



**FORTY SQUARE MILE FIELD LABORATORY**



**WORLD-CLASS TESTING FACILITIES**



**ENERGETIC MATERIALS RESEARCH AND TESTING CENTER**



Welcome to EMRTC, the Energetic Materials Research and Testing Center, a research and training division of New Mexico Tech in Socorro, New Mexico.

EMRTC is a world-class leader in the research, development, testing and evaluation of energetic materials, as well as in training participants in a wide range of anti-terrorism and homeland protection skills.

EMRTC conducts its activities in a 40 square mile field research laboratory that has more than 30 test facilities to conduct explosives research and testing. A highly professional and technically trained staff performs in-depth scientific investigations and studies of energetic materials.

For more information on EMRTC's capabilities, facilities and programs, visit EMRTC on the web at [www.emrtc.nmt.edu](http://www.emrtc.nmt.edu)

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EMRTC—Where we find solutions to technology's challenges, share our results, and teach safe, practical and effective applications to others.





**RESEARCH**

EMRTC's Process Safety Group investigates a diverse set of issues ranging from thermal hazards to chemical incompatibilities.

In the new Chromatography Lab, researchers conduct analyses of low-level explosives to post-blast residue involving explosives detection, compatibility, forensics, thermal hazards, aging and mechanistic decomposition.

EMRTC's smoothed particle hydrodynamics computational modeling technique provides computer modeling analysis of energetic materials. Results can be predicted before conducting dynamic testing in the field laboratory.

At the EMRTC Torres Laboratory, common pyrotechnics to isotopically labeled explosives can be fabricated to replicate materials that have been used in actual terrorist attacks for use in testing at EMRTC.

The EMRTC MicroElectronics Testing and Technology Obsolescence Program (METTOP) tests, evaluates, and assesses many types of microelectronic components that comprise today's sophisticated military, space, and commercial systems.



**TRAINING**

The Department of Homeland Security's Office of Domestic Preparedness has supported EMRTC's development of operational and awareness level training programs to counter the threat of terrorism. Since 1998 EMRTC has educated thousands of First Responders through its various programs.

The Incident Response to Terrorist Bombings course is designed to prepare first responders in the prevention, response, and appropriate post-incident actions needed at the scene of a terrorist event. With the increase in suicide bombings around the world, EMRTC has developed a Prevention of and Response to Suicide Bombing Incidents course, designed to educate the First Responder in the recognition of and appropriate actions to counter suicide-type incidents.

EMRTC also conducts training at its complex in Playas, New Mexico, a premier, one-of-a-kind suburban training and RDT&E facility that includes a 640 acre town site with residential, municipal, and commercial areas; 1,200 surrounding acres; and a complex where simunitions and other devices are used in real-world scenarios. Playas is used as a training and RDT&E complex for homeland security, homeland defense, SWAT and police training and for a variety of other programs.



**TESTING**

EMRTC's field laboratory contains gun ranges that fire from point-blank to 5,000 meters. EMRTC's assets include the ability to modify and meet ballistic experiment requirements. These gun systems may be used to fire specialized/prototype projectiles and fragments at more than 2 kilometers per second.

The Light Gas Gun Facility houses a two-stage light gas gun with a 1.5-inch diameter launch tube that can launch projectiles at velocities greater than 6.4 kilometers per second.

EMRTC's 300 meter monorail sled track is used for testing warheads, penetrators, and shaped charges; for providing precision impact control for target penetration studies; and for developing hard target penetrators and proof of concept testing.

The Rocket Test Site Facility provides a low-cost, liquid propellant rocket engine test capability. Two thrust stands support testing of liquid oxygen/kerosene engines and liquid hydrogen/liquid oxygen engines.

The Countermine Test Track Facility evaluates technologies for detecting and disarming antitank and antipersonnel mines as well as unexploded ordnance.

