



American Society of Naval Engineers
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Intelligent Ships Symposium VII

9-10 May 2007

Drexel University
Philadelphia, PA

For conference updates, check www.navalengineers.org

Intelligent Ships Symposium VII

Presented by ASNE Delaware Valley Section



Agenda

Intelligent Ships Symposium VII - May 9-10, 2007

This is an era of unprecedented excitement and challenge for the naval engineering community. We are in the process of transformation. Development of DDG1000, LCS, CVN21, CG(X) and other assets will form new families of ships with advanced distributed capabilities, and a reduced ship's complement. Seabasing and homeland defense concepts will require transformational capabilities to enable Naval Forces and the Coast Guard to respond to new threats and situations here at home and around the globe. Unmanned vehicles, the ultimate intelligent ships, will continue to take on more roles to keep sailors out of harms way. Engineering breakthroughs such as electric drive propulsion, integrated power systems, automated damage control systems, and advanced computer networks are changing the ways we look at ship design and operations. At the heart of it all, however, one thing has not changed. The men and women who operate and maintain our ships and systems are the single greatest asset in our navy. People make it happen. It is in the spirit of providing the best technology to our war-fighters that the American Society of Naval Engineers proudly hosts Intelligent Ships Symposium VII. It is the aim of this symposium to provide a forum for the military, government, academia, and industry to come together to focus on technology initiatives that provide solutions to the current and future needs of our most valuable naval asset - the men and women who defend our great nation from the sea.

This year's symposium will showcase over 50 papers, from industry, academia and government personnel. The papers will cover a broad spectrum of topics: wireless condition-based maintenance, fuel cell design, thermal engineering initiatives, and many more. There will be an exhibit hall displaying some of the latest technologies and concepts being created by industry, academia and government personnel. We will hear from some top leaders, who have helped create, formulate and nurture the vision for the U.S. Navy and beyond. Our keynote speakers are: Rear Admiral Archer Macy, USN, Commander, Naval Surface Warfare Centers; Dr. James Bagian; and Congressman Joseph Sestak (D-PA). Our plenary panel members and moderators of the technical tracks will include personnel from the PEO SHIPS, PEO IWS, NSWCCD, CNAF, CNSF, ONR, U.S. Naval War College, and the Fleet.

Drexel University was selected as host of the 2007 event because of significant synergies with the Navy and engineering including active naval research programs, co-op programs, and Drexel/ASNE/NSWC partnership with the ONR sponsored, Sea Perch outreach program. As part of our community outreach program, student representatives from local grade and high schools will be involved in the symposium to expose them to the opportunities and challenges of a naval engineering career. The American Society of Naval Engineers invites you to participate in and contribute to the seventh biennial symposium focusing on Intelligent Ships and Intelligent Technologies.

9 May 2007

0730 Registration Open & Continental Breakfast sponsored by LCE

0830 Exhibit Hall Open / Ribbon Cutting Ceremony sponsored by Delphinus Engineering

0900 Opening Session: Welcoming Comments: Dr. Selcuk Guceri, Dean, College of Engineering and Ms. Patricia C. Woody, Head of the Machinery Research and Engineering Department, Naval Surface Warfare Center, Carderock Division

Keynote Speaker: Rear Admiral Archer Macy, USN, Commander, Naval Surface Warfare Centers

1055 Plenary Session - How Technology impacts today's Fleet and future ship design: Captain Mark Thomas, USN, Commander of Naval Surface Warfare Center Carderock Division, Captain Jeff Fullerton, USN, U.S. Naval War College-JMO Faculty, Captain David Lewis, USN, Ship Maintenance N43, COMNAVSURFORCE, Captain Johnny Walker, USN, PEO SHIPS, Captain Lawrence Baun, USN, Ship Maintenance N43, COMNAVAIRFORCE, Captain Greco, USN, PEO IWS, Ballistic Missile Defense (invited), Captain. McQuilkin, USN, CO of the CG-64, USS Gettysburg (invited)

1200 Lunch in Exhibit Hall sponsored by DRS Technologies

1330 Concurrent Technical Tracks

– **Track 1: Intelligent Ships**

- Lessons Learned from the LPD-17 ECS Development and Integration
- Naval Thermal Imaging Evolution of Equipment, Procedures, and Expectations
- Tank Level Indication and Fuel Control Upgrade for Navy DDG Class Ships
- Shipboard Application of Power Node Control Center
- Benefits of Flexible Pipe Joints (Straub Type) in Shipbuilding Design
- Automation of Hull and Deck Machinery Systems
- Advanced Engineering Control System (AECS)
- Designing HM&E COTS Equipment to meet Naval Environmental Requirements

– **Track 2: Intelligent Technologies**

- Optimization of a Lithium-Ion battery/5kW PEM Fuel Cell Stack Hybrid Power System for an Unmanned Surface Vehicle
- Ship Systems Thermal Modeling
- A Flexible Structure Application for a Cumulant Generalization of H2 Control
- Evaluation of Multi-Vessel Ship Motion Prediction Codes
- Hybrid Control for Autonomous Systems
- Improving Shipboard Maintenance Practices Using Non-Intrusive Load Monitoring
- Mission and Sensor Fusion Based Autonomous Navigation Control Development
- Distributed Fluid System Damage Control Development

