The eNewsletter of The Royal Institution of Naval Architects, U.A.E. Branch

MARCH 2009






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Dear UAE Branch member,
The eNewsletter of the UAE Branch of The Royal Institution of Naval Architects is published bimonthly to all members of the UAE Branch. It contains reports of past and future activities of the Branch as well as selected articles from the Institution's international journals on subjects of particular interest to members of the UAE maritime industry.
The UAE Branch eNewsletter is also available to non-members who are interested or involved in the UAE maritime industry.
Please forward to the Secretary the email address of any colleague who would like to receive the eNewsletter. Please also forward to us any items for possible inclusion in the eNewsletter.

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In-depth | SAFETY

Damage stability rules beefed up

IMO calls for increased damage stability of cargo and passenger vessels

The International Maritime Organization (IMO) has resolved to step up protection of new cargo and passenger vessels in the case of accident. All new vessels built from 1 January 2009 will be governed by new technical design regulations to ensure a higher level of stability in a damaged state.

In the recently revised SOLAS regulations, the previous concept of risk assessment has been extended. On the basis of current average statistics, IMO administrations saw themselves obliged to devise a better method of assessing the residual stability of damaged vessels. This now applies not only to cargo vessels, but also to passenger vessels.

The new regulations clearly stipulate that these vessels must have a double bottom that extends over their entire breadth. Vessel designs without a double bottom are only permitted if a comparable level of safety in the event of grounding is proven by means of additional calculations.

No exceptions apply to lubricating oil circulation tanks arranged under the main engine. With regard to their arrangement, it is important that a minimum distance of 500mm to the keel line of the vessel is always ensured. The specification in the new SOLAS 2009 regulations has been agreed in order to prevent lubricating oils from escaping or the engine from sucking up seawater in the event of a vessel striking the ground. The latter inevitably results in the main engine failing. Without engine power, a vessel is rendered disabled in the case of average, thus leaving it abandoned to the wind and waves. If an accident happens near to the coast, total loss can quickly occur along with serious consequences for the marine environment.

The decisive factor in implementing the new stricter SOLAS regulations is the date of laying down the keel. All vessels laid down after 1 January 2009 must comply with these requirements. For cargo and passenger vessels now in planning, an extensive recalculation of the damage stability is now necessary. In addition, special onboard information for damage control is being called for, which will be documented in a damage-control plan for the crew. A new aspect in the IMO requirements is that this onboard documentation is also to be introduced for tankers.

IMO committees have been working since 2005 on improving the technical protective measures with regard to damage stability. In particular on the recommendation of the flag states, the decision came about to ensure better protection.

The rules of SOLAS 2009 are being augmented with 'Explanatory Notes' containing technical explanations. IMO finalised the content in July; a formal decision on the "Explanatory Notes" will be taken at the meeting of the Maritime Safety Committee in November.

The International Convention for the Safety of Life at Sea (SOLAS) is a UN convention governing ship safety. The convention creates international minimum standards on merchant vessels and stipulates binding rules governing all conceivable preventive measures. SOLAS contains technical regulations that prescribe safety-enhancing structural measures and equipment for assuring damage stability and the general improvement of ship safety.

The stability of a ship corresponds to the residual safety in the case of average. Stability is not only calculated on the basis of the hull construction, but also applies to varying loads. The stability assessment is more difficult in complex vessel designs and variable service conditions. *NA*

SPECIAL ANNOUNCEMENT

Please note the following announcement relating to the visit of Mr. Stephen Payne, OBE, RDI MNM FRENG, FRINA, HonFIED HonPhD(Science) BScEng(Hons), CEng., the President of RINA, U.K.
Mr. Payne will be making a special presentation upon his stop in Dubai (please see below) and we have made arrangements with IMarEst, Dubai, for any members of RINA in Dubai to attend if they so wish.

Stephen M. Payne OBE RDI MNM FREng FRINA HonFIED HonPhD(Science) BScEng(Hons) CEng
Vice President Chief Naval Architect
Carnival Corporate Shipbuilding Southampton

President The Royal Institution of Naval Architects
Designer Queen Mary 2

I am sailing on board Queen Mary 2 from Singapore to Dubai, arriving in Dubai on 21st March. I have been asked by the local IMarEST branch to stop over in Dubai to present two lectures; the first will describe the life and times of the Queen Elizabeth 2 and the second will describe the design and construction of Queen Mary 2.

The lectures will be presented on Sunday 22nd March and it occurs to me that this would be a good opportunity to meet you and other members of the RINA branch if you elect to attend.

You may wish to liaise with your counterpart at IMarEST with the possibility of having a joint meeting.

This is an exceptional opportunity - not to be missed - and we hope you all attend.
HAK

Peril in store

Long-standing concern regarding the risks to seafarers working in enclosed or confined spaces onboard ships has been heightened following a series of high profile incidents.

