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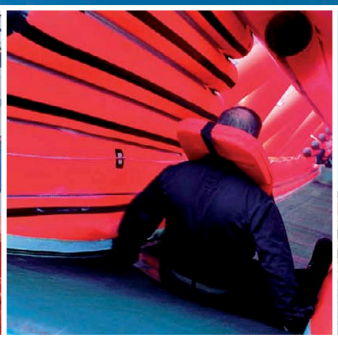

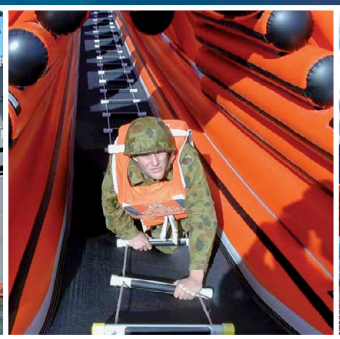


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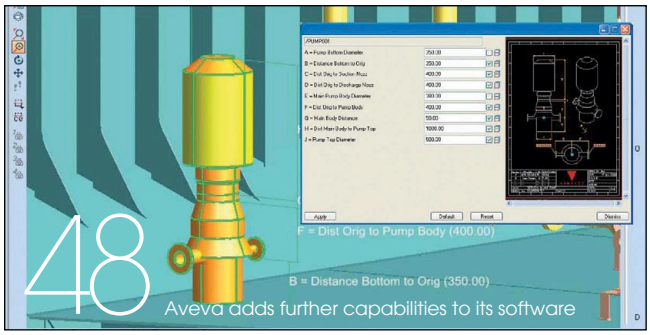
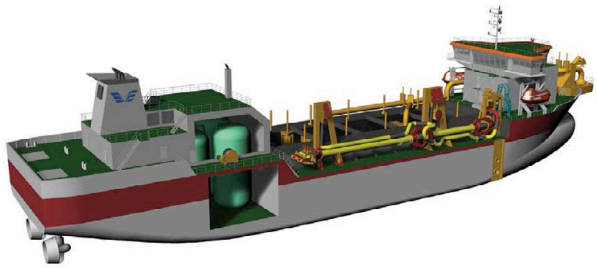
30-58 Features



47 VER presents LNG dredger concept



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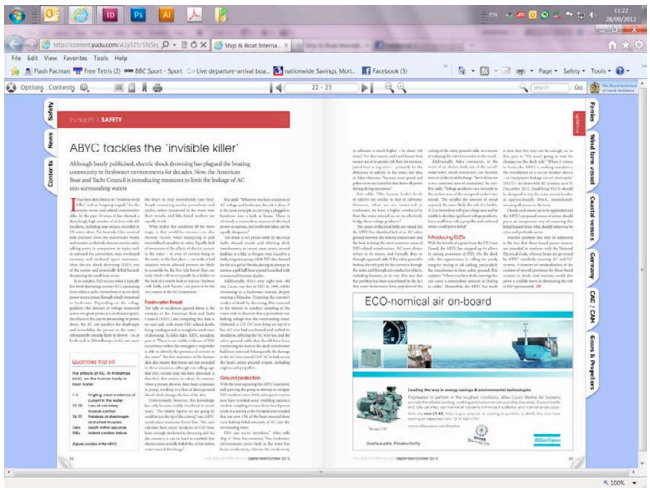

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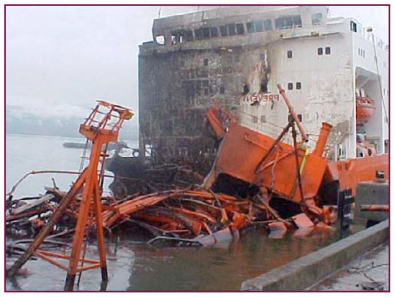
Fire at Sea

26-27 March 2014, London, UK



Call for Papers

Fire remains one of the top three causes of loss for marine vessels in the World Fleet, and is a major risk for Ro-Ro ferries, due to their open decks, and Passenger Ships due to ever increasing passenger numbers. The risk of fire may never be eliminated, but its effects can be mitigated.

With a unique operating environment, conventional fire fighting techniques are sometimes difficult to implement onboard ship. Technologies that involve starving a fire of oxygen are generally the most popular, however they still pose risks, especially to the crew. The revision of SOLAS Chapter II-2 has put a greater focus on the prevention of fire through effective crew training and design stage planning. And advances in technology mean that detection equipment can lead to a quick response that maintains the integrity of the vessel.

To further investigate the impact of fire at sea, RINA invites papers from naval architects, class societies, regulators, operators, and researchers on all related topics, including:

- Fire management techniques
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- Preventative measures & training
- Modelling of fire & smoke
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www.rina.org.uk/fire-at-sea.html

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Moving targets

South Korean shipyards are facing a struggle to reinvent themselves as competition from China has undermined their strength in the bulk carrier market, the bread and butter ship orders that used to be the Korean yards' domain

Orders for new ships remain thin in South Korea and elsewhere. According to Clarksons orders are steady but, are hardly forging ahead.

In a bid to maintain their businesses Korean yards have sought to find new markets. In 2007 the price of crude oil crashed through the US$100/barrel and, apart from the odd dip, it has remained high.

As *The Naval Architect* goes to press the price of West Texas intermediate Crude stands at US$103.59 while Brent Crude is higher at US$108.16/barrel. Future projections of the cost of oil expect the commodity to remain above the US$100 mark.

It is this high cost of oil that has benefitted Korean yards. As the price of oil has increased so the economics of mining oil in more difficult regions has changed. It is now possible to drill for oil beneath the ocean and in deeper waters, which has meant the offshore energy business has required an entirely new fleet of vessels to service it.

Some Korean yards are also looking ahead to when countries start to exploit the oil and gas reserves within the Arctic Circle, which will require specialist vessels with ice breaking capabilities and winterisation notations from class societies.

Orders for vessels in the offshore market now comprise more than 50% of the orderbooks of South Korea's major yards. If LNG carriers and FPSO's are included in this calculation the proportion of the orderbook increases substantially.

It is this fact that caused Samsung Heavy Industries' (SHI) to collectively sigh with relief that the offshore market remains strong. Shifting its focus to offshore and to high value vessels such as LNG carriers and drillships has sustained the major Korean shipbuilders, the reality for smaller yards has been a far harsher story.

Many of South Korea's smaller yards started their trading days as block builders for the major yards; Shipbuilders such as Sungdong Shipbuilding & Marine Engineering (SSME) transferred their skills during the boom years of the noughties into building ships in their own right.

In fact SSME was the block builder for SHI up to 2001 when it established itself as a shipbuilder in its own right winning its first order in 2004. When Sungdong decided to go it alone it broke its links to the major yards.

This was not a problem pre-2007 as there were enough orders for all, but when the market collapsed China began to compete ferociously and was able to undercut Korean prices.

Korean bulk carrier orders were the frontline of the shipbuilding competition along with short and medium range tankers; markets that had been targeted by the smaller Korean yards some 10-15 years earlier.

Once Sungdong had broken its links to the larger yard there was no way back, in the heady days of the boom this was of little consequence, but after five years of economic upheaval orders have dried up and the banks have taken control of the yard.

Another of Korea's smaller yards, SPP was also a block builder for SHI and it too has been fighting a rear-guard action against stiff Chinese competition. However, SPP was able to scoop up designers that had been laid off by the Hanjin yard and is effectively leaving the low value orders for bulk carriers and small tankers to the Chinese.

SPP is effectively re-grouping around new more sophisticated designs for small LNG and LPG tankers and ethylene carriers. SPP has found a niche that could well see the yard through the recession.

Sungdong is also looking for its niche; the problem is that the yard is looking for subcontracting work from the larger yards in the offshore business. It is likely to close at least one third of the yard, two skids, in a cost saving exercise and will devote two more skids to the offshore market.

Whether the small to medium sized yards in South Korea will manage to make the change is unclear at this point, what is certainly clear is that there will definitely be more casualties and/or consolidation in the shipbuilding sector. And maybe that will prove a positive for the survivors; even if their aims have changed. *NA*

LNG

SHI and GTT dispute intensifies

The dispute between French LNG membrane designer Gaztransport & Technigaz (GTT) and Korean shipyard Samsung Heavy Industries (SHI) concerning the latter's newly developed membrane system known as the Smart Containment-system Advanced (SCA) is further intensifying says GTT.

"The situation is very tense," admitted GTT president Philippe Berterotierre, "they're not very happy and they are testing us to see if we react, and then they see that we do react," he added.

Berterotierre says that the ongoing negotiations have been very tough, but he explains that GTT are resolved to move to the "next step within a matter of weeks", if necessary.

"I feel that they realise that they are in a dead-end situation," Berterotierre claimed.

Asked about another South Korean competitor in the membrane technology field Berterotierre was less confrontational. Hyundai Heavy Industries (HHI) has also developed its own membrane system which uses similar materials to a GTT version.

However, Berterotierre was dismissive of the system. "It has major technical issues, but we are not worried about it, it is not similar to the GTT system."

GTT believes that HHI's system is flawed, but he was a little coy on specifics. "We consider that the corrugations nearby the cofferdams are going to be under very high constraints, the system could sustain a first cooling down, but cannot sustain fatigue solicitations."

Vessel safety

MOL Comfort report delayed

The report being compiled by Japanese class society ClassNK into the loss of the *MOL Comfort* container ship is to be delayed to the end of October, says the company.

Vice president Yasushi Nakamura told *The Naval Architect* that: "We need to make a detailed examination of the findings to make certain of the results."

Nakamura says that the report will focus on the causes of the accident, but the class society is seeking more information from the shipyard and owner so that it can confirm its findings.

"We will release more information by the end of October, he says.

Classification

DNV and GL get competition green light

Norwegian class society DNV and Germanischer Lloyd (GL) of Germany, both approaching their 150th year of operations, have been given permission to merge their operations into a super-class society.

Authorities in South Korea, China, the US and the EU approved the merger and the company says it formally began operations as a single entity known as DNV GL Group (DNVGLG) on 12 September.

With a total of 17,000 employees in more than 100 countries the new company's revenues will top €2.5 billion (US$3.37 billion).

Henrik O. Madsen, Group CEO of DNV GL believes the deal will be a "game changer". "DNV GL will be uniquely positioned to offer a broader set of products and services, more in-depth expertise and a denser global network of sites second to none. And importantly, there is a strong commitment by both DNV and GL to the merged company continuing to invest heavily in technology, research and innovation," he says.

Henrik Madsen, the CEO of newly merged DNV and GL, says the merger will be a "game changer"

In the meantime DNV has announced that five ships of 18,000TEU each will be built to DNV class by the South Korean yard Hyundai Heavy Industries, with an option for another vessel included. A further five 14,000TEU ships with options for six more was included in the US$2 billion contract.

"The vessels will be optimised for an Asia – Middle East – North Europe trade. Their optimal

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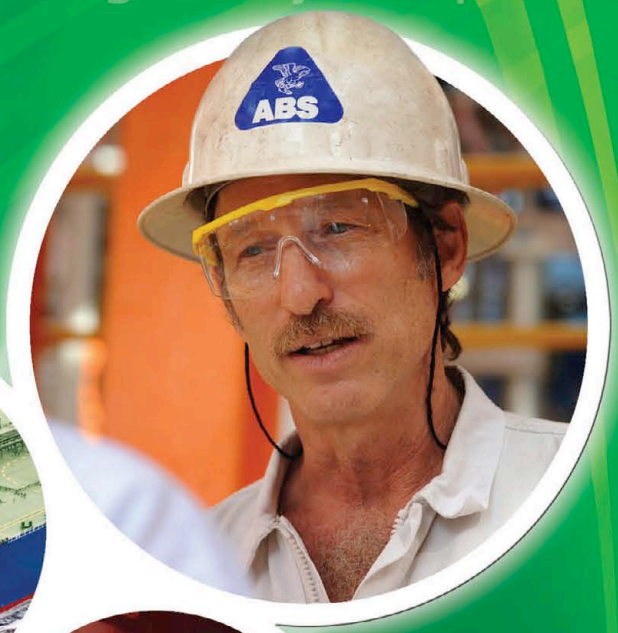

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speed window will be 16 – 18knots. In addition to hull optimisation and advanced propulsion arrangements, cargo securement has been improved through new lashing bridges," says DNV.

Deliveries of all the vessels are expected to start 2014 and be completed in the first half of the following year.

Cruise

Breakaway plus ships go diesel-electric

Norwegian Cruise Line's latest ships being built at the German yard Meyer Werft will be fitted with MAN Diesel & Turbo V48/60CR engines with diesel-electric propulsion systems.

Norwegian Cruise Lines' new *Breakaway Plus* vessels will be powered by five MAN diesel electric units

The Breakaway Plus ships will be 163,000gt and will accommodate around 4,200 passengers. Meyer Werft also built NCL's Breakaway-class vessels, which were ordered in 2010 and were delivered earlier this year.

The Breakaway Plus vessels will each be powered by five engines, two 14V and three 12V48/60CR Tier II type units – capable of delivering 76,800kW. The earlier ships, the Breakaway-class vessels *Norwegian Breakaway* and *Norwegian Getaway* are operating with four MAN units producing 62,400kW says MAN. Both vessel types meet the IMO's Tier II NOx emission regulations.

Sokrates Tolgos, head of sales cruise & ferry, MAN Diesel & Turbo, says NCL: "was the first company to introduce MAN 48/60 common-rail technology into its operating fleet six years ago. Ever since, all its MAN powered newbuilds have been ordered with the fuel saving electronic CR injection system."

Research

Partners in design

Naval Architects Owen Clarke, and aerofoil technology provider Oceanfoil have teamed up with university College London's Energy Institute (UCL-Energy) to develop its wingsails.

Final design and engineering will be worked on by Owen Clarke and Oceanfoil using software designed by UCL-Energy to model the wingsails and demonstrate their energy saving capabilities.

Oceanfoil says that prototypes of its latest wingsail designs will be available for testing in the second half of 2014.

"UCL-Energy and Oceanfoil are developing analysis capability to maximise the performance of Oceanfoil's technology on representative shipping routes, and which will enable Oceanfoil to predict the potential savings to be obtained from fitting Oceanfoil wingsails," says the company.

Current tests show that the newly designed wingsails could save owners up to 20% on fuel costs.

Charles Moray, managing director, Oceanfoil, says: "With the cost of fuel for ocean-going vessels at a sustained high level, our wingsail designs are ideally placed to capture a proportion of an industry craving fuel, emissions and cost savings amid increasing fuel costs and regulation."

The company added: "the ability to harness the wind as an additional power source to enable a reduction in fuel consumption, is now verging on necessity if the maritime transport industry is to remain cost-efficient and offers exciting prospects for the fuel efficiency and significant cost savings within a matter of years."

Corrections

In our July/August issue the article titled 'CFD aims at calm water designs', the correct title should have been 'CFD for integrated calm water ship-propeller design'. In the introduction we would like to make clear that with reference to the company's "recent developments" it refers to RANS developments. It is not just discussing the developments in the area of potential-flow solvers, but is focussing on new RANS techniques. *The Naval Architect* would like to apologise to MARIN for these misunderstandings.

Furthermore, on page 72 of the September 2013 issue we wrongly stated that Austal had presented the world's first LNG fast ferry. In fact this should read that Incat had built the vessel. *The Naval Architect* would like to apologise to Incat for the error. *NA*

Germanischer Lloyd

Shipping goods? Handle with care

Dangerous goods and dangerous situations have been two themes which have been highlighted in recent times, not least during the course of London International Shipping Week, *writes Sandra Speares*.

'What's in the box?' is not a new concept bearing in mind recent accidents involving dangerous goods carried by containers exploding or catching fire, or poorly loaded containers resulting in structural failure, as in the case of *MSC Napoli*.

With the preliminary report into *MOL Comfort* accident now due to appear in October, as opposed to September as originally intended, questions continue to be asked about the use of high tensile steel in the construction of today's newbuildings, not least because of the problems encountered by bulk carriers in the past.

The advent of 16,000 to18,000TEU container ships has only served to highlight the dangers of getting it wrong and according to the UK Club, emphasise the importance of compliance with the International Maritime Dangerous Goods Code. This has led the UK Club to reissue four booklets in its '*Book it right and pack it tight*' series.

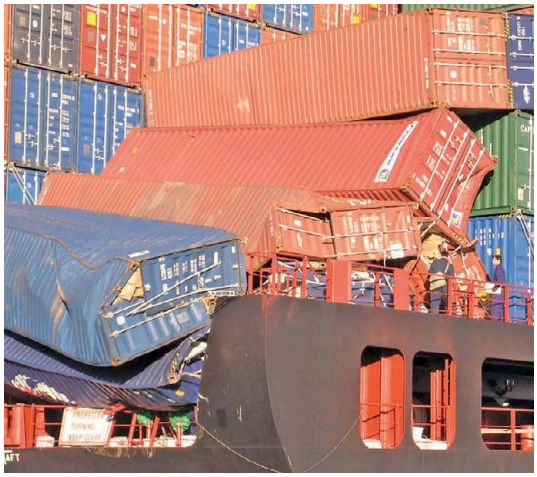
The books, which have been put together by Richard Masters with input from some of the world's major container lines, is aimed at shippers and forwarders, who classify dangerous goods and prepare the documentation for shipping line booking staff and organisations which pack dangerous goods as well as fork lift operators.

The UK Club's Carefully to Carry committee has noted a number of problems relating to the IMDG Code, arising from unawareness of the code altogether, through to non-compliance with rules for packing and securing unsafe goods that are loaded in an unsafe matter.

The club warns that deliberate negligence in handling and packing dangerous goods breaches international and maritime agreements and is bad business and may lead to criminal prosecution. In introducing the guides, vice Admiral Sir Alan Massey, chief executive of the Maritime and Coastguard Agency says the problems always begins on shore, but the consequences are usually played out at sea sometimes taking the lives of seafarers and risking the largest capital investments made by shipowners.

Another issue on the agenda at the London International Shipping Week was that of enclosed space entry. In spite of the numerous warnings and copious literature on the topic, crew members continue to die as a result of entry into enclosed spaces.

Issues that have been raised in the past include the design of hatchways, which may not take into account that people today are physically bigger, and the need to have sufficient space inside the hull to deploy breathing apparatus effectively. There have also been criticisms of the level of training onboard ships and whether they have dedicated trained rescue teams.



Misrepresenting what is in a container, be it dangerous goods or simply the weight, can have disasterous consequences say the UKP&I Club's Carefully to Carry committee

Even if rescue teams have been trained, that does not mean they have the right equipment to deal with a given situation. "Preventing deaths in enclosed spaces is a serious issue. It is a deadly serious issue, and one which the industry has to come to grips with," David Patraiko, The Nautical Institute director of Projects said at an enclosed space event organised by the Institute's North London Branch, held in conjunction with Mines Rescue Marine, which pioneered the evacuation of miners after mine accidents.

More people die in enclosed spaces than through any other work related onboard activity. The largest problem is with spaces, which are not perceived as dangers - anchor lockers and deck stores which may suffer from oxygen depletion.

