# Education & Professional Development of Engineers in the Maritime Industry



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## Conference Programme

The 2<sup>nd</sup> International Conference on the Education and Professional Development of Engineers in the Maritime Industry

TUESDAY 26th & WEDNESDAY 27th FEBRUARY 2013 AT THE NGEE ANN POLYTECHNIC UNIVERSITY, SINGAPORE

For further information visit:

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Call Laura on +44 (0) 20 7235 4622 or email conference@rina.org.uk

### DAY 1 PAPERS:

08.30-09.00. **COFFEE & REGISTRATION** 

WELCOME ADDRESS 09.00-0.905

Trevor Blakeley, Royal Institution of Naval Architects

09.05-09.10 **OPENING ADDRESS** 

Jim Brown, International Paints

09.10-09.45 KEYNOTE SPEECH

Prof. Richard Birmingham, University of Newcastle, UK

09.45-10.20 CURRICULUM DEVELOPMENT OF MARINE AND OFFSHORE TECHNOLOGY (MOT) DIPLOMA: THE SINGAPORE STORY

David Chih Wei Seow, Ngee Ann Polytechnic

This paper traces the curriculum development of the only Marine & Offshore Technology (MOT) Diploma course in Singapore over a period of 37 years since 1975. The course objective is to develop junior naval architects and offshore engineers for Singapore's buoyant marine and offshore industry. This curriculum was mandated to support the shiprepair sector and hence given an original name of Ship and Repair Technology (SRT) in 1975. The Singapore ship repair yards rose to become a leading ship repair centre.

10.20-10.55 HIGHER EDUCATION AND PROFESSIONAL DEVELOPMENT OF GLOBAL HUMAN RESOURCES IN THE OFFSHORE

> Jeom Paik and Hee Yol Yu, Pusan National University, KORFA

Paradigm change in safety design is now pertinent in terms of health, safety, the environment, and ergonomics. Accidents are the result of a long chain of human error which is due to a lack of knowledge and engineering disciplines at various stages, including engineering & design, constructyion and operation. To prevent accidents, therefore, human error should be eliminated. In this presentation, the aims and scope of the International Offshore Graduate School (IOGS) are addressed in association with the higher education and professional development of global human resources in the offshore sector, who should have extensive knowledge and engineering disciplines at all phases from design and decommissioning.

COFFEE 10.55-11.25

11.25-12.00 A NEW MASTER'S DEGREE IN YACHT ENGINEERING AT THE

UNIVERSITY OF AUCKLAND

Richard Flay, University of Auckland, NEW ZEALAND A new master's specialisation in Yacht Engineering has been developed in the Faculty of Engineering at the University of Auckland. It is aimed at providing education at an advanced level in order to support the marine industry which has plans to grow substantially in the next few years due to local developments in Auckland, New Zealand, and to also provide an opportunity for international students to study at the master's level at the University of Auckland.

PROFESSIONAL MARITIME EDUCATION: MALAYSIAN 12.00-12.35 **PERSPECTIVE** 

Md Redzuan Zoolfakar, Universiti Kuala Lumpur, MALAYSIA Professional maritime education focuses on the development of academic programmes catering to the needs of the maritime industry. Generally, these programmes are structured to provide education on the design and construction of vessels, marine engineering, maritime operations as well as marine biology and oceanography. In Malaysia, various universities and colleges have been built to accommodate these programmes. This paper aims to study the professional maritime education in the Malaysian context specifically at Universiti Kuala Lumpur.

12.35-13.10 INDIA AS A HUN OF MARITIME TECHNOLOGY EDUCATION IN SOUTH EAST ASIA

Praveen Viswanath, Synergy Marine, SINGAPORE, Sivaprasad Kodungallur and Vipin Vijayan, Cochin University of Science and Technology, INDIA

This paper proposes India as a regional hub for sustainable maritime technology studies. Availability of naval architects, shipbuilding experts, ocean scientists and offshore technologists coupled with effective usage of English communication in the higher education can be cited as some of the strong supporting factors for the proposal.

