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SRN

Ship Repair Newsletter



The *Louise Knutsen* in Spain's Metalships

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VIEWPOINT:

The International Association of Classifications Societies (IACS) has received the final report issued in Japan by the Committee on Large Container Ship Safety (CLCSS), which concludes that the MOL Comfort break up possibly occurred because the sea loads exceeded the hull girder ultimate strength at the time of the casualty.

IACS will carefully study the report as well as the recommendations formulated in the document, and will make public the results of this examination. As a matter of fact, IACS had launched at the beginning of 2014 an expert group on structural safety of container ships, which carried out a post MOL Comfort review, also taking into account a number of past casualties.

This work has resulted in the development of two new IACS Unified Requirements (UR's)

- UR S11A which is a longitudinal strength standard for Containerships
- URS 34 dealing with functional requirements for direct analysis by Finite Element

Method of Container ships, including a set of loading conditions. It is worthwhile commenting that this on-going work had already taken into account the CLCSS recommendations:

- these UR's do take into account the effect of lateral loads on bi-axial buckling of stiffened panels (a phenomenon preceding loss of ultimate strength as correctly indicated in the report) and whipping on vertical bending strength.
- with respect to the third recommendation of the report (representation of technical backgrounds), IACS can also confirm that Class Societies rules already consider the strength of the ship under specified operating and environmental conditions corresponding to its entire life.

These two important UR's will be finalised in the coming months. As a matter of clarity it should be understood that IACS Unified Requirements are minimum common technical requirements to be incorporated into the rules of each individual member. UR's are not intended to address all the strength aspects of hull structures, which remains the function and responsibility of each class society.

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POLARIS
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SHIPYARDS:

METALSHIPS:

Knutsen OAS' 16.512 dwt chemical tanker vessel **Louise Knutsen** has drydocked at Spain's Metalships, Vigo to undergo her first special survey plus shaft generator jobs like vacuum impregnate main stator, main rotor, excitation rotor and excitation stator followed by a polymerisation cycle in the baking oven. "Knutsen OAS placed the order after previous audit and also recommendation from fellow Norwegian owner - Odfjell.

"Needless to say, we now are getting the result of a hard job promoting our yard, investing in our facilities and bringing in the highest know-how. To have these two top leading companies as customers is a big step for us and an important reference, which definitely encourages us to continue working on this way", said Pablo de Celis from Metalship's Commercial Department.

Also in dock is the Herning Shipping's 7.963 dwt chemical tanker vessel **Tina Theresa**, undergoing propeller repairs and structural repair works and Maritime Performances' 10,020 dwt chemical tanker vessel **Aigran D**, which completed her fourth intermediate survey including ballast tank coating jobs, duplex steel repairs and overhaul of main engine. The engine works continues alongside on USC Barnkrug's 8,685 dwt general cargo vessel **Elbinsel**, undergoing overhaul of her main engine.

Remolcanosa's 1,879 dwt tug **Ria de Vigo** is also undergoing major repairs. After completion of afloat steel repairs, the vessel has returned to Metalships for the installation of Oil Recovery Equipment and KOSED hydraulic crane installation. Work involves:

- Cutting, removing and installing 6 m of deck side protection
- Removing and relocating two manhole covers and tank vent pipes
- Removing and modification of hydraulic lines
- Fabricating and installing two crane pedestals (with one manhole each)
- Fabricating and installing four rigid arm foundations
- Fabricating and installing eight twistlocks for the powerpack container
- Installing two hydraulic cranes
- Installing two rigid arms
- Installing two containers 10' ISO for powerpack
- Modification of the rescue boat deck IWO installing skimmer container
- Fabricating and installing four twistlocks for the skimmer container
- Installing 1 container 10' ISO for skimmer

Apart from this major job, they will also carry out standard drydocking jobs plus engine and steel works.

KEPPEL:

Singapore's Keppel Shipyard, part of the Keppel Offshore & Marine Group, has come a long way since 1990 when it repaired its first LNG tanker for Gotaas-Larsen, currently known as Golar LNG. To date, Keppel Shipyard has repaired 173 LNG tankers in its Singapore yards.

With 25 years of experience under its belt, Keppel Shipyard continues to see a steady stream of LNG tanker repair projects in the yard. In 2014, Keppel Shipyard repaired 21 LNG tankers which is 8 more than the 13 LNG tankers repaired in 2013.

In the first two months of 2015, Keppel Shipyard has already completed one LNG tanker repair project for MISC, the 152,000 m3 **Seri Balqis**, and two are currently in the yard - the 160,000 m3 **Golar Eskimo** for Golar Wilhelmsen and the 146,791 m3 **Grace Acacia** for GazOcean. Four more LNG tankers have also been awarded and will be arriving this year. The 144,596 m3 **Taitar No. 4** for NiMic Shipmanagement and the 147,546 m3 **Energy Advance** for MOL LNG will be arriving in March 2015, the 147,546 m3 LNG Ebisu for MOL LNG in May 2015, and the 145,00 m3 **Energy Frontier** for MOL LNG in September 2015.



The LNG tankers *Seri Balqis* and *Taitar No. 4* in Keppel Shipyard

Meanwhile, construction and conversion work on FLNG **Hilli** for Golar has already commenced in Keppel Shipyard's Tuas and Benoi yards. Keppel Shipyard is responsible for the provision of the design, detailed engineering and procurement of the marine systems and all of the conversion-related construction services. Keppel Shipyard's scope also includes engaging Black & Veatch to provide design, procurement and commissioning support services for the topsides and liquefaction process. Keppel Shipyard is also in the midst of finalising the contract for a second similar unit of FLNG conversion for Golar involving the **Gimi**. Even as Keppel Shipyard continues to repair and convert a diverse range of vessels, the yard is now steadily building its track record for passenger vessel repairs.