In September 2007 three seamen died inside the chain locker onboard the emergency response vessel *Viking Islay*, in the North Sea. Then, in January 2008, two seamen were asphyxiated in a store onboard the cargoship *Sava Lake*, then berthed at Dover's Western Docks. Again, in June 2008 one seaman died at the port of Southampton, after entering an almost empty ballast tank onboard the passenger ship *Saga Rose*.

In July 2008, the UK's Marine Accident Investigatiom Board (MAIB) issued a Safety Bulletin with recommendations in response to these incidents, all of which are currently under investigation. Taking an international perspective, MAIB reported that 18 administrations have reported 120 fatalities and 123 injuries involving entry into enclosed spaces since 1991.

UK south coast legal specialist Lester Aldridge (LA) has now been in touch to draw attention to the fact that it is imperative to identify the legal obligations of shipowners, manager and industry bodies, to prevent injuries or fatalities from occurring in the first place.

The Merchant Shipping (Entry into Dangerous Spaces) Regulations 1988 define a dangerous space as an enclosed or confined space that may be exposed to vapours or is depleted of oxygen, and would risk the health and safety of crew. This includes cargo holds, pump rooms, ballast tanks, cofferdams, bunker tanks and fresh water tanks. The Regulations impose the following duties:

Viking Islay. In September 2007 three seamen died inside the chain locker onboard the emergency response vessel, in the North Sea.

- Employers to ensure that procedures for entering and working in dangerous spaces are laid down, and on the Master to ensure those procedures are observed;
- Dangerous spaces to be identified and the entrance kept closed wherever possible;
- The Master of tankers or gas carriers of 500tonnes and over or any other ship of 1000tonnes or over should conduct regular drills simulating the rescue of a crew member from a dangerous space;
- Employers should ensure that an oxygen meter or other testing devices are available and in good working order.

The penalties for breach of these Regulations vary depending on the severity. Minor breaches, for example failing to conduct drills, might result in a £500 fine. Failing to ensure safe procedures are in place and enforce those procedures may result in a fine of £2500 on summary conviction and/or imprisonment for a term of two years. It is a defence to show all reasonable precautions were taken and due diligence exercised to avoid the breach occurring.

These provisions were reflected in the IMO Recommendations for Entering Enclosed Spaced Aboard Ships which were adopted in 1997. The recommendations further outline preliminary assessment procedures, ensuring proper authorisation of those entering enclosed spaces and specifying the readings to be obtained prior to entry.

Shipowners, employers and managers should take heed of the relevant regulations and ensure proper procedures are in place. Masters should adopt good practices in terms of identifying dangerous spaces and guaranteeing those crew with authorised access have the proper experience, training and equipment. *NA*

In-depth | **ENVIRONMENT**

CleanBallast boards ship

Bremen-based shipowner Beluga Shipping awards a large order to RWO for its new ballast water treatment system, CleanBallast.

Ten heavylift cargo ships are to be equipped with a new compact water treatment system to protect the environment, from RWO. The German company said it was investing further in research and development of state-of-the-art water treatment systems for ships and offshore rigs.

With world trade increasing, the volume and frequency of international cargo shipping is growing as well. Along with it, marine environment protection problems are also increasing: this means the unintended 'import and export' of alien organisms due to the necessary intake of ballast water by ships in international waters and its discharge into local ecosystems.

These organisms can then multiply in an uncontrolled way and, given suitable living conditions and a lack of natural enemies, the micro-organisms threaten the indigenous biodiversity and can also result in harm to human health and ecological damage.

According to the German Federal Maritime and Hydrographic Agency (BSH), for example, the Chinese mitten crab brought in by discharged ballast water has so far caused damage worth more than € 85 million in German waters alone.

Multi-purpose heavylift cargoship of Beluga Shipping. The CleanBallast system will be installed aboard Beluga ships of a similar class.

Bremen-based Beluga Shipping, which specialises in project and heavylift cargo ships, is now using the ballast water know-how and product of RWO. The supplier's CleanBallast product is portrayed a compact and modular system for treating ballast water, which after a research and development, has been brought to the market to cover all ballast water capacities and qualities. The CleanBallast process technology works free of chemical additives and its very low loss of pressure considerably reduces the energy consumption of the ballast water pumps compared with other systems, according to the supplier.

The prefiltration and special inline disinfection system EctoSys achieves treatment of all water qualities to be found around the world, even including harbour waters with high sediment content.

'Four top arguments back our decision and this investment of millions,' says Niels Stolberg, shareholder and managing director of Beluga Shipping. 'RWO's CleanBallast works without the addition of chemicals, which we support in the sense of sustainability. The system performed excellently in the land-based homologation in summer 2007 – and in fact even better than the International Maritime Organization (IMO) prescribes. Due to the compact and process technology conception we also save important space. And finally, RWO's competence and our many years of good experience with their oily water separators that are installed aboard all Beluga ships convinced us.'