LUNCH 13.10-14.10

NAVAL ARCHITECTURE AND SHIP DESIGN EDUCATION IN 14.10-14.45 SINGAPORE AND NEWCASTLE: UNDER- GRADUATE LEARNING AND TEACHING THROUGH TO

INITIAL PROFFESSIONAL DEVELOPMENT

Keith Hutchinson, University of Newcastle, UK

This paper will provide an outline of the current curriculum, course structure and key learning outcomes in the undergraduate teaching of Naval Architecture and Ship Design at Newcastle University to BEng and MEng Undergraduates and also MSc Postgraduates, not only in the United Kingdom but also at a number of Campus' internationally. It will address the issues of providing the key knowledge and understanding necessary to equip graduates with the professional skills required by our international industry and the further development of these and other skills during their initial professional development.

14.45-15.20 LEARNING THROUGH INDUSTRY FOCUSED AND TEAM BASED MARITIME ENGINEERING DESIGN PROJECTS Giles Thomas, Dave Harte and David Pointing, Australian

Maritime College, AUSTRALIA
This paper describes how the Australian Maritime College (AMC) develops a maritime engineering student's ability to plan, research, carry out and manage a complex design task. In particular it has incorporated the teaching and learning of industry-relevant generic graduate attributes into a final year Design Project (DP) unit. DP enables maritime engineering students to integrate all knowledge acquired during their previous years of study and helps ensure that students are equipped to enter the workforce as practicing maritime engineers. DP Projects are conducted in groups allowing a focus on the development of teamwork skills as well as systems engineering proficiency and communication skills, including oral presentations and interviews. projects are industry driven, requiring interaction by the team with external clients and relevant industry sectors.

15.20-15.55 A STRATEGIC APPROACH TO LEARNING ACROSS DIVERSE STUDENT COHORTS THROUGH CHANGE IN ASSESSMENT **METHODS** 

Sudhakaran Achazhiyath Edathil, Australian Maritime

College, AUSTRALIA

This paper details the development of the learning and assessment approaches to meet graduate attributes across such diverse student cohorts by exploring their strengths in a strategic manner through a philosophical change in assessment methodology and practice within an industry that is yet traditional in assessment strategies. This is achieved by adopting a dynamic assessment method targeting each cohort of students. Theoretical units: include a continuous assessment strategy mapped against learning outcomes, focused on enhancing the learning of trade qualified students. Practical units: structured to enhance the learning of the 'cadet' stream through a problem based learning approach utilising the strengths of the trade qualified students within the cohorts.

15.55-GENERAL DISCUSSION & EVENING DRINKS RECEPTION

#### DAY 2 PAPERS:

08.30-09.00

**COFFEE & REGISTRATION** 

09.00-09.35

COLLABORATIVE WORK BETWEEN I.T.S. AND PT MERATUS LINE, AN EXAMPLE OF SUCCESS STORY OF TRIPLE-HELIX APPLICATION IN MARITIME INDUSTRY IN INDONESIA

I K A P Utama, Institut Teknologi Sepuluh Nopember (ITS), INDONESIA & J R Pramadi, PT Meratus Line, INDONESIA Triple-helix concept involving academics people, business sector and government (ABG) has been found to be very important in order to improve the quality of human resources in one side and attract the productivity significantly in other hand. The role of government is apparent in order to bring and make sure the academics people and the business sector can work together positively. The current paper discusses an example of collaboration between Institut Teknologi Sepuluh Nopember (ITS) - the most important university in maritime sector in Indonesia and PT Meratus Line - one of the biggest and most successful shipping companies in Indonesia.

09.35-10.10

DEVELOPING MARINE TECHNOLOGY EDUCATION- 32 YEARS OF EXPERIENCE AT UTM

Adi Maimum, Universiti Teknologi Malaysia, MALAYSIA
To evaluate on the impact of the Marine Technology course
on the industry, firstly a brief discussion on the state of
the Malaysian Marine industry was made, followed by the
choice of curriculum, development of facility, efforts made
in gaining expertise, contributions of the graduates and
lastly, the future outlook of the Marine Technology course
in Malaysia. In conclusion, the presence of the Marine
Technology course has made significant impact on the
Malaysian industries. Apart from providing the much-needed
human resource, the graduates equipped with technical
know-how and aptitude for research are the catalyst for the
marine industry to change and become more competitive

10.10-10.45

THE ANALYSIS OF SOME NEW AND OLD REQUIREMENTS OF THE INTERNATIONAL MARITIME CONVENTIONS.