In June 2014, the 12,596 gt **Aratere**, a passenger ro-ro vessel that serves between New Zealand's North and South Islands, completed extensive repairs after three months in the yard. One of the key workscope included replacement of her tailshaft.

More recently, in March this year, Keppel Shipyard completed major repair works on the 12,195 gt missionary passenger vessel, **Logos Hope**, after six months. Some of the key workscope includes replacement of the auxiliary generators, boiler replacement works, and installation of a new heat recovery system. In the same month, general repairs including main engine and accommodation works are expected to be completed on the 12,449 gt Arctic cruise ship, **Minerva**.

LAVGAN DOCKYARD:

Since opening in late June 2014 Lavgan has slowly built up its capability and has docked more than 20 ships at the facility, the customers have included, Shipping Corporation of India, TAG Offshore, Samson Maritime, TCI Seaways and Seamec.

Sunil Bhasme, Head of business development at the yard reported that Lavgan is building a reputation for a yard that redelivers vessel on time in a very cost effective manner. "All the workshops are now complete or nearing completion and we are able to provide a complete range of ship repair services. To date our focus has been on Offshore Vessels and we are building a good reputation for safety, quality and on time redelivery.

“Being situated in a well sheltered port area we are also getting increasing numbers of enquiries for work on various offshore units which we would do in conjunction with our UK based partner HSOG of Merseyside.

“We believe this yard, which provides six dry repair berths with an experienced international management team makes a significant difference to the Indian ship repair market and we are now ready to welcome enquiries from owners and manager based outside of India.

“Three vessels completed within the last few days have been TCI Seaways’ 10,545 dwt containership **TCI Arjun** where we fitted pressure rails in the holds together with strengthening in wing tanks, as well as general engineering works, the tug **Water Lily** - preparing for a five-year charter at a LNG terminal and the **TAG 8**, an anchor-handler, which was drydocked for its first five year survey.”



The *Water Lily* in Lavgan Shipyard

ASTILLEROS SANTANDER:

Spain’s Astilleros Santander (ASTANDER) is currently in the middle of a three-ship retrofit contract from French cross-channel ferry operator Brittany Ferries, costing £10m each, for the fitting of exhaust gas scrubbers.

Brittany Ferries has contracted three of its fleet for this work at the Spanish yard, with each job taking two months. Work has already been completed on the ro/pax Normandie, which runs between Portsmouth and Caen. Work is currently underway on Cap Finistere, which runs between Portsmouth and Bilbao, and is scheduled to be completed on March 24th. The third vessel to be retrofitted is Barfleur in March/April. All three vessels have Wärtsilä diesel engines for main and auxiliary propulsion and are being equipped with compact exhaust gas scrubbers designed and supplied by Norway’s Green Tech Marine – now renamed Yara Marine Technologies.

The first of the three ships to be retrofitted, Normandie, has her scrubbers, of the open loop type) almost totally contained in a new, larger, funnel. The system is claimed to be the most compact and economic currently available. Normandie has been fitted with seven scrubbers – one for each of its four Wärtsilä main engines and four for its three diesel auxiliaries.

Three more Brittany Ferries vessels will be retrofitted over the winter 2015/16 period at a yet to be announced shipyard. These vessels, Mont St. Michel, Pont-Aven and Armorique are all powered by MaK diesels and, therefore, may use a hybrid scrubber system. No decision has been made yet. The old lady of the Brittany Ferries fleet, Bretagne, has just completed a refit at Poland’s Remontowa Shipyard, but has not been fitted with scrubbers due to the cost – the decision being made on the vessel’s age and complex nature of her machinery layout.

OFFSHORE:

DAMMAM SHIPYARD:

Saudi Arabia's Dammam Shipyard has now completed repairs on-board its first jack-up rig contract, involving Rowan Drilling's *Scooter Yeargain* (Rig No 55), which arrived in the yard on February 4th.

The workscope included full blasting and painting and welding/steel works. All work was completed within the 26 days scheduled by the rig owner and within budget. More IADC (International Association of Drilling Contractors) members have confirmed future projects.

A spokesman for Dammam Shipyard told SRN, "At a rig daily rate of between US\$180,000 to \$200,000, the estimated saving by staying in Saudi waters (excluding the price of repair) is \$2.8m.



Rowan Drilling's jack-rig *Scooter Yeargain* in DSRV

CLASS NK:

Japan's ClassNK has announced that it has released the latest version of its Guidelines for Floating Offshore Facilities for LNG/LPG Production, Storage, Offloading, and Regasification (Second Edition).

In February 2011, the leading classification society released its Guidelines for Floating Offshore Facilities for LNG/LPG Production, Storage, and Offloading in response to a growing need for clear technical guidelines for the construction and survey of Gas FPSOs.

Recent years have also seen a rise in FSRU projects. These offshore gas facilities have been gaining popularity due to their low cost (less than half the cost of an equivalent onshore facility) and the advantage of being able to move wherever demand is the highest for regasification.

In light of this industry trend ClassNK has clarified its guidelines to include FSRUs as well as FPSOs. As many of these facilities are often located close to shore, the amendments include design conditions which take into consideration the possibility and effects of tsunamis on offshore gas facilities. Tsunamis which occurred in the past at the specified operation site are to be investigated and the maximum tsunami which can occur at the site is to be taken into account during the design process.