According to the conference, which took place on September 11, there are four major areas to be addressed notably safety culture, shipboard design, equipment, training and drills. Ship design should minimise the need to go into enclosed spaces in the first place, and in many cases equipment crews were required to use was not fit for purpose.

Good training is also an essential element. In a recent interview Michael Lloyd of Mines Rescue Marine said that while there were a number of trainers in the market, they mainly used firefighters, but not as instructors whose training was not specifically geared to enclosed spaces. Indeed the company trains firefighters, not as instructors, but more to ensure their own safety. ***NA***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Paints & coatings

Hempel launches HempaGuard

Danish-based Hempel has launched its latest coating onto the market, which the company has claimed will give significant fuel savings and can be effective for ships that are idle for up to a period of 120 days.

Hempel developed the coating due to the demand for a flexible, high performance coating that also allowed shipowners to reduce fuel costs. The company says that vessels are now operating at slower speeds, putting more pressure on the propulsion system and also sailing with the wrong type of coating for this type of operation.

HempaGuard has been aimed at covering all types of vessels and operational speeds. The latest coating has Actiguard technology, a fusion of silicon hydrogel and biocides that, while releasing the fouling through the biocides, gives the vessel a better performance in the water through the hydrogel due to its hydrophilic nature.

Due to the ActiGuard technology employed, Hempel has been able to reduce the amount of biocides that it uses in the coating and also claims that it can achieve 6% fuel savings.

www.hempel.com

Ancillary equipment

Tranberg sheds some light

Tranberg has introduced its latest onboard searchlight to the market which the company claims will increase safety, and help navigators to operate the searchlights in a simple manner.

The latest product from Tranberg, the Point & Light, is an extension to its previously installed searchlight systems. The Point & Light system allows navigators to simply point on the object they find of interest, click a button on the device, and the requested searchlight will immediately adjust itself in this direction. The searchlight will be able to integrate with the existing operators' panels on bridge consoles and will be as simple to use as it is a plug-in system the company says.

www.tranberg.com

Ancillary equipment

Scanjet cleans up

Scanjet has secured substantial orders for its Scanjet "Surveyor" Tank Management System from Hudong Shipyard in China to equip eight 38,000dwt chemical tankers being built for Stolt-Nielsen.

The system will cover monitoring and alarm functions including radar level gauging for all tanks onboard, high-level alarms and pressure plus temperature measurements, all of which are integrated in the "Surveyor" system. In addition, Scanjet is supplying its critical Tank Cleaning system for the vessels with the value of the order exceeding US$6 million.

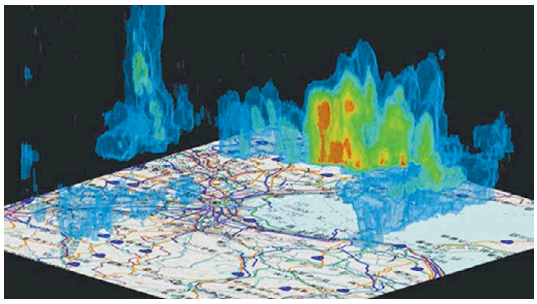
Scanjet gets orders for its Scanjet "Surveyor"

www.scanjet.se

Bridge systems

Furuno launches compact weather system

Furuno Electric has developed a small, lightweight weather monitoring solution that can provide meteorological analysis, its Furuno X-band Doppler Weather Radar.



Real-time 3D monitoring of precipitation

The system measures both the location and intensity of precipitation, and also wind speed and direction around the radar sensors by analysing the Doppler shift of the radio waves returned from precipitation particles in the wind.

Furuno's Weather Radar system consists of the Dual Polarimetric X-band Doppler Weather Radar WR-2100 and the X-band Doppler Weather Radar WR-50, which is best-suited for local weather monitoring and forecasting, facilitating high precision real-time 3D monitoring of meteorological phenomena.

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XBow model courtesy of Ulstein Group ASA

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Nupas-Cadmatic is a concurrent engineering tool for ship hull, piping, outfitting, HVAC, cable tray and electrical engineering. Powerful 3D modeling in conjunction with advanced production modules significantly improve the quality of production and greatly shorten construction times.

Nupas-Cadmatic is represented globally by a network of 21 sales and support partners. Our unified goal is to keep our more than 400 Nupas-Cadmatic clients one step ahead of the competition in continuously changing market conditions.

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www.furuno.com

Propulsion

Namjet gets slick

Namjet has announced that it will be utilising two grades of Thordon bearings for its jet propulsion series. The Thordon RiverTough will be used in its Traktor Jet's with stator bearings and ThorPlas-Blue bearings being used in the steering linkages.

The decision to design the propulsion units to include Thordon RiverTough came from the bearings' long wear life and good performance in harsh abrasive environments said the company. The RiverTough bearings can be used for dirty water environments as they can withstand abrasives in the water.

With the success of RiverTough onboard the units, NAMJet also opted to include ThorPlas-Blue grease-free bearings in the steering linkages. The self-lubricating homogeneous polymer can be used for applications with pressures of up to 45MPa and will give a longer bearing wear life with no maintenance said the company.
www.namjet.com

Condition monitoring

ZFE checks performance

Unique System FZE will deliver Marorka's ship performance monitoring solutions to ADNATCO-NGSCO fleet. The contract will see Unique System ZFE install the energy management systems on ADNATCO-NGSCO's entire fleet.

The first stage of the project will see the installation of the systems onto ADNATCO's six ships; two LNG vessels, two bulk carriers and two oil tankers. The principal objective behind the installation of the systems will be to improve the vessels' performance and to eliminate environmental concerns such as excessive fuel consumption and carbon emissions in the long term said the company.

Marorka's Onboard Energy Management System and Marorka Online, a fleet reporting tool, gathers data from the required instrumentation points and presents the overall efficiency of the vessel in a user-friendly interface. The main advantage of this system is its ability to provide real-time information from each vessel in the fleet, said the company.
www.uniquegroup.com

ADNATCO-NGSCO's fleet will be kitted out with the Marorka ship performance monitoring solution

Ancillary equipment

Bulk carriers employ MacRack technology

Economical and environmentally friendly electric-drive systems for MacGregor side-rolling hatch covers have been ordered for two new series of Greek bulkers being built by Sungdong, in South Korea.

MacGregor, part of Cargotec, has confirmed that five 180,000dwt bulk carriers under construction at Sungdong Shipbuilding and Marine Engineering, will feature MacGregor hatch covers operated by MacGregor's MacRack technology. The order includes the design and supply of key components and the fabrication of the hatch covers.

The bulkers are destined for two Greek owners, the first two for Quintana Shipping and the remaining three for Alcyon Shipping. The first vessel is scheduled for delivery at the end of 2014.
www.cargotec.com

Emission control

Clean Marine's EGCS passes US test

Balder a handymax bulk carrier, owned by Torvald Klaveness has met with the 2015 emission control regulation with its Exhaust Gas Cleaning System (EGCS) from Clean Marine, and is one the first vessels in the world to operate this type of system in the US Emission Control Area (ECA).

Upon arrival in Baltimore the vessel's Master sought approval from the coast guard to enter and exit the ECA Zone using high sulphur fuel oil with the EGCS.

Clean Marine invited USCG and EPA to observe the EGCS in operation for compliance with the ECA. Officials from the US Coast Guard conducted a Port State Control exam on 29 August in Baltimore and confirmed that the EGCS was operating satisfactorily

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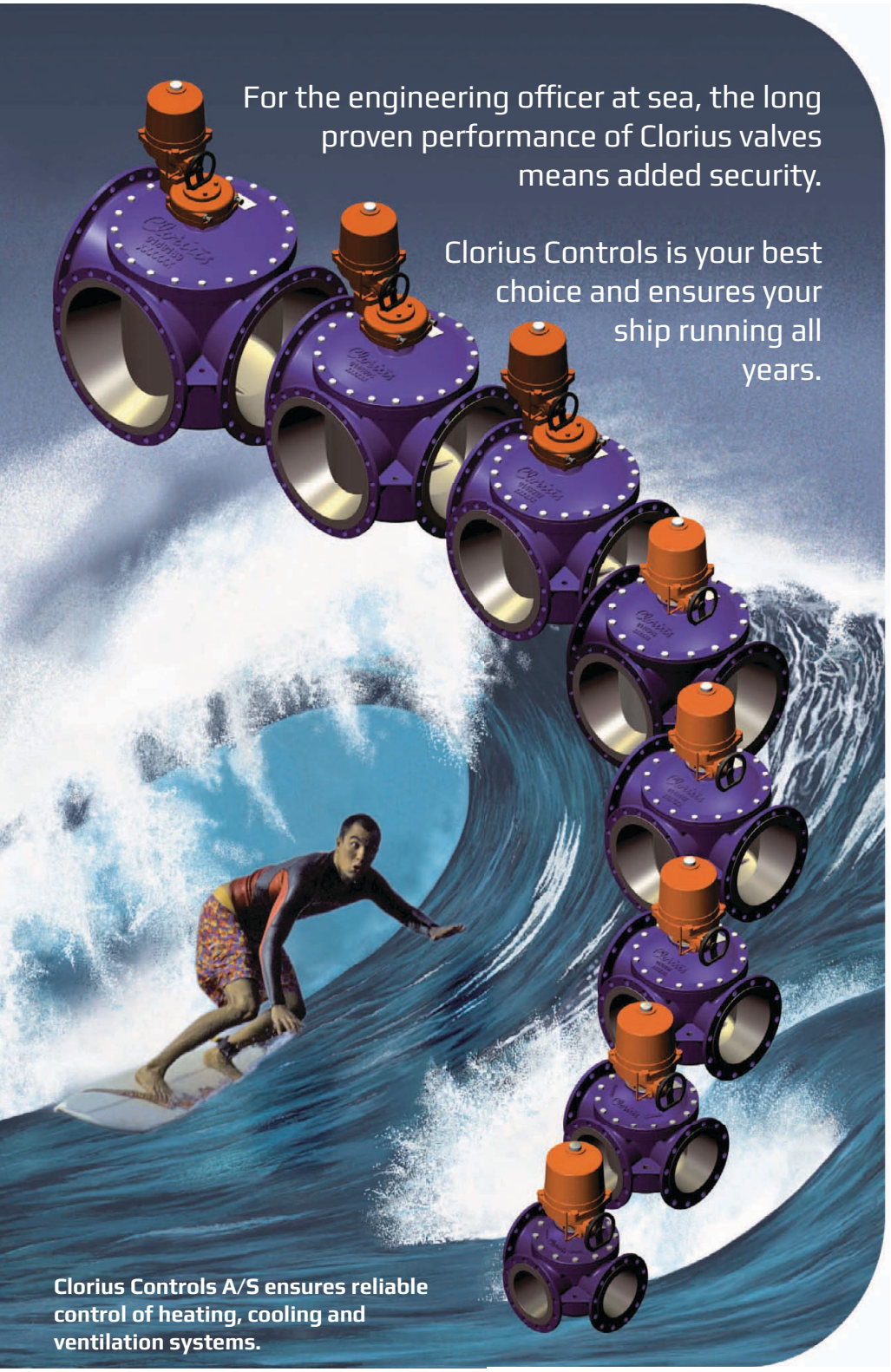

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and found to be in full compliance with MARPOL Annex VI as an equivalency to utilising low sulphur fuel oil as per the IAPP Certificate.

The Clean Marine EGCS onboard the handymax bulk carrier is an integrated, multi-stream system which cleans the exhaust from one main engine, three auxiliary engines and one boiler. The system is also a hybrid type which can operate with both open and closed loops.

www.cleanmarine.no

Propulsion

ATB presents its IE4

ATB group has announced it latest range of motor drives, the IE4 Super Premium Motor Series FS 280-355.

ATB presents it latest motor drive to the market

The motor series will come in a power range from 90kW to 315kW in IE4 acc. CDV IEC 60034-30-1Ed1. ATB has implemented this range of motor drives to get ahead of the mandatory introduction of IE4 usage and allows customers to update their systems to meet with future regulations. Also, the company has said that the latest drives have the potential to give significant savings on customers' energy systems, to protect the environment and reduce their own operating costs.

www.atb-motors.com

Paints & coatings

Fire safe coatings from Jotun

Following an extensive development and testing programme, Jotun has launched its latest mesh free passive fire protection (PFP) coating, which the company claims will help owners, fabricators and applicators save time, reducing costs and risks compared to systems that require mesh reinforcement.

Jotun launches its latest PFP coating Jotachar JF750

Jotachar JF 750 has been extensively and independently fire tested to all key industry standards, demonstrating structural fire protection for up to three hours. Steel sections and divisions have been tested to the industry recognised ISO834/BS476 Part 21 "hydrocarbon curve", proving protection from hydrocarbon pool fires.

Jotachar JF750 has also demonstrated exceptional jet fire performance in the ISO 22899 test without additional mesh reinforcement for up to two hours. This ISO standard simulates the highly corrosive, high heat flux and rapid temperate rise experienced within a jet fire. JF750 has been tested and passed a 4bar blast overpressure, again without any need for additional reinforcing mesh.

www.jotun.com

CAD/CAM

BV chills out

Bureau Veritas (BV) has responded to the demand for safer LNG transportation in the Arctic regions by developing its high-level tools to assess cargo sloshing in ice conditions. A new module in Bureau Veritas' IceSTAR ice load calculation tool will calculate the kinetic energy imparted to the cargo by a collision with ice. The kinematics derived from IceSTAR can then be used together with CFD analysis to determine how the cargo will slosh and the extra loads this will impose on the ship's structure and the LNG containment system.

The classification society has also developed a probabilistic method for assessing ice loads on structure, which will reduce the time and data needed to assess the structure of vessels and units designed for heavy ice operation. The research project was carried out in collaboration with the State Maritime Technical University of St Petersburg, which has led to BV upgrading IceSTAR to include the use of probabilistic methods to calculate ice loads.

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Bridging the gap

Mark Charman, group CEO of international maritime recruiter Faststream discusses the findings of research looking at what maritime employees at sea and ashore make of their career options

The maritime industry is an extraordinarily diverse and interesting sector to work in. As in any industry, the skills required for different roles are very diverse. Some require creativity; some are focused on technical problem solving, whilst others are more about having that indefinable element of commercial savvy.

However, what sets the maritime industry apart from many other business sectors is its reliance on people who have been to sea and served at the sharp end of the industry to be involved with the business ashore. I am not just describing ex-seafarers working in shipping companies, but the myriad of professional maritime service providers who rely on seafarers to bring their experience gained as a deck or engineering officer to the headquarters.

Not every insurer, shipbroker, surveyor, lawyer or naval architect needs to have gone to sea, but all of these businesses benefit greatly from having a layer of ex-mariners within the company.

Key findings:

- **Whilst 69% of all the respondents would follow the same profession again if given a second chance, only half of deck officers would**
- **92% of shoreside workers think it's at least quite important to have ex-seafarers in the office, whilst 35% say it's vital**
- **Engineering officers think that it is much easier to get a job ashore than deck officers do**
- **The least attractive shoreside professions to seafarers are in the law, shipbroking and insurance areas**
- **37% of maritime professionals think that SE Asia offers the best career opportunities over the next 10 years**

At the start of this year we asked maritime professionals what they thought about their careers, the choices they had and what their counterparts earned. We wanted to find out if they regretted the choices they had made and where the best opportunities lie. 2,048 responded, including 612 serving mariners and the survey threw up some interesting results.

Seafarers

Whilst 85% of all seafarers will remain at sea for the majority of their working lives and never make the transition from sea to shore, our survey showed that seafarers are far more attracted by the professions to which they have had some contact in their day to day work.

Operations managers, surveyors, fleet managers and harbourmasters all feature in the working lives of seafarers. However, how many seafarers have ever had to deal with a shipbroker or insurer? These professions can seem extremely remote to the average seafarer.

But, the reality is that all of these professions do need ex-mariners in their offices. People that do understand the realities of life at sea and what is and is not possible are important. It is of course difficult to make a sideways career step, but in the long term it can be a very good move.

It is important that companies in areas of the maritime business that are less obvious and less visible to the average seafarer, but are looking for ex-seafarers to fill some of their key positions, understand that they cannot assume that seafarers have a rounded view of how the international shipping industry fits together and what their company actually does. When marketing their positions to seafarers seeking to come ashore those responsible for recruitment need to understand that a large part of finding the right people is about marketing the company and then clearly and carefully explaining the opportunities that it offers.

For a seafarer used to a hierarchical working life and who has always followed a very defined series of courses and exams to make their career progression up the chain of command, the idea of coming ashore, taking a step sideways and learning a completely new set of skills on the job, can seem extremely daunting and a huge leap into the unknown.

It is also important to note that many seafarers do not come from the big commercial shipping centres such as London, New York or Singapore. Their families are based elsewhere, often in more remote locations, so a move ashore can often mean not only an initial drop in take-home salary, but also necessitate a move to another part of the country or even another part of the world. The pool therefore of potential experienced officers looking to make a move ashore is always going to be a limited one.

However, seafarers should be interested to read that 92% of shoreside workers think it's at least quite important to have ex-seafarers in the office, whilst 35% say it's vital. Yet just over half of seafarers, whether western or Asian, think that it's difficult or very difficult to get a job ashore. To a certain extent, this can be correct.

Not every seafarer is cut out for the challenges of a job ashore. For some, the transition to shore life with the stresses and strains of commuting, taxation, office politics, family life and less obvious hierarchal structures can make life at sea too good to leave behind. But, those who are perhaps less set in their ways, are able to explain complicated technical issues to a non-technical audience or are able to adapt to a completely new way of working, can find that their skills are very much in demand.

Shoreside

The 1,436 office-based maritime professionals who answered our survey agreed that ex-seafarers generally make

good workers, with only 5% saying that they struggle to adapt. However, one third did note that ex-seafarers do need a good deal of initial support in the office. Our experience of placing numerous ex-seafarers into office roles has shown us that companies who have good support and training programmes are the ones who are most likely to retain their staff for the long term.

With competition as hot as ever between the various shipping centres in Europe and Asia, we thought it would be interesting to find out where our ashore workers thought that the best opportunities lie over the coming decade. Some 37% think Asia and 26% Europe. But is this a fair reflection of the sheer numbers of jobs available?

The recent move by the Baltic Exchange to move its capesize vessel reporting times forward by a couple of hours to meet the Asian working day underlines just how much Singapore has grown as a chartering centre. Indeed our Singapore office has had the fastest growth within our network since it was set up in 2006; but London still remains the world's top maritime centre, providing employment for at least 15,000 and home to every type of maritime business imaginable. However, the sentiment amongst professionals seems firmly in the favour of the East.

We also asked our shore-based respondents whether or not they thought that their counterparts around the world earn more or less than them before tax. The results formed an extremely mixed opinion by shore-based employees which is representative of common 'assumptions' which are broadly made when it comes to pay.

There was very little difference between the perception of technical and commercial roles. Yes salaries are higher in the US, however, it is the perception of Asian salaries, which is furthest away from reality. Whilst technical staff in Asia often earn on par with their European counterparts, commercial roles such as a charterer or shipbroker often get paid more in Asia than anywhere else in the world.

