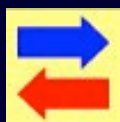




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LABORATORY FOR MARITIME TRANSPORT  
NEWSLETTER No 21  
April – June 2012



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Dear Reader,

The electronic newsletter of the Laboratory for Maritime Transport (LMT) of NTUA is issued regularly to inform you regarding our current and forthcoming activities. You are warmly encouraged to visit our website ([www.martrans.org](http://www.martrans.org)) for further information and to contact us about your enquiries. Your feedback will be highly valued. Kind regards...

*The LMT Staff*

## Bring down those walls!

Editorial by Harilaos Psaraftis

Some people call it 'holistic approach'. I do not like the term, as it may mean (a) nothing, (b) everything, or (c) something in between. I prefer the term 'cross-disciplinary', but even that is subject to misinterpretation. What it means is that in assessing the potential impact of a regulation or policy, all possible side-effects and linkages should be examined. By and large this is not being followed in today's maritime policy-making process, most of which evolves in a patchwork fashion. Examples abound, and I will mention three, all related to ship emissions.

Example No. 1: In IMO's dual quest for greener and safer shipping, the two goals have been pursued thus far in parallel. Yet, significant interactions exist. For instance, for a ship to be compliant to the new Energy Efficiency Design Index (EEDI), the centerpiece of IMO's environmental regulation as regards greenhouse gases (GHGs), a reduced-size engine might need to be installed. This may have adverse implications on safety, especially in adverse weather conditions. How does one resolve such a conflict? The answer is, we simply do not know. Attempts are being made to institute a minimum safe speed, or a minimum safe power, but a final solution is still elusive, with some people like Professor Krüger of Hamburg University asserting that EEDI violates the laws of physics (I find his arguments quite convincing). The question is, can a 'fix' be found that resolves this problem, without fundamentally changing the EEDI concept? I personally have doubts, but time will tell. Not to mention there is also a reverse link, in the sense that a ship built to be more safe may emit more CO<sub>2</sub>.

Example No. 2: The IMO/EU policy of sharply reducing SO<sub>x</sub> emissions in SECAs (Sulphur Emissions Control Areas) such as the Baltic or the North Sea runs counter to the EU policy of shifting cargo from land to sea. This is so because more expensive fuel makes short sea shipping less competitive vis-à-vis land-based alternatives such as road transport, the end result being more CO<sub>2</sub> in the atmosphere. I remind that in the recent EU White Paper on transport, GHG emissions from

transport are slated to be reduced by 60% by 2050. For the Baltic/North Sea case some people feel that not only short sea shipping is at risk, but entire industries run the risk of being shut down or relocated because of this problem. Not to mention the fact that producing low-sulphur fuel by oil refineries would produce some more CO<sub>2</sub>, and that loss of radiative cooling attributed to SO<sub>x</sub> would also add some more to the overall GHG tab. This means that the SO<sub>x</sub> policy track is not parallel to the GHG policy track, and an effort should be made to examine the cross-linkages between the two.

Example No. 3: Even within the GHG policy track, strong compartmentalization exists. At the IMO the EEDI track is being discussed separately from the Market Based Measures (MBM) track. Yet, strong linkages exist, as two of the main MBMs on the table embed EEDI as part of their formulation. These are the MBMs proposed by the United States (the so-called SECT MBM) and jointly by Japan and the World Shipping Council (the so-called EIS MBM). The two proposals are different, but their common feature is that both use EEDI. Thus far there has been no discussion on applying EEDI to existing ships, and in fact the IMO has clarified that EEDI will not be applied to existing ships. Yet, how can it be that these two MBMs are still on the table? Of course this question may be a small detail given the highly political problem of reaching a consensus with developing countries on GHGs, but it may be that details like these may add to the overall confusion.

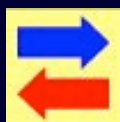
Is there a moral to all this? I think there is. We need to be more cross-disciplinary. We need methods and tools that take a broader view. We need to talk to the other guys, even though we may find that what they are doing is strange. In short, we need to bring down some walls.