It was not until February 2004 that the International Convention for the Control and Management of Ships' Ballast Water and Sediments was adopted during a diplomatic conference of the International Maritime Organization (IMO). This provides for ballast water, which is essential for the stabilisation of ships when carrying no cargo, being treated onboard in an environmentally sound way before it is discharged. To prevent further transfers of organisms between sea areas as soon as possible, the Convention demands its implementation from 2010, depending on the keel-laying and ballast water requirement, but at the latest by 2016. Ten heavy-lift cargo ships of the total 57 vessels of the Beluga fleet are to be equipped with the CleanBallast system by as early as between 2008 and 2010. To date, RWO, a subsidiary of Veolia Water Solutions & Technologies, has invested several million Euros in R&D for its CleanBallast innovation product. *NA*

The CleanBallast system for ballast water treatment in the land-based field test.

Strong Growth predicted for FPSOs

Prediction for massive growth in the offshore production and storage sector from Douglas-Westwood.

Over the next five years some $43 billion is likely to be spent on floating production systems as a total of 123 FPSs are installed worldwide. These are amongst the forecasts in a new report launched in Oslo today by energy analysts Douglas-Westwood.

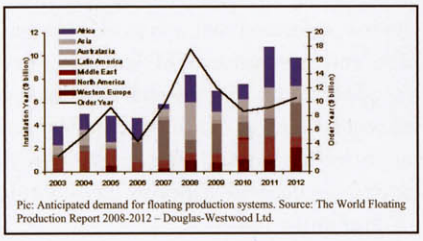
In a speech to delegates at the Tekna Floating Production Conference in Oslo, Douglas-Westwood managing director Andrew Reid said: 'The potential for strong growth in the floating production sector is clearly apparent. There are many more floater prospects on screen for 2008-2012 than were installed over the preceding five-year period. Significant growth is on the cards for the fleets of Asia, Australasia, Latin America and Western Europe, with more moderate growth likely for Africa. North America shows a marginal decline in growth when compared to the previous five-year period; however, many projects in the Gulf of Mexico have relatively short lead times and levels of activity are therefore expected to exceed the prospects identified currently.

'In terms of market value, the world's three major deepwater regions – Africa, North America and Latin America – account for 63% of forecast global Capex. The relatively benign environments and shallow waters in which most of the Asian FPS prospects are located, enable cheaper FPS solutions to be adopted.

'We forecast that over the 2008-2012 period floating production, storage & offloading systems (FPSOs) will account for the largest proportion of these installations (95 vessels), along with 11 floating production semi submersibles (FPSSs), 11 tension leg platforms (TLPs) and six spars.

'FPSOs represent by far the largest segment of the market, accounting for nearly 80% of the forecast Capex. FPSSs form the next-largest segment at 10%, TLPs take 7% and Spars 4%'. *NA*

Anticipated demand for floating production systems. Source: The World Floating Production Report 2008-2012 – Douglas-Westwood Ltd.



Pic: Anticipated demand for floating production systems. Source: The World Floating Production Report 2008-2012 – Douglas-Westwood Ltd.

This is not an advertisement: Can you tell how many cranes are there on this ship?

Not many of our readers are aware of the fact that a Branch of RINA operates out of Abu Dhabi, under the leadership of Mr. Andrew Bunney.
Andrew works for Abu Dhabi Ship Building and not so long ago he was kind enough to give us a presentation on the activities of ADSB.
It is now my great pleasure to present, below, an article written by Andrew which updates us on the activities of ADSB. HAK

ABU DHABI SHIP BUILDING MARCH 2009 UPDATE

Abu Dhabi Ship Building (ADSB) had a very busy and profitable year in 2008. The following was achieved:

1. ADSB commenced work on the 12 x 34m "Al Saber" Composite Patrol Boat progam for the UAE Coast Guard.

2. Signed contracts with the UAE Navy to tropicalise 2 Minehunters.

3. Completed a major mid-life refit on the first 4 of 10 Bahrain Coast Guard Composite Patrol Boats.

4. Commenced work on the 2 42m Landing Craft and 2 16m "Seakeeper" Fast landing Craft project for the Royal Bahrain Naval Forces.

5. Signed a long term dry-docking agreement with ESNAAD.

6. Started construction of 2 x 26m tugs and 2 x 19m Multicat workboats for Damen Shipyards.

7. Started construction of 16m "Seakeeper" Fast landing Craft for Abu Dhabi customer.

8. Completed the fourth of six Combat System upgrades on TNC45 Fast Patrol Boats for UAE Navy.

9. Laid the keel on the 5th Baynunah Class Corvette and cut steel on the 6th and last Baynunah Class corvette.

10. Delivered a 19m tug to a Gulf operator

11. Started a major refit program on 2 x UAE Navy 65m corvettes

12. Signed a fleet maintenance contract with Critical National Infrastructure Authority (CNIA)

13. Signed an agreement with Rolls Royce to create a "Waterjet Centre of Excellence" to service and support all Rolls Royce waterjet products in the GCC region.

