



Newsletter Highlights

- Editorial message by NMU project leader and project dissemination group [Page 1](#)
- NMU to increase competence in the maritime transport sector, Jens Froese, Jacobs University Bremen [Page 1](#)
- Fuel Regulations for Shipping, Erik Fridell, Swedish Environmental Institute [Page 2](#)
- NMU Pilot Modules [Page 2 - 3](#)
- Save the Date: NMU Conference: NMU Network - Innovation in Maritime Education and Training [Page 3](#)
- NMU in South America "Looking beyond the North Sea Region" [Page 4](#)

Editorial Message

Dear Readers,

Welcome to the NMU newsletter Spring 2012 edition! Development of NMU modules (some of which are available as e-learning materials) are developed to match the qualification needs of current and future staff, with the aim of driving the maritime transport systems in the future.

The pilot course of the module "Hinterland Management related to port Management", coordinated by Jacobs University Bremen, in collaboration with NMU partners University of Hamburg and TRI Edinburgh University, starting this spring semester for the students of the MSc International Logistics Management and Engineering Programme. This course, delivered online via Jacobs University's video conferencing system by Dr. Phanthian Zuesongdham of Hamburg Port Authority, mainly covers the areas of port and terminal management and operations, including the hinterland (dryport) concept. The dryport concept is introduced during a one day workshop and analyzed using a simulation tool developed by Prof. Dr.-Ing. Dietmar P. F. Möller, University of Hamburg. Dr. Jason Monios of TRI Edinburgh Napier University has created different concrete case studies on dryport to be exercised by students in the class. Most of the other pilot runs will start in April 2012. If you are interested in our modules and want further information what we will be piloting (including schedules) please do not hesitate to contact us.

In this edition, NMU partners are delighted to announce that the NMU project has "spread" to South America where we held a special session at the IAME 2011 Conference in Santiago de Chile in the October. The project also had a presence in Brazil in mid-2011.

We would like to take this opportunity to announce the **NMU Conference**, titled **NMU Network "Innovation in Maritime Education and Training"** is going to be held on 21st of June 2012, at the Speicher XI, a former Bremen harbour. Further information about our conference will be available on our website. Until then we wish you enjoyable reading!

YAKOV BOGLEV, PROJECT LEADER,
TRI, EDINBURGH NAPIER UNIVERSITY &
INDAH LENGKONG, DISSEMINATION GROUP,
JACOBS UNIVERSITY BREMEN

NMU TO INCREASE COMPETENCE IN THE MARITIME TRANSPORT SECTOR

BY **PROF. JENS FROESE,**
JACOBS UNIVERSITY BREMEN



The European Union's economy is extremely dependent on global trade and hence on sea transport. With regard to the recruitment of qualified staff to in future drive the maritime transport systems, big clouds are darkening the industry's sky.

The causes for this shortage are obvious. Traditional logistics was a practical business allowing operators and managers to easily keep pace with developments. This, however, was changed by the steep increase of cargo volumes challenging transport service productivity. The management level of logistics, which in this industry still requires hands on expertise, has serious problems to recruit. The reason is not only the rapidly changing requirements but also the lack of adequate academic training and education providing the bundle of competencies composed from economy, techniques and technologies, information and communication sciences and "soft skills" to get into the driver seat of the transport industry.

Until recently it was common practice in maritime logistics to promote ex-seafarers to management positions in shipping lines and terminal operations. This does no longer work sufficiently within the developed countries for two reasons: first, ship crews are recruited from low wage foreign countries on minimum payment levels and second, business requirements have changed and cannot longer be mastered by seafaring experience only.

The traditional education and training system has quite some weaknesses when challenged by a globally operating industrial sector but there are opportunities to meet current and future challenges. The mission of the Northern Maritime University (NMU) network is to raise the competence level of the maritime transport sector in business management and related subjects by offering education and scientific services of high academic quality. A knowledge network involving universities, the industry and administrations is the major unique selling proposition of NMU, allowing sharing of education and training resources on international level to prepare future qualified staff for the maritime transport sector.

