

QUICK CALENDAR

- Abstracts for 79th Symposium Due June 30, 2008
- 2008 Summer TAG & Free Seminar (July 15, 2008/Orlando, FL)
- Mechanical Shock Test Techniques & Data Analysis (August 11-15, 2008/Bohemia, NY)
- Practical Shock Analysis & Design Course (September 8-12, 2008/Newport, RI)

INSIDE THIS ISSUE:

U.S. Navy Ships Built to Commercial Standards?	1 - 2
79th Symposium Call for Papers	3
Summer 2008 Shock and Vibration Seminar	4
SAVIAC's Mechanical Shock Test Techniques	5
Practical Shock Analysis & Design Course Annc.	6
Conference Announcements & Job Postings	7



U.S. NAVY SHIPS BUILT TO COMMERCIAL STANDARDS?

By Mr. Tom Julian (Operational Test & Evaluation, Live Fire Testing, OSD)

The Live Fire Test and Evaluation process for Navy ships results in an assessment of ship survivability to expected threats. Navy survivability standards have developed over the span of decades and have resulted in formidable warships that can sustain significant damage. The tools for designing and assessing the survivability of ships are based on those traditional standards, but ships built in the modern era are attempting to capitalize on the perceived benefits of commercial practices.

Navy combatants used to be designed to Navy-maintained General Specifications (GENSPECS). With acquisition reform, military specifications such as GENSPECS were discarded only to be replaced by commercial specifications and standards. A variety of commercial standards are now being used: recent practice has been to use some variant of American Bureau of Shipbuilding (ABS) rules. For combatant ships such as the Littoral Combat Ship (LCS) and the ZUMWALT Class Destroyer (DDG 1000), the ABS Naval Vessel Rules (NVR) have been invoked. For non-combatant ships intended to operate as high speed transports such as the Joint High Speed Vessel (JHSV), the ABS Guide for Building and Classing High Speed Naval Craft (HSNC) is being invoked (this code depends heavily on the International Maritime Organization High Speed Craft Code). The USNS LEWIS AND CLARK (T-AKE 1) Class was built to ABS Guide for Building and Classing Steel Vessels.

So, what are the consequences of adopting non-military, commercial shipbuilding standards, technologies, and practices for affordability? Can design and assessment tools based on military standards be employed for designing and assessing commercial ship structures? We don't really know.

Commercial ship standards address peacetime incidents such as collisions, groundings, and peacetime fires; these objectives are also relevant to the military, but do not completely address survivability. Commercial ships do not intentionally engage hostile forces in combat; instead, they intend to avoid all but the most permissive environments. But military employment of ships based on commercial designs can result in attacks in plausible attack scenarios, such as when the ships are transiting choke points like the Strait of Hormuz or the Strait of Malacca. Ships are also vulnerable when entering or leaving port because they are restricted in their ability to maneuver and are moving at slow speeds.

As outlined in GAO Report GAO-08-141 (December 2007), "Port facilities are inherently vulnerable, because they must provide access by land and sea and because they are sprawling installations, often close to population centers. Likewise, the ships that transport these products are vulnerable because they travel on direct routes that are known in advance and, for part of their journey, they may have to travel through waters that do not allow them to maneuver away from possible attacks. Since so many different players are involved, terrorists have room to probe the supply chain for the weakest link. Despite an often heavy security presence, terrorists have attempted—and in some cases carried out—several attacks on this supply chain since September 11, 2001."

Even if there is no survivability design requirement, U.S. Navy ships built to commercial standards require an assessment of survivability to weapon effects. For one, protective schemes such as Sea Shield will not always provide the required level of protection for these ships, regardless of where they operate.

continued next page

U.S. NAVY SHIPS BUILT TO COMMERCIAL STANDARDS? (CONT.)



"What if this steel combatant was built to Commercial Standards?"

