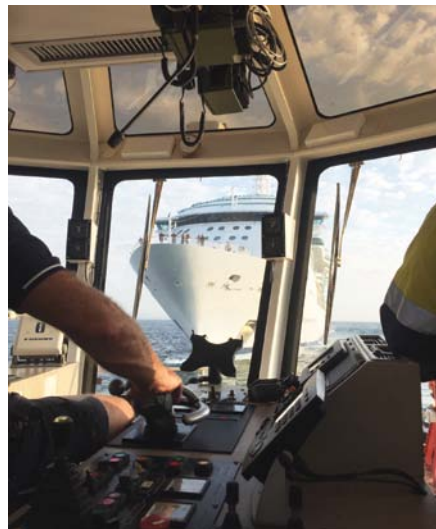
Svitzer Kiama performs a water salute as **Radiance of the Seas** is assisted into harbour; below right, a tug master's view of the mega-cruise liner from the wheelhouse

The pride of Svitzer's Port Kembla tugboat fleet escorted Royal Caribbean's mega-liner, *Radiance of the Seas*, into harbour, signalling the birth of the Illawarra region of Australia's cruise industry.

In the early morning hours, and with thousands of locals watching from numerous vantage points, the 293m-long liner with 2,400 passengers and 800 crew on board became the first cruise ship to visit the region, injecting almost Aus\$1m into the local economy.

The tugs involved were *Svitzer Marloo*, *Svitzer Kiama* and *Svitzer Barunga*, ably assisted in the berthing process by two of Svitzer's lines vessels, *Bodalla* and *Wyee*. As well as ensuring *Radiance of the Seas* docked safely, *Svitzer Kiama* also performed a spectacular water salute using its fire-fighting canons to mark the liner's maiden visit.

Svitzer Australia managing director, Steffen Risager, said: "Svitzer is thrilled to have been a part of this significant day for the Illawarra region. It was particularly great that the professionalism and expertise



of our crews were seen by so many from the community that they are proud to be part of."

Last year more than a million Australians took a cruise, with the industry now estimated to be valued at Aus\$3.6bn.

Family towage firms operating joint venture at strategic crossroads

Iskes Towage & Salvage and Rebonave started operating a tugboat fleet in the port of Lisbon, Portugal, on 1 January. The newly created joint venture will make use of the knowledge, assets and craftsmanship of both organisations.

The new joint venture is operating 24/7

and is able to bring in any vessel that requires towage assistance in the port.

Peter Rondhuis from Iskes, joint managing director of the new venture, said: "We hope that we can provide our clients with the best possible service, on a growing global network. With nearby crossroads to

Asia, the Americas and north Europe, the location is very strategic."

Fellow joint managing director, José Costa from Rebonave, said: "The skills and professionalism of our team will assure a high level of quality and satisfaction for servicing our existing and new clients."



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Shipbuilder to get new yard tug

Shipyards, especially those that repair and construct larger vessels, invariably need to move the vessels, materials and other resources about the yard. To do this, yards often have a small yard-tug that can manoeuvre in and around yard structures such as for repositioning hulls into dry docks or to control newly launched vessels.

As one of the US's largest shipbuilders, General Dynamics National Steel and Shipbuilding Company's (Nassco) San Diego shipyard has been well served by the venerable tug *Mr Ed*. But when the time came to replace this valuable yard asset, the management decided to do it right. Approaching Seattle's Jensen Design, they had a vessel designed specifically for shipyard work, robust enough to endure long hours each day while minimising the resources needed to operate and maintain it. The resulting tug is an attractive, compact, steel-hulled boat that can be operated by a single person.

The 11.6m x 4.6m x 1.7m tug is currently under construction by San Diego-based boat



builders Marine Group Boat Works at its new solar-powered construction facility in National City, California.

Work in the often-tight corners of a shipyard requires excellent visibility, so the designers have given the pilothouse a 300-degree unobstructed line of sight. In addition, a flying bridge, complete with communication and control consoles, is an integral part of the wheelhouse.

For pulling power, the tug will have a pair of Cummins QSL9M Tier 3 engines each producing 410hp. The engines turn 965mm x 660mm four-blade, bronze, workhorse-style props on 76mm Aquamet 22 shafts. Each engine is linked to the shafts with a ZF325-1 gear with 2.97:1 ratios.

The Cummins propulsion is expected to give the tug a speed between nine and 11 knots. It will also deliver between eight and nine tonnes of bollard pull. On-deck tow-bitts are mounted fore and aft to exercise the pulls.

In addition to conventional rudders, the tug will be fitted with flanking rudders for enhanced manoeuvrability and handling. Tankage will include 3,800ltr of fuel.

A fast lube oil change system negates the need for lube and dirty oil tanks. There will be a 5kW 110v generator for electrical requirements.

The tug is currently designated *Workboat 38* and is scheduled for delivery by the end of the third quarter of 2017.

History about learning from past

FarSounder has launched Local History Mapping (LHM), offering users the ability to build a 3D map of the seafloor over which they have recently sailed.

The map is updated with every ping and is displayed as an overlay on top of the system's nautical chart display. This new overlay is displayed in conjunction with the real-time sonar overlay. When used together, helmsmen can quickly see what lies ahead and what they have recently passed over.

LHM capabilities will be included as part of its standard navigation sonar software starting with SonaSoft 3.3.

Since the company's 3D forward-looking sonars have a wide horizontal field-of-view ahead of the vessel, a single pass of a FarSounder sonar with LHM can survey a much wider swath of the seafloor than with a standard echosounder. In addition, the large coverage zone from a single ping results in a huge overlapping area from one ping to the next. This means that vessel operators will not have

to worry about missing any obstacles between pings.

Due to the unique performance characteristics of the company's forward-looking sonar systems, LHM is based on a bathymetric survey engine that was developed in-house from the ground up.

The company has also invested heavily in the database infrastructure associated with the storage and integration of large survey datasets.

These investments will accelerate the release of additional bathymetric mapping capabilities.



► FarSounder Local History Mapping

Contract extension to cover more than 140 vessels in fleet

KVH Industries has announced that Netherlands-based owner-operator Vroon has extended its contract for KVH's maritime satellite communications solution, choosing the mini-VSAT broadband network for connectivity services onboard more than 140 Vroon vessels.

Rob Frenks, Vroon's group ICT manager, said: "In working with KVH during the past five years, we realised that having a reliable communications partner is essential to the smooth operation of our vessels and welfare of our crews. We also witnessed first-hand the advantage of the IP-MobileCast entertainment packages in enhancing crew welfare. KVH offers us a total and affordable managed service that brings together proven hardware and a fully integrated global network management system that will support our business for years to come."

The multi-year contract also includes KVH's IP-MobileCast service for news, sports, movie and TV delivery, and preventive maintenance checks to ensure peak performance on all fielded systems.

The first installations of KVH's 60cm diameter TracPhone® V7 systems onboard Vroon vessels took place in early 2011.

Optimism high despite hard times

Hassan Abouraya, consultant engineer – business development/international marketing & risk management executive with Saudi Arabia-based Zamil Offshore, looks at the challenges facing the Middle East in general and his company in particular



► Hassan Abouraya

The OSV market remains highly challenged, with most regional markets witnessing little if any capital expenditure, and operating expenditure kept as low as possible.

OSV lay-up may have only marginally increased during the last quarter, but still accounts for more than 600 vessels above pre-downturn levels and stands at 20 per cent of the global fleet. In 2015, 230 newbuild contracts were placed, with around half this number built and sitting at yards. The situation for yards and suppliers remains painful. There are signs of optimism, but restructuring and cost cutting has become a primary focus for many companies as they try to adapt to a multi-year downturn and make offshore production competitive and viable.

Saudi Arabia is preparing for the world's biggest initial public offering (IPO) and Saudi national oil company Aramco presses on with key maintenance projects, while UAE-ADNOC has started making significant investments downstream in new projects to further increase its refining capability and expand its petrochemicals business over the next five years as part of its recently announced 2030 Strategy.

The current oil price outlook has forced the regional companies to take a hard look at costs. Oil companies have started preparing for a future with continued market uncertainty – most have started structural changes that go beyond the traditional response of delaying projects and renegotiating with suppliers.

Fluctuating oil prices have made it critical for OSV owners and operators to make a 'step change' in their operating models to remain responsive and resilient amid on-going market variability.

Zamil Offshore, the largest offshore and marine services provider in the Middle East, sees opportunities in expansion after completing the first phase of a comprehensive restructuring and spinning off its business units into three subsidiaries – Zamil Marine Ltd, Zamil Offshore Construction Ltd and Zamil Shipyards Ltd. The second phase is now underway and includes the restructuring of each of these companies.

In addition Zamil Offshore Holding opened a new joint venture company in Abu Dhabi, UAE – Al Zamil Marine Services LLC – to work mainly in chartering out some of its offshore vessels in the UAE and at the same time market its very specialised shipbuilding, ship and rig repair services regionally.

Despite the current low market conditions, Zamil Offshore is focusing on increasing the

operational efficiencies of its vessels and shipyards and cutting costs. This reflects the fact that Saudi Aramco will not cut funding to its key oil & gas production capacity projects, despite the current market conditions.

Zamil Offshore's scope of work covers offshore marine services, ship chartering, ship chandlery, offshore and onshore construction services including hook-up business, shipbuilding, ship and rig repair, and sea ports operation and management.

"Oil companies have started preparing for a future with continued market uncertainty – most have started structural changes that go beyond the traditional response of delaying projects and renegotiating with suppliers"

Hassan Abouraya, Zamil Offshore

Zamil Marine manages 73 OSVs, with Zamil owning 68 of them while the other five are brokered. The company's offshore fleet includes diesel electric and Rolls-Royce UT 733-2 AHTS vessels, DP2 multi-role diving/ROV support vessels, shallow draft DSVs, supply boats, work/maintenance boats, utility boats, crew boats and three jack-up self-propelled lift boats. The average age of Zamil vessels is about seven years. The majority of the vessels in Zamil's fleet are on long-term charter with Saudi Aramco.

Despite the downturn, the company's fleet has continued to grow. In 2015 additions included two dive support shallow draft vessels, **Zamil 601** and **Zamil 602**, built at the company's new Dammam shipyard, and two multi-purpose fast crew boats, **Zamil 105** and **Zamil 106**, acquired from Hong Kong. The 36m crew boats have a deck space of 94m² and a passenger seating capacity of 70. They are designed to carry 50 tons of cargo.

The lower global oil price has made the company struggle, but there is optimism, with the Middle East seen as a potential growth area for OSV work, driven by Aramco and ADNOC requirements. The total number of OSVs working in the Arabian Gulf has slightly increased and is around 625 vessels. Easing of sanctions against Iran means owners are looking to move their older tonnage into that market. Many world players have entered the Middle East market to compete for Aramco long-term chartering tenders.

Average OSV chartering rates globally

have dropped significantly since last year and the big players in the Middle East – Saudi Arabia, UAE and Qatar – have succeeded in damping the region's day rates. Aramco, along with other regional oil producing companies, has started renegotiating most of the existing offshore vessel chartering contracts. However, demand in the Middle East OSV market is expected to remain positive, driven by Saudi Arabia, UAE and Qatar requirements. Anticipating market change is crucial; nobody can predict when global oil prices will stabilise, especially with the return of Iran, Iraq and Libya to the oil export market.

Zamil is currently facing fierce competition from a number of international offshore companies deploying their vessels in our region. We have already lost some chartering opportunities to some of them and are struggling to keep all our vessels employed. Currently we are focusing on implementing several programmes for increasing the efficiency and reducing our vessels' operational costs without compromising the quality of our services.

In addition, we are investigating venturing into new offshore services by investing in cable lay/pipe lay vessels and looking for alternative uses for some of our offshore fleet. We are also considering establishing a laid-up OSVs stacking capability at Dammam Shipyards.

Zamil's new Dammam yard was commissioned in April 2015. Zamil Shipyards now manages and operates four shipyards. Generally, the company focuses on building offshore and harbour service vessels. So far, 50 diversified offshore vessels, harbour tugs, port service units, navy tugs and coastguard vessels have been built and delivered.

In response to competition in the segment, the company has started implementing a diversification strategy. It has built and delivered a series of vessels for the defence and security sector for local and regional customers, three tugs for the Saudi Royal Navy and four surveillance/logistics vessels for export to the Kuwait Coast Guard.

Currently, we do not have any newbuild orders. Our eastern shipyards are concentrating on rig repairs and ship repair and we are capitalising on building the Saudi Maritime Cluster. We have agreements in place with MTU and Sparrow, with others under negotiation.

DIARY DATES

Meet us at these global events:

ISU Associate Members' Day
London, UK
22 March 2017
www.marine-salvage.com

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

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

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

TUGNOLOGY '17

23-24 May 2017
World Trade Centre, Rotterdam

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

Electric & Hybrid Marine World Expo
Amsterdam, The Netherlands
6-8 June 2017
electricandhybridmarineworldexpo.com

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

International Salvage Union AGM
Singapore
5-8 September 2017
www.seawork.com

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

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

International WorkBoat Show
New Orleans, USA
29 Nov-1 Dec 2017
www.workboatshow.com

APM Maritime
Singapore
14-16 Mar 2018
www.apmmaritime.com

Island home for new venture



◀ Heath MacDonald, Wade MacLauchlan, Elizabeth Reynolds Boyd and Jake Jacobson

Marine propulsion system manufacturer, Nautican Research and Development, is setting up a new marine technology centre at Summerside on Prince Edward Island on Canada's east coast.

Nautican owner, naval architect Elizabeth Reynolds Boyd, is a former resident of Montague on Prince Edward Island and has been looking for a way to give something back to her home province.

She said: "I see Prince Edward Island as the best place for this new manufacturing and research facility given its location, skilled workforce and the efforts of the government to establish the province as a hub for marine business. I am very happy to be able to move Nautican's manufacturing to the island not only because I'm from here, but because it's a perfect fit for the needs of my company."

Boyd was joined by Prince Edward Island premier, Wade MacLauchlan, province economic development and tourism minister Heath MacDonald and Babcock Canada vice president Jake Jacobson, when she announced the project. The Nautican, Babcock and provincial partnership will bring a manufacturing facility and 21 new full-time jobs over the next three years – joining six employees already on staff – to the facility at Slemon Park, Summerside.

With the support of Babcock, Nautican will establish a manufacturing, research and integration facility to produce high-efficiency marine propulsion products. These products incorporate high-performance hydrodynamic solutions to maximise power while reducing

fuel consumption. Nautican's integrated propulsion units are used on many types and sizes of vessels and help deliver higher fuel efficiency, better manoeuvrability, and higher power output. During the

next three years Nautican will progressively transition the manufacturing of its integrated propulsion units to the new island facility.

The provincial government will help Nautican establish the new facility by providing labour rebates for new positions and a lease rebate.

Babcock Canada is providing Nautican with a significant investment to purchase the equipment for the facility. In return, Babcock will receive industrial technological benefits from the future sales of Nautican products that will be used to meet its commitments to the Canadian government on the Victoria class submarine in-service support programme.

As part of any major Canadian defence contract, companies must undertake business activities in Canada equivalent to 100 per cent of the value of the contract that they hold with the federal government.

Babcock selected Nautican to receive this investment due to the commonality the two companies share in their products and skills. In addition to the investment, Babcock will support and guide Nautican in manufacturing set-up, process development, and financial and project management.

The advanced marine technology sector has grown rapidly on Prince Edward Island during the past three years; sales have risen from just Can\$7m in 2013 to more than Can\$76m in 2015. More than 150 islanders work in the industry, which represents approximately eight per cent of total provincial exports.

Operating costs predicted to rise

Vessel operating costs are expected to continue to rise in 2017, according to a survey by international accountant and shipping consultant Moore Stephens. Repairs and maintenance and spares are the cost categories which are likely to increase most significantly.

The survey results are based on responses from key players in the international shipping industry, predominantly vessel owners and managers in Europe and Asia. Those responses revealed that vessel

operating costs are expected to rise by 2.5 per cent in 2017 following a 1.9 per cent rise last year. Respondents expected repair and maintenance costs to rise by 1.9 per cent in 2017. Outlay on crew wages was expected to increase by 1.8 per cent.

The mood of respondents generally was quite pragmatic, with many referencing the need to address such familiar problem areas as over-tonnaging, excessive competition, a paucity of finance, rising fuel costs and burgeoning regulation.



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Move Forward with Confidence



In brief

US-based shipbuilder Metal Shark is expanding its waterfront shipbuilding complex in Franklin, Louisiana, to accommodate increased production needs. It is erecting a fully-enclosed 1,486m² large vessel assembly building to enable weather-independent construction of vessels up to 55m long. In addition, a new stand-alone office building will provide more than 372m² of space for the yard's executive, engineering, project management and administrative staff.

Apax Partners has completed the Acquisition of Telemar Group. Through its ownership of both Marlink and Telemar, it will create Apax Partners Maritime Group to provide the industry with an integrated offering of broadband communications, digital solutions, bridge electronics and on-board maintenance. The new group will be led by Erik Ceuppens as CEO of both Marlink and Telemar. Bruno Musella, Telemar CEO, will become Telemar chairman.

The Shipowners' Club has had its Standard & Poor's credit rating upgraded from A minus to A. CEO, Simon Swallow, said: "A recent brand research exercise noted the importance of our financial strength to our members and their brokers. We are pleased to note that our ongoing financial strength has been reiterated and that this strength will help the club to remain the number one P&I choice for small and specialist vessels."

US-based OSV operator, Hornbeck Offshore Services, says it will probably have to stack nearly 80 per cent of its OSV fleet in 2017 due to the decline in the offshore oil & gas sector. Hornbeck stacked 41 of its 62 OSVs in 2016 and expects that to rise to 48 this year. The company provides logistics and other support to offshore oil E&P firms, with a special focus on the Gulf of Mexico.

Smart ships are likely to be carrying cargo within 10 years, and all in the logistics chain need to adapt in order to make good use of the new technology and the huge amount of data available as a result, says Sue Terpilowski, managing director of Image Line Communications and president of the Women's International Shipping & Trading Association UK.

Focusing on digital agenda



▲ Voith Water Tractor Sirocco being operated by Boluda Towage and Salvage off Valencia, Spain

Voith group has entered 2017, which is its 150th anniversary year, with renewed strength, having completed a successful transformation over several years.

The operating result in its core business increased by 18 per cent and the company is anticipating a renewed period of growth. Around €100m has been dedicated for the development of new digital products during the next two years.

Its new digital solutions division has commenced operations and has already launched a large number of initiatives.

Voith Turbo faced a lower level of orders and sales, especially in oil & gas, in a very difficult market environment.

President and CEO, Hubert Lienhard, said: "We have once again significantly improved our net result under challenging conditions and set a decisive new course towards making Voith a key digital industry player."

Deck cutter will stop tugs capsizing

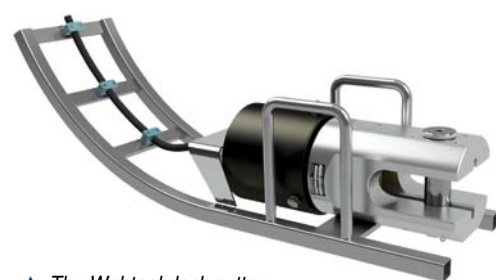
Hydraulic cutting systems specialist, Webtool, has developed a portable, emergency tow rope cutter for oil tankers, eliminating the risk of the pull-back tug capsizing. Attached to the steel wire tow line on the tanker's poop deck, the Webtool deck cutter, once activated, cuts a 60-70mm steel wire tow line within three seconds to prevent tug capsizing.

Incidents of girting are the tug's response to unexpected and sudden movements by the tanker. Once in difficulties, seconds count if capsize is to be avoided. Tugs often rely on rapid tow line pay-out by the rope winch to prevent capsize. In the event this does not solve the problem, and the tug either does not or cannot cut the line, the Webtool emergency cutter allows the mooring master to take the initiative and disconnect the tow line.

Ahead of single point mooring off-loading, the Webtool deck mounted cutter is deployed to the tanker. It comprises two portable units: a cutter (and reeled hydraulic hose) and hydraulic power source. The cutter is mounted on a skid frame and positioned on the poop deck with the towing line in the cutter's jaw ready for the emergency cut.

The cutter's hydraulic hose is paid out to the power source positioned at a safe distance from the cutter. From here the mooring master is ready and able to activate the towing line cut, in the event of the tug getting into difficulties. The cut towline, still attached to the tug, then drops to the seabed away from the tanker.

Colin Schroder, managing director, Allspeeds, makers of Webtool hydraulic cutters, said: "The Webtool deck mounted cutter is the final resort if all else fails. By positioning the emergency cutter on the tanker, it allows the mooring master to release the tug, safe in the knowledge that the cut is instant and complete."



▲ The Webtool deck cutter

People in the news



Neil McNeil

Bernhard Schulte Shipmanagement (BSM) has appointed two new managing directors: Neil McNeil will head BSM British Isles, based in the Isle of Man, and Mingfa Liu will be his BSM China counterpart in Shanghai. Prior to joining BSM, McNeil was regional fleet manager (Americas) for BP Shipping and managing director at V Ships USA. Liu, a former managing director of V Ships Asia, was most recently MD at Wallem China.



Mingfa Liu

International law firm **Hill Dickinson** has made a number of senior appointments. Managing partner Peter Jackson has been elected as the company's first CEO, long-time senior partner David Wareing has taken up the role of chairman, and Iain Johnston has been appointed as the firm's first chief operating officer. The company has also strengthened its London shipping team with the arrival of master mariner Donal Keaney, bringing the total number of master mariners at the firm to six.



Paul J Albert

Paul J Albert has been appointed as president and CEO of US-based **VT Halter Marine**, with immediate effect. Albert joined the company as senior vice president of production in 2002, and was named COO in 2009. He has served as interim president and CEO since July 2016.

GE Renewable Energy has appointed John Lavelle as CEO of its offshore wind business, with effect from November 2016. Lavelle's 30-year career with GE includes overseeing GE Energy Project Operations. Lavelle replaces Anders Soe-Jensen, who will become offshore wind's commercial and business development leader. General Electric created the GE Renewable Energy unit in November 2015.



Jan-Arie Sepers

Jan-Arie Sepers has returned to **Radio Holland**, where his career began 26 years ago. He has been appointed as general manager of Radio Holland Netherlands, after a substantial career at Nokia.

Global marine and engineering consultancy **London Offshore Consultants (LOC)** has moved one of its top performers from Asia back to London to focus on growing the company's shipping services in London and around the world. Nick Haslam, group director of shipping services, joined LOC almost 20 years ago and has been based in Singapore for the past nine years. He returns to London to focus on business development. LOC has also boosted its presence in

Singapore with two new appointments: Mark Board as marine consultant, and Dan Niklas Ahlgren as naval architect.

Norway's **Digital Marine Solutions AS (DMS)**, the parent company of C-Map, has appointed Paul Østergaard as executive chairman. With the DMS board and C-Map leadership team, Østergaard will develop and implement the company's strategic plan and lead it in achieving growth targets for 2017 and beyond. Østergaard served as ShipServ's CEO until 2016, and serves on the boards of ShipServ, Digital Marine Solutions, Founders, and the Herlufsholm Foundation.



