Blast Vibration and Seismograph Section - 2005
Officers

**Chairman**  Kenneth K. Eltschlager  
Office of Surface Mining  
Pittsburgh, Pennsylvania

**Vice-Chairman**  Randall M. Wheeler  
White Industrial Seismology  
Joplin, Missouri

**Secretary**  Wendi Stephens  
Office of Surface Mining  
Lexington, Kentucky
Background

- ISEE Seismograph Standards Subcommittee formed in 1995 in response to discrepancies in seismograph readings
- Initial goal – All blasting seismographs should read the same for a given blast
- Section established 1997
- Two primary components of performance
  - Seismograph construction
  - Field deployment
- First ISEE standards complete in 2000
- Current membership - 298
SECTION PURPOSE

Provide a forum for the discussion of issues related to vibration and noise from mine, quarry and construction blasting.
SECTION SCOPE

- Develop a section of ISEE members with knowledge and interests in blast vibrations measurement, analysis, safe level criteria and regulation,
- Conduct meetings at a frequency of at least one per year,
- Form committees within the section to examine specific issues,
- Develop objective standards for vibration measurement instrumentation and field use practices, and
- Provide an advisory team for seismograph testing and calibration.
SEISMOGRAPH STANDARDS COMMITTEE

- Chairman – Kenneth K. Eltschlager

- Purpose: Develop uniform and technically appropriate standards for seismograph performance.
Progress

- **Field Practice Guidelines for Blasting Seismographs (1999)**
  - First official ISEE standard
  - Adopted by numerous regulatory bodies
  - Available in Spanish

  - Current yardstick for designing blasting seismographs
  - A more stringent specification may be developed once a testing laboratory is found.

- [http://www.isee.org/sections/blast.htm](http://www.isee.org/sections/blast.htm)
SEISMOGRAPH TESTING AND CALIBRATION COMMITTEE

- Chairman
  Bob Turnbull

- Purpose: Develop a program to test blasting seismograph performance, enlist the services of a testing facility and maintain a seismograph calibration program.
Progress

- Draft testing protocol, “Certification of Seismographs Used to Monitor Vibrations from Blasting at Mines, Quarries and Construction Sites”

- The protocol addresses the basic frequency sweeps to evaluate seismograph performance

- We are currently looking for a testing facility!
  - US BOM equipment to U. of Missouri - Rolla
  - USGS – Iris Pascal
  - COE
VIBRATION LIMITS, TECHNICAL COMMITTEE

- Chairman
  Randy Wheeler

- Purpose: Establish a set of model standards for safe ground and air vibration levels during the surface use of explosives in mine, quarry and construction blasting.
Progress

- The committee developed a draft standard on appropriate ground vibration and airblast limits at residential structures.

- The standard will provide guidance to regulatory personnel and contractors on safe vibration levels.

- Future standards may be recommended for other types of structures.
VIBRATION REGULATIONS COMMITTEE

- Chairman - Larry Schneider

- Purpose: Catalogue the vibration and airblast regulatory levels being enforced at Federal, State and municipal government levels.

- A secondary purpose was to evaluate the consistency of the existing regulations with the current scientific findings on structural response and damage potential.
Progress

- The committee has compiled a database on the existing rules of Federal, State and local governments.

- The Federal, State and Local Vibration Regulations Database is currently available through the ISEE.

- Rules not included in the database should be sent to the chairman.
President Sarah Zgraggen

Purpose: Improve education and disseminate technical information on blast vibrations and work towards other training and educational programs.
Progress

- Working towards publishing a Section article in each ISEE journal

- Looking for vibration related papers for the annual conference to have a Seismograph session. If you become aware of a project worthy of publication, please contact the chairman.

- Some of the section members are currently involved in the ISEE Public Education Committee. A video on the effects of blast vibrations on homes is being scripted.
Help?

- Questions and comments are welcome on any of the section initiatives.
- Participation is also welcome.
- Articles or papers on vibration topics are needed. Topics could include regulatory pitfalls, unusual field observations, tricks of the trade, etc.
Questions?