DDW:

Drydocks World (DDW) has been awarded the contract from Norway's Kvaerner to carry out the fabrication of components on the Johan Sverdrup Riser Platform Jacket for end-user Statoil, to be located in the Norwegian sector of the North Sea.

Kvaerner won contract from Statoil in January and DDW will carry out the fabrication of pile clusters and floatation tanks including surface protection for the Johan Sverdrup Riser platform jacket. The pile clusters will form the base of the jacket where the structure is piled to the seabed, and the tanks will be used for launching and installation of the jackets on site. DDW will be fabricating to the stringent NORSOK safety and quality standards, with strong project management and construction team carrying out the over 7,000 ton project.

Khamis Juma Buamim Chairman of DDW & Maritime World said, "This contract confirms DDW's position as one of the industry's leading suppliers of platform substructures. We look forward to solidifying our past prosperous relations with our client and plan to continue providing optimal services to meet all production targets. DDW has delivered numerous world-first mega projects, demonstrating our capabilities and commitment to innovation. Our operational excellence program incorporates an extensive business management strategy with built-in efficiency, on-time delivery and cost-effective measures that ensure quality products of the highest standards in safety and environmental sustainability, giving DDW excellent credentials in the maritime service sector."

DDW has previously completed two substructures for semi-submersible drilling rigs **Aker Alpha** and **Aker Beta**. Currently DDW is also fabricating a 2,000 ton jacket and wellhead platform for the Technip Rashid C Platform. DDW has qualified expertise in fabricating high tolerance offshore structures, demonstrating the organizations capabilities in delivering complete offshore projects complying with strict safety, environmental and quality standards. In building the world's largest Turret mooring system, DDW has delivered four modules. DDW plans to maintain its stringent standards of operational excellence and project expertise to exceed the expectations of Kvaerner.

PAINTS & COATINGS:

INTERNATIONAL PAINT:

Leading ship owner Navig8, is progressing application of Interline 9001, an advanced cargo tank coating from Akzo Nobel's International marine coating product range, on a series of 18 chemical tankers currently under construction at South Korea's Hyundai Mipo Dockyard (HMD).

The coating upgrade is part of Navig8's ambition to be the leading supplier of sophisticated large chemical tanker tonnage with maximum earning potential and minimum cost base. Navig8 selected Interline 9001 to deliver significant operational benefits for the 37,000 dwt vessels, providing increased vessel capacity and maximum operational flexibility required to meet increased market demand for large volume contract of affreightment. In addition to the coating upgrades at HMD, Navig8 has selected Interline 9001 for a further four 49,000 dwt vessels under construction at STX, also in South Korea.

Interline 9001 is a Bimodal Epoxy coating for the cargo tanks of chemical tankers. With enhanced cargo resistance, near zero absorption for many cargoes and fewer cycling restrictions, Interline 9001 simplifies the carriage of a wide range of liquid cargoes, optimizing vessel earning potential.

Interline 9001 can carry all cargoes standard epoxy phenolic technology can, plus a further 25% of the large volume cargoes that it cannot, and has over 60% fewer cycling restrictions. Its low cargo absorption profile reduces the risk of contamination between cargoes and combined with its smooth, glossy surface, can cut cleaning time and materials by up to 70% compared to standard epoxy phenolics or zinc silicates. With reduced cleaning requirements comes a corresponding reduction in fuel and CO2 emissions. In addition, a low volatile organic content (VOC) and 80% volume solids helps to enhance operator environmental profile.

Andy Hopkinson, Business Development Manager for the marine coatings business said: "We are delighted to be working so closely with Navig8 on this significant project which signals strongly the market need to adopt new technology and react to the ever tightening cleaning requirements and need for maximum earnings with minimum cost. Contract activity around Interline 9001 has risen significantly and Navig8's commitment and confidence in the product will lead the way for many owners to reach the same conclusion. The benefits of the Bimodal Epoxy Technology certainly suit Navig8's operational model where capacity optimization through reduced cleaning time and carriage flexibility combined with maximum protection for customer's sophisticated cargoes is high on the agenda. Interline 9001 really is the only technology on the market which offers these benefits in combination with clear and concise operational guidance."

BALLAST WATER TREATMENT:

WÄRTSILÄ:

A series of eight new 33,000 dwt chemical tankers, currently under construction in Asia, will feature Wärtsilä Aquarius UV Ballast Water Management Systems (BWMS) each of which is certified for explosion proof (EX) requirements. This means that the BWMS units can be installed in Zone 1 hazardous areas. It is an IMO requirement that the BWMS for ships having hazardous areas on-board must be EX-proof certified. This contract, which was signed in January, is the first EX-system delivery since the Wärtsilä Aquarius UV system was granted EX-certification in spring 2014.

Each of the eight vessels will have two Wärtsilä Aquarius UV systems installed. The particulars of this design required a partnership approach with the shipyard in order to successfully integrate the BWMS into the hazardous area, with the addition of deepwell pumps already delivered.

Wärtsilä has taken a systems approach to the EX validation process and the complete Aquarius UV BWMS module, rather than just the electrical components, is EX-certified. This approach improves accessibility, since the modular design allows some system components to be located outside the hazardous area, thereby increasing the availability and maintainability of the entire system.

“This first contract for our EX-certified BWMS represents yet another milestone contract for Wärtsilä. Knowing that the entire system module is explosion proof when installed within hazardous areas provides the peace of mind that alternative systems, where only the electrical components are certified, cannot. With IMO ratification expected very soon, we anticipate that the Wärtsilä BWMS range will be very much in demand,” says Dr. Joe Thomas, Director, Ballast Water Management Systems, Wärtsilä Ship Power.