FUEL REGULATIONS FOR SHIPPING



BY **ERIK FRIDELL,**
IVL SWEDISH ENVIRONMENTAL RESEARCH INSTITUTE

Upcoming fuel regulations for shipping and how in particular short sea shipping is affected have been discussed intensively recently. There are important changes coming

up regarding the allowed content of sulphur in the fuel as well as standards for the emissions of nitrogen oxides (NOX). These regulations were decided upon by IMO in 2008 and are currently being implemented in the EU sulphur directive. Already since 2006 and 2007 The Baltic and The North Seas, including The English Channel, are designated as special sulphur emission control areas (SECA) where there are limits on the fuel sulphur content; presently at 1% weight. This limit is tightened to 0.1% by 2015. In the rest of the world the maximum allowed sulphur content is 4.5% which is lowered to 3.5% in 2012 and to 0.5% in 2020.

Regarding nitrogen oxides, the regulations must be considered as less stringent. Engines that are built at present must fulfil the so called Tier 1 standard and from next year the Tier 2 standard which implicates a reduction in the emissions of about 20%. From 2016 there are the Tier 3 regulations, about 80% reduction relative to today, which applies only to certain areas. At present no such areas have been agreed upon in Europe but it seems likely that the SECA areas mentioned will also be NOX-ECAS before 2016.

To meet these regulations there are some alternatives. The sulphur SECA regulations from 2015 can be reached by switching from heavy fuel oil to marine gasoil. Alternatively scrubbers can be used to abate the sulphur from the exhaust. A third option is to switch to a different fuel such as liquefied natural gas (LNG). The NOx Tier 3 standards can be reached by using selective catalytic reduction (SCR) as an abatement method.

The backgrounds to these regulations are the impacts both on health and on the environment from the emissions from shipping. As land based sources in Europe are gradually improving their emissions, shipping is becoming the major source for sulphur and NOX and also a large source of particulate matter.



SOURCE OF PHOTO: GAVIN ROSER

NOX is a major contributor to acidification and eutrophication while sulphur mainly contributes to acidification, but also plays a large role in the emissions of particles. There is a clear connection between high fuel sulphur content and high emissions of particles. These particle emissions have a large impact on health risks. The second component that is important for health effects is ozone which is formed in the atmosphere as a consequence of emissions of, e.g. NOX and hydrocarbons.

It seems clear that fuel prices will increase, both because of these regulations and due to rising fuel prices in general. There are worries that this will lead to a modal shift from sea to road.

On the other hand, the recent EU white paper on transportation strongly emphasises a modal shift towards more sea transportation. A further concern is the fact that there will be very different fuel qualities used in different parts of Europe, e.g. by 2015 gasoil will be used in Northern Europe while heavy fuel oil, with up to 3.5% sulphur, can be used in The Mediterranean Sea. This will give different transportation costs in different parts of Europe which will lead to a disadvantage for some industries in Northern Europe.

Looking into the future one can expect more regulations regarding emissions to air from ship engines. The allowed emissions for NOX can be expected to be tightened further and specific regulations targeting emissions of particles are likely. Further, there is on-going work, both in the IMO and in the EU, on how to reduce the emissions of CO2 and other climate gases from shipping.

This article was presented at the TRI Conference held at Edinburgh City Chambers, on 9th September, 2011. Presentation slides can be found at: www.conference.tri-napier.org.

NMU PILOTS MODULE ON STRATEGIC MANAGEMENT IN MARITIME TRANSPORT



BY **PROF. ALF BAIRD,**
TRI EDINBURGH NAPIER UNIVERSITY

The second pilot for the NMU module on Strategic Management in Maritime Transport (Module A) took place at the University of Molde Campus in Norway over a full week of teaching between 7-11 November 2011 with face-to-face lectures and supported by e-learning.