Second, we cannot always assume that permissive environments will not become hostile, even for short or intermittent periods of time. The terrorist attack on the USS COLE occurred in the "permissive" Yemeni port of Aden in October 2000.

In times of dire need, combatant commanders may be forced to use these assets in ways they were never intended. One needs only to look at ground vehicles in Iraq to see this scenario unfolding many times over these last several years. Finally, the Live Fire Test and Evaluation requirement for all acquisition programs requires realistic testing along with modeling and simulation in order to understand the risks our Soldiers, Sailors, Airmen, and Marines are taking when embarked in these systems.

Recent public scrutiny has turned the LCS into a case study on this issue. On 25 April 2008, The New York Times cited the use of commercial shipbuilding practices as potentially adding time and money to the already over budgeted program: "In a narrow sense, the troubled birth of the coastal ships was rooted in the Navy's misbegotten faith in a feat of maritime alchemy: building a hardened warship by adapting the design of a high-speed commercial ferry." Representative Gene Taylor, the Mississippi Democrat who leads the House Armed Services Subcom-

mittee on Seapower and Expeditionary Forces, was quoted as stating "Thinking these ships could be built to commercial specs was a dumb move."

Vice Admiral Paul Sullivan had defined an LCS role as "hang tough in a storm and take some battle damage and still survive long enough" for the crew to be rescued. But a military expert said the Navy had badly miscalculated: "They were eager to take advantage of commercial practices and the lower cost of buying off the shelf, but they did a lousy job of understanding the war-fighting requirements."

That opinion was reinforced by Adm. Gary Roughead, the current Chief of Naval Operations, who said: "We had thought that the commercial

variant would not be that far away from what we needed. I'll tell you, that was underestimated."

Even Secretary of the Navy Donald Winter complained that the Pentagon was bedazzled by the idea of saving money and time with commercial technologies. "It got oversold," he said. "The concept was just abused."

As a DOT&E funded task under the Joint Live Fire Sea Systems Program, DOT&E wants to solicit views, related tasks, and information which might shed light on answering the question: What are the global survivability implications of building Navy ships to commercial standards? To begin this study, OSD has funded NSWC Carderock and SAVIAC to search for sources of related information.

At the next SAVIAC symposium in Orlando this October, the organizations involved in this study are planning to hold a session to expound upon this topic. This session is tentatively slated to have a panel or discussion group at the beginning with technical paper presentations to follow. If you would like to nominate someone to be panel member, or if you would like to present a related paper, please contact SAVIAC Program Manager Drew Perkins at drew.perkins@saviac.org.

ABSTRACTS DUE JUNE 30!

CALL FOR PAPERS



79th Shock and Vibration Symposium
 October 26-30, 2008
 Rosen Plaza Hotel - Orlando, FL.

Planning of the 79th Shock and Vibration Symposium is underway, with the selection of the Rosen Plaza Hotel in Orlando, FL.. The featured government agency is the Air Force Research Laboratory (AFRL).

The Shock & Vibration Symposium is the oldest US Government sponsored forum dealing specifically with the shock and vibratory response of air, sea, space, and ground vehicles and structures and blast effects. The Symposium was established as a mechanism for the exchange of information among Government activities, private industry, and academia on current work and new developments. Presentations on work in progress are encouraged. Separate sessions are held for presentation of classified or limited-distribution material.

The following is a list of suggested subject areas (other subject areas are welcome):

901D Case Studies	Environmental Databases	Seismic Shock
Active Vibration Control	Finite Element Analysis	Pyrotechnic Shock
Ballistic Shock	Fluid-Structure Interaction	Shock Characterization
Biodynamics	Ground Shock	Shock Hardening
Blast Design	Impact/Penetration Mechanics	Shock Qualification by Extension
Combined Environments	Instrumentation	Shock Test/Equipment Failure Modes
Computational Structural Dynamics	Isolation Systems	Simulation Methods
COTS	Large Structures	Specifications and Standards
Crash Dynamics	Live Fire Testing	System Identification
Damage Identification Damping	Machinery Diagnostics	Test Criteria
Data Analysis	Machinery Vibration	Test Tailoring
Dynamic Analysis Methods	Material Dynamic Properties	Underwater Shock Testing
Dynamic Measurement	Modal Analysis and Testing	Vibroacoustics
Dynamic Scale Modeling	Product Announcement/Facility Description	
Dynamic Testing		

If you have a specific group of papers or presentations, consider submitting them together as a dedicated session for the 79th symposium.