Ratification of the IMO’s Ballast Water Convention is expected within the next few months and will require the owners of up to 40,000 vessels worldwide to install a BWMS. Although this ratification has yet to be finalised, the US Coast Guard (USCG) has already implemented its own legislation. This states that all ships will have to be in compliance with the regulations when sailing in US coastal waters. The intention of the legislation is to address the issue of invasive aquatic species being carried in the ballast water of ships and then discharged to the sea where they can harm local species. Wärtsilä’s Aquarius UV systems have been type approved for the IMO regulations.

UNDERWATER REPAIRS:

HYDREX:

Last month Belgium’s Hydrex carried out underwater insert repairs on vessels in Zeebrugge and Antwerp. Both vessels had suffered cracks in the shell plating. In Zeebrugge a 600 mm x 300 mm plate was installed in the flat bottom of a 203 m ro/ro vessel. A similar operation was carried out with a 300 mm x 300 mm plate on a 144 m tanker in Antwerp. Despite the relative small scale of both operations, they were vital for the shipowners. It allowed them to keep their vessels out of drydock and avoid having to go off hire.

Hydrex on-site hull repair services include the renewal of both small and large areas of damaged hull plating. These repairs can be carried out above or below water, according to the circumstances,

with external mobdocks. Normal commercial activities can therefore continue without disruption. These operations follow the Hydrex procedure for welding cracks and inserts in the vessel's shell plating and they are approved by the major classification societies.

The team started the operation with a detailed inspection of both the onboard as well as the water side of the affected plating of the ro/ro vessel in Zeebrugge. This revealed a 500 mm crack that needed to be removed. Next the divers installed a cofferdam over the area.

This allowed the team to remove the longitudinal frame covering the damage. The diver/technicians could then cut away the damage and the surrounding area. Next they positioned a new insert plate, measuring 600 mm x 300 mm. The insert was then welded following the Hydrex class-approved procedure for insert plates, using a full penetration weld.

An independent inspector carried out ultrasonic testing and the repair was approved by the classification surveyor who was present during the operation. The diver/technicians then refitted the frame and removed the cofferdam, concluding the repair.

The same procedure was followed during the operation in Antwerp. The only differences being that the gas tank adjacent to damage needed to be declared gas free before the team could begin the operation and that, besides the framework, a pipe needed to be removed and reinstalled afterwards.

Because the crack was slightly smaller, a 300 mm x 300 mm plate was enough to replace the damaged area. The affected area was situated right next to the sea chest in the turn of bilge. It was therefore essential that the cofferdam was modified to fit perfectly over the rounded shape of the hull.

MIKO MARINE:

A tool for removing oil trapped in submerged vessels has been developed in Norway by design specialists Miko Marine. With the launch of the Moskito the company has addressed the pollution threat that exists with the large numbers of sunken ships around the world that still contain significant quantities of oil in their tanks as cargo or bunker fuel. Many of the thousands of ships sunk during the Second World War now have 70 years of corrosion eating at their plates and the days are drawing inexorably closer when the pollutants that they contain will escape. The only answers are to either seal the wreck at great expense or to recover the pollutant in a controlled manner. Now, with the introduction of the Moskito, removing the oil is a speedy and cost-effective operation.

The Moskito makes this possible through being able to be deployed by divers or by an ROV (Remotely Operated Vehicle) to any ocean depth. Once in position outside the tank the Moskito's three powerful magnetic feet are planted against the steel hull and a technician on the surface then activates a 75 mm diameter electrically powered tank cutter drill. With its operation controlled through a dual video link, the Moskito's drill pierces the steel tank walls which may be up to 40 mm thick. The cut disc then falls away inside and is immediately followed into the tank by a patented spring latch coupling that automatically connects and locks a hose to the tank without allowing any of its contents to escape. With the hose securely in position a subsea pump can be activated to extract the oil at the

rate of up to 12 m³/hr and send it to the surface for safe and non-polluting recovery. If it becomes necessary to relocate the Moskito it can be easily repositioned without being returned to the surface. Being such a compact device it is also easy to use multiple units close together if a higher rate of extraction is required.

The Moskito arose from a research and development project launched by Miko Marine in 2012. It quickly attracted the interest of the Norwegian Coastal Administration (NCA) which had been grappling with the same pollution problem being caused by spontaneous leaks from sunken wrecks around Norway's coastline. Having no answer to the problem the NCA decided to support Miko Marine's quest to find a solution and the two organisations joined forces with the backing of Innovation Norway, a government-sponsored research and development organisation.

It was through a combination of engineering skill and original thought that Miko was able to create the Moskito oil removal system. The name of the tool was the inevitable consequence of its working similarity to the unpopular insect. Just like the insect it has to be light, versatile and adaptable because when a ship settles on the seabed there is no knowing how its tanks will come to rest. However, with a visual inspection and by studying the plans of the vessel a means of attack can be found. The Moskito is then delivered to the outside of the tank where it penetrates its skin and inserts its proboscis so that the liquid inside can be sucked out. The insect allusion falls short of the engineering reality but the principle is the same and measuring just 65 cm by 45 cm and weighing only 80 kg, by subsea engineering standards the tool has an insect's light touch.

