

**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)

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MAY 2008

CURRENT AWARENESS

78TH SHOCK AND VIBRATION SYMPOSIUM PROCEEDINGS UPDATE

SAVIAC is pleased to announce the proceedings from the 78th Shock and Vibration Symposium will be available in June 2008. As we work towards a more timely proceedings delivery over the next few years, we should acknowledge the strides made since the 76th symposium. Over the past three symposia (including the 78th), the delivery of proceedings has been 2 months better than the previous year. With the SAVIAC community's assistance (in timely writing of papers and faster approvals), we can continue to advance the delivery of symposia proceedings.

On another positive note, we have increased the number of papers on the proceedings each of the last three years as well. There was a 24% increase from the 76th to 77th, and a 5% increase from the 77th to 78th. The continuation of this trend is absolutely dependant upon authors following through with delivery of their papers for which a presentation was offered. Future symposia paper authors should realize that attendees expect there to be papers for all full-length presentations at any symposia, and that these papers will be on the symposia proceedings.

The first three pages of this issue contain all of the papers that will appear on the 78th Shock and Vibration Symposium proceedings. All attendees from the 78th symposium will receive a copy of the unlimited proceedings, and all "cleared" attendees will receive the limited proceedings in addition to the unlimited.

78th SHOCK AND VIBRATION SYMPOSIUM PROCEEDINGS

Unlimited Distribution Paper Listing

- Navy Test Methods and Applications
Duct Plants Shock Design Methodology Through Barge Test: The Innovative Fincantieri's Approach
Dr. Alfonso Barbato
- Index Numerical Applications, Methods & Design I
The Spectrum-Dip of Deck Mounted Systems
Dr. Rudy Scavuzzo, Mr. Jerry Hill, and Mr. Peter Saxe
- Equipment Mounting Bolt Torque for Navy Shock Loading
Mr. Ed Brennan
- Design for UNDEX Survivability of an Integrated Modular Mast
Mr. Johannes van Aanhold, Mrs. Sadra Pel, Mr. Eric Kappel, and Mr. Theo Bosman
- Comparison of the MOTISS Shock and Response Algorithm (SARA) to Finite Element Analysis for UNDEX Shock Response of a Box Barge
Mr. Paul Morrisseau and Dr. John Sajdak
- Blast Test Methods and Ground Shock
Shock Test Sled for Earth Penetration
Mr. Troy Harzig
- Numerical Study of How the Ground Shock Coupling Factor is Influenced by Soil Properties
Dr. Leo Laine and Mr. Ola Pramm Larsen
- Blast Testing and Analysis for a Mobile Office Building
Dr. Ali Sari, Mr. Mark Whitney, and Mr. Darrell Barker

Projectile & Gun Dynamics

- AGS Gun and Projectile Dynamic Modeling Correlation to Test Data
Mr. Edward Alexander

Penetration

- On the Importance of a 3rd Invariant Model for Simulating the Perforation of Concrete Slabs
Dr. Andreas Frank, Dr. Mark Adley, and Dr. Kent Danielson

Vibration: Multi-Shaker

- Creating Input and Output Transformation Matrices
Mr. Russ Ayres
- Generating a Realistic Specification for a MIMO System
Mr. David Smallwood
- Time Domain and Frequency Response Function Techniques for Multi-Shaker Time Waveform Replication
Mr. Thomas Reilly
- Non-linear Dynamical Vibrational Analysis of Diesel Valve Gear
Asst. Prof. Jurij Avsec, Prof. Maks Oblak, and Prof. Rudolf Pusenjak
- On Using Response Limiting Control During Multi-Shaker Testing
Mr. Tony Keller and Dr. Marcos Underwood
- Experimental Based Models for Shock and Vibration Environments
Mr. Troy Skousen, Mr. Jerome Cap, and Mr. Paul Larken

Vibration Test Methods and Applications

- Digital Control of an Experimental Active Magnetic Bearing Rotor Using Open Source Software
Dr. Harland Alpaugh, Prof. Frederick Nelson, and Prof. Denis Fermentel
- The Third Dimension of Random Vibration Control
Mr. John Van Baren

78th SHOCK AND VIBRATION SYMPOSIUM PROCEEDINGS CONT.

