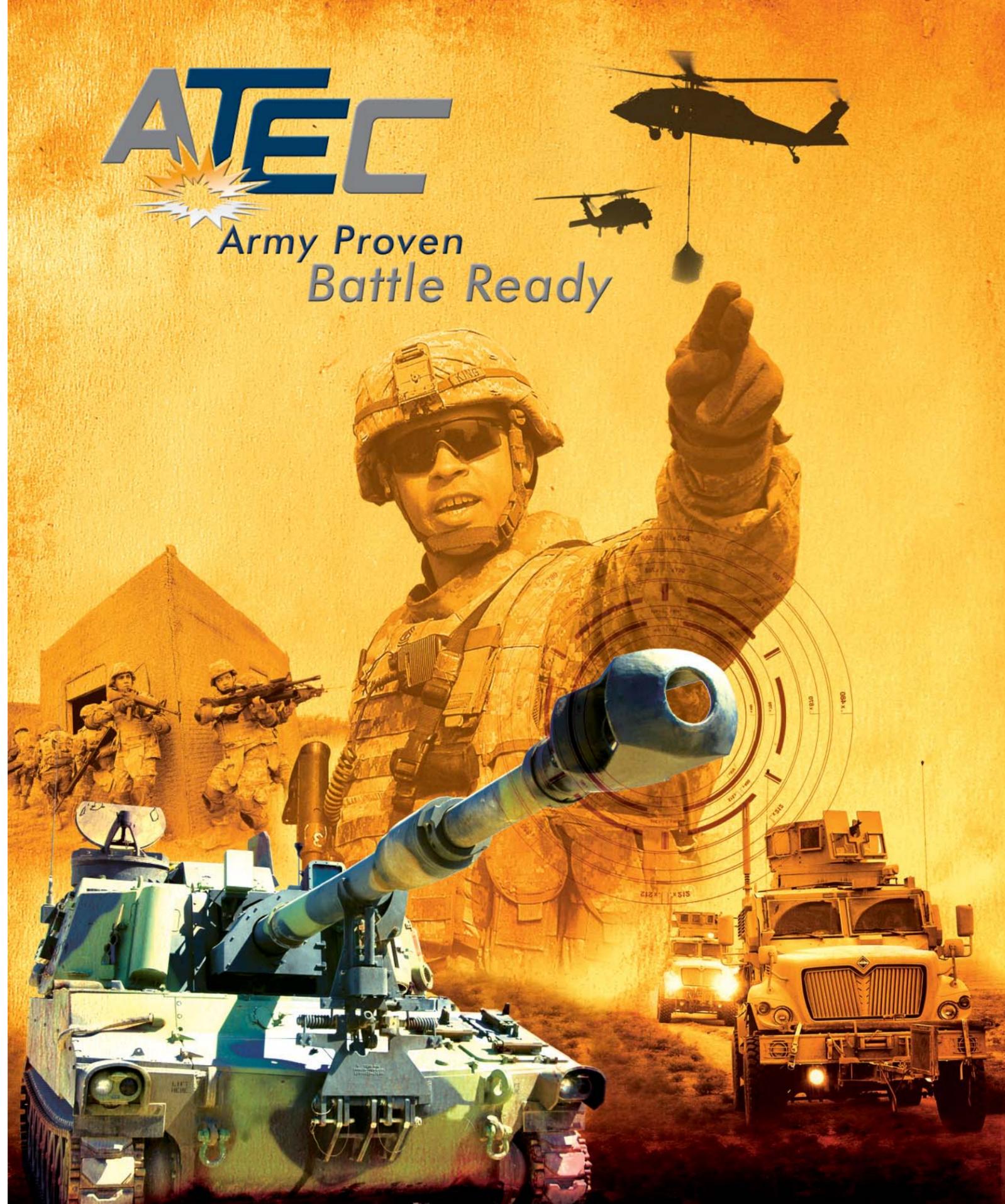


ATEC

Army Proven
Battle Ready



U.S. ARMY TEST AND EVALUATION COMMAND

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Introduction

**Army Testing and Evaluation:
“Army Proven...Battle Ready”**



The U.S. Army Test and Evaluation Command (ATEC), headquartered in Alexandria, Virginia, is the only organization within the Department of Defense to provide full spectrum testing by overseeing both developmental and operational testing as well as evaluation of the test data.

Among the many changes ongoing within ATEC, we continue to look for every opportunity to integrate developmental and operational testing, when appropriate, to be more value-added in increasing efficiency of the overall systems acquisition process, without sacrificing the quality of our test methodology.

Our first priority is near term support to Soldiers on the combat line. As we move into tomorrow, we will also continue our work in accelerating the Army's Transformation through evolving test methodologies for future weaponry and technology, and especially in testing and evaluating the wide range of the Army's Future Combat Systems in direct support of future force objectives.

MG Roger A. Nadeau, CG, ATEC

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History

On Nov. 18, 1998, the Vice Chief of Staff of the Army approved consolidation of developmental and operational testing. That decision led to the redesignation, on Oct. 1, 1999, of the Operational Test and Evaluation Command (OPTEC) to the Army Test and Evaluation Command (ATEC).

Central to the consolidation was ATEC assuming overall responsibility for all Army developmental and operational testing. The Test and Evaluation Command (TECOM) became a major subordinate command of ATEC and was redesignated the U.S. Army Developmental Test Command (DTC), with DTC headquarters remaining at Aberdeen Proving Ground, Maryland. Also, the Test and Experimentation Command (TEXCOM) was redesignated the U.S. Army Operational Test Command (OTC), with OTC headquarters remaining at Fort Hood, Texas. The third ATEC subordinate command that was redesignated encompassed both the Operational Evaluation Command and the Evaluation Analysis Center, which were combined to form the new U.S. Army Evaluation Center (AEC), completing the earlier decision to move developmental and operational evaluation into a single, integrated command.

Under the consolidation, ATEC also received responsibility for installation management of White Sands Missile Range, New Mexico; Dugway Proving Ground, Utah; and Yuma Proving Ground, Arizona. On Oct. 1, 2002, the respective Installation Management Activity regional office assumed that responsibility.

ATEC also took command of Aberdeen Test Center (ATC) at Aberdeen Proving Ground, Maryland; Redstone Technical Test Center (RTTC) at Redstone Arsenal, Alabama; Aviation Technical Test Center (ATTC) at Fort Rucker, Alabama; Electronic Proving Ground (EPG), Fort Huachuca, Arizona; Cold Regions Test Center (CRTC), at Fort Greely, Alaska; and the Tropic Regions Test Center (TRTC), headquartered at Yuma Proving Ground, Arizona, with testing in Hawaii and other locations.

In ongoing support of today's Warfighters, ATEC has created the National Counter-Terrorism/Counter-Insurgency Integrated Test and Evaluation Center (NACCITEC) within the Yuma Proving Ground. This test site provides terrain and geographical features that resemble Iraq in climate and built-up areas and serves as an excellent means of testing Improvised Explosive Device (IED) counter measures for the typical Iraqi urban environment. In addition, ATEC has established a consolidated Counter-IED Directorate within the AEC with resources to quickly plan, coordinate and execute direct test and evaluation support to ensure that the Counter-IED weapons, systems and technology meet Warfighters' ever-evolving needs in Iraq and Afghanistan.

Mission

ATEC plans, integrates and conducts experiments, developmental testing, independent operational testing and independent evaluations and assessments to provide essential information to acquisition decision makers and commanders.

Vision

Remain the Nation's preeminent Test and Evaluation Command with a world-class, highly professional military and civilian work force that focuses on the acquisition of capabilities supporting Warfighters engaged in support of the Global War on Terrorism and traditional acquisition. Also serve as the Army's "Strategic Mirror" ensuring the Army fields capabilities to our Soldiers as quickly as possible without rushing to failure.



Crest

The grid lines represent scientific method and verification in the testing programs conducted by the Command. Black and silver denote the precision and clarity required in carrying out these programs. The wreath stands for high ideals. The balance scale denotes objectivity and represents the testing and evaluation mission of the Command. Blue stands for truth, and gold for excellence.



Patch

The Command's mission, to seek truth through testing and experimentation, is symbolized by the triangle, or fulcrum, balancing a bar and sun. The bar and triangle represent a scale; the sun signifies the search for knowledge, enlightenment and high ideals. Yellow indicates the precious metal gold and represents "the worth of quality assurance of tested products." Dark blue alludes to the sky and space, suggesting the possibilities and discoveries of the future. The red sword characterizes the individual Soldier, whose combat preparedness is aided by the data and information products the organization provides. White expresses the Command's search for truth and sterling quality of the products produced.

ATEC's Wide Range of Customers

- ▶ The American Soldier
- ▶ Congress
- ▶ Chief of Staff and Vice Chief of Staff, U.S. Army
- ▶ Joint Chiefs of Staff
- ▶ Army Deputy Chief of Staff for Operations and Planning
- ▶ Assistant Secretary of the Army for Acquisition, Logistics and Technology
- ▶ Program Executive Officer or Program Manager
- ▶ Director of Operational Test and Evaluation
- ▶ Under Secretary of Defense for Acquisition, Technology and Logistics
- ▶ Director of Information Systems for Command, Control, Communications and Computers
- ▶ Training and Doctrine Command
- ▶ Army Materiel Command
- ▶ U.S. Navy
- ▶ U.S. Air Force
- ▶ U.S. Marine Corps
- ▶ Missile Defense Agency
- ▶ Deputy Under Secretary of the Army for Operations Research
- ▶ Defense Threat Reduction Agency
- ▶ Allied Foreign Countries
- ▶ Commercial Developers and Academia
- ▶ Manufacturers
- ▶ National Security Agency



Organization

The U.S. Army Test and Evaluation Command (ATEC) was established Oct. 1, 1999, by the Vice Chief of Staff with the primary function of ensuring that our Soldiers go to war with weapons that work. ATEC has overall responsibility for all Army developmental and operational testing, operating from three fully integrated major subordinate commands: the U.S. Army Developmental Test Command (DTC), U.S. Army Operational Test Command (OTC); and the U.S. Army Evaluation Center (AEC).

