SAVIAC
Shock and Vibration Information Analysis Center

DECEMBER 2006 SYMPOSIUM WRAP-UP ISSUE

QUICK CALENDAR

- Philadelphia to host 78th Shock and Vibration Symposium (November 2007)
- Free Shock and Vibration Seminar (March 7, 2007—New Orleans, LA)
- Practical Shock Analysis & Design Course (March 19-23, 2007—Hampton, VA)
- Final 77th Papers Due March 31, 2007

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US Army Corps of Engineers Engineer Research and Development Center
HI-TEST LABORATORIES, INC.

77th Shock and Vibration Symposium

By Drew Perkins, Program Manager

SAVIAC's 77th Shock and Vibration Symposium was held October 29 through November 2, 2006 at the Hyatt Regency Monterey in Monterey, California. The symposium drew over 500 attendees to the three-day symposium.

The week got off to a great start on Sunday, Ocotber 29 with two days of pre-symposium tutorials. These three-hour courses were taught by experts in the fields of shock and vibration, and were extremely well attended. SAVIAC is pleased to announce that there was a record 27 tutorials for the 77th symposium.

Two evening events were held before the official "opening" of the symposium. On Sunday evening, all SAVIAC guests were invited to the Welcome Reception held in the Monterey Grand Ballroom. This reception was co-sponsored by PCB Piezotronics and HI-Test Laboratories. The traditional SAVIAC Program Committee reception was held on Monday evening on the lower level of the Conference Center.

The 77th Shock and Vibration symposium was officially underway with the Opening Session on Tuesday, October 31. A capacity crowd of SAVIAC community members listened and watched as VIPs were recognized, awards were presented, and the SAVIAC Director, Dr. Bob Welch, delivered his remarks. The keynote address was given by Dr. James Meng, Head of NAVSEA 06B for the Warfare System Engineering. The Elias Klein lecture was offered by Captain William Shepherd (NASA Astronaut & Navy SEAL) of Trex Enterprises.

Technical sessions were underway after community members were treated to lunch courtesy of the 77th symposium exhibitors. Highlights from Tuesday's sessions were the MIL-S-901D Panels and the New Engineers' Forum.

(continued on page 2)

SAVIAC Director Bob Welch Addresses the SAVIAC Community at the 77th Opening Session

SAVIAC Says "Thank You" to Darnise

By Drew Perkins, Program Manager

SAVIAC's Administrative Manager is leaving SAVIAC after serving for three symposia. Darnise Johnson is returning to the DC area at the end of this year. She has been working for HI-Test Laboratories, in administration for SAVIAC, since 2004. Darnise's contributions to SAVIAC are numerous and varied, and were witnessed each year during the annual symposium.

In only a short period of time, Darnise was able to build a strong rapport with the community. She was instrumental in improving the operation of the symposium as she was the lead for registration and community affairs for the past two years. SAVIAC extends our sincerest gratitude to Darnise for her service, and wish her well in future endeavors as she leaves SAVIAC and HI-Test in mid-December.

Contact and forwarding address information for Darnise Johnson can be obtained by calling Drew Perkins at (804) 282-5570 or by e-mailing to:

drew.perkins@saviac.org.

77th Symposium (cont.)

Mr. Austin Alvarez (General Dynamics Electric Boat) & Mr. Bill Yancey (HI-Test) Chat at the Program Committee Reception

Tuesday evening gave everyone a chance to reconnect at the Halloween party co-sponsored by PCB Piezotronics and HI-Test Laboratories, Inc. The event was held in the Monterey Grand Ballroom.

Wednesday's morning technical tracks were full of dedicated sessions. Full-scale explosive tests, high-g effects, co-joined and standardized enclosures, and the Lutjens shock trials/ dysmas solutions sessions highlighted the morning of November 1.

After a break for lunch, Wednesday afternoon offered another full-slate of presentations covering a myriad of shock and vibration topics.

A town-hall meeting was held early Wednesday evening. The SAVIAC community offered the SAVIAC staff numerous suggestions and comments which assists in the improvement of the annual symposium and the operation of SAVIAC in general.