Training I

- Shock and Vibration Measurements
Dr. Joshua Gordis

Shock and Vibration Numerical Applications I

- Sine on Random Analysis: Alternatives and Challenges
Dr. Ali Gokce and Dr. Mary Baker
- Vibrational Analysis for Beams Under Static and Dynamic Thermal Effects
Prof. Jurij Avsec
- Several Aspects of Mechanical Transfer Evaluation for an Electronic Package from Flight and Vibration Tests: Part 1—Test Results
Mr. Zeev Sherf, Mr. Abraham Manor, and Mr. Philip Hopstone
- Several Aspects of Mechanical Transfer Evaluation for an Electronic Package from Flight and Vibration Tests: Part 2—Trend Evaluation and Modeling of the Amplification at Resonance
Mr. Zeev Sherf, Mr. Abraham Manor, and Mr. Philip Hopstone

Shock and Vibration Numerical Applications II

- Calculating Required Substructure Damping to Meet Prescribed System Damping Levels
Dr. Joshua Gordis and Lt. Wendel Penetrante
- Hysteric Damping for Direct Transient Analysis
Dr. Tom Moyer

Structural Response

- Stabilized Load Control for Softening Structures
Mr. Scott McLennan and Ms. Shawn Ozuna

Instrumentation

- Development of a Damped Piezoresistive MEMS High Shock Sensor
Mr. Robert Sill
- A New Approach to Designing Hopkinson Bar Fly Away Test Fixtures for MEMS Devices
Mr. Brendan Rogilio and Mr. Jack Heister
- Selecting Accelerometers for and Assessing Data from Mechanical Shock Measurements
Dr. Patrick Walter

Shock and Vibration Isolation

- Dynamic Qualification Testing of the New Horizons Spacecraft
Mr. Edward Schaefer
- Simulation, Development, and Field Measurement Validation of an Isolation System for a New Electronics Cabinet in the Space Shuttle Launch Environment within the Mobile Launch Platform
Mr. Alan Klembczyk and Mr. Michael Mosher

Survivability of Microelectronics & Equipment in High-G Environments

- Simulation and Measurement of Shock Transmission Across Bolted Joints
Mr. Kumarswamy Karpanan, Dr. Brendan O'Toole, Mr. Sachiko Sueki, Mr. Masoud Feghhi, and Dr. Samaan Ladkany
- Material Wave Speed Mismatch for High-g Acceleration Mitigation
Mr. Sachiko Sueki, Dr. Samaan Ladkany, Mr. Kumarswamy Karpanan, and Dr. Brendan O'Toole, Dr. Amir Baz, and Mr. Morris Berman

Diagnostics Analysis and Modeling

- Physics of Failure (POF) Application in RAM-T Case to Eliminate/Mitigate Machinery Failure
Mr. Vincent Whelan
- State-based Survival Estimation Using Proportional Hazard Bayesian Networks
Dr. George Lloyd and Dr. Timothy Hasselman

Bioengineering and Human Response

- Vehicle Rollover Propensity and Potential Injuries to Belted Occupants from Roof Crush
Dr. Nicholas Perrone
- Adaptive Semi-Active Magnetorheological Seat Suspension for the Expeditionary Fighting Vehicle
Dr. Gregory Hiemenz and Dr. Norman Wereley

Blast: Numerical Methods and Applications II

- Fluid-Structure Interaction Studies on a Submerged Platformed Cylinder Near an Underwater Explosion
Mr. George Yiannakopoulos
- Optimization of Fastener System Design for Blast Protection Appliques
Dr. Ken-An Lou, Dr. John Tierney, and Mr. Richard Goetz
- A Neural Network Approach to Modeling the Effects of Barrier Walls on Blast Wave Propagation
Dr. Ian Flood, Mr. Bryan Bewick, Dr. Robert Dinan, and Dr. Hani Salim