Paul Østergaard

John Parrott assumed the role of president and CEO of Seattle-based **Foss Maritime** on 1 January. Parrott joined Foss in January 2016 as COO; in August 2016 he assumed the role of president from retiring president and CEO Paul Stevens. Parrott begins the year with a focus on enhancing communication and efficiency within the company. Meanwhile, Foss' VP of HSQE and external affairs, Susan Hayman, has been nominated by President Barack Obama to the US Merchant Marine Academy's Board of Visitors. Hayman joined Foss in 2006.



John Parrott



Susan Hayman

Intellian has appointed industry veteran Edward Joannides to take the helm of its Americas business unit as general manager. His experience in the maritime and satellite communications industries spans over 25 years, most recently as programme manager for satcom services at Northrup Grumman.

Osman Munir has been appointed as chief commercial officer of the **Kotug Group**. Munir has worked for Kotug since June 2007. From 1 January, in his new role, he will continue to take a global perspective on strategy and market opportunities, and lead in assessing and prioritising geographic as well as market segments.



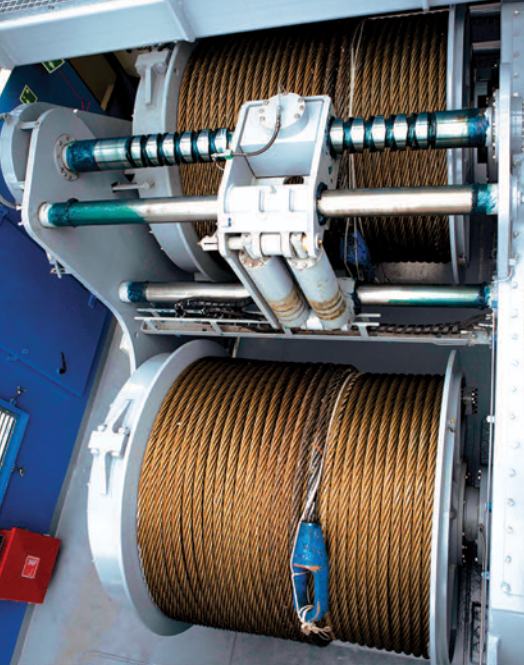
Osman Munir

Eastern Shipbuilding Group has announced the appointment of Admiral Robert J Papp Jr, US Coast Guard (Retired), as president of the Florida-based group's Washington operations.

The Nautical Institute's new CEO is Capt John Lloyd. He will take over from Philip Wake, who is retiring in May. Lloyd became COO in November 2015, taking on overall responsibility for specialised training services. As CEO, he will be managing the resources of an organisation that has 7,000 members and over 50 branches worldwide.



Capt John Lloyd



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Deal signed for new high performance tugs

Canada-based Robert Allan Ltd and Uzmar Shipyard of Turkey have signed documents commencing a new high performance escort tug project that is an example of the continuing strong long-term level of co-operation existing between the two companies.

Uzmar has now built more than 90 Robert Allan Ltd designed tugs and workboats since the first project in 1996, ranging in size from 15m aluminium catamarans, to 36m escort tugs and 46m shallow draft pushboats.

The contract, signed at the end of last year at the International Workboat Show in New

Orleans, covers a new RAStar 3000-W design setup to accommodate propulsion packages of up to 90 tonnes of bollard pull, while still staying under 500gt.

The modern escort tugs will have an overall length of 30m, moulded beam of 13.2m, least moulded depth of 5.5m, a maximum overall draft of 5.7m and be capable of safely performing steering and braking manoeuvres in exposed conditions.

The vessels will have a complement of 10 people in MLC 2006 compliant accommodation, 140m³ of fuel oil and 30m³ of fresh water.

The high quality vessels were due to begin construction in Turkey early this year and are scheduled to be available for delivery to international clients in 2018.

Jim Hyslop, Robert Allan Ltd's manager, project development, said, "I am delighted to witness the signing of this design contract with Uzmar that will spur the building of new market leading tugs allowing owners to quickly respond to today's demanding tender requirements. We are very excited to see them back in the tug market."

◀ Hasan Ata, proposals and projects co-ordinator at Uzmar, and Jim Hyslop, Robert Allan Ltd's manager, project developments, at the contract signing ceremony in New Orleans



In brief

Norwegian offshore vessel owners, NREM Offshore and Solstad's Solship Invest, have completed their merger. The merged company will have a fleet of 61 offshore vessels, consisting of construction support vessels, AHTSs, and oil & gas platform suppliers. The completion of the merger was reported to Norway's regulators on 9 December.

Singapore Technologies Engineering has announced that its Singapore shipyard, Singapore Technologies Marine Ltd and its US shipyard, VT Halter Marine, secured new contracts worth S\$138m in shipbuilding and shiprepair during the fourth quarter of 2016.

Norwegian offshore vessel owner DOF has secured new contracts for three of its ships – PSV *Skandi Aukra*, AHTS *Skandi Icesman* and AHTS *Skandi Pacific*. The contracts, all with different operators, range from 13 months to three years.

Mexican operator is expanding fleet

Leading Mexican maritime operator, Grupo TMM, has signed a protocol of delivery and acceptance with Damen Shipyards Group for a 70 tonne bollard pull ASD tug 3212 named *TMM Colima*. The tug will operate in the Mexican port of Manzanillo on the Pacific coast. Ongoing port modifications and changes in port authority requirements were the driving force behind the deal.

Founded in 1958, Grupo TMM has become one of the largest integrated logistics and transportation companies in Mexico. The group provides a dynamic combination of specialised maritime services, port and terminal management and integrated logistics services to an extensive Mexican and international client base.

The ASD tug 3212 will join Grupo TMM's first Damen tug, purchased in the 1990s, and will become part of a fleet of 42 vessels. The tug will operate in and around the port of Manzanillo, where the organisation is expanding

its operations. The tug will bring enhanced capability to TMM's fleet and was scheduled to be delivered by the end of 2016.

In addition to the performance and features of the ASD tug 3212, another factor influencing the deal was Damen's ability to guarantee a fast turnaround and punctual delivery. Luis Ocejo, TMM's senior managing director, said: "In addition to the ASD tug 3212 being what we were looking for technically, the fact that this specific vessel is built in series allows us to access a proven platform in record speed."

Financed through Damen customer finance, the new vessel was built at Song Cam Shipyard in Vietnam.



▶ The Damen ASD Tug 3212 TMM Colima

Formidable workboat added to growing fleet

A contract has been signed between Van Wijngaarden Marine Services and Damen Shipyards Hardinxveld for the build and delivery of a Damen Shoalbuster 3512, to be named *Lingestroom*. This will bring the total number of Shoalbusters in the Van Wijngaarden fleet to five including *Noordstroom*, also a Shoalbuster 3512, which was delivered in April 2016.

Netherlands-based Van Wijngaarden operates a modern, 15-strong fleet that delivers a wide range of support and supply services on a global basis to the maritime

construction and offshore energy industries as well as port services and towage.

The 3512 is the largest model in the Shoalbuster range at 35m and, like its smaller sister-ships, is designed to be a multi-purpose workboat capable of undertaking a wide variety of roles including towing, mooring, pushing, anchor-handling, dredge support, supplying and other support assignments. The 3512 combines a bollard pull of 55 tonnes with a deck area totalling 145m² – enough space for seven 20ft and two 10ft containers – and an 11.3 tonnes at 16.5m deck crane,

making it a formidable workboat.

Peter van Wijngaarden, managing director of Van Wijngaarden Marine Services, said: “*Noordstroom* has had an excellent reception from our clients and has been busy since we took delivery. This gives us the confidence to go ahead and order a second 3512, particularly as the offshore wind sector is likely to be a strong source of demand. Like *Noordstroom*, *Lingestroom* will be equipped to undertake all the roles that are necessary to support offshore wind farms and other marine construction, as well as much more besides.”

Managing director at Damen Hardinxveld, Jos van Woerkum, said: “We are delighted that Van Wijngaarden has ordered a second Shoalbuster 3512 in 12 months at our yard. This is certainly due in part to the excellent co-operation between the management and team of Van Wijngaarden and the production team at our yard. This ensures that we can guarantee a fast delivery time and rapid deployment of the vessel.”

The Shoalbuster 3512’s climate-controlled accommodation includes a captain’s cabin, two single crew cabins, four double crew cabins, a galley, a mess and sanitary facilities. The facilities comply with ILO2006 rules, and can take up to 11 people.

Delivery is due at the end of April 2017.

◀ *The Shoalbuster Noordstroom*



Powerful vessels needed for challenging conditions

Jawar Al Khaleej Shipping (JAK) signed a contract with Damen Shipyards Group for two ASD 3213 tugs and a fast crew supplier (FCS) 5009 at the Seatrade Maritime Middle East exhibition in Dubai.

JAK is a leading provider of specialist services to the offshore oil & gas sector in the Gulf, delivering logistical support including oil terminal support services, towage and salvage, together with other integrated

offshore solutions. Its current fleet includes AHTSs, support vessels, jack-up barges, an emergency oil spill response vessel, crew boats, a heavy lift crane vessel and flat top barges. These include existing Damen tugs *Jawar Basra*, an 8,000hp ASD 3213 delivered in 2015, and *Jawar Dubai*, a Stan Tug 2909 purchased in 2009.

The 53m FCS 5009 is to be built at Damen Shipyards Antalya in Turkey and

named *Jawar Abu Dhabi*. It is scheduled for delivery in early 2017.

The flagship of Damen’s fast crew supplier range, the FCS 5009 has a top speed of 25 knots and can carry up to 80 passengers. 240m² of deck space is available for equipment and other cargo.

The twin ASD 3213 tugs are to be named *Jawar Faw* and *Jawar Um Qasr* and are being constructed at Damen Shipyards Song Cam, Vietnam. A respected and extremely capable design, the ASD 3213 is 32m in length, has 8,000hp and with 85 tonnes of bollard pull it is dedicated to handling VLCC tankers at offshore terminals. Both ASD 3213s are under construction and ready to be delivered after commissioning.

JAK operates a fleet of tugs and support vessels that support the Al Basra and Khor Al Amaya oil terminals that, between them, handle more than 90 per cent of Iraq’s crude oil exports. It is JAK’s responsibility to keep the terminals operable in all weather conditions, and high winds occur frequently in the area south east of the Faw Peninsula. Only powerful tugs such as the ASD 3213 can ensure an uninterrupted service, manoeuvring the VLCCs that arrive at the terminals to take on crude oil. Both facilities are planning to expand their capabilities in the years ahead as Iraq increases its oil output.

Firm wins coastguard emergency tow contract

The UK’s Maritime & Coastguard Agency (MCA) has signed an agreement with Ardent for emergency towage (ET) off north and north-west Scotland.

The Marnavi-owned 139 tonne bollard pull AHTS *Ievoli Black* arrived on station in the Orkney Islands at the end of last year,

where it relieved the current MCA ET vessel *Herakles*.

Ievoli Black is capable of fire-fighting operations, anchor handling, towing, research and underwater services. Ardent previously contracted the vessel to serve in a similar role under the Dutch Coastguard.

Ardent has a long-standing relationship with the MCA. In January 2015 it refloated the grounded *Hoegh Osaka* in Southampton, a major salvage case handled by the MCA.

Oliver Timofei, Ardent director of emergency management, said: “We are proud to lead the maritime and offshore services market as an emergency preparedness and response partner.”

◀ *The 139-tonne BP AHTS Ievoli Black*





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Two AHTS ordered in follow-on move

Norwegian ship technology company Havyard has won a follow-on order for two AHTS vessels for Brazilian state-owned oil company Petrobras.

It follows a contract for four Havyard 843-design AHTSs placed in 2014 by Grupo CBO, a shipyard owner and the largest offshore shipping company in Brazil. The first vessel of that order is scheduled to be launched by CBO later this year.

Havyard says the design of its latest AHTS has reduced the cost of similar Brazilian-built ships, while also ensuring enhanced anchor-handling performance with innovations such as a wider deck area.

The improved design has come about through the ongoing working relationship with CBO, according to Kjell Peder Overvåg, general manager Havyard South America.

He said: "Together with the shipping company, we have searched for and found good solutions instead of focusing on problems.

"We have created a utility vessel, a real workhorse carefully adapted to the needs of solving most tasks and operations. By doing this, we have also designed an extremely cost-effective ship."

The Havyard 843 design has an overall length of 81m with a bollard pull of 200-220 tonnes and a speed of 16 knots from engines delivering 12,000-14,000kW.

Deal will cover 200 vessels

Thome Ship Management and Radio Holland Singapore have concluded a service rate agreement (SRA) covering the navcom service and maintenance needs of its entire fleet of more than 200 vessels.

Headquartered in Singapore, Thome has worked with Radio Holland for many years. The two companies have now taken a next step to a new format of co-operation with the SRA, which includes everything from annual radio surveys to servicing bridge equipment, to the delivery of spare parts and on-the-spot troubleshooting.

Irene Yoong, Radio Holland sales manager services, said: "Thome was looking for cost efficiencies in terms of managing the maintenance and repair of its global fleet. This SRA provides it with fixed rates, allowing it to have complete control of its maintenance spend and making it much easier to budget.

"Thome won't face unpleasant surprises through unexpected costs – the same rates apply worldwide. We also offer special package rates for annual and five-year surveys. This ability to pre-plan makes it possible to save a considerable amount of money."

Under the SRA a single point of contact (SPoC) is established. Yoong said: "Because Thome operates globally, the SPoC was very important. This means that wherever the 200 vessels are in the world and the captain or chief engineer have a maintenance/repair request, they can get in touch with their dedicated Radio Holland co-ordinator in Singapore. The co-ordinator then talks to our technical team to make sure the vessel can be serviced in the nearest convenient port."

Yoong said Radio Holland's global network of more than 80 stations was also a



▲ Irene Yoong



▲ Ryan Dalgado

major reason Thome chose the company as its maintenance partner.

Ryan Dalgado, Thome's procurement and supply chain manager, said: "Radio Holland has a large global network and enjoys a good reputation. We need a reliable partner we can call on to support our worldwide activities of our entire fleet. It is also convenient for us to have a local contact in Singapore, where we know the people and they help us wherever our vessels are in the world."

Radio Holland has more than 5,000 vessels under service contract. Its CEO, Paul Smulders, said these service contracts are highly valued by clients and offer several advantages. Crucially, the agreements give clients access to Radio Holland's service network through one point of contact.

He said: "All the relevant service data is stored in a database to provide up-to-date status information on the fleet's equipment. We can flag surveys that are coming up or when parts need to be replaced. It can warn the ship operator well before any expiry dates. Thus, we can offer advice to the owner in order to achieve the lowest cost of ownership during their lifetime."

Wastewater treatment system delivered as a flat pack

ACO Marine was awarded a contract to supply a Clarimar MF-10 wastewater treatment plant to the 8,234-ton dive support vessel (DSV) *Bibby Polaris*.

The vessel's wastewater management arrangement was scheduled to be converted to the Clarimar system during a planned refit at the end of last year at an undisclosed European shipyard.

Mark Beavis, managing director, ACO Marine, explained that the system will be gravity-based and designed for treating black water only. However, in what marks a first for wastewater treatment system suppliers, the Clarimar unit will be supplied IKEA-like and flat packed.

Beavis said: "Changing the vessel's current wastewater management system to one capable of meeting new MEPC 227(64) requirements was a challenge given the limited space available, so we decided to deliver the system as a flat pack for erection

and welding onboard by a specialist team of welders. We have completed a number of Clarimar retrofit projects, but this is certainly the first one where we will supply the complete unit in this way."

Alex Munro, V Ships Offshore's vessel manager, dive support vessels, said: "This novel approach to equipment supply means that we don't have to cut holes in the side of the ship to get systems in-situ. ACO will deliver the system sheet-by-sheet and then build the unit in the space we have available, reducing installation time and

costs. It makes perfect sense."

Since 2014, when the new Clarimar MF range was introduced to the market, the German-headquartered manufacturer has supplied more than 100 units for installation to a wide range of OSVs.



► DSV Bibby Polaris

Time to take a long hard look at tug safety

Dr Ugo Savona, salvage master and chief designer of Giano, the new design double-ended tunnel hull tugboat, and Dr Sotiris Skoupas, senior surveyor, stability load line & tonnage with Lloyd's Register Group, discuss the stability of escort, harbour and anchor-handling tugs and moves to improve operational safety



◀ Ugo Savona

Ugo Savona: Approaching the 200 years barrier in the history of mechanically propelled tugboats, an honest and forward looking assessment of the relevant aspects connected to the safety and efficiency of this industry's main tool, the tugboat, is now necessary, especially by a classification society with a responsible and long history.

Ship towing operations have always been seen as an ancillary help to blue water shipping, a sort of little brother, and it has developed along the same lines, following the changes in propulsion available at the time: steam, diesel, reversible engines, reduction reverse gear, variable pitch propellers, and Kort nozzle. From the 1950s onward, the Voith Schneider and azimuth thrusters, positioned in various configurations on the hull of tractor tugs, were in common use.

The actual rules that are in force among the IACS Registers for the classification of tugboats are well known to ship designers of escort tugs, providing the safety frame for designers and operators. The present outlook is for a review in the near future by a joint committee of classification societies.

It is revealing to observe the evolution, over the past 100 years, of one of the main elements of the tugboat, the hull form.

It is well known that the metacentric height GM, and the curve of righting levers GZ, are functions of the following elements: the moment of inertia of the water plane, the volume of the hull and the position of VCG. As a consequence, and in simple words, if two tugs have the same displacement, same water plane area, and same distribution of weights, the shorter one with a larger beam will be the more stable.

Accordingly, the beam of a tugboat that is subject to huge listing moments while working, is a crucial element of stability. Going back some 100 years in the design of ship handling tugs, we can see that an average of 6m beam was quite common in the 1930s to '40s, moving to 7m in the 1960s, to 8m in

the '70s, to 9m in the '90s and finally to 10m at the start of the 21st century.

Today the increase in beam has accelerated and in the short span of 15 years we have moved from the accepted standard of 10m for the bulk of escort tugs in service, to 11m, and recently, to 12m as the standard of any average escort tugs built with BP between 60 and 90 tonnes. The trend toward more compact tugs has also increased.

It is interesting to note that as one of the main elements of stability, the beam of the hull has taken almost 100 years to double in size. Considering that it was quite obviously the main way to increase the safety of the tug, one wonders why it has taken so long to be improved.

One of the possible answers is that this industry is quite conservative. It is a fact that for a long period, the design of ship handling tugs including propulsion, stability, position of tow points, winches and so on was by an 'in house' team of naval architects and marine engineers, with a life-long career in the same towing companies, but disconnected from the real operations on board (and the advice of the skippers concerning situations when they found themselves in trouble).

The following incident, that unfortunately has a sad ending, was told by a competent tug skipper some time ago, and may shine some light on the bias that sometimes we all get from established paradigms, and resistance to necessary changes.

The skipper met the designer of *Flying Phantom*, at the time the latest Clyde Shipping Company tug, built with conventional single screw Kort nozzle, in Scotland in 1981. He noticed that the towing winch was being placed high above the main deck, something that the designer was proud of. The skipper responded negatively, but being just a tug skipper, his opinion was dismissed. The tug was a strong terminal tug, and considered to be one of the very best of that period. Unfortunately it was over-run and girted while towing a 77,000 ton cargo vessel, resulting in the deaths of three crew.

An inquiry by the Marine Accident Investigation Branch (MAIB) later concluded that the tug's towing winch had not released quickly enough, which meant it was capsized by the vessel it was pulling.

The new tasks to which the escort tugs are called upon require an update of all elements relevant to safety. Quite often during escort operations, tugs are brought to their extreme limits with sometimes half of their deck underwater at severe angles of list.



◀ Sotiris Skoupas

Sotiris Skoupas: Special attention must be given to total manoeuvrability, to allow the skipper to handle any situation when under a ship, especially in the lead forward tow. Double-ended propulsion may be an available answer, if fitted in advanced designed hulls. Towing points at forward and aft ends may avoid the danger of girting.

The stability characteristics of the ship during towing and anchor-handling operations are subject to dynamic phenomena which cannot be evaluated completely by using the static properties of the GZ curve, such as the righting arm and metacentric height (GM) values. Today, beyond the existing prescriptive rules and regulations, there are alternative methodologies for assessing ship stability where real operational scenarios can be simulated by using time domain and computer fluid dynamics (CFD) tools as well as model tests. As a matter of fact Lloyd's Register (LR) has been working extensively over the past four years with the designers and builders of one of the new generation tugboats, matching above standards, and remains at the forefront of innovation.

It should always be borne in mind that the existing stability standards provide the minimum requirements for the safe operation of vessels. Owners, operators, crew, authorities and everybody involved in decision making during towing, anchor-handling or lifting operations, should always carefully assess all risks before taking action. The sad event of the capsizing of the newly built AHTS *Bourbon Dolphin* on 12 April 2012, when eight people lost their lives, increased the need to adopt new international standards in order to improve the safety level by design and during operations.

LR is continuously and closely working with IACS and the IMO in the development of new international standards for the safe design and operation of tugs. The IMO maritime safety committee at its 88th

session (MSC 88) agreed to include in the agenda an item regarding the development of amendments to the 2008 IS Code relating to towing and anchor-handling operations. After six years of extensive discussion among the IMO bodies, the agenda of the session of the maritime safety committee in November 2016 (MSC 97) included the consolidation and adoption of the agreed amendments to the introduction, part A and part B, of the 2008 IS Code with respect to vessels engaged in lifting, towing and anchor-handling operations. The intention of IMO bodies is that all the amendments will be adopted as a consolidated package and enter into force at the same time on 1 January 2020.

According to the new international standards, where a ship is expecting to carry out anchor-handling, towing or lifting duties, the necessary calculations should be carried out and the stability criteria satisfied. This will provide additional standard calculations to be assessed and approved where mandated by the flag administration. Approval would be carried out by the relevant flag administration or recognised organisation. Additionally, safe operation guidelines for the crew will be required.

With respect to the forthcoming amendments to the 2008 IS Code relating to towing operations there will be new requirements applicable to ships and other marine vehicles of 24m in length and above when engaged in harbour, coastal or ocean-going towing operations and escort operations. As part of these requirements a vessel engaged in towing operations should be provided with means for quick release of the towline, including vessels provided with towing winch systems.

According to the new definitions, 'ship engaged in harbour towing' means a vessel engaged in an operation intended for assisting ships or other floating structures within sheltered waters, normally while entering or leaving port and during berthing or unberthing operations.

'Ship engaged in coastal or ocean-going towing' means a vessel engaged in an operation intended for assisting ships or other floating structures outside sheltered waters in which the forces associated with towing are often a function of the ship's bollard pull. Reference is also made to the guidelines for safe ocean towing (MSC/Circ.884).

'Ship engaged in escort operation' means a ship specifically engaged in steering, braking and otherwise controlling of the assisted ship during ordinary or emergency manoeuvring, whereby the steering and braking forces are generated by the hydrodynamic forces acting on the hull and appendages and the thrust forces exerted by the propulsion units.

