



MARINA

The Quarterly Newsletter of
The Hong Kong Institute of Marine Technology and
The Hong Kong Joint Branch of The Royal Institution of Naval Architects
and The Institute of Marine Engineering, Science and Technology

IMAREST

香港海事科技學會及皇家造船師學會
暨輪機工程及海事科技學會香港聯合分會季刊

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HKJB & HKIMT Activities

DNV Greater China Committee Meeting 2010

This year's DNV Greater China Committee Meeting was held in Sanya, China, on 12 March. The meeting was chaired by Mr. Stephen Pan, Chairman of the World-Wide Shipping Agency Limited and attended by over thirty numbers of shipowners, shipbuilders, designers and a number of DNV staff, including Mr. Tor Svensen, DNV President, and Mr. Remi Eriksen, DNV COO for Asian Division.

Mr. Pan raised a number of concerns in his opening remarks. On the environmental side, he pointed out the post COP15, regional initiatives, clean shipping and LNG transport. He highlighted that shipping industry was looking at very challenging times on many fronts in the next year or two. Not only are we facing a supply/demand imbalance we also face challenges on the environmental regulatory front. His "What Ifs.... Market Implications questions" triggered the thoughts of the audience and strengthened those arguments of the speakers.

Mr. Svensen saw the reduced growth rates in the world economy. He expected that some negative aspects of globalization might be felt and shipping might face challenging times, with overcapacity and rate pressure in all segments. Some megatrends appear to become even stronger, i.e. strengthening of the East, particularly in China, and increasing importance of climate change and sustainable development. Mr. Svensen thought that shipping could seize the initiative and define the premises for future regulation of GHG emissions, e.g. "Shipping will commit to achieving carbon neutral growth towards 2030 with a long term aim to halve CO2 emission by 2050" and "Shipping will establish a system for measuring and monitoring of global CO2 emissions for international trade by 2012".

Mr. Eriksen considered using natural gas in shipping would be a reliable, affordable and clean solution. He said the world used 3 trillion cubic metres of gas a year. Under the current usage of gas, the world gas resources,

including the supply of shale gas, could last for 250 years. He opined that natural gas could offer "triple solution", i.e. it enhances supply security, improves energy affordability and reduces atmospheric emissions of carbon when it replaces other sources. There is an abundant supply of natural gas in the world. Natural gas would be the preferred fuel for short sea shipping in many countries and regions.

Mr. Pan understood that DNV is responding to the green challenges by focusing on innovation, particularly on clean shipping technology, at the same time the management and organization structure is changed so they are more responsive to their customer's needs. He commented that in the absence of COP15 reaching consensus on many fronts there is a danger of regional regulations, for example if EU impose tax on shipping this would then shift goods movement from shipping, the most efficient mode in terms of carbon emission, to some less efficient modes. Given the total volume of trade involved, it could be EU/US requirements on the environmental control of carbon emission and this may become the global standard. For the time being IMO still has the mandate and they are working on EEDI (Efficient Engine Design Index). However if IMO is unable to come up with substantive proposal, EU will likely impose unilateral targets and mechanisms. It is therefore important for shipping industry to come up with meaningful reduction targets for 2020. The airline industry has already done so.

In DNV's analysis, significant potential exists to reduce carbon emission by 15% on existing ships without substantial capital investment. DNV is currently working with shipowners to achieve carbon reduction as well as document operating procedures for achieving this. Reducing carbon emission is the same as saving fuel consumption and some DNV clients have already

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experienced savings of million dollars fleet-wide by implementing the various abatement alternatives. Shipowners must take a longer term investment return time frame when looking at environmental and fuel savings schemes. Some shipowners are only willing to take a short one/two-year perspective when looking at returns.

Mr. Pan outlined that there have been significant changes in the energy scene when it comes to natural gas. The discovery of shale gas in USA only two years ago will alter the entire picture for gas. USA is most likely to be an exporter of natural gas rather than importer as envisaged only a few years ago although the US may not export much due to energy security concerns. A rough estimate of global shale gas, natural gas, coal bed methane reserves could mean gas as source of energy would last 250 years. Australian gas mega-trains are price competitive as is Papua-New Guinea gas. The likely result of all this is the Pacific gas trade would most likely far exceed the Atlantic Basin gas trade. With this potential supply gas prices are unlikely to go up near as much as oil and this may make gas as source of marine propulsion viable in some specialized trades.

