

May 2008 – Mechanical Shock Test Techniques and Data Analysis Course presented by SAVIAC

On August 11 to 15, 2008 [SAVIAC](#) (Shock and Vibration Information Analysis Center) will present this new short course at our **Training Facility of Dayton T. Brown Inc.**, 1195 Church Street, Bohemia, NY (Long Island) 11716.



This five-day short course is intended for the novice shock practitioner as well as those who are already operating in the shock arena as designers, test engineers, data analysts or managers of mechanical shock testing facilities. Discussion of mechanical shock testing of items as small as Micro-Electrical-Mechanical Systems (MEMS) to full scale structures or equipment weighing hundreds of pounds will be discussed

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 narrow velocity change range from about 1 meter per second to 51 meters per second (40 - 2000 inches per second). Conversely acceleration magnitudes range from 1g (or less) in earthquakes to 200,000 g's in differentiated Laser Doppler Vibrometer measured pyroshocks.

This new short course will provide a comprehensive treatment of mechanical shock test techniques and data analysis for shocks from 40 g's to 200,000 g's. Mechanical shock instrumentation from low frequency techniques for underwater explosions 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. ***Expert 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, integration, and shock spectrum analysis using Matlab programs written for shock data analyses.***

Instructors are: Dr. Vesta Bateman, Dr. Howard Gaberson, and Mr. Jeffery Morris. Students will receive a comprehensive set of course notes, a collection of Matlab programs written for shock data analyses, a compilation of papers by Instructors Bateman and Gaberson, a text book entitled Shock Data Analysis edited by Rudolph J. Scavuzzo and Henry C. Pusey and a Certificate of completion worth 3 CEUs.

Complete details and a Registration Form are on the SAVIAC Web Site, www.saviac.org, or from Course Registrar Sallie C. Pusey (540-678-8678 or saviac@comcast.net).