The new stability criteria will apply to newly constructed vessels engaged in harbour towing, coastal or ocean-going towing and escort operations and to vessels converted to carry out towing operations. The criteria for ships engaged in towing operations require

► *The Ugo Savona-designed Giano tug demonstrates the side stepping manoeuvre*

the calculation of the self-tripping and tow-tripping heeling levers as a function of heel, based on the propulsion and towing arrangement by using semi-empirical formulas. For the evaluation of the stability particulars during escort operations, for each equilibrium position the corresponding steering force, braking force, heel angle and heeling lever are to be obtained from the results of full scale trials, model tests, or numerical simulations in accordance with a methodology acceptable to the flag administration. For the purpose of stability for ships engaged in towing operations, the calculation of the heeling lever is to be taken as constant and equal with the maximum heeling lever of each relevant combination of loading condition and escort speed.

"Everyone involved in the design and operation of tugs should not compromise on safety and always follow the new international standards as minimum requirements"
Sotiris Skoupas, Lloyd's Register Group

In addition to the standard stability criteria given in part A of the 2008 IS Code, or the equivalent stability criteria given in chapter 4 of the explanatory notes to the 2008 IS Code, where the ship's characteristics make compliance with part A impracticable, the vessel should also comply with a new set of criteria depending on the type of operation (harbour, coastal, ocean-going or escort towing). The new criteria are based on the energy balance principle (similar to the weather criterion) saying that when a heeling moment is acting dynamically, the dynamic angle of heel is resulted from the equalisation of the work of the heeling and righting moments. For ships engaged in harbour, coastal or ocean-going towing operations, the static heeling angle resulted by the towing moment should be less than the angle of down-flooding, while for ships engaged in escort operations the resulted static angle should be less than 15 degrees.

The new criteria define the minimum requirements for ensuring that the righting moment during a towing operation will be sufficient in order to overcome the dynamic heeling moment and the static angle will not exceed specific limits.

Apart from the stability criteria, the new amendments to the 2008 IS Code also



include design precautions and operational procedures against capsizing. For example, the access to the machinery space (other than emergency and removal hatches) should, if possible, be arranged within the forecastle, while any access to the machinery space from the exposed cargo deck should be provided with two weathertight closures, if practicable. In addition, the area of freeing ports in the side bulwarks of the cargo deck should at least meet the requirements of regulation 24 of the *International Convention on Load Lines, 1966* or the *Protocol of 1988* relating thereto. During the operation, the arrangement of cargo stowed on deck should avoid blocking the freeing ports, shifting and not interfere with the movement of the towline.

In addition, the amendments to the code include guidance and requirements regarding the preparation and retention of the stability information and operational booklets onboard the ship as well as the calculations performed by computer loading instruments. For example, ships engaged in anchor-handling should be provided with planning tools in compliance with the operational manual requirements, while information such as ballasting and consumables sequences, permissible tension, working sectors, heeling angles and use of roll-reduction devices should be stated.

The amendments and adoption of new international standards comprise a significant step towards the reduction of the risk associated with loss of stability (capsize or sink) and aims to minimise the consequences by providing design and operational measurements. Although part B of the 2008 IS Code is non-mandatory and will have the title *Recommendations for ships engaged in certain types of operations, certain types of ships and additional guidelines*, everyone involved in the design and operation of tugs should not compromise on safety and always follow the new international standards as minimum requirements.

Further reading: LR Future IMO legislation, March 2016; LR Report to MSC 96, May 2016; IMO Documents: MSC 97/3/1, MSC 96/3/1, SDC 3-21, SDC 3-7; LK Kobylinski & S Kastner *Stability and Safety of Ships – Volume 1*, Elsevier, 2003



Dual-fuel PSV goes to work in Australia

Offshore vessel operator Siem Offshore, took delivery of its newbuild platform supply vessel *Siem Thiima* in late November from Remontowa Shipbuilding in Gdansk, Poland. The vessel is destined to complete the voyage to Port Dampier in Western Australia, where it will be servicing Woodside Energy Australia for the next five years.

The vessel, a dual-fuel (LNG/MGO) PSV of Wärtsilä VS4411 design, is Siem Offshore's third vessel of the same blueprint, with the earlier completions being *Siem Symphony* and *Siem Pride*. This new line offers the combination of environmentally friendly operation, while having its focus on improving fuel economy. High end technical features ensure the three vessels are fit for multiple tasks besides safe supply duties, such as fire-fighting, oil recovery and standby/rescue operations, while reducing the NO_x, SO_x and CO₂ footprint. Significant efforts have been made to assure a tailored combination of LNG operation and optimal hull shape for future cost benefit in the demanding OSV market.

The trio of vessels each measure 89.2m x 19m with a summer draft of 7.4m, and main propulsion is provided on each ship by four Wärtsilä provided generator sets (2 x 2,510kW plus 2 x 1,352kW) powering stern-mounted Steerprop type SP35-CRP steerable thrusters.

Forward are two Brunvoll 1,000kW tunnel thrusters and a retractable unit of 880kW from the same manufacturer. The emergency generator set supplied by Nordhavn employs a Scania diesel engine of 270kW. The vessel's speed is claimed to be in the region of 14.8 knots. Cooling is provided by NRF box coolers. The external fire-fighting system to DNV FiFi2 (36,000m³/hr) is supplied by FFS.

All facilities are provided for a crew of 25 accommodated in four state rooms, nine single cabins and six twin cabins. In addition, all the necessary requirements are provided for the standby/rescue of 300 people. The wheelhouse is particularly well equipped with a Kongsberg DP2 dynamic positioning system, and numerous other items supplied by this company including ECDIS Mk 2, AIS and K-Master controls. Sperry manufactured the radars and gyro compass, while Sailor (Thrane & Thrane) provided the communication systems including a Fleetbroadband 500, MF/HF and VHF including DFC.

The cargo deck area is 980m² and tanks are available for 1,980m³ of drill water, 330m³ of dry bulk in six tanks, 930m³ of liquid mud, 800m³ of brine, 950m³ of MDO and 230m³ of LNG. Four tanks are set aside for a total of 345m³ of methanol.

Port and starboard are cargo cranes

supplied by MacGregor and a range of mooring and tugger winches have been supplied by Vulkan Nova. The MOB boat is an Alusafe 700 powered by twin 125hp Yanmar diesels driving Hamilton waterjets. This is launched and recovered by a dedicated MacGregor davit.

Siem Offshore serves the global oil & gas industry with a modern, environmentally friendly and technically advanced fleet which currently consists of 49 vessels with focus on low fuel consumption. The fleet includes large AHTS vessels, PSVs, multipurpose field and ROV support vessels and offshore subsea construction vessels designed to meet the most challenging environments. Siem Offshore operates from Norway, and has offices in Brazil, Germany, the Netherlands, Poland, USA, Ghana, Canada and Australia. The company is listed on the Oslo Stock Exchange.

The Gdansk shiprepair yard Remontowa SA is a member of the Remontowa Holding capital group, which specialises in ship conversions and repairs, design and construction of new ships, offshore units and steel structures.

The shipyard was established in 1952 and privatised in 2001. Over 61 years, Remontowa has become a leader among the European ship repair yards and a major player in the world market.

Andy Smith



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‘Little sister’ is meeting market challenge



A Sanmar delivery crew recently made the trip from Turkey to Dubai with the first of a brand new design of ASD tug jointly developed by Sanmar AS and Robert Allan Ltd to meet the market's demand for more compact tugs with bollard pulls ranging between 45 and 60 tonnes. The lead tug of the resultant new series has been purchased by Drydocks World – Dubai and the keels have been laid for two more of the same.

Ali Gürtin of Sanmar said: “The industry is under the challenge of ever tighter cost control and the only way to achieve this is to have greater bollard pull in more compact hulls with low operational and maintenance costs. This new design, which is exclusive to us, combines all these attributes.”

In mid-2015, Sanmar contracted with Canada-based naval architects Robert Allan Ltd to design a ‘little sister’ to leading tug builder Sanmar’s highly successful RAmports 2400-SX Bogaçay series tugs. The result is a compact yet powerful 22m design designated

by Robert Allan Ltd as the RAmports 2200 class and by Sanmar as their Sirapinar series. The first of these tugs, *Sirapinar*, completed sea trials only 16 months after the signing of the design contract before the vessel left on its delivery voyage.

The new series builds on the success of the RAmports 2400-SX Bogaçay series, of which more than 30 have been constructed with bollard pulls ranging from 60 to 75 tonnes.

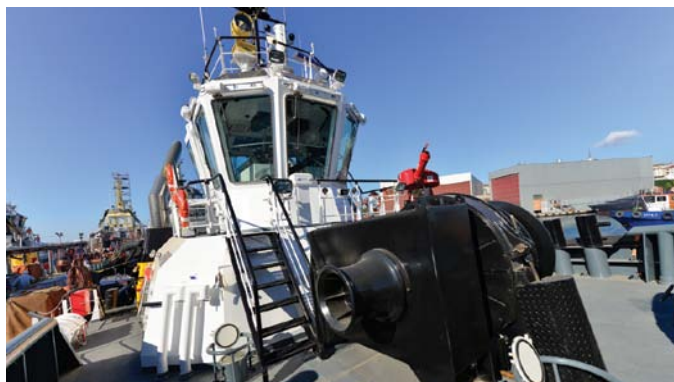
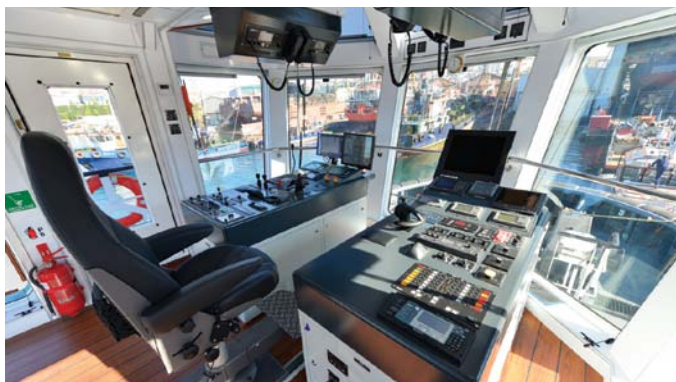
The hull of the new 22m tugs is similar to the larger 2400-SX and features standard RAmports class characteristics. These include good dead rise for improved thruster performance, modest side flare, a half-raised forecastle deck for good sea keeping, and gently rounded deck line in plan to ensure that the tug can safely and easily come alongside and remove itself from an attended ship at speed.

Most important is the characteristic conically shaped, double-chined stern form unique to all Robert Allan Ltd tug designs, which ensures that the tug can run astern at

high speeds and maintain good control and directional stability in all directions.

Depending on the propulsion system selected by the customer, the RAmports 2200-SX can accommodate up to 60 tonnes bollard pull and is ideal for low-manning operations due to the high standard of machinery automation fitted by Sanmar.

Sirapinar measures 22.4m overall with a beam of 10.85m and maximum draft of 4.67m and has been built to RINA class requirements, but the basic design complies with the rules of all the major classification societies. It is powered by two Caterpillar 3512C main engines each developing 1,380kW at 1,600 rev/min. These turn Schottel model SRP 1012 fixed-pitch azimuthing Rudderpropellers with 2,100mm diameter propellers. Auxiliary power is supplied by two Caterpillar 86kW C4.4 diesel generator sets. The engine room features a small, acoustically isolated switchboard room. The port main engine powers a single FFS pump which feeds a single FFS remotely operated



water/foam monitor with an output of 1,200m³/hr.

On trials, the vessel met or exceeded all performance expectations, with bollard pulls of 46.9 tonnes ahead and 44.8 tonnes astern. The free-running speed ahead was measured at 12.2 knots.

Although the accommodation layout can be adjusted to match almost any reasonable requirement, the first vessel off the line has been outfitted to a high MLC compliant standard for a crew of six. The main deckhouse contains an entrance lobby, the galley, mess, one officer cabin with en suite facilities, and a laundry. The lower deck contains two double

berth cabins with shared en suite and one single officer cabin, also with en suite. The wheelhouse is designed with a single split control station which provides maximum all-round visibility and exceptional visibility to the bow and side fendering.

On the fore deck is a DMT type TW-E 250kN electric double-drum hawser winch with a brake-holding load of 150 tonnes, and a pull of 250kN at 0-9m/min on low speed and 80kN at 0-28m/min on high speed. Rope capacity on each drum is 210m of 40mm diameter synthetic rope. Aft is a Data Hidrolik tow hook model DTH 45-90P with pneumatic auto-release and there is an

electric capstan on the aft tow post with SWL of 5 tonnes.

Ship-handling fenders at the bow consist of an upper row of 800mm diameter cylindrical fenders and a lower course of W-fender. Sheer fendering consists of 300m D rubber. 'W' block type fendering, 300mm high, is fitted at the stern. All the fendering was supplied by Lion Rubber.

Even at this early stage it seems certain that the RAmports 2200-SX/Sirapinar series is destined to follow in the wake of its bigger sister and become another highly desirable and popular tug.

AS

Faster rescue tug joins the Russian Navy

Shipyard Pella has designed and built at its new production facilities near St Petersburg, Russia, a modern Ice Class ASD rescue tug of the project PS-45 for the Russian Navy.

Named *SB 737* (SB stands for 'Spasatelny Buksir' which is 'rescue tug' in Russian), the vessel measures 48m x 13m with a draft of 5.4m and is equipped with diving and lifesaving gear, external fire-fighting equipment, modern operating suite and isolation ward, comfortable single and double cabins, spacious mess room, galley with imported food processing equipment, open cargo deck clad in natural wood, high-tonnage crane and towing equipment.

The heavy duty propulsion system, which comprises two MaK type 8M25C main engines each developing 1,815hp at 750 rev/min, as well as the Ice Class of the vessel's hull, is in compliance with the requirements of the Arc5 class symbol of the Russian Maritime Register of Shipping, ensuring safe operation of the vessel in open first-year ice conditions with ice up to 1m thick. Furthermore the main engines have a high level of automation and economical efficiency.

In order to optimise the operation of the vessel, this is a faster version of the project PS-45 with Rolls-Royce azimuthing Z-drives fitted with fixed pitch propellers without nozzles offering a higher free-



running speed of 14.5 knots but a reduced bollard pull of 60 tonnes (compared to 80 tonnes of the nozzled propeller version). The Rolls-Royce azimuth thrusters provide for superior manoeuvrability of the vessel, while the 200kW Fluidmeccanica ducted thruster allows the vessel to effectively carry out both mooring and rescue operations.

The Caterpillar main electrical powerplant ensures electric power supply and comprises a quartet of 200kW C9 diesel generator sets backed by a C4.4 standby set. The high level of automation is in compliance with requirements of AUT 1 RMRS.

The vessel's accommodation is for a crew of up to 18 plus two medical technicians and up to 12 rescued personnel. For crew housing there are two single cabins with en suite facilities, four en suite double cabins and six double cabins. Reclining seats are provided for rescued personnel in double cabins. All cabins are equipped with air-conditioning, communication systems and internet.

The vessel is also equipped with a modern galley, two provision stores, mess room rated for all crew members, administrative support centre, medical store room, operating suite, laundry, community sanitary spaces and

shower rooms. The wheel house features all-round view and two bridge wings, each equipped with an operating station.

For towing operations there is a set of Fluidmeccanica deck machinery comprising stern electro-hydraulic windlass with a capstan head and spooling gear with a towing tension of up to 35 tons and a rope capacity of 700m; fore anchor/towing/mooring electro hydraulic windlass with a towing tension of up to 35 tons and a rope capacity of 180m; and a stern towing hook with a towing tension of 65 tons. There is also a stern towing roller and stern and fore towing bitts. A Palfinger cargo crane with a maximum safe working load of 10 tons at a boom reach of 10m is provided on the vessel's upper deck for cargo handling operations. This can be used for the handling of containers – the cargo deck is covered with Oregon pine and is able to bear four 20ft or eight 10ft containers.

The water and foam external fire-fighting system, supplied by FFS, is based on two main engine driven centrifugal pumps, each of 767kW capacity.

SB 121, *SB 123* (pictured) and *SB 736* are similar vessels built earlier by Pella to the same basic design parameters.

AS



Utility tug adapted to Australian conditions

East Coast Maritime of Gladstone, Queensland, Australia, has taken delivery of *Pacific Titan*, a new 31-tonne bollard pull, twin-screw, shallow draft utility tug. The vessel's construction was carried out at a Malaysian shipyard by the owner's own shipbuilding division, ECM Workboats, under its guidance and full-time supervision.

The concept was developed by ECM's operations manager and director, Lindsay Toy, who says the new vessel was inspired to some degree by modern European workboats, but with a hull more suited to offshore conditions. He told *IT&O*: "She features several unique design elements to maximise her performance when bed levelling, which is something we do plenty of."

The design was completed by Sea Transport in Australia. The vessel also has anchor handling capabilities and will be involved in dredging support, plough dredging, barge handling and towing.

Built to Lloyd's Register requirements having a length overall of 25.8m with a beam of 9.1m and an operating draft of 2.6m, *Pacific Titan* is powered by twin Yanmar IMO Tier II diesels. These develop a total of 2,276hp at 1,450 rev/min which is transmitted via Yanmar gearboxes with 4.96:1 reduction ratios to Veem Skewplan propellers turning inside 1,880mm diameter Rice nozzles. There are two Yanmar-powered 60kVA generator sets and all the prime movers are connected to Weka box coolers. Kobelt-controlled high lift fishtail rudders are fitted. On trials the vessel achieved a certified bollard pull of



31.6 tonnes and a maximum speed of 12.7 knots. The service speed is reckoned to be 11 knots. For enhanced manoeuvrability, a 2-tonne Nakashima bow thruster is fitted.

The fully air-conditioned and heated crew quarters are in the forepeak and comprise five single cabins with individual wash basins clustered around separate head and shower compartments and alongside a combined galley and mess.

The wheelhouse is provided with control stations facing both fore and aft and there is a generous array of Furuno items fitted including satellite compass, two radars, AIS, sounder, autopilot, VHF, MF/HF and GMDSS. The major exception to the single supplier principle is the Sailor F-150

Fleet broadband. As befits a vessel facing a wide variety of tasks, *Pacific Titan* is well equipped with deck machinery. Dominating the timber clad deck is a Heila crane capable of lifting 12.5 tons at 10m. The main winch is a double drum HES Australia unit in reverse waterfall configuration. In addition there are Dinamic tugger and plough winches, a stern roller, HES anchor windlasses, WK Hydraulics towing pin set and a 30-ton Mampaey towing hook.

East Coast Maritime is a marine contractor which owns and operates a fleet of utility vessels, tugs, barges, and specialist equipment. It services the Australian east coast market from operations bases at Gladstone and Brisbane. AS

Tailored for strong winds and currents

Port Nelson, located at the top of New Zealand's South Island at the head of Tasman Bay, has taken delivery of a Damen ASD Tug 2310.

Named *Tōia*, which is Maori for 'to pull', it is the first new tug there for more than 30

years and represents a significant upgrade in capability. Jointly owned by Nelson City and Tasman District Councils, Port Nelson is a vital hub for the regional economy and is investing in its infrastructure both ashore and afloat in anticipation of future growth.



The port has been steadily receiving ever larger ships, with vessels of up to 248m in length becoming regular visitors. Port Nelson is also not the easiest harbour in which to manoeuvre. At 4.5m, the tidal range is the largest to be found anywhere in New Zealand, and it creates strong currents. Added to that are powerful winds that can come up suddenly from both the south and north.

Harbour master Dave Duncan said: "With 50 tonnes of bollard pull, the new tug will see our safety margins being much improved on the bigger ships. Now we've got the power we need to slow or stop even the larger vessels moving forward, and to pull or push them against strong winds and tides."

Tōia travelled the 7,280nm distance from Damen Shipyards Changde, China, to Port Nelson on its own hull with a Dutch crew aboard. The 22.73m x 10.43m vessel has a draft aft of 4.62m and is built to the requirements of Bureau Veritas for unrestricted navigation and is the 18th to be constructed in the series.

Modifications to the standard ASD 2310

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design to meet the particular needs of Port Nelson included upgrading the bollard pull from 46 to 50 tonnes, and the fitting of Panama chocks through the stern plates. Damen also built and installed a gangway to a design provided by Port Nelson.

Prior to the order being placed in late 2015, Duncan travelled to China and inspected a recently completed 2310.

He said: "This clearly demonstrated to us the quality of the yard and its vessels, and its high environmental standards.

"The fact that another 2310 that we saw in build at the yard was being constructed without an owner's rep on site also gave us confidence that we would receive a quality product without needing to commit significant resources to overseeing the build,

despite the distances involved."

The propulsion system comprises a pair of Caterpillar 3512 C TA HD main engines each developing 1,500kW at 1,600 rev/min. These turn Rolls-Royce type US 205 Z-drive units with 2,200mm propellers in nozzles and built-in clutches. Caterpillar also provided the C4.4 64.5kVA diesel driven generator sets.

Air-conditioned accommodation is provided for four people. It is completely insulated and finished with durable modern linings, acoustical Dampa ceiling in the wheelhouse and floating floors. There is one cabin above main deck and two cabins below deck, galley/mess, sanitary facilities and switchboard room.

The wheelhouse is equipped with

an extensive array of navigational and communication electronics featuring equipment supplied by Furuno, Sailor and Simrad.

On the fore deck is an anchor/towing winch which is hydraulically driven, has a brake holding load of 130 tons and incorporates a split drum. Aft there is a 3-ton capstan and a Mampaey towing hook with an SWL of 650kN.

Duncan said: "This means we are good for another 30 years, judging by how we have maintained our other tugboats."

He concluded: "We are all very pleased with our new tug, how it operates and what we can achieve with it. The quality of the finish impresses everyone who sees it for the first time." AS

Powerful escort joins Canadian built sister



On 28 October last year, the Ocean Group of Quebec City, Canada, took delivery of the 6,000kW ASD tug *Ocean Taiga*. This icebreaking escort tug joins sister vessel *Ocean Tundra* as among the most powerful tugs in the Canadian registry, part of a new generation of extremely capable tugs providing the highest degree of year-round escort towing capability to Canada's East Coast and the St Lawrence Seaway.

Ocean Taiga is the latest addition to the TundRA 3600 series (with a nominal 100 tonnes bollard pull) of icebreaking tugs designed by Robert Allan Ltd, naval architects of Vancouver, Canada. This tug was built to the highest standards at Ocean's own shipyard, Ocean Industries, on Iles aux Coudres, Quebec. The launching of this heavy tug was a major challenge for the shipyard, due to its weight and draft.

This powerful tug will provide a wide range of services, including tanker escort, terminal support, general ship-docking operations and icebreaking/ice-management services in various ports along the St Lawrence River. The vessel is also equipped for coastal/rescue towing and is fitted with a major fire-fighting capability. In addition, the vessel is able to carry lube oil as cargo, for transfer to transiting ships.

Built under the inspection of, and classed by, Lloyd's Register of Shipping, as an Ice Class fire-fighting escort tug, the new vessel measures 36m x 13m with a maximum draft of 6.8m. This icebreaking hull form has been extensively model-tested to ensure superior performance in ice, as well as to provide the best possible open water and escort performance, bearing in mind the contradictory hull geometry requirements

of those functions. The ice capabilities have been well demonstrated in similar but slightly smaller tugs working in Sakhalin, Russia.