ABNSOTD	Airborne and Special Operations Test Directorate
ADATD	Air Defense Artillery Test Directorate
AEC	Army Evaluation Center
AMSCA	ATEC Mission Support Contracting Activity
ATC	Aberdeen Test Center
ATTC	Aviation Technical Test Center
AVTD	Aviation Test Directorate
BCCTD	Battle Command and Communications Test Directorate
BMDED	Ballistic Missile Defense Evaluation Directorate
C2ED	Command and Control Evaluation Directorate
CIED	Counter-IED Directorate
CRTC	Cold Regions Test Center
CTF	Combined Test Force
DPG	Dugway Proving Ground
DTC	Developmental Test Command
EPG	Electronic Proving Ground
FFED	Future Force Evaluation Directorate
FITD	Futures Integration Test Directorate
FOA	Forward Operational Assessment Team
FED	Fires Evaluation Directorate Team
FSTD	Fire Support Test Directorate
IED	Intelligence Evaluation Directorate
IEWTD	Intelligence and Electronic Warfare Test Directorate
ILS	Integrated Logistics Support
JTB	Joint Test Board
JIEDDO	Joint Improvised Explosive Device Defeat Organization
MAED	Maneuver Air Evaluation Directorate
MGED	Maneuver Ground Evaluation Directorate
MS2TD	Maneuver Sustainment Support Test Directorate
MTD	Maneuver Test Directorate
OTC	Operational Test Command
RAM	Reliability and Maintainability Directorate
RTTC	Redstone Technical Test Center
SED	Sustainment Evaluation Directorate
SVED	Survivability Evaluation Directorate
TRTC	Tropic Regions Test Center
TTD	Transformation Technology Directorate
WSMR	White Sands Missile Range
YPG	Yuma Proving Ground



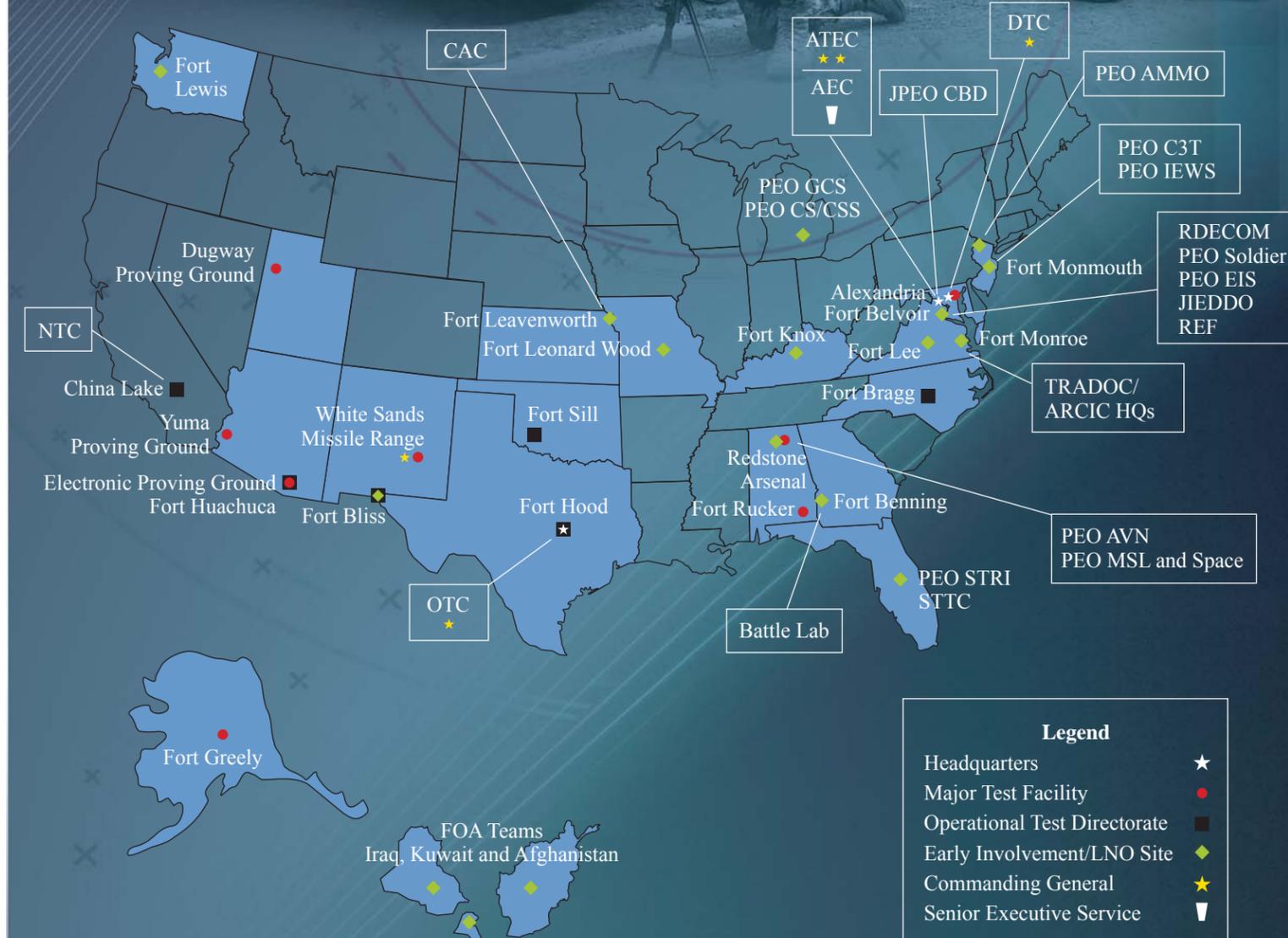
ATEC Liaison Officers

As part of our early involvement initiative, ATEC reaches out to acquisition organizations through Liaison Officers. ATEC Liaison Officers establish an important link with external agencies such as Program Executive Offices (PEO), Program Managers (PM), Training Doctrine Command (TRADOC) and rapid acquisition organizations. Liaison Officers are embedded within these agencies to ensure information exchange remains constant throughout the life cycle — from requirements documentation through the Test and Evaluation (T&E) process and beyond. Early involvement with Liaison Officers translates directly into cost savings by avoiding the rising cost of change within the system design life cycle.

Mission

ATEC provides experienced T&E Liaison Officers to:

- ▶ Provide early involvement and facilitate a direct communication link between ATEC and TRADOC/PEO.
- ▶ Provide advice and assistance in developing T&E strategies.
- ▶ Coordinate a T&E cost estimating process between ATEC and PEO/PMs, and ensure adequate funding is budgeted for T&E in the Program Objective Memorandum (POM).
- ▶ Provide assistance in resolving conflicts on T&E program-related matters.
- ▶ Improve PEO/PM understanding of ATEC's mission and understanding of the ATEC System Team (AST) member mission.
- ▶ Work with ATEC/PM Integrated Product Teams (IPT) to improve T&E planning, execution and evaluation.



ATEC Liaison Offices (LNO)

LNO Branch Chief (703) 681-8353

TRADOC

CAC LNO, Fort Leavenworth, Kan. (913) 684-4280

CASCOM LNO, Fort Lee, Va. (804) 734-1135

Infantry Support Cell, Fort Benning, Ga. (706) 545-7952

DSN: 835-7952

Armor Center, Fort Knox, Ky. (502) 624-4782

TRADOC HQ LNO, Fort Monroe, Va. (757) 788-3056

Program Executive Offices (PEO)

PEO Ammo LNO, Picatinny Arsenal, N.J. (973) 724-0521

PEO AVN LNO, Redstone Arsenal, Ala. (256) 876-6413

PEO C3T, Fort Monmouth, N.J. (732) 427-4251

PEO CS&CSS LNO, Warren, Mich. (586) 574-5275

DSN: 786-5275

PEO CBD LNO, Falls Church, Va. (703) 681-6444

PEO EIS LNO, Fort Belvoir, Va. (703) 806-3662

PEO GCS LNO, Warren, Mich. (586) 574-6769

PEO IEW&S LNO, Fort Monmouth, N.J. (732) 427-0054

DSN: 987-0054

PEO Soldier LNO, Fort Belvoir, Va. (703) 704-1297

DSN: 654-1297

PEO STRI LNO, Orlando, Fla. (407) 384-5353

PEO Missiles and Space LNO, Redstone Arsenal, Ala. (256) 876-6413

JIEDDO, Alexandria, Va. (703) 602-5022

NTC, Fort Irwin, Calif. (760) 380-8256

DSN: 470-8256

Rapid Equipping Force (REF)

Fort Belvoir, Va. (703) 704-4244

DSN: 654-4244

(703) 704-2319

DSN: 654-2319

Army Test and Evaluation Command Support to the Warfighter

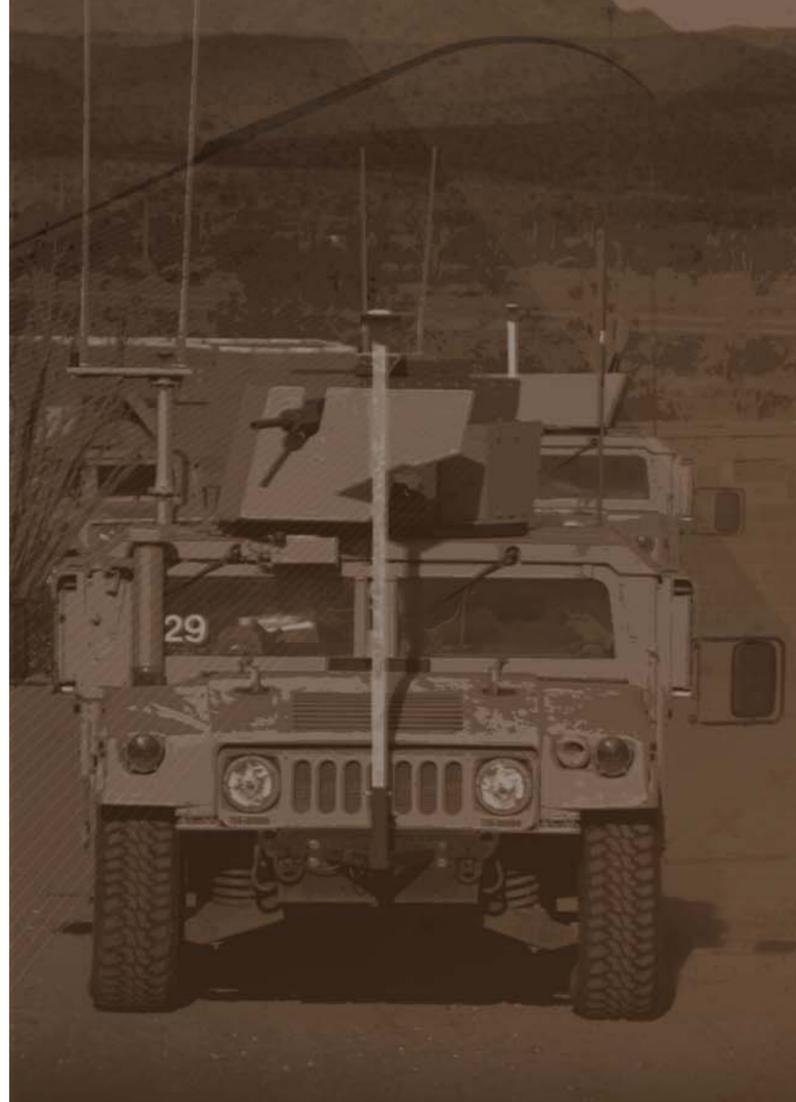
Forward Operational Assessment Teams Assess Systems in Theater

ATEC Forward Operational Assessment (FOA) teams, under the direct command of the Operational Test Command, Fort Hood, Texas, began deploying in 2003 in support of the Global War on Terrorism (GWOT). They began embedding with units in Iraq, Afghanistan and Kuwait in January 2005 to collect data on critical systems being used by the Warfighters. This includes systems off-the-shelf and future force technology equipment. Soldiers in theater share their personal experiences with operating systems on the battlefield with FOA teams.

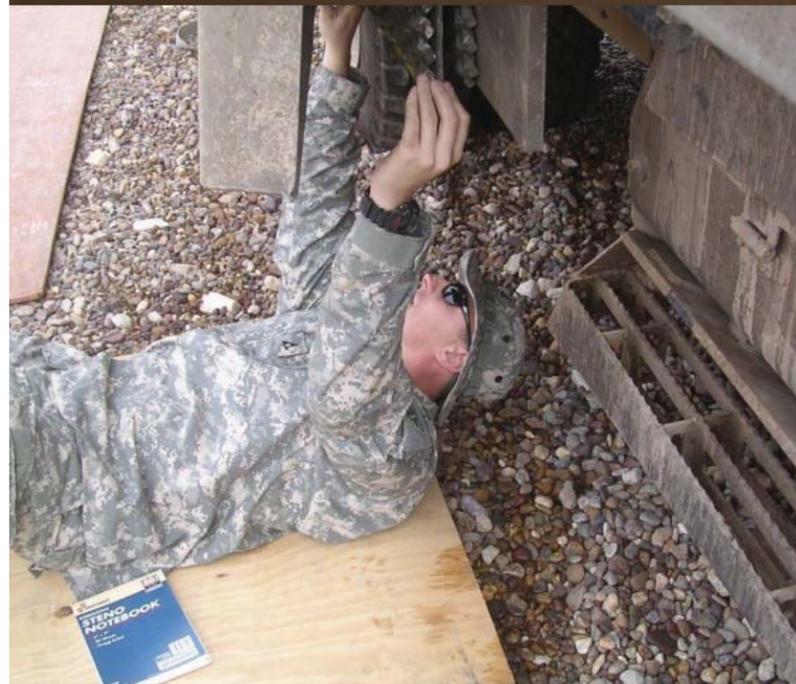
The FOA teams rotate every six months and have a two-part mission that combines their roles as both testers and liaisons for Soldiers and the institutional Army. They conduct interviews with Soldiers and leaders in theater to gather data on how selected systems or equipment are performing in that environment. The other part of the mission is to inform Soldiers and leaders about materiel capabilities and limitations, as a result of testing in the continental United States (CONUS).