Commenting on the potential of the Moskito, Nicolai Michelsen, general manager of Miko Marine was pleased to summarise the success of his company's innovation. "This was not an easy product to develop as it required us to call upon our highest standards of engineering and design. We are, however, very pleased with the end result which has a practical versatility that will make a valuable contribution to marine environmental conservation. It provides a solution to a problem that has remained unanswered since the first ship sank and we are now hoping that our coastlines and our wildlife will see the benefit."

Even before developing the Moskito system Miko had enjoyed a close working relationship with the NCA which had become a customer for some of the company's other innovative products. A team of highly qualified young designers has repeatedly found solutions to thorny problems by lateral thinking and innovation that is not tied to any particular technology. These include a range of magnetic patches that can be used to quickly seal a hole torn in a ship's hull while the more recent invention of the ShipArrestor has solved the problem of drifting ships by devising a parachute-shaped sea anchor that can be delivered by a helicopter. Instead of rolling helplessly until it breaks up or runs aground, a ship without engine power, or crew to operate it, can now be intercepted by the ShipArrestor and its drift slowed until a tug is able to reach it and tow it to safety.

LNG:

MEYER TURKU:

Tallink Grupp and Finland's Meyer Turku Oy have signed a contract for the construction of a LNG-powered fast ferry for Tallinn-Helsinki route shuttle operations. The dual fuel ship will be about 212 m in length with a passenger capacity of 2,800. The fast ferry will cost around €230m and will be built at Meyer Turku shipyard for delivery in the beginning of 2017. The project will provide approximately 2000 man-years employment for the shipyard.

The new environmentally friendly ship uses LNG as fuel and she will comply with the new and stricter emission regulations for the ECA areas including the Baltic Sea. The ship, with a gross tonnage of 49,000 and service speed of 27 knots, will bring significant improvement in energy efficiency. The highly innovative hull form minimises the flow resistance and ensures that the ship operates well in ice conditions. Efficient and fast cargo turnaround in ports has been taken into account in the design of the new generation fast ferry.

According to the contract 20% of the total cost will be paid during the construction period and the rest upon delivery of the vessel. The financing details will be announced by AS Tallink Grupp shortly.

CEO of AS Tallink Grupp, Janek Stalmeister says that Tallink wants to develop sea travel and to revolutionise business concepts and this project will be one of the attempts to succeed on that. "We have brought a new understanding to the fast ferry services with the Shuttle concept and now the time is right to take the next step. We have learned from our own experience, listened to our customers and experts and we are now very excited about the end result", added Stalmeister.

"Meyer Turku is very happy to continue the long and good tradition to build ferries for Tallink and with our new and advanced LNG propulsion plant we are lifting this partnership to the next technological level. With this contract we increase our output by 30% in 2016, which is good news for the shipyard and its suppliers and the entire region. It furthermore allows us to implement our strategy to further strengthen our capabilities by making the necessary recruits and by improving design and building methods", says Jan Meyer, CEO of Meyer Turku Oy.

ENIRAM:

Finland's Eniram Limited has announced that they are releasing their Onboard and Onshore 'Boil-off Management Tool' designed for LNG tankers. Eniram is the first company in the world to quantify and provide a Boil-off Management Tool for the actual measured boil-off, based upon real on-board data. Eniram's Boil-off Management Tool enables both officers on-board, and officers onshore to understand and monitor the actual boil-off for LNG tankers.

"We are delighted to be able to help our LNG customers further with our latest addition to the Eniram LNG portfolio. We have worked hard to build a strong portfolio of products to help our LNG customers. The addition of Boil-off Management is a natural evolution as a key component in helping our LNG customers to operate as efficiently as possible." Director of LNG & Tankers at Eniram Nick Pinkney commented.

Eniram's experience within the LNG sector encompasses Steam vessels, Dual (DFDE) and Tri Fuel (TFDE) Diesel Electric vessels.

SHIPMANAGEMENT:

SPECTEC:

SpecTec has announced that it will be working with long term partner Mercy Ships to migrate their current system Business Suite to AMOS Enterprise Management Suite (EMS). Mercy Ships is an international charity who visits some of the poorest countries in the world. Its team comprising doctors, nurses, water engineers and agriculturalists devoting their time to provide free surgery and medical care as well as offer advice to help improve local communities free of charge. Through the deployment of the world's largest hospital ship, the **Africa Mercy** brings hope to the lives of thousands of people who never believed it was possible.

The partnership between SpecTec and Mercy Ships began over 19 years ago when we donated AMOS on-board, managing the vessel's assets Maintenance, Purchase Orders, Stock Control and Budget. The **Africa Mercy** will now receive a brand new update of the latest version of AMOS EMS installing the Quality Management module in the first instance. This will then follow with the migration of their existing modules from their current system.

Cosimo Colonna, Vice President of SpecTec America said, "Working with the Mercy Ships team at any level makes me incredibly proud. The idea that my job contributes to their mission thousands of miles away from here makes me feel part of their project to humanity and the less fortunate. On top of that when I meet with them it's like being one of the family; I'm truly grateful to have been involved in this mission".

Ciaran Holden, Engineering Superintendent of Mercy Ships said, "Mercy Ships has used AMOS for many years, the ability of the software to adapt to our changing maintenance needs has been excellent. The training we have received from SPECTEC, on both user and administrator sides, has enabled us to train our people and refine the use of the program to meet our specific maintenance needs. It has made life for our on-board crew members easier, in reporting work and recording history. We all highly value AMOS as an integral part of our maintenance plan in supporting the **Africa Mercy** thereby giving our medical staff the peace of mind and comfort of knowing as they work the platform is stable. I personally have learned and grown in my use of AMOS from the training I have received from the SPECTEC team. The friendships I have made and comradery in purpose and vision has been great. Already we have great plans in mind for our future maintenance planning when we transition to AMOS EMS. We are looking forward to a long lasting partnership for the years to come". At the end of the project, the Africa Mercy will be fully integrated with new and existing modules; helping to continue the efficiency on-board whilst on their worldwide vocation.

