

# Measurement of Ballistic and Explosive Events

## KEYWORDS

Ballistics  
Instrumentation

Blast Instrumentation

High-Speed Imaging

Flash X-ray

High-Speed Data  
Acquisition

Homeland Security

**S**outhwest Research Institute® (SwRI®) has the capability to conduct fully instrumented, high-fidelity experiments to examine impact, penetration, and blast phenomena. The SwRI Ballistic and Explosion Test Facility has a variety of instrumentation, data recording and reduction systems available to measure, record, and analyze dynamic data. The facility is staffed with experienced technicians who can design and fabricate specialized sensors and data recording devices to meet unique requirements.

### *Dynamic Measurements and Transducers*

- Blast and quasi-static pressure
- Temperature
- Strain
- Acceleration
- Rotation
- Displacement
- High-speed photo-optic sensors
- Ultra high-pressure carbon gages
- Humidity
- Particle size

### *High-speed Imaging*

- IMACON ultra high-speed digital camera (up to  $10^8$  frames/second)
- High-speed video systems

### *Radiography*

- 300 kV and 150 kV Hewlett Packard pulsed x-ray systems
- On-site automated film processing
- Digital image analysis and enhancement

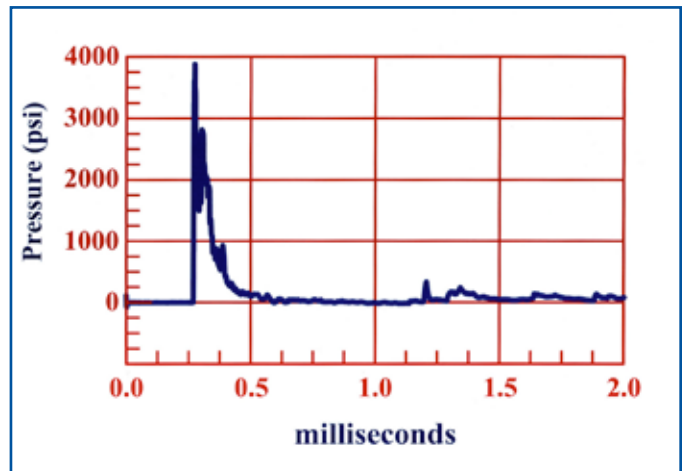
### *Transient Data Acquisition*

- Nicolet Multipro high-speed data acquisition system (95 channels)
- Portable Nicolet Multipro high-speed data acquisition system



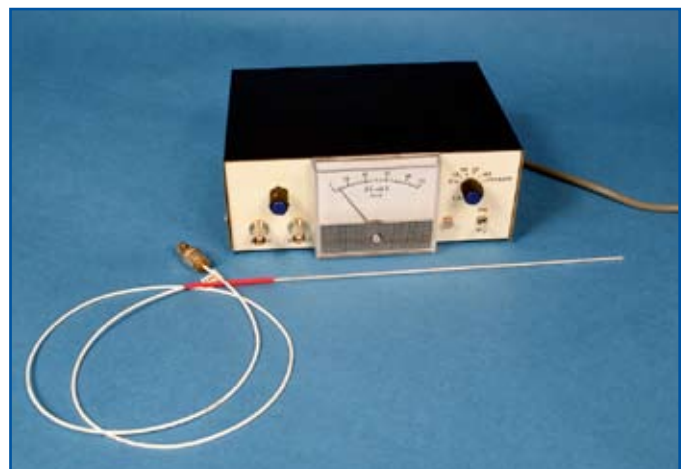
DE136343

Typical piezoelectric transducers used to measure blast pressures



D005132

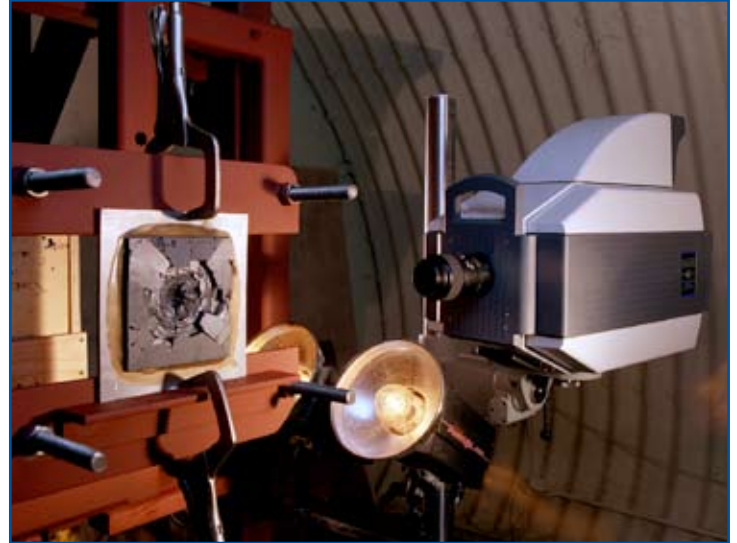
Over-pressure measurement from high explosives test



DE101261

SwRI-designed probe for measuring wave propagation in soils and powders

*IMACON ultra high-speed digital camera used for imaging of projectile penetration into ceramic armor*



E128509



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**We welcome your inquiries.**

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