LNG propelled ships could be viable for short sea trades and offshore supply boats. The main design challenge on the safety side is explosion and extreme cold temperature of the gas should it escape. Technical solutions exist for these two challenges. The one obstacle to using LNG as main propulsion fuel in long haul is the containment system requires 4 times the volume of equivalent bunker tanks. DNV already classed a good number of LNG coastal vessels including ferries and offshore supply/anchor handling vessels.

It seems timely that the advent of climate change/carbon emission targets for the maritime sector coincided with IMO's adoption of Goal Based Standards in rule making. Solutions to "green-ships" must be cost effective and this points to integrated and holistic approach to ship design. There is no one solution which will fit all ships or all trades and so it is extremely important that all involved cooperate and work closely together to find the most cost effective solution.

Mr. Pan stressed that the industry is facing some serious problems arising out of recent requirements on low sulphur

fuel. While refineries are producing lower sulphur content fuel to comply with requirements this fuel contains much higher abrasives which are detrimental to engine wear. This low sulphur fuel also has lower flash point which could be a serious safety hazard. Looking ahead with even lower sulphur content, many of the existing engines and auxiliary machinery are not designed to cope with the use such fuel, there is a real risk of such regulations when implemented could create new operating risks.

On market outlook, Mr. Pan summarized that with the import/export requirements of China the shipping market boom would be much less if at all and yards would have had a difficult time. The better numbers now are because 2008/9 was such a poor year. Even with China's high growth rate there is high uncertainty as to global economic recovery. As far as shipbuilding is concerned it is very dependent on the export market and this is dependent on global economic recovery. So far traditional main stream owners are not ordering too many ships. Delivery beyond 2010 will show a pronounced decline and it is possible for example that new VLCC prices could fall below US\$ 80m however orders from raw material players and stability in the second hand market would also help stabilize new building prices.

There are however other factors which could change this negative view. Although clearly there is excess capacity many of the private yards are very flexible and some of them are already diverting to the manufacturing of other products and some set up leasing companies to lease ships to end users. There was discussion on 75% of oil imports by 2015 be carried on Chinese controlled vessels and looking at today's fleet it could well mean 100 VLCC orders would need to be placed. Infrastructure expansion



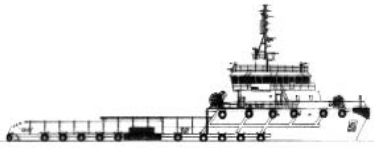
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in China, rapidly growing car ownership, high speed rail network, deep-sea exploration, coal industry reorganization all offer opportunities for the ship builders. As for overseas competition the comment was made that Korean yards have a much higher level of debt so the Korean yards face more difficulties when compared with Chinese yards.

In discussing the four scenarios as presented by Mr. Svensen almost all present thought the most likely scenario is “Slow Boat to China.” There is consensus confidence that China will continue on good economic growth and will reap the benefits when recovery comes.

On investment in “Green Ships” a majority of the members felt we should move forward in designing and ordering the next generation of more environmentally friendly ships as regulations are already on the drawing boards.

Mr. Pan in his overview mentioned potential fragmentation of rule making for shipping in the absence of clear accord at COP15 and the need for shipping to have uniform rules and regulations for global trade. Changing patterns of trade have significant impact on transportation needs and Mr. Pan gave illustrative examples of how the Eastern Siberia Pacific Ocean oil pipeline and the new Queensland coal mine could change the volume and type of vessel required.

(S Y Tsui)

HKJB 34th AGM

The 34th AGM for HKJB was held on 12 January 2010 at 18:30hrs at conference room A, 24/F, Harbour Building, Hong Kong.

There were a total 21 branch members attending the 34th AGM which did meet the Branch Rule requirement of 12 Branch members to form a quorum for any general meeting.

Before the starting of the 34th AGM, there were two presentations, one was the student prize presentation and the other was the long membership certificate presentation.



Chairman S Y Tsui gave his report at 2010 AGM.