EMISSIONS:

WÄRTSILÄ/CLEAN MARINE ENERGY:

Wärtsilä and Clean Marine Energy (Europe) Ltd (CME) have announced the landmark signing of the shipping industry's first collaboration agreement that will provide a convenient funding solution to drive the uptake of exhaust gas cleaning technology. The move is intended to ease the financial burden on ship owners seeking to install scrubber systems in order to meet sulphur emissions legislation.

The financing solution, similar to those prevalent and proven in the building environment space, enables a ship owner to repay the cost of the scrubber system installation via a fuel adder, i.e. a fuel premium on the price of HFO by which the ship owner repays the cost of installing the scrubber. This provides a return from the differential between Heavy Fuel Oil (HFO) and Marine Gasoil (MGO) for a period of four to six years, depending on price spreads. This means that ship owners do not have the burden of meeting the up-front capital expenditure, which is typically between US\$3m and \$12m/vessel. This investment is often difficult to pass on to charterers, whereas with CME financing, the fuel adder charge can be easily passed on until such time as the scrubber system is paid for. The concept therefore minimises the impact on the owner's balance sheet, banking and security arrangements.

Juha Kytölä, Vice President, Wärtsilä Environmental Solutions said, "This funding concept enables ship owners to increase the value of their asset without taking on additional debt, thereby making it easier to achieve long-term compliance with increasingly stringent environmental legislation. Wärtsilä is proud to be at the forefront of developing innovative solutions aimed at assisting customers to reduce both their operational costs and their environmental footprint. This collaboration agreement with CME is one more example of this philosophy."

Pace Ralli, Co-founder and Director of CME (Europe) commented, "The shipping industry is faced with a number of environmental regulations right now, often with a significant capital burden. Despite lower fuel costs, there is an even greater spread between HFO and MGO; as much as 90% in some cases. This allows us to inject capital to pay for the installation of a scrubber, allow the ship owner some of the benefits of continuing to burn HFO and still take out a return. In addition, the asset value improves, while the ship owner is compliant with new tighter ECA regulations. We see the CME solution as filling a gap in the financing of the latest scrubber technology. CME and Wärtsilä can provide the financed installation and maintenance of a scrubber through CME's Emissions Compliance Service Agreement (ECSA)."

GOTHENBURG:

Measurements at the Port of Gothenburg show that sulphur emissions from ships have fallen by 80% since stricter rules came into force at the turn of the year. At the turn of the year, the sulphur content in fuel was reduced from 1.0 to 0.1% in the short-sea shipping area around Gothenburg (Baltic, North Sea and English Channel). Measurements now show that sulphur emissions have fallen by 80% at the Port of Gothenburg.

The measurements are being carried out using a 'sniffer' located at the Älvsborg Fortress, in the fairway leading in to the port. The sniffer has been developed by Chalmers University of Technology with support from Vinnova, the Swedish Environmental Protection Agency and Gothenburg Port Authority. The sniffer measures the sulphur and carbon dioxide levels in the gas emissions, thus revealing the sulphur content in the fuel.

During the first few weeks of this year, the emission plume from around 200 passing ships was measured. It is estimated that 80% of these were approved whilst for 20% the sulphur emissions were too high.

"It is incredibly positive to see that the new rules are having such an effect and that sulphur emissions are falling. At the same time there is still uncertainty regarding the control system for vessels that are failing to comply with the rules. The industry has reason to be concerned that less serious shipping companies will not follow the rules and that this will lead to a distortion in competition," said Edvard Molitor, Senior Manager Environment at the Port of Gothenburg. The Port of Gothenburg hopes that sniffer technology will be used to check compliance with the Sulphur Directive.

TRAINING:

BAE SYSTEMS:

Apprentices trained by BAE Systems' are now boosting companies across the North West. Following a year of training at BAE Systems' training school in Preston, Lancashire, 21 engineers and manufacturing apprentices have moved in to 12 companies throughout the region.

The apprentices started training as part of the Employee Ownership Pilot programme, set up to boost skills in supply chain companies and part-funded by Government, have now moved in to the workplaces of their parent companies with a further 10 apprentices now in training at the training centre. Later this year, the second cohort will join the workforces of companies throughout the region with a third cohort due to start at the centre from this September.

Ben Farnsworth a technical apprentice is now working for Techni-Grind (Machining), a company based in Preston which provides precision machining for components used by aerospace firms across the globe including BAE Systems. Dennis Boyle, Shop Floor Manager at Techni-Grind, said, "Ben has been a real gem for us and brought skills to our business which have help to boost our productivity and efficiency. The training he has been received on the BAE Systems apprenticeship scheme at the Preston Training Centre has been invaluable to Ben and our business and the support the Company continues to offer us has been first-class. As a small business, we are not in a position to set up an apprenticeship scheme like the one BAE Systems has, so being able to benefit from getting apprentices like Ben has been a real boost."

Last month, Ben's work was recognised when he was awarded an Outstanding Achievement Award by a First Year Apprentice at the regional finals of the Engineering Employers' Federation Future Manufacturing Awards, while the team behind the Preston Training Centre was named Training Provider of the Year at the North West Aerospace Alliance New Talent Awards.

