

Measurement of Ballistic and Explosive Events

KEYWORDS

Ballistics
Instrumentation

Blast Instrumentation

High-Speed Imaging

Flash X-ray

High-Speed Data
Acquisition

Homeland Security

Southwest 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

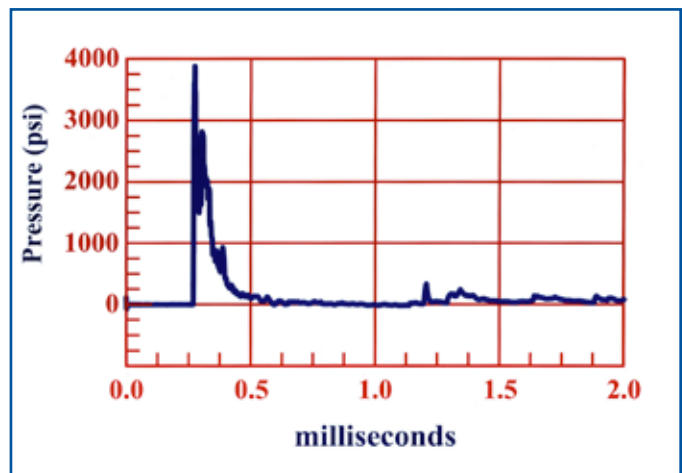
Transient Data Acquisition

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



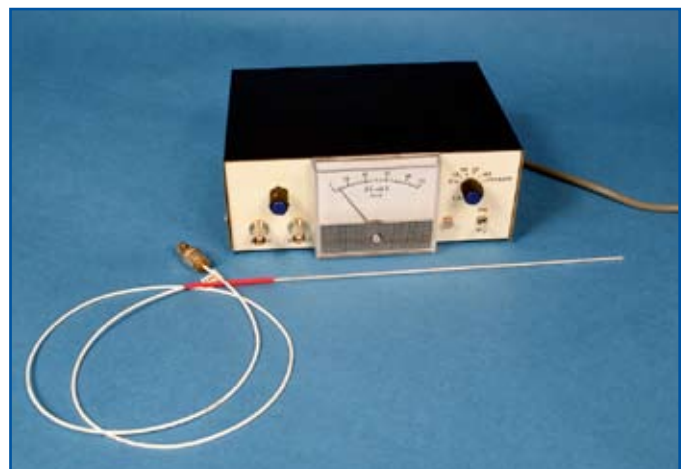
DE136343

Typical piezoelectric transducers used to measure blast pressures



D005132

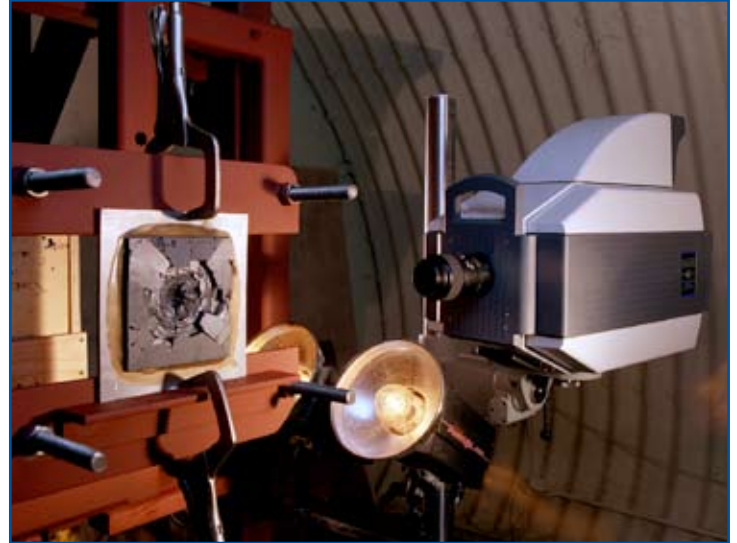
Over-pressure measurement from high explosives test



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



Southwest Research Institute is an independent, nonprofit, applied engineering and physical sciences research and development organization using multidisciplinary approaches to problem solving. The Institute occupies 1,200 acres in San Antonio, Texas, and provides more than 2 million square feet of laboratories, test facilities, workshops and offices for more than 3,300 employees who perform contract work for industry and government clients.

We welcome your inquiries.

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