14. Signed an MOU with BVT Surface Fleet Ltd. To create a JV Company to provide extensive service and support to GCC Naval / Military Organisations.

At the recent IDEX 2009 defence exhibition held in Abu Dhabi, ADSB secured a contract with the Critical National Infrastructure Authority (CNIA) for the supply of Thirty Four (34) x 16m High Speed Interceptor vessels.

ADSB's Strategic Partner for the project is Turkish company Yonca-Onuk JV and the vessel being supplied is the proven and in-service Yonca-Onuk MRTP16.

To enable simultaneous building of the vessels – Yonca-Onuk will build twelve (12) vessels in Turkey and ADSB will build twenty two (22) vessels at its state of the art composite facility in Mussafah, Abu Dhabi

These new 16m Composite vessels will be powered by MTU marine diesel engines and have speeds in excess of 50 knots. The boats are designed to meet the wide range of duties provided by the CNIA including the security of Abu Dhabi Inshore waters, Abu Dhabi marine facilities and high speed interception against marine based threats.

Each vessel will be crewed by five (5) personnel and will be equipped with latest state of the art navigation, and communication suites.

Also at IDEX ADSB was awarded a contract to build twelve Missile Boats for the UAE Navy. These 26.5m vessels, constructed in aluminium will be fitted with a MBDA Marte Mk2/N Missile system.

Designed by Swedeship Marine of Sweden, the vessels are based on the proven ADSB supplied "Ghannatha" Class vessel currently in service with the UAE Naval Forces.

In addition to the Missiles, the vessels are fitted with a 27mm gun located forward and a 12.7mm gun located aft. These highly sophisticated vessels will provide considerable defensive fire power support for the UAE Naval Forces.

The Missile System represents the latest in missile development and technology. The Missile System will be located aft of the wheelhouse in a mid-ships location on the vessel.

The platform is a slightly larger vessel than the Ghannatha Class vessels and is fitted below deck with accommodation designed for a maximum crew of twelve (12).

She is propelled by twin MTU Marine Diesel engines coupled to Rolls Royce FF waterjets which will give a maximum speed of in excess of 40 knots.

With a view to the medium and long development of the company, ADSB's Management and Board of Directors clearly recognize that the most significant opportunity for achieving substantial future company growth lies in diversifying the current ship building and repair business into the provision of client support services. This diversification effort seems very timely as there are strong indications of increasing local government interests in the outsourcing of non-core activities. Moreover, the provision of client support services would appear to be a large market opportunity throughout the region as well as a good fit with ADSB's current skills and abilities.

Successfully achieving such dramatic business diversification will require very careful and deliberate planning and will be a major undertaking for ADSB requiring adequate resources and strong leadership. Potential client support services cover a broad variety of subjects that vary widely in both difficulty and risk and ADSB is interested in the following types of services.

- Integrated Logistic Support (ILS) Fleet Maintenance Planning; Material Supply Management; Configuration Management; Technical Documentation Management.

- Maintenance Services: 24/7 operations; Equipment, System, Platform: At base, on board, at sea; preventive, corrective emergency.

- Contractorised Facilities; Workshops; Specialized Repair Facilities; Test & Trials Facilities & Means.

- Training Management; Basic Seamanship New Recruit; Naval Operations; System Operations & Maintenance; Platform & Weapon Systems; Navy Instructor Certification; Advanced Courses.

In recognizing the niche area of the market and the real proven expertise associated with this work – ADSB has announced the formation of a Joint Venture Company with BVT Surface Fleet Ltd (the maritime Joint Venture between BAE Systems and VT Group) to provide world class naval support services for customers in the Gulf Cooperation Council (GCC) Region.

The new company is the first Joint Venture of its kind in the Arabian Gulf and will offer a range of naval support services across the full spectrum of integrated logistics support and training as well as outsourcing solutions for base facilities to support the marine fleets of Navies, coast guards, marine police, homeland security organizations, special forces and other key commercial customers, not only in the UAE, but across the whole of the Gulf region.

As the Joint Venture becomes operational, BVT and ADSB will be fully committed to the effective transfer of technologies, processes, systems and skills in the field of naval support services to the JV. This Abu Dhabi based JV will also strive to work in close cooperation with customers in the other GCC countries and form partnerships and alliances in those countries to develop the local support capabilities needed there as well.

Would you like to write something about your own company? Provided it is a factual statement, of interest to the readers of this newsletter, we shall be happy to publish it.