– **Track 3: Intelligent Logistics and Maintenance**

- Automated Storage and Retrieval System Technology
- Open Source Five Nines
- The Evolution of the EOSS Production Process
- METBENCH Automated Calibration and Readiness Reporting
- Intelligent Artificial Crew for Embedded Training
- Reliability Centered Maintenance (RCM): Applications and Benefits for Shipboard Equipment.
- Conversion of AIMSS Data to SGML/XML
- SuperTech + 3D tools New rate and new 3D tools for Navy shipboard technicians

The Department of Defense finds this event meets the minimum regulatory standards for attendance by DoD employees. This finding does not constitute blanket approval endorsement for attendance. Individual DoD Component commands or organizations are responsible for approving attendance of their DoD employees based on mission requirements and DoD regulations.

Agenda

9 May 2007 continued

1715 Technical Speaker: James P. Bagian, MD, PE

1745 Reception in Exhibit Hall sponsored by L-3 Communications SPD Electrical Systems
Reception Speaker: Congressman Joseph Sestak, D-PA (invited)

10 May 2007

0730 Registration Open & Continental Breakfast in Exhibit Hall sponsored by LCE

0800 Concurrent Technical Tracks

– **Track 1: Intelligent Ships**

- Gigabit Ethernet Data Multiplex System (GEDMS) - Supporting the Modernization of Navy Combatants
- Break It Now or Watch It Break Later
- Electromagnetic Compatibility of Naval Machinery in Modern Naval Platforms
- A Model-based Reasoning Framework For Remote Intelligent Electric Power Distribution System Management
- Study Results of a Power-Dense, Low-Cost, Fault Current Limiting 3 MW AC-DC Power Converter
- Wireless Systems Development for Distributed Machinery Monitoring and Control
- The Navy and the reality of Electronic Charting
- Modular Shipboard Fuel Cell Design
- Hybrid Fiber/Coax Wireless Sensor Network for Survivable Machinery Control
- Human Factors Considerations for the Design of the LCS Ship Control Console

– **Track 2: Intelligent Technologies**

- Hybrid Ultrasonic and Wireless Networks for Naval Control Applications
- Intelligent Tools used in the Design of Navy Ships
- Variable Structure Design of a Fault Tolerant Control System for Induction Motors
- Optimal Dynamic Reconfiguration and Simulation of Ship Power Systems in SIMULINK with Stateflow
- Simulink Model of the Hybrid Power System Testbed
- Hydrogen-Fuel Blends Promise Lower Extinction Limits and Reduced Emissions
- Optimal Control Design for Piecewise Affine Hybrid Systems

– **Track 3: Intelligent Logistics and Maintenance**

- A Plan to Attack Obsolescence within the HM&E Navy
- Leveraging New, Adaptive Technology to Reduce Acquisition Risk and Life Cycle Cost of Future Ships
- Data Acquisition System for the First-in-Class Trials of Littoral Combat Ships
- Advances in Automating Data Collection To Support Condition Based Maintenance
- Enterprise Remote Monitoring (eRM) the Plan for the Next Generation Monitoring & Condition Based Assessment System
- Advances in Condition Based Assessment Design and Utilization
- Reducing Maintenance Costs through Agent-based Predictive Analytics
- Maintenance Performance Assessment

1215 Lunch & Closing Speaker in Behrakis Hall sponsored by AMSEC

Speaker: Mr. Charles R. (Randy) Reeves, Technical Director, Naval Surface Warfare Center, Carderock Division (invited)

1330 Symposium Concludes

Note that you may earn Continuous Learning points by attending ISSVII. If you are a Department of the Navy certified acquisition workforce member and have met the required Defense Acquisition Workforce Improvement Act (DAWIA) certification for your position, you have a biannual Continuous Learning requirement to earn 80 points. For more information on the Continuous Learning policy, go to the DACM web site at <http://www.acquisition.navy.mil/navyaos/content/view/full/110/>. Your supervisor must approve all points.

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Registration

Intelligent Ships Symposium VII

9-10 May 2007

Drexel University • Philadelphia, PA

Please return this form to: ASNE • 1452 Duke St. • Alexandria, VA 22314

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Print Clearly or Type All Information

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CANCELLATIONS, TRANSFERS, AND REFUNDS:

Cancellations must be in writing and cannot be accepted after 25 April 2007.

A \$50 administrative fee will be applied to all refunds, \$25 to any transfers.



Are you a Non-Member?

Did you know that the cost of 1 year of ASNE Membership plus the cost of the conference is *less than* the conference cost for Non-Members?

Fill out the Membership Application below and send it in with your application! You will enjoy all membership benefits as well as the lower rates at future symposia.

Registration includes:

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(Through 25 April)

ASNE Member @ \$325

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(After 25 April)

ASNE Member @ \$385

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Presenters

Registration is free on the day(s) of presentation (includes access to Technical Sessions, lunch on the day(s) of presentation, breaks on day(s) of presentation, reception, proceedings, and access to exhibits.) If you are only presenting on one day and would like to attend for the day that you are not presenting, please register for the one day rate below.

I will be presenting: Wednesday Thursday

I would like to attend on the day I am NOT presenting at the rate of:

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Location

Drexel University

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