

**Welcome to Issue #73**

你好! ("Hello," pronounced néih hóu in Chinese.) In case you've been wondering, each month we've been working our way around the world learning how to say "hello" in many different languages. This lap around the world is very similar to the way our calibration support team has been responding. This year we've been to every continent (except Antarctica!) in support of dynamic calibration standards committees, technical conferences, educational calibration seminars and customer installations. It's a very rewarding feeling to be supporting many of the world's leading companies...and reassuring to "break bread" with so many people of different cultures. The world can be a complicated place, but we're all in this together.

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**Tip of the Month:  
Low-Frequency  
Calibration**

Remember when working at vibration calibrations of less than 5 Hertz, it's often helpful to select a higher sensitivity reference accelerometer (for example 500 mV/g) due to the small acceleration levels of displacement stroke limited exciters. Alternatively, optical displacement vibration reference methods are now available for ultra-low-frequency calibration.

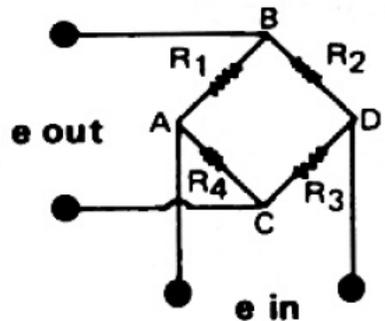
**Technical Exchanges**

[NCSLI Southern Ohio/Kentucky Fall Section Meeting](#)  
Oct. 30

[SAVE \(Formerly SAVIAC\)](#)

**Load Cells: An Overview of Their Design and Application**  
By Kenneth Watkins, PCB Load & Torque Product Manager

PCB Load & Torque, Inc. load cells consist of specially designed structures which perform in a predictable and repeatable manner when a force is applied. The force applied is translated into a voltage by the resistance change in strain gauges, which are intimately bonded to the transducer structure. The amount of change in resistance indicates the magnitude of deformation in the transducer structure and hence the load applied.



The strain gauges are connected in a four arm Wheatstone Bridge configuration, which...

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**World's Longest Running Continuous Building Vibration Monitoring System Completes 25th Year**

The San Jose Center for Performing Arts was designed by architect Frank Lloyd Wright. Unfortunately, Wright died prior to the completion of the

Nov. 3-7

### Quick Links

[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

[SAVE \(Formerly SAVIAC\)](#)

[Vibration Institute](#)

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

[TMS Video Vault](#)

[Learn More Calibration](#)

### Previous Newsletters

[Dynamic Sensors & Calibration #72](#)

Calibrate Our Own Accelerometers?; Monitoring Structural Dynamics with a Microphone

[Dynamic Sensors & Calibration #71](#)

Pressure Calibration in Ballistics Testing; Shakers & Accelerometers

### 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 \(T.O.C.\)](#)

### PCB Group Companies

[The Modal Shop Systems & Service Website](#)

[PCB Piezotronics Sensor Website](#)

[IMI Monitoring Website](#)

[Larson Davis Acoustics Website](#)

[PCB Load & Torque Website](#)

[SimuTech FEA Website](#)



project. Wright's Grand Tier balcony design is unique and graceful, especially when viewed from the seating below,

because it is only attached to the building structure at its ends and not along its back edge. Thus, the Grand Tier's design is more like a bridge than like a conventional balcony. An unanticipated and undesired consequence of this bridge-like design is that it was sometimes excited to uncomfortable levels of vibration by audience-generated forces. In the late 1980s [Response Dynamics](#) was hired to perform dynamic testing of the Grand Tier balcony structure...

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### Blast From the Past: Non-Traditional Uses of ICP™ 'Power' Sensors [Excerpted from Sound & Vibration magazine]

Over the past decade or so, sound and vibration test professionals, particularly those in the automotive NVH and aerospace markets, have developed measurement applications that use more and more microphone channels.



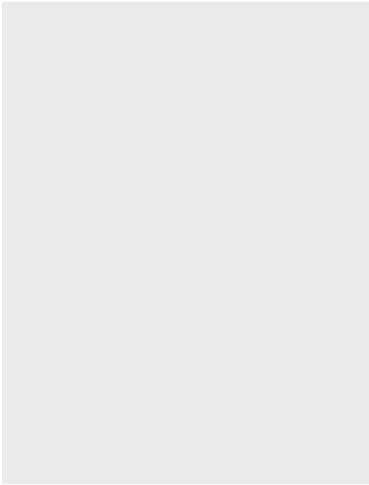
Given the increasing availability of dynamic measurement channels, the first "new generation," ICP-powered sensors were created. Driven by such large, multichannel applications as near-field acoustic holography (NAH), temporal array and inverse frequency response function techniques, two measurement systems utilizing dozens, if not hundreds of microphones have become more common...

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Thanks for joining us for another issue of "Dynamic Sensors & Calibration Tips." As always, please, speak up and [let us know what you like](#). We appreciate all feedback: positive, critical or otherwise. Take care!

Sincerely,



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