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Directory**

# March Contents

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*The journal of record for the West Coast commercial maritime industry.*

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## On the Cover

A Shipyard worker at Freeland, Washington-based Nichols Brothers Boatbuilders, captured last September working on the tow bitt for the Jensen-designed *T.P. 3*, illustrates our 2009 Shipyard Directory, beginning on page 35. Photo by Bill Forslund.

## Next Month

Next month we'll look at marine communications, as well as terminal design and construction developments at West Coast and East Coast ports.

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## Developing a Marine Vessel Environmental Rating System

By Timothy S. Leach, PE, and  
Kevin J. Reynolds, PE, The Glosten Associates



Tim Leach and Kevin Reynolds will be discussing the SNAME Environmental Rating Initiative at GreenPacific 2009 to be held April 21, at the Long Beach Renaissance, Long Beach, CA. Visit [www.GreenPacific.org](http://www.GreenPacific.org) for details or call our offices at (206) 284-8285

The importance of facing environmental challenges in maritime shipping was highlighted in 2007, when the International Maritime Organization (IMO) selected “*IMO Response to Current Environmental Challenges*” as its theme for World Maritime Day. Two excerpts from their address to the United Nations frame the challenge:

*There is today, quite rightly, a growing concern for our environment and a genuine fear that, if we do not change our ways right now, the damage we will inflict on our planet will render it incapable of sustaining – for future generations – the modern, industrial economy that much of humankind has grown accustomed to over the better part of the past two centuries.*

*As marine and atmospheric pollution from land-based sources is reportedly reduced, so shipping, like every conspicuous user of energy and every conspicuous contributor to climate change and global warming, is under pressure, as never before, to adopt greener practices and to do even more to clean up its act. -Efthimios E. Mitropoulos, Secretary-General, IMO*

As the maritime industry rises to meet these challenges, so does the need for a rating system to answer the question: “How green is green?” This answer is difficult to formulate given the breadth of vessel classes, mission profiles, and operating environments. However, a rating system would assist the industry as it works to develop and apply sustainable practices and technology.

The development of such a rating system took its first step when it became an initiative at the 2008 Society of Naval Architects and Marine Engineers (SNAME) Annual Meeting. This will be a collaborative effort utilizing the technical expertise of the SNAME Technical and Research (T&R) Program and gaining key participation from industry. Glosten is proud to have a leadership role in this project. The objective is to establish a rating system for ships

similar to the LEED (Leadership in Energy and Environmental Design) Green Building Rating System™. LEED is a third-party certification program, and the nationally accepted benchmark for the design, construction, and operation of high-performance green buildings. This initiative for marine vessels will provide a standard ranking to determine the environmental impact of a vessel’s life-cycle during its construction, operation, and decommissioning. The intention is for this rating system to encourage and guide designers, builders, operators, and recyclers in their initiatives to reduce the environmental impact of marine vessels.

### Existing Marine Standards

While there is no consistent rating system for marine vessels, the classification societies offer supplemental notations to class to address efforts to reduce marine vessel environmental impacts. These classification society notations and support services provide important stepping stones for an industry-wide rating system.

The American Bureau of Shipping (ABS) offers the Green Passport (GP) notation at this time. GP addresses the hazardous material onboard by helping track all materials, so it is known what is on board in the event of an accident or at decommissioning.

The Det Norske Veritas (DNV) offers notations related to the environmental impact of the vessel: *Clean* and *Clean Design*. The *Clean* notation primarily addresses reduced air and water emissions. The *Clean Design* notation adds to the *Clean* requirements by examining the consideration given in the design process to additional power redundancy, as well as to fuel oil tank locations. The desired effect of *Clean Design* is to reduce the likelihood of an accident or spill, thereby reducing the potential negative impact on the environment.

Lloyds’ Register offers notation or services on: ballast water management, environmental auditing and management systems, ship recycling and Green Passport notation, type approval of

pollution control technologies, and environmental protection notation that includes the oxides emissions of all types.

### Objective and Process

SNAME’s T&R Program objective is to develop a T&R Bulletin to establish standard metrics and an overall rating system for determining the environmental impact of a vessel life-cycle, including construction, operation, and decommissioning. The planned development process is inclusive of key stakeholders, and focused on providing a metric that will be valuable to the marine industry.