Andy Bloor, Head of Early Careers for the company's Military Air and Information (MAI) business, said, "We are proud of the contribution our apprentices make to our business and the training we offer gives our recruits the chance to learn from senior engineers and gain invaluable experience working on cutting edge products, to further advance their careers. We recognise the importance of supporting the companies in our supply chain and the important contribution that apprentices make to the future of our industry".

For the first time the company is offering a Higher Apprenticeship qualification in engineering which has attracted more than 400 applications to join the September intake. The Higher Apprenticeship is a five-year scheme which enables apprentices to earn an honours degree in either Aerospace Engineering or Aerospace Software Development.

WASTEWATER:

ACO MARINE:

ACO Marine has launched a novel water recovery system that gives vessel owners greater capacity to re-use the treated effluent from wastewater treatment plants. The ACO Water Maker WM3 converts treated waste water into pure distilled technical water for such applications as general surface cleaning, laundry, showering, toilet flushing, engine cooling – in fact, any fresh water requirement.

The unit, which has extremely low energy consumption, reduces a ship's need to take on fresh water in port or to make its own water through reverse osmosis or flash evaporation – both high energy consumers.

It is suitable for use on-board all vessel types and can be easily retrofitted to ACO Marine's Maripur and Clarimar wastewater treatment solutions in addition to third party systems. A typical unit has a footprint not dissimilar to the size of a small domestic refrigerator, with water-making capacities ranging from 6,000 to 24,000 litres/day.

"We have received a lot of interest in this innovative system, from the German Navy to Greenpeace," said Managing Director Mark Beavis. "It is environmentally-friendly and very cost effective. The smallest unit can even run solely on solar power."

The water maker reduces the kW power/litre of water produced compared with conventional methods and can cut wastewater dumping significantly. The unit also fulfils the function where vessels require freshwater generation redundancy.

"By enabling treated wastewater to be converted back into pure distilled technical water or even drinking water, the WM3 closes the water treatment loop," Beavis said. "The sterilisation process is so effective that all types of produced water can be stored in vessel holding tanks for at least 120 days without any further treatment."

Few sectors of the shipping market provide much to smile about as key sectors continue to be swamped with surplus tonnage. However, the LPG sector is an exception and, despite significant fleet growth recently with more to come, analysts are broadly positive about the outlook. US production and growing demand in Asia provide a positive backdrop, particularly for the owners of very large gas carriers (VLGC) which predominate on long-haul routes out of the US and Middle East.

Shipping analyst Drewry believes the market will remain firm and ship earnings buoyant as a result of low oil prices and the absence of fuel substitution. Despite fears of the substitution of LPG as an industrial fuel and as a result of low oil prices, this has not happened. LPG shipping demand has remained intact and low bunker prices have supported vessel earnings, Drewry says.

This trend is likely to continue, the analyst suggests, because of relatively inelastic LPG demand. Around 60% of global consumption is residential where demand is not sensitive to changes in the oil price. The balance is used in the production of petrochemicals, a sector which is expanding rapidly in the Middle East. Yet Drewry says that only about 20% of capacity in the petrochemicals sector is capable of switching away from LPG fuel. Its consumption, therefore, has proved to be remarkably stable in spite of oil price volatility, Drewry notes.

There is concern over future fleet growth, however, with no fewer than 38 contracts for VLGCs signed during 2014. This year alone, the VLGC fleet is projected to grow by 23%, as 36 new vessels join the fleet, according to figures released by shipbroker Banchemo Costa. Another 43 VLGCs are due to be delivered in 2016. Meanwhile, lower oil prices are leading to a fall in drilling activity, the broker notes, which in turn could lead to lower production levels and therefore less LPG, at exactly the same time as the fleet is undergoing significant expansion.

But the optimists are not worried. The commissioning of new petrochemicals plants in the Middle East is boosting long-haul demand for shipping capacity. New production facilities are being built across the region, notably in Saudi Arabia, and a number of new projects are expected to start up soon, particularly in Abu Dhabi and Qatar which has not overtaken Saudi Arabia to become the region's largest exporter, according to Banchemo Costa.

It is the fundamental change in the US energy framework, however, that is also a key element in the strength of the sector. US export growth is allowing Asian customers to diversify their supplies and has generated a new long-haul trade in addition to the Middle East-Asia route. Demand for VLGCs remains strong, despite the commissioning of new ships. Rates have eased somewhat from last year's peaks when VLGC owners could earn more than \$130,000 a day on spot voyages. But rates in excess of \$90,000 a day are still very firm.

In the longer term, the story continues to be positive. Despite lower oil prices which may or may not become a medium-term phenomenon, LNG production in the US is set to rise steadily in the years ahead. As a by-product of LNG, more gas cargoes will be available for export because US petrochemical plants have no significant requirement for more feedstock. Many of these cargoes will be destined for Asia, therefore, underpinning demand for VLGCs. Sources indicate that US export capacity will soar this year – from around 12m tonnes in 2014 to as much as 20m tonnes. It should continue to expand to around 30m tonnes by 2016, according to estimates.