HKJB members at 2010 AGM

There were total 5 students coming from HKU and HKPU obtained the student prize. The long membership certificates were given to Dr. Peter Jui-shan Cheng.

Dr. S.Y. Tsui, the Chairman, delivered the Branch Annual Report to all the participants and he stated that 2009 was a fruitful year for the Branch in fulfilling the objectives of the parent Institutions and he thanked to the effort and support of all committee members and members.

At the end of September 2009, our JB had a healthy account of small bank balance of HK\$7,773.38. Therefore both auditors Mr. P.S. Kwan and Mr. Kenny Them as proposed and seconded by the members,



Founded in London in 1856, The Salvage Association served the maritime community and insurance interests, worldwide, for more than 150 years. Now known as BMT Marine & Offshore Surveys Ltd, we remain a global marine surveying company with over 30 offices in 25 countries. Our continued growth in key market sectors has created a requirement for a progressive and dynamic individual to be located in our Hong Kong office in the capacity of MARINE ENGINEER SURVEYOR. While specializing in damage surveys for hull and machinery insurance interests, our surveyors are also heavily involved in warranty, liability, cargo, offshore and general consultancy work providing technical support to our varied client base including Shipowners, P&I Clubs, Underwriters and Solicitors.

Applicants must be fluent in spoken English; proficiency in spoken Mandarin would be preferred. He/She will be expected to be suitably qualified and experienced as a chief engineer or superintendent, and possess a strong technical background. Alternatively, experience in Chinese shipyard repair, existing commercial survey or Classification Society, would be considered. Good written English and the ability to write concise reports are essential criteria, as well as the need for flexibility and the ability to work unsupervised. The work is challenging and rewarding, and often requires long hours and travel at short notice to carry out marine surveys in China or elsewhere as required in the Far East. Applicants must be computer-literate, and capable of preparing their own reports. Interested applicants please submit your C.V. in confidence to: ajones@bmtmarinerisk.com



Ir Dr S Y Tsui presented the Long Membership Certificate to Dr Peter Cheng



HKJB & HKIMT members congratulated Dr. Peter Cheng on his awards of the IMarEST & RINA Long Membership Certificates.

continue to be the auditors for 2010 and the proposal was unanimously agreed.

Mr. Chung King-yan and Mr. Kam Dik-chiu, Dick were elected as new committee members at the AGM.

Immediately after the AGM, the 1st Committee Meeting was held and Dr. S.Y. Tsui was re-elected as Chairman and Mr. Y. M. Cheng as Vice Chairman for 2010 HKJB Committee. The Hon. Secretary & Asst. Hon Secretary, Hon. Treasurer remain unchanged as last year.

(Ir. Tang Kai Fun)

Maritime Labour Convention 2006 (MLC 2006)

On 22nd January 2010, Ir. Dick Kam of BV gave a talk on the above subject to members of HKJB, HKIMT and HKIE at the conference room of HKIE.

The objectives of the seminar were to give participants a knowledge and enhance their understanding on the MLC and the way it functions with a special focus on development of the Declaration of Maritime Labour Compliance (DMLC). It also gave participants a good starting point for evaluating how to handle, prepare for and implement the Convention requirements.

In summary, Ir. Dick Kam explained to the participants the background, objectives, entry into force, application, content of the MLC 2006, certification, inspection and challenges for ship owners.

In conclusion, MLC represents a considerable change to the regulation of working conditions for seafarers. Prudent ship owners should start taking steps such as amending charterparties agreements, drafting new onboard procedures, reviewing employment contracts and crew management in order to comply with MLC 2006.

Masters and senior officers need to be trained to ensure that the vessel is compliant with MLC, including aspects such as dealing with crew grievances and monitoring working-time limits.



S Y Tsui and Nelson Yu presented a souvenir to Mr. Dick Kam



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Shipping industry as a whole will benefit from the MLC. There will probably be more balance among shipowners when the fight for profitability and competitiveness is no longer allowed to be won at the expense of the working conditions on board. Furthermore, recruiting and retaining will probably be easier.

HKJB, HKIMT and HKIE must thank Ir. Dick Kam to give such an informative seminar to our members. Interested parties can review the full contents on <http://www.hkimt.org.hk>.