*the LMT staff wishes you  
a nice summer holiday!*



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### SUPERGREEN PROJECT NEWS

SuperGreen



#### SUPERGREEN at the TRA 2012 Conference

The Transport Research Arena Conference (TRA 2012), the top transport research event in Europe that gathers in one place every 2 years key stakeholders like experts, industry and policy-makers, was held in Athens, Greece, from 23rd to 26th of April, 2012 (<http://www.traconference.eu/>).

As reported in our last issue, SuperGreen was granted important presence at the Conference. The following SuperGreen-related activities took place in chronological order:

- Harilaos Psaraftis participated as invited speaker at the Strategic Session “Efficient Services for Intermodal Freight Transport and Logistics” held in the morning of April 24. The session, focusing on ways to improve efficiency at intermodal platforms, was chaired by Ms. Fleur Breuillin, the Project Officer of SuperGreen.
- Christiane Geiger of the Technical University of Dortmund, a SuperGreen partner, gave a poster presentation of the Clausen and Geiger paper “Green corridors by means of ICT applications” in the morning of April 24. The paper examined how far selected ICTs can alleviate or even dissolve the basic bottlenecks identified along predefined freight corridors.
- The Psaraftis and Panagakos paper “Green corridors in European surface freight logistics and the SuperGreen project” was delivered by George Panagakos during a Thematic Session on Freight Transport in the afternoon of April 24. The paper focused on the part of SuperGreen work concerning corridor benchmarking through a set of key performance indicators.
- In late afternoon of April 24, the special session “Green corridors in Europe” was organized by LMT. In addition to examining the prospects of the green corridor concept in Europe, the session aimed at discussing related policy issues. The sometimes heated discussions were orchestrated by a panel of esteemed speakers from the European Commission, the European Community Shipowners’ Associations, the Swedish Transport Administration, Scania and NewOpera Aisbl. LMT’s Harilaos Psaraftis was the moderator. Participants of the

session were also asked to fill out a questionnaire specifically designed to obtain stakeholder feedback on the initial policy recommendations suggested by SuperGreen. The feedback received augmented the one obtained earlier from other sources and formed the basis on which the final recommendations of the project are to be decided.

- In the afternoon of April 25, Paulus Aditjandra of NewRail – Newcastle University, another SuperGreen partner, gave a poster presentation of the paper “Investigating freight corridors towards low carbon economy: evidence from the UK”, authored by Aditjandra, Zunder, Islam and Vanaale. The paper examined the feasibility of the SuperGreen corridor Cloverleaf stretching from Glasgow, Scotland to Duisburg, Germany through Carlisle, Liverpool (with a branch sea link to Dublin), London and the Channel Tunnel. The study identified the cost of rail operations and the associated low demand as the main challenges for shifting cargoes from road to rail.

#### Joint WP3&4 meeting and PMC meeting

On June 26, several SuperGreen partners involved in Work Packages 3 and 4 met at LMT premises in Athens for a critical discussion on the methodology to be followed for the benchmarking of green technologies in the framework of Task 3.3. The joint character of the meeting addressed the quest for a methodology for this task, as close as possible to the one applied for benchmarking the smart ICT flows of Task 4.4.

On the occasion of the joint WP3&4 event, the 8th PMC meeting took place the following day. Participating partners reviewed the status of ongoing project work and planned activities for the remaining life of the project.

#### LMT IN THE EUROPEAN PARLIAMENT

From June 27 to 29 the members of the Laboratory for Maritime Transport, Assist. Prof. Dimitrios V. Lyridis and Dr. Panayotis Zacharioudakis travelled to Brussels for a series of meetings with members of the Shipping, Shipbuilding Community and the European Parliament. Among other things, a two day conference was organized by the Greek Member of the Green Party of the European Parliament Nikolaos Chrysosgelos, entitled “Green Direction of Shipping, Ports, and the Shipbuilding/Shiprepair Industry-Shortsea Shipping Connections of Islands”. A visit and presentation of the European Parliament and Institutions followed.