Some of the systems that the current FOA team will assess include:

- ▶ Enhanced Logistical Support Off-Road Vehicle (ELSORV).
- ▶ Mine Resistant Ambush Protective Vehicle (MRAP).
- ▶ Enhanced Mobile Rapid Aerostat Initial Deployment (EMRAID).
- ▶ Boomerang.
- ▶ MARCbot.
- ▶ PackBot.
- ▶ M1A2 TUSK.
- ▶ MRAP Ambulance.
- ▶ Add-on Armor Kits.
- ▶ Mine Rollers.
- ▶ Task Force ODIN.
- ▶ Unmanned Aerial Systems.



A Forward Operational Assessment team member discusses with a mechanic the repairs of a bullet hole on an M1151 Humvee in Afghanistan. FOA team members travel to theater of combat operations in order to assess equipment and its functionality. (U.S. Army photo)



An ATEC FOA team member inspects an MRAP Expedient Armor Program add-on armor plate on an MRAP vehicle in Iraq. (U.S. Army photo)



Developmental Testing

U.S. Army Developmental Test Command

Aberdeen Proving Ground, Maryland

Supporting Soldiers Through Rigorous, Realistic Testing

Who We Are

- ▶ The Army's premier developmental tester.
- ▶ Department of Defense's (DoD) largest, most diverse array of testing capabilities.
- ▶ Nine subordinate test centers providing the full spectrum of arctic, tropic, desert and other environments under natural or precisely controlled conditions:
 - Aberdeen Test Center (ATC), Aberdeen Proving Ground, Maryland.
 - Aviation Technical Test Center (ATTC), Fort Rucker and Restone Arsenal, Alabama.
 - Cold Regions Test Center (CRTC), Fort Greely, Alaska.
 - Electronic Proving Ground (EPG), Fort Huachuca, Arizona.
 - Redstone Technical Test Center (RTTC), Redstone Arsenal, Alabama.
 - Tropic Regions Test Center (TRTC), Schofield Barracks, Hawaii, and Panama.
 - West Desert Test Center (WDTC), Dugway Proving Ground, Utah.
 - White Sands Test Center (WSTC), White Sands Missile Range, New Mexico.
 - Yuma Test Center (YTC), Yuma Proving Ground, Arizona.

What We Do

- ▶ Provide a full range of technical support, including:
 - Conducting test planning, execution and reporting.
 - Collecting unbiased test data on the technical feasibility of early concepts.

- Collecting data to assess technical risks during system development.
- Evaluating the safety of Army systems and conducting performance testing.
- Maturing designs to lower technical risks.
- Validating manufacturers' design and performance at both the system and component levels.
- ▶ Fully engaged in the Global War on Terrorism (GWOT) from in-theater support to development of armor protection and Counter-Improvised Explosive Devices (C-IED) solutions to testing.
- ▶ Support developmental, rapid initiatives, production and live fire tests.
- ▶ Develop and procure new test technology, test instrumentation and selected models and simulation.
- ▶ Conduct Distributed Test Events to support the Future Force.
- ▶ Test across the full spectrum of physical and electromagnetic environments.
- ▶ Provide technical expertise to DoD organizations; other federal agencies; local, state and foreign governments; academia; and private industry.
- ▶ Support development of acquisition strategy, statement of work, performance specification and test/simulation execution strategy.
- ▶ Test equipment and systems under a variety of conditions and possible uses to ensure the safety of Soldiers and operators from earliest training and testing through fielding.

Contact Us

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Marines fire the .50 caliber weapon on the Expeditionary Fire Support System (EFSS) Light Strike Variant during testing at Cold Regions Test Center. (U.S. Army photo)



Test of the Shadow Unmanned Aerial Vehicle (UAV) at West Desert Test Center, U.S. Army Dugway Proving Ground, Utah. The Shadow UAV is manufactured by AAI of Hunt Valley, Maryland. It is designed for aerial reconnaissance. This photo was taken May 6, 2008, at Dugway Proving Ground's Michael Army Airfield. (U.S. Army photo)



Army Test Centers Focus Efforts on Protecting Soldiers in Harm's Way

By Mike Cast
Developmental Test Command Public Affairs

Under ATEC guidance, Development Test Command (DTC) testers have worked around the clock to support the fielding of systems such as the Mine Resistant Ambush Protected (MRAP) vehicles to Iraq and Afghanistan. DTC's National Counter-Terrorism/Counter-Insurgency Integrated Test and Evaluation Center (NACCITEC) at Yuma Proving Ground (YPG) has been testing at an accelerated pace to meet the needs of an Army at war.

DTC's Electronic Proving Ground (EPG) and ATEC's Intelligence and Electronic Warfare Test Directorate, both located at Fort Huachuca, Arizona, have been working with the NACCITEC to determine which systems are most effective. EPG continues to support Counter-IED testing at YPG because it has rugged desert terrain and can safely detonate explosives during testing. Creating a realistic radio-frequency test environment is one of EPG's challenges, so personnel from this test center deployed to the combat theater and collected information that enabled EPG to reproduce this environment.

"Situational awareness" among friendly forces is crucial if units are to conduct operations jointly and avoid incidents of fratricide. EPG has been heavily involved in testing the Force XXI Battle Command, Brigade and Below, which evolved into the Blue Force Tracker, a system that consists of a computer, satellite antenna and Global Positioning System receiver. EPG also has tested the Joint Network Node, a system designed to provide tactical and strategic Internet services to troops in the field, including over-the-horizon communications.

Aberdeen Test Center in Maryland — the Defense Department's lead agency for land-combat, direct-fire and live-fire vulnerability testing — has ramped up testing to help the Army field a variety of Counter-IED systems. Testing the MRAP vehicles has been one of its highest priorities. Col. John Rooney, the test center's commander, organized a focused workforce of 250 personnel to test MRAP's ballistics survivability and automotive performance.

"We are supporting what is probably the largest rapid-fielding initiative of a major-category program," he said. The focus has been ballistic testing, but automotive performance and reliability tests have been rigorous as well.

The MV-4 mine roller is another system designed to counter the IED threat. DTC's White Sands Missile Range (WSMR) in New Mexico has tested Model A of this system. WSMR testers have subjected it to electromagnetic environments testing as well as other tests to determine the hazards of electromagnetic radiation to personnel and susceptibility to external radio frequencies.

DTC's Redstone Technical Test Center in Alabama has supported the war effort by testing the Hellfire missile, a weapon the Air Force is using on its Predator unmanned aerial system. Because of testing, the Army has made modifications so this weapon can be launched from both the Predator and the Army's Apache helicopter.



Soldiers such as this Army captain in Iraq must rely on communications systems tested at the Developmental Test Command's Electronic Proving Ground. (Photo by Navy Petty Officer 1st Class Jeremy Wood)



Supplies are dropped to a drop zone in Afghanistan. Yuma Test Center at Yuma Proving Ground is the Developmental Test Command's center of expertise for testing such air-delivery systems. (Photo by Staff Sgt. Brian Ferguson)

The Army needs reliable sensors to protect aircraft crews, so DTC's Aviation Technical Test Center (ATTC) has been testing the Common Missile Warning System for several years. The system depends on the accuracy of its sensors and the rapid deployment of countermeasures, including flares that draw heat-seeking missiles away from the target aircraft. ATTC experimental test pilots have deployed to Afghanistan and Iraq to assess this and other systems while flying combat missions, and ATTC modified its test infrastructure to test this system more effectively, producing data from the combat theater and stateside so the Army could evaluate the performance of this system.



Aberdeen Test Center

Aberdeen Proving Ground, Maryland

One of the Department of Defense's Most Diverse Test Facilities

Who We Are

- ▶ A Major Range and Test Facility Base, whose primary mission is to support Department of Defense test and evaluation requirements.
- ▶ The Army's Center of Excellence for congressionally mandated live-fire vulnerability and lethality testing.
- ▶ The Defense Department's lead test center for automotive, direct-fire, nonlethal weapons, unmanned ground vehicles, littoral warfare, Soldier systems, transportability, survivability and lethality testing.
- ▶ An accredited federal laboratory and leading center for technology transfer and dual-use partnerships with industry, academia and other DoD components.
- ▶ A center that supports testing worldwide using extensive mobile instrumentation, satellite communications and leading-edge technologies.

What We Do

- ▶ Conduct testing and evaluation of rapid materiel equipping initiatives in support of the Global War on Terrorism.
- ▶ The Army's lead automotive testing facility.
- ▶ Perform live-fire vulnerability/lethality testing.
- ▶ Test military firepower systems including guns and munitions (direct fire and small arms).
- ▶ Test Soldier systems and support equipment.
- ▶ Provide data to support safety releases and confirmations, so Soldiers can safely use systems.
- ▶ Perform testing for federal, state and local governments, academia, private industry and foreign governments.

Major Programs

- ▶ Automotive and ballistic testing of Mine Resistant Ambush Protected systems.
- ▶ Ballistic testing of Soldier helmets and body armor.
- ▶ Expedient armor and up-armor kit testing for light, medium and heavy tactical vehicles.
- ▶ Improvised Explosive Device (IED) and Explosively Formed Penetrator (EFP) survivability testing.
- ▶ Automotive and ballistic testing of Stryker variants including the Mobile Gun System (MGS).
- ▶ Area Mine Clearance Systems.
- ▶ Armor plate acceptance testing.
- ▶ Large-caliber ammunition lot acceptance testing.
- ▶ Homeland Security.
- ▶ Modeling and simulation capabilities to support Future Combat Systems.
- ▶ System-of-Systems distributed test events and experimentation.

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An Abrams tank fires during testing at the U.S. Army Aberdeen Test Center. (U.S. Army photo)



A Category II Mine Resistant Ambush Protected (MRAP) vehicle runs a test course at Aberdeen Test Center's Perryman Area during the automotive performance test. (U.S. Army photo)



Aviation Technical

Test Center

Fort Rucker and Redstone Arsenal, Alabama

Aviation Testing for the 21st Century

Who We Are

- ▶ A cadre of military and civilian experimental test pilots, flight test engineers and technicians who conduct developmental testing of manned and unmanned aircraft and aviation systems.
- ▶ A center of Army aviation expertise whose test facilities provide more than 220,000 square feet of workspace at both Cairns Army Airfield at Fort Rucker and Redstone Army Airfield at Redstone Arsenal, Alabama, for modification, maintenance, modeling and support of test systems.
- ▶ The premier Army agency for testing military aircraft throughout the acquisition, modernization and sustainment life cycle in support of America's Warfighters.

What We Do

- ▶ Conduct airworthiness qualifications of Army aircraft.
- ▶ Test the flight performance of aviation systems.
- ▶ Test aircraft handling qualities.
- ▶ Test the integration of aviation systems into aircraft.
- ▶ Test for human factors engineering and system safety.
- ▶ Test digital communications systems.
- ▶ Test aircraft handling under icing and rain conditions.
- ▶ Conduct aircraft modifications and maintenance.
- ▶ Instrument aircraft.
- ▶ Collect and process test data.
- ▶ Conduct test-flight simulations.
- ▶ Conduct flight-test engineering.

