

Marine Safety Engineering

The Newsletter of the Marine Safety Engineering Community



Build the Community

Members of the Marine Safety Engineering (MSE) community are encouraged to identify eligible and high performing Coast Guard military members and personally encourage them to apply to the Marine Engineering, Fire Protection Engineering and/or Chemical Engineering post-graduate programs. You are well positioned to help expand the Coast Guard's Marine Safety Engineering competence, capacity and leadership in the coming years!

Keep an eye out for CGPC-OPM's message that details the advanced education application process, most likely to be released in April 2009. E-resumes to apply to these programs are most likely to be due in May 2009.

Further information can be found at: <http://cgcentralweb.uscg.mil/cLink/3108>.



Members of the MSE Community at the Annual Marine Inspector Holiday Party in DC.

A Note from the Director

Greetings and welcome to the inaugural newsletter for our Marine Safety Engineering community.

Engineering is the foundation for regulating the complex, technologically advanced marine industry. Vital American interests such as the national energy infrastructure depend on engineering. Unless the Coast Guard has sufficient engineering capacity, the service will be unable to develop standards, promulgate policy, and conduct plan review. This newsletter will help unite the marine safety engineers, military and civilian, who form the technical core of the Marine Safety mission. This core is comprised of active duty graduates from the Marine Engineering, Fire Protection Engineering and Chemical Engineering advanced education programs, and civilian marine safety engineers at the Marine Safety Center and the Commercial Regulations and Standards Directorate (CG-52).

The marine safety technical community is growing as a direct result of proposals to enhance engineering capacity in accordance with the Commandant's Marine Safety Performance Plan. Three billets of particular note are new instructor positions, both military and civilian, specializing in Naval Architecture & Marine Engineering and Mechanical Engineering at the Coast Guard Academy.

Efforts are also underway to properly code marine safety engineering billets. If this effort is successful, these billets will be coded as the sub-specialty Marine Safety Engineering (CG-OAP16) under the officer specialty Operations Ashore – Prevention, and will recognize our community as a Coast Guard sub-specialty critical to mission execution and success.

Wishing you a wonderful holiday season and a happy new year,

Jeff Lantz,
Director of Commercial Regulations and Standards



Marine Safety Center Can Explain New Chemical Carriage Requirements

On October 23, LCDR John Humpage, a chemical engineer assigned to the Marine Safety Center, met with vessel designers, shipyard representatives, tank barge operators, and Coast Guard marine inspectors. He discussed the execution of several significant technical changes to international regulations and policy governing how and where oceangoing tank barges carry bulk chemical cargoes, such as biodiesel. LCDR Humpage and his colleagues are available to travel to field units to conduct training on many issues, including cargo authority, vapor collection systems, and subchapter O endorsements.

Contact LCDR John Humpage at (202) 475-3388 for more information.

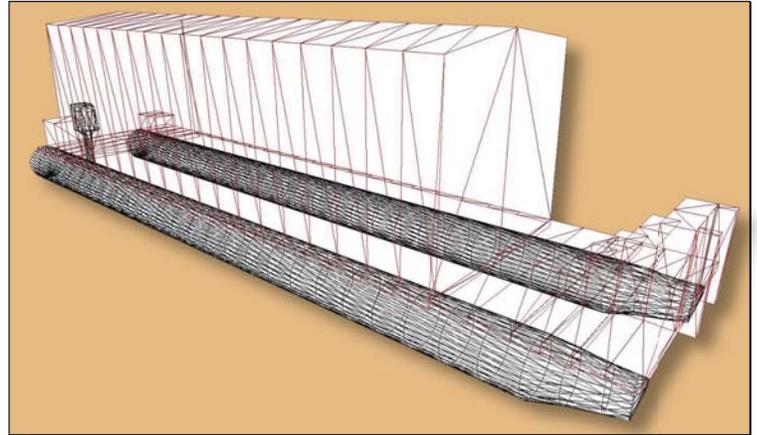


LCDR John Humpage, a Chemical Engineer from the CG Marine Safety Center, meets with representatives from the maritime industry and CG Marine Inspectors to discuss the carriage of chemical cargoes.

Marine Safety Center Hosts Naval Architect Interns

LT Brian Thomas

For the past two summers, the Marine Safety Center (MSC) has hosted two interns from the Coast Guard Academy's Naval Architecture and Marine Engineering Department. These internships have introduced future officers to the unique careers within the marine technical community by rotating them through different Divisions at MSC. The interns worked with MSC engineers to evaluate strength, stability, fire protection, cargo handling, and other design aspects of a variety of commercial vessels, including the largest passenger ships ever built and offshore energy projects.



A detailed computer model of a typical pontoon vessel. Computer models are used routinely by the MSC to evaluate stability for all kinds of vessels.