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## ENVISHIPPING PROJECT NEWS



The first year of work in the “Envishipping” research project concluded with success in May. “Envishipping” is a three year research project partially funded by the Hellenic General Secretariat of Research and Technology. The project which is coordinated by NTUA- LMT brings together a consortium with interdisciplinary expertise and capabilities of important representatives from the Greek maritime industry and research domain. This initial phase of research has resulted in the development of a novel framework structure which enables the identification and examination of all important pollution drivers of a ship (e.g. air emissions, oily and non oil liquid wastes, ballast water, garbage, , etc) in a life cycle basis. The second year is now ongoing and first results from the elaboration of the developed framework is expected soon.

### From Sopot to Mykonos to Hong Kong

May 2012 provided a challenging logistical scenario to Harilaos Psaraftis. After attending the highly interesting [ESPO conference](#) at the seaside resort of Sopot, Poland, he attended the [5th International Workshop on Freight Transportation and Logistics \(Odysseus 2012\)](#) in Mykonos, Greece. And then he immediately travelled to Hong Kong for the [International Forum on Shipping, Ports and Airports \(IFSPA 2012\)](#). In Mykonos he presented a paper combining ship speed optimization with routing and scheduling and in Hong Kong he delivered a keynote address on the quest for greener shipping.

The Hong Kong forum was organized by the Department of Logistics and Maritime Studies (DLMS) of the Hong Kong Polytechnic University. After the forum, Harilaos Psaraftis spent a few days visiting DLMS, by which he was honored to be asked to serve as the department’s academic advisor.

Both the Mykonos PPT and the Hong Kong PPT can be downloaded from the LMT web site. Click the following links to download both presentations:

- Psaraftis H.N., [A Ship Pickup and Delivery Model with Multiple Commodities, Variable Speeds, Cargo Inventory Costs and Freight Rates](#), ODYSSEUS 2012 5th International Workshop on Freight Transportation and Logistics, May 21-25, Mykonos, Greece.

- Psaraftis, H.N., "[The quest for greener shipping](#)", 5th International Forum on Shipping, Ports and Airports, IFSPA 2012, 27-30 May 2012 . Hong Kong, China.



*Mykonos, Greece*



*Hong Kong, China*



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## IMO business: MSC 90 Joint Working Group on FSA/GBS

LMT sent two staff members to the 90<sup>th</sup> session of the Maritime Safety Committee (MSC 90), Assistant Professor N. Ventikos and post-doctoral researcher C. Kontovas and they attended the Joint Working Group on Formal Safety Assessment (FSA) and Goal Based Standards (GBS).

Work on the amendments to the IMO Guidelines on Formal Safety Assessment (doc. MSC 83/INF.2) was continued. One important addition was the introduction of the environmental risk evaluation criteria which were developed in July 2011 at MEPC 62 (MEPC 62/WP.13), see LMT Newsletter No 18. Furthermore, the revised Guidelines now also include updated terms of reference for the group of experts, which is the group that will review FSA studies submitted to the IMO. The revision should be finalized at MSC 91.

On the issue of Goal-Based Standards (GBS), the MSC established a Working Group on Goal-Based Standards to develop draft guidelines for the approval of equivalents and alternatives as provided for in various IMO instruments, and endorsed a work plan for the development of interim guidelines for the safety level approach. The WG decided to develop an example for SLA GBS based on the on-going revision of SOLAS Chapter III, which should be the main priority, and that the Guidelines for GBS SLA should be developed in parallel. However, the priority of the work was put on the development of the example. A working group on GBS will be established at MSC 91.



(from L to R)

*Nikos Ventikos, Christos Kontovas, John Panopoulos, Michalis Manoledakis, and George Seferiadis at MSC 90.*

## MEETINGS AND EVENTS

attended by LMT staff

- TRA 2012 conference, April 23-26, Athens, Greece.
- ESPO conference, May 10-11, Sopot, Poland.
- Odysseus 2012: 5th International Workshop on Freight Transportation and Logistics, May 21-25, Mykonos, Greece.
- International Forum on Shipping, Ports and Airports, May 27-30, Hong Kong.
- Posidonia Conference, June 6, Athens, Greece.
- SuperGreen joint WP3&4 meeting, June 26, Athens, Greece.
- SuperGreen PMC meeting, June 27, Athens, Greece.