With the sounds of an eight-piece Mariachi band playing in the background, symposium attendees were treated to a Mexican-themed SAVIAC Social Event on Wednesday evening. As with the exhibitors' luncheon, attendees had the opportunity to tour the exhibit hall during this event.

Thursday's sessions were highlighted by the dedicated classified session on the VIRGINIA class submarine and by the unclassified training sessions on MIL-S-901D testing. Lansmont Corporation held a cocktail reception at its Monterey facility on Thursday evening. They provided refreshments and transportation for this event.

SAVIAC offers thanks to all community members who helped make the 77th Shock and Vibration Symposium a success. The symposium is driven by the community and their willingness to teach tutorials or trainings, organize and/or chair sessions, and share technical information.

If you are interested in becoming more involved in the symposium, please contact Drew Perkins at (804) 282-5570 or email to:
drew.perkins@saviac.org

Dr. James Meng and Capt. Bill Shepherd Deliver Opening Session Lectures at 77th Symposium

Dr. James Meng Delivers Keynote Address During the Opening Session

By Drew Perkins, Program Manager

Dr. James Meng (SES), Executive Director of Warfare Systems Engineering for NAVSEA, delivered the Keynote Address at the 77th Shock and Vibration symposium. During his address to the SAVIAC community, Dr. Meng outlined strategies for reducing full ship shock testing of U.S. Navy vessels. In his delivery, Dr. Meng supported this approach by primarily focusing on time and cost comparisons. The theory of faster developments and lower costs using science based assessment tools (modeling and simulation) was contrasted to the slower developing, higher cost full ship shock tests.

In order to streamline the efforts of modeling and simulation relating to this effort, and to give it more credibility, Dr. Meng suggested more open architecture with an integrated model among competing companies and systems. In fact, he suggested SAVIAC be the lead accreditation agent and the primary advocate to establish this process.

Dr. Meng's keynote address is certainly keeping this debate near the forefront of the shock and vibration community. This keynote address will be available on the 77th proceedings available in April 2007.

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Captain William Shepherd of Trex Enterprises gave the Elias Klein lecture to finish the opening session of the 77th symposium. As the first American astronaut to man International Space Station, he delivered a lecture, including narrating his "home video" of the events, that chronicled this historic endeavor between the Russian and American space programs.

Taking the audience through the timeline of his mission, Captain Shepherd provided extraordinary images from his training days at the Gagarin Cosmonaut Training Center near Moscow to the liftoff of the Russian *Soyuz* rocket to the day-to-day operation aboard International Space Station. His first-hand account of these momentous events provided an outstanding conclusion to the 77th symposium's opening session.

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SAVIAC offers its' sincerest gratitutde to Dr. Meng and Captain Shepherd for contributing to the SAVIAC community with their opening session remarks.

77th S&V Symposium Guest Program

By Boo Perkins, SAVIAC Guest Program Chair

This year's spouses program was well attended for all three days. We attempted to see everything the Monterey peninsula had to offer in this short period of time. While there are certainly some places we did not get to, the guests and I enjoyed getting to know this area and getting to know each other.

On Tuesday morning our first stop was the Monterey Bay Aquarium. We enjoyed visiting the California locals and learning about their habits in the bay. Following the aquarium we started a guided tour through 17 Mile Drive. We made a stop at the Lodge at Pebble Beach for an excellent three course meal at the Stillwater Grill. Then we finished the 17 Mile Drive tour.

Carmel-by-the-Sea was our Wednesday destination. Some strolled the quaint streets all the way to the lovely white sand beach. While others shopped till they dropped. Everyone enjoyed the unique architecture Carmel has to offer. We ended our day with a fantastic three course lunch at Casanova, a Carmel-by-the-Sea favorite.

Gorgeous weather on Thursday greeted us as we entered Point Lobos State Park. Many hiked miles seeing wildlife and breathtaking views along the way. After our outdoor adventure we headed to Chateau Julien for a relaxing lunch and winery tour. It was lovely and very informative for all.

The best part of the guest program is the rekindling of old friendships and the blossoming of new ones. Thank you for everyone who participated, and I will look forward to seeing all of you next year.

