

**QUICK
CALENDAR**

- 81st Symposium Abstract Deadline (June 15, 2010)
- Practical Shock Analysis & Design Course (May 3-7, 2010 — Mobile, AL)
- FREE Summer Seminar & TAG Meeting (July 28-29, 2010)— Orlando, FL)
- Mechanical Shock Testing Course (May 24-28, 2010 — Phoenix, AZ)

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MARCH 2010

CURRENT AWARENESS

PLANNING GUIDE
81st Shock and Vibration Symposium

SAVIAC is well underway with the planning of the 81st Shock and Vibration Symposium in Orlando, Florida. This event will be held at the Rosen Plaza Hotel from October 24-28, 2010.

In order to further build on the successful symposium held in 2009, we have instituted a few changes to this year's symposium. By gathering information from evaluation forms, two SAVIAC Technical Advisory Group (TAG) meetings, and general communications within the community over the past few months, SAVIAC will be enhancing many areas of the symposium based on community members' feedback.

The "planning guide" that follows will assist those persons and/or organizations that are

interested in participating in the symposium. Pages two and three of this newsletter address multiple aspects of being part of the symposium including presenting papers, offering tutorials or trainings, exhibiting, or arranging meetings, discussion groups or panels. As part of this planning guide, a list of the most important dates are listed at the bottom of this page.

While this information is well known by many in the SAVIAC community, last year's symposium welcomed almost 200 new faces to the symposium. We want to ensure our new members are aware of the opportunities and processes for not only attending our symposium, but contributing to its merit as well.

Important Dates Relating to the 81st Shock and Vibration Symposium

- **March 1** Exhibitor Prospectus Available
- **April 1** Hotel Reservation Call-in Available
- **May 1** Authors' Package Available
- **June 30** Abstract (Papers, Tutorials, Trainings) Submittal Deadline
- **July 29** Program Committee Meeting / Abstract Review
- **August 9** Symposium Early Registration Available (\$100 off standard price)
- **August 15** Acceptance Notifications to Abstract Submitters
- **August 31** Preliminary Symposium Program Available
- **October 1** Early Registration Ends / Standard Registration Begins
- **October 2** Hotel Reservation Block "Cut-Off" Date
- **October 11** Final Symposium Program Available
- **October 24-28** 81st SHOCK AND VIBRATION SYMPOSIUM - ORLANDO

PLANNING GUIDE (CONT.)

81st Shock and Vibration Symposium

Paper Presentations

Full Paper Presentation

This category of presentations represents the bulk of the symposium program. A full paper presentation is one that is 15 minutes in duration, plus 5 minutes for Q&A at the end of the presentation, and is based on a technical paper that either has or will be written. Full paper presentations are expected to be published to the symposium proceedings.

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 if designated for a "Product/Facility" session.

Short Topic Presentation

Short topic presentations are 10 minutes in duration with no Q&A period at the end. The standards are similar to that of a full presentation except that short topics can be previously published. Short topics are not expected to be published papers in the symposium proceedings.

Submitting Abstracts

Submitting a full paper or short topic abstract can be done by using the abstract form links on www.saviac.org under the "81st Shock and Vibration Symposium" page. When completing this form it is imperative to provide complete and accurate information for the presentation classification, subject area, contact information of the author(s), and abstract itself.

Abstracts are due to SAVIAC by June 15, 2010. After they are reviewed during the July 29, 2010 Program Committee meeting, all authors will receive acceptance notification no later than August 15, 2009.

Authors' Package

The 81st symposium author's package is currently being revised to serve all presenters more effectively. Once it is released on May 1, 2009, presenters should follow the instructions contained therein in order to prepare their presentation and manuscript professionally and in-line with other presenters.

General Sessions/Dedicated Sessions

General Sessions

These sessions contain paper presentations that have been submitted with a subject area but are not part of an organized group of papers. Papers of similar subject areas are grouped together by the Program Committee to form these general sessions.

Dedicated Sessions

These sessions contain paper presentations that have been submitted with a subject area and have been submitted together as a group. Typically, an individual or organization has solicited for or grouped together 4-12 paper presentations to comprise a session of related material or a session of paper presentations that are dependent upon the other papers in the session in order to be complete.

Paper & Session Classifications

Unclassified, Unlimited Distribution

Paper presentations submitted under this classification, and the subsequent sessions they are presented in, can be witnessed by any and all attendees of the symposium.

Unclassified, Limited Distribution

Paper presentations submitted under this classification, and the subsequent sessions they are presented in, can be witnessed only by U.S. government agency personnel and/or their contractors. SAVIAC holds its "limited" sessions according to Limited Distribution, Statement C.

Classified

Classified paper presentations can be submitted as confidential or secret. However, if there are not enough confidential abstract submissions to have a confidential session, **all classified presentations will be held to the secret level.** These paper presentations, and subsequent sessions they are presented in, can be witnessed only by persons who have a security clearance to the proper level and who have submitted the proper clearance form.

