

## Another Man's Treasure

**W**hen a Texas police agency wanted to train narcotics dogs to inspect railroad cars as they came across the southern border of the United States, the agency found it was missing one vital piece of training equipment: a railroad car. A perplexing acquisition to say the least. After all, who would have a spare railroad car lying around? Yet the agency did acquire one. It came as a gift from the Federal Government, acquired through a program that takes excess military equipment and gives it to law enforcement and corrections agencies.

Through this program, the South Carolina Department of Corrections received more than \$4 million in equipment, including three mobile homes, more than 1,000 gas masks, and an armored vehicle.

The mobile homes will be used for classrooms to train correctional officers.

The gas masks will be available for use by officers

during prison disturbances. The armored vehicle can be used during prison disturbances and also will be made available to other law enforcement agencies for use in hostage or stand-off situations.

This excess equipment program, officially known as the 1033 Program, has been nothing short of a financial windfall. Equipment of all types—everything from tents to tractor/trailers—has gone to departments around the country, says William LeGro, Project Manager with UEL, Inc., the program grantee. LeGro serves as program liaison between the Department of Defense (DoD) and the National Institute of Justice (NIJ).

"We have helicopters, helicopter parts, fixed-winged aircraft, four-wheel-drive vehicles, big trucks, small trucks, cars, armored personnel carriers, heavy equipment, sleeping bags, boots, tents, backpacks, canteens, cots, radios, binoculars, and weapons like M-16s, sniper rifles, and shotguns."

It is the ultimate recycling program, LeGro says. The equipment belongs to DoD, which no longer needs it or has replaced it with newer equipment. DoD ships the equipment to its Defense Reutilization and Marketing Offices (DRMOs). Law enforcement and corrections agencies can then request specific items, and if they meet certain criteria, acquire these items at little or no cost.

In South Carolina, the city of Charleston secured a tractor/trailer and now uses it for emergency response to hurricanes. In High Point North Carolina, police use wreckers acquired through the program to seize and haul mobile homes. One creative department managed to find use for a street sweeper. "What do you do with one of those?" asks LeGro. "You put undercover officers in it in the small hours of the morning. They drive it through the streets and watch drug deals go down."



In Missouri, the State Highway Patrol built its Aircraft Division out of excess military equipment. Its fleet currently contains six helicopters and three twin-engine aircraft, including a King Air, according to Lt. Rich Rehmeier, director of the division. "We use them for hauling police personnel, and for drug interdiction, marijuana eradication, search and rescue, and man-hunts," he says. "We have nine patrol troops and seven of them have their own aircraft." But the highway patrol has picked up much more than aircraft, Rehmeier says. The