Major Programs

- ▶ Multi-Aircraft Common Missile Warning System Upgrades and System Performance Testing.
- ▶ Advanced Threat Infrared Counter Measure Testing UH-60/CH-47.
- ▶ UH-60M Upgrades Program.
- ▶ YRH-70A Armed Reconnaissance Helicopter Airworthiness Testing.
- ▶ Joint Cargo Aircraft.
- ▶ AH-64D Longbow Apache Block III.
- ▶ Unmanned Aerial Systems and Payload Testing.
- ▶ UH-60 Upturned Exhaust Program.

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A tester is lowered by rope from a Blackhawk helicopter during testing at the Army Aviation Technical Test Center. (Photo courtesy of ATTC)



Soldiers form a safety chain as a CH-47 Chinook helicopter lifts off. The Aviation Technical Test Center continues to support the Army's CH-47 test requirements. (U.S. Army photo)

Cold Regions Test Center

Fort Greely, Alaska

*The Department of Defense's
Natural Cold Environment Tester*

Who We Are

- ▶ Defense Department's premier tester for winter warfare, with long-standing expertise in cold-weather testing and more than 670,000 acres of impact area and maneuver space.
- ▶ A test environment combining the varied and synergistic effects of terrain, temperature, wind and snow over a large area.
- ▶ Owner of a 3.2-mile paved test track with skid pad and test slopes, including the capability to produce large-scale ice and snow fields.
- ▶ Site of 800-foot unmanned aerial system landing strip within 30 kilometers of Afghanistan-like mountains reaching 13,000 feet.
- ▶ Designated user of airspace over test ranges at Donnelly Training Area of Fort Wainwright, Alaska.

What We Do

- ▶ Test military tracked and wheeled vehicles.
- ▶ Test manned and unmanned ground vehicles and aerial systems.
- ▶ Test weapon systems and munitions (direct and indirect fire) as well as small arms.
- ▶ Test Soldier systems and support equipment.
- ▶ Test Soldier clothing and equipment.
- ▶ Test brake, suspension, traction and handling (for commercial customers).
- ▶ Partner with other test centers in a cooperative effort to develop standardized unmanned vehicle testing procedures in preparation for Future Combat Systems.
- ▶ Provide access to assault strips, drop zones and a Military Operations in Urban Terrain (MOUT) site.
- ▶ Provide experimentation sites and standardized test protocols for unmanned systems development.

Major Programs

- ▶ All Stryker configurations, most recently the Mobile Gun System (MGS).
- ▶ Support for fielding of Strykers to U.S. Army Alaska through cold-weather testing and interaction with Stryker Brigade Combat Team Soldiers.
- ▶ Testing of indirect fire weapons such as Excalibur, Guided Multiple Launch Rocket System, and Marine Corps Expeditionary Fire Support System.
- ▶ Support for operational tests and joint service tests such as the Marine Corps Expeditionary Fighting Vehicle (EFV) and Lightweight Supply Replenishment Vehicle (LSRV).
- ▶ Cold-weather testing of the SPIDER and SLAM munitions systems.

Contact Us

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A test NCO fills out data collection sheets for the Talon Laser Target Locator Module. (Photo courtesy of CRTC)



Soldiers fire weapons using the Thermal Weapon Sight at CRTC. (Photo courtesy of CRTC)

Dugway Proving Ground and West Desert Test Center

Dugway, Utah

The Focal Point for Chemical and Biological Defense

Who We Are

- ▶ Department of Defense (DoD) lead tester for:
 - United States and allied Chemical and Biological (CB) defense equipment.
 - Nuclear, Biological and Chemical (NBC) contamination survivability of defense materiel.
- ▶ Program Manager Operational Meteorology for Army Research Development Test and Evaluation.
- ▶ A DoD Major Range and Test Facility Base whose test facilities and ranges comprise approximately 800,000 acres. DPG and Utah Test and Training Range maintain a team relationship to serve customers and use the many resources available.

What We Do

- ▶ Conduct CB collective and individual protection, detection, contamination avoidance and decontamination testing for joint services, combatant commands and other agencies.
- ▶ Support the CB weapons conventions.
- ▶ Manage the development of CB defense models and validation tests.
- ▶ Act as the primary CB defense test center under the Reliance Program.
- ▶ Host full-scale field exercises that enable emergency response organizations to validate their tactics, techniques and procedures for use during CB weapons incidents.
- ▶ Provide test and training ranges with nine drop zones, 91 artillery firing points and four major impact areas (231,000 acres).
- ▶ Maintain capability to handle all Army and Air Force aircraft with fully lighted 11,000 foot runway.
- ▶ Determine the reliability and survivability of all types of military equipment in the CB environment.

Major Programs

- ▶ Chemical:
 - Stryker Nuclear Biological and Chemical Reconnaissance Vehicle.
 - Joint Service Lightweight Suit Technology.
 - Joint Protective Aircrew Ensemble.
 - Joint Service Chemical Environmental Survivability Mask.
 - Joint Service Family of Decontamination Systems.
 - Joint Service Lightweight Standoff Chemical Agent Detector.
 - Joint Chemical Agent Detector.
 - Future Combat System.
- ▶ Biological:
 - Joint Biological Point Detection System.
 - Joint Biological Agent Identification and Detection System.
 - Joint Biological Standoff Detection System.
 - Critical Reagent Program.
 - Whole System Live Agent Test.
 - Support of FBI and EPA regarding anthrax investigation/decontamination.
 - Homeland Security support for Center for Disease Control/National.
 - Institute for Occupational Safety and Health pathogen sampling.
- ▶ Meteorological:
 - Joint Science and Technology Office Sensor Data Fusion Program.
 - Four-Dimensional Weather System Development.
 - Defense Threat Reduction Agency Modeling Program.
 - Joint Urban 2003.
 - Defense Advanced Research Projects Agency Pentagon Shield.

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An XM106 Smoke/Obscurant grenade is tested for its ability to obscure an object on one of the vast test ranges at Dugway Proving Ground, Utah. (U.S. Army photo)



An Advanced Gun System (AGS) projectile firing test is performed from an M110 Self Propelled 155mm gun. Data from the firing of these projectiles will be used to create and improve projectiles in the AGS, to be used on the U.S. Navy's proposed DD(X) destroyer. (U.S. Army photo)

Electronic Proving Ground

Fort Huachuca, Arizona

The Army's Center of Expertise for Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) and Networks Testing

Who We Are

- ▶ Development Test Command's (DTC) network and C4ISR tester at Fort Huachuca, Arizona, providing test support for a full range of C4ISR systems, Systems of Systems (SoS) and networks.
- ▶ Electromagnetically quiet ranges, controlled environment for open air testing.
- ▶ A cost-reimbursable government test range with extensive laboratory facilities, controlled air space and test sites.
- ▶ Test ranges and air space that total some 70,000 acres at Fort Huachuca, 23,000 acres at Wilcox Dry Lake, and more than 100,000 acres at Gila Bend; additional acreage can be coordinated to accommodate tests requiring additional acreage.
- ▶ Experts in testing distributed networks and in SoS testing.
- ▶ DTC's information assurance (IA) tester and the Army's TEMPEST tester.
- ▶ ATEC's lead for Defense Homeland Security's Secure Border Initiative.
- ▶ Flight test facility for unmanned/micro aerial vehicles.

What We Do

- ▶ Plan and conduct technical tests to determine capability, limitations and vulnerabilities of complex electronic equipment and systems, including:
 - Command and control
 - Communications
 - Computers
 - Surveillance and reconnaissance
 - Intelligence and electronic warfare
 - Global positioning and navigation
 - The Global Information Grid

- ▶ Conduct electromagnetic effects testing of electronics, C4ISR, networks and information processing systems.
 - Conduct EMI/EMC, mutual interference, co-site interference and TEMPEST tests.
 - Conduct antenna pattern tests, mounted and unmounted on host platforms.
- ▶ Test unmanned aerial system C4ISR payloads.
- ▶ Analyze data and the results of technical tests.
- ▶ Develop innovative advanced technology solutions via instrumentation, stimulations and simulations to enhance test planning, situational awareness, data collection and reduction, and test after-action review.
- ▶ Provide quick-reaction support to real world missions and homeland defense.
- ▶ Provide test support to other service branches, government agencies and civilian corporations.
- ▶ Support C4ISR systems and network test aspects of commodity areas as they are tested by other DTC Test Centers.
- ▶ Test program management.

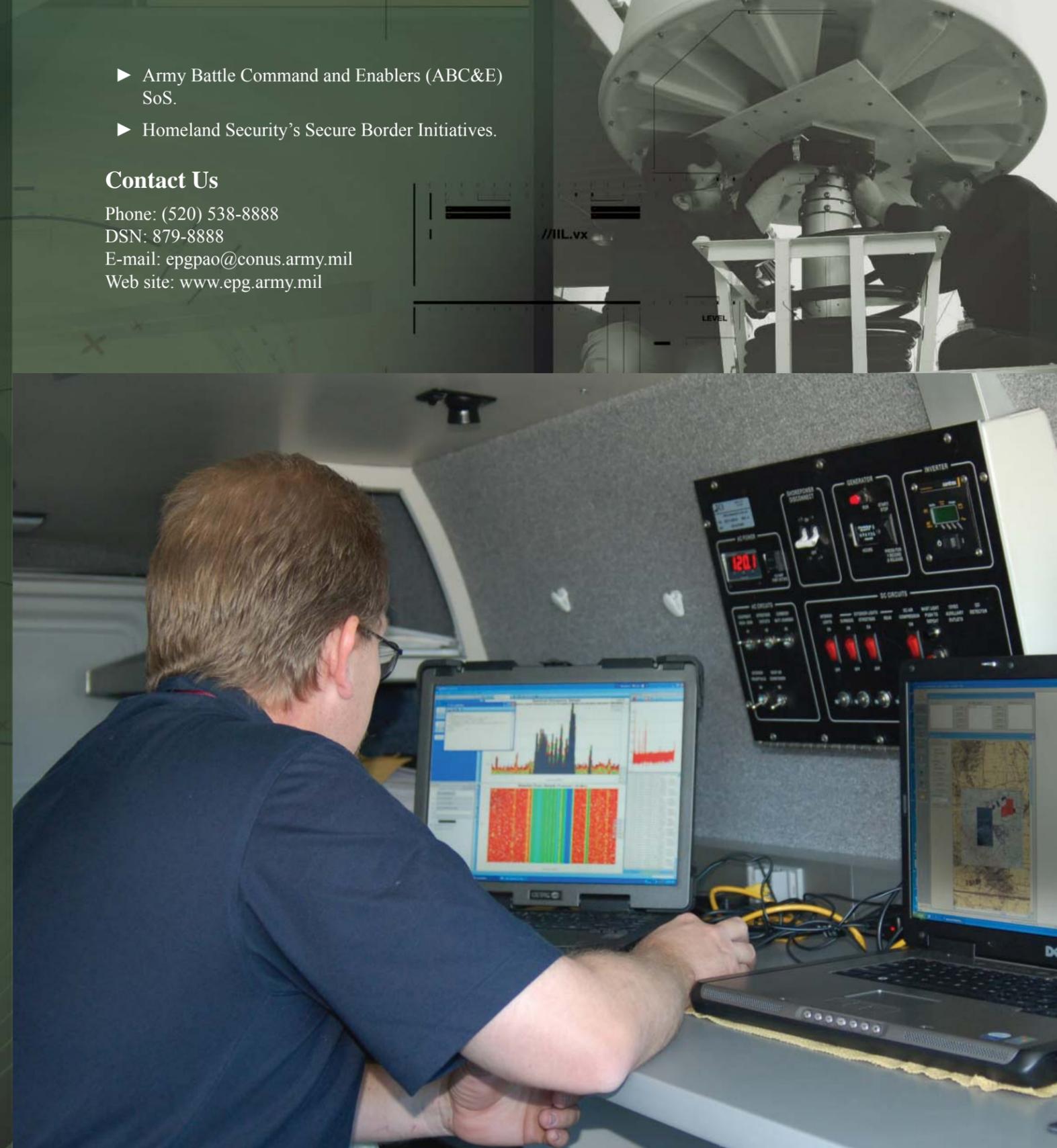
Major Programs

- ▶ IED electronic counter systems.
- ▶ Force XXI Battle Command Brigade and Below (FBCB2) and Blue Force Tracker (BFT) Joint Capabilities Release (JCR).
- ▶ Joint Tactical Radio System (JTRS).
- ▶ Stryker Family of Vehicles.
- ▶ Prophet.
- ▶ Compass Call.
- ▶ Joint Warning and Reporting Network (JWARN).
- ▶ Global Positioning System (GPS).
- ▶ Beacon Tester.
- ▶ Land Warrior.
- ▶ Joint Network Management System (JNMS).
- ▶ The distributed network and information grid that supports Future Combat Systems (FCS).