Oleksandr Kanifolskyi, Odessa National Maritime University, Ukraine

This paper presents a short review on the International Maritime Conventions. The review of the Convention's requirements to ships leads to the finish line in the training of engineers-shipbuilders. We can consider several documents: International Convention on Load Lines, International Convention on Tonnage Measurement of ship, International Convention for the Safety of Life at Sea. The analysis of new and old requirements of Conventions will help the future engineer to understand the way of creating safe and efficient ships.

10.45-11.15

COFFEE

11.15-11.50

A NEW PARADIGM OF COLLABORATION IN MARITIME TEACHING AND LEARNING

I C K Tam, School of Marine Science and Technology, Newcastle University, SINGAPORE

T Aung Win, Singapore Maritime Academy, SINGAPORE W Phui Pah, School of Engineering, Ngee Ann Polytechnic, SINGAPORE

An offshore campus was set up by the School of Marine Science and Technology, Newcastle University in Singapore 2009. Three maritime technology programmes are delivered with approximately 80 students taking into the courses annually. Results achieved in the UK campus are used as a baseline for the study. Excellent performance by the students in Singapore is found when it is compared with the best practise. The model of teaching collaboration is expected to achieve a 50% contribution by adjunct staff to the Singapore programmes by 2015.

11.50-12.25

INDUSTRY'S CURRENT AND FUTURE REQUIREMENTS FOR PROFESSIONAL SKILLS

A Mandrekar & V Meena, Students at Indian Maritime University

Naval architecture is widely job oriented area but the fact is that the number of institutions catering to this course of study is limited so it indicates a lots of job opportunity for naval architecture in today's life where the people are hunger for jobs. Indian Shipyards have a competitive advantage resulting from low labour costs, availability of a trained and skilled labour force and proximity to international shipping lanes. The maritime industry will

be at the fore front of that acceleration to assure the emplacement of the necessary transportation infrastructure needed for India's global society transformation and future economic growth.

12.25-13.00

DEVELOPMENT IN SHIP AND OFFSHORE HYDRODYNAMICS AND NEED FOR AN ALTERNATIVE TEACHING AND LEARNING METHOD

A K Dev & Ribeiro e Silva, Senior Lecturers, School of Marine Science and Technology, Newcastle University, Singapore In the past hydrodynamics when applied to a ship was mostly based on 2-D strip theory which gave quite a fairly good solutions even with a forward speed. With the introduction of offshore activities, there has been tremendous boost in computational techniques for large body (3-D radiation-diffraction) as well as slender bodies (Morison equation). With the increase in speed in computers, CFD technique is now trying to overlap and perhaps take over those numerical techniques with more information. CFD has complemented many experimental results telling the answer why there is a difference, which in the past could not be related in an exact manner. In short, the authors believe the era of teaching hydrodynamics have changed from 2-D to 3-D to CFD though the experimental technique has remained as the only validation tool.

13.00-14.00

LUNCH

14.00-14.35 GRADUATE ATTRIBUTES: INDUSTRY AND GRADUATE PERCEPTION

Mark Symes, Giles Thomas and Dev Ranmuthugala, Australian Maritime College, AUSTRALIA

Graduate attributes are the non-discipline specific skills and qualities that graduate need to have developed by the time they complete their undergraduate engineering course. These range from 'Manage, create, use and disseminate information' to 'Work in teams' and 'Manage self and others'. Attainment of these graduate attributes has become a significant component of undergraduate engineering programmes, for example through problem-based learning activities.

14.35-15.10

STUDENTS VIEW- ACCREDITATION- INTERNATIONAL RECOGNITION OF NATIONALLY ACCREDITED PROGRAMMES, AND THE FUTURE OF ACCREDITATION

**Vivek Meena** and **Arjun Mandrekar**,Indian Maritime University, INDIA

Lately there has been a huge lapse in the quality of cadets and engineers that maritime institutes are producing. Ask shipping companies, and they have a list of complains about fresh graduates. Probably that is just an excuse on their part; probably it is true, but the fact is maritime institutes today are more interested in quantity than quality. Though it's true that experience is the best teacher, a fresh seafarer should have the basic skills to ensure his or her safety on ship. Most of the fresh seamen are still "Alice in wonderland" when on ship, increasing shipping companies belief that they really are nothing but "liabilities", until these institutes tighten the loose ends, the shipping companies will not show their trust in fresh graduates.