Each intern was paired with an MSC naval architect to complete an in-depth technical analysis of a current engineering challenge such as catamaran simplified stability criteria, the impact of various well deck configurations on parasail vessel stability, and extensive quantitative analysis of passenger crowding effects. In 2007, then Cadet 1/c Lisa Myatt assessed the degree of safety afforded by the Pontoon Simplified Stability Test (PSST) when compared to existing and proposed stability standards.



The transverse portion of a Pontoon Simplified Stability Test (PSST).

Her work confirmed that the PSST is conservative, but also that it is extremely sensitive to geometric and loading parameters. Cadet Myatt continued the project as a directed studies course at the Academy where her parametric study analyzed 47,628 different vessel configurations to determine the impact of vessel geometry on passenger capacity. The resulting passenger count estimating tool she created has been submitted for publication in a technical journal and will provide a valuable guideline for marine inspectors as well as pontoon vessel builders and owners.

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The dredge barge *New York* was kept afloat by the 1,000-ton derrick barge *Chesapeake*, February 2008.



The liftboat *Joni* listed to port, August 2008.

SERT: The Shipwreck Engineers

CDR Steve McGee

The Marine Safety Center’s Salvage Engineering Response Team (SERT) is a group of highly trained naval architects who provide real time engineering support to Coast Guard field units during marine casualties. During fiscal year 2008, the SERT worked on 66 such casualties helping Sector Commanders mitigate property loss and environmental damage.

One of 2008’s more notable cases began on January 24, when the tanker *Orange Sun* allided with the dredge barge *New York*, which was spudded to the harbor floor in Newark, NJ. The impact not only created a 15’ by 2’ vertical tear in the hull of the *New York*, flooding several void spaces and compartments, but the spuds were also bent beneath the vessel’s hull making them immovable.

Sector New York activated the SERT fearing the dredge could break apart and sink. SERT’s initial review determined the damaged spuds provided the only force preventing the dredge from sinking, and cautioned against placing people aboard the vessel. While a giant 1,000-ton derrick barge kept the *New York* afloat, the owner’s naval architect and SERT’s Duty Salvage Engineer, LT Dan Cost, prepared a detailed computer analysis of the damaged vessel.

Based on the analysis, LT Cost informed the unified command that the dredge was not at risk of catastrophic structural failure, and after dewatering the vessel would have sufficient strength and stability for transit to a repair facility. As part of the approved salvage plan, divers cut off the lower 40 feet of a spud and the *New York* was safely towed to a repair yard in Brooklyn.

SERT has a naval architect on call 24 hours a day, 7 days a week. The duty officer can be reached at (202) 327-3985.

After joining the Coast Guard, Bill was surprised to find memoranda in Coast Guard files to and from his uncle, CAPT R.B. Lank, Jr., a member of the Subdivision and Stability Committee, preparing for the 1948 SOLAS conference files.



Engineer in the Spotlight

LCDR Tracy Phillips

William “Bill” Peters is a naval architect in the Office of Design and Engineering Standards. Bill has been involved in most of the key matters handled by the Naval Architecture Division including participation on the U.S. delegation to IMO’s Stability and Load Lines and on Fishing Vessels Safety (SLF) Sub-Committee addressing stability, simplified stability tests and coordination of standards for the Alternate Compliance Program.

A graduate of the Webb Institute of Naval Architecture, Bill first worked for C.R. Cushing & Co., a naval architecture consulting firm, through the 1980s and 90s. He developed a comprehensive understanding of classification society rules, international requirements, and Coast Guard regulations while specializing in stability, hydrodynamics, arrangements, and preliminary design for a variety of vessels including containerships, ro-ro ships, refrigerated cargo ships, passenger ships and tank barges. He regularly submitted plans, stability tests and booklets to the Coast Guard for approval. Bill also regularly attended U.S. SOLAS Working Group – SLF meetings and provided technical support for U.S. positions at IMO.

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Mr. Peters at the March 2008 SNAME Chesapeake Section meeting.

Bill joined the Coast Guard in 2002 as a naval architect in the Office of Design and Engineering Standards. In this capacity, Bill continued work he had been involved in since the late 1980s, specifically IMO's adoption of probabilistic damage stability requirements for dry cargo ships. Bill has been a part of the U.S. delegation to SLF on 11 occasions.

Following a 2005 Coast Guard work group preliminary study of passenger weight, Bill coordinated a follow-on study and became the Project Manager for the development of new regulations to improve passenger vessel safety.

Congratulations to Class of 2011 Advanced Education selectees!