Sponsored By: Electric Boat

77th S&V Symposium Evaluation

SAVIAC values your input to the annual symposium! All evaluations and comments are taken very seriously for planning and improving the next symposium. Based on several dozen completed evaluation forms, this is the ratings breakdown for the 77th symposium. The following scale was used to rate the 77th symposium:

1 = Poor

2 = Fair

3 = Good

4 = Very Good

5 = Excellent

77th Symposium Rating by Category	
Overall ~	4.21
Technical Program ~	4.00
Opening Session ~	4.02
Exhibits ~	3.90
Meeting Location ~	4.15
Cost ~	3.55
Hotel Service ~	3.60
Registration ~	4.52
Food ~	3.70
Social Event ~	3.74
Guest Program ~	4.29

The 77th S&V symposium was rated highly by attendees who completed forms. While we are pleased with the results, we know there are always things we can do better. By using the Town Hall meeting, the Technical Advisory Group (TAG) meeting, and the evaluation forms, our staff is able to get the pulse of the SA VIAC community. The following is a preliminary list of things to be improved/added for the 78th:

-Name Badges (Larger Font)

-Food and Beverage (More Diversity)

-Facility Tour (Fri. AM/Thu. PM)

-Signage (More Designation for Events)

Based on evaluations and comments, the new conference program and the padfolio notebooks were welcomed changes for the symposium.

77th S&V Symposium Final Statistics

This year's symposium was a success due in large part to our five featured organizations. SAVIAC offers our sincerest thanks to NAVSEA (NUWC Keyport), Idaho National Laboratory, Naval Postgraduate School, Spectral Dynamics, Inc., and ABAQUS, Inc. Our numbers were right in-line with the past few years, and we even achieved record numbers in a couple of categories. Thank you to everyone who contributed to the symposium content. Here are the final statistics for the 77th symposium:

Unlimited Presentations ~	100
Limited Presentations ~	55
Classified Presentations ~	15
Symposium Attendees ~	512 (Checked In)
Tutorials ~	27 (Record)
Tutorial Attendees ~	475 (Record)
Trainings ~	13
Discussion Groups ~	5
Panels ~	3
Meetings ~	6
Exhibitors ~	35 (Record)

Course Announcement

Response of Marine Structures to Underwater Explosions

Shock & Vibration Research
Professor Young Shin & Professor Thomas Geers
March 27-30, 2007
Monterey, CA

The purpose of this 4-day short course is to provide engineers, scientists, and naval architects a discriminating review of underwater explosion phenomena, structural response analysis, fluid-structure interaction, shock spectrum concept, and shock-induced vibration analysis of shipboard equipment.

The contents include: (1) Underwater Explosion Phenomena: Sequence of Underwater Explosion Events, Hydrodynamic Relations, Underwater Acoustic Waves, Air-Water Interface, Shock Wave Parameters, Bubble Behavior and Bubble-Pulse Loading, Bulk and Local Cavitation, Scaling; (2) Elements Of Structural Dynamics: Analytical Dynamics, Classical Linear Oscillator, Two-Degree-of-Freedom System, Finite Element Discretization and Modelling, Finite Difference Time Integration; (3) Fluid-Structure Interaction: Athwartship Response of Submarine, Vertical Response of Surface Ship, Submerged Plate Oscillator; (4) DAA-Based Analysis: Submerged Spherical Shell, FE/BE Fluid-Structure Interaction; (5) Fluid Volume Discretization: Fluid Cavitation, Validation of Computer Codes; (6) Modelling And Shock Simulation: 3D Ship Shock Analysis, Modeling and Approaches; (7) Shock Qualification Of Shipboard Equipment By Design Analysis: Shock Spectra, Normal Mode Analysis, Response of a Multi-DOF System to Shock Motion; (8) Dynamic Design Analysis Workshop: Dynamic Design Analysis Method (DDAM), DDAM Step-by-step Analysis Procedure, Design Criteria of Shipboard Equipment Using DDAM; (9) Application To Shipboard Equipment Using Design Analysis: Application Problems.

Contact yshin2004@sbcglobal.net, Tel (831) 277-7117, Fax (831) 375-4999, Shock and Vibration Research.

77th Symposium Classified Sessions at NPS

By Barabra Honneger, Senior Military Affairs Journalist, Naval Postgraduate School

On Nov. 2, the Naval Postgraduate School hosted all classified sessions of the leading forum for scientists and engineers in the shock and vibration research community, the 77th Shock and Vibration Symposium.