Modeling and Simulation II

- A Comparison of Numerical Simulation with Experiment on Hull Whipping Response
Mr. Yuichiro Noma, Ms. Miki Arami, and Dr. Isoa Neki
- Simulation of Structural Failure from Contact Underwater Explosions
Mr. James Gregson and Mr. Timothy Dunbar

- Effects of Explosive Position on Longitudinal Bending Moment of Hull Girders Induced by a Close-in Underwater Explosion
Dr. Akihiro Yasuda and Mr. Akihiko Imakita
- Ship Impact Study - Analytical Approaches and FE Modeling
Dr. Pawel Woelke, Dr. Najib Abboud, Mr. Darren Tennant, and Dr. Eric Hansen
- Prevention of Pressure Oscillations in Modeling a Cavitating Acoustic Fluid
Dr. Alan Brown and Mr. Bradley Klenow

Modeling and Simulation III

- Validation of a Nonlinear Plasticity / Damage Model for Sandwich Structure Foam Core Materials
Mr. Douglas Lesar and Dr. Alexander Gielen
- Determination of an Adequate Mesh Size for Transient Finite Element Analysis
Mr. Eric Luft and Mr. Brian Lang

Bolted Joints Under Shock

- 3D FEA Shear Load Bolt Bending Shock Analysis of Vibracon (Mechanical Adjustable Chock) and Standard Chock
Mr. Craig Miller and Mr. Jeffrey Sacconi

Blast: Numerical Methods and Applications III

- Numerical Simulation of Shallow Buried Explosive Blasts in Dry Sand
Dr. Karim Muci-Kuchler, Dr. Gregory Buck, and Dr. Bryan Cheeseman
- Charge Shape Effects on Structural Loads
Mr. Paul Hassig, Mr. Chad McArthur, Mr. Darell Lawver, and Mr. Darren Tennant
- Explosion at an Intersection in an Urban Environment - Experiments and Analyses
Dr. Morgan Johansson, Mr. Ola Pramm Larsen, and Dr. Leo Laine

Random Vibration and Acoustics

- Identification of Random Vibration Environments
Dr. Thomas Paez, Dr. Richard Field, and Mr. David Smallwood

Unlimited Papers from 77th Symposium—Monterey, CA

- Consideration of Global Error Metrics in the Conduct of MDOF Motion Replication
Mr. Mike Hale
- Shaker Testing for Random Excitations with Low Kurtosis
Mr. Alexander Steinwolf

Limited Distribution Paper Listing

Blast Effects on Structures I

- FRP Panels for Blast and Fragmentation Mitigation
Mr. John Hoemann, Dr. Robert Dinan, and Dr. Hani Salim
- Prefabricated Tilt-Up Concrete Panels for Blast Resistant Design
Mr. Bryan Bewick, Mr. John Hoemann, Dr. Robert Dinan, and Dr. Hani Salim
- Blast Shielding of Lightweight Materials Exposed to Contact Detonations of Bare Charges and Cased Weapons
Mr. Ryan Stinson, Mr. Michael Roth, and Mr. Thomas McGill

Blast Effects on Structures II

- Use of Precast Concrete Walls for Blast Protection of Steel Stud Wall Construction
Asst. Professor Clay Naito, Mr. Stephen Grumbach, and Dr. Robert Dinan

Modeling and Simulation I

- Whipping Analyses of the DDG 51 Class Full Ship Model
LCDR Gerald Prendergast and Dr. Young Shin
- Modeling & Simulation of Ship Shock Trials: Comparison of DYSMAS & LS-DYNA/USA
Mr. Jarema Didoszak and Dr. Young Shin
- Structural Integrity of the Mk-84 Bomb During Water Entry
Ms. Kathy Ruben, Dr. Andrew Wardlaw, Mr. Terence Musho, and Dr. Jack Goeller