Two categories of presentations will be accepted: full papers, suitable for publication in the Symposium Proceedings; and short discussion topics, consisting of viewgraphs with no written paper. Full papers will have a 15 minute technical presentation time plus 5 minutes for questions, while short discussion topics will have a 10 minute presentation time with no question period.

Presentations will be accepted on the basis of their abstracts, which must be submitted by **June 30, 2008**. You are encouraged to submit online at www.saviac.org, click on 79th S&V Symposium Abstract Submittal. The Program Committee will review the abstracts during the July Program Committee meeting and authors will be notified of acceptance by July 31, 2008 (for on-time submittals). The full paper presentations must meet the following standards: They must be previously unpublished, must be appropriate to community interests and must not be overtly commercial, except for papers in the Product/Facility Session. Standards for short discussion topics are similar except that they may include previously presented or published material.

The Proceedings will be published on CD-ROM.

The paper due-date (for the proceedings) is February 28, 2009.

Questions should be directed to Drew Perkins, 434-581-3041, or drew.perkins@saviac.org.


FREE SEMINAR

SUMMER 2008 SHOCK AND VIBRATION SEMINAR ORLANDO, FL - JULY 15, 2008

SAVIAC hosts free shock and vibration seminars twice a year in conjunction with SAVIAC's Technical Advisory Group meetings. SAVIAC and the featured experts in their disciplines organize these seminars to introduce the attendees to the SAVIAC community, while providing a valuable educational experience.

WHAT: FREE Shock and Vibration Seminar
WHEN: July 15, 2008
WHERE: Orlando, FL*

*The Rosen Plaza Hotel will be hosting this event:

Rosen Plaza Hotel
9700 International Drive
Orlando, FL 32819
1-800-627-8258

The room block is sold-out at the Rosen Plaza. Rooms have been reserved at alternative hotels. Please call Drew Perkins at (434) 581-3041 for details.

PRELIMINARY AGENDA

7:30-8:15	Registration & Continental Breakfast	
8:15-8:30	Welcome & Introduction to SAVIAC	Dr. Bob Welch, SAVIAC Director Mr. Drew Perkins, SAVIAC Program Mgr
8:30-9:15	(1) TBD	Ms. Margaret Tang Weidlinger Associates
9:15-10:00	(2) Overview of SRS (Shock Response Spectrum)	Mr. Ed Alexander BAE Systems
10:00-10:25	Break	
10:25-11:10	(3) Introduction to Shock Isolation	Mr. Alan Klembczyk Taylor Devices
11:10-11:55	(4) Shock Qualification Process	Mr. Kurt Hartsough NAVSEA Carderock (Philadelphia)
11:55-1:00	Lunch	Hosted by National Technical Systems
1:00-1:45	(5) Underwater Explosion Phenomena and Shock Physics	Mr. Fred Costanzo NAVSEA Carderock / UERD
1:45-2:30	(6) TBD	Mr. Tim Edwards Sandia National Laboratory
2:30-2:55	Break	
2:55-3:40	(7) Introduction to MIL-STD-167 Type I Environmental Vibration Testing	Mr. Jeff Morris HI-TEST Laboratories, Inc.
3:40-4:25	(8) Live Fire Test and Evaluation (LFT&E) Overview	Mr. Hans Mair Institute for Defense Analyses