15.10-15.45

MY REFLECTIONS: FROM A SHIPYARD TO A CLASSROOM A K Dev, School of Marine Science and Technology, Newcastle University, SINGAPORE

After spending almost 20 years in industries and 10 years in PG research in UK and Netherlands, the author has finally decided to go back to teach at the Newcastle University (Singapore) under its School of Marine Science and Technology. In this paper, the author will discuss how his wealth of experiences in marine and offshore industries have given an added value in teaching modules where the students learnt how to relate and apply the knowledge when they go back to work after their graduation.

15.45- GI

GENERAL DISCUSSION

International Conference **REGISTRATION FEE** By 26/01/2013 Education and Professional Development of Engineers in the Maritime Industry RINA MEMBERS: **NON-MEMBERS:** £270 **CONCESSIONS:** (Retired/Students etc.) 26-27 February 2013, Ngee Ann Polytechnic University, Singapore £120 PRINCIPAL AUTHOR To register, simply complete all sections of this form and return it ADDITIONAL AUTHOR with your payment to: The Conference Department, RINA 10 Upper Belgrave Street, London, SW1X 8BQ TEL: +44 (0)20 7201 2401 FAX: +44 (0)20 7259 5912 E-MAIL: conference@rina.org.uk TITLE (Dr, Mr, Eur Ing): I am unable to attend the conference, please reserve me NAME (as it should appear on name badge): Papers @ £110 (members) £130 (non-members) CD ROM £110 (members) £130 (non-members) **POSITION:** via e-mail at: publications@rina.org.uk **COMPANY** (as it should appear on name badge): RINA requires payment before the conference date. **INVOICE ADDRESS:** SWIFT No: RBOSGB2L **POSTCODE:** Polytechnic University, Singapore. COUNTRY: **EVENING DRINKS RECEPTION TELEPHONE:** evening drinks reception at the conference venue. FAX: E-MAIL: reduced rate accommodation for conference participants. **CONTACT MAILING ADDRESS** (if different): STUDENT SPONSORSHIP Tel: +44 (0)20 7235 4622 or e-mail:ypang@rina.org.uk. PROMOTIONAL OPPORTUNITIES POSTCODE: COUNTRY: **TELEPHONE:** Conference Organiser to discuss your individual requirements. FAX: **CANCELLATION CHARGES** E-MAIL: PLEASE INDICATE YOUR PREFERRED METHOD OF PAYMENT: I enclose a cheque for: (made payable to RINA) Please send me an invoice for:

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IBAN No: GB14RB0S16001610042127 The Venue for the conference is the Convention Centre (Building 68), Ngee Ann Following the end of day one (26 February 2013), delegates are invited to attend an Upon registration you will be provided with details of a hotel booking service offering CONTINUING PROFESSIONAL DEVELOPMENT
RINA Certificates of Attendance will be issued at the event, which contributes towards the Institution's Continuing Professional Development Scheme. For further details regarding the scheme please contact Giuseppe Gigantesco, Director, Professional Affairs on Tel: +44 (0)20 7235 4622 or e-mail: membership@rina.org.uk A number of sponsored places at this conference are available for Student Members of RINA. For more information, please contact Yuen Yee Pang, Professional Affairs, RINA on Why not use this conference to promote your company's products and services? It why not use this conference to promote your companys products and services? It provides an excellent opportunity to increase your profile and to network with a highly focused audience. We offer a number of cost effective options, including various conference sponsorship packages, exhibition space and literature distribution. If you are interested in any of these promotional opportunities please contact the Cancellations received in writing two weeks before the event takes place will be subject to administration charge of £200. Cancellations received after this time cannot be accepted and are subject to the full event fee. Delegates may be substituted; however, this must be sent in writing and confirmed with the conference Co-ordinator. It may be necessary for reasons beyond our control to alter the content and timing of the programme. In the unlikely event that RINA cancels the event for any reason, our liability is limited to the return of the registration fee. Personal data is gathered in accordance with the Data Protection Act 1998. Your details may be passed to other companies who wish to communicate with you offers related to your business activities. Please tick the box below where appropriate: Please do not pass my information to any third party.

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