Such an endeavor is recognized to be broad in scope, providing a wide range of opportunities for best practices that range from design and technology, to construction, operations, and recycling. It is critical to note that the current SNAME T&R program is robust, with active panels ranging from Hull Structure Materials and Propulsion Hydrodynamics, to Alternative Fuels and Ballast Water Management. SNAME membership crosses all marine industries, from cruise ships and military to off-shore and small craft. In other words, the expertise and standing panels within SNAME already exist to lead the development of such a broad-based standard that could be accepted internationally.

A small Project Team is being formed to develop the Marine Vessel Environmental Rating System and to collaborate with the existing T&R panels. To guide and direct the Project Team, a broad-based Advisory Group is being formed inclusive of: owners, designers, builders, operators, port authorities, and classification society agents. The team will pursue the following objectives:

- Develop a framework for an environmental rating system to be used by various expert panels and sub-committees;
- Maintain a plan and schedule which engages and leverages the existing SNAME T&R panels, and calls for new sub-committees as needed;

- Reach out to the marine industry during both the development and delivery of the rating system;
- Present a T&R Bulletin establishing a coordinated rating system during the 2010 SNAME Annual Meeting;
- Provide a continuation plan for the upkeep and outreach of the rating system, including the promotion for international acceptance.

### Envisioned Framework

The framework developed by the Project Team will follow a phased process, beginning with research into the current state of the industry and working towards tiered certifications.

*Identify sources of waste and energy needs*

In the first phase, efforts will be

made to categorize the various types of ship environmental impacts and their sources. LEED™ uses the categories: Sustainable Sites, Water Efficiency, Energy & Atmosphere, and Materials & Resources. Some are clearly more easily transferable than others to the marine environment. Additional marine categories could include Shore Impact, Underwater Acoustics, Waste Management, Propulsion, Decommissioning, and others. Categories will be further developed by surveying existing regulations, typical industry practice, recent projects with innovative approaches, and the Ship Work Breakdown Structure (SWBS). SWBS already provides an exhaustive checklist of ship components from which to assess each component's impact. The product of Phase 1 will be a tool for designers and owners to

inventory the energy needs and wastes produced in a ship. Secondary benefits will include the identification of specific areas for potential improvement and a formal avenue to recognize "green" steps already taken.

#### *Metrics for each impact*

Quantitative metrics will be assigned in the second phase. Governing bodies have already written minimal requirements for some impacts. Here, goal values for all category items from the first phase will be set. A review of current technology will prove essential for writing measurable and reasonable goals.

#### *Certification Rankings*

The LEED™ model awards a point for each satisfied goal metric, and some metrics are mandatory. For example, a new construction building earning 26 points is LEED certified. Silver, gold, and platinum certifications require 33, 39, and 52 points, respectively. Similarly, the third phase will establish how "green" is "green enough," and develop a method to normalize the various units to points (or another system).

#### Path Ahead

The planning effort for providing industry with a comprehensive, meaningful, and fair marine vessel environmental rating system is nearing completion. SNAME is committed to moving ahead with this initiative as rapidly as available funding will allow. As planning efforts reach completion, the panel discussion at the *Pacific Maritime Magazine* Green Pacific conference offers a great opportunity to gain industry feedback. We look forward to seeing you there. **PMM**

*Timothy S. Leach, PE and Kevin J. Reynolds, PE are leading efforts at The Glosten Associates to assist vessel Owners with complying with ever increasing environmental regulations. Additionally, they are supporting multiple initiatives designed to establish environmental best management practices. Kevin's operating experience as an unlimited Chief Engineer and shipyard construction engineer results in practical mariner focused solutions. Tim, as manager of Glosten's naval architecture department, provides a holistic approach to marine vessel challenges.*

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### DOCKING TUG SERVICES REQUEST FOR PROPOSALS NOTICE VANCOUVER, BC

The Chamber of Shipping of British Columbia (COSBC) announces a Request for Proposals (RFP) for docking tug services and the lease of the Deltaport tug basin at the Vancouver Fraser Port Authority's Deltaport container terminal and Westshore coal terminal.

Interested parties are invited to download a copy of the RFP, please refer to the following link <http://www.cosbc.ca/RBTRFP.pdf>.

The RFP process will close at 3:00 pm, Pacific Daylight Savings Time on April 10, 2009. Any proposal received after that time, determined in accordance with COSBC receipt records will not be considered.

Responses may be delivered by email to [tug.rfp@cosbc.ca](mailto:tug.rfp@cosbc.ca) or alternatively by hard copy to:

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