MECHANICAL SHOCK TEST TECHNIQUES & DATA ANALYSIS

2008 Schedule and Locations

August 11—15, 2008 (Bohemia)

More Dates and Locations to be Announced

About the Course

Mechanical Shock may be defined as a sudden change in velocity and is a major design consideration for a wide variety of systems and their components. The structural response to mechanical shock must be measured and characterized during the engineering development of these systems so that they will survive all environments during their service lifetime. These environments may include (but are not limited to): handling and transportation shocks, shocks during system delivery to a target, use impact shocks and shock originating from an explosive or pyrotechnic event. These different shock environments have quite a velocity change range from about 1 meter per second to 51 meters per second (40 - 2000 ips). Conversely acceleration magnitudes range from 4 g's in earthquakes to 200,000 g's in differentiated LDV measured pyroshocks.

This course will provide a comprehensive treatment of mechanical shock test techniques and data analysis for shocks from 100 g's to 200,000 g's. Mechanical shock instrumentation from low frequency techniques for underwater explosions (digitally filtered at 250 Hz as required by the US Navy) to high frequency techniques for ballistic shock will be reviewed in detail along with the techniques and data analyses to evaluate the instrumentation measuring these shocks.

Mechanical shock test techniques from package testing to conventional mechanical shock machines to pyroshock simulations and Hopkinson bar techniques will be presented. Design procedures for mechanical shock equipment will be discussed in detail. Where possible, theoretical bases for mechanical shock test techniques are provided. Mechanical shock data analysis and interpretation will be a major focus of all presentations and discussions and will include shock data examination and editing as well as interpolation, trend removal, and integration with Matlab.

Instructors

Dr. Vesta Bateman, Dr. Howard Gaberson, Mr. Jeffery Morris

Course Topics

Introduction to Mechanical Shock	Data Acquisition System Calibration/Use	Accelerometer, MEMS, and Materials
Mechanical Shock Measurement	Matlab Data Analysis	Evaluations
Mechanical Shock Instrumentation	Conventional Shock Testing Machines for	Hopkinson Bar Theory
Certification of Shock Instrumentation/ Measurement Devices	Components and Full Scale Systems	Hopkinson Bar Certifications
Time Domain Shock Specifications	Underwater Explosion Testing	Hopkinson Bar Materials and Configurations
Frequency Domain Shock Specifications	Navy Mechanical Shock Machines	Commercial Laser Doppler Vibrometer use and Certification
Shock Analysis using the Acceleration Shock Response Spectrum	Pyroshock Testing and Simulation	Uncertainty Analysis
Revolutionary Treatment of Pyroshock with the Pseudo Velocity Shock Spectrum	Full-Scale Pyroshock Tests and Simulations	Review and Wrap-up Sessions
	Component Pyroshock Simulations Including Apparatus and Fixture Design	

Course Registration

The Registration Fee is \$1500 per student. The registration is transferable to any person in the same organization. The fee includes a comprehensive set of course notes, a compilation of papers by Instructors Bateman and Gaberson, a text book entitled *Shock Data Analysis* by Rudolph J. Scavuzzo and Henry C. Pusey, a Certificate of completion worth 3 CEUs, as well as a Continental Breakfast, Lunch and coffee breaks daily. A Registration Form may be printed out from the SAVIAC Web Site or may be requested from Sallie Pusey, SAVIAC Course Registrar (Contact Information below). A Registration Form (available mid-Dec '07) may be printed out from the SAVIAC Web Site or may be requested from Sallie or Henry Pusey. As SAVIAC Technical Services Manager, Henry Pusey will arrange for the scheduling, management, and presentation of all courses. All completed registration forms should be faxed or mailed to Sallie Pusey at the address given below.

For registration information contact:

Sallie Pusey, Course Registrar
1877 Rosser Lane
Winchester, VA 22601

Tel: (540) 678-8677
Fax: (540) 678-8799
email: saviac@comcast.net

NOTE: Registrants will be provided details about the course location and hotel(s) as soon as the course is firmly scheduled.