Marine Engineering

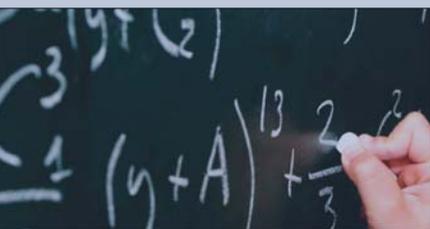
- ⊖ LCDR Heather Mattern
Activities Europe
- ⊖ LT Catherine Phillips
Sector Mobile
- ⊖ LT Tony Cao
Sector Boston
- ⊖ LTJG Bryan Watts
OPBAT Nassau
- ⊖ LTJG Meghan Hough
Sector Honolulu
- ⊖ LTJG Jarred Hinton
USCGC Valiant

Fire Protection Engineering

- ⊖ ENS Bryson Jacobs
USCGC Healy

Chemical Engineering

- ⊖ LT Jodi Min
MSU Pittsburgh



Where are They Now? "Techie's" in the Field

John Dwyer

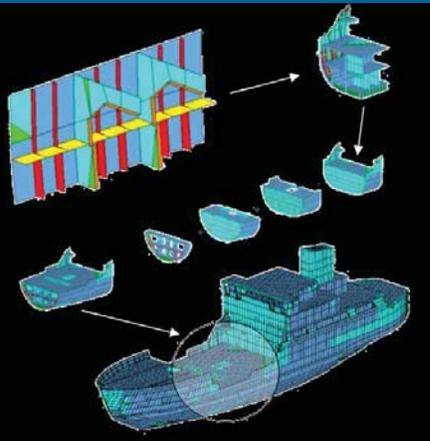
Sector Seattle is a prime example of where graduate school-trained marine safety officers contribute to the unit's missions. For almost thirty years electrical, fire protection, chemical, and marine engineers, as well as naval architects, have been assigned to this command.

Affectionately known as "techies," these officers serve in both technical, managerial, and senior leadership roles. As technical specialists they may be marine inspectors heading new vessel construction projects. In management, they may oversee Domestic or Foreign Vessel Inspection Branches or hold even more senior roles, like the current Sector Seattle Commander, Captain Suzanne Englebert, a University of Michigan grad and techie.

LCDR Todd Howard is a techie assigned to the Inspection Division in Sector Seattle. Educated at the Ohio State University in mechanical engineering, Todd is the Chief of Domestic Vessel Inspections where he oversees new vessel construction projects as well as the Washington State Ferries (WSF), the nation's largest ferry system. His duties aren't limited to engineering; he also works in vessel security, lifesaving, and environmental protection. The large local ferry fleet (Puget Sound has nine ferry systems in addition to the WSF) puts his engineering education to good use resolving issues that stem from the aging vessels' frequent modifications and repair. "I usually have to diagnose the problem over the phone, and then decide what operating restrictions or changes are needed," Todd noted.

Todd believes his experience is useful for future assignments. "I have been able to put my formal training into practice, and I've also managed a large staff. I think I'm going to be well prepared to be a Prevention Department Head."





If you have any comments for this e-newsletter, please contact LCDR Marie Byrd:

marie.b.byrd@uscg.mil

or

(202) 372-1361



Rear Admiral Jim Watson, Director of Prevention Policy for Marine Safety, Security and Stewardship (CG-54)

LCDR Marie Byrd

The most senior officer in the Marine Safety Engineering community is Rear Admiral Jim Watson, who graduated from the University of Michigan with Master of Science degrees in Naval Architecture and Mechanical Engineering.

He advises junior officers in the marine safety engineering community to “Become a technical specialist. I had 10 years of technical work in Headquarters, the Marine Safety Center, and graduate school before getting a field operations assignment. I could go head to head with naval architects from around the world. The confidence you have as a marine safety technical specialist translates to nearly everything the Coast Guard asks you to do.”



For junior officers interested in the marine safety engineering community, Admiral Watson suggests, “Push yourself into as strong a program as possible. I had to take night courses and an extra undergraduate semester before starting the graduate program at Michigan. The extra work paid off. I graduated with two degrees instead of one.”

Admiral Watson states his marine safety engineering background contributed to his success because, “I became part of one of the most respected fields of expertise in the U.S. Government. You can’t beat the opportunities that pop up when your resume includes a solid association with the Coast Guard’s marine safety engineering program.”

Admiral Watson’s career branched into Coast Guard budgeting and program review following three marine safety office assignments. Then, following his MSO Miami command, he became the Coast Guard’s Chief Budget Officer. He says his analytical techie skills carried him through some of the toughest budget battles.

Admiral Watson’s marine safety engineering experience is the centerpiece of his Coast Guard career because it opened opportunities for travel, higher learning, and greater responsibility. He credits knowing many of his best friends to his technical profession. He plans to promote Coast Guard marine safety engineering and naval architecture expertise during his Coast Guard career and beyond.



Admiral Watson and Mr. Alan Gavin, Marine Director, Lloyd’s Register at the SNAME Maritime Technology conference.