There are three main elements to the Strategic Management module. The first introduces students to the strategic management process. The second part explains the tools and analytical frameworks that can be used in strategic management. And third, the focus is on strategic management analysis in different shipping sectors, including liner shipping, cruise shipping and ferry transport. The course provides a wide range of examples and case studies taken from a variety of maritime transport business sectors to illustrate how strategic management tools and skills can help organisations compete and develop competitive advantage.

There is significant potential demand, therefore, for the offering of education and training which enhance the innovation capacity within the sector; in the future, maritime business managers will need to possess multidisciplinary knowledge and skills to cope with growing maritime traffic, port development, and rising environmental challenges, all within an intermodal environment. NMU developed e-learning modules in transnational cooperation enable the NMU partners to use the modules and module elements independent from time and space. Further, students have started to take part in exchange programmes without extending their studies attending NMU partner universities.

Further information on the Pilot Course for the upcoming NMU Strategic Management in Maritime Transport module can be obtained from Professor Alf Baird of TRI (a.baird@napier.ac.uk).

NMU PILOTS MODULE

"HINTERLAND MANAGEMENT RELATED TO PORT MANAGEMENT" AT JACOBS UNIVERSITY BREMEN

BY **INDAH LENGKONG,**
JACOBS UNIVERSITY BREMEN

Development of the NMU modules has almost been finalised and pilot test will run at different partner universities this spring 2012. The first pilot course of the module "Hinterland Management related to Port Management", coordinated by Jacobs University Bremen starting this spring semester for the students of the MSc International Logistics Management and Engineering Programme. This course mainly covers the areas of port and terminal management and operations, including the hinterland (dryport) concept.



This pilot course, delivered online via Jacobs University's video conferencing system by Dr. Phanthian Zuesongdham of Hamburg Port Authority, aims to introduce the fundamentals

of port operations and management, the important role of the port in logistics chain, how hinterland connections affect the port's performance and its interaction to different actors in port are touched on. In class exercises and workshops, in a group working on a concrete case study to enhance the understanding of the complexity of this industry, are some of the main features offer within this course. Besides the traditional teaching methods as lecturing and workshops, the modern technologies are involved. Delivery of the lectures online via video conferencing system allows the interactive two-channel communication. The recordings of the lectures support the learners during the further individual work on case studies or in preparation of the exams.



The dryport concept, as an alternative approach for solving the shortage of free space in the gate way of port areas, is introduced during a one day workshop and analyzed using a simulation tool developed by NMU partner Prof. Dr.-

Ing. Dietmar P. F. Möller, University of Hamburg. Dr. Jason Monios of TRI Edinburgh Napier University has created different concrete case studies on dryport to be exercised by students in the class to improve their holistic understanding of this concept.

NMU EVENTS GUIDE

21-22 May 2012 - European Maritime Day 2012, Gothenburg, Sweden. For detailed information please visit: www.emd2012.se

18-20 June 2012 - The North Sea Region Programme Joint Annual Conference 2012, Bremerhaven, Germany. For detailed information please visit: www.northsearegion.eu/

For more details about the upcoming events, please visit: www.nm-uni.eu/events

SAVE THE DATE: NMU CONFERENCE

21 JUNE 2012, SPEICHER XI, BREMEN

NMU Network: Innovation in maritime education and training – this has been the primary motivation in putting altogether the members and stakeholders of the NMU network to pursue a project that has been running for more than three years now. Acknowledging the lack of adequately trained personnel in the maritime sector, the NMU's central objective is to establish a sustainable collaboration between industry and educational institutions to enhance the innovation capacity of the maritime industry. The NMU conference is the venue where topics relevant to the successful collaboration within the NMU Network are presented and discussed.