PRACTICAL SHOCK ANALYSIS AND DESIGN COURSE

2008 Schedule and Locations

September 8 - 12, 2008 (Newport, RI)

About the Course

At the first Shock and Vibration Symposium in 1947, mechanical shock was defined as "a sudden and violent change in the state of motion of the component parts or particles of a body or medium resulting from the sudden application of a relatively large external force, such as a blow or impact." Since then the specific words used have changed somewhat but the meaning remains the same. Most analysts treat shock as a transient vibration. No matter how it is described or what source produced it, the effects of mechanical shock on structures and equipment create major design problems for a wide variety of systems.

This course will provide a comprehensive treatment of practical shock design and analysis with special emphasis on applications related to the design of ship structures and equipment for shock loads produced by underwater explosions.

Participants in this course will have an opportunity to increase their knowledge and understanding of the analytical and experimental tools that are available for shock design and qualification particularly with respect to requirements that are imposed for shipboard equipment. The lectures will provide a basic review of vibration and shock theory and will present the analytical and experimental methodology in the context of particular design applications. Analytical lectures will emphasize the physical significance of the results. Examples and case histories will be used as illustrations of design approaches; workshop problems that involve class participation will be used to advantage throughout the course. Class members will be encouraged to propose real design problems. The instructors will provide guidance for solutions or the problems may be used as class exercises.

Although this course is aimed primarily at shock design applications on ships, the analysis and design techniques presented are equally applicable to problems related to design for seismic loads or blast induced ground shock. Thus, engineers in these related areas may find the course to be useful. For all who participate, the course will provide a comprehensive coverage of shock design practice and a solid basis for further exploration of shock technology.

Instructors

Dr. Rudolph J. Scavuzzo, Mr. Henry Pusey, Mr. G. D.Hill, Mr. Jeffery Morris

Course Topics

Review of Basic Vibration Theory	Introduction to Mechanical Shock	Shock Measurement
Underwater Shock Phenomena	Multi-Degree-of-Freedom Systems	Navy Shock Qualification Process
Shock Qualifications by Test	Shock Qualification by DDAM	Shock Qualification by Extension
2-Dimensional Normal Mode Theory	Practical Design Considerations	Special Design and Analysis Tools
3-Dimensional Normal Mode Theory	Optimum Foundation Design	Use of Finite Element Analysis-DDAM
General Problem Solving Workshop		Review and Wrap-up Sessions

Course Registration

The Registration Fee is \$1500 per student. The registration is transferable to any person in the same organization. The fee includes a comprehensive set of course notes, a text book entitled Naval Shock Analysis and Design by Rudolph J. Scavuzzo and Henry C. Pusey, a Certificate of completion worth 3 CEUs, as well as a Continental Breakfast, Lunch and coffee breaks daily. A Registration Form may be printed out from the SAVIAC Web Site or may be requested from Sallie or Henry Pusey. As SAVIAC Technical Services Manager, Henry Pusey will arrange for the scheduling, management and presentation of all courses. All completed registration forms should be faxed or mailed to Sallie Pusey at the address given below.

For registration information contact:

Sallie Pusey, Course Registrar
1877 Rosser Lane
Winchester, VA 22601

Tel: (540) 678-8677
Fax: (540) 678-8799
email: saviac@comcast.net

NOTE: Registrants will be provided details about the course location and hotel(s) as soon as the course is firmly scheduled.

