

Education & Professional Development of Engineers in the Maritime Industry



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The 2nd 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*

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DAY 1 PAPERS:

08.30-09.00.	COFFEE & REGISTRATION	13.10-14.10	LUNCH
09.00-0.905	WELCOME ADDRESS <i>Trevor Blakeley, Royal Institution of Naval Architects</i>	14.10-14.45	NAVAL ARCHITECTURE AND SHIP DESIGN EDUCATION IN SINGAPORE AND NEWCASTLE: UNDER- GRADUATE LEARNING AND TEACHING THROUGH TO INITIAL PROFESSIONAL DEVELOPMENT <i>Keith Hutchinson, University of Newcastle, UK</i> 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.
09.05-09.10	OPENING ADDRESS <i>Jim Brown, International Paints</i>		
09.10-09.45	KEYNOTE SPEECH <i>Prof. Richard Birmingham, University of Newcastle, UK</i>		
09.45-10.20	CURRICULUM DEVELOPMENT OF MARINE AND OFFSHORE TECHNOLOGY (MOT) DIPLOMA: THE SINGAPORE STORY <i>David Chih Wei Seow, Ngee Ann Polytechnic</i> 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 ship-repair 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.	14.45-15.20	LEARNING THROUGH INDUSTRY FOCUSED AND TEAM BASED MARITIME ENGINEERING DESIGN PROJECTS <i>Giles Thomas, Dave Harte and David Pointing, Australian Maritime College, AUSTRALIA</i> 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. These projects are industry driven, requiring interaction by the team with external clients and relevant industry sectors.
10.20-10.55	HIGHER EDUCATION AND PROFESSIONAL DEVELOPMENT OF GLOBAL HUMAN RESOURCES IN THE OFFSHORE SECTOR <i>Jeom Paik and Hee Yol Yu, Pusan National University, KOREA</i> 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, construction 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.	15.20-15.55	A STRATEGIC APPROACH TO LEARNING ACROSS DIVERSE STUDENT COHORTS THROUGH CHANGE IN ASSESSMENT METHODS <i>Sudhakaran Achazhiyath Edathil, Australian Maritime College, AUSTRALIA</i> 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.
10.55-11.25	COFFEE		
11.25-12.00	A NEW MASTER'S DEGREE IN YACHT ENGINEERING AT THE UNIVERSITY OF AUCKLAND <i>Richard Flay, University of Auckland, NEW ZEALAND</i> 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.	15.55-	GENERAL DISCUSSION & EVENING DRINKS RECEPTION
12.00-12.35	PROFESSIONAL MARITIME EDUCATION: MALAYSIAN PERSPECTIVE <i>Md Redzuan Zoofakar, Universiti Kuala Lumpur, MALAYSIA</i> 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 <i>Praveen Viswanath, Synergy Marine, SINGAPORE, Sivaprasad Kodungallur and Vipin Vijayan, Cochin University of Science and Technology, INDIA</i> 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.		

DAY 2 PAPERS:

08.30-09.00	COFFEE & REGISTRATION	
09.00-09.35	<p>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>I K A P Utama, Institut Teknologi Sepuluh Nopember (ITS), INDONESIA & J R Pramadi, PT Meratus Line, INDONESIA</i> 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.</p>	12.25-13.00
09.35-10.10	<p>DEVELOPING MARINE TECHNOLOGY EDUCATION- 32 YEARS OF EXPERIENCE AT UTM <i>Adi Maimum, Universiti Teknologi Malaysia, MALAYSIA</i> 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</p>	13.00-14.00
10.10-10.45	<p>THE ANALYSIS OF SOME NEW AND OLD REQUIREMENTS OF THE INTERNATIONAL MARITIME CONVENTIONS. <i>Oleksandr Kanifolskyi, Odessa National Maritime University, Ukraine</i> 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.</p>	14.00-14.35
10.45-11.15	COFFEE	
11.15-11.50	<p>A NEW PARADIGM OF COLLABORATION IN MARITIME TEACHING AND LEARNING <i>I C K Tam, School of Marine Science and Technology, Newcastle University, SINGAPORE</i> <i>T Aung Win, Singapore Maritime Academy, SINGAPORE</i> <i>W Phui Pah, School of Engineering, Ngee Ann Polytechnic, SINGAPORE</i> 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.</p>	15.10-15.45
11.50-12.25	<p>INDUSTRY'S CURRENT AND FUTURE REQUIREMENTS FOR PROFESSIONAL SKILLS <i>A Mandrekar & V Meena, Students at Indian Maritime University</i> 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</p>	15.45-
		<p>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.</p>
		<p>DEVELOPMENT IN SHIP AND OFFSHORE HYDRODYNAMICS AND NEED FOR AN ALTERNATIVE TEACHING AND LEARNING METHOD <i>A K Dev & Ribeiro e Silva, Senior Lecturers, School of Marine Science and Technology, Newcastle University, Singapore</i> 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.</p>
		LUNCH
		<p>GRADUATE ATTRIBUTES: INDUSTRY AND GRADUATE PERCEPTION <i>Mark Symes, Giles Thomas and Dev Ranmuthugala, Australian Maritime College, AUSTRALIA</i> 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.</p>
		<p>STUDENTS VIEW- ACCREDITATION- INTERNATIONAL RECOGNITION OF NATIONALLY ACCREDITED PROGRAMMES, AND THE FUTURE OF ACCREDITATION <i>Vivek Meena and Arjun Mandrekar, Indian Maritime University, INDIA</i> 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.</p>
		<p>MY REFLECTIONS: FROM A SHIPYARD TO A CLASSROOM <i>A K Dev, School of Marine Science and Technology, Newcastle University, SINGAPORE</i> 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.</p>
		GENERAL DISCUSSION