Blast: Numerical Methods and Applications I

- The Role of Negative Phase Airblast on the Structural Response of Conventionally Constructed Load-Bearing and Non-Load-Bearing Walls
Mr. Joseph Magallanes, Mr. Ruben Martinez, and Mr. Paul Carpenter
- Loads on Shielded Buildings in an Urban Environment
Dr. James Baylot, Mr. Byron Armstrong, and Mr. Denis Rickman
- Tunnel Blast-Door Defeat by Cold Fire Attack
Mr. Denis Rickman, Mr. Bob Britt, Dr. Jon Windham, Dr. Stephen Akers, Dr. Photios Papados, and Mr. Andre Edwin

Blast: Test Methods and Weapons Effects

- High Speed Photography and Digital Image Correlation System for Blast Response of Aircraft Structures
Dr. Mark Nansteel and Dr. Chit-Tsai Chen

78th SHOCK AND VIBRATION SYMPOSIUM PROCEEDINGS CONT.

- Enhanced Crater, Airblast, and Damage to Aboveground Targets Due to Simultaneous Detonations of Multiple Weapons
Dr. Jon Windham, Mr. Denis Rickman, and Mr. Andre Edwin
 - Design and Fielding of Full-Scale, Water-Backed Embankment Cratering Experiments
Mr. Denis Rickman, Mr. Larry Nuss, Mr. William Walker, and Dr. Richard Jepsen
 - Influence of Casing Ductility Upon Air Blast Fields from Cased Explosive Charges
Dr. Alan Ohrt, Mr. Roosevelt Davis, and Dr. Seung Lee
 - A Comparison of Engineering-Level Airblast Modeling Approaches for a Sub-Scale Penetration
Mr. Roosevelt Davis, Dr. Alan Ohrt, and Mr. Robert Britt
- Structural Analysis
- Modal Analysis of Heavily Reinforced Concrete Reaction Mass: An Exploration of FEA Validation, Bending Modes, Percent Damping, Stress During Resonant Excitation, Failure Mode Prediction and Operational Recommendations
Mr. Andrew Fried and Mr. Eric Young
- UNDEX and Vibration Test Applications
- Shake-Table Testing of a Simulated Office Environment
Mr. James Wilcoski and Mr. Jonathan Trivillion
- UNDEX and Vibration Test Applications
- Flight and Re-entry Test Simulation in Combined Acceleration, Vibration, and Spin Environments
Dr. Richard Jepsen, Mr. Edward Romero, and Mr. Doug VanGoethem
- UNDEX Numerical Methods & Applications
- Fully Automated Ship Shock Tool (FASST) Supports UNDEX Shock Approach for Equipment Kill and Mission Analysis Assessments
Ms. Morgan Eash, Mr. Jeff Adams, Mr. Derek Skahen, and Mr. Steve Rutgerson
- Limited Papers from 77th Symposium—Monterey, CA
- Sectional Modal Vibration Analysis Supporting the Design of Shock Mount Systems for COTS Equipment on CVN77
Mr. Alec Clark
 - Enclosure Packaging Concepts for Use in CVN21 Information Distribution Centers
Ms. Alicia D'Aurora, Mr. Bob Krezel, Ms. Crystal Spence, and Dr. Michael Talley
 - Deck Simulating Shock Machine (DSSM)
Mr. Charles Pizzano, Dr. Michael Talley, and Mr. Steve Borgman
 - Development and Characterization of a Family of Shock Mounts for CVN 78 Co-joined and Standardized Enclosures
Mr. Bob Krezel, Dr. Michael Talley, and Mr. Alec Clark
 - Simulation of Attached Piping in Shock Tests
Mr. J. Rick Griffen
 - Design Verification and Shock Test Considerations for a Co-joined 8-Pack Enclosure System
Mr. Kevin Gould, Mr. Steve Borgman, and Mr. Michael Talley
 - Shock Qualification Strategy for IDC Equipment
Mr. Michael Talley, Mr. Bob Krezel, and Ms. Alicia D'Aurora
 - Investigation of Loading Effects on Deck Simulator Fixtures Used in MIL-S-901D Heavyweight Testing
Mr. David Callahan, Dr. Michael Talley, Mr. Kevin Gould
 - Optimization Routine for Selecting Mounts for CVN78 Standardized Enclosures
Mr. Alec Clark, Dr. Michael Talley, Mr. Bob Krezel, and Ms. Alicia D'Aurora

