

Closing comments

Senior Technical Officer for ClassNK
Maritime Innovation Japan Corporation
Oshima Shipbuilding Co., Ltd

Dr. Tatsuo Takaishi

Development of LNG fuelled ships(natural gas engines)

- This subject has been introduced as an example of Collaboration.
- A summary of fundamental study on natural gas engines was explained, and ClassNK is contributing to Collaboration between Singapore and Japan to promote the technological innovation.
- It is said that one of the main points to promote LNG fuelled ship is expanding and improving LNG bunkering port. Singapore is strongly expected as an important LNG bunker port.

The role of MTI as a R&D company which aims to assist ship owners/operators

- The company is extending its activities with the aim of achieving Smarter ship, Smarter operation, and Smarter partnership.
- This subject explained the situation in which the company is promoting research and development on the following fields.
Innovation of ship, Improvement in operation, Revolution in logistic
- Research & Development on 0.5% EGCS is more significant for 0.5% SOx Global Cap, and “International Work-style”(namely Collaboration) is more important to fulfill the practicability.

Role of academia in Green & Smart shipping and METB initiative

- An outline of R&D in Green Technologies for Maritime Industry was explained, and the structure and function of Maritime Energy Test Bed were illustrated in detail.
- The importance of METB was stressed toward Green & Smart Shipping.
- We are looking forward to promoting innovation solutions for maritime industry with translation from lab-scale to real-application scale, and to overcoming issues prior to onboard ship trial.

Modeling and Simulations - Enabling Green & Smart Shipping

- The great capabilities of IHPC to fulfill green and smart shipping were introduced in a wide range of fields.
- For the preservation of atmospheric environment and oceanic environment, it is important to utilize both Fluid Dynamics and Material Science & Engineering.
In particular, CFD as a Virtual Lab is effective approach introducing state-of-the-art technology on various field of research.
- Lastly, IHPC & ClassNK Collaborations are expected to develop further toward the future innovation on shipping.

Yanmar's Innovation and New Product Development for “Beautiful Harmony with Global Environment”

- The company is setting research and development on new technologies for marine engines.
- More specifically, the following are examples of what the company is promoting with the aim of achieving “Life Cycle Value” for Customers and Beautiful Harmony with Global Environment.
 - Reduction of fuel consumption, ○Marine gas engine, ○SCR system
- I hope above-mentioned technologies will be applied aiming at more contribution to Green & Smart Shipping.

ClassNK R&D Activities in Singapore, Collaborations and Policies

- An outline of Global Research & Innovation Center (GRIC) was explained. In particular, Advanced Exhaust Gas Cleaning System is drawing attention from all over the world as Marquee Projects, and one of key activities in Singapore is Maritime Energy Test Bed as mentioned earlier.
- Another key activities in Singapore is Marine Renewable Energy Scale up Test Site, and ClassNK funds and supports its activities.

Collaborations : Key Word to promote smoothly the gear train revolution on "E"