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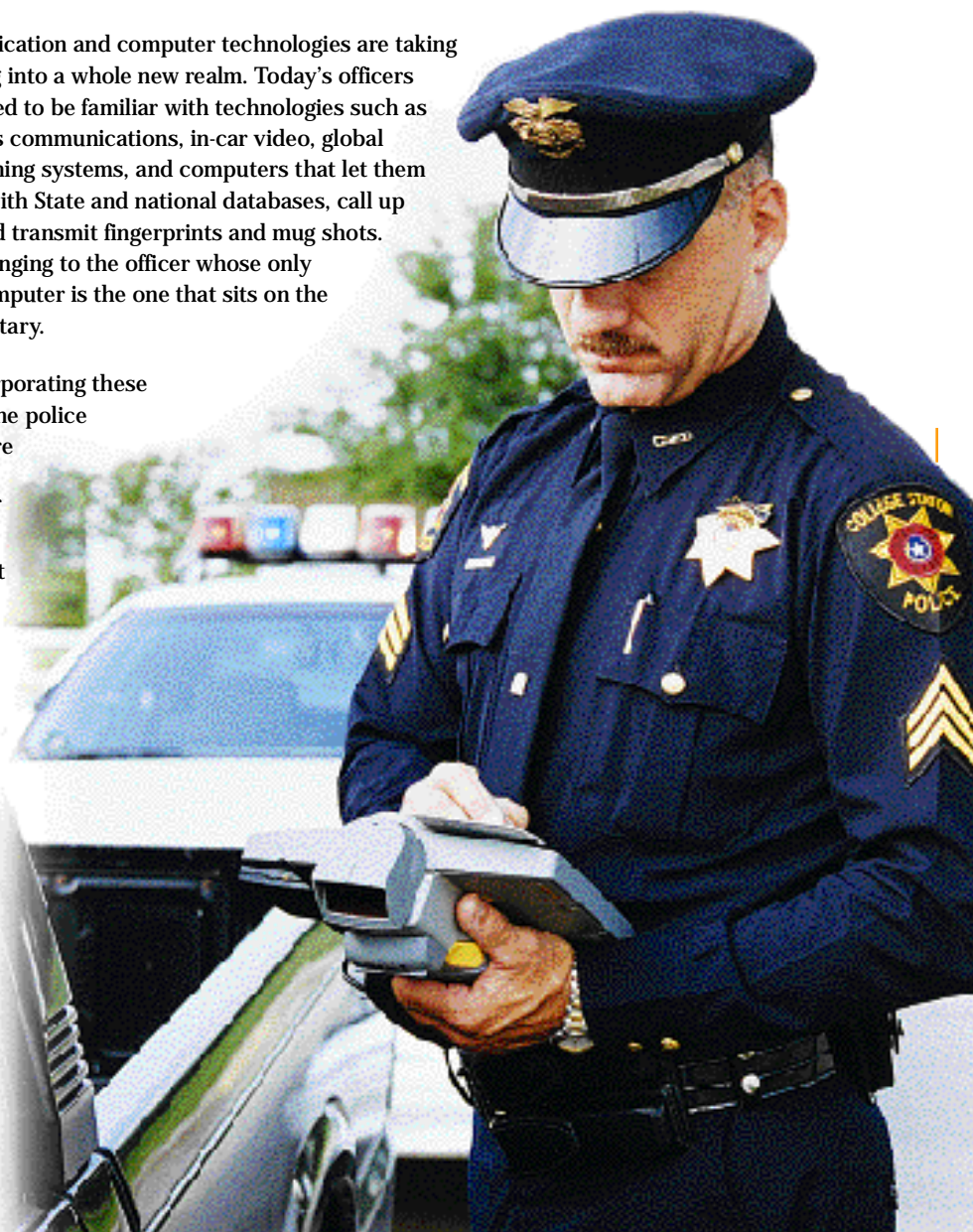
## Be ALERT . . . for the Police Car of the Future

**C**ommunication and computer technologies are taking policing into a whole new realm. Today's officers now need to be familiar with technologies such as wireless communications, in-car video, global positioning systems, and computers that let them communicate directly with State and national databases, call up warrants and warrants, and transmit fingerprints and mug shots. This can be quite challenging to the officer whose only acquaintance with a computer is the one that sits on the desk of the chief's secretary.

But the task of incorporating these technologies into just one police cruiser can be even more challenging. Aside from the ergonomic puzzle of squeezing an array of equipment into the front seat of a patrol car, there are the technical difficulties of making it all work as one transparent, seamless system.

The Texas Transportation Institute (TTI), located at Texas A&M University in College Station, has been working on the problem since 1994, when the Federal Highway Administration (FHWA) decided to find out how new data

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agency has also acquired armored cars, pickup trucks, weapons, battle dress uniforms (BDUs), spare engines and parts, as well as a raft of tools. "When we picked up a bunch of toolboxes and tools, we gave a set to not only the pilots but also to the officers on the interstate who



do drug interdiction. When they have to disassemble door panels or other areas of a vehicle to find the dope, they have the tools. Some agencies may feel that getting this equipment is a hassle, but once you understand the system, it's pretty easy. And the money you save is unbelievable," Rehmeier says.

In Georgia, bread trucks have been converted to SWAT vans, prisoner transports, and mobile command posts. According to Darrell Bennett, assistant manager of Georgia's 1033 Program, tractor/trailers haul earth-moving equipment that is then used to cut paths into marijuana fields. Cars and trucks are used in undercover work, or as marked units on patrol. BDUs are outfitted with patches and brass for use as official police uniforms. Nothing is wasted. "We even tell our departments that before they can dispose of anything they have to get written permission from us," Bennett says. "If it's an item someone else can use and it's still in good shape, we don't allow them to dispose of it. Even if it's a wrecked car, we still might be able to use the parts. We try to use everything to the fullest, and give everyone a chance to benefit."