- ▶ Army Battle Command and Enablers (ABC&E) SoS.
- ▶ Homeland Security's Secure Border Initiatives.

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A tester monitors frequencies in support of Joint Tactical Radio System testing. (U.S. Army photo)

Redstone Technical Test Center

Redstone Arsenal, Alabama

An Army Leader in Aviation Components and Missile Systems Testing

Who We Are

- ▶ The Army's tester of small rockets, missiles and weapon components and subsystems as well as unmanned and remotely operated weapon and sensor systems.
- ▶ The Army's technical testers for aviation subsystems and components.
- ▶ The Army's primary electromagnetic environmental effects tester for Army Aviation Systems.
- ▶ A center of expertise for testing lightning's effects on explosive and hazardous materials.
- ▶ A lead developer of Distributed Testing technologies.
- ▶ The technical tester for Active Protection Systems.

What We Do

- ▶ Provide complete test capabilities for small rocket and missile systems, including flight, warhead and motor performance.
- ▶ Conduct static and dynamic testing of warheads and fuses including urban targets.
- ▶ Perform Insensitive Munitions testing.
- ▶ Perform safety, qualification and reliability testing of Army aircraft components and systems in support of Air Worthiness Qualification.
- ▶ Conduct environmental and electromagnetic environmental effects testing of components, subsystems and systems.
- ▶ Test sensors/seekers/designators for weapon systems and homeland defense systems.
- ▶ Test Counter-IED technologies including ground and aerial intelligence, surveillance and reconnaissance sensor systems and electronic countermeasure systems.
- ▶ Test under simulated battlefield conditions that include obscurants and countermeasures.

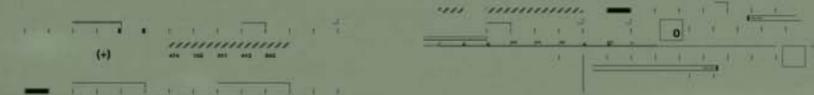
- ▶ Test systems in natural and induced operating environments.
- ▶ Operate the Army's largest propulsion RDT&E test facility for rocket motors and rotor craft engines.
- ▶ Exploitation of foreign systems via MSIC.

Major Programs

- ▶ Longbow/HELLFIRE, JAVELIN and TOW Missile Systems.
- ▶ Patriot Missile and Terminal High Altitude Area Defense (THAAD) Missile Systems.
- ▶ UH-60 Blackhawk, CH-47 Chinook, OH-58 Scout/Attack, ARH-70A Armed Reconnaissance and AH-64 Apache Attack Helicopters.
- ▶ Unmanned Aerial Systems (UAS) Shadow, Raven and Sky Warrior Alpha.
- ▶ Aircraft Survivability — Common Missile Warning System (CMWS), Advanced Threat Infrared Countermeasures (ATIRCM).
- ▶ Army Airborne Command and Control System (A2C2S).
- ▶ Constant Hawk, Highlighter, Night Eagle, ARMSS, Eagle Eye, and Engineer Reconnaissance Vehicle.
- ▶ Non-Line-of-Sight Launch System.
- ▶ High Mobility Artillery Rocket System (HIMARS) and Guided Multiple Launch Rocket System.
- ▶ Bunker Defeat Munitions and other shoulder launched systems.

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An HH-60M Electromagnetic Vulnerability (EMV) Test at Redstone Technical Test Center (U.S. Army photo)



Honest John solid rocket motor static fires at Test Area 5 on Redstone Arsenal, Alabama. (U.S. Army photo)

Tropic Regions Test Center

Yuma Proving Ground, Arizona

Giving the Department of Defense Firm Answers on Jungle Warfare

Who We Are

- ▶ Department of Defense lead tester for materiel and systems in the tropic environment.
- ▶ Test facilities and ranges are located in Hawaii, Panama, Suriname, and other tropic areas within Central and South America.

What We Do

- ▶ Test all types of systems and materiel in a tropical environment to keep American armed forces prepared to fight, win and survive in any jungle environment.
- ▶ Conduct tests of Army and joint program systems in realistic tropic environments.
- ▶ Maintain an array of test areas in a variety of tropic forest, open lands and coastal environments.
- ▶ Challenge weapons and other systems with real-world tropic issues in an extremely complex test bed that cannot be duplicated in a chamber environment, including:
 - Insects.
 - Destructive fungi.
 - Bacteria.
 - Heavy rains.
 - High temperatures with high humidity levels.
- ▶ Test Soldier systems in tropic environments, assessing:
 - Durability.
 - Performance.
 - Reliability.
 - Human factors.
- ▶ Conduct portability and mobility tests to evaluate tropic issues, including:
 - System ruggedness.
 - Component analysis.
 - Small team effectiveness.
 - System analysis.

- ▶ Use standardized test sites, courses and written procedures to determine system performance and reliability and interpret the results.
- ▶ Combine the realism of Operational Test principles with the control of Developmental Testing techniques to produce objective results.
- ▶ Evaluate Soldiers' system materiel through human factors engineering.
- ▶ Test Soldier system support equipment performance and reliability.
- ▶ Test environmental military technologies.
- ▶ Provide test support to other service branches, government agencies and private industry.

Major Programs

- ▶ Nuclear, Biological and Chemical Reconnaissance Vehicle (NBCRV) variant of Stryker vehicle and M-56 Smoke Generation System (SGS).
- ▶ Joint Soldier system programs and chemical biological defense systems:
 - Joint Service Lightweight Integrated Suit Technology.
 - Joint Chemical Agent Detector.
 - Joint Lightweight Standoff Chemical Agent Detector.



The first test conducted by the Tropic Regions Test Center in the nation of Suriname: a Stryker fighting vehicle transported to the country by ship negotiates a rugged mountain road. (U.S. Army photo)



A TRTC employee monitors automated data obtained during a long-term storage test. (U.S. Army photo)

- ▶ Sensor and communications systems:
 - Airborne multisensor programs.
 - Ground sensors.
 - Air and ground communications systems.
- ▶ Collaborating with industry to develop tropic testing capabilities for heavy vehicles.

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White Sands Missile Range

White Sands, New Mexico

Department of Defense's All Overland Test Range

Who We Are

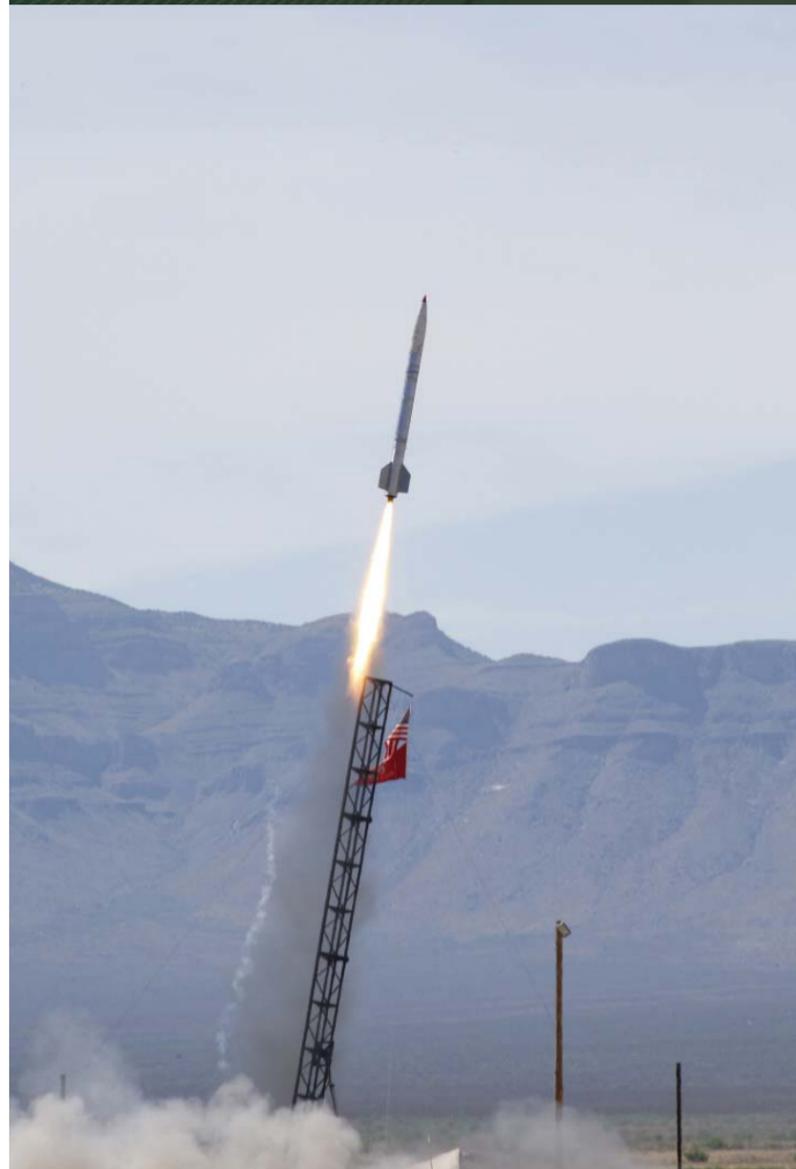
- ▶ Department of Defense's (DoD) largest overland Test Range (2.2 million acres).
- ▶ Developmental Test Command's Test and Evaluation Range supporting joint, interagency and multinational tests.
- ▶ Expert in complex and multimission command and control.
- ▶ Inter-Range Control Center for distributed testing.
- ▶ Manager of DoD zero-to-infinity restricted air space, with full command and control authority.
- ▶ Primary developmental tester of the Future Combat Systems.
- ▶ Provider of high quality services for experimentation, test, research, assessment, development and training for Warfighters and customers in support of the Nation at war.

What We Do

Plan, conduct, analyze and report the results of developmental tests, production tests and other tests in the following areas:

- ▶ Air and missile defense systems.
- ▶ Aircraft systems: Aircraft Armaments Fixed-Wing, Aircraft Survivability Equipment.
- ▶ Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR):
 - C4 Systems Integrated within Missile, Automotive and Vehicle Systems.
 - Surveillance and Reconnaissance, Information Warfare, Intelligence and Navigation Systems.
 - Target Acquisition Architectures.
- ▶ Directed energy weapons: HPM and Laser.
- ▶ Electromagnetic environmental effects: EMI/EMC, EMP; HERO, HERF, HERP, electrical bonding, external grounds and EMCON.
- ▶ Indirect Fire Systems: Indirect Fire Weapon Systems.

