



Climate Change and Ships: Increasing Energy Efficiency

a SNAME & Marine Board Symposium

FEBRUARY 16 & 17, 2010



Co-hosted by:

The Society of Naval Architects & Marine Engineers

and

The Marine Board (of the National Academies)

To register: <http://www.sname.org/SNAME/climatechange>

This symposium is organized around three themes: (1) the Energy Efficiency Design Index for new ships now under development at the IMO, (2) the cost effectiveness of market-based mechanisms applied to shipping, and, (3) technical and operational measures to increase energy efficiency on ships. Each session will consist of a series of technical presentations followed by a panel discussion with audience participation. The final session of the meeting will involve breakout sessions to identify future research needs. The symposium Proceedings consisting of all papers and summaries of the breakout session discussions will be mailed to all attendees following the meeting.

SNAME is committed to providing technical information to agencies and organizations involved in the development of greenhouse gas (GHG) regulations for the maritime industries, to help ensure that these regulations have a sound technical basis. SNAME has recently established three T&R Ad Hoc Panels on GHG issues. Early research efforts have resulted in the submittal of two documents for consideration at the IMO MEPC60 meeting in March. This workshop is part of this ongoing commitment to foster research and disseminate technical information on the subject of climate change as it relates to the maritime and offshore industries.

Please join us at this important conference and workshop. It is a great opportunity to learn about the upcoming regulations on climate change, and contribute to the regulatory development process.

Keith Michel, President of SNAME

Malcolm MacKinnon III, Chairman of the Marine Board

Co-sponsors: American Bureau of Shipping, Herbert Engineering Corp., and the International Council on Clean Transportation

Technical Program

Tuesday February 16, 2010

Opening and Keynote Speech

8:30am **Welcome and Introductory Remarks:** Keith Michel, President of SNAME and Malcolm Mackinnon III, Chairman of the Marine Board

8:40am **Keynote Speaker:** Chris Grundler, Deputy Director of EPA's Office of Transportation and Air Quality and the Chief Executive of the National Vehicle and Fuel Emissions Laboratory in Ann Arbor, Michigan.

Session #1: Energy Efficiency Design Index for New Ships

9:15am **Session #1 Introduction** (Session moderators: Peter Weber, SeaRiver Maritime, Inc. and Keith Michel, Herbert Engineering Corp.)

9:20am **"Climate Change Regulations – Consequences for Ship Design in a Rapidly Changing Environment,"** D. Braxton Scherz, Det Norske Veritas

9:40am **"Influence of Ship Design Parameters on the Calculation of the Energy Efficiency Design Index (EEDI),"** John Larkin, Herbert Engineering Corp.

10:00am **"An Evaluation of the Energy Efficiency Design Index (EEDI) Baseline for Tankers, Containerships, and LNG Carriers"** Yoshi Ozaki, American Bureau of Shipping

10:20 – 10:40am: **Coffee Break**

10:40 **"Efficiency Metrics for New versus Existing Ships,"** Hugh Harris, Office of Transportation and Air Quality, U.S. Environmental Protection Agency

11:00 **Energy Efficiency Design Index Discussion Panel and Forum** (authors and session moderators)

12:00 – 1:30pm **Lunch at MITAGS Facility**

Session #2: Maritime Economics of Market Based Mechanisms

1:30pm **Session Introduction** (Session moderators, Peter Wallace, ConocoPhillips and Bruce Russell, JS&A Environmental Services)

1:35pm **"A Global Cap-and-Trade Scheme for Maritime Transport,"** Dr. Jasper Faber, CE Delft (Netherlands)

2:05pm **"US Government Perspective on Market-Based Instruments for International Shipping."** Brian Muehling, Office of International Affairs, U.S. Environmental Protection Agency

2:40pm **"Marginal Abatement Costs of CO₂ Emissions Reduction and Market Based Mechanisms and the Pricing of Credits,"** Bruce Russell, Director, JS&A Environmental Services

3:00 – 3:20pm: **Coffee Break**

3:20pm **“An Example of Calculating the Marginal Abatement Cost of Employing Technologies and Operational Measures to Reduce Ship-Generated for CO2 Emissions,”** Dr. Haifeng Wang, Maritime Economist, International Council on Clean Transportation

3:40pm **“Macro Aspects of the Proposed Energy Efficiency Regulations and the Transition of the Shipping Industry”** Peter Wallace, Director Commercial Marine, Conoco-Phillips

4:00pm **Market Based Measures Discussion Panel and Forum** (authors and session moderators)

5:00pm **Adjourn**

5:30 – 6:30pm: **President’s Reception** (in the Memorabilia Room)

Wednesday, February 17, 2010

Session #3: Technical Measures and Operational Measures to Increase Energy Efficiency

8:00am **Session Introduction**, Professor Jose Femenia, Master of Science in Marine Engineering Program Director, U.S. Merchant Marine Academy and Robert North, RADM USCG (ret), President North Star Maritime, Inc.

8:05am **“Carbon Foot Printing for Ports,”** Sarah Flagg, Port of Seattle

8:30am **“Optimizing Energy Efficiencies in the Terminal”**, Michael Gaffney, Executive VP Alaris Companies, LLC

8:55am **“Emission ABC's: Formation, Reduction, and Control plus Leading Marine Engine Technologies”**, John Hatley, VP Wartsila, North America

9:20am **“Hull and Propeller Performance Monitoring: Fuel Conservation and Emission Reduction”**, Daniel Kane, VP, Propulsion Dynamics

9:45am **“An Operator’s Initiatives to Mitigate Climate Change”**, David Rodgers, Director New Buildings, Horizon Lines

10:10 – 10:30am: **Coffee Break**

10:30am **Technical Measures and Operational Measures to Increase Energy Efficiency Panel and Forum** (authors and session moderators)

11:30 – 1:00pm **Lunch at MITAGS Facility**

Breakout Sessions

1:00pm **Breakout sessions** to develop lists of recommended maritime industry GHG research topics (Session organizers: Alex Landsburg and Paul Cojeen)

2:30pm **Breakout Session Reports** from moderators, suggestions for future research

3:20pm **Wrap up and path forward** (Bruce Russell, Chair of Symposium Steering Committee and SNAME T&R Environmental Committee and Keith Michel, SNAME president)

3:30pm **Adjourn**