

INL is home to a variety of energetic and ballistic testing capabilities and breaching techniques



National Security Test Range

Comprehensive testing capabilities completed by world class R&D staff

The nation requires advanced tools and techniques to ensure the safety of our war fighters. Idaho National Laboratory's National Security Test Range provides access to capabilities to understand and mitigate emerging challenges being faced on the battlefield.

The Range is uniquely positioned to support a wide variety of full scale and practical testing opportunities for the DOE, DOD, NNSA, DHS, and other federal and industrial collaborators. Located

about 45 miles west of Idaho Falls, INLs unique geography includes an isolated 890-square mile site with several dedicated test ranges and restricted airspace that allows research to be conducted safely and securely.

National and Homeland Security expertise at the lab spans ballistics, explosives and barrier testing, current breaching strategies, high-performance modeling and simulation capabilities, and classified program support. The National Security Test Range

is home to comprehensive research and testing capabilities that are flexible and adaptable to meet custom requirements. The range provides users with access to specialized capabilities including:

- Custom electronics design and prototyping
- Specialty tool prototyping and integration
- Electrical distribution and SCADA systems
- Affiliated laboratories for material analysis

Unique and Essential National Security Test Range Capabilities

- 20,000 lb NEW limit
- 8.7km range fan
- Classified testing capability
- Tactical breaching training
- Classified networking
- Dynamic testing experience
 - Domestic small arms and heavy weapons ballistics
 - Foreign weapons, grenades and rockets
- Military, foreign improvised, secondary HME, binary, custom explosives
- Barrier testing including VBIED testing
- Explosive breaching techniques – including heavy breaching
- Emerging threat intelligence
- Explosive and energetics chemists
- Mechanical/thermal breaching techniques
- Delay analysis and testing for vulnerability assessments
- Custom test fixtures for R&D
- Scientific test cannons – 14.5mm, 20mm, 30mm
- Flyer plates, EFPs, IEDs, various shaped charges

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The Energy of Innovation



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Advanced Research and Development Capabilities

Advanced national security research and development initiatives require access to advanced measurement, analytical, modeling and simulation tools alongside full scale testing capabilities. The National Security Test Range at INL enables a strategic approach to technology development and deployment with critical capabilities and advanced equipment and techniques.

Dynamic Scientific Measurements

- Pressure (free-field, incident, transmitted)
- Acceleration
- Force
- Strain
- Velocity
- Penetration

High-Speed Data Acquisition

- Hi-techniques meDAQ, 16 ch, 2MS/sec/ch, PC controlled
- National Instruments/PCB, 2 PXI chassis, 96 ch each, 60MS/sec/ch, extensible

High Speed Photography and Advanced Flash X-ray

- Phantom cameras – models V7-V12
- L3 Titan FXR system, 4 heads, 450keV, multi-trigger orthogonal view

Computer simulation capabilities

- Dedicated classified cluster with 256 cores and 768GB total memory
- Dedicated unclassified cluster with 144 cores and 288GB total memory
- Other high-performance scientific computers

- CTH, Alegra, LS-Dyna, ABAQUS, ALE3D, visualization and optimization codes

Explosive and energetic materials characterization

- Energetic material test chamber
- Electrostatic discharge testing
- Acoustic mixing

Dedicated manufacturing facilities for secure prototyping and production

- custom fabrication, variety of CNC machines
- precision parts
- welding
- rolling
- electro-discharge machines
- grinding, polishing
- optical comparators
- furnaces

For more information

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High-fidelity analytical capabilities compliment INL's breadth of testing capabilities