European and US based workers seemed to think the opposite with 47% and 64% respectively believing that their Asian counterparts get paid less than them, whilst workers in Asia seemed more confident in the pay levels against both workers in Europe and US - 64% of Asian workers thought they got paid more than their counterparts in Europe and 69% thought the same against US shore-based employees.

There are a number of other conclusions which can be drawn from these results, however one of the most interesting is how workers perceive their own pay against their counterparts within the same continent. Whilst workers in the US and Asia felt happy with their own salary, European employees were by far the most negative with over 43% stating that their counterparts around Europe earn more than they do.

However, you look at it, the maritime sector is a complex playing field for both employers and employees. *NA*

Jacks of all trades and masters of some

European education has seen the development of a unique course in ship design with seven universities in six European countries offering opportunities to aspiring ship designers from around the globe. Philippe Rigo of EMSHIP reports

The shipping industry is looking for polyvalent engineers; that is engineers with expertise in two or three technological fields such as naval architecture, mechanical engineering, production, CFD, etc.

EMSHIP provides such an opportunity for new graduates, but also experienced professionals looking to update their knowledge.

EMSHIP integrates advanced education from seven top EU universities, each being a leader in its field of expertise – from hydrodynamics and ship design to ship structure and offshore technology. Therefore, a unique and outstanding scientific and technical education has been assured by this consortium.

Examples of EMSHIP internships combined with master's theses are:

- ***"Modeling and Simulation of a Production Line (Panel Line) in shipbuilding Industry …", URO-Germany, Feb. 2012 and internship at Fraunhofer Research Institute (DE),***
- ***"Analysis of Structural Strength of FPSO Ship …..", ZUT-Poland, Feb 2012 and internship at DNV-Poland,***
- ***"Energy Efficiency Design Index (EEDI) Impact on Superyacht Design", UNIGE-Italy, Feb 2013 and internship at Benetti Yachts (IT).***
- ***"Non-linear Hydro-Elastic Response Analysis in Irregular Head Waves…", UGAL-Romania, Feb 2013 and internship at Icepronav.SA (RO).***

Information on EMSHIP is available at www.emship.eu and the EMSHIP coordinator can be contacted at emship@ulg.ac.be

Figure 1: The EMSHIP Partners (in Europe and outside EU)

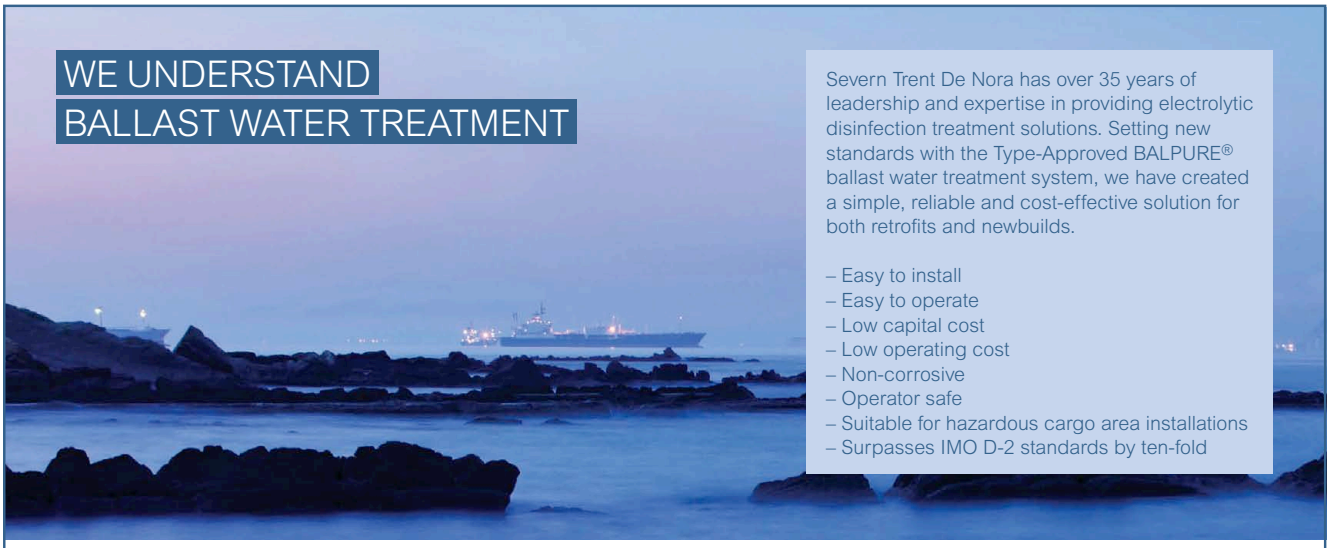
In order to attain the main goal of EMSHIP, which is to guarantee the candidates' future career, we have integrated the market demands and European industrial needs into the educational programme.

The educational programme at EMSHIP is the only Erasmus Mundus Master's Degree dedicated to the field of naval architecture (ship and offshore design and production technology in Europe).

Teaching at all the universities is delivered in English but, students will have the opportunity to learn European culture in at least three countries. A Double Master's degree is delivered by the prestigious Ecole Centrale of Nantes (ECN) and by University of Liege (ULG) (coordinator of the project), including also six months internship and master's thesis completed with an industrial partner, under the supervision of a third university (URO-Germany, UNIGE-Italy, ZUT-Poland, UGAL-Romania or ICAM-France).

The 90 credit lectures, delivered during 18 months, provide relevant advanced knowledge in ship design, ship structures, ship hydrodynamics and ship production (offshore structures and particularly wind energy structures are also tackled).

Three mandatory mobility periods, Belgium and France for all students, and later either trips to Germany, Italy, Poland or Romania, which guarantee a wide opening to the EU market for job opportunities, in Europe, but also worldwide.



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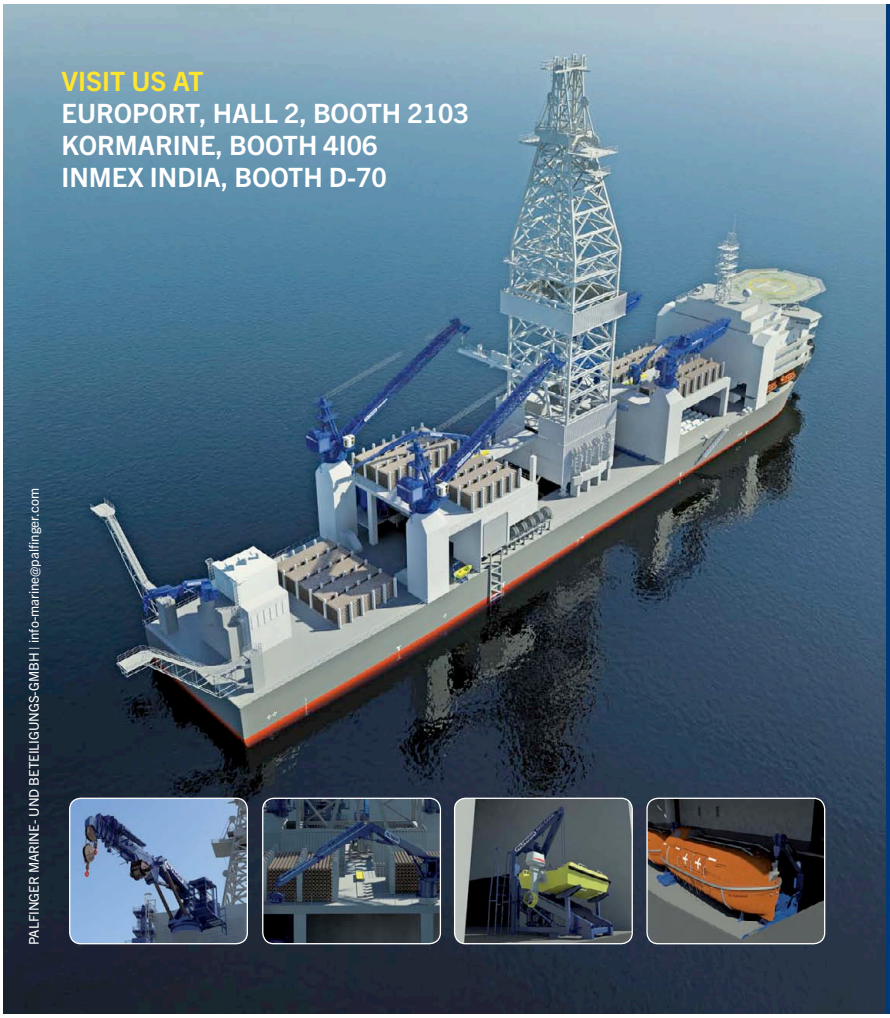

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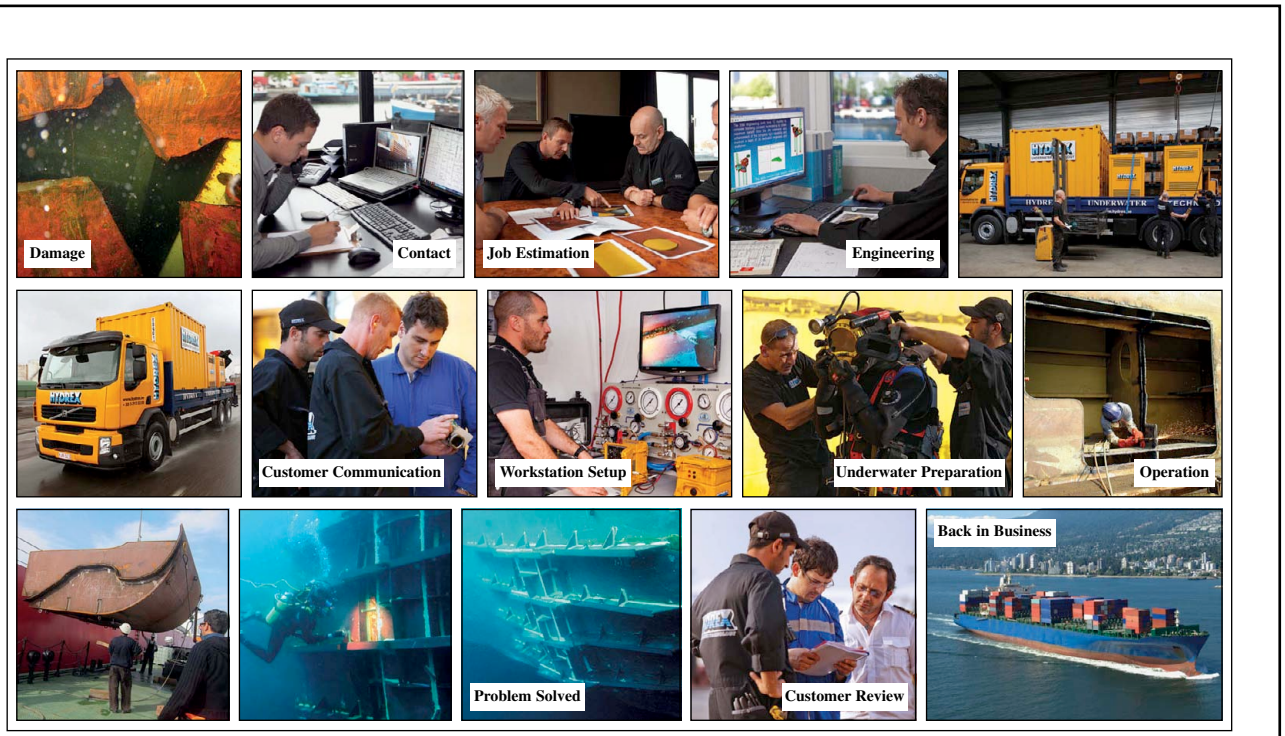
In "ship hydrodynamics" and "ship design", students start courses on ship theory, ship projects and ship design, design of high speed vessels, then continue with lectures in waves and sea state models for ship design, seakeeping: theory and numerical modelling, CFD for ship hydrodynamics multi-objective optimisation for ship design, experimental ship hydrodynamics and finally maybe get advanced lectures in ship manoeuvrability, ship propulsion or hydrodynamics and aerodynamics for sail boats, design of sails, masts and rigging, hull form and skeg design, general arrangements of sail boats, hydrofoils, planing and semi-planing crafts.

In "ship structure" and "ship production", students start at ULG with lectures on structural design of ships and offshore structures, and ship production and equipment. Then they continue with advanced lectures in structural materials (metallic and composite materials); structural modelling (FEA); Load assessments (rule based method versus direct analysis); structural responses: linear analysis, nonlinear analysis, ultimate strength, dynamic behaviour, fatigue; or in production technology: shipbuilding, reconstruction and conversions, maintenance, decommissioning.

To maintain the courses at the highest level, EMSHIP is supported by major universities from around the globe, which offer visiting professors for advanced lectures (UoM-Michigan, NAOE-Osaka, UFRJ-Rio, NSW-Australia and PNU-Korea, and where students can go for an internship and master's thesis).

EMSHIP attracts students from all over the world. Scholarships are available from the European Community (Erasmus Mundus), industrial partners (BV), and the Lloyd's Register Foundation (LRF).

The Strategic (industrial) Advisory Board (SAB), composed of 25 industrial partners, provides internships, master's thesis and often new jobs to graduates. The SAB members are from classification societies, including Bureau Veritas, DNV, GL, Lloyd's Register, Rina; shipyards [Blohm + Voss, Aberking & Rasmussen, Benetti, Intermarine, Perini-Navy, Baglietto, Damen, Stocznia Gdańsk, Crist; the marine & equipment industry and R&D institutes Aveva, Becker-IBMV, CMT, Deme, Flume, Friendship S., Genfer Design, Hochtief, HSVA, J. De Nul, Marin-Teknikk, Saipem, SDG, VDMA; shipowners Exmar and educational associations (WEGEMT). *NA*



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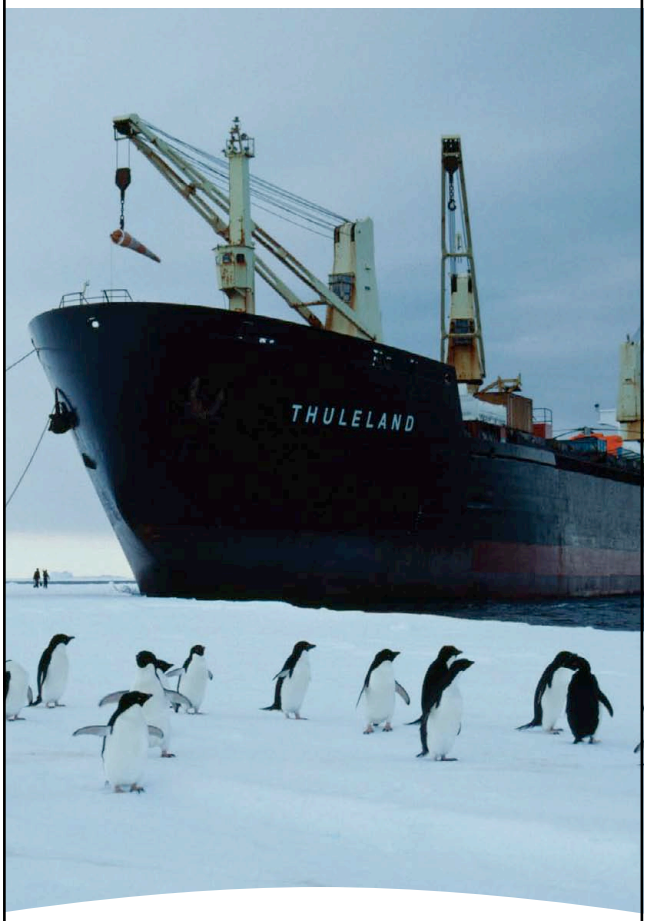

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Jumping hurdles to achieve luxury cruise ship designs

The building of luxury cruise ships means a lot to China, which is striving to transform from a big shipbuilder to a strong shipbuilding country. No Chinese yard has entered the cruise market as yet, but even with China's solid foundations it still has a long way to go to snatch the pearl in the crown, reports Yan Fenghua

Luxury cruises and LNG carriers are both regarded as the pinnacle of achievement in the shipbuilding sector. While China has already managed to design and build LNG ships on its own, it is struggling to enter the complex world of luxury cruise ship building.

For Chinese yards building a cruiseship means more than just entering a profitable sector. The building of luxury cruise ships is symbolic in that it will elevate China's industry from merely prominent in size to a strong shipbuilding country.

A breakthrough in the cruise market would help China improve its shipbuilding product portfolio and technological standards and enhance its competitiveness in the international market.

However, in reality even though China has a solid foundation in shipbuilding technology, it still has a long way to go to design and build cruise ships because their design is particularly difficult to achieve. There have been comments from European shipyards that China may be able to build a cruise ship soon, but the design of such vessels will still be firmly in European hands.

Is China ready for the cruise ship market?

More complex than LNG carriers

Cruise ships are regarded as "floating resorts" and "moveable star graded hotels" with integrated functions of sight-seeing, travelling, relaxation and entertainment. They are typical high-technology, high-value-added ships.

The average construction cost of a cruise vessel is US$700-800 million. The building costs of some can even reach over US$1 billion. According to Zhang Minjian, an expert from Shanghai Merchant Ship Design & Research Institute (SDARI), cruise ships have more complex and higher-standard requirements on dynamic power technology and the design of the ship hull compared to other ship types.

Unlike designing an LNG ship of which the difficulties lie only on the technical side, designing a cruise vessel also involves issues such as interior design, furnishings and ancillary facilities, etc. While both are regarded as the height of ship design, it is fair to say that it is more difficult to design cruise vessels than LNG ships.

The space for public activities and entertainment facilities are important criteria when evaluating passenger vessels. International standards require these ships to cater for a wide variety of entertainment facilities.

In recent years, high-end ancillary facilities on cruise ships have become more diversified and novel. In order to enhance the cruise experience of tourists operators have tried to copy almost all entertainment and leisure facilities on land onto their ships. It is no longer just a pool and a bar, but a planetarium, yacht club, man-made underwater world, ice-skating, multi-purpose ball game courts, mini golf courses, merry-go-rounds, rock climbing and theatres with 750 seats, etc. are all possible to be found on a cruiseship.

Much work to do

In fact, Chinese shipbuilders still have a very long way to go before they can achieve a critical breakthrough in cruise vessel design. But, the country's shipbuilding sector has already built a solid foundation on ship construction and design over the years, and has accumulated rich experience of shipbuilding management and craftsmanship

One option for Chinese shipbuilders to develop the design skills necessary for cruise ships is through buying patents from foreign shipyards. But this is an expensive option and foreign companies may not be willing to sell their core design to the Chinese.

In addition buying designs from foreign yards without the development of an in-house design capability, will mean Chinese shipyards will only be followers and will have no chance to compete. Therefore, merely buying patents from foreign yards is not enough to fulfil the country's ambition to become a strong shipbuilding nation. China must start by developing its own design capability.

Some Chinese shipyards have already made some headway towards their goal of building a cruise vessel. For example, SDARI has designed its own models of a 16,000gt ro-pax vessel *Weihai-Dalian*, of which there are several versions, the 700 lane metres and 1,100 passengers type, the 2,000 lane metres/1,400 passenger vessel, 2,000 lane metres/1,600 passenger vessel, 2,500 lane metres/2,300pax ro-pax vessel and Beihai-line ro-pax vessel, etc.