Main propulsion consists of a pair of MaK 9M25C diesel engines, each developing 3,000kW at 750 rev/min, driving stern-mounted Rolls-Royce US 305CP Z-drive units with 3,000mm diameter controllable pitch propellers turning inside Kort nozzles. Sea trials confirmed that this configuration gave the new tug a bollard pull of slightly in excess of 110 tonnes and a free-running speed in calm water of 14.2 knots. The electrical plant comprises three identical Caterpillar C9 diesel generator sets, each with a power output of 250kW.

The vessel has been outfitted to the highest standards for a crew of up to 10 people. However, the normal operating crew for runs would be four; for longer voyages,

seven people would be more normal. The wheelhouse has a split-level design, providing excellent all-round visibility. The forward control station, of typical split parallel console type, affords the helmsman maximum visibility to both fore and aft deck working areas.

The deck machinery is dominated by a high-performance, all-electric, escort rated

hawser winch on the fore deck, a Markey model DESDF-48-200HP, plus an electric towing winch, a Markey model TES-40UL-125HP, which is located in a fully enclosed shelter to the aft of the deckhouse. A Palfinger model 15500 hydraulic knuckleboom crane is installed.

An impressive external fire-fighting system by FFS, capable of discharging approximately

twice the normal FiFi1 standard, with two pumps, each rated 2,978m³/hr at 11 bar, is driven from the front end of the main engines. The pumps feed a trio of high capacity monitors – two foam/water monitors each rated at 1,200m³/hr and one large water-only monitor rated at 2,400m³/hr, all mounted above the rear of the wheelhouse roof.

AS

Chinese-built trio destined for Middle East

Three 34m ASD type harbour tugs – *Radhwa 26*, *Radhwa 27* and *Radhwa 28* – left Yuexin Shipyard's jetty on 27 September to Nansha Port and were successfully delivered to their Saudi Arabian owner based in Jeddah. The yard, Guangdong Yuexin Ocean Technologies Co Ltd, to give it its full name, is based in Tanzhou Port, Guangzhou, China.

The 34m long tugs are built to an exclusive design by design house Shiptech Pte Ltd and have a beam of 11.5m, a depth of 5m and a draft of 5.06m. The designers say that these dimensions will give the tugs greater stability in steep seas.

The vessels were built under survey to Bureau Veritas notation which includes FiFi1. Propulsion is provided to each vessel by a pair of ABC main engines, each of them delivering 2,143kW at 1,000 rev/min to Schottel azimuthing Rudderpropellers of type SPR1515CP. This combination gives the boats a bollard pull of 67 tonnes ahead and 65 tonnes astern and a free running speed of 13.5 knots. Electrical needs are supplied by a pair of 187kW Cummins generator sets aboard each vessel. The main engines also power the fire pumps which feed two monitors and a waterspray system.

At the forward end of the engine room is a main switchboard room and additional buffering to the forward accommodation is provided by a laundry and crew sanitary space. The occupants of three twin berth cabins use these facilities. The chief engineer enjoys the benefit of a single en suite cabin on this level.

The main deck accommodation layout



consists of numerous lockers, a galley and generous mess and recreation room. The boat deck has just two single en suite cabins designated as being for the owner and captain. The bridge deck has dual controls and instrumentation on two pairs of island consoles fore and aft. The working area on board is easily visible from the wheelhouse thanks to the full height windows with 360-degree visual field.

For harbour working duties the vessels are equipped with a Jepsen & Jessen winch at the bow, along with a towing hook. Other deck equipment includes a 1.5-ton crane and a separate launch and recovery davit for the rescue boat. Each tug can carry 180m³ of fuel

oil, 25m³ of fresh water, 8m³ of lube oil, 10m³ of recovered oil, 8m³ of detergent and 10m³ of foam.

Shiptech Pte Ltd is a highly experienced independent marine design and engineering consultancy strategically located in Singapore, from where it has provided ship design and related engineering services to vessel owners and shipyards for nearly 40 years. The company draws on an experienced workforce of highly trained engineering, technical and administrative personnel to provide an integrated team capable of handling the largest of marine design projects, from concept through to detailed documentation.

AS



Deliveries in brief

Italian towing company Fratelli Neri has expanded its fleet with the delivery of three new **Damen** workboats from stock and now based in the operator's home port of Livorno on the Tuscan coast.

Toscana, an ASD 2913, has undergone several modifications for its harbour assistance role in Livorno port, including the installation of FiFi1, oil recovery capability and an aft winch. The Stan Tug 1606, **Pacini**, is a compact and sturdy design making it ideal for its role in shallow water operations in coastal and inland water in and around Livorno. As well as fire-fighting apparatus, **Pacini** is also equipped with an aft towing winch.

Santa Giulia is a Stan Launch 1305 that is performing a range of environmental services in the region. It is operated by Labromare, a joint venture subsidiary of Fratelli Neri providing waste management and anti-pollution services to ports.

Turkey's **Arena Offshore** has completed its latest vessel at its Istanbul shipyard. **Tare**, now for sale, is a 22m tug with pushbow, designed for towing, mooring and pushing operations.

Main-engine power comes from twin Caterpillar C18s each delivering 600bhp at 1,800 rev/min, driving two ZF 1,500mm diameter fixed pitch propellers. Two Caterpillar C4.4 generators – each delivering 65kVA at 1,500 rev/min – provide auxiliary power.

Bollard pull is given as 15 tonnes and maximum speed is 12 knots.

Deck machinery includes a quick-release 15-tonne towing hook, a pair of 2-tonne tugger winches and a hydraulic knuckleboom deck crane that has a 355kg SWL at 7m boom outreach.

Accommodation for six people includes two single cabins with WC and shower on the main deck, along with a mess room/dining room and a galley. The lower deck has two double crew cabins, a shared WC/shower and a store room.



Alabama-based **Horizon Shipbuilding** has delivered its ninth 36.5m river towboat – and 19th vessel overall – to Florida Maritime Transporters (FMT). **AB York** has



joined FMT's growing fleet to support the company's business of transporting liquid and bulk cargoes along many of the US's major inland waterways – with operations from the Great Lakes to the Gulf of Mexico.

The four-decked towboat is powered by two 2,000hp Caterpillar 3512C engines turning 100in (254cm) five-blade, stainless steel wheels on 10in (25cm) shafts. Auxiliary power is supplied by twin 175kW Caterpillar C9 generators.

Mike Sims, Horizon project manager, said: "This boat is not a thoroughbred racehorse but more like a Clydesdale – big and beefy with lots of oomph."

AB York was built at Horizon's Bayou La Batre shipyard utilising Gordhead management software, which has reduced production man-hours and shortened delivery schedules.



Suderman & Young Towing Company's newest arrival, **Poseidon**, is the last in a series of four identical Robert Allan Ltd designed Z-Tech 2400 Class terminal and escort tugs built and delivered by **Eastern Shipbuilding Group** from its yard in Panama City, Florida.

Poseidon has joined sister vessels **Triton**, **Neptune** and **Oceanus** on towing duties along the Texas Gulf coast. Like its predecessors, the 24m long boat's main engine power comes from two Caterpillar 3516Cs delivering 5,150hp at 1,600 rev/min and driving a pair of Schottel SRP 1215FP Z-Drives in nozzles. Two John Deere 4045AFM85 Tier 3 marine diesel generators provide auxiliary power of 99kW at 1,800 rev/min.

On deck, **Poseidon**'s Markey Machinery

DEPCF-48S electric hawser winch with a 36in (91cm) 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.



Offshore marine operator **Swire Pacific Offshore** will be able to safely transport up to 90 personnel plus cargo to oil & gas platforms even in the roughest sea conditions, thanks to its latest high-speed crew transfer vessel delivered towards the end of last year.

Pacific Kestrel, designed by Incat Crowther and built at the **Austal** shipyard in the Philippines, is a 57.6m all-aluminium catamaran capable of 40 knots that is replacing more expensive and fair-weather dependent helicopter transfers.

Featuring an Amplemann motion-compensated walk-to-work gangway, **Pacific Kestrel** can safely transfer personnel to offshore platforms up to Sea State 6 (defined as very rough conditions with wave heights of 4-6m).

In addition to a 200m² cargo deck for up to 100 tonnes of cargo to be transported, the vessel also has a search-and-rescue capability, with an onboard fast rescue craft available for rapid deployment and a chemical dispersant adding oil-spill first-response capability.



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 **Hurricane TOW** is the last of four crew transfer vessels (CTVs) developed and built by Isle of Wight-based **Aluminium Marine Consultants** now in operation with offshore wind services provider CWind. The 25m catamaran – along with its twin **Typhoon TOW** and 23m siblings **Tempest** and **Tornado** – was designed in partnership with CWind to be highly versatile and future-proof as the offshore wind sector continues its rapid growth for the foreseeable future.

The Category 1, Bureau Veritas-classed **Hurricane TOW** is powered by a pair of MTU 12V 200 M72 12-cylinder engines, each developing 1,080kW and driving Rolls-Royce Kamewa A3 56 water jets.

The semi-displacement catamaran hull and 1.4m draft, coupled with a high waterline, give plenty of room for waves to pass between the hulls, thus preventing slamming. It also maximises space in the engine compartments, making maintenance access easier, and ensures comfort for the 12 passengers and three crew.

The CTVs can achieve 28 knots, but speed is not the sole focus as sea-keeping qualities and the ability to remain at sea for extended periods were also part of the concept. Also, while primarily intended to support windfarm operations, the vessels can take part in dive, survey and ROV operations. And in addition to passenger-carrying capabilities, the forward and aft deck can each carry 10 tonnes of cargo, and a crane can be mounted if needed.



 The delivery of new inland towboat **David J Bangert** to Missouri-based Gateway Dredging represents the first of a new generation of vessels resurrecting an established name and design.


The 17m, 1,200hp twin screw conventional towboat was based on a design developed by Barbour Metal Boat Works – a boat builder in the US state of Missouri from the early 1900s until it was bought by JB Marine in 1985.

Three decades later, JB Marine president George Foster and Kurt Johnson – owner of sand and gravel supplier Southern Illinois Transfer – formed **Barbour JB Shipyard** to build boats based on the Barbour blueprints. These were adapted by Texas-based marine architects The Shearer Group to ensure the new vessels complied with current regulations, including the still-evolving Subchapter M requirements.



David J Bangert is the first of three new towboats to be delivered from the Barbour JB Shipyard near St Louis, Missouri, the next two being larger, 21m vessels. Power for this first vessel comes from two 660hp Cummins QSK19M diesel engines each driving Sound propellers on 6in (15cm) shafts. Auxiliary power is provided by two Kubota 40kW generators.

The vessel is named after its owner, who is also a partner in Gateway Dredging. The company's growing fleet of dredgers and towboats operates from 10 locations on the Missouri and Mississippi rivers.


 Energy industry company Technip has taken delivery of its latest newbuild, **Deep Explorer**, a DP3 class diving support vessel purpose-designed and certified for subsea projects in the demanding North Sea Canada market.

The 157m LOA ship features a state-of-the-art 24-man twin bell saturated dive system rated to 350m plus a 400-tonne box boom crane as its main hoist, a 1,680m² deck area, working moon pool and two ROVs capable of reaching 3,000m.

Deep Explorer itself is powered by six Wärtsilä engines – four 3.3MW 6L32s plus two 4.4MW 8L32s, giving total generated power of 22MW and a maximum speed of 17 knots. Accommodation for 150 people is provided in 109 cabins.



The vessel hull was built by **Vard Tulcea** shipyard in Romania before being towed to **Vard Langsten** in Norway for equipment outfitting and commissioning.

 Transferring up to 50 rig workers to the Abu Dhabi oil fields has become safer and more cost effective thanks to the delivery of a **Damen** fast crew supplier (FCS) 2610 vessel, **MCS Allianz Venus**, to


Allianz Middle East Ship Management and Maritime Craft Services (MCS).

With the vessel available on stock, Damen carried out several adaptations to make it OPCO compliant for operations in the Abu Dhabi oil fields. Modifications included increasing the passenger capacity to 50 people and upgrading the five-man crew accommodation to allow for extended offshore duties.

The 25m long vessel has a top speed of 25 knots and a range at maximum speed of 1,200nm thanks to its twin Caterpillar C32 TTA engines generating 2,400bhp.

The **MCS Allianz Venus** is the second FCS 2610 now active in this sector of the Middle East with the design having first shown its crew transfer capabilities in the North Sea offshore wind sector.



 **Svitzer Monte Cristi** and **Svitzer Catuan** have been delivered by Turkish tug builder **Sanmar** to Svitzer Americas, to operate in the Dominican Republic. The RAMparts 2400 SX class tugs, designed by Robert Allan Ltd exclusively for Sanmar, are known as the Bogaçay class, of which 30 have now been purchased worldwide.

The tugs measure 24.4m in length with a moulded beam of 11.25m and an overall draft of 5.70m. They are powered by a pair of Caterpillar 3516C main engines, each developing 2,100kW at 1,600 rev/min, driving Rolls-Royce type US 255 FP azimuth drives with carbon shafts turning 2,600mm diameter propellers inside high efficiency nozzles with stainless steel inner surfaces. Auxiliary generator sets are a pair of Caterpillar 86kW C4.4s. This combination delivers a bollard pull of up to 70 tonnes and drives the hull when free-running at 13 knots.

The port side main engine also powers the pump for the external fire-fighting system with an FFS supplied monitor capacity of 1,200m³/hr located at the forward end of the bridge deck. The main winches, manufactured by DMT, are mounted on the vessels' fore deck. The tugs are equipped with CC Jensen off-line filters for fuel oil, main engine oil and thruster gear oil.



Salvors raise jack-up from seabed

Ardent has completed removing *Troll Solution*, a jack-up that sank off the coast of Mexico in what was the largest wreck removal finished in 2016.

Weighing approximately 7,000 tons, the jack-up experienced a debilitating accident while carrying out maintenance work on the wellhead platform CAAN-A in 2015.

Prior to Ardent's involvement, efforts were made to refloat and salvage the jack-up. However, *Troll Solution* collapsed and sank into the seabed in approximately 30m water depth. After sinking, it came to rest just 2m from the active CAAN-A platform.

Ardent deployed assets from several

countries, including the *Conquest MB-1* crane barge, and a 1,000-ton hydraulic wreck grab from the Netherlands. Further support vessels were deployed to the Bay of Campeche from the US and Mexico.

Conquest MB-1, with a maximum of 1,400 tons lifting capacity, has been previously deployed under Titan, Ardent's pre-merger company, in support of the *Costa Concordia* removal in Italy.

The operation used the company's newly designed guided guillotine to dismember the jack-up, instead of cutting with more conventional methods.

Ardent naval architect, Roland De Marco, said: "Traditional methods require either a push or pull-cut with chains or diamond wire. Pull-cuts require tunnels to be bored into the seabed, whereas push-cuts require a large framework to be built."

Shelby Harris, Ardent Americas operations director, said: "The main hurdles to overcome were how to best cut the jack-up into sections without fabricating an elaborate structure,

◀ A section of *Troll Solution* is lifted from around 30m of water

▶ Ardent CEO, Peter Pietka



while boring holes underneath the jack-up through the seabed was improbable due to obstructions. We had to apply ingenuity to use our chain cutting techniques on the deck house in a less than conventional method, and the Ardent guided guillotine sectioned the hull. The method worked very well."

Conventional guillotine cutters are restricted to operations above the surface. The Ardent guided guillotine can function underwater with the precision to cut the *Troll Solution* jack-up into the required lift pieces.

The salvage team cut the deck house into six pieces and the vessel's hull into 31 pieces and subsequently lifted these from the seabed with the crane barge.

Peter Pietka, Ardent CEO, said: "This project showed the excellent integration of staff from both ex-Svitzer and ex-Titan team members, and further serves as a solid foundation for continued progress ahead."





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Salvage firms confident no job is too large

A confident salvage industry has been invigorated by the 'Costa Concordia effect' which has led leading salvors to conclude that no wreck removal job is too big or too complex. Major operations involving as yet unforeseen challenges will not be cheap or quick, but they will get done.

Speaking at the Salvage and Wreck Conference in London, ISU president and executive vice president of Donjon Marine, John Witte, said: "The individual cases that salvors are expected to respond to are more complex, time consuming and expensive.

"There have been questions asked about the capacity or even the ability of the international salvage community to respond to vessels that are ever bigger and more complex. *Costa Concordia* showed that we are in a position to respond.

"I still think we are a vibrant industry with a record of success. Present us with a problem and we'll figure out a way of getting it done.

"Wreck removal income has grown enormously during the past decade and accounts for almost half of revenue. This trend reflects the increasingly stringent requirements of coastal states and authorities throughout the world.

"We want to work co-operatively with others, particularly with insurers as well as owners, but we want to do so on a fair basis together. We face a number of key issues and it is in everyone's best interest that there should be a strong body of contractors able to intervene to save life, protect the environment and save property. In the end this makes economic sense."

Other speakers during the two-day conference included Dieter Berg, president International Union of Marine Insurers, and Gijsbert de Jong, of Bureau Veritas, who discussed new-



builds for new markets, hybrid tug design and propulsion and engine efficiency.

Panel discussion topics included the future of LOF, oil spill challenges and operating within guidelines, conventions and authorities' requirements.

Lawyer Simon Tatham, a partner at Tatham Macinnes, founder member of the TugAdvise.com service and regular *IT&O* columnist, led an interactive session on when tows become salvage operations.

Alec Laing of ACL Shipbrokers gave an overview of the present market and how many firms are responding to the economic downturn by diversifying. He said the traditional industry structure of small family-run firms with two or three tugs was changing, but stressed that harbour towage remained a commodity that world trade could not do without.

Other topics discussed at the conference

▲ The ground-breaking salvage of the cruise liner *Costa Concordia*

included BIMCO's new oil spill contract, the Hazardous and Noxious Substances Convention, amendments to the Turkish commercial code and the impact on marine insurance of the UK's vote to leave the EU.

Paul Bryson, of the UK Marine Accident Investigation Branch (MAIB) discussed lessons learnt from the grounding and subsequent successful salvage of *Hoeigh Osaka* and Thijs van de Jagt, operations director of Smit, presented a case study on the equally successful *Modern Express* salvage operation in the Bay of Biscay.

Alex Macinnes, Simon Tatham and Sara Jeon of Tatham Macinnes discussed issues surrounding the wreck removal of MV *Saloos* in Angola, including negotiating the repatriation of the crew.

Environment higher priority than property recovery

Pollution prevention is an increasingly key role for salvors, according to ISU vice president Charo Coll. In fact, she says, protecting the environment has overtaken the recovery of property in the top three priorities for a salvage operation. Protecting and saving lives remains number one.

Coll, general manager offshore and salvage for Spain-based Boluda Towage and Salvage, was speaking at the ISU annual press lunch in London. She said: "All casualties have the potential to cause significant pollution,



◀ ISU vice president Charo Coll

either from their cargo or their bunker fuel. Increasingly, coastal state authorities will insist on the removal of bunkers from a casualty. Bunker removal today is very sophisticated with probes able to go deep into tanks."

Latest ISU figures show that during 2015 its members carried out 185 pollution services involving a total of 66,000 tonnes of bunker fuel, 666,000 tonnes of crude oil and refined products and 36,000 tonnes of chemicals. Not all were at risk of going into the sea.

ISU president, John Witte, executive vice president of US-based Donjon Marine, told the assembled journalists that the ISU now had 63 active salvors as full members, 72 businesses connected to salvage as associate members and 13 associations as affiliate members and that the organisation,

▶ ISU president John Witte Jr



founded in 1934, remained the sole voice of the industry in international forums such as IMO. Also linked to pollution control, was the increasing importance of wreck removal for ISU members as jobs get bigger and authorities' requirements more demanding (see above).

Witte said that among the many current issues that the ISU was working on were places of refuge, the decline in the use of LOF, the threat of criminalisation during operations, and fair contracting and tendering in wreck removal work.

Take care in heavily mined waters

Regular columnist Simon Tatham takes a look at a court judgment under TOWCON and warns of the risk to tugowners of cancelling or withdrawing from a disputed contract



► Simon Tatham

2016 has drawn to a close, and it was an interesting year. It also ended with a rare event: a court judgment under TOWCON. Before you get too excited and call your broker to start applying red tracked alterations to the standard wording, no ground breaking changes follow from the ruling. But as always there are useful lessons to be learnt.

You are welcome to plough through the 20 pages of the judgment if you have time, and there is plenty there to consider both in terms of how a contract was negotiated and performed, as well as how the parties fell apart and what legal traps they stumbled into. However, more likely your patience and time are limited so let's distil it down to the key pointers that emerge.

The case dealt with a common problem of fixed sum tows: if it goes more slowly than anticipated, other than for weather delays, the tugowner is likely to be losing money, alternatively the hirer's future planned use of the tow on arrival is in jeopardy. Questions arise whether the slow speed is down to the performance of the tug or something else.

We had one such case where the tow was a new hull. The hirers engaged a second tug at great expense and pressed for the additional cost also withholding the final lump sum instalment. The second tug, however, added only half a knot. It transpired that the

unfinished hull had a number of openings in it and it was pretty obvious that these greatly affected the hull speed. The hirers climbed down and paid the hire.

The recent case involved a tow by Singaporean operated tug *Harmony I*, a four engine, 13,000bhp, 146 tonnes bollard pull, 1980-built but more recently modernised AHTS vessel.

It was contracted to tow an FPSO of 134,000dwt, operated by a Swedish oil company, half way around the world. The contract provided that the tow be 'in light ballast condition', which is a relatively common stipulation.

The parties disputed what quantity of ballast amounted to light condition. The judge applied a previous 2006 Commercial Court judgment that light ballast condition is "concerned with ensuring physical fitness, primarily stability, for the tow's voyage ...", that is the minimum ballast required for physical safety.

The hirers had indeed ballasted down for other good reasons on the advice of their naval architect, but this was found to be some 30,000 tonnes over light ballast condition on delivery, later reduced to about 10,000 tonnes.

Having won on that point, the tugowners failed to recover the claimed delay payments under clause 17(a)(ii) together with damages

for the extra bunker costs because they could not demonstrate that the additional weight and draft had a material effect on the towing speed. In particular, the tow speed did not increase as a result of the deballasting of 20,000 tonnes.

The tugowners had furthermore anticipated 4.5 knots using two engines. It was held that they could not rely upon clause 17(a)(ii) as it required the tugowner to make a decision to slow steam because the tow could not be towed at the original contemplated speed. Here the tow could have achieved that average speed by using all four engines, but obviously at the expense of further fuel which tugowners were reluctant to incur.

TOWCON does not contain a standard provision as to the speed to be achieved, but the hirers counterclaimed that tugowners had in effect agreed a collateral term guaranteeing a speed of 4.5 knots and were liable in damages. That was rejected.

Finally the tow had stopped en route while the parties sought to resolve their differences. When they failed to do so the tugowners gave notice of cancellation and withdrawal. This was ill-advised and they were found to have wrongfully repudiated the contract.

As a result they were also liable in damages for the hirers' net costs of employing a second tug to complete the tow.

So what lessons can be learnt? For starters any party contemplating terminating a contract is entering heavily mined waters: complex issues arise and it is essential to take legal advice.

Secondly, the more information that can be exchanged pre-contract the better to enable proper calculations as to speed and performance particularly when concerning complex hull forms.

Thirdly, don't confuse 'light ballast condition' with towing warranty surveyors' recommendations: they may be two very different things.