ON WATCH:

- **TT Club**, the leading international transport, freight and logistics insurance provider, has appointed Justin Reynolds as Regional Claims Director, Europe, Middle East and Africa. Based in London, he will be responsible for handling member's claims across the EMEA region. Justin is a qualified solicitor and has over 20 years' dispute resolution experience, having handled a diverse range of high profile claims in the cargo, transport, shipping and logistics arena. Prior to joining the TT Club, Justin was a partner at the international law firm Holman Fenwick Willan LLP where he negotiated, mediated, arbitrated and litigated claims in the UK and around the world. Charles Fenton, CEO of the TT Club, said: "Justin will be a strong addition to our experienced claims team across EMEA. His extensive expertise in claims management and his knowledge of the transport and logistics industry will be a pivotal asset for the TT Club."
- Finland's **Evac Group** has announced the acquisition of Deerberg-Systems GmbH (Deerberg). Deerberg, based in Oldenburg, Germany, is the global market leader in marine environmental protection systems for the treatment of dry and wet waste (DW) on board all kinds of vessels. The Deerberg Multi-Purpose-Waste-Management-System MPWMS® is renowned in the marine industry to be the leading solution in this field. With this acquisition Evac is now able to offer a total, flexible multipurpose waste management system from one source. According to industry estimates, the DW treatment market will continue to grow in the coming years. These estimates are based on strong demand coming from the cruise vessel and ferry segments. The acquisition of Deerberg will elevate Evac to be the leading player for total waste management systems in the cruise ship segment.
- The **Liberian Registry** has appointed shipping executive Gerry Buchanan as managing director of its dedicated office in Hong Kong. As the recently retired president of Genco Shipping & Trading, Gerry Buchanan's experience spans an extensive career in the management and operation of a wide array of ships. After successful careers with Denholm Ship Management and Canada Steamship Lines, Gerry was appointed managing director of Wallem Ship Management in Hong Kong. In 2005 he was appointed president of Genco Shipping & Trading, where he joined the team which oversaw the company's successful transition from a private entity to a publicly traded company on first NASDAQ and then the New York Stock Exchange. Gerry says, "I relish the challenge of joining the world's most innovative and responsive ship registry, helping it strengthen still further its position in an area of strategic importance for international trade and shipping. Hong Kong is a ship management stronghold, and I am looking forward to using my contacts, knowledge and experience to the advantage of the Liberian Registry and the continually growing number of shipowners whose vessels fly the Liberian flag."

- As part of the **Marine Travel's** growth and expansion, Simon Crosbie has joined the company driving new business development. With a background in the Oil & Gas industry and business-focused technology partnerships and solutions in the finance, public and government sectors, Simon brings a fresh business perspective and approach to build on the successes of The marine travel company. The marine travel company manages the travel requirements for a cross section of marine related businesses throughout the UK and Worldwide. UK's No 1 leading independent marine travel specialist, operating for over a decade in the marine and offshore industry. Open 24/7/365 offering a continuous travel service.
- **ATPI Group** has announced a number of new appointments to its global management team. This includes the strengthening of their dedicated shipping and energy commercial division to reflect the future growth of the Group's operation in this market. The division is headed by Griffin's Gary Pearce, who has been appointed chief commercial officer for shipping and energy, supported by Nikos Gazelidis, former managing director of ATPI in Greece, who will be head of shipping sales. Pippa Strasser-Ganderton remains as head of global account management, marine and energy, managing a portfolio of key global accounts for the Group. CEO of the ATPI Group Graham Ramsey said, "The development of the shipping and energy division and the appointments of Gary Pearce and Nikos Gazelidis are a strategic decision to ensure we continue to lead the shipping market on a global scale. Each commercial division head is an expert in their field of operation and each regional head will offer key insight and knowledge for their area of the world. I look forward to leading the newly enhanced management team and delivering the benefits of our global buying power to our clients across all regions and sectors."

OBITUARY:

It is with great sadness that we announce the death of Denzil Stuart, a highly respected figure in marine and insurance journalism and public relations consultancy. Friends and colleagues throughout the industries he knew intimately, and the public relations sphere, will mourn his passing. He was 83. Despite suffering poor health in the last few years, he continued to serve his client accounts with selfless attention, and to be closely attuned to the latest developments in the insurance and maritime sectors.

Denzil Stuart was a long-time contributor to many publications, including Lloyd's List, and was latterly the insurance editor of Seatrade magazine for several years, covering all aspects of the marine insurance and P&I markets. Fellow journalists respected the extent of his contacts throughout the

London and international markets, which often gave him a head start on key stories. Denzil's public relations client list over the years saw him travelling the world. At various times, he represented the huge Hong Kong-based group World-Wide Shipping, the Salvage Association, the American P&I Club, the Strike Club, tanker group NITC, AXA Corporate Solutions, BMT Marine & Offshore Surveys, and other maritime interests.

He was consultant and press officer to the International Union of Marine Insurance for eight years until 2012. He represented law firms in the UK (including Ince & Co), Greece and the US, and was closely involved with the biennial maritime trade fair Posidonia. His first public relations client was Lloyd's broking group Stewart Smith, later to become part of Matthew Wrightson and then Stewart Wrightson. He particularly admired the head of the broking group, the late George J Stewart. Denzil spent 10 years as a staff shipping journalist and freelance contributor to Fleet Street papers, including feature writing for the Financial Times.

He was invited by Jim Davis, a leading figure in the maritime and ship finance sectors and currently chairman of the International Maritime Industries Forum, to become the first press officer of what was at the time the world's biggest shipping group, P&O. And Denzil was the first PR consultant appointed by any shipowners' protection and indemnity mutual, starting with the UK Club. Another first was his appointment as PR consultant to the former Institute of London Underwriters, one of the forerunners of the International Underwriting Association. He also organised and moderated the first General Arab Insurance Conference to be held outside the Middle East. His career was among those featured in June 2013 in the Insurance Day series *Power Behind the Throne*.



SHIPPAAT