Courses / Conferences

Explosion Effects and Structural Design for Blast

A 2-day training course
Holiday Inn Washington Dulles Airport
Washington, DC
July 22 and 23, 2008

Engineers, architects, first responders, builders and others will benefit from learning about explosion effects, protective design methods, and retrofit techniques. Most new government buildings now require some level of blast resistant design and many facilities require retrofitting to meet anti terrorism bomb protection criteria; this training will address those requirements. Each participant will receive a certificate indicating 15 Professional Development Hours (PDH) that can be used to meet continuing education requirements for professional engineers. The course will focus on the fundamentals of explosion effects, determining blast loads on structures, computing structural response to blast loads, and the design and retrofit of structures to resist blast effects. The emphasis will be on terrorist threats from vehicle bombs, but the fundamental concepts can be applied to other explosive scenarios. Currently available software and publications for blast effects and design guidance will be demonstrated and discussed. Much of the design guidance and software are restricted distribution to government agencies and their contractors, however specific information on how qualified users may obtain the software will be provided. Several computer programs for blast effects and blast design have recently been developed by the government for general release and those programs will be discussed along with instructions on how to obtain the software. All of the software and references discussed in this course are available free of charge to qualified users. Participant will gain an understanding of how to compute explosion effects like overpressure and impulse; how to calculate the resulting blast loading on a structure; how to compute structural response to blast loading; and practical methods for designing and retrofitting structures to resist blast effects. Participants will be provided a complete set of class notes. Participants may check in beginning at 7:30 am on July 22 and the course will run 8am to 5pm each day. Lunch and coffee at breaks will be provided for participants each day. For more information about the instructors, the course, and accommodations visit <http://www.blastdesigntraining.com/> where secure online registration is available. Questions should be directed to Dr. Sam Kiger at 573-882-3285, KigerS@missouri.edu or Dr. Stan Woodson at 601-636-4429, woodsoneng@netzero.net. For room reservations call 800 HOLIDAY (800-465-4329) and mention Explosion Effects Training for the course room rate. The hotel web site is; www.hidullesairport.com.

Got News or Conference Announcements?

Please submit your information to
ashley.shumaker@saviac.org
with a subject heading of
"Current Awareness News"

Press Releases

May 22, 2008 SignalCalc Drop Test Unveiled

Data Physics is pleased to announce the release of its latest addition to the SignalCalc analyzer platform: SignalCalc Drop Test.

SignalCalc Drop Test provides a comprehensive and easy to use package for applications such as product fragility assessment, prototype testing and cushion evaluation. Working with drop and/or shock test machines, the application software provides users with the ability to capture and display drop waveforms, perform 'fairing' and pass/fail testing relative to tolerances specified in accordance with industry, military or user defined standards. The package offers unlimited display layouts, automated reporting and optional shock response spectrum (SRS) measurements.

The base package contains the most essential Drop Test features including transient waveform capture, Standards based or User Defined tolerance limit checks, waveform fairing and velocity change calculations, manual movement of tolerance lines around a captured waveform and the calculations of resultant shock magnitudes for triaxial sensors. The advanced Drop Test option adds SRS analysis capabilities to the base package. The new application comes equipped with internal signal generators that allow the user to simulate actual drop tests with classical waveforms such as half sine, saw tooth and trapezoid.

Consult your local Data Physics representative or e-mail sales@dataphysics.com to arrange a product demonstration.

June 4, 2008 New Family of Signal Conditioners with Isolated Grounds and Selectable Filters Aid in Vibration Testing of Satellites and Automotive Components

PCB Piezotronics has introduced a new family of rack mounted signal conditioners, available with selectable filters or isolated grounds. These signal conditioners are best suited for applications where case ground piezoelectric sensors are used and could potentially cause ground-loop noise, such as during aerospace or satellite component vibration testing, automotive component testing, product testing, drop testing, and any general vibration testing.

Model 483C30 features eight channels with true galvanic isolation of each input to output, which is also selectable on/off per channel. Isolation is ideal for the removal of ground loop noise caused by sensors which are electrically on ground. Other features in this low-noise model include choice of ICP®, charge, or voltage inputs; multiple charge input sensitivities (0.1, 1, 10 mV/pC); incremental gain (x0.1 to x200); internal/external calibration; 4-order 10 kHz low pass filter; and Ethernet interface, for ease of setup with supplied software. Other frequency filters are available as options.