Finally, if the contract is keenly priced, as inevitably it is in this market, take great care to ensure that the downside risk of things going wrong is not additionally falling on to the operator, as that will simply guarantee that a loss is made.

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

Tug assists Channel storm rescue

French salvage and rescue tug, *Abeille Languedoc*, was involved in a dramatic rescue operation during Storm Angus in the English Channel, amid winds of up to 97 miles an hour.

Almost half the 23-man crew of cargo ship *Saga Sky* were evacuated by helicopter after it lost all engine power and struck an unmanned rock barge. The holed vessel then started taking on water.

The UK Coastguard, assisted by the RNLI, said the 'major incident' took place about three miles south west of the Port of Dover.



The rescue operation involved two helicopters plucking 11 crew from the deck of the stricken vessel. The rest remained on board the 220m long ship in order to help get it to a safe port.

The RNLI dispatched two lifeboats to stand by as the helicopter teams swung into action. The stricken vessel, which was flying a Hong Kong flag, later drifted on to a sandbank, where the remaining crew were able to restore some power.

Abeille Languedoc, sent to the scene from Boulogne, France, is a Bourbon-affiliated vessel, chartered by the French Navy and is on permanent watch, ready to sail in less than 40 minutes, 24 hours a day, seven days a week. *Saga Sky* was taken to Dunkirk to undergo repairs. The UK Marine Accident Investigation Branch said it had deployed a team to Dover to conduct a safety investigation into the incident. The RNLI said there was no sign of pollution.

◀ Salvage and rescue tug *Abeille Languedoc*



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Salvage firm assists four stricken tankers

Greece-headquartered Tsavliris Salvage and Towage has released an activity report for the final quarter of 2016.

On 28 September, the 9,600bhp salvage tug *Tsavliris Hellas* was dispatched from its permanent station at Ponta Delgada, Azores, to assist the 27,612gt chemical/products tanker *Elka Glory*, which was immobilised about 1,000 miles west of Ponta Delgada due to stern tube leakage while fully laden with 42,000 tons of ultra-low sulphur diesel.

The tug started escorting the stricken vessel towards the discharging port of Pembroke, UK, but the stern tube leakage deteriorated and the ship's master requested a towage connection.

Following delays due to weather conditions, the tow continued towards Pembroke until on 7 October, following instructions from the owner, the tug master altered course to Gibraltar. The *Elka Glory* arrived safely at Gibraltar's eastern anchorage on 16 October after which *Tsavliris Hellas* towed it to an inner anchorage, and then to Setubal for dry docking. The convoy arrived safely on 29 October and the salvage tug was released.

On 7 October, the 30,006gt tanker *Kirstin* also suffered stern tube damage and leakage while discharging palm oil at Chittagong anchorage in Bangladesh following contact with another vessel.

The 6,600bhp AHTS *Ning Hai Tuo 6001* was dispatched from Chittagong to provide standby holding services during lightening and discharge. Due to prevailing strong currents and adverse weather conditions it was later replaced by the 16,300bhp AHTS *Terasea Hawk*. On completion of the discharge operation, towage commenced and the convoy arrived safely in Singapore on 16 November, where the vessel was delivered to drydock tugs.

Meanwhile, the 160,036gt crude oil tanker *Armada Ulysses*, laden with 221,000 tonnes of fuel oil while being employed as a bunker storage vessel off Tanjung Pelepas, Malaysia, sustained sudden leakage from cargo tanks to double bottom tanks on 9 October.

Tsavliris was contracted to provide salvage assistance and on 12 October a salvage team, consisting of project manager, naval



architect, salvage master, salvage officer and salvage engineer, arrived at the casualty from Greece, Holland and Singapore.

On 13 October, 44,464 tons of cargo were transferred to the tanker *Nissos Kythnos*. As the damaged vessel needed refuelling, it sailed to Singapore's eastern bunker anchorage B, where the operation was carried out with an anti-pollution vessel alongside.

A salvage plan was submitted and after two meetings with all parties concerned, it was decided that the vessel could remain at bunker anchorage B for a dive inspection. Upon receipt of the underwater inspection report by the MPA, the casualty moved to Raffles reserve anchorage for tank cleaning, inspections and repairs. The Tsavliris team and equipment demobilised on 19 October.

That same day, Tsavliris dispatched the 9,200bhp tug *Salvage Titan* from Kaohsiung, Taiwan, to assist the 40,014gt bulk carrier *Minoan Courage*, which was fully laden with soy beans and immobilised due to a main engine breakdown in bad weather conditions, caused by the approaching typhoon *Haima*, in the South China Sea, around 50 miles south-east of Shantou, China. When the salvage tug arrived the next day, the stricken vessel's power had been partly restored and escort services commenced. On 21 October power was fully restored and *Salvage Titan* demobilised.

Finally, on 1 November the 40,975gt products tanker *Spottail*, on passage from Singapore to Sri Lanka in ballast condition, ran aground on the north coast of Pulau

▲ The tanker *Elka Glory* seen from the salvage tug *Tsavliris Hellas*

Takong Besar, Indonesia. The port authority of Batam claimed reef and fish farm damage.

Tsavliris was contracted the next day to provide salvage services. Tugs *Sumber Harbour* and *Sumber Z Marine*, both with 3,200bhp and bollard pulls of 45 tonnes, a diving boat and diving team and a salvage master were dispatched.

On 8 November the vessel was successfully refloated with the assistance of the tugs in combination with a ballast/deballast operation, and proceeded to Nipa anchorage, where both tugs were released.

On 9 November an underwater inspection – witnessed by class, insurers and owners' representatives – was carried out and on 10 November another diving inspection was arranged to determine the condition of the grounding site seabed. The salvage services were successfully terminated on 10 November, without any coral reef damage or pollution having occurred.



◀ Grounded tanker *Spottail* was assisted by *Tsavliris*



◀ Company principal Nicolas Tsavliris was among past presidents given special awards when the Propeller Club's Piraeus branch marked its 80th anniversary. The awards were in recognition of their contribution to the club's growth.

Major forum to address key issues

Following the resounding success of the inaugural Asian Marine Casualty Forum (AMCF) in 2015 the event, aimed at addressing the current key issues in maritime casualty management, returns later this year with an impressive agenda and range of top flight speakers.

The forum will take place at the Raffles City Convention Centre in Singapore on 27 and 28 April during Singapore Maritime Week – at which the international maritime community gathers in Singapore for a week of conferences, dialogues, exhibitions and social events.

LOC Group, the leading international maritime consultancy, will once again be hosting the forum and welcomes global industry leaders from all parties involved in marine casualties. Invitations have been extended to many of the world's leading marine insurers, salvage contractors and law firms, as well as ship owners and government representatives. More than 350 senior professionals and executives are expected to attend.

The theme for the second AMCF is: *Risks, Rewards, Response & Results in the Life and Time of a Casualty – The Industry Debates*. Industry leaders will be sharing insights and outlook on the most topical issues of wreck removal and salvage in the shipping industry.

The forum aims to raise standards within the industry further, boost cross-industry co-operation, and reduce the risks and unforeseen challenges involved in future major salvage operations.

An impressive range of supporters include the International Group (IG Group) of P&I Clubs, the International Salvage Union, the Singapore Shipping Association, Singapore Chamber of Maritime Arbitration, Baltic Exchange, the International Union of Marine Insurance, the International Tanker Owners Pollution Federation, NUS Centre for Maritime Law, the UK Nautical Institute, the National Maritime Safety at Sea Council, the Women's International Shipping & Trading Association and Singapore Maritime Foundation.

The ABR Company Ltd, publisher of *IT&O*, is among the event's sponsors. Managing director, Garth Manson, said: "The first AMCF was a great success and this year's is shaping up to be even better."

Speakers on the provisional list, many of whom who have already confirmed, reflect all aspects of the marine casualty sector.



▲ Raffles City Convention Centre, top, is the event venue while among speakers lined up are, left to right, Leendert Muller, Tony Goldsmith, Mark Hoddinott and Jim Allsworth



They include: Tony Goldsmith, a partner at Hill Dickinson, Singapore; Peter Pietka, CEO of Ardent; Leendert Muller, MD of Multiraship Towage & Salvage; Jim Allsworth, C Solutions Ltd, head of Admiralty London; John Witte, executive VP of Donjon Marine and president of the ISU; Reinder Peek, MD of KeppelSmit Towage; Mark Hoddinott, general manager of the ISU, and Jeremy Russell QC, Lloyd's appeal arbitrator, Quadrant Chambers.

The wide-ranging agenda will include subjects such as risk management in the life cycle of a wreck removal project, the future of LOF, risk from a changing world fleet, global progress on places of refuge, mutual co-operation in casualty management and the high-risk strategy of challenging authorities. The programme will also include several major case studies.

More details of the event, including how to sign up to attend and accommodation, will be live on the microsite highlighted below by the end of January.

Industry leaders sponsor event

Organisers would like to thank the following companies and maritime organisations for their generous sponsorship of this year's Asian Marine Casualty Forum.

- The ABR Company Ltd
- CWaves
- Asia Capital Re
- Harbor Star
- UK P&I Club
- Shipowners' P&I Club
- Multiraship Towage & Salvage
- Nippon Salvage
- Holman Fenwick Willan
- Campbell Johnston Clark
- TMC Marine
- Brookes Bell
- Global Salvage Consultants
- Andrew Moore & Associates
- Donjon Marine
- Braemar SA
- SPICA
- Soenen BV
- TT Salvage
- Smit Singapore
- RPC
- Hill Dickinson
- Resolve Salvage & Fire
- Malayan Towage and Salvage Corporation
- C-Solutions

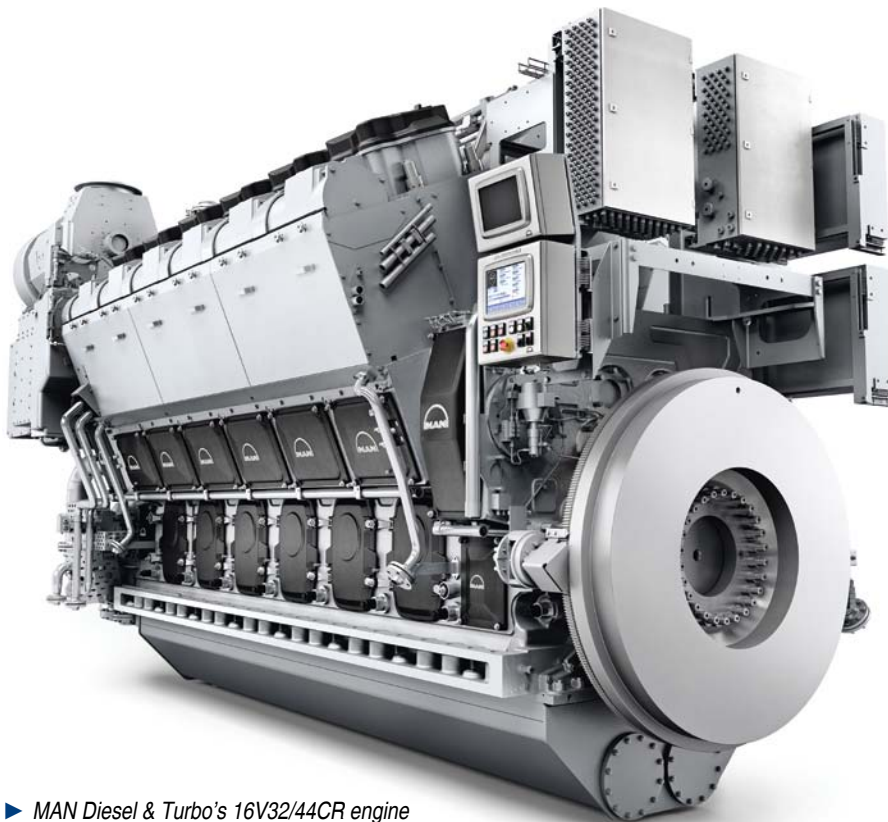
More details and latest updates at <http://loc-group.com/amcf/>

Main engines chosen for green profile

MAN Diesel & Turbo has been selected to supply the main engines to a new, ice-breaking, supply-and-research vessel for the Australian Antarctic Division (AAD). The 2 × 16V32/44CR main engines – each producing 9,600 kW – were chosen for their highly reliable and fuel-efficient design that will serve in an environment with a demanding operational profile, including temperatures down to -30 degrees C and extended mission times.

The vessel is being procured by Serco Defence through DMS Maritime (the prime contractor) and will be designed and built by Damen Shipyards Naval Shipbuilding (DSNS). This complex vessel will form an integral part of the AAD programme for the next three decades. Handover is scheduled for April 2020.

The new icebreaker will succeed the old research vessel *Aurora Australis* and will have greater ice-breaking and cargo capacity, increased endurance and operational flexibility, a high standard of environmental performance and state-of-the-art research, rescue and resupply capabilities. Features



► MAN Diesel & Turbo's 16V32/44CR engine

on board will include a moonpool, drop-keel, multi-beam bathymetric and scientific echo sounders, fisheries sonar systems, hydrophones and underwater cameras to support a wide range of scientific research in the Southern Ocean and around Antarctica.

The AAD, based in Hobart, Tasmania, is the division of the Australian government's department of the environment and energy responsible for the advancement of the country's strategic, scientific, environmental

and economic interests in the Antarctic. Non-research activities include personnel transfer, station resupply and waste management.

Lex Nijssen, head of four-stroke marine, MAN Diesel & Turbo, said: "We are delighted to be able to add such a prestigious reference to the 32/44CR's CV. It is an engine that already enjoys popularity in a broad spectrum of market segments, but for it to be employed in such an unspoiled yet extreme, demanding environment with such stringent environmental requirements is testament to its many positive attributes. Thus we are happy to execute such a challenging project with an experienced and highly professional partner such as DSNS."

MAN Diesel & Turbo will also supply its in-house-designed SCR system to ensure the vessel's eco-friendly footprint in the pristine Antarctic environment.

The compact and well proven SCR system is available in a wide range of sizes and covers the entire MAN portfolio of medium-speed engines. A special feature of the system is its communication with the engine control system that optimises the temperature for the SCR system at individual load-points.

Visit marks project's two years

To mark the second anniversary of Svitzer Australia's partnership with Oil Search, a delegation consisting of senior representatives from both companies visited the Kumul Marine Terminal off Papua New Guinea (PNG).

It included Oil Search's executive general manager in PNG, Julian Fowles, and Svitzer Australia's managing director Steffen Risager. They received a guided

tour of the Oil Search facility and were able to inspect *Svitzer Venture*, one of the two newly-built, 120-tonne bollard pull tugs modified to handle the unique environment in which they now operate.

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Tug firm updates its procedures after container ship grounding

The Australian Transport Safety Bureau (ATSB) has issued the report of its investigation of the grounding of the container ship *Maersk Garonne* in Fremantle on 28 February 2015. The harbour pilot decided to delay the ship's entrance into the harbour when he realised that the assist tugs had yet to arrive.

The ATSB investigation found that bridge resource management was not effectively implemented on board *Maersk Garonne*. As a result, the ship's bridge team was not fully engaged in the pilotage and did not effectively monitor the ship's passage.

While the master retained responsibility for safe navigation of the ship, the harbour pilot was the only person actively focused on the pilotage. Consequently, single-person errors that occurred went undetected or inadequately challenged and uncorrected.

The investigation identified that Fremantle Pilots' publicly available passage planning guidance for the pilotage was inadequate and was not effectively implemented. Further, Fremantle Pilots' pilotage procedures did not include abort points or contingency plans for identified risks. The investigation also found that procedures for tugs to be on station at the

entrance to the port, or for their co-ordinated movement, were not clearly defined.

Fremantle Pilots, the port's pilotage provider, has reviewed and updated its website, procedures and training with respect to pilotage, passage planning and communications. This includes simulator training for emergencies.

"The potentially severe consequences of a pilotage accident means that a low accident rate in the past is not a reliable indicator of safety risk"

ATSB report

Svitzer Australia, the towage provider, has updated its procedures to include defined on-station times for tugs. Fremantle Ports, the port authority, has advised that it has clarified the role of the vessel traffic service in assisting ship arrivals and berthing.

These safety actions, together with joint simulator exercises, clarify the roles and responsibilities of all parties with respect to monitoring and management of pilotages.



This increases safety margins and reduces the likelihood of a similar incident in the future.

Maersk Garonne's managers have issued fleet circulars to emphasise and clarify the roles and responsibilities of the master and ship's crew during navigation with a pilot on board. The managers have also implemented a fleet-wide programme that includes education and auditing to ensure compliance with bridge procedures.

The report states that comprehensive passage planning that includes risk-assessed contingency planning is vital to safe pilotage and underpins effective bridge resource management.

The potentially severe consequences of a pilotage accident means that a low accident rate in the past is not a reliable indicator of safety risk.

Sydney gives new-arrival tugs a traditional welcome

Sydney's two newest tug boats – *Svitzer Waratah* and *Svitzer Bondi* – were officially named during a special ceremony at the Australian National Maritime Museum.

Gadigal Elder, Uncle Chicka Madden presented the Welcome to Country and Elder Max Eulo carried out a traditional Smoking Ceremony. Then Kathryn Holliday, wife of Sydney harbour master Philip Holliday, christened the *Svitzer Waratah* while Caltex Australia's marine adviser Capt Megan Arnott named the *Svitzer Bondi*.

The event was hosted by Svitzer's global CEO Henriette Thygesen and

managing director of Svitzer Australia, Steffen Risager. In attendance were senior members of the company's management team from both Australia and Denmark as well as representatives from port authorities, shipping companies, and major exporting and importing businesses.

Thygesen said: "Acquired as part of our ongoing fleet renewal programme, the arrival of these two impressive tugs underscores our long-term commitment to Sydney and the port community that services it. Importantly, this significant investment by Svitzer will ensure that we can continue to provide our customers with the safe, reliable service they have come to expect from us."

Risager added that the names of the tugs were chosen by a popular vote among the crews that will operate them, a process that has delivered names of real significance.

He said: "Waratah is not only the official floral emblem of New South Wales, it is also



▲ Henriette Thygesen



▲ Steffen Risager

the name of a 1902 Cockatoo Island-built coal fired tug, which now takes pride of place in the Sydney Heritage Fleet.

"And, of course, the name Bondi really needs little explanation. When anybody around the world thinks of Australia, two images immediately come to mind: the sails of the Sydney Opera House and the sand, sun and surf of Bondi Beach.

"Waratah and Bondi are names that genuinely reflect the city that these vessels now call home."

Svitzer Bondi is now stationed in Port Jackson to support the booming cruise ship industry and assist visiting mix dry bulk carriers and oil tankers, while *Svitzer Waratah* is based in Botany to work in Australia's second biggest container port.



◀ Guests at the traditional welcoming ceremony for *Svitzer Bondi*

Powerful tugs purpose-built for LNG project

Perth, Australia-based KT Maritime has celebrated the naming ceremony of two infield support vessels (ISVs) at ASL Shipyards in Singapore.

The ISVs are the most powerful and sophisticated Rotor®tugs in the world, purpose-built to support Shell's FLNG facility *Prelude*, the largest floating LNG facility ever constructed, which will produce and export LNG off the coast of Australia. The *Prelude* FLNG facility will be located in the Prelude and Concerto gas fields in the Browse LNG basin 200 miles off the coast.

Together with a third ISV which was completed earlier this year, the vessels will be employed to manoeuvre LNG and LPG carriers alongside the *Prelude*, as well as assist with condensate offtakes, emergency response and personnel transfer.

Ard-Jan Kooren, director of KT Maritime and acting CEO of Kotug, said: "This is a historic moment for KT Maritime as well as ASL Shipyards. With the development of FLNGs, natural gas production is moving in a new direction and our new ISVs are at the vanguard to support that development."

Susan Beattie, a long-serving and well-respected Shell employee who was one of the two godmothers, thanked ASL's management, KT Maritime's site management and all their shipyard employees for their hard work on



the project. This was seconded by her fellow godmother, Mimoza Anderson, wife of KT Maritime's business development manager, Jamie Anderson. She said: "KT Maritime are extremely privileged to be part of such a historic project, our team is extremely excited to take on the responsibility of pioneering the use of infield support vessels in supporting a FLNG facility."

The christening and delivery of *RT Kuri Bay*, *RT Roebuck Bay* and *RT Beagle Bay* is one of many major milestones for ASL which has built 21 Rotortugs to date.

▲ Australia bound, the naming ceremony at ASL Shipyards, Singapore

In his address, ASL chairman and managing director, Kok Tian Ang, acknowledged this as a proud achievement for the shipyard and a testament to the relationship between it, KT Maritime and Kotug.

KT Maritime is a joint venture established by ship owners and operators, Kotug International and Teekay Shipping Australia, to provide marine towage solutions to the energy and resources sectors.

Charter deals mark good start to coming year

Norway-headquartered Farstad Shipping ASA has been awarded several major charter contracts in Australia.

ConocoPhillips Australia Exploration has issued a letter of intent for two Rolls-Royce UT 731 CD AHTS vessels, the 24,371bhp *Far Sirius* and the 23,664bhp *Far Saracen*, to support its upcoming Barossa drilling campaign, which was due to commence in January 2017.

In another development, the Inpex-led Ichthys LNG Project has extended its contract for the 16,000bhp AHTS *Far Sword* for an additional 17 months starting from 31 March 2018.

Meanwhile, McDermott's Australia has awarded the UT 751 E 9,466bhp PSV *Far Seeker* a contract for a period of 40 days firm plus 40 days options. The contract was due to commence in December 2016.

McDermott's Australia has also awarded contracts to two AHTS vessels to assist with the mooring operations of the Ichthys LNG Project's central processing facility. This is scheduled to commence within the second quarter of 2017.



Farstad's AHTS Far Saracen

The commercial terms of the agreements will be kept private and confidential between the parties.

Karl-Johan Bakken, CEO of Farstad Shipping, said: "This is a clear demonstration of the ongoing standing of Farstad Shipping within Australia as the market leader and provides the Australian operations with a strong foundation as we head into 2017."

Farstad is still looking to restructure its finances after a restructuring plan agreed with Siem Industries in November 2016 – whereby Siam would become a 50.1 per cent majority owner in the company – was rejected by creditors.

Farstad's fleet currently consists of 55 offshore and subsea vessels including 27 AHTSs and 22 PSVs.

Innovative new compensation unit unveiled

Palfinger Marine has developed a 3D-compensation unit to be mounted on offshore cranes used onboard wind farm service operation vessels (SOVs) for increased vessel operability. This also enables smaller and more cost-effective vessels to be used in harsher and more challenging weather conditions.

The 3D-compensation module is designed for mounting on Palfinger offshore cranes – knuckleboom, telescopic boom cranes or stiff boom cranes – to transfer goods between the SOVs and wind turbines or other fixed installations.

The 3D-compensation increases the operational safety and eases transfer and

lifting/landing. It enables positioning of the cargo on the wind turbine, substations or other installation despite movements of the vessel due to waves and currents, as the system keeps the load vertically steady and the boom tip horizontally steady.

The low weight which is being compensated gives an advantage, as it has less influence on the ship stabilising systems and also requires less power consumption when in 3D mode.

The unit has very high performance with high accuracy due to the state-of-the-art, tailor-made MRU unit located on the unit itself. The 3D-compensation module can be dismantled and parked in a separate cradle,

allowing the crane to be used as a standard offshore crane when not in use.