Among those that have been delivered, *Yu Zhu* and *Long Xing Dao* are the two, over-150m, large-scale ro-pax vessels of which the intellectual property rights belong solely to the Chinese. SDARI's experience in designing passenger vessels and ro-pax vessels has laid the technical foundation for the research institute to develop luxury cruise models.

According to Zhang, SDARI established a luxury cruise special project team in 2010 and has started preliminary works such as conducting basic research and collecting data on cruise vessels. In early 2013, SDARI commenced working on the "Research on critical technologies of functions and overall designs of mid-sized luxury cruises". The project, commissioned by the Ministry of Industry and Information Technology of PRC, has provided an opportunity for SDARI to deepen its understanding of luxury cruise design.

"The design of luxury cruises is a broad and difficult area. It is impossible for us to grasp everything in one go. We have to move forward step by step," concluded Zhang. *NA*

Veth Propulsion propels LNG barge

Veth Propulsion has recently installed its VZ-550 rudder propellers on the latest inland LNG tankers for Shell

The LNG powered barge, *Greenstream*, has been built and designed at Peters Shipyards in The Netherlands and will be managed by the Dutch-based Interstream Barging (ISB). This is the first of two new LNG- electric powered barges to be chartered by Shell. *Greenstream* was launched earlier this year, with the second vessel, *Green Rhine,* just being christened.

Greenstream has four small efficient engines (Peters LNG Packs) rather than one large engine as in traditional barges. This means that the power can be reduced when it's required to travel downstream then upstream with potential for fuel savings. These engines will operate at a lower frequency than traditional barges, reducing vibration and noise levels, the company says.

The company noted that the Veth Propulsion VZ-550 rudder propeller has been fitted to *Greenstream* because it has good manoeuvrability and 360degs thrust. In addition this type of thruster was installed because it does not need a lot of space to be fitted.

"Due to the space that the thrusters the thrusters take up will mean that you can put the engine next to the thrusters, as only a small shaft line is needed", says Martin van der Jagt, sales manager, Veth Propulsion. "There is also no resistance to a rudder when you compare this with a conventional system and you can dismount the propeller without docking."

Greenstream the latest in LNG inland barges

Van der Jagt highlights that these types of rudders are not very common in the inland market, but with more modern designs on vessels coming on to the inland waterways this is something we could see more of in the future. *NA*

Whether it's a de-rated or low revving engine, or just a vessel that has adopted a 'slow steaming' policy, the new NPT propeller from Stone Marine Propulsion is now proven in service to dramatically reduce fuel consumption and emissions. What's more, an NPT propeller often costs less than a conventional one. To read more about the NPT Propeller in general, and the remarkable results achieved on Seahorse 35000 class vessels in particular, go to this address - **www.smpropulsion.com/npt**

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Korean yards hopeful of recovery

Expectations of an economic recovery following the banking crisis in 2007/08 have been high every year. Every year since then those hopes have been dashed, including the 2010 false dawn. South Korean yards are again hoping for the elusive upturn in their fortunes, but hope is fading for some builders

Hidden behind the bleak newbuilding and orderbook figures are the South Korean yards' attempts to reinvent themselves, or at least to refocus their efforts on the more lucrative vessel types such as LNG carriers and the offshore market. And the beginnings of what could be a recovery.

In leaving the lower end of the market, in value terms, to the Chinese the South Korean's have given up trying to maintain their status as the largest shipbuilding nation in the world, a mantle they effectively relinquished to their neighbours in 2009, in terms of new orders, and in 2010 when counting completed vessels.

Three years on South Korean yards have fallen far behind China with some 44% of the current orderbook accredited to China and only 23% to South Korea, according to the broker Clarksons (see *The Naval Architect* September 2013, pages 66-67). The figure is slightly better in terms of DWT with China still on 44% but South Korea managing 28% of orders in total.

That said Table 1 (below) shows that the Korean yards are having some success at transforming their businesses; at least the larger yards are, smaller yards may still be trapped in the economic mire; but as we shall see later even they are seeing some signs of an upturn in their fortunes.

In 2010 South Korean yards built 14.9 million CGT of shipping, a 28.8% market share of the total. China in the same year completed 18.8 million CGT, 36.6% of the world's total tonnage built that year.

By 2011 and 2012 these figures had increased to 15.8 million and 13.4 million CGT, 30.9% and 27.9% respectively in South Korea. In the same years China completed 19.2 million and 19.3 million in CGT, but its market share had increased to 37.6% and 40.3%.

This demonstrates the larger Korean yard's success in developing their businesses, even though these yards were building significantly less in CGT terms, the value of those ships was far higher. So although in South Korea yards built nearly 25% less in tonnage, the value of the vessels built was very nearly double that of the Chinese yards.

In subsequent years these figures have changed, with the Chinese showing a marked improvement in value terms, suggesting that the Chinese may be catching up fast. Indeed some Chinese yards are taking on more sophisticated designs, though it may take a few years yet for these yards to match the technological capabilities of the mature South Korean shipbuilding industry.

To illustrate the shift from conventional shipbuilding to the offshore sector and to ships considered to be of a more sophisticated design, the reader need look no further than Samsung Heavy Industries (SHI), which says that in 2012 it delivered 328 tankers of all types, 312 container ships and 53 bulk carriers. In the same year it completed 71 LNG carriers and 50 offshore vessels of which 33 were drill ships, as well as nine ferries including one high speed ferry.

Still under construction at the end of the year were 39 tankers, 50 container ships and, significantly, no bulk carriers. Some 32 LNG carriers and a further 23 offshore vessels were still under construction.

The fact that the company has not taken any new orders for bulk carriers is the stand-out figure, and JH Chung VP Marketing at SHI, explains: "Shipyards, desperate to fill their workload, are implementing aggressive pricing strategies preventing newbuilding prices from falling. SHI's strategy of focusing on sophisticated products, such as LNG carriers, shuttle tankers and offshore facilities, has paid off and allowed us to strengthen our position in those markets."

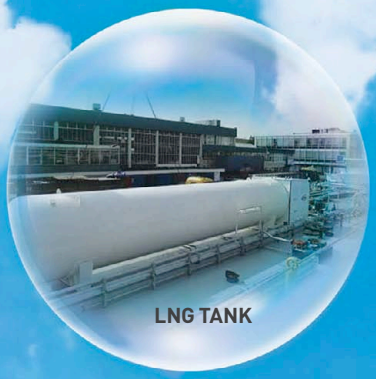
SHI summed up the feeling within the Korean yard industry: "The global economic recession has resulted in significantly less newbuilding orders. However, to our relief, the offshore market is doing relatively better thanks to high oil prices and growing global energy demand. Consequently, SHI is receiving more offshore orders than commercial vessels orders."

For the larger yards the shift to offshore markets and other more complex ship sectors is all well and good, but the small to medium sized yards, many of which shifted from providing blocks for the larger yards, to build ships in their own right during the boom years before 2007, now find that switching back to their previous life is difficult, but maintaining the business in this climate is even more challenging.

Investment $bn

YEAR CONTRACTED	2010	2011	2012	2013ytd
BUILDER COUNTRY				
China P.R.	40	24.5	18.9	17.3
South Korea	33.8	48.1	30.4	24.8

Table 1. Source:Clarksons Research Services



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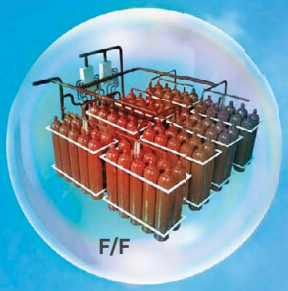

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Green Promise for the People

YS Kang, senior VP of sales and marketing at Sungdong Shipbuilding & Marine Engineering (SSME) told *The Naval Architect*: "The recession caused substantial damage to many shipyards specialised in small and medium sized commercial vessels."

As a result SSME says the smaller yards need to find a niche, SSME's case that was the FSO's and shuttle tankers. According to Kang a number of forecasts show that the commercial vessel sector may pick up offering some hope to the beleaguered small and medium sized yards.

In fact since Kang told *The Naval Architect* of his belief that the market would gain a little momentum SSME has reported an order for eight 115,000dwt LR2 tankers (which includes four options) from Singapore owner Navig 8, and a second contract for four 50,000dwt MR tankers (including two options) from Greek owner Horizon Tankers, a Target Marine Group affiliate.

The orders are worth a combined KW600 billion (US$539 million) and are scheduled for delivery in 2015-16.

However, these deals were reportedly made possible through the cooperation of creditor banks, including the Export-Import Bank of Korea and the company believes that it will sign more deals in the near future.

Up to this point in 2013, SSME has been awarded US$1.3 billion in contracts for 30 tankers. Kang recognises that yards in China remain its greatest competitor for bulk carriers, but he says: "We are confident that many owners who are dealing with us take quality as their top priority, especially for container ships or tankers. There is still a big gap in terms of technology between Chinese and Korean yards."

Ultimately it is this element, which the Korean yards believe is their greatest selling point over its competitors in China who have significantly lower labour costs. If they can remain ahead technologically, the Korean yards may have a chance of successfully competing.

As the upturn finally materialises that quality may increase in importance, though there are signs of movement in the market yards are still reticent to call it a recovery.

"Although the shipping market downturn continues, we are seeing a gradual improvement in the overall supply and demand balance. In particular, the product tanker market is showing fast improvement in demand. We hope to see the shipping market's full recovery soon," says SHI. *NA*

World Shipbuilding Performance

New orders Source Koshipa

Year	Korea		China		World	
	Thou. CGT	%	Thou. CGT	%	Thou. CGT	%
2002	5,611	29.6	2,112	11.2	18,931	100.0
2003	18,810	42.9	6,107	13.9	43,828	100.0
2004	15,732	33.2	6,765	14.3	47,359	100.0
2005	13,571	32.4	6,606	15.8	41,983	100.0
2006	22,010	37.6	31,382	36.0	61,091	100.0
2007	32,861	37.6	31,382	36.0	87,288	100.0
2008	15,833	38.3	13,148	31.8	41,386	100.0
2009	3,443	20.8	6,987	42.1	16,580	100.0
2010	11,172	28.9	16,083	41.6	38,625	100.0
2011	13,550	43.9	8,224	26.7	30,846	100.0
2012	6,823	27.9	8,110	33.2	24,421	100.0

Completions

Year	Korea		China		World	
	Thou. CGT	%	Thou. CGT	%	Thou. CGT	%
2002	6,688	31.3	1,572	7.3	21,392	100.0
2003	7,175	32.0	2,569	11.4	22,454	100.0
2004	8,319	33.6	3,090	12.5	24,774	100.0
2005	10,093	34.8	4,237	14.6	28,967	100.0
2006	11,940	35.0	5,274	15.5	34,066	100.0
2007	11,277	32.5	6,795	19.6	34,670	100.0
2008	14,509	35.4	9,065	22.1	41,019	100.0
2009	14,466	33.1	12,387	28.4	43,692	100.0
2010	14,906	28.8	18,800	36.6	51,664	100.0
2011	15,797	30.9	19,198	37.6	51,044	100.0
2012	13,391	27.9	19,331	40.3	47,918	100.0

Order books

Year	Korea		China		World	
	Thou. CGT	%	Thou. CGT	%	Thou. CGT	%
2002	15,098	30.7	6,064	12.3	49,159	100.0
2003	26,623	37.7	9,543	13.5	70,555	100.0
2004	33,968	37.3	13,483	14.8	91,077	100.0
2005	37,595	35.6	16,643	15.8	105,635	100.0
2006	47,994	35.2	28,645	21.0	136,238	100.0
2007	64,575	35.6	53,101	29.3	181,449	100.0
2008	64,357	33.8	62,001	32.6	190,266	100.0
2009	47,576	31.3	54,357	35.8	151,952	100.0
2010	39,145	30.5	48,922	38.2	128,013	100.0
2011	33,066	29.7	38,872	34.9	111,442	100.0
2012	24,164	27.3	29,361	33.1	88,674	100.0

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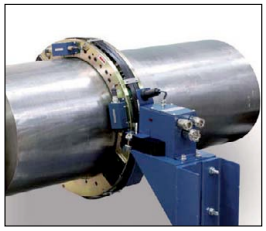

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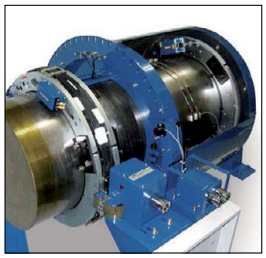

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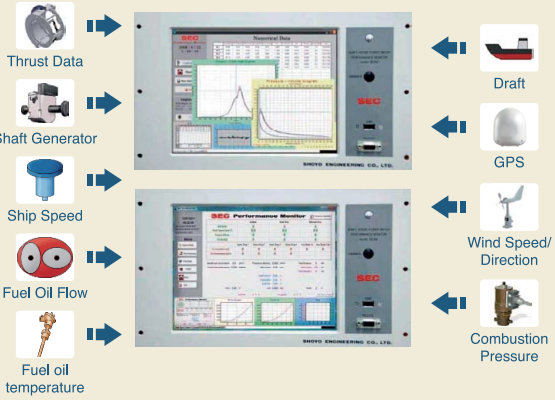

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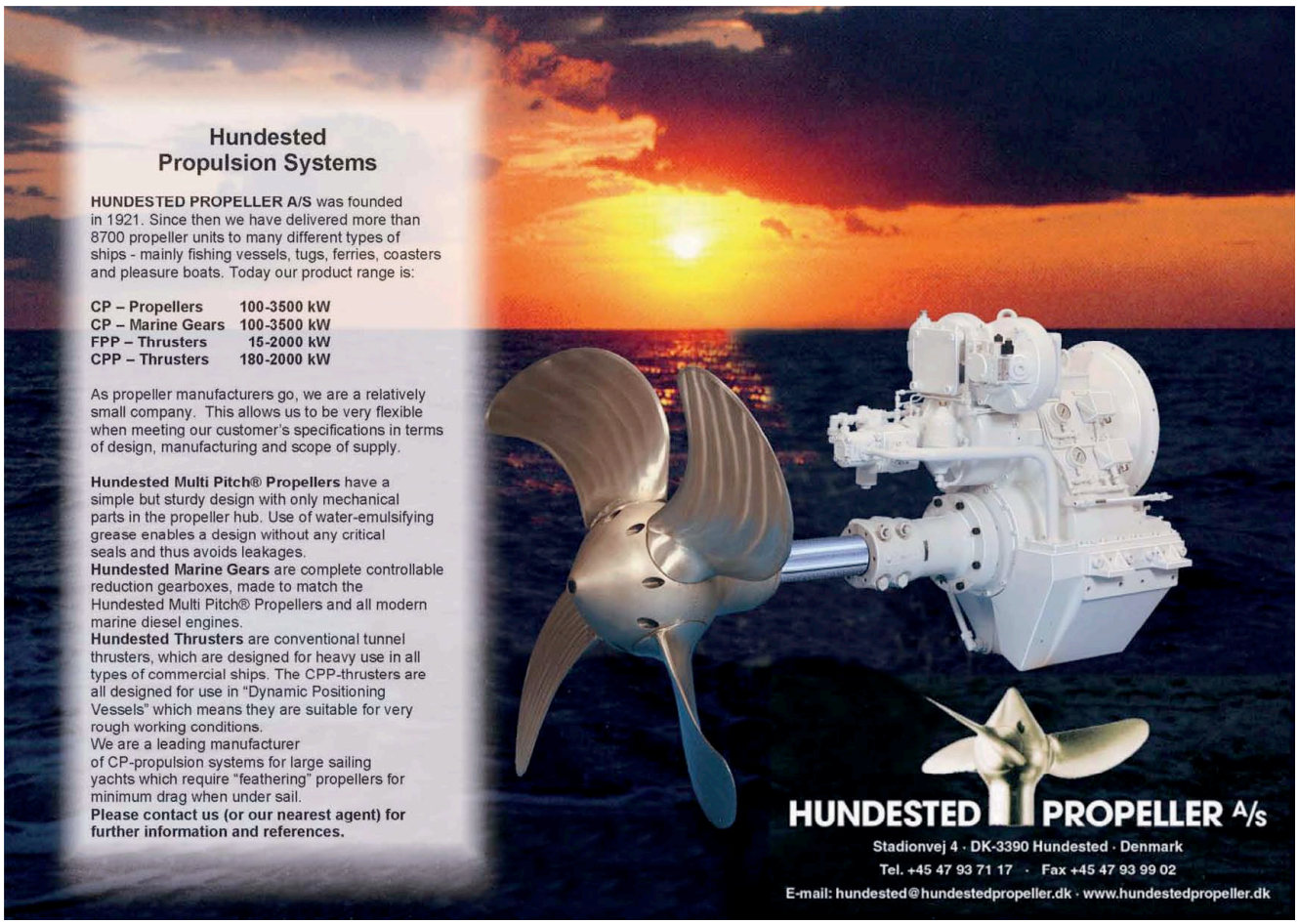

SHI improve ABAS Blanket design

New developments to Samsung Heavy Industry's Anti-boil-off gas Anti-Sloshing (ABAS) Blanket have made the anti-sloshing system more attractive to owners say its designers at BASF and the South Korean yard. Last year's independent tests have verified the effectiveness of the design

Putting a blanket on is normally associated with keeping warm. In the cryogenic world of LNG, however, the ABAS Blanket maintains the liquefied gas at -162°C and reduces the amount of gas lost as boil-off and also reduces the pressure in the tank.

This is just one of the ways that SHI's ABAS Blanket can improve the commercial prospects for LNG carrier operators according to Samsung Heavy Industries (SHI).

Sloshing has been a particular problem for vessels with large membrane tanks and the blanket design was originally devised by BASF and SHI to limit the movement of the liquid, while the vessel was in the open sea.

Cargo movement, particularly from half loads created waves with high impact velocity within the tanks that damaged the membrane wall, this could lead to leaks of the cargo, which could ultimately endanger the safety of the vessel and crew.

Tank tests have shown that the ABAS blanket has a dampening effect that slows the motion of the LNG cargo and reduces the impact pressure by around 20% says SHI.

This reduced impact pressure in turn means that the octagonal shape of the tanks, designed to reduce the sloshing impact, can be changed by doing away with the two sloping sides at the top of the tank and making them right angled corners; this will increase the cargo capacity by 5%.

Changes to the links of the system have improved it. Essentially the blankets are one metre cubes of Basotect, a foam developed by German chemicals firm BASF that is lightweight, soft, absorbent and is able to maintain its form at temperatures below -200°C. The Basotect cubes have an aluminium ball inserted for buoyancy and are covered with another hardwearing material, Vectran, which is made from polyarylate fibre and is produced by the Japanese company Kuraray.

Dr. Sangeon Chun, designer of the ABAS Blanket, points to the environmental and technical benefits of the system in dampening the sloshing movement of LNG cargoes

Dr. Sangeon Chun, Cryogenic Research & Development Center (System R&D), SHI says the original design of the blanket used metal U-bolts to link the one metre basotect cubes together to form the blanket, but he admitted the bolts could: "hit the primary membrane and damage it".