PLANNING GUIDE (CONT.)

81st Shock and Vibration Symposium

Tutorials/Trainings

Tutorials

Offered on Sunday and Monday prior to the opening session of the symposium, the tutorials are three-hour college level presentations that seek to further educate attendees in specific areas of shock, vibration, blast, and beyond.

For potential instructors: SAVIAC is seeking new tutorials for this year's symposium. At a minimum, you will be expected to provide the attendees with history, definitions, basic equations, where, who and why it is used, resources for additional education, and future developments. You may submit a tutorial abstract for consideration by going to www.saviac.org and clicking the "tutorial submittal" link under the 81st Shock and Vibration Symposium page. In appreciation for the time and effort devoted to developing tutorials, the symposium registration fee is waived for tutorial instructors.

For potential attendees: The tutorials cost \$250 (per tutorial) for persons attending the symposium. Abstracts for these tutorials will be available at which time the symposium registration form is made available (August 9, 2010).

Trainings

The Training Lecture is a 45-minute to one-hour college level presentation that seeks to introduce people to a subject they are not familiar with. These are offered throughout the main portion of the symposium (running Tuesday through Thursday).

For potential instructors: If you are considering offering a training, please keep the subject area broad enough to entice a large number of attendees. You may submit a training abstract for program consideration by going to www.saviac.org and clicking the "tutorial submission" link under the 81st Shock and Vibration Symposium page.

For potential attendees: There are no additional fees or reservations required to attend trainings. As the preliminary and final symposium programs become available, you will be able to review abstracts and consider if any of the trainings being offered are of interest to you.

Discussion Groups, Panels, Meetings

For those persons who need to hold more specific, more intimate, or a different style of gathering than the tutorials or trainings, they can consider a discussion group, panel, or meeting.

Discussion Groups

The discussion group is a 1 to 2-hour informal meeting of people interested in the topic up for discussion. Users' group meetings also fall under this category. Interested organizers may submit an abstract for consideration by going to www.saviac.org and clicking the "discussion group submittal" link under the 81st Shock and Vibration Symposium page.

Panels

Panels shall consist of 3-6 persons to serve on the panel. The panel typically lasts 2-4 hours in duration. Panels shall have an organizer and chair, and the panel shall address a topic of great interest to numerous symposium attendees. Interested organizers may submit an abstract for consideration by going to www.saviac.org and clicking the "panel submittal" link under the 81st Shock and Vibration Symposium page.

Meetings

Meetings can be informal or formal meetings of people interested in a specific topic. Meetings can be restricted attendance (with approval) or unrestricted attendance. Meetings can be for any duration of time provided there are not major conflicts with other scheduled events. There may or may not be cost involved for hosting a meeting (based on availability, date, time, etc.). Interested organizers may submit an abstract for consideration by going to www.saviac.org and clicking the "meeting submittal" link under the 81st Shock and Vibration Symposium page.

For more information regarding papers, tutorials, trainings, discussion groups, panels, and/or meetings, please visit www.saviac.org and click on any of the links to past events. These links will provide a better understanding of what topics and formats have been approved by SAVIAC in the past.

(continued on page 4)

PLANNING GUIDE (CONT.)

81st Shock and Vibration Symposium

EXHIBITING

After a sold-out exhibit hall the last three years, we are making arrangements (and improvements) for another great exhibition for the 81st symposium. The exhibitor prospectus was released on March 1st via mass email and is updated weekly online at www.saviac.org to show booth availability.

After reviewing feedback from our exhibitors from recent years, SAVIAC has made some changes for the exhibit portion of the 81st Shock and Vibration Symposium. All breaks and accompanying food and beverage will now be held inside the exhibit hall. This approach should increase traffic and ability to interact with symposium attendees. This year's venue, the Rosen Plaza, was the venue for the 79th Symposium and affords SAVIAC the opportunity to use comments from that year to increase traffic and place sessions in close proximity to the exhibit hall.

Exhibit prices are between \$1800 and \$2300 per exhibit space (based on option chosen).

CORPORATE SUPPORTER OPTIONS

For organizations that plan on sending multiple attendees and exhibiting at the 81st Symposium, the corporate supporter options can save money. The varying corporate supporter levels are detailed here and registration for this option is made available in the exhibitor prospectus.