- ▶ Missiles and rockets (non-aviation): Line/Non-Line-of-sight; propulsion systems; components/subsystems.
- ▶ Non-Lethal Weapons.
- ▶ Nuclear weapons effects tests.
- ▶ System-of-systems integration: FCS/BCT Level Live; Distributed Testing (Inter-Range Control Center).
- ▶ Unmanned Aircraft Systems: Performance.



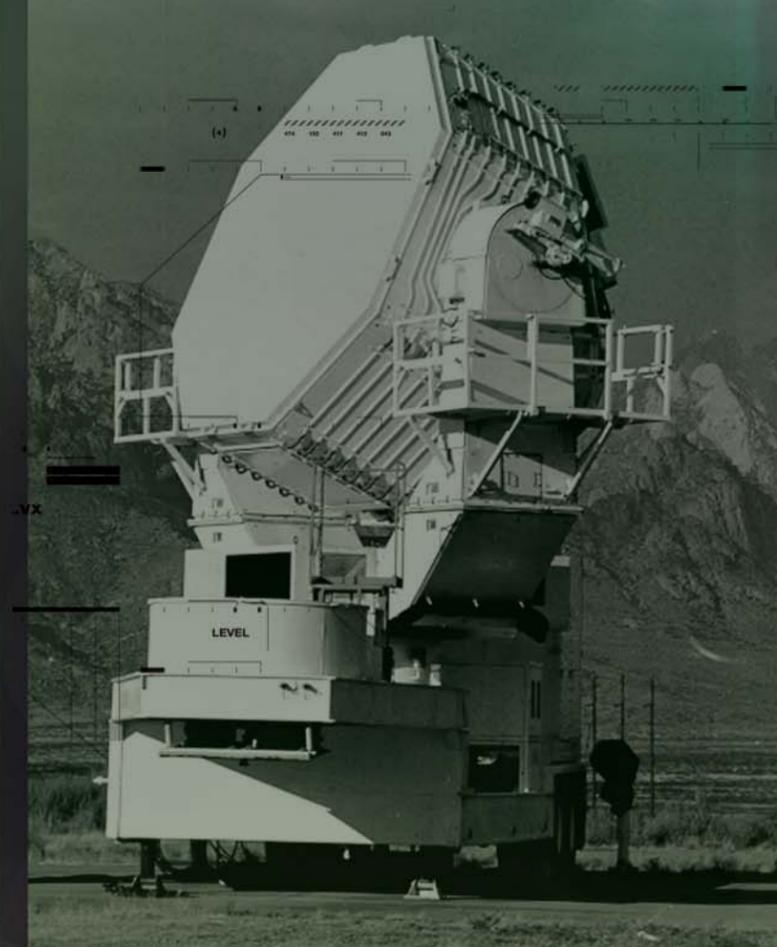
The Redbird 11 rocket launches from West Center 50 at White Sands Missile Range. The Redbird 11 was designed and built by high school students, and it carried a scientific payload made by Stanford University. (U.S. Army photo)

Major Programs

- ▶ Advanced Medium Range Air-to-Air Missile.
- ▶ Army Tactical Missile System Multiple Launch Rocket System.
- ▶ Bradley A3.
- ▶ Defense Threat Reduction Agency Programs — Deeply Buried Hardened Targets.
- ▶ Extended Range Gun Munitions.
- ▶ FCS Brigade Combat Team.
- ▶ High Mobility Artillery Rocket System.
- ▶ Japan ChuSam.
- ▶ Japan PATRIOT.
- ▶ Joint Air-to-Surface Standoff Missile.
- ▶ Joint Direct Attack Munitions.
- ▶ M1A1 Abrams Integrated Management Tank.
- ▶ Multiple Launch Rocket System.



A Navy Standard Missile 6 (SM-6) takes off from White Sands Missile Range's desert ship complex. The SM-6, a new missile that will be able to engage air targets beyond sight of the launching ship, used a combination of Navy and Air Force missile technology to find its target and score a direct hit. (U.S. Army photo)



- ▶ Non-Line-of-Sight Launch System.
- ▶ PATRIOT and PATRIOT Advanced Capability 3 Missile.
- ▶ Small Diameter Bomb.
- ▶ Standard Missile.
- ▶ Stryker.
- ▶ Terminal High Altitude Area Defense System.
- ▶ Unmanned Aerial Systems (Aerostar, Extended Range Multi-Purpose, Global Hawk, Hunter, Predator, Raven and Shadow).
- ▶ Unmanned Ground Vehicles (HMMWV; Robotic Convoy; Small Unmanned Ground Vehicle).

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Yuma Proving Ground and Yuma Test Center

Yuma, Arizona

The Army's most extensive weapons and munitions test facility and extreme desert environment tester

Who We Are

- ▶ Yuma Proving Ground is a Major Range and Test Facility Base (MRTFB) with three components: the Cold Regions Test Center at Fort Greely, Alaska, the Tropic Regions Test Center located in Panama, Suriname and other tropic locations and the Yuma Test Center at Yuma Proving Ground, Arizona.
- ▶ The proving ground is one of the Defense Department's largest land holders (1,300 square miles of terrain and 2,000 square miles of restricted airspace).
- ▶ The three test centers represent the Army's primary desert, cold and tropic environment test experts.
- ▶ Yuma Test Center is the Army's primary artillery and mortar tester.
- ▶ The test center is the Army's primary personnel and cargo parachute tester.
- ▶ Yuma Test Center's National Counterterrorism/Counterinsurgency Integrated Test and Evaluation Center (NACCITEC) boasts proven expertise in testing electronic countermeasures that defeat improvised explosive devices — the number one threat to Warfighters in Iraq and Afghanistan.
- ▶ The test center features America's most highly instrumented helicopter test facility and ranges.
- ▶ Robust and grueling mobility test courses amid extreme temperatures at the test center challenge personnel and equipment amid a realistic environment.
- ▶ Diversified ranges at the center test nearly every commodity in the Army ground and air combat arsenal.
- ▶ Yuma Test Center firing ranges feature coveted remoteness, with minimum noise problems and no encroachment.
- ▶ Yuma Test Center's expansive ranges feature instantaneous connectivity over more than 600 miles of fiber-optic cable.

- ▶ Range facilities at the test center and the region's sunny climate add up to almost perfect test and training conditions. Training capabilities include a military working dog complex, convoy lanes, spacious terrain, and small arms, crew-served and grenade weapons ranges.

What We Do

Yuma Test Center is the primary tester of the following commodities:

- ▶ Air delivery systems/airdrops.
- ▶ Aircraft systems.
- ▶ Engineering equipment.
- ▶ Direct-fire systems (non-missile/rocket).
- ▶ Electronic IED countermeasures.
- ▶ Smoke and obscurants — indirect-fire weapons.
- ▶ Unmanned aircraft systems.
- ▶ Support numerous ground and air reinforcement and supplemental capabilities.

Major Programs

- ▶ Mine Resistant Ambush Protected (MRAP) vehicles.
- ▶ IED countermeasures system.
- ▶ M777 Lightweight Howitzer.
- ▶ Artillery platform of the Future Combat System Non-Line-of-Sight Cannon System demonstrator.
- ▶ Excalibur 155mm artillery projectile.
- ▶ Advanced Tactical Parachute System.
- ▶ All Stryker armored vehicle variants.
- ▶ Joint Precision Aerial Delivery Systems.
- ▶ Desert training (many subsequent overseas deployments).
- ▶ Husky.
- ▶ Vehicle Mounted Mine Detection System.

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Soldiers train amid realistic urban structures of Yuma Proving Ground's NACCITEC. Hundreds of buildings, miles of paved roads and a section of railroad have been constructed at the complex. (U.S. Army photo)



A rotary-operated unmanned aerial system (UAS) takes flight amid Yuma Proving Ground's 2,000 square miles of restricted airspace. The proving ground has become a center of UAS activity. (U.S. Army photo)



Operational Testing

Operational Test Command

Fort Hood, Texas

Truth in Testing

Who We Are

- ▶ The United States Army Operational Test Command (USAOTC), the Army's independent operational tester, tests and assesses systems in a realistic operational environment using typical Soldiers to determine whether systems are effective, suitable and survivable in varying environments. OTC remains true to its ultimate customer — the American Soldier, our sons and daughters who answer the call to duty and serve our nation.
- ▶ The Army's independent operational tester meeting the operational test requirements of public law (Title 10, US Code, Section 139).
- ▶ Readily deployable test teams supporting the Army's Rapid Acquisition Initiatives.
- ▶ Forward Operational Assessment (FOA) teams supporting the forces in Iraq and Afghanistan.
- ▶ OTC Headquarters Command and Staff, five test directorates, four forward test directorates, a Test and Evaluation Coordination Office (TECO) at Fort Leonard Wood, Missouri, and an Infantry Support Cell at Fort Benning, Georgia:

Directorates

- Airborne and Special Operations Test Directorate (ABNOSTD), Fort Bragg, North Carolina.
- Air Defense Artillery Test Directorate (ADATD), Fort Bliss, Texas.
- Aviation Test Directorate (AVTD), Fort Hood, Texas.
- Battle Command and Communications Test Directorate (BCCTD), Fort Hood, Texas.
- Futures Integration Test Directorate (FITD), Fort Hood, Texas.
- Intelligence Electronic Warfare Test Directorate (IEWTD), Fort Huachuca, Arizona.

- Maneuver Test Directorate (MTD), Fort Hood, Texas.
- Maneuver Support and Sustainment Test Directorate (MS2TD), Fort Hood, Texas.
- Fire Support Test Directorate (FSTD), Fort Sill, Oklahoma.

What We Do

- ▶ Plan, conduct and report operational tests and experiments for the Army acquisition decision making process.
- ▶ Test and/or assess systems in a realistic operational environment using Soldiers to determine whether systems are effective, suitable and survivable.
- ▶ Capitalize on synergy with units and acquisition organizations at Fort Hood and the installations at which OTC's forward directorates and TECO are located.

- ▶ Deploy test teams worldwide to accomplish operational testing missions at Soldier locations.
- ▶ Deploy FOA teams into combat and operational contingency theaters to collect data on weapons and systems used in the operational environment, including systems recently fielded through the Army's Rapid Acquisition Initiatives.
- ▶ Plan high-priority operational testing on the Army's Future Combat Systems (FCS).

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Special Operations Forces conduct a fast rope operation with an Improved Weighted Fast Rope System from the CV-22 aircraft. (U.S. Army photo)



Army aviators operate the control panel of an UH-60M Blackhawk helicopter upgrade while being observed by an OTC evaluator during an operational test. (U.S. Army photo)

Airborne and Special Operations Test Directorate

Fort Bragg, North Carolina

Home of the Airborne Soldier

Who We Are

- ▶ The Army's independent operational testers for airborne contingency and Joint Special Operations Forces serving the Soldier — our ultimate customer. We plan, conduct and report on the Army's airborne systems and techniques in support of the acquisition decision-making process.

What We Do

- ▶ Test every Army combat system the Soldier needs that can be transported in, airdropped from or transported outside Army or Air Force aircraft.
- ▶ Manage the Test Parachutists Certification Program (TPCP) for the U.S. Army Test and Evaluation Command. Conduct risk reduction airdrops using ABNSOTD test paratroopers, qualified under the TPCP, to mitigate any risks associated with new aircraft, system or procedure before the use of operational paratroopers.
- ▶ Test joint service equipment and aerial methods of delivery, including:
 - New parachute systems or airdrop techniques.
 - Air delivery of new or modified combat equipment.
 - Individual weapons or equipment.
 - Equipment used by other government agencies.