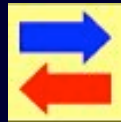
## PAPERS, PRESENTATIONS & SPEECHES published / presented by LMT staff.

- Gkonis K., Kapetanis G. N., Lyridis D. V., Psaraftis H. N., An Emissions Calculation and Speed Optimization Tool for Different Ship Types, published in *Naftika Chronika*, June 2012.
- Panagakos, G.P. and Psaraftis H.N., "Green Corridors and the Supergreen Project", *Naftika Chronika*, vol. 151, June-July, 2012.
- Psaraftis, H. N., A. A. Pallis, "Concession of the Piraeus container terminal: turbulent times and the quest for competitiveness," *Maritime Policy and Management* Vol. 39, No.1, pp 27-43, 2012.
- Psaraftis, H.N. and Panagakos, G.P., "Green corridors in European surface freight logistics and the SuperGreen project", paper presented at the Transport Research Arena Conference (TRA 2012), Athens, Greece, April 23-26, 2012.
- Psaraftis, H.N., "A Ship Pickup and Delivery Model with Multiple Commodities, Variable Speeds, Cargo Inventory Costs and Freight Rates," *Odysseus 2012: 5th International Workshop on Freight Transportation and Logistics*, May 21-25, 2012, Mykonos, Greece.
- Psaraftis, H.N., "Formal Safety Assessment: an Updated Review," *Journal of Marine Science and Technology*, DOI 10.1007/s00773-012-0175-0, 2012.
- Psaraftis, H.N., "Market Based Measures for Green House Gas Emissions from Ships: A Review," *WMU*



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Journal of Maritime Affairs, DOI 10.1007/s13437-012-0030-5, 2012.

- Psaraftis, H.N., “The Quest for Greener Shipping,” invited keynote address, International Forum on Shipping, Ports and Airports, May 27-30, 2012, Hong Kong.
- Stavrou D.I., Ventikos N.P., Kiritsis G.M., Theodosopoulos C.P., “Cable Laying Ships – Electric driven vessels in the context of operation”, Proceedings of 1st International MARINELIVE Conference on “All Electric Ship”, Athens, Greece, 2012.
- Psaraftis, H.N., “The Economic and Environmental Dimensions of Slow Steaming,” Posidonia Helmepe Conference, June 6, 2012.
- Ventikos N.P., Chatzinikolaou S.D., “Sustainability in Maritime Transport”, Naftika Chronika, vol. 151, pp. 116-120, 2012.
- Ventikos N.P., Grammatikaki E., “Offshore hydrocarbon exploration: technologies, risks and opportunities, Naftilia/Naftemporiki, pp. 103-105, 2012.
- Ventikos N.P., Lykos G.V., Padouva I.I., “People may not change but perhaps their behavior can? Behavior based safety process in short sea shipping safety”, Proceedings of the 2012 International Research Conference on Short Sea Shipping, ISBN: 978-972-98324-6-8, Estoril, Portugal, 2012.

**PICTURE GALLERY**



*The ‘port quintet’: with (from L to R) Hercules Haralambides (Erasmus University and port of Brindisi), Thanos Pallis (Aegean University and SG for port policy), Stavros Hatzakos (port of Piraeus) and Dimitris Theologitis (EC DG-MOVE), at the Sopot Pier, after the ESPO conference in Sopot, Poland.*

**LMT’s Lloyd’s List Greek Shipping Awards**

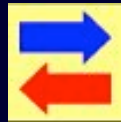


*With (from L to R) Øyvind Halskau (Molde University), Gilbert Laporte (University of Montreal) and Irina Gribkovskaia (Molde University) at a Mykonos restaurant after an Odysseus 2012 conference day.*



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At the International Forum on Shipping, Ports and Airports, Hong Kong.



Addressing the audience at the Posidonia Helmepe conference.



With students and faculty, Hong Kong Polytechnic University, Department of Logistics and Maritime Studies



Atle Minsaas (Marintek) at the SuperGreen PMC meeting in Athens.