

sensor & calibration tips



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Your one-stop sound & vibration shop

Greetings,

Welcome to Issue #58

Summer is in full swing in the northern hemisphere! Along with picnics, BBQ's, sun and swimming... your friends at The Modal Shop are summiting new heights in sound and vibration success. TMS Senior Scientist Mark Schiefer is with the [ISO TC108/SC3 \(Use and Calibration of Vibration and Shock Measuring Instruments\)](#) committee meeting, in Buffalo, New York, and is hosting a tour of the PCB Piezotronics Technology Center today. Here in Cincinnati, Ohio, we are doing our part to pump up the global economy and have earned our 6th record month this year of growth in the dynamic sensing and calibration marketplace. Ever innovating, in the next months, we look forward to a new product release in the portable vibration calibrator line, as well as expanding options and technology in pressure, force and vibration calibration.

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Tip of the Month

Q: Is mounting my calibration shaker on the work bench a bad idea? A: Depends on your bench!

Some rigid support benches are fine. Do a test sweep with a triaxial accelerometer mounted and look for resonances and frequencies showing transverse motion. In general, it is safest to move the shaker to an "elephant's foot" (a structurally rigid solid pedestal) to entirely avoid any bench resonances and also place the excitation device at an ergonomically desirable height and location for the operator.

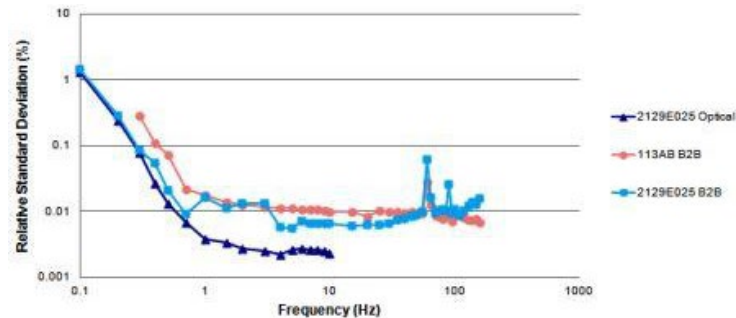
Technical Exchanges

[Experimental Techniques -](#)

Significance of Low Frequency Calibration

Calibration System Engineer at The Modal Shop, Patrick Timmons, recently presented on the [New Long Stroke Shaker Using Linear Motor Technology](#) at Sensors Expo in Chicago, Illinois.

With the global crisis last March in Japan, the significance of low frequency calibration has become more important in seismic applications, especially industrial monitoring of nuclear power generating assets.



Click the following link to view Patrick's presentation.

[Click here to view the presentation](#)

<http://www.modalshop.com/calibration.asp?ID=746>

Technical Exchanges Around the Country

The University of Cincinnati's Structural Dynamics Research Lab (UC-SDRL) will be hosting the annual [Experimental Techniques Seminar Series](#), featuring equipment from both TMS and PCB. The first session will discuss Structural Measurements and the second session will cover Modal Analysis. The sessions include a lecture style



[University of Cincinnati SDRL](#)

August 8-10
August 13-15
Cincinnati, OH

[Accelerometer Calibration - TMS](#)

August 2
Sacramento, CA

[Successful Measurement of Dynamic Force, Pressure & Acceleration - PCB](#)

August 7-9
Buffalo, NY

[Accelerometer Calibration - TMS](#)

Late August
Detroit, MI

Quick Links

[NCSL](#)

[IMEKO](#)

[PTB](#)

[NIST](#)

[ISO TC 108](#) - Mechanical vibration, shock and condition monitoring

[ISO TC 108/SC 3](#) - Use and calibration of vibration and shock measuring instruments

[ISO TC 108/SC 6](#) - Vibration and shock generating systems

[SAVIAC](#)

[Vibration Institute](#)

[Equipment Reliability Institute \(ERI\)](#)

[TMS Video Vault](#)

[Learn More Calibration](#)

Previous Newsletters

[sensor & cal tips #57](#) -

Double vs Single Ended Transfer Standard Reference Accel; Video Tutorial on Transverse Motion

[sensor & cal tips #56](#) -

Low Outgassing Accelerometers and Cables; Calibration Basics - The Exciter

Select Newsletter Articles by Topic

[Function and Structure of Accelerometers](#)

[Similarities Between Charge and ICP Operation](#)

[Selecting Accelerometers for Mechanical Shock](#)

[Master List of Topics \(T.O.C.\)](#)

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[IMI website](#)

[Larson Davis website](#)

presentation and hands-on experimental lab work.

In addition to these sessions at the University, PCB Piezotronics and The Modal Shop have served the sound and vibration community for over 40 years, and continue the commitment to innovation and customer education.

In a similar way, The Modal Shop offers [free 1/2 day technical seminars](#) around the country on vibration metrology. Sessions focus on dynamic sensor types, calibration theory and standards, measurement uncertainty budgets, calibration methods, and much more.

PCB Piezotronics offers courses on [dynamic shock, vibration, pressure and force measurement theory and practice](#). The previously sold-out courses are taught by Texas Christian University professor, Pat Walter, at PCB in Buffalo, NY.

[Click here to find an exchange near you](#)

<http://www.modalshop.com/calibration.asp?ID=736>

Blast from the Past - Triaxial Accelerometer Basics

For this month's Blast from the Past, we wanted to highlight an article from 1997 - "[Characterization and Comparison Accelerometers for Low-Frequency Modal Applications](#)"...

The paper overviews the selection process for transducers used for estimating experimental modal parameters below 0.5 Hz on aerospace and civil structures. Four different designs are examined, and when it comes to low frequency, resolution is improved when you tolerate more sensor mass.



[Click here to read more](#)

<http://www.modalshop.com/calibration.asp?ID=745>

Thanks for joining us once again. We are working hard to continue to develop technical content that is non-commercial and high in educational value. We are also continuing to evaluate the popularity of video as a training and communication medium.

Please, speak up and let us know what you like. [We appreciate all feedback](#), positive, critical or otherwise... Take care and enjoy the week!

Sincerely,

[PCB Load & Torque website](#)
[SimuTech website](#)

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