Bronze Level—\$4,000

- One Exhibit Booth at 81st S&V Symposium
- 2 Registrations at 81st S&V Symposium
- Up to 4 tutorials per registrant at 81st Symposium
- 3 quarter page ads - Current Awareness Newsletter
- SAVIAC Supporter Recognition

(savings of \$2,015 over individual pricing)

Silver Level—\$6,000

- One Exhibit Booth at 81st S&V Symposium
- 3 Registrations at 81st S&V Symposium
- Up to 6 tutorials per registrant at 81st Symposium
- One 2010 Calendar Ad
- 3 quarter page ads - Current Awareness Newsletter
- SAVIAC Supporter Recognition

(savings of \$4,110 over individual pricing)

Gold Level—\$10,000

- One Exhibit Booth at 81st S&V Symposium
- 5 Registrations at 81st S&V Symposium
- Up to 6 tutorials per registrant at 81st Symposium
- One 2011 Calendar Ad
- 3 half page ads - Current Awareness Newsletter
- SAVIAC Supporter Recognition

(savings of \$5,275 over individual pricing)

Platinum Level—\$15,000

- Two Exhibit Booths - 81st S&V Symposium
- 7 Registrations at 81st S&V Symposium
- Up to 6 tutorials per registrant at 81st Symposium
- One 2011 Calendar Ad
- 6 half page ads - Current Awareness Newsletter
- SAVIAC Supporter Recognition

(savings of \$7,965 over individual pricing)

HOTEL RESERVATIONS

Rosen Plaza Hotel

Reservations can be made at group rate (prevailing 2010 GSA per diem) by calling (800) 627-8258.

On-line reservations should be available via a link on the SAVIAC website by the end of April 2010.

The cut-off date to receive the group rate is: October 2, 2010.

SYMPOSIUM REGISTRATION

Due to the necessity of listing the tutorials on the symposium registration form, the form will not be available until August 9, 2010. We will post the form on www.saviac.org and send a mass e-mail reminder to the community once it is available.

Registration Fees:

Early Registration (Aug 9-Oct 1):	\$775
Standard Registration (After Oct. 1):	\$875
Tutorial Attendance (per tutorial):	\$250

SAVIAC is working diligently to increase the quality of our annual symposia. If you have questions regarding our current event processes or about new changes outlined in this planning guide, please feel free to contact our office at (434) 581-3041.

CALL FOR PAPERS

81st Shock and Vibration Symposium
October 24-28, 2010
Rosen Plaza—Orlando, Florida



Planning of the 81st Shock and Vibration Symposium is underway, with the selection of the Rosen Plaza in Orlando, FL.

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 80th 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 15, 2010. You are encouraged to submit online at www.saviac.org, click on 81st 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 August 13, 2010 (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, 2011.

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

PRACTICAL SHOCK ANALYSIS AND DESIGN COURSE2010 Schedule and Locations

May 3-7	Mobile, Alabama
August 16-20	Middletown, Rhode Island
October 4-8	Hampton, VA

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, Mr. Ed Alexander

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 \$1700 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.

MECHANICAL SHOCK TESTING & DATA ANALYSIS2010 Schedule and Locations

May 24-28	Phoenix, Arizona
July 12-16	Monterey, California
September 20-24	Huntsville, Alabama

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 <1 g in earthquakes to 200,000 g 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 to 200,000 g. 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

Course Topics**Mechanical Shock**

Introduction to Mechanical Shock
Mech. Shock Instrumentation & Measurement
Certification of Shock
Instrumentation/Measurement devices
Time & Frequency Domain Shock Specifications
Shock Analysis using the Acceleration
Shock Response Spectrum
Revolutionary Treatment of Pyroshock
with the Pseudo Velocity Shock spectrum
Data Acquisition System Calibration/Use
MATLAB Data Analysis
Conventional Shock Testing Machines

Navy Mechanical Shock Machines
Pyroshock Testing and Simulation
Component Pyroshock Simulations
Accelerometer, MEMS, & Materials Evaluations
Hopkinson Bar, Configuration & Certifications
Commercial Laser Doppler Vibrometer Use
Uncertainty Analysis

Pseudo Velocity Shock Spectra (PVSS) technology and applications including the following:

PVSS on four coordinate paper defines shock severity level
Severe shock frequency range defined by the PVSS plateau

PVSS measurement of shock isolation protection
Maximum modal stress given by the PVSS
PVSS measurement of filtering: fast digital filter
PVSS calculation ramp invariant filter theory
Shock polarity measurement with the damped PVSS
Continuous systems maximum stress from PVSS
Max modal velocity is proportional max modal stress
Evaluation of equipment shock fragility
Damage capacity you are hidden by data filtering
Review and Wrap-up Sessions

Course Registration

The Registration Fee is \$1700 per student. The registration is transferable. The fee includes a comprehensive set of course notes, a compilation of papers by Drs. 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 (Course Registrar). 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.

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

A LOOK INSIDE THE MARCH 2010 *CURRENT AWARENESS*

81st Shock and Vibration Symposium Comprehensive Planning Guide



- Resource for Authors, Attendees, and Exhibitors

81st Shock and Vibration Symposium

- Call for Papers

Course Announcements

- SAVIAC's Practical Shock Analysis & Design
- SAVIAC's Mechanical Shock Testing & Data Analysis

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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@erdce.usace.army.mil