- ▶ Conduct airdrop certification for delivering equipment loads and personnel to combat zones, including:
 - Internal loads using fixed-wing aircraft and helicopters.
 - External loads using helicopters.
 - Static line parachute procedures.
 - Military free-fall parachute procedures.
 - New cargo delivery techniques and equipment.
- ▶ Record data on the aircraft, between aircraft exit and ground impact, and during post-drop operations for validating airdrop events by using state-of-the-art instrumentation such as:
 - Ground-based Video Tracking Systems.
 - Aerial photography from T-34 chase aircraft or paratrooper's helmet-mounted cameras.
 - Global Positioning System (GPS)-based instrumentation attached to jumpers and equipment loads.
 - High-speed videography and digital still photography.

Major Programs

- ▶ Initial Operational Test of the T-11 Advanced Tactical Parachute System (T-11 ATPS).
- ▶ Joint Developmental and Operational Test of the 2,400-pound Joint Precision Airdrop System (JPADS-2K).
- ▶ Joint Developmental and Operational Test of the 10,000-pound Joint Precision Airdrop System (JPADS-10K).
- ▶ Joint Developmental and Operational Test of the Future Cargo Aircraft (FCA).
- ▶ Limited User Test of the XM320 40-millimeter Grenade Launcher Module (GLM).
- ▶ Limited User Test of the Laser Target Locator Module (LTLM).
- ▶ Limited User Test of the Enhanced M2 Machine Gun (M2E2).
- ▶ Limited User Test of the XM-26 Modular Accessory Shotgun System (MASS).
- ▶ Limited User Test for Military Free-Fall of the Parachutist Oxygen Mask (POM).
- ▶ Limited User Test for the Thermal Weapon Sight (TWS).

- ▶ Early User Assessment of the Light-Tactical All-Terrain Vehicle (LTATV).
- ▶ Customer Test for Military Free-Fall (MFF) Certification of Four Advanced Combat Helmet (ACH) Harness Assemblies.
- ▶ Customer test of the MC-6 Canopy Release Assembly.
- ▶ Customer Test for the Ranger Assault Pack (RAP).

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As part of an operational test, a Soldier prepares to conduct a post-drop functions check of the XM110 Semi-Automatic Sniper System. Personnel airdrops consisted of Static Line and Military Free-Fall operations with the weapon. (U.S. Army photo)



The XM326 Quick Stow System is being lifted by a CH-47D helicopter. Operational Soldiers rigged the test item for dual-point hookup, and the aircraft transported the test item to the landing zone maneuver area and conducted flight testing. (U.S. Army photo)



Air Defense Artillery Test Directorate

Fort Bliss, Texas

Who We Are

- ▶ The Army's premier air and missile defense operational tester.
- ▶ Total combat arms tester.
- ▶ Merging in October 2009 with the Fire Support Test Directorate to become the Fires Test Directorate.

What We Do

- ▶ Plan, conduct and report on operational testing of systems from other battlefield functional areas (Close Combat and Engineering and Combat Services).
- ▶ Deploy test teams worldwide to accomplish test missions at the customer's locations.
- ▶ Conduct Rapid Acquisition Initiative (RAI) programs in support of Global War on Terrorism (GWOT).
- ▶ Conduct initial operational tests for major ADA systems.
- ▶ Conduct limited user tests for ADA.
- ▶ Conduct customer tests.
- ▶ Perform advanced Warfighting experiments.
- ▶ Conduct joint testing.
- ▶ Support OTC's Forward Operational Assessments (FOA) with experienced capable personnel in operational testing.
- ▶ Robust and state-of-the-art instrumentation with high resolution GPS capabilities.
- ▶ Provide a full complement of data reduction and analysis capabilities for large operational test.

Major Programs

- ▶ Terminal High Altitude Area Defense (THAAD).
- ▶ Counter-Rocket, Artillery and Mortar (C-RAM).
- ▶ Patriot Advanced Capability 3 (PAC3) Post Deployment Build (PDB) 6.0.
- ▶ Surface-Launched Advanced Medium Range Air-to-Air Missile (SLAMRAAM).

- ▶ Medium Engagement Area Defense System (MEADS).
- ▶ Integrated Air and Missile Defense (IAMD) System of Systems.
- ▶ Sentinel ETRAC.

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The Patriot radar and antenna mast group, two components of the Patriot system, are operationally tested by the Air Defense Artillery Test Directorate. (U.S. Army photo)



Aviation Test Directorate

Fort Hood, Texas

Who We Are

The Army's Aviation Test Directorate plans, conducts and reports on manned and unmanned aviation-related operational tests and field experiments.

- ▶ Aviation Systems Test Division — plans and conducts testing on cargo and utility helicopters combined with joint programs that include unmanned aerial systems and fixed wing aircraft.
- ▶ Combat Aviation Test Division — plans and conducts testing of reconnaissance and attack helicopters, tactical trainers and aviation countermeasure programs.



An Extended Range/Multipurpose Unmanned Aircraft System (ER/MP UAS) maneuvers during an exercise. (U.S. Army photo)

What We Do

- ▶ Test aviation doctrine, training, organization and equipment systems to ensure they meet Soldiers' needs in an operational environment.
- ▶ Place Soldiers and equipment under the most realistic test conditions possible that closely approximate the anticipated aviation environment.
- ▶ Test new aviation concepts, materiel and systems to consider their effects on the total force.
- ▶ Equip aviators and test equipment in theater without negatively impacting tactical missions.
- ▶ Balance support to the Warfighter with traditional acquisition efforts.

Major Programs

- ▶ Heterogeneous Airborne Reconnaissance Team Event (HART).
- ▶ UH-60M Blackhawk Helicopter Upgrade (UH-60Mu).
- ▶ Apache Block III (AB3).
- ▶ Extended Range/Multipurpose Unmanned Aircraft System (ER/MP UAS).
- ▶ Mobile Tower System (MOTS).
- ▶ Unmanned Aircraft System Tactical Laser Designator (UAS-TLD).
- ▶ Joint Service Aircrew Mask Integrated Helmet and Display Sighting System (JSAM IHADSS).

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Battle Command and Communications Test Directorate

Fort Hood, Texas

Who We Are

- ▶ Communications-Electronics Test Division.
- ▶ Battle Command Test Division.
- ▶ Enterprise and Information Systems Test Division.

What We Do

- ▶ Test systems that will process and transmit voice, data, messaging and video information through networks at the tactical, operational, strategic and sustaining base levels.
- ▶ Assure that information storage and transmission are secure, available and protected from hostile or accidental destruction or release.
- ▶ Lead directorate for the Army Battle Command and Enablers System-of-Systems (ABC&E SoS) testing.
- ▶ Conduct Forward Operational Assessments (FOA) of Battle Command Systems.

Major Programs

Warfighter Information Network–Tactical (WIN-T)
Network Enabled Command and Control (NECC)

- ▶ Defense Integrated Military Human Resources System (DIMHRS).
- ▶ Force XXI Battle Command Brigade and Below (FBCB2).
- ▶ Joint Tactical Radio System (JTRS).
- ▶ Global Broadcast System (GBS).
- ▶ Secure Enroute Communications Package–Improved (SECOMP-I).
- ▶ General Fund Enterprise Business System (GFEBS).

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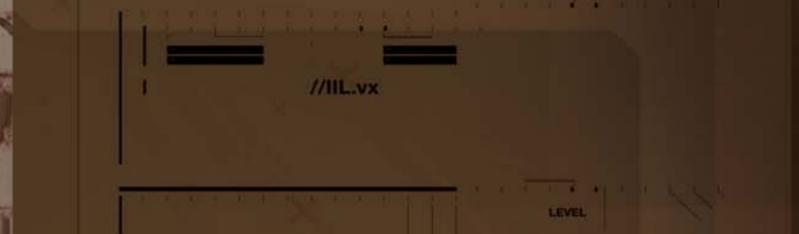
Warfighter Information Network–Tactical equipment is ready for use during an operational test. (U.S. Army photo)

Fire Support Test Directorate

Fort Sill, Oklahoma

Who We Are

- ▶ The longest standing test directorate within OTC — testing since 1902.
- ▶ Consists of the Weapons Test Division, Automated Fire Support Test Division and Support Division.
- ▶ Merging in October 2009 with the Air Defense Artillery Test Directorate to become the Fires Test Directorate.



Members of the Utah National Guard's 222nd Field Artillery perform a live fire operational test at Dugway Proving Ground's West Desert Test Center. (U.S. Army photo)

What We Do

- ▶ Design and conduct operational tests of field artillery systems.
- ▶ Assess rapid acquisition initiatives.
- ▶ Provide leaders and data collectors to serve on FOA teams.
- ▶ Develop and maintain fire support simulators and instrumentation.
- ▶ Represent ATEC at the Fires Center of Excellence.

Major Programs

- ▶ Excalibur Block 1a-2 Precision Engagement Artillery Projectile.
- ▶ Advanced Field Artillery Tactical Data System (AFATDS).
- ▶ Artillery Systems Cooperation Activities (ASCA).
- ▶ Non–Line-of-Sight (NLOS)-Launch System and NLOS-Cannon.
- ▶ Extensible Command, Control, Communications, Computers and Intelligence (C4I) Instrumentation Suite (ExCIS) Fire Support Application (FSA).
- ▶ Lightweight Counter Mortar Radar (LCMR).
- ▶ M109 Family of Vehicles (FoV)/Paladin Improvement Program (PIM).
- ▶ Precision Guidance Kit (PGK).
- ▶ Enhanced AN/TPQ-36 (EQ-36) Counterfire Target Acquisition Radar.

Contact Us

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Futures Integration Test Directorate

Fort Hood, Texas

Who We Are

The Futures Integration Test Directorate coordinates efforts of Future Force initiatives and the proliferation of advanced Warfighting.

- ▶ Lead directorate for OTC support to Army transformation experiments.
- ▶ Lead directorate for Operational Testing of Future Combat Systems (FCS).

What We Do

- ▶ Support Army transformation by focusing on FCS.
- ▶ Develop testing parameters that meet the requirements of FCS complexity and reliance on a network-centric environment.
- ▶ Develop procedures for operational tests involving FCS Brigade Combat Teams.
- ▶ Support the Rapid Fielding Initiative (RFI) and Rapid Equipment Fielding (REF) programs.
- ▶ Assist other OTC test directorates in absorbing technological trends.

Major Programs

- ▶ Future Combat Systems.
- ▶ Unmanned Remote-Controlled Vehicles.