(Ir. Tang Kai Fun)

Head Quarter News

The formation of the IMarEST Technical Policy Committee will be set up in order to supersede the existing Technical Affairs Committee (TAC).

The roles of the Technical Policy Committee is to set the overall technical direction of the IMarEST. One of the key areas of change proposed by the Governance Structure Working Group was a need to give greater prominence to both the technical activities of the Institute and the Technical expertise of the Institute's members.

Several proposals have been presented at the recent Council Meeting as to how IMarEST can achieve the objectives of the Technical Policy Committee. Such proposals can be summarized as follows:

- Project Contracting
- Combination of Brokerage & Technical Consultancy
- Newbuilding Supervision
- Shipyard Projection planning

- Firstly, a database of interests and expertise can be searched at IMarEST HQ.
- Secondly, branch technical meetings have to report to HQ.
- Thirdly, Technical Working Groups and Special Interest Groups will be developed and maintained. Members from branch can propose a subject matter for a Working Group or Special Interest Group or even chain a group.
- Finally, branch is urged to identify interests with their Marine Partner organizations, so a list of Marine Partners can be posted in IMarEST website, and IMarEST HQ would be happy to make appropriate introductions between key ambassadors within the Marine Partner Organizations and the branches.

(Ir. Tang Kai Fun)

Bulk Carrier Seminar

DNV HK office had arranged a seminar on bulk carrier on 19/01/2010 at Novotel Hotel in HK. A total of 5 representatives from HKJB and HKIMT attended the seminar.

Speaker Mr. Anders Swerke was coming from DNV Shanghai office to give a talk on the topics of:-

- Bulk carriers drivers and innovations
- Easy Loading & Easy Cleaning
- Terminals and operation
- Hull inspections of Bulk Carriers

Summary of the talks are as following:-

A) Bulk carriers drivers and innovations

The three main drivers for bulk carriers are:-

- Environment innovation, such as bigger size bulk carrier to reduce the number of voyages, in return less emission of XX oxide
- Money innovation such as investment on easy loading and easy cleaning

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- Legislation innovation such as ballast water management

B) Terminals and Operation

The challenge

In order to counteract port congestion and to become more efficient, some terminals request bulk carriers and ore carrier to perform loading operations at nominal loading rates up to 16,000 tons per hour, and with as few steps as possible.

Potential effects

- Drive for maximum loading efficiency calls for
 - higher loading rate
 - fewer loading pours
- Hull girder loads are pushed closer to or even exceeding design limits.
- The acceptable loading time is depending not only on loading rate and the corresponding strength, but also the necessary time for de-ballasting.
- If the de-ballasting time is not taken properly into account, this may lead to hull girder stresses approaching their allowable limits in port.
- To compensate for low de-ballasting capacity, many vessels arrive at the terminal with ballast condition as light as possible, often with big aft trim for submerging the propeller.

Observations

- Very few, if any, existing Panamax, Capsize or VLOC vessels have been designed with loading manuals specifying nominal loading rates up to 16000 tons per hours.
- Very few vessels have loading manuals specifying specific loading rates at all.
- Very few vessels have been designed taking IACS recommendation properly into account, i.e. few vessels have a loading manual where de-ballasting is specified to be time-wise synchronized with the loading operations.

- Modern Capesize design where loading time is extended, and also ballast water exchange at sea may take very long time due to:

- Insufficient ballast pump capacity,
- Insufficient dimensioning of valves and main and branch pipes,
- Inadequate tank arrangement featuring only few tanks.

- Modern Capesize design where one ballast pump serve two tanks simultaneously, preventing more than one ballast pump to run at the same time.
- Modern Capesize design do not always featuring an efficient ballast stripping system.
- Modern Capes are not always equipped with remote tank sounding and draught reading system.

DNV's General Design Recommendation

- Maximum loading rate and minimum number of pours to be quantified in building specification according envisaged trading pattern.
- Special consideration to be given if two or more loaders are used simultaneously.
- Capacity and dimension of ballast water pumps and piping system are to reflect design loading rate, number of pours and number of loaders.
- Ballast system should be designed such that two ballast pumps (in general) may run at full rating serving each simultaneously each one ballast tank P&S (forming a pair) at recognized water flow velocity.

