

## ASEF #9 Summary Note by Session 2 Chairman

Session 2 took place in the afternoon of 25th November 2015 and dealt with Environmental issues which were currently of great concern to the shipbuilding industry.

The session topics were grouped into four,

EEDI,  
Underwater noise,  
Polar Code, and  
IGF Code.

Six presentations were made, which are fully informative and invited active discussions.

On EEDI,

- This subject was approached by the two presenters from the aspects of sea trial data analysis, minimum propulsion power guidelines and EEDI review.
- Mr Weixin ZHOU of China Ship Scientific Research Center (CSSRC) introduced three topics, namely, impact of application of ISO 15016:2015 on speed trial analysis, Chinese research status on speed reduction coefficient in waves, fw, and impact of the amendments to IMO Guidelines on minimum propulsion power. In his presentation, he pointed out that three alternatives on wave correction methods exists, which leads to different result and there are newly introduced conditions and restrictions in speed trial analysis to which shipbuilders should pay attention in the new ISO standards. He also expressed that under the revised minimum propulsion power guidelines, many small ships and large tankers cannot satisfy the revised Level-1 assessment and a research for proposing reasonable assessment guidelines will be planned in China.
- Mr Kazuyoshi HIROTA of Japan Marine United Corporation (JMU) introduced status of recent discussions at IMO on the issues of minimum propulsion power and of EEDI review. In his presentation, he highlighted that the Greek proposal to strengthen the minimum propulsion power guidelines, which many countries supported at MEPC 67, would have a huge impact on shipbuilders and shipowners if it were agreed, and at MEPC 68 it was not agreed as it is because the said impact is well understood by stakeholders. In this regard, in a comprehensive review of the minimum propulsion power guidelines to be expected in the near future, results of research projects of EU's SHOPERA and one in JASNAOE should be used as a basis for the discussion. Concerning the EEDI review, he presented that 20% reduction rate in Phase 2 would be achievable, while further innovative technologies are necessary for achieving Phase 3 reduction rate of 30%.
- The session noted that it is a challenge for shipbuilders to design ships meeting with requirements both on EEDI and on minimum propulsion power, the latter of which is to be discussed in IMO in the near future, and also noted the importance of technical inputs from shipbuilders to appropriate fora including IMO and ISO in corporation of those among Asian countries.

#### On underwater noise

- Dr Wenwei WU of China Ship Scientific Research Center (CSSRC) introduced a propeller model test method, which is a tool for controlling propeller noise emitted from ships and also provided an example of noise control effect with a vortex generator. With regard to ship propeller model tests, he presented a model test method for measurement of radiated noise using the large cavitation channel in CSSRC and showed a result of measurement in good agreement with data of a full scale ship test. He also expressed wake equalization devices, like pre-duct, vortex generator, pre-swirl stators, could have mitigation effect and an example of controlling cavitation noise with vortex generator are provided.
- The session noted that it is a challenge for shipbuilders to reduce both propeller cavitation noise and EEDI while sometimes there is a trade-off between them.

#### On Polar Code

- Dr Shifeng DING on behalf of CANSI introduced overview of the Polar Code and points needs to be considered in designing polar ships. In his presentation, he explained that the Polar Code covers the area of SOLAS, MARPOL and STCW conventions and contains both mandatory and recommendatory provisions, and that hull shapes and propulsion systems should be designed taking into account the damage scenes corresponding to the ship's ice class and winterization measures shall be provided depending on polar service temperature of the ship.
- The session noted that the information provided is useful for shipbuilders who are planning to design polar ships.

#### On IGF Code

- This subject was approached by two presenters from the aspects of points necessary for shipbuilders to pay attention in design stage and of economic analysis for gas fuel ships.
- Mr Shaowei GAN on behalf of CANSI introduced recent progress of IGF Code in IMO and main points for shipbuilders to be taken into account in design stage. He presented that the IGF Code is applied to newly built LNG fuelled ships to which IGC Code is not applied, and it lays a solid regulatory foundation of which provisions are made to address hazards related to LNG, namely, cold brittleness and flammability. He highlighted that there are two approaches each for protective location of LNG storage tanks, for machinery space protection and for fuel supply system, and also provided information how shipbuilders choose an alternative.
- Mr Hyun Chae JUNG of Samsung Heavy Industries introduced his economic analysis based on a concept design of a gas fuelled 14,000 TEU container ship. He explained outcome of his analysis that initial cost of the gas fuelled ship would be higher than the conventional ships by about 21%, which should be reduced, and while, fuel consumption of the gas fuelled ship would be better by 18%, annual total expense would be the same level due to high capital and other cost associated. His analysis also contained information that required freight rate, that means the expense per carrying TEU, of the gas fuelled ship would be almost the same level, 2% less than conventional ships provided that the fuel prices of oil and gas is at same price.

- The session noted that the information provided is useful for shipbuilders who are planning to build gas fuelled ships.

Finally, Session 2 had an active discussion on the issues of importance and I appreciate all participants for their cooperation.

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