Evening Lecture

Jointly Organised by
The Joint Branch of RINA & IMarEST
Society of Naval Architects and Marine Engineers Singapore
and
Centre for Offshore Research & Engineering (CORE), NUS

“Introduction to LNG Carriers and Cargo Tank Systems
with emphasis on “Design” and Operation of Membrane Tanks
for LNG FSO and FSRU Conversion”

By Dr. Xing (Jim) Zheng
Principal Naval Architect, Oil & Gas Services, Lloyd’s Register Asia

Date: Wednesday 16 August 2006
Time: 6.30pm to 7pm Registration & Refreshments
Talk begins at 7 p.m. and ends at 9 p.m.

Venue: Seminar Room EA-02-11, Faculty of Engineering, National University of Singapore (see attached map)

Please see the attached documents for the abstract of the talk and biography of the speaker.

Please confirm with Ms. Juliana by Friday 11 August 2006 via the reply slip.

A/Prof. Choo Yoo Sang
Chairman
The Joint Branch of the RINA and the IMarEST (Singapore)

REPLY SLIP - Fax No. 67791635; Tel No. 65162151; Ms Juliana Binte Miswan, Email: cvejulia@nus.edu.sg

Yes, I would like to attend the talk

Name : ____________________________________________
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ABSTRACT

Natural gas is the world’s fastest growing primary energy source. It is predicted that the natural gas will account for one-third of all incremental energy growth and represent one-quarter of world energy supplies by 2020. This will result in a dramatic increase in LNG fleets and terminals, both on and off shore, around the world, and present great opportunities for conversion of old LNG tonnages to FSO and FSRU.

The most important fact that differs a LNG vessel with other ship types is the cargo she carries, namely LNG, which has a temperature of -163 °C. The presentation will give potential owners, operators, designers and yards in Singapore an introduction on different types of containment systems and vessel types currently in services and how they work. Emphasis will be given to GTT membrane systems, since they firm the largest portion of the existing fleet and become more and more popular due to economical reasons.
The presentation will address the difference between design and operation of a LNG carrier and a converted FSO or FSRU. The former restricts filling level in cargo tanks to avoid severe sloshing, which can cause the membrane system failure, cargo leakage and consequently loss of the vessel. However, for an FSO or FSRU unrestricted partial filling can not be avoided. As the project manager for LR’s LNG sloshing studies for many years, the author will explain the cause of the severe sloshing, the capability of different membrane systems and how an operator or designer can deal with this potential risk and limit it within an acceptable level. LR’s procedure for assessment of LNG sloshing loads will also be presented.

ABOUT THE SPEAKER

Dr Xing (Jim) Zheng is the Principal Naval Architect of Oil & Gas Services in Lloyd’s Register Asia, Singapore. Dr. Zheng received his Ph.D in naval architecture from Glasgow University UK in 1988. After five years working for University of Newcastle upon Tyne UK and Kvaerner Oil & Gas London, he joined Lloyd’s Register London Office in 1993. There, he was head of hydrodynamics in R&D Department and responsible for hydrodynamic and loading related research and rule development. He was the 1st Chairman, then LR task leader, of the load working group in IACS Common Structural Rule for Tanker project and LR’s representative to IACS Wave Data and Sea Load Working Group. In August 2005, Dr Zheng was assigned to his current post in Singapore to strengthen LR’s plan approval capability in Oil and Gas Services, Asia. Dr. Zheng is also a visiting professor to Huazhong (Central China) University of Science and Technology.