Jan Silgjerd, Palfinger sales director cranes, said: “Conventional solutions in the market are huge and very expensive, require a lot of power and are not as flexible as our solution. To offer our customers a more satisfying solution we knew it was essential that the new unit was light, modular, applicable for any sort of crane and could easily be taken on and off.”

Meanwhile, Palfinger has delivered a package, including marine crane and davit, to Austal for a high-speed crew transfer vessel. The 57.6m all-aluminium catamaran was designed by Incat Crowther and constructed by Austal’s shipyard in the Philippines.

The PK 6500 M electro-hydraulic foldable knuckleboom crane has a safe working load (SWL) of 880kg at 5.6m outreach. The crane has a 1,300kg hydraulic winch installed on the outer boom and safety devices according to the European directive of general machinery. The PK 6500 M is mounted on the 200m² deck, allowing up to 100 tonnes of cargo to be transported.

The vessel also has search and rescue capability, with an onboard fast rescue craft for rapid deployment and a chemical dispersant adding oil-spill first response capability. Palfinger delivered a hydraulic pivoting A-frame davit, type PRHE, with a SWL of 3,060kg.

◀ *An artist’s impression of Palfinger’s 3D-compensation unit in action at an offshore wind farm*



Propulsion and deck machinery deal for 13 tugboats

Rolls-Royce has signed a contract to deliver propulsion and deck machinery for 13 new tugs, including five that will have a direct bollard pull of around 150 tonnes.

The contract, with Edison Chouest Offshore (ECO), is worth more than €38m. The 13 tugs are being designed and built at Chouest-affiliated US shipyards (IT&O, November/December 2016, page 56).

The five most powerful tugs will be 45m long and 17m wide, making them the world’s largest of their kind to date.

Rolls-Royce scope of delivery includes both large azimuth thrusters and winch packages, enabling the tugs to efficiently perform their main duties of general harbour assistance, braking or steering a vessel, or performing deep sea towing.

Mikael Makinen, Rolls-Royce, president – marine, said: “This contract underlines our capability to supply mission critical equipment to customers undertaking demanding towing operations, where safety at sea, high power and responsive manoeuvrability are all essential factors.”

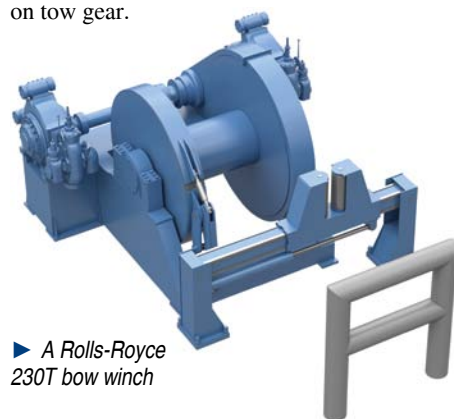
Eight of the vessels ordered by ECO will be equipped with two US 255 fixed pitch thrusters, while five will have US 60 controllable pitch propellers.

All 13 vessels will be equipped with towing winches plus auxiliary winches from Rolls-Royce, all based on low-pressure hydraulics.

The five largest of the tugs are to be equipped with winches with dynamic towing capability in the full bollard pull range. This is instead of towing on static brake which is

most common for these type of vessels.

The dynamic towing capability of the low-pressure hydraulic reduces risk during a towing operation, and reduces wear and tear on tow gear.



▶ *A Rolls-Royce 230T bow winch*



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Firm secures breakthrough into market

Vestdavit, the Norway-based boat system and davit-handling specialist, recently secured a market breakthrough for its innovative MissionEase multi-boat handling solution for mission bays, after a first order from OSV operator Esvagt.

MissionEase is the first multi-boat handling system designed from concept stage to offer the complete answer to the boat launch and recovery challenges from terrorism, piracy, minesweeping and border security, to dive support, oil spills, search and rescue, and humanitarian aid.

It uses a system of hydraulic cradles running along the mission bay deck to move boats from their stowage positions to the maintenance, preparation or launch areas. The patented feeding system links seamlessly with dual or single-point davits to launch or recover boats.

Esvagt specified MissionEase for installation onboard a crew change vessel under construction at Spanish shipbuilder Astilleros Zamakona, which was for delivery at the end of 2016.

The vessel design has a hangar for four boats, fed via a transverse MissionEase cradle with lift and lowering capability to one Vestdavit TDB-5000 telescopic davit on each side of ship.

In its full version, which includes longitudinal cradles, MissionEase can stow, launch and retrieve up to seven different RIBs, daughter boats and unmanned surface vehicles safely and quickly in high seas from within the ship's protected hangar.



▲ An artist's impression of the MissionEase system in operation

Using the system, the complete transfer, launch and recovery operation can be controlled remotely by a single member of the crew or through manual back-up.

Atle Kalve, Vestdavit development director, said: "Many multi-boat handling existing systems rely on gantries to lift boats within the bay. This can be hazardous when ships are in motion, while slinging and unslinging boats consumes precious time that multi-role ships often cannot afford.

"Our system is simpler, quicker, safer and cheaper than any boat handling system available and brings together all of our experience with naval and seismic ships to make the best use of a hangar or mission bay."

Contract to supply fleet of AHTSs

MacGregor has won deck machinery orders for six 64m AHTSs being built for long-term charter in the Middle East to Saudi Aramco.

The company was awarded the contract by PaxOcean Engineering to supply six sets of deck machinery, each including a 150-tonne anchor handling and towing winch, shark jaws, towing pins, auxiliary winches and ancillary equipment.

Esko Karvonen, head of MacGregor's smart ocean technology division, said: "We won the contract because of our proven track record in this market segment where our equipment is well-received both by the owners and operators.

"Additionally, we have close working relationships with this ship owner and the ship designer."

Karvonen said that the urgency of the project and the tight deadlines imposed intense, focused technological discussions.

He said: "Excellent co-operation between the shipowner, the ship designer and MacGregor's relevant expert divisions ensured the project's successful start."

The equipment will be delivered in stages to the shipyard in Zhuhai, China, one of six shipyards operated by the Singapore-based PaxOcean group.

Work was expected to commence at the end of 2016 and the vessels are scheduled to start being delivered during the third quarter of 2017.

The vessels have been designed by Conan Wu Enterprises and are owned by PACC Offshore Services Holding.

Technical seminar for operators on rope performance

Dutch firm Lankhorst Ropes delivered a technical seminar in Cairo on rope selection to help Egyptian operators achieve their desired level of safety, operational performance and cost-of-ownership.

Presented by Raafat Hammad, WireCo district manager – North Africa, and Mark Pieter Frölich, Lankhorst Ropes' Middle East regional director, the seminar showed how Lankhorst's high performance synthetic and steel wire ropes meet the needs of operators facing a range of demanding applications.

Frölich said: "Rope selection is key to achieving high performance, long service life and therefore low cost-of-ownership. Criteria that should be considered include: elongation properties, rope flexibility, break load, safety risks, environmental conditions and international standards. However, equally important as selecting the right rope is using the rope correctly. Unless the crew are trained and vessel hardware tailored to the ropes used, the rope is vulnerable to damage.

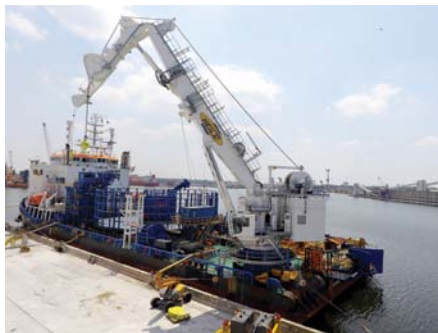
"Our holistic approach ensures the recommended rope meets the needs of the application and environment, as well as making sure both the vessel and crew are prepared. A longer lasting rope service-life, and ultimately rope recycling, translates into levels of sustainability that make a significant contribution to operators."

Crane design is tailor-made

Rotterdam-based Stemat Marine Services chose Italy's Heila Cranes to construct a new HR4070 active heave compensated (AHC) crane, with a boom length of 34m and a lifting capacity of 140 tons, for installation on its vessel *Stemat Spirit*.

Stemat Spirit is a multi-purpose vessel, able to do the work of two cable layers in coastal areas. It has been used in a large number of wind farm projects since being launched in 2010. With a total length of 90m, a beam of 28m and a draft of only 3.2m, the vessel is uniquely able to be beached, making it able to perform cable work onshore via the 'Hi-plough', the latest in marine technology, enabling deeper burial for the cable.

Currently there is a Heila HLRM 340 knuckleboom crane on board *Stemat Spirit*, an established design used for cargo and deck operation. It has been operating successfully



since 2010 and has proved to be a very reliable product.

Henk van Wingerden, manager, technical department, Stemat, said: "We were looking for a reliable AHC crane with strong offshore capabilities, but also the need for a tailor-made solution, able to fit on our vessel and satisfy our needs in the best possible way."

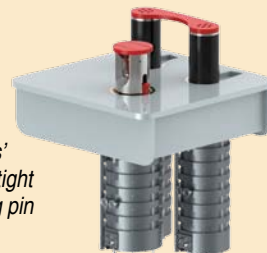
Massimo Magli, sales and marketing manager at Heila, said: "More than a year ago we started talking with Stemat about this project. We understood the importance of perfectly understanding their needs and coming up with the best solution. After a preliminary analysis we had several technical meetings with the client focusing on the optimisation of the project."

The result is a new Heila AHC subsea crane. Equipped with a machinery room behind the main upper tower, the new jib crane model HR4070/30-2BJ includes a 1,320hp marine diesel Caterpillar engine that provides the necessary power for complete hydraulic control of the crane and the powerful AHC system. The AHC system is designed and produced in co-operation with Bosch Rexroth, guaranteeing high performance together with the most reliable and precise control of the wave compensation, including in deep sea operation and in the most challenging conditions.

◀ The new HR4070/30-2BJ crane from Heila

Towing pin offers watertight solution

▶ Tugpins' new Watertight Plus towing pin system



Tugpins, the Netherlands-based designer and manufacturer of hydraulic anchor handling systems, has launched a new generation of towing pin systems: Watertight Plus. This complete new technology guarantees a watertight system below deck.

The watertightness is created by an overpressure inside an aluminium casing filled with an ecological lubricant. Compared to the traditional towing pin systems, the Watertight Plus has a completely new approach to keeping the system watertight, even when rollers get worn.

Tugpins says additional advantages of Watertight Plus include lower service costs, reduced maintenance and better environmental protection.

Firm to supply davits for two state-of-art SOVs

Deck equipment company MacGregor is to supply davits for two state-of-the-art SOVs designed to act as 'mother ships' to wind turbine technicians in the North Sea.

The contracts have been placed by Spanish shipyard Gondan, which is building the SOVs. The vessels, ordered by Norwegian operator Østensjø Rederi and designed by Rolls-Royce, will service UK DONG Energy's

Race Bank and Project One offshore wind farms.

Each one will be fitted with a MacGregor HMD G110 davit, designed for launching and recovery of personnel-carrying 'daughter' craft, and an HMD A34 davit for launching and recovery of rescue boats.

The 11-tonne lifting capacity G110 will include a high-speed winch system, anti-pendulum docking head – for operations

in rough sea conditions – and an automatic parking cradle for the craft. The smaller A34 has a 3.4-tonne lifting capacity and includes a high-speed winch system, constant tension mode and a shock-dampening system.

Bjørnar Bakke, sales manager for the Finland-headquartered company, said: "This order confirms MacGregor's position as a manufacturer of advanced davit systems."

▶ MacGregor's A34 davit



Specialist lift and winch company provides custom-made solutions

UK scientists researching the world's oceans are being helped in their work by a containerised deep-ocean mooring winch system designed and built by specialist company Romica Engineering.

The 4,000m capacity winch system has been delivered to the National Oceanography Centre (NOC) for use on its two state-of-the-art research ships as well as vessels operated by NOC's many national and international partner organisations.

It is just one of the highly-specialised products developed by Romica, which have helped it become one of the world's leading

designers and manufacturers of marine lift equipment and winches.

Founded in 2003, and based in Beverley near the port of Hull on the UK's Humber estuary, the company now exports 80 per cent of its sales. Its products are used across the marine, renewables, ports and terminals, oil & gas and oceanographic sectors. Uses typically include marine site surveys and seismic surveys.

For managing director Bob Turner, the key to Romica's success is clear: "We work as a trusted partner, designing and manufacturing custom-made winch solutions."

"We work with our clients like an in-house member of their team; we do not just palm them off with easy, off-the-shelf solutions."

From the outset, the company had an international focus not just on its market, but also its operations; fabrication of many of its products is carried out by Romania-based sister company TIE Services International, run by Turner's son Michael, in a 7,000m² facility.

TIE, with a string of international accreditations and certifications, provides Romica with a high-quality, cost-effective manufacturing capability.

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The Standard



Demanding requirements no problem

Spain-based Ibercisa has designed and manufactured deck machinery for the TRAKtor 3200-V tugboats designed by Robert Allan Ltd specifically to meet tug owner and operator Boluda's demanding requirements for performance, propulsion equipment, accommodation facilities and tank capacities of below 500gt.

The deck machinery features an Ibercisa Model MR-H/200/2/300-80, double drum, hydraulic escort towing winch. Winch low speed pull at first layer is 75.5 tonnes at 8.4m/min and rendering capacity is 120.8 tonnes at 13.4m/min. The brake holding load is 200 tonnes.

The vessel was built at the Zamakona shipyard in collaboration with Robert Allan Ltd and the experience of Boluda Towage and Salvage as tug operator. The 31.6m long, 12.8m wide tug has 7,600hp to obtain a bollard pull of 79.6 tons and will work in harbour, towage and escort. It has accommodation for eight crew with 'Comfort-Noise 3' – another new departure for this type of vessel.



The vessel has a maximum load condition draft (seagoing) of approximately 6.63m and can achieve a speed of 13.6 knots.

The tug's general arrangement, main engine performance requirements and specifications, and electrical power plant design all evolved from the significant collaboration between Boluda and Robert Allan Ltd.

▲ Ibercisa's double drum, hydraulic escort towing winch onboard Boluda's new Robert Allan Ltd designed tug

The result is a functional layout making maximum use of the relatively limited space on such a high-powered vessel with overall volume constrained by the 500gt limit.

Contract a 'perfect opportunity to flaunt our wares'

North Sea Winches (NSW), headquartered in Scarborough, UK, has recently designed, manufactured, commissioned and supported a state-of-the-art quadrant handling system for offshore contractor DeepOcean.

Working for a leading international

developer, DeepOcean has delivered class leading efficiency completing inter array cable installations from the vessel *Maersk Recorder* for a UK east coast wind farm development.

Working closely with DeepOcean, NSW supplied equipment including a 20-tonne active heave compensated winch, a 5 tonne constant tension winch and three 110kW HPUs to operate the two winches and an overboarding A-frame.

The new equipment has greatly improved

cable lay times, of at least two completed lays in a 24-hour period, while the active heave function meant working through what would be hold points in poor weather conditions.

NSW is in a joint venture with MJR Controls of Stockton, UK, to deliver active heave and constant tension solutions to the offshore and marine markets.

Lee Smith, DeepOcean project manager, said: "This project is one of the first combined active heave/constant tension deck layouts for NSW and MJR, and it has proved their abilities beyond doubt. The winches and controls were installed over a 10-day mobilisation and then put straight into operation on a time-critical deployment, when everything went according to plan."

Robert Gretton, managing director of NSW, said: "DeepOcean needed a safe, reliable and operator-friendly system. We were only too happy to help, and with winches and controls already developed and tested by NSW and MJR using the X-Wave system, it was a perfect opportunity for us to flaunt our capabilities."

While NSW and MJR (ActiveWinch) are currently working towards a range of AHC hire units, they are also undertaking the development of an AHC winch for a subsea trenching vehicle and also the retrofitting of a pair of 30-tonne AHC offshore cranes.



◀ An ActiveWinch winch now being operated at a North Sea wind farm development

Continuing a family tradition

MD and owner of motion monitoring services specialist Siri Marine, Capt Albert Lenting's maritime career began in his teens and has since taken him around the world and back. Based once more in the Netherlands, he talks to contributing editor Joceline Bury about his life at sea and ashore

Born in 1953 in Steendam, in the Dutch province of Groningen, the son of a sea captain, there was never much doubt that Albert Lenting would pursue a maritime career.

Lenting's father was captain and owner of a small (500dwt) coaster, *Alder-L Steendam*, and traded, like numerous fellow captain/owners, in western European waters, carrying "a lot of timber from Scandinavia to Holland".

As a result, home life for most of the year meant just Lenting, his mother and his sister. "Dad was on board for at least nine months a year. During the summer he managed to get a relief and we usually spent the holidays in the eastern part of Holland, in the woods and hills. Dad did *not* want to spend his holiday near the sea."

On other occasions, Lenting recalls: "We travelled to the ship and had the most wonderful family holidays in places such as Finland, the Trolhattan Canal in Sweden, London, etc with the complete family.

"At home in the evenings we listened to the SSB [marine] radio at set times, and Dad often transmitted something for us at home on the dedicated frequency (he never saw a mobile phone in his lifetime). So a career in the maritime world was simply a matter of course for me: what else is there?"

Lenting started working on ships while he was still at school, spending summer holidays as a deckhand. At the age of 17, he went to the Nautical College *Abel Tasman* in Delfzijl, later spending time at sea as apprentice, fourth and third deck officer on Shell tankers. "Dad insisted: 'first get your seetime on the deep-sea fleet and, when you really want to, there is always the possibility of going on the home-trade vessels. Vice versa is not an option'."

Moving to South Africa, Lenting joined Safmarine, working on cargo vessels. After three years – including a return to college in the Netherlands to add a master's certificate to his qualifications – he joined Smit-Lloyd on AHTS vessels, trading worldwide, as chief officer and captain. Next came a stint as captain on the semi-submersible diving support vessels operated by Smit International (later Rockwater).

Lenting said: "A lot of different tasks were

carried out during this period: normal supply and anchor handling tasks, an expedition to Christmas Island in the Indian Ocean for a special mooring replacement job; heat in Indonesia and the South China Sea; cold in Punta Arenas, Chile; the challenges of working in Ghana, West Africa... and so on."

During his time on diving support vessels in the North Sea, he developed a keen interest in projects in the oil & gas industry, and in 1990 was asked to join the Rockwater project team in Stavanger, Norway – a place that later became home for Lenting and his family.

His first assignment was a two-year spell as marine operations manager on the installation of Saga Petroleum's Snorre field tension leg platform (TLP). And by this time, Lenting's personal circumstances had changed.

"Until the age of 33 I was footloose, and enjoyed being a bachelor, both on board and on leave," he said. "A passion was motorcycling and many leave periods were spent on the bike, driving south until the sun started to shine seriously and calling in to the office after weeks to find out where they wanted me next. Preferably in a faraway country with lots of sunshine – the North Sea was never really my thing.

"Then I met Linda. We fell in love and started living together pretty quickly. She was OK with my life at sea and later 100 per cent behind moving from Groningen to Rotterdam and later to Stavanger, as project manager for Rockwater.

"Life in Norway was good – by then, we had a daughter, Marleen, and son, Marc – but when the oil industry had another downturn, we had to leave Norway and return to



▲ Albert on the Siri sailing yacht

Holland. Employment was not a problem and I started to work as project manager and later as yard manager for a shipyard in the north of the country. This continued until 2003 – by which time I was rather fed-up with working for bosses and wanted to do something for myself. Also, after 17 years the marriage was not working out any more – but the contact and friendship has always remained."

So, after seven years in the Dutch shipbuilding industry – first with Bodewes Volharding and then Damen Shipyards – Lenting decided it was really time for something else. He said: "Possibly the genes of my father (and mother) had a big influence, and the wish to start my own company and do it all myself became all-consuming.

"I found a challenge in the world of 'motion monitoring' on ships. It all started from a cargo safety point of view. Deck cargoes get lost, containers fall over the side – and all because the people on the bridge do not fully know the forces that are acting on the vessel



► Boarding *Rena* during one of the biggest salvage operations of the past decade; far right, Siri Marine's offices, and Lenting's home, in Appingedam

and the importance of proper seafastening.”

Working with a friend, Lenting started to develop an acceleration and angle sensor with simple display software that showed the personnel on the bridge the actual forces working on the vessel. He explained: “The maximum allowable forces are laid down in engineering regulations, so using all that information, a ‘decision support’ tool was born. In addition, all motion data was logged for future investigation and reporting/analysis.

“The first years were hard, knocking on doors, getting ‘no’ for an answer, but always believing in the product.

“The first success came in 2004 with a weather-dependent lashing (WDL) project for P&O Ferries. In the same year we were given the contract to provide motion monitoring services during the transport of the *Thunderhorse* production platform (the largest ‘floater’ at that time) on a Dockwise vessel from South Korea to the Gulf of Mexico.”

After these first contracts, the work continued in earnest, and a number of variations to standard monitoring practices were developed. These included wireless data transmission/tow monitoring, which for the first time enabled the tugmaster to actually see the motions of his tow.

The company participated in the Lashing@Sea joint industry project (JIP), and won a number of WDL contracts – because reducing lashing where possible also reduces the cost of lashing significantly. Other services offered included assisting during salvage operation, where the condition of a casualty and especially any changes are of great value to salvage teams; long-term condition monitoring of fixed platforms, jack-up rigs, etc; and integration of third-party sensors (wind, waves, GPS, current, and so on).

In 2006, things changed again, and Siri Marine came into being in its current form. Lenting’s partner decided that he wanted to do something different, so Lenting continued alone, with two other members of staff: the nucleus of the present Siri Marine operation.

The company is based where it started out, in Appingedam, a small town near the port

▼ *Lenting, daughter Marleen and Joseph Foo, of Jason Marine, at OSEA 2016 in Singapore*



▲ *The Lenting family and crew aboard the coaster Alderd-L, owned and operated by Lenting’s father Hendrik Lenting; grandfather Alderd is pictured (inset) with the hull of the newly built Alderd-L*



of Delfzijl in the north of the Netherlands. “Why here? This is where we started,” Lenting said. “Our work is worldwide and Schiphol airport is only two hours’ drive away. Our relations in the Rotterdam area are also close by, and Bremen and Hamburg are at the same distance.”

There are now nine employees, including Lenting’s daughter, Marleen, who recently joined Siri Marine as marketing and sales manager, after working in Australia for five years. “A career shift which works out pretty good for the both of us!” he said. He is also hopeful that his son, Marc, will join the company once he has completed his engineering studies and gained some experience.

Lenting added: “The team consists of primarily people with a maritime background. I want people who know what it is like to work offshore and who can be recognised on a vessel as ‘one of us’. Of course there are also other disciplines: technical development and administration.

“The dynamics in a small team handling a wide variety of work – from emergency response mobilisation, to planned work for an oil major, along with lots of administrative tasks – require flexibility. And commitment!”

The company subcontracts parts of the R&D and production work, and continues to develop new applications, smarter equipment, and better communication and reporting/analysis tools.

Plans for the company’s future are straightforward. “In the next few years we want to grow further as a preferred specialist in our field, with smart and ‘fit-for-purpose’ solutions,” Lenting said. “The main challenge is to keep up with developments – and to understand that what we did in 2003 is not unique any more. So we have to keep thinking about how to do things better.