"This symposium is my top choice to attend," said Distinguished Prof. of Mechanical and Astronautical Engineering (MAE) Young Shin, a co-chair of the symposium. "It's strongly DoD relevant, with all of the U.S. services represented, and has the longest and most respected history," he said. "I always contribute to this symposium, especially now with the global war on terrorism and the need to prevent and mitigate the damage from IEDs (improvised explosive devices) and small boat attacks on our ships, like the USS Cole. My own focus is on how to design ships to protect against the effects of just such underwater explosions."

The conference highlighted NPS as a featured government agency, and NPS faculty members Shin, Associate Prof. Joshua Gordis and Assistant Research Prof. Lt. Cmdr. Jake Didoszak presented papers on underwater explosions and other topics. Shin and Gordis also gave tutorials. Their presentations were among 200 covering a wide range of topics, including shock-ship testing, a specialty of the NPS MAE Department; the physics of shock and vibration; water and ground shock; air blasts; cratering; penetration weapons effects; earthquake engineering; structural dynamics; software developments; accelerometer isolation problems; and shock and vibration instrumentation and experimentation techniques.

"It's very important that NPS is able to provide the space and processing for classified sessions, which for this symposium are up to the Secret level," said Shin. "Very few facilities have this capability, which is necessary for the most critical technology and research to be presented in closed forums of cleared U.S. government and government contractor researchers. NPS also hosted the classified sessions of this symposium in 1985 and 1994.

"It's also important that the papers myself and other faculty presented are jointly published with NPS students," Shin emphasized. "In the MAE Department, we highly encourage our students to write a paper based on their thesis research for presentation at this and other conferences. And NPS' contributions, whether by faculty or students or both, are unique in that they are cutting edge and militarily relevant.

"In the shock and vibration field in the department, we do a lot of modeling and simulation," Shin explained. "It's a lot less expensive to run a ship shock modeling and simulation than to do a multi-million-dollar underwater explosion test on an actual ship, and we're now almost to the point where the results are equally reliable."

SAVIAC Course

Course Announcement

Shock & Vibration Winter Seminar

SAVIAC invites you to attend a FREE seminar on Shock & Vibration. The course will be held on March 7, 2007 at the Royal Sonesta Hotel, New Orleans, LA in conjunction with the SAVIAC Winter Technical Advisory Group (TAG) Meeting. SAVIAC and the featured experts in their disciplines have organized this seminar to introduce you to the SAVIAC community, while providing a valuable educational experience.

The seminar is free, but you must register to attend. Please RSVP to Drew Perkins, (804) 282-5570 or drew.perkins@saviac.org to assure your space and note packet. The agenda will be available in December '06/January '07 and may be subject to change.

For the Winter Seminar Registration form, directions to the Royal Sonesta Hotel, and additional information about SAVIAC, please visit our website at www.saviac.org and use the link for the Winter Seminar and TAG Meeting.

Hotel:	**The Royal Sonesta**	**Location:**	**New Orleans, LA**
Room Rate:	**$148 (Group name - SAVIAC)**	**Phone #:**	**(504) 586-0300 or (800) SONESTA**

Call For Papers

78th Symposium

78th Shock and Vibration Symposium
November 4 - November 9, 2007
Sheraton City Center ~ Philadelphia, PA

Planning the 78th Shock and Vibration Symposium is underway, with the selection of the Sheraton City Center in Philadelphia, PA. The featured government agency is the Naval Surface Warfare Center - Carderock (Philadelphia). The featured commercial agency is General Dynamics Electric Boat.

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

If you have a specific group of papers or presentations, consider submitting them together as a dedicated session for the 78th 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 1, 2007. You are encouraged to submit online at www.saviac.org, click on 77h S&V Symposium Abstract Submittal. The Program Committee will review the abstracts during the June Program Committee meeting and authors will be notified of acceptance by July 14, 2007. 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, 2008.
Questions should be directed to Drew Perkins, 804-282-5570, or drew.perkins@saviac.org.