As a result the latest ABAS Blankets have dispensed with the U-bolts and the cubes are linked with Vectran belts instead. Furthermore, he says that the system cannot be used with GTT's NO96 membrane system, as there is also a risk of damage to the blanket.

"The NO96 membrane uses sharp tongues [to link the primary membrane] and the protrusions tear the blanket and so it cannot be used in the NO96 membrane," he says.

Even with these difficulties Chun told *The Naval Architect*, that: "Two classification societies, ABS and Bureau Veritas, have now approved the ABAS Blanket." This followed the verification tests carried out by two of South Korea's prominent universities Seoul National University and Pusan National University.

Chun says that Basotect blanket design was tested by the departments of Naval Architecture & Ocean Engineering at both colleges with the tests taking place, in "correctly dimensioned, transparent containers", that simulated sloshing conditions and that had the octagonal shape of a full size LNG tank and they were equipped with pressure sensors in the walls."

Test results showed that the ABAS Blanket reduced sloshing peak pressures against the walls by about one-fifth allowing for the simplified shape with right-angles at the top of the tank, which allows for more cargo and reduces production costs.

In addition the tests revealed that the ABAS system, "considerably reduced undesired abrupt vaporisation in operation, which could lead to a sudden increase of internal pressure. The vaporisation is measured with the so called boil-off rate (BOR). The BOR is mainly determined by how well the insulation succeeds in preventing heat transfer from the LNG to its surroundings. The reduction of BOR is an additional benefit of the anti-sloshing blanket solution." However, SHI has not released figures for the reduction in the boil-off rate experienced by the testing institutions.

SHI also believes that the ABAS Blanket is beneficial for the environment because it will allow vessels to carry part loads, thereby allowing deliveries to several destinations.

"As LNG tankers will be able to take different load levels, it will be possible for them to call at several harbours in succession and to unload their contents based on need. This will reduce the number of no-load journeys and therefore also costs while at the same time making an important contribution to resource efficiency," says Chun.

As concern over global warming increases issues over efficiency will become more acute and so any improvements could well be seized upon. *NA*

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Conoship develops eCONOlogy Traders

Dutch ship design specialist, Conoship International B.V., recently developed a series of super fuel efficient general cargo vessels: the eCONOlogy Traders. Jan Jaap Niewenhuis, manager design department, Wieger Duursema, naval architect, Conoship describes the latest design

This new generation of General Cargo Vessel designs varies in deadweight (dwt) between 2,200-5,000dwt, combining eCONOmy and eCOlogy with a fuel consumption of only 2.5-3.5tonne per 24 hours at a service speed of 10knots. In some cases this equals to a 50% lower fuel consumption compared to conventional general cargo vessel designs.

The developed series of general cargo vessels are based on a common design approach and share a common aft ship design: the ConoDuctTail. However, the design is not standardised: design parameters as main dimensions, deck area and hold dimensions can up to a certain degree, be freely chosen. This way a shipowner's specific design requirements can be met, including Ice Class and other (class) notations.

The designs share their "DNA" with the successful series of 3,700dwt Sea River liners of Wijnne Barends, as developed by Conoship in cooperation with Groot Ship Design. These vessels have a maximum deadweight of approximately 3,700dwt, a service speed of 10knots, at which they use 2.5-3.0tonnes fuel per 24 hours: EEDI-champion in its DWT-class, with an "Attained Energy Efficiency Design Index" of 11.3, only 62% of the maximum allowable value.

Design approach

The overcapacity of tonnage has considerably changed the market situation for small general cargo vessels. Shipowners now tend to search niche markets in which they can still make some money. These niche markets usually involve transporting of specific types of project cargoes in combination with the possibility to transport traditional cargoes for general cargo vessels. Therefore, innovative designs are required.

In many of the design projects of general cargo vessels one of the main objectives is a high energy efficiency at reduced speed. The fuel efficiency can be improved by optimising each design for its (low) operational speed.

eCONOlogy Trader 3700

The hull form and propulsion train of the eCONOlogy Trader are optimised for a speed of about 10knots.

This new generation of general cargo vessels provides considerable savings regarding fuel costs compared with the conventional general cargo vessels designs, which were optimised for their maximum speed, but which are now operating at substantially lower speeds. This does not mean that the new vessels are not able to sail faster. Most of the ships in the series have a maximum speed of about 12knots.

The development of these very efficient modern general cargo vessels truly is state-of-the-art naval architecture. To minimise the fuel consumption and to maximise the vessel's earning potential in the foreseen (niche) market requires a holistic design approach. It starts with a careful determination of design requirements regarding the combination of speed, deadweight, hold dimensions and deck area.

The design process is continued by an optimisation of main dimensions and integral design of the hull, the propeller and the selection of the main engine and gearbox. Failing to balance these last three aspects could for a 4,000dwt vessel lead to an increase of propulsion power at 10knots of over 100kW. With the current gas oil prices this results in an increase of fuel oil costs of more than €100,000 (US$133,336) per year.

Hull form and propeller

In all the designs of the eCONOlogy Trader series a ConoDuctTail is incorporated. The ConoDuctTail is an in-house developed aft ship design with a strong focus on the combination of a low resistance and a high propulsive efficiency, both in calm weather and when sailing in waves. Optimisation based on extensive CFD calculations conducted by Conoship in cooperation with SasTech and Van Oossanen led to a 17% reduction of resistance compared to a conventional tunnel shape aft ship.

The differences between the ConoDuctTail and extreme pram type aft ships are reflected in the propulsive characteristics: the propulsive efficiency of the ConoDuctTail is substantially higher. This is the result of the larger propeller diameter, nozzle and evenly distributed wakefield. The propeller diameter is up to 25% larger than units normally fitted to vessels of this size. Recent studies performed by Conoship have shown that a further increase of the propeller diameter, while reducing the propeller speed results in an even higher propulsive efficiency.

Main engine and gear box selection

Although the series of vessels are optimised for 10knots, the ships should be capable of sailing at off-design speeds without the fuel consumption rising steeply. The maximum speed of these designs is about 12knots at reduced deadweight, which for the largest eCONOlogy Trader results in a maximum main engine power of about 1,200kW. This is substantially more than the required engine power for a speed of 10knots at full draught.

The difference between the engines from different suppliers, in specific fuel consumption, at part load is significant. Therefore, only the main engines are considered with a wide operating range and a high efficiency at part load. The design speed of 10knots and the maximum speed of 12knots are not rigid limitations of the eCONOlogy Trader series. It is optional to extend the propulsion installation with a

		eCONOlogy Trader 2200	eCONOlogy Trader 3700	eCONOlogy Trader 4000
Lpp	[m]	79,97	84,98	91,8
Bm	[m]	11	13,35	13,5
Depth	[m]	5,2	7,05	7,8
Draught	[m]	4,13	4,9	5,7
Deadweight	[ton]	2260	3711	4000
Hold dimensions	LxBxH [m]	50,05 x 9,00 x 6,00	62,30 x 10,80 x 7,73	61,6 x 11,1 x 8,2
Hold capacity	Cubft	90000	182000	194500
Deck area	[m2]	451	688	690
Main engine	kW	749	749	1200 - 1800
Fuel consumption	Ton/day	1,7	2,9	3,0

Technical particulars of the eCONOlogy traders

Power Take In, to further increase the speed, or to further improve the fuel efficiency.

Low propeller speeds may require a two stage gearbox. These gearboxes are more expensive than the conventional one stage gearboxes. Depending on the fuel type the vessel is operating on, the pay-back period for the additional costs can be less than one year. Optionally the vessels can be equipped with an LNG or dual fuel propulsion train.

Designs

The series of eCONOlogy Traders currently consists of three types: the 2200, 3700 and the 4000 Trader, referring to their maximum deadweight. These vessels are not standard designs and each vessel consists of a unique combination of deadweight, hold dimensions and deck area (see table above). The common aspect of these vessels is that they are all super efficient. More vessels are currently under development.

eCONOlogy Trader 2200

The eCONOlogy Trader 2200 is currently the smallest vessel in the family. The vessel is developed for trading along the British coast and between the British Isles and the European mainland. The bottom of the vessel is strengthened for loading/unloading aground operations in small English ports at low tide. The eCONOlogy Trader combines a speed of 10knots with a deadweight of 2,260tonnes at a fuel consumption of about 1.7tonnes a day.

eCONOlogy Trader 3700

The eCONOlogy Trader 3700, developed in close cooperation with Wijnne Barends and Groot Ship Design has been built in a series of four by Groningen Shipyards. The ship is designed for two draughts: a low draught for sailing inland on rivers and a maximum draught for sailing at sea. With this vessel a fuel consumption of less than 3.0tonnes per day is realised when sailing about 10knots and carrying 3,000tonnes of cargo. To complete the figure, a speed of 10.8knots is reached with an engine power of 748kW.

Consumption figures of around 2.7tonnes fuel per day have been reported for roundtrips, by careful consideration of the actual required speed/power for each part of the trip. Although the ship is equipped with only 74 kW engine power, it showed very good behaviour and manoeuvrability characteristics in waves compared to conventional general cargo vessels.

eCONOlogy Trader 4000

Based on the gained experience from the eCONOlogy Trader 3700 with ConoDuctTail, Conoship developed a new design which features a large single hold, and a deadweight of 4,000tonnes, in combination with a very low fuel consumption. To this end the ConoDuctTail is applied in combination with the ConoSeaBow, a bow specially designed for a low added resistance in seaway. Furthermore, this ship has been strengthened according to the Finnish Swedish Ice Class Rules 1A. The fuel consumption is only 3.0tonnes a day to reach a speed of 10knots.

eCONOlogy developments

Conoship is currently working on the expansion of the series of eCONOlogy vessels on the upper level of the range: also larger vessels (5,000dwt and above) will be available in the near future.

Furthermore, Conoship is participating in joint industry research projects in the field of hybrid propulsion trains, combined with different types of combustion engines such as diesel engines, dual fuel or mono fuel LNG.

As Conoship keeps developing its knowledge in this field, it is able to design ultimately energy-efficient ships, which meets the eCONOmic demands of shipowners. Moreover, the knowledge gained in this project enables Conoship to design ships which are able to meet the upcoming ecological and environmental regulations. *NA*

eCONOlogy Trader 4000

Keeping the tank steady

GTT and Amarcon have joined forces to develop a sloshing advisory system for LNG vessels

In April of this year Amarcon signed a cooperation agreement with GTT (Gaztransport & Technigaz) to market and further develop a forecasting and advice software system for sloshing prevention onboard LNG carriers. Both parties already had a lot of knowledge in the field of sloshing prevention.

Tim Ellis, marketing & sales coordinator, Amarcon says: "We recognise that sloshing will be an issue in the future as the demand for LNG vessels will increase and will need to be fitted with a sloshing advisory system. We also recognise that as the relatively new LNG fleet will age in the coming years, sloshing will play a significant role in the overall lifetime of the LNG tanks.

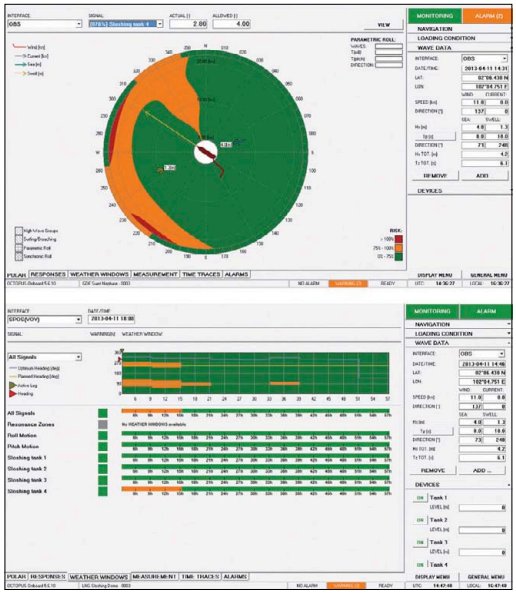
The sloshing advisory feature has been developed as an extension of the OCTOPUS-Onboard decision support platform. OCTOPUS gathers information about the vessel, the route or operational plan, the loading conditions, vessel-specific limitations and the weather.

By making use of a hydrodynamic database of the vessel, the OCTOPUS-Onboard system is capable of giving clear advice on how changing weather conditions are going to effect the vessel's motions, therefore allowing the captain to safely navigate through heavy weather.

The sloshing advisory system takes a number of factors into account, including weather forecasts, motion sensors and wave radar

GTT has carried out the model testing, where the results have been fed back into the system. The risk for sloshing is calculated using criteria from these model test results. The system works by reading the tank levels from loading computer and calculating the motion response amplitude operator (RAOs) including the effect of liquid motion (not limited to partially filled tanks). It then forecasts the vessel's fluid motions and accelerations in measured and expected sea states. The risk for resonance in the tanks is monitored, predicted and displayed giving crew warning and advice of the situation.

The systems is aimed at giving increased awareness of the crew, extending the lifetime of the vessel, achieving maximum schedule regularity and predictability and even increasing the number of sailing days. Ellis notes about the increased number of sailing days that: "This is a decision support tool. It is aimed at reducing the risk of sloshing, to avoid damages to the LNG tanks and for the master to select the optimum route without the risk for sloshing so time savings can be achieved. *NA*



The system's two views that are available to the crew

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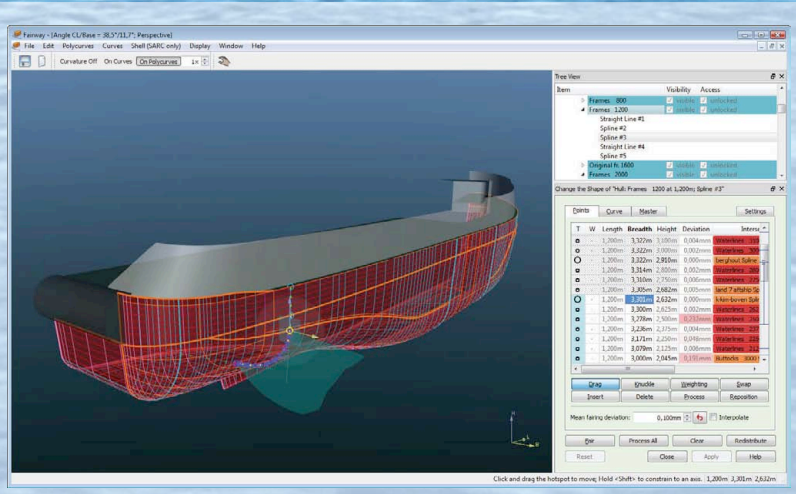
PIAS software
for intact and (probabilistic) damage stability calculations, longitudinal bending, shear and torsion, resistance, speed, power and propeller calculations, etc.

LOCOPIAS software
for on-board evaluation of loading conditions with a wide range of options for definition of different types of cargo.

Fairway software
for hull design, fairing, modifications, transformations and plate expansions (picture).



In addition to the software listed, SARC BV provides services, training and engineering support to design offices, shipyards, ship owners, classification societies, and many others.

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Veka and Deen Shipping to supply LNG inland market

Veka Group and Deen Shipping have joined forces to develop an inland LNG tanker

This new partnership will be a first big step to facilitate the transport and bunkering of LNG via the major European inland waterways. Veka Group says that due to the development of an LNG Terminal at Rotterdam there is a need to transport this fuel through means other than pipelines or on the roads.

"At the moment there is no real inland vessel that can do this as yet. Also, it is needed as we are sitting on a big trading line", says Rutger Bolt, marketing manager, Veka Group.

By joining their forces and experience in shipbuilding, shipping and LNG, both companies will be working towards designing and building the inland LNG carrier. Since VEKA was the first Dutch shipyard to deliver a seagoing LNG carrier with LNG propulsion (*Pioneer Knutsen*), an inland LNG carrier is the logical next step in expanding this market, the company noted.

The latest inland LNG tanker from Veka Group and Deen Shipping

Bolt highlights the challenges of designing this type of vessel is the safety aspect and meeting with any rules. As rules for LNG vessels are still very new and undergoing development Veka is working with the close support of classification societies on this project.

A special feature of the LNG inland shipping tanker is that it has very low 'boil-off'. "LNG is fluid at a temperature of -162°C, and as soon as it warms up, it becomes gaseous", explains Wout Van Wijnen, project manager, Veka. "When the cargo tanks are equipped with the correct insulation we can reduce the amount of 'boil-off' so that daily no more than about 0, 2% of the liquid cargo is being transformed into gas. This gas can be converted into energy for the propulsion of the tanker as well as the electricity onboard."

The LNG tanker will be 90.70m by 10.20m with a loading capacity of 2,250m^3 and is expected to be delivered in 2015. *NA*

Bolidt shows it colours

Dutch deck and flooring specialist Bolidt has launched its latest colour range for its Future Teak range of flooring

The latest range of colours has been introduced to meet the demands of yacht owners, which require something different for their flooring onboard. Bolidt has been working with companies such as Camper & Nicholson, Feedship, Lurssen and Royal Huisman, where the company has reference numerous projects that it has worked on to develop its latest range of colours for the market.

"Designers and owners want the latest innovation in every other area, but when it comes to the decking, they have often stuck with tradition in specifying teak," says Jacco van Overbeek, director Shipping Division Bolidt. "Once they have had the opportunity to use Bolideck Future Teak, though, we have found them to be willing repeat customers."

Bolideck Future Teak can be installed by Bolidt on any size and shape of deck, and this flexibility offers designers more scope, when compared to conventional materials. Safe in wet and dry conditions, it is easy to maintain, sustainable and is a highly cost-effective alternative to real wood. It's lighter weight even helps cut fuel consumption, the company claims.

"Bolidt can produce any colour required" says van Overbeek. For this moment we are presenting 10 new colours for reference, which will be welcomed by those used to real teak's limited scope for colour and appearance, but we want to emphasise that the only thing limiting Bolideck Future Teak colour selection will be the imagination." *NA*

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Imtech improves fuel efficiency

Imtech Marine has developed its Energy Management System that is aimed at reducing power consumption and cutting fuel costs

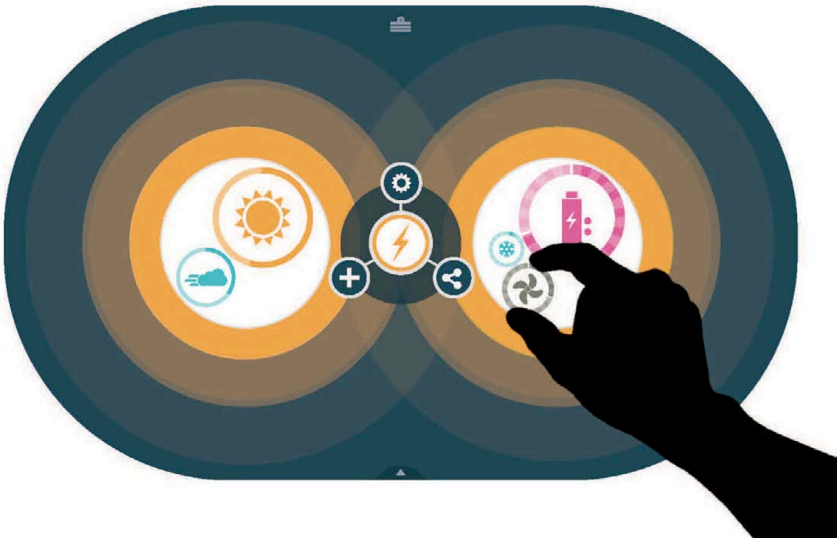
The long term goal of the Energy Competence Centre of Imtech Marine is to develop 'Zero Emission Ships'. In the past three years a research study on 'Smart Grids on Ships' has been made. In this R&D study the focus was on hybrid diesel-electric and battery propulsion systems.