The focus on "Innovation in Maritime Education" at the NMU conference brings diverse speakers to share their ideas and perspectives in "Competence development for academics and maritime industry" and in "Enhancing the attractiveness of careers in the maritime industry." A panel discussion is lined up to showcase the significance of the collaboration within the NMU Network to the need for innovation in maritime education and training. The NMU conference is the setting for collaborative discussion between leading academic institutions involved in maritime education and training, and the stakeholders in the maritime sector.

NMU CONFERENCE PROGRAMME AT A GLANCE

SESSION 1: COMPETENCE DEVELOPMENT FOR ACADEMICS AND MARITIME INDUSTRY

*Moderator: Prof. Dr. Thomas Pawlik
of Bremen University of Applied Sciences*

- Prof. Kevin Cullinane, PhD, Director of the Transport Research Institute (TRI), Edinburgh Napier University
- Dr. Max Johns, Managing Director of the German Ship-owners' Association
- Dr. Gordon Wilmsmeier, Economic Affairs Officer at UNECLAC, Chile

SESSION 2: ENHANCING THE ATTRACTIVENESS OF CAREERS IN THE MARITIME INDUSTRY

*Moderator: Prof. Dr. Jens Froese
of Jacobs University Bremen*

- Associate Prof. Harald M. Hjelle, Molde University College, Norway
- Mr. Giovanni Mendola, Maritime Safety Unit, European Commission DG Transport

PANEL DISCUSSION: BEYOND NMU NETWORK

- Mr. Gavin Roser, Managing Director of Pantrak Transportation, Scotland
- Prof. Arne Jensen, PhD, University of Gothenburg, Sweden
- Ms. Miaojia Liu, Chief Education Officer of BIMCO
- Prof. Kevin Cullinane, PhD, Director of the Transport Research Institute (TRI), Edinburgh Napier University

We look forward to welcome you at the NMU conference! Conference in free of charge. For further information about the conference and registration please contact us at: event@nm-uni.eu

NMU in Santiago de Chile

IAME CONFERENCE

BY YAKOV BOGLEV, TRI

EDINBURGH NAPIER UNIVERSITY



The International Association of Maritime Economists (IAME) held its 2011 conference in Santiago, Chile, in October. The event was organised by NMU lead partner the Transport Research Institute, Edinburgh Napier University, and the Institute of Transport and Maritime Management Antwerp and was hosted by the United Nations Economic

Commission for Latin America and the Caribbean (UN-ECLAC). The event was well attended with over 180 participants from all over the world.

The NMU project held a special session within the conference which focused on maritime education and training. The session was chaired by NMU partner the University of Applied Sciences Bremen, as represented by Professor Thomas Pawlik. Papers were presented on the issue of knowledge as a competitive factor and the management and control of the international sea transport business.

More generally, the IAME conference was based on a simple concept: shipping services and ports play a critical role as facilitators of trade. In an environment of changing economic conditions, increasing environmental challenges and pressures on the human element in the shipping and port industry, collaboration, knowledge exchange and new ideas are needed more than ever before. The event featured academic papers with original ideas that analysed, discussed and proposed solutions to these exciting new challenges across the globe and particularly in Latin America. Each day ended with a plenary session featuring distinguished speakers from academia and industry. These sessions discussed current issues following an introductory statement by the moderator and picked up on many of the points raised by the academic papers presented during the day. Issues of particular note were:

- Hinterlands and changing geographies of trade – is there a new role for ports?
- Port devolution and concessions – where to next?
- Shipping markets and maritime clusters – what are the current and future challenges?

The last point was an area where NMU had much to contribute. Current maritime education practices and pathways are a key factor in determining the future shape of the industry. The skills and abilities of an industry's workforce impact on two things: constraints and opportunities. What the future maritime workforce is capable of will set an upper constraint on what the industry can accomplish. A lack of skills will lead to a lack of good performance. However, the ability of the future workforce is also the pool from which opportunities are generated. A skilled and competent workforce with the ability to think critically and creatively can change or surpass constraints. This latter idea is the key motivation behind the NMU project's activities and the IAME 2011 conference served as an excellent platform to make this point and inform delegates of the strides NMU has made in achieving these aims.