For better filtering options, Model 481A03 features 16 channels of ICP® inputs with programmable eight-order Elliptical low pass filters (>256 steps), incremental gain (x0.0025 to x200), internal/external calibration, programmable overload threshold, and RS-232 interface for setup with supplied software. Other filter alternatives are available. This unit can be used with all models of ICP® sensors for vibration, pressure, force, and strain measurement. For detailed specifications, drawings or additional information, contact the **PCB Piezotronics** toll-free at (888) 684-0013 (in the U.S.); E-mail: electronics@pcb.com; or visit www.pcb.com.

Job Postings

HALT Reliability Engineer (Ongoing Contract)

Albin Engineering has an immediate need for a Reliability Engineer with HALT skills (Highly Accelerated Life Test). You will be working for a top high-tech company in the Silicon Valley. This an ongoing contract opportunity that renews every 6 months.

The successful candidate profile will include:

- Proficiency in accelerating stress testing
- Proficiency in Reliability fundamentals, and application with PCA discipline
- Proficiency in all standards and compliances (Telecordia, Mil-std, etc.)
- Proficiency in all reliability application tools, (e.g., ReliaSoft, etc.)
- Proficiency in reliability prediction models, (RADC, Norris-Landzberg, Arrhenius, etc.)
- Knowledge in Lead-free, and solder joints structure & behavior
- Knowledge in FA&RCA of stress related failures
- Great communication skills, and ability to articulate issues
- Personable, open and easy to talk to, works well in teams and individually
- Should be well versed in HALT and reliability testing (theory and application).
- Understanding of the following: failure root-cause analysis, HALT vs field failure, product life cycle and concurrent engineering
- Understanding of solder joint characteristics and behavior under excitation/stimulation
- Knowledge networking products
- Experience with electronic circuitry/circuit analysis, traffic analyzer/traffic test processes, and some programming

Required Skills:

- BS Degree in related discipline
- Reliability Testing Experience
- HALT HASS experience
- General product reliability experience
- Knowledge of router protocols, and general networking

If interested in position, please contact:

Ms. Amber Laurel
Albin Engineering Services, Inc. (AESI)
3350 Scott Blvd, Suite 27
Santa Clara, CA 95054-3105
Phone: 408-733-AESI (2374) ext. 33
Fax: 408-739-AESI (2374)
Email: amber.laurel@aesi.com

SAVIAC / HI-Test Laboratories, Inc.
PO Box 165
1104 Arvon Road
Arvon, VA 23004

**A LOOK INSIDE THE JUNE 2008
CURRENT AWARENESS**



U.S. Navy Ships Built to Commercial Standards?

**79th Symposium—Call for Papers (Abstracts Due
June 30th)**

Summer 2008 FREE Shock and Vibration Seminar

Course Announcements

- SAVIAC's Practical Shock Analysis & Design
- SAVIAC's Mechanical Shock Test Techniques & Data Analysis

**Other Conference, Course, & Job Announcements +
Press Releases**

The Current Awareness newsletter is published by the Shock and Vibration Information Analysis Center, which is operated by HI-Test Laboratories, Inc., under contract to the U.S. Army Engineer Research and Development Center.

SAVIAC Main Office
1104 Arvon Road
Arvon, VA 23004
(434) 581-3041-Ph (434) 581-3037-Fx

Program Manager
Drew Perkins
drew.perkins@saviac.org

Program & Event Coordinator
Ashley Shumaker
ashley.shumaker@saviac.org

Manager of Technical Services
Henry Pusey
(540) 678-8678
saviac@comcast.net

SAVIAC Director
Dr. Charles Robert Welch
U.S. Army Engineer Research & Development Center
Vicksburg, MS 39180
charles.r.welch@erd.c.usace.army.mil