Walter van der Pennen, consultant, Imtech explains: "The power grids onboard ships are getting more complex due to different power sources that become commercially available; all with their specific favourable characteristics. This needs some source of control to control all this technology optimally."

As a spin-off of this R&D study Imtech Marine is developing an Energy Management System (EMS). The system is beneficial to ships with multiple energy sources. When there is one type of primary energy source, like diesel-generator sets, it is easy to monitor and control these energy sources. But, when there are more than one type of energy source, such as a diesel-generator set and a battery, the optimal control and load sharing can be complicated.

"In a hybrid car the operator doesn't have two gas pedals, one for the internal combustion engine and one for the battery. It is the same in a hybrid ship; it is becoming too complex for an operator to control the energy from the diesel-generator set and from the battery", van der Pennen explains.

The EMS is aimed at monitoring, giving advice to the operator and also allowing fully automated control for the energy generating plant. The company notes that the EMS will optimise the energy generating plant towards the optimisation goals of the owner. These goals can be for example fuel reduction, emission reduction, low wear and tear or even optimising towards high availability for critical operations.



Conceptual prototype human machine interface for the energy management system

Van der Pennen notes that working on the propulsion system for Caladonian McBrayne's hybrid ferry, *Hallaig*, which was supplied with a hybrid power plant, accelerated the development of the EMS. After the development Imtech decided to take the idea one step further and develop a system that could be used onboard other types of vessels.

"We are convinced that the hybrid vessel can achieve a 20-25% fuel savings from the hybrid propulsion alone with a further 10% saving coming from the Energy Management System", highlights van der Pennen.

The EMS is flexible in how it can be installed, as the monitoring and advice part of the system can be developed for most vessels at sea, but Imtech has noted that the core part of the technology is the control function, which is the optimalisation control function for hybrid power plants. This part of the software has been developed with the use of algorithms, based on the power plant data onboard the ship such as, component characteristics and the operational use of the powerplant.

Van der Pennen says that this technology was first aimed at the ferry segment, but that it is now further developed for all types of vessels that run on a hybrid system and that the monitoring and advice function is applicable to all vessel types.

"People are aware of the environmental regulations coming into effect. The ship energy efficiency management plan (SEEMP) will need to show what and how you monitor your fuel consumption onboard; the monitoring and advice function within the EMS could help to comply to these regulations. We at Imtech Marine believe in these solutions and we see a lot of interest from the market as it is also regulations driven", concluded van der Pennen. *NA*

Battery banks installed on Caladonian McBrayne's *Hallaig*

Responding to market moves:

The METS success story

In an era where trade shows in every industry sector have been forced to re-evaluate their raison d'etre, one event in the leisure marine world continues to go from strength to strength. Some say it's the ideal location in Amsterdam, others the no-nonsense B2B atmosphere that attracts marine professionals and businesses in ever greater numbers. But there is a third factor behind the METS success story… the show's ability to listen to the market and diversify into new areas.

25 years and still growing strong

METS - the Marine Equipment Trade Show - celebrated its 25th anniversary in 2012 as the world's largest and most visited leisure marine trade show. Despite the recession, the event attracted an impressive international attendance and the number of exhibitors remained exceptionally high. The fact that almost half of the exhibitors pre-booked stand space for 2013 before METS 2012 had even closed speaks volumes for the value attached to this annual gathering of the global marine industry.

"It is clear that exhibitors and visitors alike welcome the fact that METS is strictly trade-only," explains Irene Dros, Domain Manager of Amsterdam RAI Convention Centre, which has successfully organised METS for the past quarter of a century. "Keeping our focus firmly on products attracts people from over 100 countries and has also led marine industry associations from 15 countries to set up their own pavilion."

The METS organisers have also enhanced the show's diversity by introducing specialist pavilions. "The first of these - the SuperYacht Pavilion - was opened several years ago and we have been pleased to see it develop a very distinctive identity of its own while remaining very much part of the overall METS experience," adds Dros.

An unmissable date with the SuperYacht Pavilion (SYP)

While boat shows such as those in Monaco and Fort Lauderdale have traditionally been first on the calendar of companies in the large yacht industry, METS now attracts more suppliers in the sector than any other event worldwide. The SuperYacht Pavilion runs in association with the Global Superyacht Forum (GSF), one of the world's leading summits for captains, designers, builders, project managers, brokers and owners organised by SuperyachtEvents and hosted by The Superyacht Group.

Add in a wide range of educational and social networking programmes and it is clear why Amsterdam in November is now a must not just for the entire superyacht supply industry but also representatives from all the leading superyacht builders.

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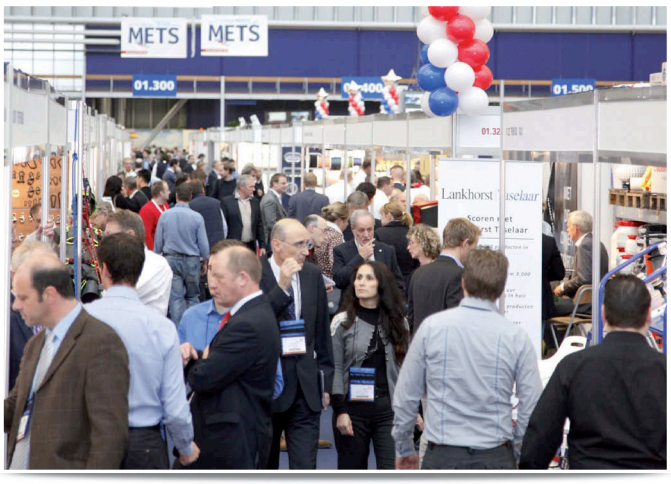

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BV keeps up energy efficiency drive

The Dutch maritime industry continues to push ahead with innovative designs focusing on operational excellence and energy efficiency. Bureau Veritas (BV) says it is supporting owners, builders and designers to stay ahead of the competition

This year has seen some specialist vessels with alternative propulsion such as LNG enter the market. Specialist gas carrier operator Antony Veder took delivery of the world's first directly driven dual-fuel LNG carrier, *Coral Energy*, from Papenburg-based Meyer Werft in January.

With a capacity of 15,600m^3 and a specially designed compatibility package, the Ice Class IA vessel can load LNG at all major terminals. BV assigned the ship a sophisticated class notation, reflecting the vessel's innovative design, environmental friendliness and advanced control systems.

Gijsbert De Jong, business development manager, BV, says: "*Coral Energy* is at the cutting edge of the new energy map of the world, which LNG is drawing. There is going to be a strongly increased demand for small scale flexible LNG distribution.

Dutch owner Anthony Veder is at the forefront of developing specialised vessels to meet this demand, and BV is happy to work with Anthony Veder on developing very high technology and flexible vessels like *Coral Energy*, which will be able to deliver gas where it is needed at competitive rates."

In January 2013 Germany's Meyer Werft delivered the 15,600m^3 directly driven dual-fuel LNG carrier *Coral Energy* to Antony Veder

There have also been some interesting developments in dry cargo ships despite the depressed market. In March Wagenborg took delivery of its first 23,000dwt Ice Class IA multi-purpose vessel from Ferus Smit. The BV-classed *Reestborg* is the largest vessel ever built by the yard. The distinctive hull form, featuring an innovative bulbless bow with negative stem profile, sharp entrance angles and reduced bow flare in combination with a ducted large slow-running propeller, significantly reduces the hull resistance.

"Dutch owners have a strong track record of operating in the dry cargo vessel market, especially with small flexible vessels capable of handling multiple types of cargo. The market is badly depressed but, Dutch owners are willing to invest in innovative and flexible tonnage which, offers energy savings to deliver a good service in this market. BV is the leading classification society in The Netherlands and it works closely with Dutch owners and yards to help develop innovative concepts cost-effectively", notes De Jong.

Wagenborg's 23,000dwt MPV *Reestborg*, featuring an innovative hull form design for optimum energy efficiency, was delivered by Ferus Smit in March 2013

Another innovative design concept is *M^2 Runner*, a short-sea general cargo vessel, which has been developed by Dutch designer Conoship in cooperation with owners Hartman Marine. In order to achieve the highest flexibility for carriage of high-volume project cargoes such as wind turbine parts and industrial plants, the cargo deck area has been maximised to over 1,300m^2 and the open-top concept has been applied. The first out of a series of three, *Oceanic*, was delivered to BV class from the Polish Partner Shipyard in 2012.

In dredgers, Boskalis has taken delivery of the 4,500m^3 trailing suction hopper dredger *Causeway* from Dutch shipbuilder Shipkits. Conoship designed the vessel as a highly manoeuvrable craft for shallow-water operations. IHC Merwede delivered the 25MW self-propelled cutter suction dredger *Artemis* to Van Oord in April 2013, the second of a pair of highly advanced mega-cutters.

The shipbuilder also launched the "Easydredge" concept, which aims at providing cost-efficient trailing suction hopper dredgers by supplying a basic design platform with various option packages which can be delivered from stock. Specific attention is paid to lifecycle management, energy efficiency and sustainable dredging. *NA*

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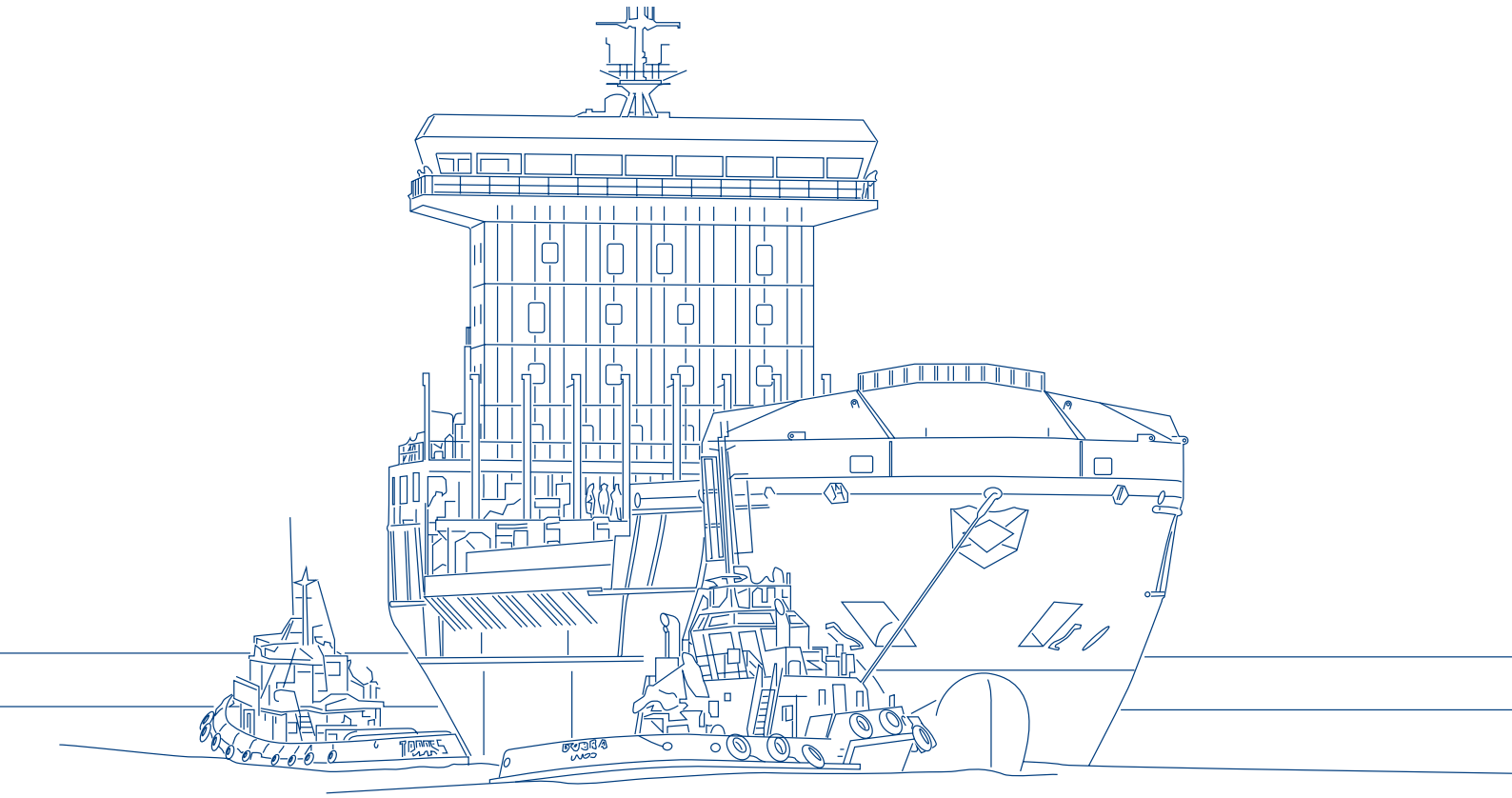

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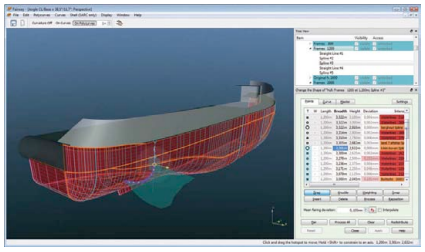
SARC keeps up with the times

Dutch-based software house and consultant SARC BV has been staying ahead of competition and looking to meet the future demands of its customers with the further development of its software

In an ever changing environment, software must evolve and expand to keep in line with, or better yet, ahead of competition. SARC has invested in the technical merits of its software and from this has implemented complex or rare features, such as, probabilistic damage stability calculations for open hopper dredgers (dr-68 regulations), evaluations of generated countermeasures for actual damage cases (typically used on naval vessels), maximum allowable chain forces on anchor handling tugs.

One of its latest features under development is the 'local cloud'. Using a cloud will mean that different modules will be able to interact with the same model and in real time; where multiple modules can be opened simultaneously and submit or retrieve data from this local cloud. This allows multiple calculations to be updated directly after, for instance, an amended frame section in a bulbous bow is submitted.



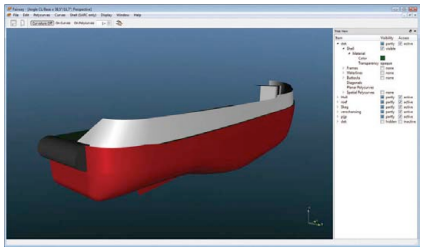


Figure 2 & 3: show enhanced graphic feedback in Fairway: one of the goals has been the visualisation of the rendered surface within the modelling interface. Rendering is done in the background, so that manipulation and design work may continue during rendering. When surfaces are exported to IGES format the same interface is now used to check the resulting surface patches

Previously in PIAS, updating calculations after such a change would require saving the modifications on file and opening the individual modules to recalculate resistance predictions, tank tables, stability calculations and tables of hydrostatics.

The user interface of these complex and more common features has always functioned well, but has been growing new menus. SARC has committed itself to sort that out and is now in the beta testing stage for the new interface. The concepts behind this new interface are that more graphical feedback should be provided, existing features should be combined into fewer menus and the overall appearance should be more modern.

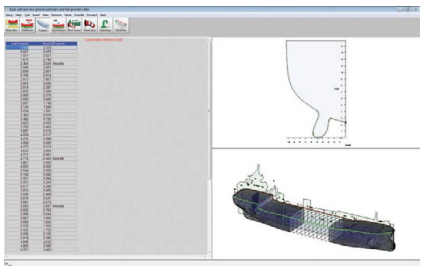
By logically combining many features into a limited number of modules, SARC has found the middle ground between an overkill of dedicated, single purpose modules and a monolithic programme with compromised interface (as it must accommodate many dissimilar options and features). Such a software structure requires versatile inter-module communication, which is provided by the `local cloud' TCP/IP-based infrastructure.

SARC says that another continuous area of its development is in hull form modelling, where already more than 15 years ago the conclusion was drawn that the main stream non-uniform rational B-spline (NURBS) modelling method is less suitable for ship hull design, an insight which is recently also acknowledged and elaborated in scientific literature.

The scope of its software programmes, developed in-house, today include; Fairway: hull design, fairing, modifications, transformations and plate expansions; PIAS: Intact and damage stability, longitudinal bending/torsion/shear, resistance predictions and power requirements, propeller calculations; LOCOPIAS type 3 loading instruments for the onboard evaluation of loading conditions. Services are provided within and around the scope of this software. *NA*

Figure 1: shows a small revolution for first-day users of PIAS and Fairway software, as 10 icons have replaced some 80 text descriptions to choose from in the previous main menu. The new main menu reflects the effect of integrating more functions in fewer modules and has a more modern appearance.

Figure 4: shows the new interface for hull geometry definition and the icons used to select different input modes for frames, composed and asymmetric hulls, wind contour, openings, etc. Note that hull models can be defined in or converted with Fairway, digitised from scanned drawing, read from offset tables.



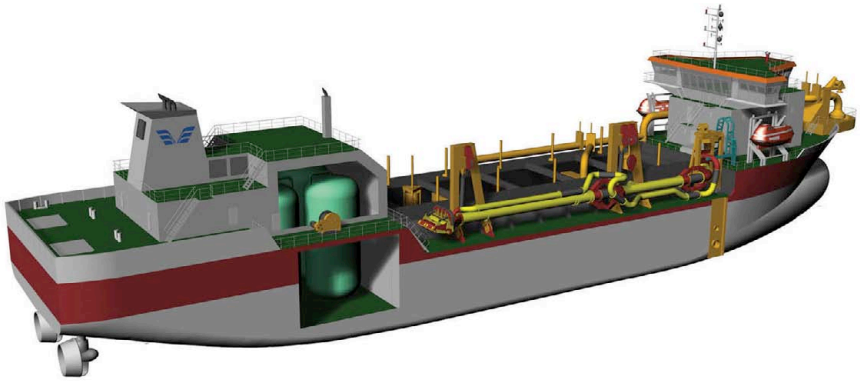
VER looks to LNG for dredgers

Environmental awareness is growing with climate change and other environmental problems that are largely caused by the emissions from transportation. In an effort to reduce these emissions Vuyk Engineering Rotterdam (VER) presents its LNG hopper dredger to the market

New rules have been stipulated in MARPOL Annex VI, which concentrates on the emission of sulphur oxides (SOx) and nitrogen oxides (NOx). The most stringent criteria will be in the emission control areas (ECA), in those regions the maximum allowable sulphur content in fuel is set to 0.1% by 2015 and in 2016 the emissions of NOx is to be reduced by 80% compared to the original standards. This means that the use of heavy fuel oil will only be possible if emission reduction measures are taken which can achieve the emission levels required by the new regulations.