SAVIAC Course

Course Announcement

PRACTICAL SHOCK ANALYSIS AND DESIGN COURSE

2007 Schedule and Locations

March 19-23, 2007 (Hampton, VA)
August 20-24, 2007 (Philadelphia, PA)
May 7-11, 2007 (San Diego, CA)
September 17-21, 2007 (Bath, ME)

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
Underwater Shock Phenomena
Shock Qualifications by Test
2-Dimensional Normal Mode Theory
3-Dimensional Normal Mode Theory
DDAMGeneral Problem Solving Workshop
Introduction to Mechanical Shock
Multi-Degree-of-Freedom Systems
Shock Qualification by DDAM
Practical Design Considerations
Optimum Foundation Design
Shock Measurement
Navy Shock Qualification Process
Shock Qualification by Extension
Special Design and Analys Tools
Use of Finite Element Analysis-DDAM
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) 678-8678
Fax: (540) 678-8799
email: saviac@adelphia.net

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

Industry News

Full Meshing Capabilities in LMS Virtual.Lab Structures Rev 6
Leuven, Belgium
LMS, the engineering innovation company, introduced Rev 6 of LMS Virtual.Lab Structures, its integrated solution for structural modeling and analysis. Extended with full meshing capabilities, LMS Virtual.Lab Rev 6 captures the complete modeling and analysis process, from general pre- and post-processing for structural analysis to multi-attribute performance simulation. Starting from a wireframe, surface or a solid geometry, LMS Virtual.Lab Structures Rev 6 is able to generate different structural mesh types using a full range of meshing methods. LMS Virtual.Lab Structures is solver-neutral and offers a set of entirely integrated drivers to industry-standard structural analysis solvers for linear and non-linear analysis such as MSC.Nastran, NX Nastran, Abaqus, Elfini and Ansys. Furthermore, LMS Virtual.Lab Structures Rev 6 steps up simulation productivity through the introduction of an advanced, unified environment to model and assemble full-vehicle structures.
For high resolution images, please visit http://www.lmsintl.com/pressimages. For more information on LMS Virtual.Lab, please visit http://www.lmsintl.com/virtuallab.

Create a User Interface in Minutes
Design Custom Windows with DAPstudio
Microstar Laboratories, Inc.
Bellevue, WA 98004
If you are designing a data acquisition system and you would like to develop a user interface quickly, ...test it,improve it, test it, improve it, ...and deliver a working system, then you may want to set aside a few minutes to download DAPstudio 3.00 and decide to try it out. There is no time limit on the free trial of the full software.
DAPstudio 3.00, the latest version of DAP Measurement Studio software from Microstar Laboratories, maker of Data Acquisition Processor (DAP) boards and software, includes a new custom window design capability. This lets you size and place different display formats exactly the way you want them. You now have a tool to help you quickly create the most effective user interface for your application. It lets you select any combination of graph, table, waterfall, bar, alarm, and digital volt meter formats to display application data. And the user can toggle between flat and 3D views.To develop a working system does require a DAP board. The company provides hardware at no charge for evaluation. DAP boards cost from US$1195. If you decide to keep on using DAPstudio after you have tried it,
you will need to buy a license. That costs US$199. For additional information, please visit http://www.lmsintl.com/virtuallab.

New High Sensitivity, Triaxial DC +Response Accelerometer
PCB Piezotronics, Inc.
Depew, NY
The Vibration division of PCB Piezotronics (PCB®) has announced new Series 3713, a high sensitivity, MEMS DC (steady state) response accelerometer, capable of measuring accelerations in a variety of automotive and off-highway testing applications. PCB's Series 3713 is gas damped, and provides micro g resolution and ±5,000 g pk (49,033 m/s2 pk) shock survivability. Several full-scale acceleration ranges are available, from 3 to 200 g, with a frequency response from DC to 1,500 Hz (±10%). The sensor incorporates built-in conditioning electronics that provide amplification to the sensing elements and temperature compensated output. The footprint for Series 3713 is a 1-inch (28 mm) cube in a welded titanium case design, with a choice of either hermetic connector or integral cable.For additional information, contact the Vibration Division of PCB Piezotronics, Inc., at 888-684-0013 or visit www.pcb.com.