“The communication possibilities of 2017 – the internet, satcom, apps – have to be integrated into our services, and, most

importantly, we need to understand our clients’ requirements.”

Lenting is keen to stress that along with the challenges come new opportunities.

“Structural integrity monitoring in the oil & gas industry is finally getting attention. Using smart tools to assist in lifetime extension programmes is both the big challenge and also the big opportunity. We are also working on assisting ro-ro operators with the challenges of WDL; developing communication and apps, and looking at how to handle big data.

“When you own a company such as Siri Marine, work and leisure are never far apart. Books and articles have been written about small and large family businesses. Continuity is important, but also transfer of knowledge and transfer of responsibility.

“We have a good team and I try to delegate responsibilities and tasks. It’s not always easy, because nobody does it like me and accepting that is one of the greatest challenges.

“As for our future plans: stay on the chosen path, which is that we want Siri Marine to be the leading expert in our niche market. We intend to concentrate on the maritime and oil & gas and renewables markets – with no deviation into civil or other non-maritime markets: it simply takes too much energy away from our main tasks.

“Personally, I will also keep working on building up the team effort and transferring tasks in order to have more time for networking, consultancy and other things that I like to do – which includes sailing.”

So there is life outside the workplace? Lenting replied: “My house and my office are in the same building, so work is never far away. But that has never been a problem for me. When I’m not working I like to play golf and go sailing on my 37ft ocean-going yacht. Only on the boat is there time to read a lot.

“And I watch TV and movies: *Game of Thrones* is something I stay home for!”

The first edition of the monograph *Bow Tug Operations with Azimuth Stern Drive Tugs* was published in 2006 – in response to a number of accidents involving bow-to-bow operations with ASD-tugs and discussions in some ports about how such tugs should be employed as bow tugs. What were the causes of these accidents? No proper training, unsuitable design of the ASD-tug for bow-to-bow operations, high ship's speeds, or were some other factors playing a role?

At the same time, the question arose about whether every ASD-tug is suitable for bow-to-bow operations, which seemed not to be the case.

Bow tug operations at a ship having headway are very risky, particularly in the case of ships with a very high speed on dead slow ahead – a situation increasingly seen with large container vessels. The problem starts with the approach towards the bow and then with the procedure of passing the towline. Because of the risks involved, tug masters that have to carry out bow tug operations, and particularly tug masters of ASD-tugs that have to operate bow-to-bow, should be well trained and aware of all the possible risks.

These issues are all dealt with in this book in an easy understandable way, resulting in a set of guidelines for safe operations at the bow.

In 2016 the issue is still relevant. This third edition has been updated for several crucial aspects that play an important role in bow-to-bow operations, such as skeg and stern design. As the skeg is such an important appendage for carrying out bow-to-bow operations at a ship having speed, more attention has been paid to skeg design and the effect of differences in skeg design on bow-to-bow operations.

A good stern design is also important for bow-to-bow operations, so stern design has been further dealt with here. Further subjects have been extended or renewed: proper radar use, bow approach manoeuvres, and new tug performance diagrams have been included. As bow-to-bow operations present high risks, additional attention has been paid to this particular issue.

Suggestions for some test trials using your own tugs have been added in order to be able to learn about its specific suitability for bow-to-bow operations, with images explaining the trials discussed – all again focusing on the safety of tugs, tug crews and attended ships.

Finally, since speed, which means speed through the water, is so critical for safe bow tug operations, renewed attention has been paid to this important aspect.



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Handle with care: the offshore challenge

Tom Guldner of US-based Marine Firefighting Inc looks at the specialised challenges facing crews of FiFi-classed OSVs and anchor-handlers when fighting fires on offshore oil & gas platforms and installations

There are many different types and designs of vessels involved in operations connected with the offshore oil & gas industry. From crew boats transporting relief personnel to and from work to larger anchor-handling vessels helping to secure or move a platform, each has its own speciality and each is designed to enable it to conduct those operations.

Many of these larger vessels will also be designated as a fire-fighting (FiFi) vessel, to enable them to carry out external fire-fighting duties – such as fighting a fire on another vessel, an offshore platform, a floating production, storage and offloading unit (FPSO), a floating storage and regasification unit (FSRU), or even land-based installations.

Fire-fighting capabilities further categorise these vessels as either Fire-fighting I (FiFi1), Fire-fighting II (FiFi2) or Fire-fighting III (FiFi3) vessels. There can be further sub-categories, such as Fire-fighting 1+, but for the purposes of this article, let us just leave it at those three main categories.

The world's classification societies set up guidelines for the way any type of vessel is to be designed and built. In reading the many detailed specifications needed by these OSVs to meet the requirements of their fire-fighting category, we find that the regulations are very specific as to equipment required, pumping capacities, number of pumps, number of fire monitors, amounts of foam, and other systems and equipment needed to be classed.

▼ *Giant fire monitors onboard OSVs pump out tonnes of water per second*



▲ *Fighting a fire on an offshore platform; inset, Tom Guldner of Marine Firefighting Inc*

Main photo: US Coast Guard



The one thing I have found conspicuously missing is any requirements for the training of the crews who will now be responsible for controlling a fire monitor which is throwing out tonnes of water every second.

I am aware that training for fighting a fire on your own vessel is already a licensing requirement. However, these massive pumps and monitors are a far cry from the minuscule 38mm hose throwing 113-151ltr/min. In training, it is important to ensure that crews are aware of the stability problems that even this small amount of water can present.

In contrast, on FiFi-classed boats, the monitors are each putting out more than 22 tonnes of water a minute. And that is just on the smaller capacity FiFi1 boats. With two or more monitors operating on each fire-fighting vessel we can very quickly be creating a stability issue on the vessel or platform being protected.

These massive quantities are needed in the sometimes severe offshore conditions. Large fires on the mammoth offshore installations require substantially more water and foam. However, indiscriminate use may cause more damage and financial distress than doing nothing. If there are lives at stake we will use whatever means necessary to protect and/or rescue any victims. But if it is strictly a fire-fighting operation, using too much water and capsizing or collapsing multi-million (or billion) dollar offshore installations can

be costlier than if the fire had destroyed the equipment but left the platform intact.

That is just the damage caused by the weight of all that water. The force of these massive firefighting streams is also capable of causing serious damage and injury. One example I use in mariner training programmes estimates the force of fire-fighting streams from a FiFi3 vessel as equal to the take-off thrust of a DC-9 jet aircraft.

In my 33-year fire-fighting career, I have overseen large fireboat streams which I directed to intentionally knock down a building's wall to gain access to the fire. Please, do not underestimate the power of these streams. Your personnel and property are in danger if the monitor operators of your vessels are not trained in its use and made aware of grave dangers involved in indiscriminate use. The costs to you might also include the cost of litigation if your streams damage property or injure people.

These fire-fighting assets are needed in the harsh maritime environment of offshore oil & gas installations. If used improperly they can become weapons rather than tools. With proper ongoing training, knowledge, and respect for these very powerful tools, the fire-fighting vessels can protect the lives and property of this important marine industry and keep the commercial operation operating.

‘Beach’ vessel to aid spill clean-up

Two Dutch companies have come up with an innovative solution to dealing with severe oil spills at sea.

Whether caused by tanker collision, blow-out or a leaking pipeline, spilled oil is very difficult to deal with at sea. As a result, most of the oil tends to end up on nearby beaches, where it is easy to recover – but at a tremendous cost in both money and time.

Stouco Consultance and Ubitec, under the name of Stubitec BV, have proposed an alternative that involves bringing the ‘beach’ to the spill.

A dedicated vessel – a product carrier with a sloping deck – is used as an artificial beach purpose-designed for collecting oil at a high rate.

Spilled oil in the open sea forms long streaks about 100m wide. The Stubitec solution has the oil recovery vessel positioned broadside to the wind and waves, which – aided by the sideward movement of the vessel – will force the oil on to the artificial beach. The oil is collected in a gully at the upward end of the deck, from where it is delivered into the vessel’s 10,000m³ cargo tanks.

First type approvals for BWM

The US Coast Guard’s (USCG’s) first type-approval certificates for ballast water management (BWM) systems have been issued to Scandinavian companies.

The Coast Guard Marine Safety Center issued the first certificate in early December 2016 to Norway’s Optimarin, when its Optimarin Ballast System (OBS) was reviewed and determined to meet the Coast Guard’s requirements. This follows IMO approval, and certification of OBS from several classification societies, including DNV GL, Lloyd’s, Bureau Veritas, MLIT Japan, and the American Bureau of Shipping, according to Optimarin.

“While this is a significant milestone, it is the first of multiple system approvals that are needed to mitigate the threat of harmful aquatic invasive species,” said Rear Admiral Paul Thomas, USCG assistant commandant for prevention policy. “One size does not fit all, so we will continue to evaluate other systems submitted by multiple manufacturers with the intent to provide options that meet shipping’s varying needs.”

The second and third certificates were issued at the end of last year to Norway-based OceanSaver AS and Sweden’s Alfa Laval after a detailed review of each manufacturer’s type approval application.

The USCG based its type approval of Alfa

Laval’s PureBallast 3 system on ‘cell tracker’ testing conducted at DHI in Denmark. Outside the US, where PureBallast has been type approved using the ‘most probable number’ (MPN) method, the USCG-certified system will operate in IMO mode and be able to treat water with UV transmittance as low as 42 per cent.

Anders Lindmark, general manager, Business Centre PureBallast, said: “With both USCG and IMO type approvals backing up the market’s best biological disinfection performance, ship owners can be truly confident in their choice of PureBallast. Alfa Laval is proud to be at the forefront of ballast water treatment worldwide.”

As well as meeting the demands of the USCG, the PureBallast 3 family is prepared for the revised IMO G8 guidelines determined by the recent MEPC70 meeting. Pending a few final tests of biological efficacy, a completed application for an updated G8 certificate is expected in the first half of 2017.

Alfa Laval is prepared for the increased demand triggered by the ratification of the IMO Ballast Water Management Convention.

Lindmark added: “Alfa Laval can provide not only technology with the relevant type approvals, but also a complete range of vessel-adapted solutions with high efficiency and a well-developed service offering.”



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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.

TUG STABILITY

A Practical Guide to Safe Operations



Henk Hensen and Markus van der Laan

ABR

"The authors have produced an original and valuable training guide which will increase the knowledge of tug stability within the industry, and so enhance the safety of tugs, tug crew and the ships they support. It is hoped that this increased knowledge will indeed enhance safety and help to protect the marine environment."

Ashok Mahapatra *Director, IMO Maritime Safety Division*

"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*

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Partnership boosts safety in Arctic regions

Aimed at strengthening education, training and research in Arctic maritime safety and security, Kongsberg maritime simulators are enabling a new partnership between Nord University, Bodin and Lofoten Maritime Vocational Schools, and the Nordland county administration in Norway. The objective is to increase safety and contribute to improved competence in maritime search and rescue (SAR) and oil spill response operations in Arctic regions.

The institutions, which form the new Maritime Campus North partnership, will collaborate in maritime education, course offerings, innovation and research. The target groups are government and industry SAR organisations, oil spill response organisations, ship owners and the oil & gas industry.

Central to the co-operation is the development of a common technical platform based on Kongsberg simulators. Kongsberg won the tenders issued by Maritime Campus North and will contribute with upgrades and extensions of the simulator capacity at the three training institutions. The simulator systems at all three will be integrated and used to form joint nautical and emergency management training across all locations.

Nord University professor, Odd Jarl Borch, said: "The expansion of new simulator capabilities in the region meets demand for advanced training for government institutions, ship owners, oil & gas companies and other organisations operating, exploring



▲ A simulated Arctic training scenario from the simulator's visual system

and developing polar waters. Of special importance is the growing interest from the cruise and petroleum industries for the Arctic regions and the implementation of the Polar Code.

"The Nord University is now initiating a new circumpolar education and research network on Arctic safety and security, including 20 universities under the University of the Arctic umbrella. This will give us an excellent academic platform for further international co-operation."

Hull protection is a cost saving

Classification society Lloyd's Register has renewed its certification of the Ecospeed hard coating as an approved abrasion resistant hull protection system for vessels operating in polar waters.

Boud Van Rompay, CEO of Ecospeed manufacturer Subsea Industries, said: "The number one consideration in a hull coating for ice-going vessels and icebreakers is the ability of the coating to protect the hull in the harshest marine environment there is. Only a few types of coatings are capable of providing this protection. Typically, they are certified for their ice-abrasion resistance qualities by the classification societies."

Lloyd's Register said that if the coating is applied to the ice belt – the bow area above the waterline most prone to mechanical damage when navigating ice – on ships intending to navigate in first year ice conditions, and if the coating is maintained in good condition during service, then the steel plate thickness of the ice belt can be reduced by up to 1mm. This provides a considerable saving for shipowners planning newbuilds for Arctic operations and also reduces the overall weight of the vessel.

Workboat launched

Russia's Onezhsky Shipbuilding and Ship Repair Yard has launched an Ice Class workboat, built for the state enterprise Rosmorport. It is to be deployed at the seaport of Arkhangelsk.

Classified by the Russian Maritime Register of Shipping, the vessel is 22.1m in length, breadth including fender 6.7m, draft 1.8m, with a speed of 12 knots. The boat is intended for operation in river mouths, coastal areas and port waters.

Career change for ice-breaking tug



◀ The luxury motor yacht **Legend** will take cruise passengers to polar regions and other remote areas

An ice-breaking salvage tug has undergone a three-year conversion to emerge as a luxury explorer yacht capable of reaching the most remote regions of the globe.

Legend (formerly **Giant**) was launched in late 2016, after its conversion at the Icon Shipyard in the Netherlands. Originally built to the highest specifications by the IHC Holland shipyard, it is a fully classified Class I ice-breaking vessel, certified by Lloyd's Register.

Its stern was extended by 3.6m to measure 77.4m, and it is equipped with an ultra-modern stabilisation system that results in smoother cruising.

The rebuild was managed by Jan Verkerk of Verkerk Yachting Projects, with engineering by Diana Yacht Design.

Legend has accommodation for up to 30 guests in 15 suites, plus up to 25 crew. The vessel also boasts a gym, spa, cinema and entertainment system, medical suite, swimming pool and helicopter landing pad.

TUGNOLOGY

'17



World Trade Centre, Rotterdam

23-24 May 2017

The two-day technical conference on the design, construction, operation and economics of tugs, organised by the same team as the highly successful *ITS Conventions*



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TUGNOLOGY '17



The *Tugology* 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 *Tugology* 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 has now completed the process of choosing the papers that will make the final programme. As with previous *Tugology* events, committee members were presented with a large number of submissions. The result of these deliberations can be seen in the table on the right showing the papers to be chosen and who will be presenting them. A more detailed synopsis for each paper is available on the Conference Programme pages of the *Tugology* '17 section at www.tugandosv.com.

Focusing on tugs and tugs alone, *Tugology* is very much a technical conference which concentrates on the latest advances and operational best practice in the tug world. The papers reflect the experience, research and knowledge of some of the leaders of our industry, and the emphasis at the event will be 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.

As well as providing an insight into the latest technological advances and the chance to discuss these with leading industry experts, *Tugology* provides an unrivalled opportunity for networking, whether this involves meeting up with old friends or making new ones.

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

TABLETOP EXHIBITS

The tabletop display area will be located in the Shipping Hall and Exchange Hall of the World Trade Centre. There are a limited number of tabletop display spaces available on the conference level of the convention centre. This area is in between the conference room and the delegate 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 www.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

Tugology '17 will take place at the 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 *Tugology* '17 section of www.tugandosv.com and click on the 'Accommodation' page.



PAPERS AND SPEAKERS

Title	Author/Speaker	Company	Country
Official Opening and Inaugural	René J de Vries Harbour Master	Port of Rotterdam Authority	The Netherlands
The Advantages of a Low-emission Hybrid E-tug Driven by a Revolutionary Podded Drive with Flexible and Green Diesel-electric Configuration	Haijo van der Werf Walter van der Pennen	Offshore Ship Designers BV RH Marine Netherlands BV	The Netherlands
Your Oil is Talking - But Are You Listening?	Kim Kjaer Steffen D Nyman	CC Jensen AS	Denmark
CellSwap - Battery Re-coring to Reduce the Cost, System Size and Environmental Footprint of Hybrid and Electric Vessels	Brent Perry	PBES	Canada
The Introduction into Service of New Propulsion Solutions for Tugboat Applications	Dr Elias Boletis	Wärtsilä Ship Power	The Netherlands
Future-oriented Developments in Azimuth Thruster Technologies	Roland Schwandt	Schottel GmbH	Germany
Remote Engine Monitoring - Bridging the Technology Gap Between Tugboat Operations and Other Industries	Dr Matthias Schlipf Mark Watson	MAN Diesel & Turbo AS	Germany
Enhancing Tug Safety Through Internationally Harmonised Stability Regulations	Gijsbert de Jong	Bureau Veritas	The Netherlands
Next Generation Performance-linked Tug Stability	Govinder Singh Chopra	SeaTech Solutions International (S) Pte Ltd	Singapore
Using CFD in the Design of Modern Ship Handling Tugs at Damen	Joost Schot	Damen Shipyards	The Netherlands
Stern flow stabilization to improve directional stability of tugs with low length-to-beam ratios	Barton Stockdill	Robert Allan Ltd	Canada
Increased Safety and Reduced Lifecycle Costs with Electronic Diesel Engine Management	Cyrill Halbauer	MTU Friedrichshafen GmbH	Germany
A World-first Configuration - a Dual Fuel Engine Direct Coupled with a FPP Z-Peller on a Harbour Tug	Hideyuki Takahashi	Niigata Power Systems Company Ltd	Japan
Staying Green While Keeping Lean	Jonas Nyberg	Caterpillar Propulsion International Pte Ltd	Singapore

Detailed synopses of all the papers can be found in the *Tugology* section online at www.tugandosv.com

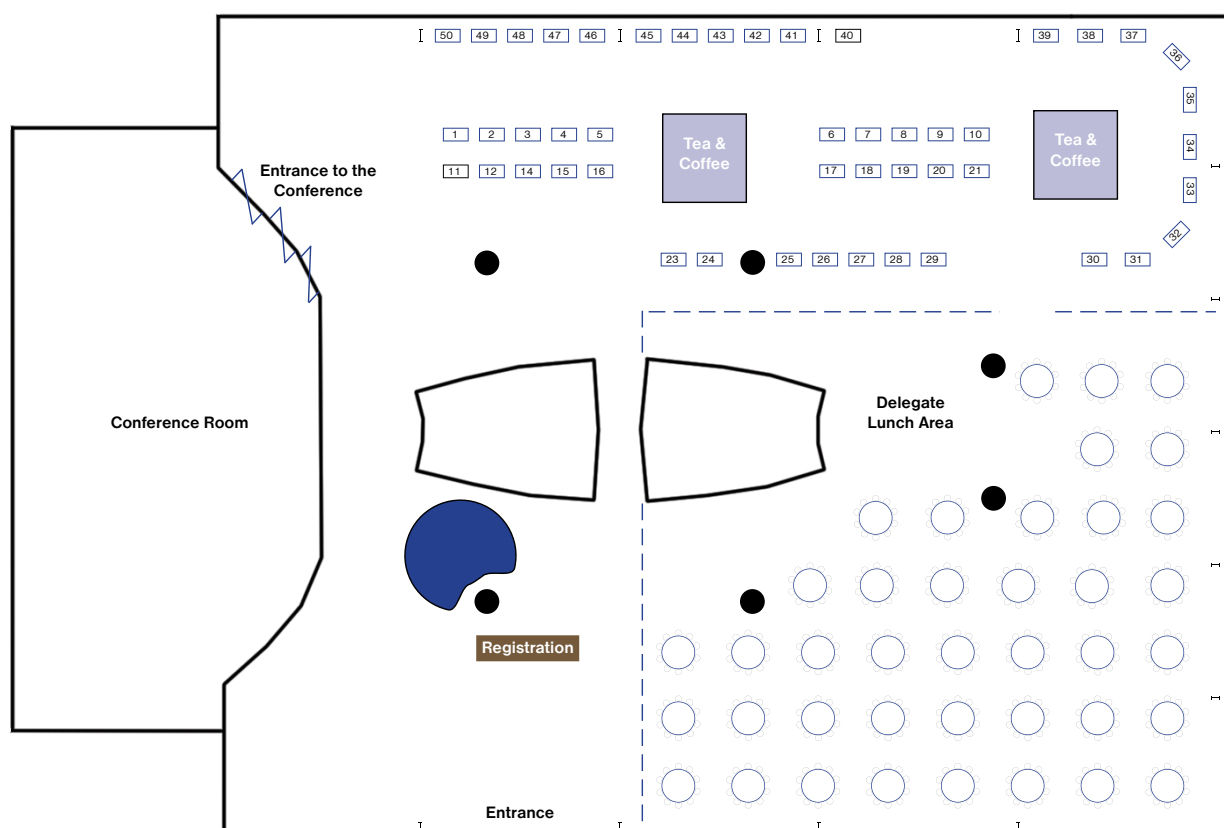


23-24 May 2017, World Trade Centre, Rotterdam



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 Tugology and ITS conferences are the most highly regarded in the marine industry."

Paul Jamer, Breakwater Group, Canada

"Congratulations to the organisation team of Tugology 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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Report predicts \$1bn engine market growth by 2020

The marine engines market will be worth US\$10.1bn by 2020, compared with US\$9.1bn in 2015, according to global market research company MarketsandMarkets. The increase is attributed to growth in international seaborne trade, stringent environmental regulations aimed at reducing harmful gas emissions, the advent of new technologies, and growth in the shipbuilding industry.

MarketsandMarkets broadly segments the marine engines market on the basis of application, type of propulsion mechanism, power capacity, fuel and location. The study covers more than 25 vessel types, including general cargo vessels, tankers and tugs.

To provide an in-depth understanding of the competitive landscape, the report includes profiles of some of the leading players in the marine engines market including Caterpillar and Mercury Marine (US), GM Powertrain (Italy), Rolls-Royce (UK), Wärtsilä Corporation (Finland), and others.

Among the three major types of propulsion systems, diesel-electric engines are considered to be the best alternative when compared to other conventional propulsion systems, such as two-stroke engines. This segment is estimated to grow at a higher

rate when compared to two-stroke and four-stroke propulsion systems, due to stringent environmental norms to reduce harmful gas emissions.

The report also segments the marine engines market on the basis of fuel used. Heavy fuel oil (HFO)-based marine engines have been widely accepted in the past few years, but LNG-based marine engines are at an emerging stage. Increasing emission control regulations and recent revisions in IMO standards have led to an increasing use of low-sulphur oils replacing the use of HFO. However, most marine engines use HFO as it is a conventional fluid and is more economical than other marine engine fuels. In future, use of LNG and its hybrid fuel is expected to grow faster than other fuels during the forecast period.

The marine engines market has been analysed with respect to five regions: North America, South America, Europe, Asia-Pacific, and the Middle East and Africa. Asia-Pacific will continue to dominate the market with growth in the shipbuilding market in China, Japan, South Korea and India.

The full report can be ordered, and a free PDF brochure downloaded at: <http://www.marketsandmarkets.com>

Collaboration on marine propulsion

ZF Friedrichshafen and Rolls-Royce Power Systems will be collaborating even more closely on marine propulsion systems in future. A collaboration agreement to that effect has been signed by Wilhelm Rehm, of ZF Friedrichshafen's management board, and Dr Ulrich Dohle, CEO of Rolls-Royce Power Systems.