Contact Us

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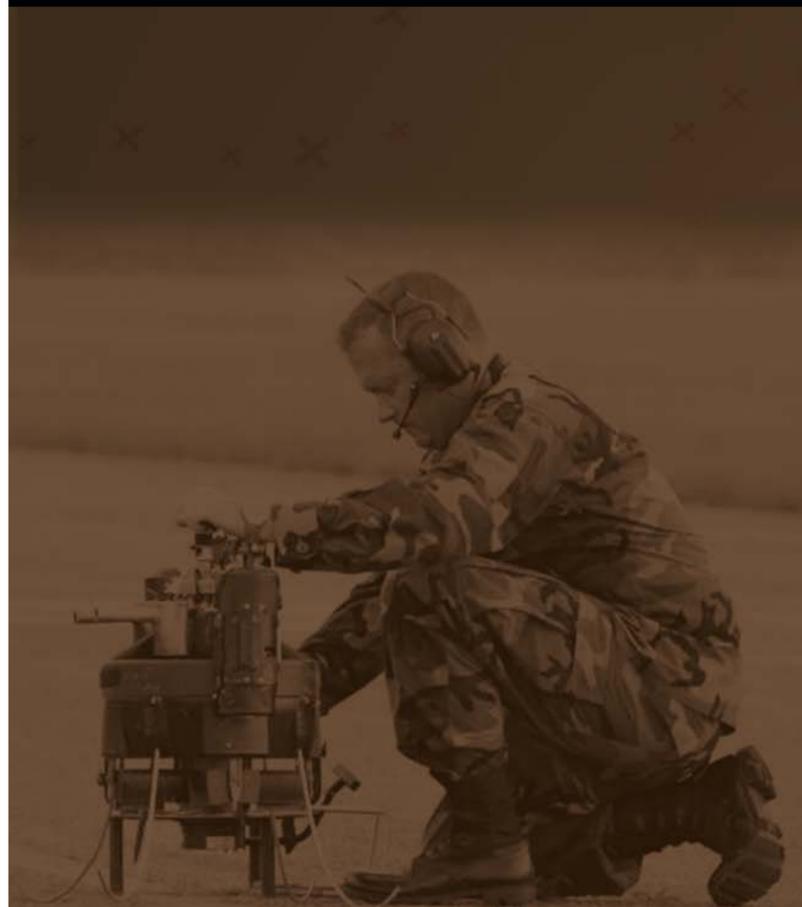
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PackBot 510 inspects a partially buried 155mm artillery shell IED during the ATEC Operational Assessment at Redstone Arsenal, Alabama. (U.S. Army photo)



Intelligence and Electronic Warfare Test Directorate

Fort Huachuca, Arizona

Who We Are

- ▶ The Army's operational tester of Intelligence, Surveillance, Reconnaissance (ISR), Electronic Warfare (EW), and Counter-Improvised Explosive Device (Counter-IED) systems.
- ▶ The Intelligence Modeling and Simulation for Evaluation (IMASE) — a robust modeling and simulation tool for collaborative virtual and constructive threat simulation of test systems.
- ▶ The Intelligence Systems Integration Laboratory (ISIL) — a state-of-the-art facility to support ISR-EW, Counter-IED, tests, training, experiments and related activities in a secure, collaborative environment.
- ▶ The Test Division and Technical Support Division conduct test planning, execution and support for ISR-EW, Counter-IED, biometric and intelligence processing system test events.



A test technician prepares equipment for operational testing at the Oatman Mountain Radar Site at the Electronic Proving Ground, Fort Huachuca, Arizona. (U.S. Army photo)

What We Do

- ▶ Provide robust synthetic operational environments with realistic battlefield conditions to test the future ISR, Counter-IED and EW systems.
- ▶ Conduct operational assessments at worldwide locations to support rapid acquisition initiatives, the Joint IED Defeat Organization (JIEDDO) and the Warfighter's urgent capability needs.
- ▶ Develop intelligence and threat modeling and simulation tools (IMASE).
- ▶ Provide fully instrumented and validated threat systems, dynamic operational scenarios and automated data extraction tools to measure systems under test.
- ▶ Test the operational effectiveness, suitability, survivability and performance of ISR-EW and Counter-IED systems.
- ▶ Test in live, virtual and constructive environments.
- ▶ Provide test support to Intelligence and Security Command, Special Operations Command, armed forces branches, JIEDDO, National Security Agency, and other government agencies.

Major Programs

- ▶ Distributed Common Ground System—Army (DCGS-A).
- ▶ Prophet (Signals Intelligence/Electronic Warfare (SIGINT/EW)).
- ▶ Joint Remote-Controlled IED EW System (JCREW).
- ▶ JIEDDO Counter-IED Detect and Defeat Systems.
- ▶ National Polar-Orbiting Operational Environment Satellite (NPOESS).
- ▶ Biometrics.
- ▶ Integrated Broadcast Service (IBS).
- ▶ Unmanned Aerial System (UAS) ISR-EW payloads.
- ▶ Aerial Common Sensor (ACS).

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Maneuver Sustainment Support Test Directorate

Fort Hood, Texas

Who We Are

- ▶ The most versatile OTC directorate, conducting operational tests in the areas of combat engineer, chemical, transportation, military police, quartermaster, ordnance and medical service.

What We Do

- ▶ Design operational tests for Army and other armed forces customers and agencies.
- ▶ Conduct operational testing for a broad spectrum of Army and joint service materiel, systems and concepts.

Major Programs

- ▶ Maneuver Support Programs:
 - Spider Command Network Munitions.
 - MV-4B Mechanical Antipersonnel Mine Clearing System (MAPMCS).
 - Common Remotely Operated Weapons Station (CROWS).
 - Medium Mine Protected Vehicle (MMPV).
 - Intelligent Munitions System (IMS).
 - Ground Torch RI.
- ▶ Sustainment Programs:
 - Mine Resistant Ambush Protected Vehicle (MRAP).
 - MRAP Ambulance Joint Light Tactical Vehicle (JLTV).
 - Next Generation Automated Test Set Expanded Capacity Vehicle 2 (HMMWV).
 - MRAP All Terrain Vehicle (M-ATV).
 - Theatre Support Vessel — Army Watercraft Programs Long Term Armoring Strategy.
- ▶ Homeland Defense Programs:
 - Analytical Laboratory System Increment 1.
 - CBRNE Deployable Analytical Laboratory (CDAL) Light.



A convoy of MRAPs travels down a dirt road under simulated conditions. (U.S. Army photo)

- ▶ Joint Programs:
 - CBRNE Deployable Analytical Laboratory (CDAL).
 - Light Joint Effects Model (JEM).
 - Joint NBC Reconnaissance System Increment 2.

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An operational test team conducts the Land Warrior limited user test at Fort Lewis, Washington. (U.S. Army photo)

Maneuver Test Directorate

Fort Hood, Texas

Who We Are

- ▶ The test directorate for operational testing of armor and infantry systems.
- ▶ The lead test directorate for operational testing of the weapons and systems of the Army's transformation force.
- ▶ The lead test directorate for operational testing of the Stryker.

What We Do

- ▶ Conduct Independent Operational Testing for weapons, scopes, lasers, armored vehicles and future combat rifles.
- ▶ Provide personnel in support of ATEC Forward Operational Assessment (FOA) mission.
- ▶ Provide rapidly deployable test teams to conduct operational assessments on systems in support of the Army's Rapid Equipment Fielding Initiative.

Major Programs

- ▶ Stryker Mobile Gun System (MGS).
- ▶ Grenade Launcher Module (GLM) GLM320.
- ▶ Modular Accessory Shotgun System (MASS).
- ▶ Thermal Weapons Sight II (TWSII).
- ▶ Enhanced Combat Helmet (ECH).
- ▶ AT4 Confined Space Tandem Warhead (AT4CS TW).
- ▶ 120mm Mortar Fire Control System Dismounted (MFCS-D).
- ▶ Next Carbine (NC).
- ▶ One-Tactical Engagement Simulation System (OneTESS).
- ▶ Operational Test Tactical Engagement System Comms Upgrade (OT TES CU).
- ▶ Land Warrior Next Generation (LW NG).

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Evaluations

U.S. Army Evaluation Center

Alexandria, Virginia
Aberdeen Proving Ground, Maryland

Understanding Through Evaluation

Who We Are

- ▶ The Army's premier evaluation organization affecting all Army modernization and transformation research, development and acquisition programs.
- ▶ Four Support Staff Directorates: Plans and Operations, Resource Management, Human Resources and Technical Directorate.
- ▶ A nearly 575-member civilian and military team that plans, programs, coordinates and executes integrated evaluations in 13 directorates:
 - Ballistic Missile Defense Evaluation Directorate (BMDED) — Army operational test and evaluation arm of the Ballistic Missile Defense System (BMDS) Combined Test Force (CTF), and lead service member of the BMDS Operational Test Agency Team.
 - Maneuver Air Evaluation Directorate (MAED) — Aviation (aircraft, air traffic control, munitions and Soldier support) systems operational effectiveness, suitability and survivability.
 - Maneuver Ground Evaluation Directorate (MGED) — Infantry/Soldier systems, wheeled and tracked combat platforms, sensors and target acquisition systems, battle command systems, combat training simulators and lethal and nonlethal weapons/munitions programs.
 - Sustainment Evaluation Directorate (SED) — Sustainment, mobility, maneuver support, quartermaster, ordnance, transportation, military police, engineer and chemical-biological systems.
 - Command and Control Evaluation Directorate (C2ED) — Army and joint command, control, and communications, business information and medical information systems.

- Fires Evaluation Directorate (FED) — Army Fire Support (rockets and missiles, cannons, command and control) and Air and Missile Defense systems.
- Intelligence Evaluation Directorate (IED) — Intelligence-related acquisition programs, surveillance and reconnaissance, electronic and information warfare, covering national, theater, coalition and commercial space.
- Integrated Logistics Support (ILS) Directorate — Logistics supportability (to include MANPRINT) evaluation of a system and its impact on suitability, and independent logistics supportability assessments reported to the Assistant Secretary of the Army for Acquisitions, Logistics and Technology.
- Reliability and Maintainability Directorate (RAM) — Reliability, Availability and Maintainability (RAM) system characteristics for major defense acquisition programs.
- Survivability Evaluation Directorate (SVED) — Survivability, ballistic and nonballistic battlefield threats, live-fire evaluations and reports, and vulnerability and lethality of Army and designated joint systems. Also leads ATEC's Information Assurance Task Force for the Combatant Commanders.
- Future Force Evaluation Directorate (FFED) — Future force and Army transformation acquisition programs.
- Counter-Improvised Explosive Device (Counter-IED) Evaluation Directorate — Evaluations on all Counter-IED equipment, and is ATEC's interface with the test/user community in the Counter-IED mission.
- Joint Test Board (JTB) — Coordinates and synchronizes T&E events with Joint Improvised Explosive Device Defeat Organization (JIEDDO) Counter-IED requirements and priorities in order to ensure all systems are adequately tested and evaluated to provide information to decision makers and the Warfighter in support of the GWOT mission.



Chemists from the U.S. Army Aberdeen Test Center's Chemical Sampling and Analysis Team prepare a sample for X-ray Fluorescence Spectroscopy. (U.S. Army photo)

What We Do

- ▶ Plan and conduct independent evaluations and assessments of acquisition programs.
- ▶ Develop the evaluation strategy, test design and evaluations addressing operational effectiveness, suitability and survivability.
- ▶ Conduct continuous evaluation throughout the acquisition life cycle of systems.
- ▶ Provide evaluation information to key Department of Defense decision makers.
- ▶ Work in harmony with the material acquisition community to best achieve our evaluation mission.
- ▶ Provide rapid response analysis for hundreds of Rapid Equipping Force and Rapid Acquisition initiatives.
- ▶ Satisfy Warfighter and Global War On Terrorism (GWOT) requirements.

- ▶ Provide military utility assessments for the Warfighter's urgent needs in Iraq and Afghanistan.
- ▶ Chair over 95 percent of Army Test and Evaluation Command (ATEC) System Team (AST), which guide the initial test and evaluation effort.
- ▶ Combatant Command (COCOM) major training exercises in assessing information assurance.

Major Test Programs

- ▶ Army Battle Command Systems (ABCS) planning.
- ▶ Ballistic Missile Defense System (BMDS) Limited Deployment Capability (LDC) assessment.
- ▶ Future Combat Systems (FCS) restructure test and evaluation plan.
- ▶ Stryker reliability and Stryker variants, including Mobile Gun System (MGS).
- ▶ Mine Resistant Ambush Protection (MRAP) Armored Vehicles and variants.
- ▶ Up-Armor Wheeled Vehicles.
- ▶ Counter-IED measures.

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ATEC is an organization known for its uncompromising test and evaluation standards. ATEC's culture is noted for viewing the Soldier as the ultimate customer, and ATEC strives to help its people advance and grow — personally and professionally.

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U.S. ARMY TEST AND EVALUATION COMMAND