Conferences/Courses

Naval Undersea Warfare Center Distributed Networked Systems (DNS) Conference - Newport, RI
Feb 13-17, 2007
The Naval Undersea Warfare Center (NUWC) is the Navy's full-spectrum research, development, test and evaluation, engineering and fleet support center for submarines, autonomous underwater systems, and offensive and defensive weapons systems associated with undersea warfare. One of the corporate laboratories of the Naval Sea Systems Command, NUWC is headquartered in Rhode Island, and has two major subordinate activities -- Division Newport (also in RI) and Division Keyport (in Washington State).
The Naval Undersea Warfare Center (NUWC), officially established on 2 January 1992, is the Navy's full-spectrum research, development, test and evaluation, engineering and fleet support center for submarines, autonomous underwater systems, and offensive and defensive weapons systems associated with undersea warfare. There are two major divisions of this Warfare Center -- Division Newport located in Newport, Rhode Island, and Division Keyport located in Keyport, Washington. For additional information on the NUWC Conference and other NUWC Newport activities contact The NUWC Division Newport Public Information phone number is 401-832-3124.

TTI - "Fundamentals of Vibration for Test Applications" Course #116
February 21-23, 2007
Random vibration and shock are important in most engineering applications where the product is exposed to transportation and to possible vibration and shock during service. The need to understand the effects of vibration and shock on product reliability is paramount today, where electronic/computer components are part of almost every product. This course covers a wide range of topics associated with vibration and shock applications in order to enable the course participants to acquire a basic understanding of the complex field of vibration and shock. Each of the subject areas covered in this course have expanded coverage in their own three day courses for those individuals who need a more thorough understanding for their application. Additional information can be obtained by contacting TTI @ 866-884-4338 (866-TTi-4Edu)or by email:Training@ttiedu.com.

IEST Online Education: "Biocontamination Control— An Applicable Approach"
Wednesday, February 21, 2007
11:00 a.m. (CST)
The Institute of Environmental Sciences and Technology (IEST) continues to offer valuable online education classes. "Biocontamination Control—An Applicable Approach" will be presented on . Learn from your desk, conference room, or auditorium without travel expenses. The per-location fee has no limit on the number of students who may participate at each location.*
This online tutorial will present a general approach to biocontamination control that can be adapted by various industries based on the critical requirements of specific products or processes. The session will explain how to perform microbial environmental monitoring and interpret the data. Reference documents will include the ISO 14698 series of International Standards: Cleanrooms and associated controlled environments—Biocontamination control and IEST-RP-CC023.2: Microorganisms in Cleanrooms. Instructor Gordon M. Ely is QC/Validation Manager at Nelson Laboratories, where he has worked for more than 16 years and is a certified Specialist Microbiologist (SM) in Consumer and Industrial Microbiology. More information is available online at www.iest.org or by calling IEST at (847) 255-1561.

ESTECH 2007 Golf Outing
Bloomingdale, IL
Sunday, April 29, 2007
Come join the Institute of Environmental Sciences and Technology (IEST) at the ESTECH 2007 Golf Outing. The outing will kick off the IEST annual technical meeting and exposition on Sunday, April 29, 2007 at the world renowned Blackhawk Trace Golf Course at Indian Lakes Resort in Bloomingdale (northwest suburban Chicago), Illinois. Golfers will tee off with their friends, colleagues, and prospective clients in a scramble format starting at 1:00 p.m. Prizes will be given during the Presidential Welcome Reception the following evening for the lowest scoring team, closet to the pin, longest drive, and other accomplishments. Do not miss out on this opportunity to network with industry experts. Space is limited. The theme of ESTECH 2007 is "Center for Excellence." Registration is now available at www.iest.org or by calling IEST at (847) 255-1561.

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Suite 110
Richmond, VA 23229

ADDRESS SERVICE REQUESTED

A LOOK INSIDE THE DECEMBER 2006 *CURRENT AWARENESS*

77th Shock and Vibration Symposium

- Wrap-Up
- Opening Session Speakers
- Statistics
- Evaluations
- Guest Program
- Classified Sessions

Darnise Johnson to Leave SAVIAC

Course Announcements

- Response of Marine Structures to Underwater
- Explosions
- SAVIAC's Shock and Vibration Winter Seminar
- SAVIAC's Practical Shock Analysis & Design

Industry News

Other Conference & Course Announcements

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.

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