These new rules also have their effect on the dredging industry. Especially hopper dredgers operating close to shore or in ports which are more likely to work in sulphur emission controlled areas (SECA's) and so must comply with the most stringent emission criteria.

LNG as a fuel is one of the alternatives to consider as it is considered as one of the cleanest and most efficient fuels currently on the market. Sailing on LNG gives an additional reduction in CO_2 emissions of 20% as well as the virtual elimination of SOx, NOx and particulate emissions which significantly affect vessels that mainly operate close to the shore Another important reason is the competitive fuel costs of LNG, the price of LNG is currently about half the price of distillate fuels.



Vuyk Engineering Rotterdam's LNG fuelled hopper dredger concept

Marc Oele, managing director, Vuyk Engineering Rotterdam says: "With the new MARPOL Annex VI regulations coming into force soon alternative fuels have to be considered for vessels sailing in ECA's. LNG is a good alternative that can meet these requirements and has the benefit of a low fuel price. Near shore maintenance and reclamation hopper dredgers are good examples of vessels that may benefit from using LNG."

Due to the growing interest in LNG as a fuel for dredgers VER has started a research project to investigate the consequences of a LNG fuel installation for the design of a medium size trailing suction hopper dredger and develop a concept design for a 5,500m^3 TSHD based on LNG.

"Vuyk Engineering Rotterdam has therefore developed a concept for such a dredger sailing on LNG. With more and more LNG terminals becoming available and with the pressure from the regulations and environmental motivations it is expected that more LNG fuelled vessels will enter the market within three years from now", says Oele.

One of the main challenges in designing a LNG fuelled hopper dredger is the arrangement of the large LNG tanks. Natural gas as is used onboard vessels, has a density of 0.45 kg/m^3. This is about half the density of diesel oil. This space implication was further investigated. But, also the safety aspects of the installation were taken into account. Of course the design should comply with the recently drafted IGF code for LNG fuels, but also the intrinsic safety of the design in relation to escape routes and the risk of fire is taken into account. In the final concept four vertical LNG tanks are placed aft of the ship minimising the required length of cryogenic piping to the engines.

For the concept dual fuel engines were chosen. Dual fuel engines are able to run on LNG, using MGO as pilot fuel, or on diesel. The use of dual fuel engines in combination with the dredging process contains challenges to overcome the load steps that are required for a proper dredging process. Together with Wärtsilä VER identified these challenges and decided to implement a diesel electric power generation plant with three dual fuel generators.

Relative to existing hoppers of this capacity the vessel's dimensions are slightly larger to accommodate for the required fuel capacity of LNG in combination with the preferred safety arrangement. With this concept VER has paved the way for developments of a dredger that meets the most stringent emission requirements with a type of fuel that has a very competitive price. *NA*

TECHNICAL PARTICULARS

Hopper Dredger concept

Length oa:	approx. 105.00m
Length bp:	approx. 92.50m
Breadth:	approx. 21.60m
Depth:	approx. 7.70m
Dredging draught:	approx. 7.10m
Hopper capacity:	5,500m^3
LNG storage capacity:	870m^3

AVEVA offers new enhancements to AVEVA Marine

Engineering design software company AVEVA this year released a number of enhancements to its AVEVA Marine portfolio that saves costs and time on a number of shipbuilding processes that together can make a significant improvement to slender profit margins

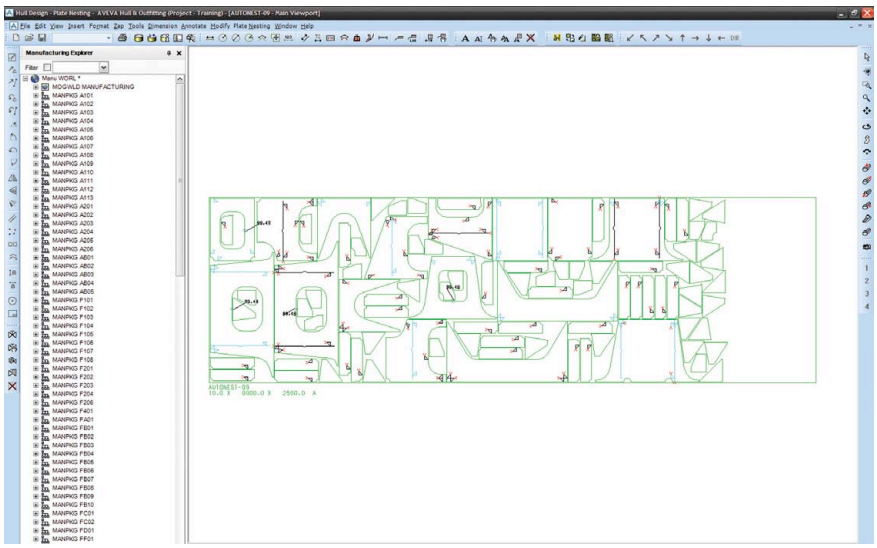
Perhaps the most conspicuous improvement has been enabled by the release of its latest product, AVEVA Automated Plate Nesting. Production engineers will be familiar with nesting applications that aim to cut hull parts from the least amount of raw steel plate. With the escalating cost of steel, and the huge quantities used in shipbuilding, even small improvements in nesting efficiency put money straight on the bottom line.

AVEVA's head of business management – marine, Stéphane Neuvéglise, explained: "Nesting algorithms are examples of extremely challenging mathematical problems that have direct commercial value. AVEVA Marine included a manual nesting tool that was effective but, required skill and effort to get the best result, so many of our customers preferred to use third-party solutions that were more automated. There was a clear need for an automated solution that not only integrated with AVEVA Marine, but that also set a new benchmark in nesting efficiency."

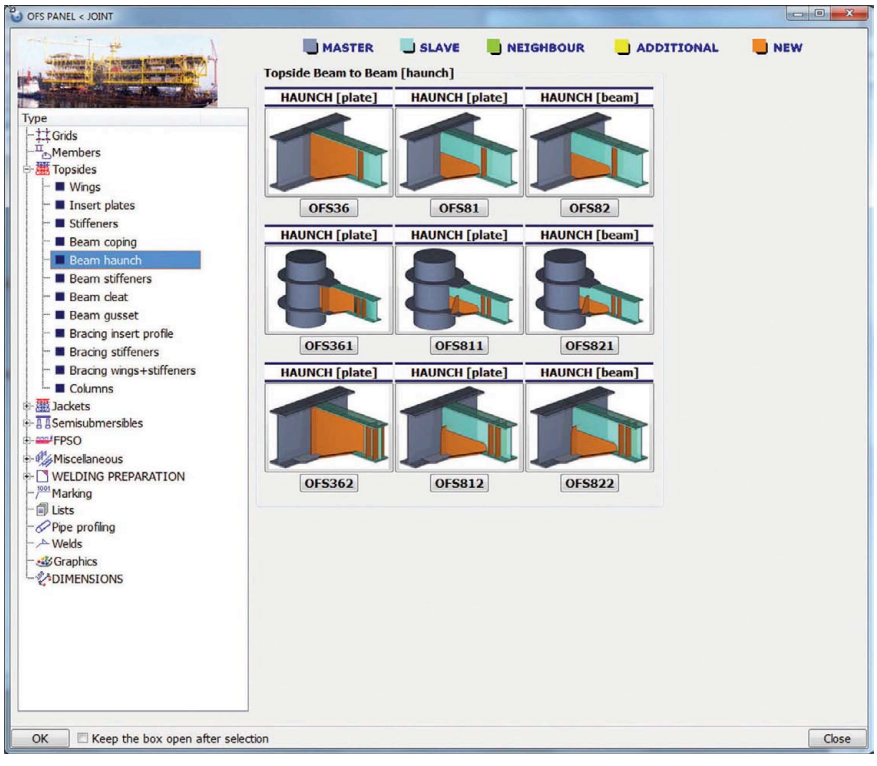
Testing of the new product was completed with the close cooperation of lead customers who helped to refine the new application, "testing it with data from a range of real projects to ensure that the complex algorithms would be versatile enough to cope with the wide variety of part shapes and sizes used in shipbuilding". The result is a complex programme that achieves the maximum use of the minimum number of steel plates", Neuvéglise adds.

Material savings amount to around 13% say AVEVA and that is ahead of the best third-party application. The advantages of data integration and the savings in man-hours achievable, says the company, makes this a highly productive new tool.

Other products have also been improved. New features have been added to AVEVA Outfitting that increase productivity in both the design and fabrication of the many small steel outfitting items required, such as equipment foundations. Production engineers used to



AVEVA Automatic Plate Nesting packs parts efficiently to leave the maximum usable area of steel for the next job



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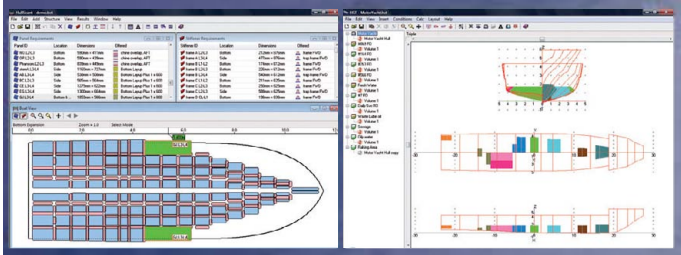

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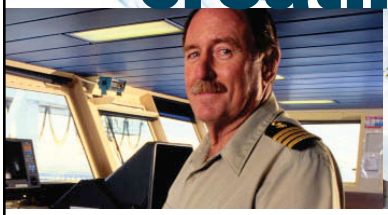

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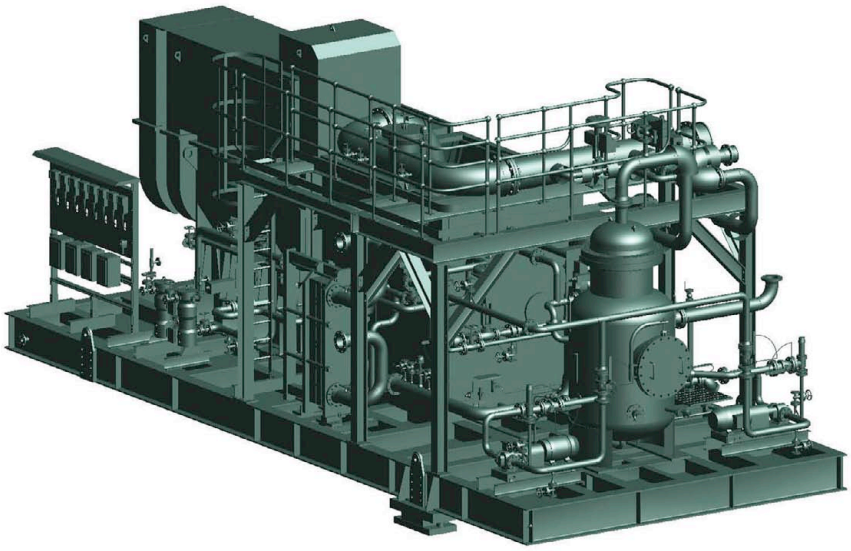


A model of a vendor's complex skid module imported using AVEVA Mechanical Equipment Interface. The assured accuracy and high level of detail in the model eliminates a common source of design errors and unnecessary remodelling effort

the way in which AVEVA Marine generates production information directly from the hull model, will appreciate its ability to do so now with outfitting parts. As before, designers benefit from a more extensive use of templates and the ability to save designs as library items for reuse.

Advanced capabilities in pipe fabrication have now been added to AVEVA Marine. Pre-configuring the piping design software with the capabilities of the pipe fabrication machines used by the shipyard enables it to automatically prompt the designer to create an optimum design of each individual pipe. For example, one common cause of fabrication work is a pair of back-to-back bends, which can only be created by cutting and welding. This adds cost and introduces unnecessary opportunities for defects.

The software enhancements overcome this by highlighting the non-compliant feature so that the designer can, if space permits, add a straight length between the bends. Importantly, the minimum straight length is determined by the fabrication machine's characteristics. Multiplying such small improvements in manufacturability by all the many pipe runs and bends throughout a vessel leads to significant savings in production costs and material wastage.

An application that was welcomed by AVEVA Marine users on its first release is AVEVA Mechanical Equipment Interface. This eliminates a common source of design errors and extra effort by enabling 3D models of equipment items to be imported directly from the vendors' own 3D CAD systems. Previously, doing so was either impossible or too unreliable, obliging designers to have to re-model the equipment from scratch in AVEVA Outfitting, a laborious and error-prone procedure.

The latest enhancements to this interface now add increased graphical performance and more flexibility in managing the design hierarchies in the imported models.

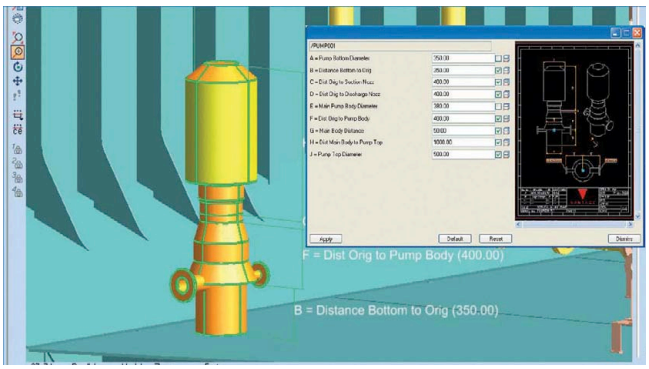
A new capability recently created by AVEVA is the ability to integrate structural steel detailing with outfitting design. This has been brought about by the company's acquisition last year of Bocad, developers of the structural steelwork solution, leading to the release this year of new AVEVA Bocad products.

Commenting on AVEVA Bocad, Neuvéglise says that it will provide new opportunities in shipbuilding, especially if a yard wants to move into another market. He adds that in the offshore market. FPSOs and FLNG vessels require steel structures such as helidecks and flare towers, for which the new AVEVA Bocad Steel is a powerful design tool.

"While any increase in design productivity is to be welcomed, the greater benefit often arises through design integration. Structural steel detailing is often carried out using specialist third-party software, to which the basic steelwork design is exported from the project model. So even where the steelwork and outfitting designers sit next to each other, their respective design areas have already diverged, creating opportunities for undetected clashes and requiring careful and laborious checking and rechecking," he says.

AVEVA has now overcome this problem by enabling bidirectional exchange of data between the two systems; a major step towards seamless integration. The steelwork design can be readily re-imported into the vessel project model and a Compare & Update performed to identify changes and to accept or reject them as appropriate. Design collaboration is made easier and errors can be eliminated early. Shipbuilders working in the offshore industry will find their plant industry counterparts increasingly using this capability, so benefits to their normal ship design work will be paralleled with easier collaboration on offshore projects.

Equally valuable, the AVEVA Bocad products can generate fully detailed, shop-ready production deliverables straight from the 3D model in the same way that other AVEVA Marine applications do. Shipbuilders can now achieve comparable levels of production efficiency in hull, outfitting and steelwork. *NA*



The new AVEVA Bocad products provide new capabilities for more efficient shipbuilding and easier diversification into the offshore market

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ShipConstructor's AutoCAD foundation provides a user environment that is a globally recognized CAD/CAM standard. This results in an existing labor pool of expertise, a common DWG format for sharing information with other applications, and a portfolio of complementary Autodesk products.

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Dassault's platform in the clouds

Dassault Systemes will be launching its latest version of its 3D experience CAD software V6R2014 next year, but select customers have had a chance to preview the latest update this year

The latest version of the software platform will bring users added features across all the Dassault Systemes 'experiences', but the most prominent feature of the version is that it will be accessible through its Cloud, the internet based information sharing site, which will give users better workflow and easy access to all data.

"It is a revolutionary release and will bring cloud capabilities to all customers through all the experiences. It will give users access without the complex IT systems", says Alain Houard, vice president, marine & offshore industry, Dassault Systemes. "In the context of industry approach having a cloud based solution is wanted."

The software is currently not available to all customers until next year, with the official launch penned for June next year. However, Dassault has allowed some customers access to this latest development of the platform.

"We have delivered V6 2014 to key customers. These customers have been selected due to projects that they have been working on, which has required the next stage in software development", says Houard.

Alain Houard, vice president, marine & offshore industry, Dassault Systemes explains the latest changes to the Dassault Systemes platform

Dassault has noted that during the time between now and the official launch, it will allow these customers to test the software and give feedback to Dassault as to how it works and where any adjustment can be made. Houard noted that one customer in the marine and offshore industry has been given this software to test.

He added that the market demand is for better collaboration between all players and to remove the silos between the shipyard, designers and the other elements in the shipbuilding process. "All these players would like to see a one unit platform", he says.

With further developments for more complex ships Dassault aims to provide a platform, which delivers a tool that caters for all the process in the shipbuilding process.

Houard says that ships today are becoming more complex not just through the design, but also with the electronic systems onboard. Cruise ships and ferries now have even more technology packed into them than before and it needs to be accounted for.

As for the implementation of damage stability rules in the software, Houard notes that this will be done in the future. "We want to improve our of design package before we get to add these facilities. We are at the stage of understanding the rules and talking to class societies and also looking at other 'green' rules that are coming into effect." *NA*

ShapeSpace enhances search capabilities

UK-based ShapeSpace has improved the performance of its 3D CAD data search and parts management solution

The software that was launched back in 2010 was designed for users in the fields of engineering and manufacturing to help them quickly find CAD files held in product data management (PDM) and product lifecycle management (PLM) systems, to improve efficiency and productivity. Search information could be instantly presented collectively in a 3D visual format for easy identification and comparison.

David Chisholm, business development director, ShapeSpace Ltd explains that: "The Geometric Search software is not restricted by different types of CAD files. All CAD file formats are supported and different CAD formats can be indexed and centralised for visual search. The original CAD file remains secure in the CAD software"

Since 2010 the company has been improving the software's search capability allowing it operate faster, saving even more time for the designer. One of the recent developments of the software is its product data intelligence (PDI) function, which brings together product data and business intelligence. It allows data buried in multiple core software solutions to be mashed together and queried, the results of which are delivered in understandable dashboards, and avoids heavy investment in user licenses and training. The PDI Engine provides searches of multiple core systems e.g. Product Data, Supply Chain information Manufacturing, Finance and the ubiquitous Excel spreadsheet. *NA*

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www.rina.org.uk/basic-drydock-2014.html

Courses are also available in San Diego, Virginia Beach, Boston, Victoria (Canada), Dubai, Melbourne and Singapore

ShipConstructor evolves into SSI

Canada-based CAD software provider ShipConstructor Software Inc has changed its name to SSI and released its latest version of the ShipConstructor software

SSI has announced that it has separated the company name from the product name to allow the company to show its full range of products and services such as complimentary Autodesk software, as well as SSI training and consulting. This rebranding will also set the stage for the company to expand into other products currently under development.

"Our company is growing," explains SSI, CEO, Darren Larkins. "Increasingly, we see ourselves acting as an expert advisor to help implement a total enterprise wide solution, maximising overall productivity. This is the essence of our tagline 'Empowered Engineering.'"

To reflect this name change, SSI has revamped its website and will have a new web address of www.SSI-corporate.com. Larkins says about the rebranding of ShipConstructor that: "We are well known as ShipConstructor, the challenge for us was how to make this transition and where we can push it to. It's moving forward from what people thought of us and where we are now. Brand recognition is the biggest thing about a product."