FREE SEMINAR

SUMMER 2008 FREE SHOCK AND VIBRATION SEMINAR

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.

*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. However, arrangements have been made with two alternate hotels for the same \$99 rate. Please visit www.saviac.org for more 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) Shock Response Spectrum - A Primer	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) Hosted by National Technical Systems
11:55-1:00	Lunch	
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

CALL FOR PAPERS



**79th
Symposium**

**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 (extended to August 1, 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 14, 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.

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.

Conferences/Courses

Random Vibration and Shock Test Training

- June 3-5, 2008, 8am to 4pm

- Celestica Inc., Toronto (Ontario), Canada,

Earthquakes are only one of the vibration subjects that Steve Brenner will discuss at the "Fundamentals of Random Vibration and Shock Testing, HALT, ESS, HASS (...)" course, meeting. He will also discuss the severe vibrations aboard helicopters and other aircraft, aboard rockets, spacecraft and satellites en route to orbit and the less severe but sometimes troublesome vibrations of automobiles and other land vehicles. Numerous testing laboratories, including one at Celestica, utilize shakers to simulate those vibrations, proving that products will survive in-service vibration. Further information on the event is available at <http://www.equipmentreliability.com/course1.htm>.

The June course will deal with accelerometers, used in measuring vibrations over the road, over the waves, in flight and during rocket launch and powered flight. Accelerometer signals are usually telemetered to recording stations. One use of the resulting data is the generating of programs to control vibrating laboratory platforms called shakers. These are used to test parts of future vehicles.

For more information, please contact Wayne Tustin of the Equipment Reliability Institute at (805) 564-1260 or by email at tustin@equipment-reliability.com.

TTI Announces Course Schedule

- Las Vegas, NV.

"In just a few days you will obtain practical information to immediately improve your on-the-job performance."

June 3-6 Engg Stats/Masurement Uncertainty
 June 16-18 Fundamentals of Vibration for Test
 June 19-20 Environmental Test Specifications
 June 23-25 Corrosion Control Techniques
 June 26-27 Test Procedures for EMI/EMC/ESD
 June 30 - July 2 Project/Systems Engineering

Course Fees	
2-day courses	\$1495
3-day courses	\$1795
4-day course	\$2095
5-day courses	\$2395

\$100/person discount for group enrollments of two or more. \$100/course discount for one individual to multiple courses.

\$100 discount for 45 day early payment prior to course date. All courses are also available on-site.

Technology Training, Inc.
 Brian P. Slattery - Vice President
 toll-free: 866-884-4338 (866-TTI-4edu)
 e-mail: brian@ttiedu.com
<http://www.ttiedu.com>

Explosion Effects and Structural Design for Blast

- July 22 and 23, 2008

- Holiday Inn Washington Dulles Airport

Led by Dr. Sam Kiger and Dr. Stan Woodson

Engineers have an opportunity to improve their skills in understanding explosion effects and designing facilities that are safer to occupants by understanding and minimizing the effects of explosive detonations on structures. Architects, first responders, builders and others will also benefit by understanding explosion effects and protective design methods. For more information and secure on-line registration visit <http://www.blastdesigntraining.com/>

AeroTest America 2008 Announces Introductory Lineup of Off-site Visitor Technical Tour Offerings at Lockheed Martin Missile & Fire Control & Bell Helicopter XworX

AeroTest America 2008 has announced the introductory lineup of its off-site technical tour offerings, to include available visit options for both the world renowned Lockheed Martin Missile & Fire Control High-speed Wind Tunnel and Bell Helicopter XworX facilities. The tours, scheduled for Wednesday and Thursday, November 19th and 20th, have been developed to provide access to the very latest in design, testing and technology tools within the civil and military aviation, space engineering and airborne defense industries.