Precisely matched combinations of MTU engines from Rolls-Royce Power Systems and marine transmissions from ZF have long been the preferred choice on many commercial vessels. Now, the two companies will be exchanging information and knowledge relating to the development of new technologies and products more intensively than ever.

Dohle said: "Through the even closer collaboration with our long-standing partner ZF, we will further expand our systems expertise and, with our MTU engines, will be able to provide our customers with optimally matched and innovative propulsion solutions."

"We too see excellent opportunities resulting from the expansion of our two product portfolios," added Rehm, ZF board member responsible for the industrial technology division. "Together with MTU, we will develop pioneering technologies and supply the market with system solutions."



▲ ZF's Wilhelm Rehm and Dr Ulrich Dohle, of Rolls-Royce Power Systems, sign the collaboration agreement

Details of the collaboration will be specified in subsequent talks. The partners expect to achieve the greatest synergy effects in three areas: each company intends to extend its respective product range with the addition of jointly developed fully integrated systems and to collaborate closely in R&D and applications development. The ultimate aim is to provide optimally matched systems and new solutions for future marine propulsion systems, such as hybrid propulsion systems or digitally networked solutions. The partners also intend to work together in the fields of marketing, sales and service.

New CPP system 'highly effective'

In development for several years, the Bruntons controllable pitch propeller (CPP) system has now been launched and will be available to almost all motor-driven vessels with engines up to 2,000hp.

Available with manual control, the system can also be managed by a sophisticated computer controlled system capable of automatically maintaining exactly the right propeller pitch for the vessel's operating conditions and the crew's requirements. They will be able to select any number of variations between maximum power and maximum fuel efficiency.

The UK-based company's engineers have also worked hard to ensure that the new CPP system will be highly effective at maintaining the correct pitch for hybrid or purely electrically driven vessels. The system will monitor and automatically adjust not only propulsion efficiency, but also battery use optimisation and the maximising of electricity regeneration.

Other CPP propellers can suffer from excessive blade wear and high spindle loads. With the Bruntons system, both of these issues have been addressed and a new blade retention system and unique twin cam design make these problems of the past.

Improved propeller design launched

Finland-based Steerprop has launched a new generation of ducted azimuth propellers with an upgraded design and improved technical features.

The new generation of Steerprop propellers offers agility and endurance in a compact package, with lighter construction, cast housing and enhanced robustness of the lower section. The design focuses on maximal hydrodynamic optimisation for improved free-running efficiency and fuel economy, with a more slender body, smaller hub ratio and new high performance HJ4-nozzle design.

The HJ4-nozzle guarantees superior bollard pull and allows optimal nozzle positioning. Traditional anodes have been replaced with a new, non-flow-disturbing shape cast anode.

The new propellers are available with both electric and hydraulic steering, with direct diesel drive, electric motor drive and option for hybrid drive.

Efficiency game-changer unveiled

The underlying issue in fuel savings is the efficiency of a ship's propulsion system. In an ideal world, every bit of energy put into the shaft would be used for driving the ship forward. In reality, only about 50-70 per cent can be utilised due to various types of kinetic losses.

One area of concern is rotational loss, a consequence of the rotating propeller pushing against the water and thus putting the water into a spin. Rotational loss consumes roughly 5 per cent of the energy that goes into the system.

Since its introduction three decades ago, a favoured solution to reduce rotational loss has been to place a cap with fins aft of the propeller hub. The cap reduces the swirl, while the fins effectively catch and absorb the force of the rotating water, eliminating the vortex and feeding the energy back into the propulsion drive train.

Wärtsilä's line of such devices, the Wärtsilä EnergoProFin, has proven to be a highly attractive add-on as it boosts propulsive efficiency by a fairly consistent 2 per cent at a reasonably low cost. However, this type of solution has historically been limited to use on fixed pitch propellers (FPPs), where the pitch angle of the blades never changes.

The pitch for FPPs is optimised for energy efficiency in only one operating

condition – maximum bollard pull in the case of tugs. Other types of ships, notably ferries and fishing vessels, use controllable pitch propellers (CPPs), where an actuating mechanism inside the hub can change the pitch depending on the operating needs.

CPPs, with all the mechanics fitted within them, have relatively larger hubs compared to FPPs. The resulting higher hub ratio means they can produce a more intense swirl. Additionally, when a cap and fin device is used, the angle of the fins is designed to operate with a specific pitch angle.

When the pitch is changed on a CPP, the angles of the fins and the blades no longer match. For these reasons, the prevailing view in the industry has been that recapturing the rotational loss in a CPP by using a cap and fin device simply would not work.

That view has now changed – Wärtsilä's services hydrodynamic and mechanical design engineering team has developed a new type of Wärtsilä EnergoProFin (pictured above right) specifically for CPPs that overcomes the above challenges. It is already being used on two vessels.

The catalyst for this breakthrough was an EU-funded research project entitled GRIP (Green Retrofitting through Improved Propulsion), which was carried out from 2011 to 2015. Under its auspices, Wärtsilä and

nine other European companies combined forces to overcome some of the problems faced when attempting to increase propulsion efficiency. Armed with the deeper knowledge of hydrodynamic principles gleaned from GRIP, along with state-of-the-art computational fluid dynamics (CFD), the Wärtsilä team was able to use its experience in producing the Wärtsilä EnergoProFin to develop a solution for CPPs. The result, following rigorous testing, is a new type of Wärtsilä EnergoProFin that is compatible with a CPP. Its development marks a real achievement for the teams involved – and serves as a testament to the efficacy of joint industry research projects such as GRIP, and to the power of recent advances in CFD.

The more fundamental significance of this device, however, will be in the sizable energy savings that it can bring to the shipping industry as a whole, and in the benefits to individual operators looking for practical ways to minimise costs and emissions.



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LNG-fuelled icebreaker Polaris

Icebreaker world first in LNG

The world's first icebreaker to run on LNG fuel has entered service. Finland's newest icebreaker, *Polaris*, began operations in November 2016 – an early 100th birthday present to itself as 2017 sees the country mark the centenary of its independence from Russia.

Built by Arctech Helsinki Shipyard, *Polaris* is owned and operated by state-owned icebreaking and offshore services company Arctia under a contract with the Finnish Transport Agency.

The vessel's main task is icebreaking on the Baltic Sea, assisting merchant vessels to and from Baltic Sea ports during winter months. In addition, *Polaris* can perform oil spill response operations, emergency towing and rescue operations on the open sea throughout the year.

Polaris's icebreaking capacity is 1.2m at a speed of 6 knots thanks to its special hull form and propulsion arrangements which also minimise ice resistance. When used for helping to clear up oil spills, *Polaris* can collect 1,015m³ of oil at a rate of 200m³/hour even in harsh weather and ice conditions.

The 110m LOA vessel has a beam of 24m

and an operational draft of 8m. Propulsion comes from two 6,000kW, two 4,500kW and a single 1,280kW dual-fuel engines, all supplied by Wärtsilä. LNG fuel comes from two 400m³ onboard tanks, while it can also run on ultra-low-sulphur diesel.

These characteristics give *Polaris* several other 'firsts' – its total output of more than 22MW makes it Finland's most powerful icebreaker, while its ability to run on both LNG and ultra-low-sulphur diesel make it the world's most environmentally friendly diesel electric icebreaker as well as the first to operate that combination.

Tero Vauraste, president and CEO of Arctia, said: "*Polaris* represents a new generation of icebreakers. Arctia supports the proposed ban on the use of heavy fuel oil in the Arctic.

"We believe that the use of LNG and the vessel's built-in oil recovery system are the future of cost effective multipurpose icebreakers. We are proud to be the owner of the world's most environmentally friendly icebreaker, which will safeguard our customers' winter transport needs in the Baltic Sea."

Coalition creates its top team to drive LNG potential

The multi-sector coalition SEA\LNG has announced its board of directors, which is representative of the coalition's membership. This followed the announcement that Peter Keller, executive vice president of Tote Inc, will chair the coalition.

The board of directors is responsible for the strategic development and oversight of SEA\LNG's vision, mission, objectives and activities, directed towards the accelerated use of LNG as a marine fuel.

It will play a critical role in representing the membership in key decision making and promoting SEA\LNG initiatives.

Alongside Peter Keller on the board are: Michael Chia, managing director (technology), Keppel Offshore & Marine; Tjerk Johan de Vries, executive vice president and regional director, DNV GL; Timo Koponen, vice president, flow and gas solutions, Wärtsilä; Tetsuya Mizuno, deputy general manager, energy business division, Mitsubishi; Svein Steimler, executive vice president and chief operating officer, NYK Group Europe; Tom Strang, senior vice president, Carnival Corporation; Yvonne van der Laan, director of process industry and bulk goods, Port of Rotterdam; Laurant Wetemans, general manager, downstream LNG, Shell.

Peter Keller said: "To fully realise the potential of LNG as a marine fuel, it is vital that we work together, across the LNG value chain."

Role of LNG in moves to reduce greenhouse gas emissions challenged

LNG is not a panacea to reducing global greenhouse gas (GHG) emissions and its increasing use as a marine fuel could be worse for the environment than burning heavy fuel oil, says a bunker expert.

In stark contrast to media reports claiming that the use of LNG as a marine fuel can reduce the industry's CO₂ emissions by 75 per cent, Ian Adams, the former CEO of the



International Bunker Industry Association, who is often called upon as an expert witness in bunker dispute cases, argues that: "While it is well documented that LNG

◀ Ian Adams

is an excellent solution for reducing SO_x and NO_x emissions, I am dismayed to see it being promoted as a solution for reducing GHGs."

Adams, a Fellow of the Institute of Marine Engineering, Science & Technology, who now heads the Association of Bulk Terminal Operators, said: "The energy content of LNG is slightly more than half that of fuel oil, so to extract the same energy output when consuming LNG rather than fuel oil it is necessary to consume almost twice the volume of LNG. While the chemical make-up of LNG will admittedly result in a lower CO₂ emission, it is certainly not a large magnitude; but there is another important consideration: LNG is principally methane. With methane recognised as a GHG and widely considered to be 25 times more harmful than CO₂, it would only require a

four per cent slip through the supply chain to equal the CO₂ emissions from the industry's current consumption of heavy fuel oil.

"If we, rather generously, accept that burning LNG will reduce CO₂ emissions by 20 per cent over the current level, it would require less than one per cent slip for there to be no gain from a GHG perspective. Taken over the entire supply chain, one per cent is not an unrealistic slip. Unfortunately, the LNG myth has progressed unchecked with very few challenging those lobbying for a wider take up of LNG."

Adams' comments followed the decision by the IMO to adopt mandatory requirements for ships of 5,000gt and above to collect consumption data for each type of fuel oil they use in order to provide information for future decisions on emissions.

Innovative vessel design moves forward

Japan's classification society, ClassNK, has issued approval in principle (AIP) for a 7,500m³ LNG bunkering vessel designed by South Korea's Hanjin Heavy Industries & Construction. The revolutionary design for ship-to-ship bunkering is the result of research carried out by the two organisations to improve the efficiency of bunkering vessels.

The choice of LNG as a ship fuel is increasingly prevalent and is expected to become a primary source of fuel in the near future. However, LNG-fuelled vessels are

currently largely dependent on existing infrastructure comprised mainly of fixed bunker locations, potentially limiting their operations. Recognising the greater flexibility that LNG bunker vessels could provide through ship-to-ship bunkering, Hanjin Heavy Industries & Construction and ClassNK worked together to improve the viability of this technology.

The innovative design employs type-C bilobe tanks, improving on cargo capacity to allow for greater efficiency and productivity. The AIP was granted after confirming the

design complies with ClassNK's Rules and Guidance for the Survey and Construction of Steel Ships.

This AIP allows the design to be considered for further individual projects, where tests on the hull structure scantling and direct stress analyses will be carried out to ensure the structural integrity of each specific design is in line with class rules and the International Code for the construction and equipment of ships carrying liquefied gases in bulk (IGC Code).

Takashi Nishibashi, ClassNK's country manager for Korea, said: "Hanjin Heavy Industries & Construction and ClassNK have always enjoyed close co-operation, and this design is just one of the fruits of our relationship."

"We hope this AIP will help pave the way for a new generation of highly efficient LNG bunkering vessels."

Hanjin technical director Cha-Soo Lee said: "When we are commissioned to develop an LNG bunkering vessel concept by clients we face a much wider array of challenges, such as a compact ship's dimensions, robust hull structure, more cargo capacity, simple operation and lower ship's price, etc. We are happy to find the best compromise between economic and technical issues through this joint research with ClassNK."

Code on gas fuel now in force

The International Code for Ships using Gases and other Low Flashpoint Fuels (IGF Code) took effect on 1 January, providing a clear legislative framework for vessels to install LNG fuel systems. Specific provisions for vessels to use other fuels with flashpoint below 60 degrees C have yet to be developed.

The IGF Code applies to all vessels above 500gt that install low flashpoint fuel systems. It has been made mandatory through SOLAS.

Vessels planning to install fuel systems for other types of low flashpoint fuels are required to demonstrate compliance with the functional requirements of the IGF Code through alternative design. Work on developing regulations for low flashpoint fuels other than gas is ongoing.

Previously, ships that have LNG or other low flashpoint fuel systems needed to obtain permits from each port authority or the maritime administration in the countries where they called.

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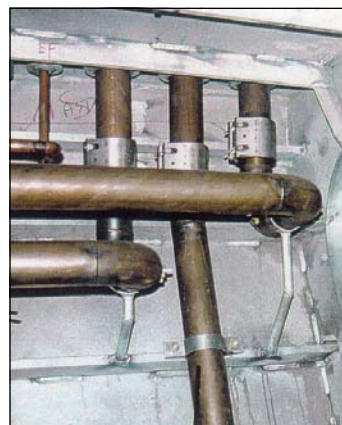
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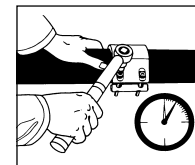


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In the Spotlight

On a regular basis, we put one ITS Club member under the spotlight. This time, we talk to Arie Nygh, director of SeaWays Consultants and founder president of the International Tugmasters Association



How long have you been an ITS Club member?
Since 2005.

How many ITS conventions have you attended?

My first was Rotterdam in 2006 and I have attended every ITS and Tugology conference since. For me, it is one of the most important business and educational activities we at SeaWays undertake.

What is your most memorable moment from an ITS convention?

From a spectacle point of view, the tug parade in Rotterdam 2006; I believe it is in the *Guinness Book of Records* for the most tugs in one place. From an interest point of view, when at the same conference ITS chairman, Mike Allen, interviewed on stage Smit Towage's then CEO Ben Vree. Ben spoke of the future where there would only be three or so major players in the towage industry – and guess what!

Which one person has so far had the biggest influence on you during your career?

To single out one person is hard, as I have been very fortunate to have had many quality individuals mentor and support me; such as my wife Susanne who was once my boss, Alan Loynd who convinced me to believe in what I had to offer industry and Tony Cousins who taught me the value of genuine relationships in business. However, if I had to choose one, it would be Capt Henk Hensen. When I was a struggling young tugmaster, I would communicate with Henk via email for advice. In 2006, again at ITS Rotterdam, I actually got to

meet him. For me it was like being in the presence of God. We became very good friends and he has mentored me ever since. He has personally taken me to meet the likes of the hierarchy of Damen tugs and Ton Kooren at Kotug, and nominated me to become a Fellow of the Nautical Institute. He agreed to be the founding Patron of the International Tugmasters Association. While we communicate almost weekly, I travel to Holland once a year to visit Henk to discuss the industry and how we can work to make it safer. In the dark times when attempting to change the mind-set of alpha males in a traditional industry such as ours gets too confronting, he is the person I turn to for some Dutch frankness, always tempered with just enough succour and solace.

What is the most important piece of advice you would give to anyone entering the industry today?

Train to a much higher level than you intend to operate at, then you have somewhere to go within your competence and confidence when things become overly challenging. You will never stop learning in our extremely complex and ever evolving industry. Don't become overly confident or believe your press releases, as when we get it wrong when operational, very quickly things get broken and people get hurt.

If you could invent one thing that would make life in your segment of the maritime world easier, what would it be?

A way of immediately identifying and registering fatigue when operational.

What would you like to be remembered for within the industry?

Giving voice to a tugmaster's challenges in operating high performance omnidirectional tugs with ever faster and larger ships. As someone who communicates our concerns pertaining to safe operations, fatigue and the myriad other operational aspects in a balanced manner that, while perhaps challenging to some, is delivered in an educating consolatory fashion not linked to industrial relationship. I believe we have been heard, understood and our views respected by managers, third party stakeholders and authorities. It was with this in mind that I conceptualised and founded the International Tugmasters Association and became a voluntary ambassador for CHIRP. It is why I still endeavour to write articles for industry and present papers at conferences, rather than pontificating, and try to find simple and economical solutions in all my projects.

The ITS Club

ITS Club membership has many benefits, including a discount on registration for ITS conventions and Tugology conferences, a discount on a wide range of Tug & OSV titles, and an airmail subscription to the magazine, ensuring that you never miss a copy. To become a member, go to www.tugandosv.com

Investing in training 'vital to modernisation of industry'

Training acts not only as a career enhancer, but also plays an essential role in the modernisation of the shipping industry as a whole, said Esben Poulsson, chairman of the International Chamber of Shipping (ICS) in his keynote speech at the annual Crew Connect Global Conference.

He said: "The future sustainability of the industry requires an evolutionary response to the training and retention of seafarers. We need to do more than simply respond to changing needs, we must learn to anticipate them and thereby control the development of the industry."

In an uncertain time for the global economy

and world trade, and therefore the shipping industry, he pointed out the inevitability that structural change will follow along with changes to operations and trading patterns.

Poulsson told the conference, held in Manila: "There is always a danger in these circumstances that investment in training can be a victim. Now, perhaps as never before, companies must have an eye to the future and consider that significant growth in shipping could return within the next five years."

"Employers must recognise that decisions made in these difficult times should not inhibit the future sustainability of the industry. Investment in training and recruitment is

an essential part of assuring good industrial health. We are experiencing a transition into a 'smart' era, which will feature integrated technology and automated functions and systems. Certainly, there will be a continuous challenge to ensure that seafarers' skills reflect their changing roles on board ship. Seafarers may no longer be required so much to use machines, but rather to collaborate with them."

In conclusion, Poulsson warned conference delegates: "Changes may well be rapid and a failure to respond with equal speed may leave training needs assessment trailing in their wake."

Industry-related distance learning available

Lloyd's Maritime Academy, the UK-based international maritime training and education provider, is now offering industry-related distance learning courses in marine salvage law and marine accident investigation.

A course leading to a certificate in marine salvage law starts on 15 February, and provides an essential understanding of the complexities of international salvage law for professionals who are involved with, or who may become involved with, a maritime casualty. The 12-week professional development programme provides an introduction to the history of salvage law, reviews salvage principles and definitions, examines salvage convention, explains Lloyd's Open Form and the Special Compensation P&I Club Clause. It also analyses other key contracts, conventions and guidelines which are essential knowledge for anyone involved in marine salvage, whether they be a seafarer, salvor, ship owner, cargo owner, underwriter, P&I Club case handler,

broker average adjuster or maritime solicitor.

Course director, Archie Bishop, is a solicitor both in England and Hong Kong, an examiner in Admiralty and a former senior partner of Holman Fenwick Willan with whom he is now a consultant. Trained aboard *HMS Worcester*, he served seven years as a deck officer with the P&O Line.

The academy, which has around 3,600 students from 75-plus countries enrolled each year, also offers an all-encompassing marine accident training course leading to a diploma in marine accident investigation.

Starting on 7 March, this professional development diploma provides a solid foundation for effective marine accident investigation to actively help with the prevention of future incidents. It uses a 'no-fault' and 'non-regulatory' approach to discover root causes, enabling students to complete meaningful and detailed reports.

Ideal for people working in accident investigation and prevention and security enforcement in the maritime industry the

aim of the course, which is again delivered by distance learning, is to provide students with the expertise required to conduct thorough investigations which could promote improved safety and be of value to themselves, their employer and the maritime industry as a whole.

The course is equally applicable to those responsible for safety standards within their role or organisation, as to those involved in the conducting of or responding to investigations and their outcomes. The course director is John Astbury CBE, CEO of Intermapolicy Ltd, who is an independent maritime policy adviser and formerly the chief executive of the UK's Maritime and Coastguard Agency.

Further information about the salvage law course, including fees and how to apply, is available at www.lloydsmaritimeacademy.com/FLR2792TUGOSV. Similar information about the marine accident investigation course is at www.lloydsmaritimeacademy.com/FLR2793TUGOSV

Canada commits to marine safety

Canada is to spend C\$1.5bn over the next five years on a national oceans protection plan that includes creating a world-leading marine safety system to improve responsible shipping and products.

Specific pledges in the plan unveiled by Prime Minister Justin Trudeau in November include improved marine traffic and navigation information – including hydrography and charting – as well as additional resources for the Canadian Coast Guard such as new rescue stations, new towing capacity and new communications equipment.

With the longest coastline in the world, Canada is looking to ensure that its coasts are protected in a modern and advanced way that ensures environmental sustainability, safe and responsible commercial use, and collaboration with coastal and indigenous communities.

Trudeau said: "Canada's economy, environment and history are inextricably linked to our country's coastal regions.

"The Can\$1.5bn Oceans Protection Plan ... will make Canada a world-leader in marine safety and takes a powerful step toward co-management of our coasts with indigenous and coastal communities, together making sure they remain healthy, clean, and safe for generations to come."

New role for in-motion resources

Mark Woodhead has started in the newly created position of senior vice president for training and content for in-motion satellite TV and communications systems provider KVH.

Since 1 January, Woodhead has been responsible for directing KVH's maritime crew welfare, safety and productivity services, which include Videotel maritime training packages – currently in use on more than 12,000 vessels worldwide – as well as numerous entertainment and news brands. The role brings KVH's maritime training, news and entertainment under one umbrella for the first time.

Woodhead said: "The shipping industry is in an unprecedented period of change. As technological

advances continue to offer better communications options, KVH is committed to providing competitive solutions for our maritime clients, and making the transition both smooth and seamless as we can."



an unprecedented period of change. As technological

◀ New training role, senior vice president Mark Woodhead

Provider reaching out for partners

International Training Academies, the Norway-headquartered cloud-based portal for training in the oil & gas and maritime sector, is seeking agents or co-operating partners in the Philippines, Singapore, US, Greece, Italy, Croatia, UK, Brazil, India, Indonesia, Poland and Germany.

The online portal www.ita247.com includes booking possibilities from training academies around the world, on board/offsite training on vessels and e-learning that can be custom made according to the needs and priorities of individual customers.

Middle East college offers full range of courses

Founded in 2005, International Maritime College Oman (IMCO) is the only educational institution in the Gulf region to offer a complete package of courses for navigation, logistics and the port-based processing industry.

Based in the port city of Sohar in the north

of Oman, IMCO also offers an extensive range of short courses and other training programmes for those looking to ensure they stay up to date with the latest developments and practices in the fast-changing worlds of ports, shipping, logistics, oil & gas and petrochemicals.

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