For more information about the event and to download presentations please visit: www.iame2011.org

NMU in Brazil

LOOKING BEYOND THE NORTH SEA REGION

BY ENRICO LOBRIGO, MBA,

BREMEN UNIVERSITY OF APPLIED SCIENCES



In line with the central objective of the NMU project, establishing contacts and partnerships with institutions beyond the North Sea Region allows exchange of knowledge and information that can supplement efforts in enhancing innova-

tion capacity of the maritime industry. The maritime industry can be argued to be one of the most globalized industries and projects related to it cannot be strictly confined to a particular region. The biggest commercial players in the maritime industry in the North Sea Region are most likely active in other continents as well. This is evident in the number of offshore oil and gas companies from region that are operating in South America, particularly in Brazil. The NMU project's promotion in Brazil is therefore a concrete way of looking far beyond to share the vision of enhancing maritime education and R&D which, in one way or another, can still serve the interests of the maritime cluster in the North Sea Region.

As a project member attached to the Bremen University of Applied Sciences, the author had the pleasure to visit Brazil in two occasions in behalf of the NMU consortium. The purpose of the visit was primarily to establish contacts that can potentially expand the NMU project's network of stakeholders and beneficiaries. Brazil is particularly interesting for the NMU project as the country struggles to organize the concept of cluster in its rapidly growing maritime industry. The idea of creating a strong maritime cluster entails collaborations and defining the network of all parties involved in the country's maritime industry to ensure sustainability. The fast growing Brazilian maritime industry that can be attributed to expansion of offshore explorations and trade activities therefore presents challenges that require highly competent professionals. It is in addressing such challenges where the NMU project can be involved.

During the visits in Rio de Janeiro, Brazil in March and in June 2011, contacts were established with the following institutions and shipping companies: Syndarma (Union of Brazilian Shipowners), CIAGA Maritime College, Department of Ports and Coasts of the Brazilian Navy, FEMAR Foundation for Maritime Studies, Transpetro/Petrobras, CBO Offshore Shipping, and NORSUL Navigation. Attendance at the Brasil Offshore 2011 Conference held in Macae on 14th to 17th June 2011 also provided an opportunity to promote the NMU project. The institutions visited are potential NMU stakeholders and beneficiaries, and collaboration with them may significantly contribute to the realization of the maritime cluster concept in Brazil. They are open in discussing how they could benefit from the NMU project with the hope of producing the needed number of competent maritime professionals in Brazil.

Contact

Lead Partner Project Office
Transport Research Institute (TRI)

Contact Persons: Prof. Kevin Cullinane and Yakov Boglev

Edinburgh Napier University
Merchiston Campus, Edinburgh EH10 5DT, UK
Tel.: +44 (0) 131 455-2809
Fax: +44 (0) 131 455-2953

E-mail: NMU@tri-napier.org

Dissemination Group

Workgroup Maritime Logistics
School of Engineering and Science

Contact Persons: Prof. Jens Froese and Indah Lengkong

Jacobs University Bremen gGmbH
Campus Ring 1, 28759 Bremen, Germany
Tel.: +49 (0) 421 200-3479
Fax: +49 (0) 421 200-3078

E-mail: Prof. Jens Froese – j.froese@jacobs-university.de
Indah Lengkong – i.lengkong@jacobs-university.de

Please visit us at: www.nm-uni.eu

The Interreg IVB
North Sea Region
Programme



European Regional Development Fund (ERDF)
*"Investing in the future by working together for
a sustainable and competitive region"*

Imprint

Northern Maritime University Network (NMU) Project

Transport Research Institute (TRI)
Edinburgh Napier University,
Merchiston Campus, Edinburgh EH10 5DT
United Kingdom

Project Leader: Kevin Cullinane

Persons responsible for content: Indah Lengkong and Yakov Boglev