AeroTest America is a unique, fully dedicated showcase of the latest testing, analytical and inspection technologies and specialist services for the civil and military aviation, space engineering and airborne defense industries. The show is co-located with both the SFTE Annual International Symposium and Global Windtunnel Symposium, and is anticipated to draw top-notch industry experts from these targeted communities, with a full menu of technical programming offered to further enhance exhibitor and visitor offerings in Fort Worth. Visit www.aerotestamerica.com for more information.

Twenty-Third Transducer Workshop

- June 17 - 18, 2008
 - Buffalo, NY.

The Twenty-Third Transducer Workshop, sponsored by the Vehicular Instrumentation / Transducer Committee, Telemetry Group, of the Range Commanders Council, will be held June 17-18, 2008 at the Buffalo Airport Holiday Inn, Buffalo, NY. This committee develops and implements standards and procedures for transducer applications. Attendees are working level people who must solve real-life hardware problems and are strongly oriented to the practical approach. Test and project people who attend will benefit from exposure to the true complexity of transducer evaluation, selection, and application. Since there is limited seating available at the Transducer Workshop, attendees are encouraged to register as early as possible by contacting Ray Faulstich at 301-737-8129, or by email to rfaulstich@csc.com

Job Posting

Senior Research Scientist with a background in Structural Acoustics

United Technologies Corporation Research Center (UTRC) is a Division of United Technologies Corporation, a Fortune top 50 company is at the leading edge of commercial and military aviation, aerospace systems, climate control, elevator design, security and fire protection as well as hydrogen fuel cell development.

The UTRC Acoustics Group seeks an expert in the area of structural acoustics, aeroacoustics, system-level modeling and analysis, active and passive control, duct acoustics, sound quality, and acoustic liner design. Applications include elevators, jet engines, helicopters, HVAC systems, machines and power systems. The candidate will work as part of multi-disciplinary teams to identify and implement quiet technology into UTC products. Specific duties may include source identification, developing physics-based understanding and analytical models of acoustic phenomena, developing and validating noise and vibration prediction tools (analytical methods, SEA, BEM, FEM, CFD-based acoustics), identifying and implementing noise and vibration control concepts, and implementing sound quality metrics into design requirements. The candidate will be responsible for delivering high quality technical work and ensuring excellent and proactive communication and teamwork. MS/PhD in acoustics, mechanical or aerospace engineering or related discipline.

Minimum Qualifications Required:

- .. MS Degree and 3+ years of related work experience in the area of analytical and applied acoustics.
- .. Outstanding technical depth in acoustics, with strong analytical and modeling skills and a solid understanding of experimental diagnostics and validation.
- .. Technical breadth and ability to relate fluid dynamics, structural dynamics, heat transfer, etc. to noise and vibration. (a2 Familiarity with SEA, FEA, BEM, Matlab, and other noise and vibration tools.
- .. Demonstrated ability to work effectively within multi-disciplinary teams to successfully achieve desired technical outcomes within time and budget constraints.

Preferred Qualifications:

- .. PhD, 2+ years of related working experience in areas of analytical and applied acoustics.
- .. Record of technical achievements, including awarded patents, special awards, and technical publications in refereed journals.

US Citizen or permanent residence status is required.

Got News or Conference Announcements?

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

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



78th S&V Symposium Proceedings Update

Summer 2008 FREE Shock and Vibration Seminar

79th Symposium—Call for Papers

Course Announcements

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

Other Conference, Course, and Job Announcements

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