Along with the rebranding SSI has launched its latest version of the ShipConstructor software, ShipConstructor 2014. The software incorporates latest features which reflect the changes at SSI, where the company is now building on a proven product and expanding its capabilities for other markets, such as the offshore market.

SSI has enhanced ShipConstructor's user experience to promote a more efficient workflow. New products have been added to the software suite containing improved capabilities for the design and construction of piping systems along with enhanced capabilities for the reuse of design work. Most noteworthy of all is an innovative new product called MarineDrafting, which allows 2D approval and workshop drawings (in DWG format) to be created directly from the 3D model while remaining associatively linked.

Further new features to the software are its P&ID DesignValidation, which allows for the checking and validation of the ShipConstructor 3D pipe model against 2D schematics generated in standalone P&ID software including AutoCAD P&ID. The validation is performed using neutral formats in order to allow users more flexibility in the choice of P&ID software.

PipeLink, is also a new feature and it allows the piping systems within a ShipConstructor project to be used within other business processes, and applications. This is accomplished through an export to the PCF format from within a ShipConstructor production drawing.

Larkins notes that the future development of the ShipConstructor product will be towards a more rounded design. "Other industries still use a lot of the shipbuilding facilities, but need other specific tools, which we are looking to build into the software package", he says. *NA*

CD-Adapco presents its EHP

CD-adapco has developed a new custom tool, specifically designed to assist naval architects in estimating hull performance in calm water

In order to cope with surging fuel prices and meet increasingly stringent safety and environmental norms, naval architects have been forced to rethink their approach to the design of marine structures. As improved product performance and shortened design cycles have become essential to meet market demand and keep the competition at bay, naval architects have been looking for new ways to deliver better products in less time.

Estimating Hull Performance (EHP) is the latest CD-Adapco virtual product development add-on to STAR-CCM+, and provides naval architects with a streamlined GUI (graphical user interface)-driven process to simulate powered hull motion in calm water.

EHP has been tailored to analyse unappended displacement hulls. With its automatic set-up and intuitive, user-friendly GUI, EHP can be used by all naval architects, including those with very little CAD or CFD experience. It also guides users from the CAD import, through to solutions of single or multiple speeds in a single session, to automatic PowerPoint generation with images and reports of the results, which can also be done in a company's own template.

After model setup, EHP gives optional direct access to the sim file, which can easily be adapted to more complex geometries and/or specific conditions, thereby allowing more experienced users to harness the full power of STAR-CCM+ to deliver high-quality predictions for various scenarios.

Thomas Walker, manager of the CAE Custom Tools Development Team, STAR-CCM+, comments on EHP: "We have spent a lot of time getting EHP to be as user-friendly and intuitive as possible. EHP is a naval architecture-focused tool. As such, the tool speaks the language of the naval architect. we have developed a tool that uses STAR-CCM+'s full functionality, but is as easy to use as a 1D hull performance utility."

CD-Adapco says that the goal of its VPD-Series tools is to speak the language of the industry experts for which it is designed, and to offer full STAR-CCM+ functionality with the ease of using a simple industry utility. The latest tool has been developed using the experience of our naval industry customers, as well as experts inside of CD-adapco with specific naval architecture backgrounds. *NA*

CONTINUOUS DEVELOPMENT IS A KEY TO SUCCESS

VSMPO-AVISMA Corporation is the world's largest and Russia's unique integrated titanium manufacturer.

Today, Russia, represented by VSMPO-AVISMA Corporation, takes up a quarter of the global titanium market, which is the largest fraction demonstrating share of a country in the international business. And this share is not raw materials, this is high technology value added products starting from exclusive ingot chemical composition and ending with unique combination of strength and geometry of a finished product. The Company has developed 33 titanium-based alloys for different high technology applications, including aerospace, shipbuilding, nuclear power engineering, chemical and petrochemical, oil and gas producing sectors.

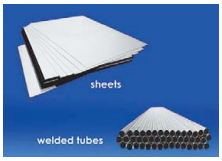
At present, titanium and its alloys are employed both in commercial shipbuilding and in manufacture of naval surface ships and submarines, for frame structures, marine power plants and various subsystems.

In 1968, Russia built the first in the world general purpose nuclear submarine using titanium, with the displacement of 5,200 tons and length of 100 meters – this was a revolutionary step up in using titanium for large and heavy structures. By now we have manufactured and supplied over 80,000 tons of titanium mill products specifically for marine applications.

Unique qualities of titanium alloys (low radiation absorption, high corrosion resistance etc.) used in the structures of steam generators, condensers, circulation pumps and other equipment of water-cooled and water-moderated nuclear power plants have proved their vital importance for application in power plants of surface ships and submarines.

Unique combination of physical and chemical properties of titanium alloys is now highly demanded not only by naval shipbuilding, aerospace, but also by civilian industries, particularly by such dynamic sector as field developments on continental shelves. Development and construction of oil and gas offshore platforms, shore-based terminals, natural gas liquefaction plants require using titanium alloys that ensure continuous and failure-free operation of the equipment under heavy conditions, such as, high concentrations of chloride-ions, low temperatures of the North or excessive microbiological corrosion in the south seas, etc. Norwegian companies have been recognized worldwide as leaders in designing titanium alloys equipment for offshore oil and gas production, but Korean companies - HYUNDAI Heavy Industries, SAMSUNG Heavy Industries, STX, etc. - are more experienced in building high technology offshore structures.

VSMPO-AVISMA Corporation operates full metallurgical cycle from raw materials (titanium-based raw materials) to mill products (ingot, billet, plate, sheet, forging, bar, tube) and finished items. The Company has been developing long and successful cooperation with Russia's largest shipbuilders and leading materials engineering and design organizations. Corporation has also accumulated experience in supplying titanium mill products to Indian, Vietnamese and other shipyards.



Long history of working with customers, design organizations has enabled the Company to promptly react to the requirements for the supplied titanium mill products, as well as individual demands of each client.

Meeting current challenges of reducing production costs, improving quality and developing new competitive products, the Company offers not only conventional types of mill products (forging, plate, sheet, cold- and hot-worked tube), but also rough and semi-finished machined items, detail and component parts.

In naval shipbuilding, titanium alloys are used for critical parts and assemblies of ships, namely: pipelines, valves, steering mechanisms, nuclear power plant elements, sonar systems, propulsion elements of deep submersibles, and other assemblies that directly impact ship's performance, and what is most essential, safety of the ship crew. This is why use of sound, high technology materials is very critical.

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CORPORATION VSMPO AVISMA

Wilhelmsen examines CIC fire safety report

Results are in from the Paris MoU survey carried out last year. Wilhelmsen highlights the need for better maintenance for equipment

The results of the survey carried out between 1 September and 30 November 2012 in the Paris MoU, over half of the ships detained in the three month period were detained due to fire-safety related issues with problem areas including fire pumps and pipes, firefighting equipment and appliances and fire control plans.

The concentrated inspection campaign (CIC) questionnaire was completed during 4,014 inspections on 3,985 individual ships. A total of 1,958 CIC-related deficiencies were recorded and 103 ships were detained as a direct result of the CIC. The report also states that fire safety has been in the top five of the most frequently encountered categories of deficiencies during inspections for a number of years.

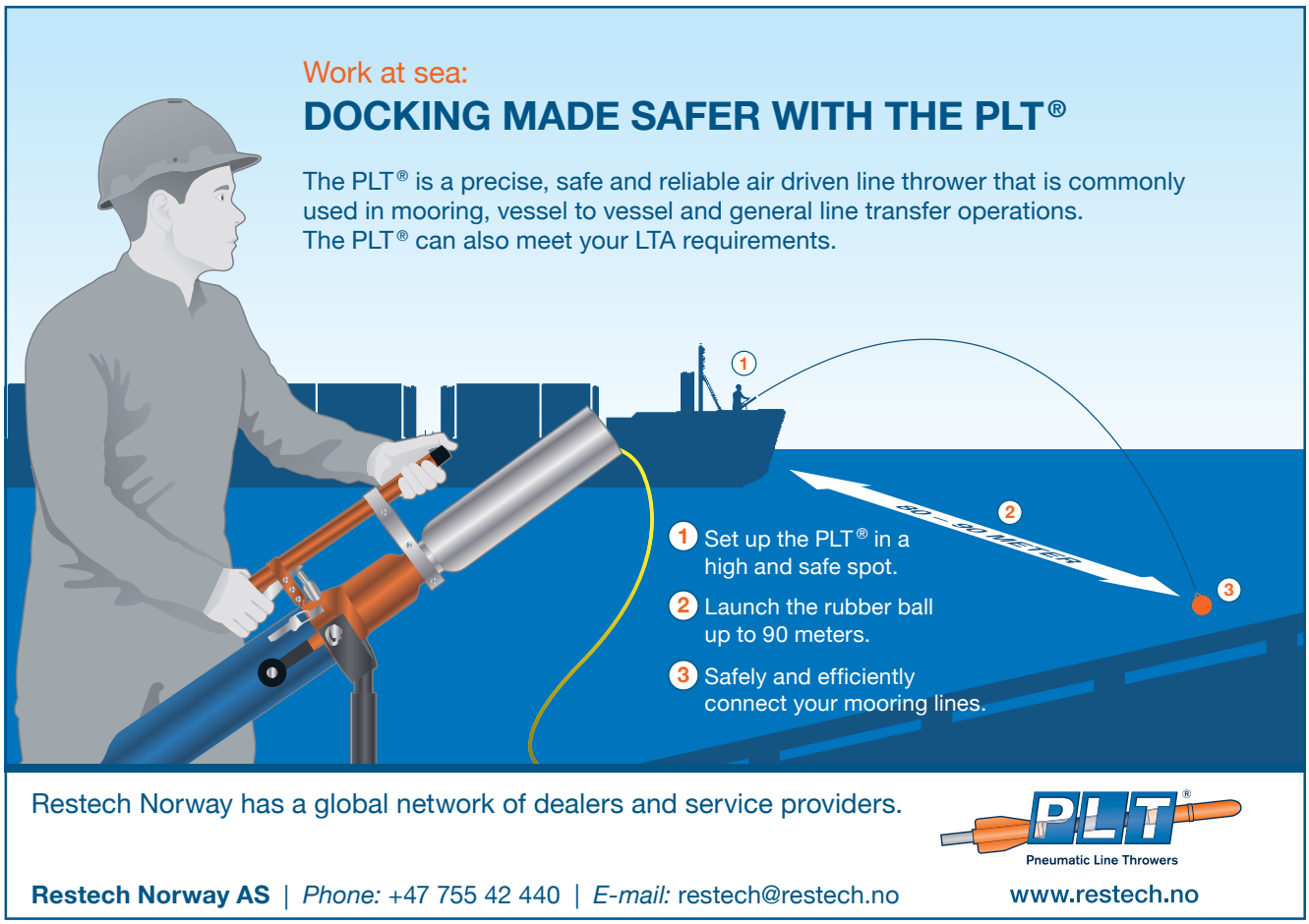
Dave Evans, manager of safety, Wilhelmsen Ships Services notes that: "Many ships get caught out on compliance issues because their suppliers have insufficient service provision in key ports or because shipowners have not viewed their total cost of ownership during the decision making process… cheapest is not always best."

The challenge for the industry is now to increase that awareness and also make servicing more affordable, whilst maintaining the high quality. "Service and maintenance is controlled by too few and often on the basis of commercial decision making; ie; who sells the most rather than technical capability or more importantly, the availability of servicing in a port where a supplier has no appointed dealer", adds Evans.

"Regular maintenance and the appointment of suitable service companies to conduct the servicing on time", Evans highlights are the key factors for increasing fire awareness onboard "to maintain compliance is a priority if we are to improve vessel efficiencies, reduce costs and keep crew safe", he adds about future priorities.

Wilhelmsen says that it has placed a lot of credence on training its employees to high levels in order that they can advise customers on due date monitoring systems, as well as recommended spares to ensure ongoing use during passage. WSS introduced the Liferaft Exchange Concept (LRE) five years ago, which allowed it to make an innovative approach to improving safety through renting rather than the traditional ownership method.

"Whilst some manufacturers maintain the commercial aspects of the servicing market, this is always going to be an expensive option as opposed to multi-brand service merited on a technical and availability basis", concluded Evans. *NA*



RINA - Lloyd's Register
Maritime Safety Award

The Institution believes that the safety of both the seafarer and the maritime environment begins with good design, followed by sound construction and efficient operation. Whilst naval architects and other engineers' involved in the design, construction and operation of maritime vessels and structures do not have a patent on such issues, nonetheless their work can make a significant contribution.

The Institution also believes that it has a role to play in recognising achievement of engineers' in improving safety at sea and the protection of the maritime environment. Such recognition serves to raise awareness and promote further improvements.

The Maritime Safety Award is presented by the Institution, in association with Lloyd's Register, to an individual, company or organisation which has made a significant technological contribution to improving maritime safety or the protection of the maritime environment. Such contribution can have been made either by a specific activity or over a period of time. Nominations may be made by any member of the global maritime community, and are judged by a panel of members of the Institution and Lloyd's Register. The Award will be announced at the Institution's Annual Dinner.

Nominations are now invited for the 2013 Maritime Safety Award. Individuals may not nominate themselves, although employees may nominate their company or organisation.

Nominations may be up to 750 words and should describe the technological contribution which the individual, company or organisation has made in the field of design, construction and operation of maritime vessels and structures,

Nominations may be forwarded online at *www.rina.org.uk/MaritimeSafetyAward*

or by email to *MaritimeSafetyAward@rina.org.uk*

Nominations should arrive at RINA Headquarters by 31 Dec 2013

Queries about the Award should be forwarded to the Chief Executive at *hq@rina.org.uk*

The Royal Institution of Naval Architects

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Dr Kenneth W FISHER, FRINA

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Better training needed

Recent shipping accidents have highlighted the safety issue at sea for both crew and passengers with the focus on providing better training

The IMO's Maritime Safety Committee, MSC93, approved a draft resolution on Requirements for periodic servicing and maintenance of lifeboats and rescue boats, as well as associated draft SOLAS amendments to make these requirements mandatory. In addition IMO wants to approve, in principle, a draft MSC circular on Guidelines on safety during abandon ship drills using lifeboats, reflecting recommended provisions.

The latest updates include the requirements for better maintenance and training of the lifesaving equipment onboard.

Manolis Petassis, vice chairman, International Life-saving Appliance Manufacturers' Association ILAMA says: "Ships used to trade with open lifeboats. The equipment now has become more sophisticated and because of this the crew has become less competent in handling the equipment. We now see a lot of accidents happening from the lack of knowledge of the equipment that they are using."

In the IMO guidelines for 'Measures to Prevent Accidents with Lifeboats' it lists at length items that need to be carried out in order to prevent accidents and make handling and training of the lifesaving equipment more coherent for crew. However, Patassis says that with such a long list, in order for those measures to be carried out it would need someone to be in charge who understands these measures and would oversee them being carried out.

"Up to a few years ago lifeboats where easy to handle, but now with more modern equipment being used there is a lack of trained personnel onboard to operate it. The industry needs more schools and training to give confidence back to those using the equipment", says Petassis.

Ensuring that the measures are implemented will be down to shipowners. Petassis notes that in the past apart from the annual and five year check of lifesaving equipment shipowners were obliged to do a weekly check of equipment with the crew, but it has since been discovered from accident reports that this has not been happening, which Petassis has warned is dangerous, "They don't pay as much attention to lifesaving as they should, this equipment is put in to protect people's lives." *NA*

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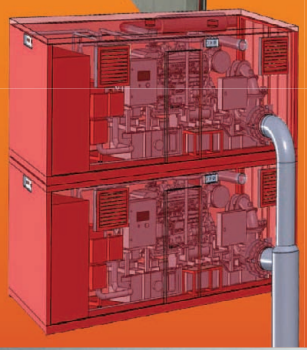

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An outstanding research profile at an international level and evidence of substantial seminal contributions to their field of knowledge is a pre-requisite for this appointment. This will lead to publishing new knowledge in leading international research journals, and teaching undergraduate and taught postgraduate courses.

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Enquiries about the position may, in the first instance, be directed to Perrett Laver by contacting Katie Ho at katie.ho@perrettlaver.com or on +44 207 340 6223.

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The Award is made annually to either an individual or an organisation, in any country. Nominations for the Award may be made by any member of the global maritime community, and are judged by a panel of members of the Institution and QinetiQ. The Award will be announced at the Institution's Annual Dinner (tbc).

Nominations are now invited for the 2013 Maritime Safety Award. Individuals may not nominate themselves, although employees may nominate their company or organisation.

QinetiQ

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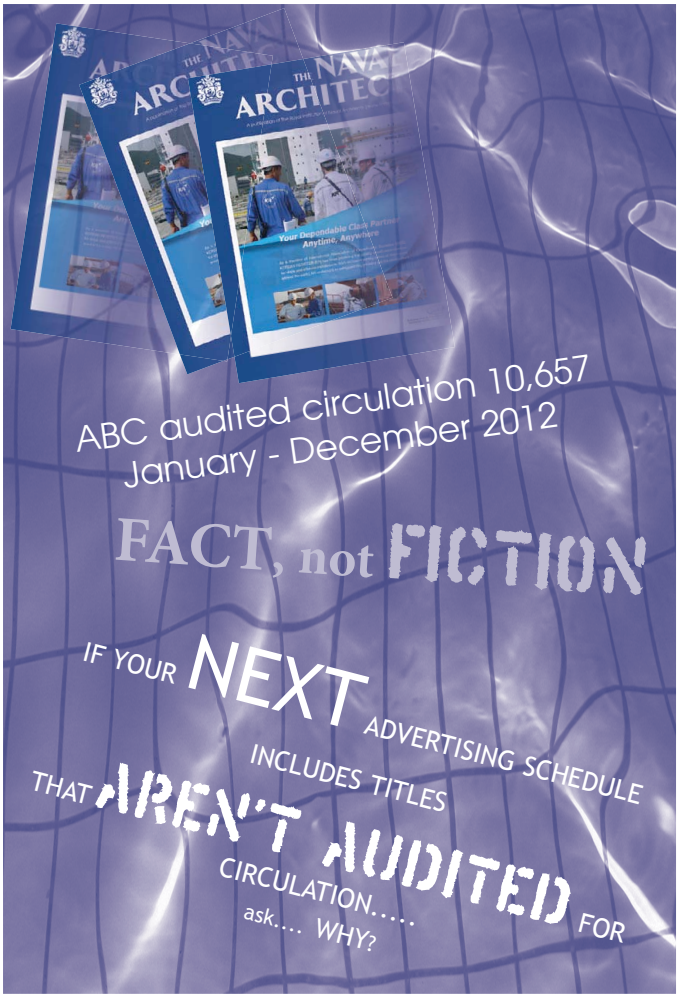

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Compiled By The Nautical Institute Ref: ISOD
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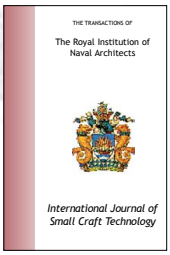

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