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- A separate ballast water stripping system should be installed to ensure that the de-ballasting process can proceed without interruption during the loading of the vessel.
- Bulk carriers should be fitted with remote sounding for water ballast and fuel oil storage tanks and a draught reading system with an online interface into the software of the onboard loading computer.
- Check of local strength for single and adjacent cargo hold loading pattern should be integrated into the software of the onboard loading computer.

C) Hull inspections of Bulk Carriers

- Keep an eye on the small damages and fix them while they are small.
- Keep an eye on critical areas for cracks.
- Keep an eye on the coating.

In general, hull integrity management services include the following 4 modules:-

- Knowledge, e.g. hull competence, in hull structure & hull inspection
- Systematic, e.g. hull inspection manuals
- Software tools, e.g. Nauticvs hull integrity to store all inspection data
- Support, e.g. hull advisory services on the main risks identified

This seminar gave a brief introduction on the recent trend on bulk carriers where all the attendance can benefit. HKJB and HKIMT will continue to arrange such kind of seminar to members in order to keep up with the Maritime development.

(Ir. Tang Kai Fun)

Announcement of AMEC 2010

As advised by the Vice President of SNAMEs, Mr. G.D. Kinrade, AMEC 2010 (Advanced Maritime Engineering Conference) will be held in National

University of Singapore in Singapore during 6 to 8 December 2010 after the 4th PAAMES Meeting (Pan Asian Association of Maritime Engineering Societies). This is the 1st Announcement and call for papers for awarding the best papers award and the students paper award will be presented. The following 3 organizations did involve this activities:-

- The Hong Kong Institute of Marine Technology (HKIMT)
- The Hong Kong Institution of Engineers – Mechanical, Marine & Naval Architecture and Chemical Division (HKIE-MMNC)
- The Institute of Marine Engineering, Science and Technology, East Asia Division (IMarEST-EAD.)

For details, interested members can contact the following representatives accordingly:-

- HKIMT (Ir Nelson Yu)
Nelsonyu@apel.com.hk
- HKIE-MMNC (Ir Steven Lai Kam Hong)
lai.steven@pbword.com
- EAD/NEAD-IMarEST (Ir Szeto Ka Sing, Louis)
kasing.szeto@shell.com

(Ir. Tang Kai Fun)

Promotional Talk on Marine Engineering Profession and IMarEST

As invited by the Vice President of HKUST of Prof. Ir Matthew Yuen, Ir K.S. Szeto gave a special talk to introduce Marine Engineering Profession and the route to Membership of IMarEST on the 3rd February 2010 to their Mechanical Engineering Students and Graduates in Marine Stream. There was total about 30 students attending the talk which included a few female students.

What the students really concerned about in the clear routing how to become a professional marine engineer such as how long it will take to become an marine engineer as well as chartered marine engineer. What

about the salary scale at different positions as third engineer, second engineer, first/chief engineer etc.? What kind of trainings or examinations they have to take during their works onboard a vessel?

Also they wanted to know how they can get in touch with those shipping company in order to get a job onboard the vessel, etc. Ir Szeto did give answers to all those questions and he finally gave advice to students to set up a solid foundation and always have the mind of self learning while they are working and do not refuse to work more, as request by their superior. It seems that students are not very keen to become a student member of IMarEST and we trust that more promotional talk to students are needed on this subject.

After the talk, we had dinner with Prof. Ir Matthew Yuen, Prof. Christopher Chao and Associate Professor Mr. Gao together with HKJB/HKMIT Member Ir Tang Kai Fun and one graduate student in which a more thoughtful talk on how HKJB/HKMIT as well as related parties can assist the students to have a brighter career future.

(Ir. Tang Kai Fun)

Coming Events / Activities in 2010

- **May 2010**
Half Day Seminar in Ship Design & Ship Building Technology
- **May 2010**
Career Talk in IVE
- **June 2010**
Dragon Boat Race at Government Dockyard
- **July / August**
Technical Visit to China
- **19 November 2010**
HKJB & HKIMT Annual Ball
- **November 2010**
Career Talk at HKPolyU
- **8-10 December 2010**
INMEX at Guangzhou, China

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