The 1033 Program started in 1989 as the 1208 Program (the number refers to the enabling section in the Defense Authorization Act). At that time, the primary qualifying criterion was that the agency could only use the equipment for counterdrug activity. In 1996, the 1033 Program superseded 1208, which made all law enforcement activities eligible but still gave special consideration to those that focused on counterdrug and counterterrorism activities.

In its first year of operation, the excess property program transferred an estimated \$1 million in equipment; by the end of fiscal year 1996, it had transferred \$336 million in equipment. The 1033 Program currently operates under the Defense Logistics Agency (DLA). It is administered by the Law Enforcement Support Offices in Ft. Belvoir, Virginia, and in San Pedro, California. In 1995, NIJ's Office of Science and Technology was designated

by the U.S. Attorney General as the point-of-contact to DoD and DLA for the administration of the program to gain maximum benefit for law enforcement and corrections agencies.

According to LeGro, DoD differentiates between "excess" and "surplus" equipment. Excess refers to equipment that has been shipped to a Defense Reutilization and Marketing Office and has been in stock for less than 21 days. After that time, anything that has not been tagged or acquired by a Federal, State, or municipal law enforcement or corrections agency is considered surplus. This equipment is then made available, with fewer restrictions, to other State agencies. "Most of it goes to fire departments, schools, hospitals, or to support activities of State, county, or local government," LeGro says.

Although there is no charge for the property, about 20 percent of the States charge a handling fee, anywhere from 1 to 20 percent of the item's original cost. There are times, however, when DoD will assume the cost of the transfer. In one case, it paid to ship 1,000 gas masks, rather than pay to have them destroyed.



Each State handles the 1033 Program differently. Although each is required to have a Governor-appointed coordinator, some States have dedicated whole offices and full-time employees to the project, while others added the task to a full-time employee's regular duties. In Georgia, the program operates through the Georgia Emergency Response Agency and has full-time staff assigned to it. "New equipment comes in daily," Bennett says. "We have screeners who go to the DRMOs in their areas every week. They let us know what is available, and we match it up with requests from the various agencies." A new computer system, recently designed for the program, helps staff track each request and each piece of equipment from acquisition to disposal.

"Some States have given the program to the highway patrol to administer," LeGro says. "Some have given it to an officer in the State bureau of investigation, some have given it to the National Guard bureau in their area, and some have given it to the State agency for surplus property because that agency knows about screening and tagging property. Some really promote the program,

others don't have the time, and others just wait for someone to ask them about it."

The differences between how States handle the program, however, can be easily quantified. Ken Dover, a retired North Carolina State police officer, spent 5 years developing and setting up a full-time program for his State's Department of Crime Control. During that time, he brought in millions of dollars in excess property, including more than \$22 million in property for local law enforcement agencies during 1995-96. In contrast, another State brought in only \$1.5 million in property in 1996, primarily because the job was given to a full-time police officer to do in his spare time.

"What makes the program work best is if a State can devote some resources to the State coordinator's office," LeGro states.

Kevin Jackson is the program manager for NIJ. Bill Deck and Ken Dover at NIJ's National Law Enforcement and Corrections Technology Center (NLECTC)-Southeast in Charleston, South Carolina, manage the day-to-day support and provide assistance to State and local law enforcement and corrections.

One of the principal tasks of NLECTC-Southeast is to facilitate the acquisition and distribution of Federal excess/surplus property to State and local law enforcement and corrections agencies by notifying State coordinators when items suitable for law enforcement or corrections are located, and by improving those agencies' accessibility to various property purchasing programs.

**To participate in the 1033 Program, contact your State coordinator or contact Ken Dover or Bill Deck at NLECTC-Southeast, 800-292-4385, who work with States to improve their 1033 program participation and offer assistance in using the Internet to locate surplus property, including the NLECTC World Wide Web site, JUSTNET, at <http://www.nlectc.org>.**



## Check It Out

The best way to access information about Department of Defense (DoD) property is via a searchable database at DoD's Internet site, <http://www.drms.dla.mil>. This address takes you to the home page of the Defense Reutilization and Marketing Service. From this page:

- ◆ Select the [GOV. R/T/D] button located on the left-hand side of the page.
- ◆ Then select the [PROPERTY SEARCH] button.
- ◆ Scroll down to the middle of the page to [COMMODITY GROUPS] and click on it. This will bring up the Government Search Form page.
- ◆ In Section A, you are required to select a Commodity Group. If you already have a concise description of the item for which you are searching, type it into the Product Name box.
- ◆ Scroll down to Section D (entering information in sections B and C is optional). Note the listed geographic zones from which to choose. Each zone box contains a pull-down listing of specific sites. Remember, the location of the item can affect its cost because you pay for the shipment. Obtaining a jeep from Spain would likely cost more than the jeep is worth. Search first in the region of the country where your agency is located, then branch out if needed.
- ◆ When finished, click the [SUBMIT SEARCH] button. Be prepared to wait for several minutes, depending on the parameters of the search.

Once the search is complete and the list appears on your screen, you may see some items with photos attached. This is a good way to take a look at the actual item. But do not be influenced by the condition reports. Items listed as "unserviceable" may be brand new, but are no longer of any use to the military.

### 1033 Program Participation Criteria

- ◆ To participate in the Department of Defense (DoD) 1033 Program your agency must be a government agency whose primary function is the enforcement of laws and whose officers are compensated and have the power of arrest and apprehension.
- ◆ Excess DoD property cannot be transferred to correctional institutions for general support of the prison population, for routine prison activities, or for the rehabilitation or treatment of drug offenders. However, the Defense Logistics Agency generally will approve property transfers for use by teams, squads, or individuals who enforce laws within the jurisdiction of prison officials. These would include units whose mission it is to quell disturbances within the prison jurisdiction, or teams or individual officers charged with apprehending escapees. Parole and probation agencies generally qualify as well, as long as it can be shown that their officers have arrest, apprehension, or revocation authority within their jurisdictions.
- ◆ The property must be drawn from the existing stocks of DoD.
- ◆ The transfer must be made without the expenditure of DoD funds. Costs incurred subsequent to the transfer are borne or reimbursed by the recipient.
- ◆ The agency takes the property "as is."
- ◆ Each State must detail how the equipment will be used and agree to use it within 1 year of transfer.
- ◆ Property cannot be sold, leased, rented, exchanged, bartered, or used to secure a loan, or to supplement the agency's budget.
- ◆ All property is transferred on a first-come, first-served basis.



# NIJ takes the RAP

**I**t was the late 1960s, the era of the Vietnam War, and Abraham Flatau was an aeronautical engineer working for the U.S. Army, a young man full of energy, curiosity, and bright ideas. He knew the soldiers in Vietnam were having problems with their rifle-fired grenades. Their grenades required a high trajectory, which made them impossible to use in the thick canopy of the jungle. The heavy foliage invariably caused them to blow up short of their target.

Flatau knew the solution was a projectile with a flat trajectory, something that would fly straight and fast, without the typical ballistic arc. He also knew there were only two methods to achieve this flat trajectory: increase muzzle velocity or find a way to create aerodynamic lift in the projectile. His solution lay with the latter method. The result was the ring airfoil grenade, a small explosive metal ring that looked like a donut and spun like a bullet. Because it generated lift while it flew in a low-drag mode, it had a near straight-line trajectory. Flatau's theory was sound enough that a prototype was developed. However, the Army never pursued it.

It was not until the 1970s, following the shootings at Kent State University, that the subject of the ring airfoil grenade came up again. Like many law enforcement and military officials, Flatau saw a need for a nonlethal device that would give military police and law enforcement and corrections officers more control over crowds without the possibility of killing anyone.

Many of the crowd control devices at that time—rubber and wooden bullets, for the most part—had serious problems. They had to be skip-fired (ricocheted) so they would hit people in the legs, not in the head. This meant that even the smallest piece of gravel or rock could bounce the projectile in the wrong direction. At long range, these

weapons were disturbingly inaccurate, and at short range, they could be lethal.

Flatau had the solution. He turned his explosive ring airfoil grenade into the nonlethal ring airfoil projectile (RAP), a 2-inch-diameter rubber ring weighing about 1 ounce and banded with a special paper wrapping designed to hold the shape until impact. It was fired by a launcher-adaptor that fit over the barrel of an M-16A1 rifle and propelled by a 5.56mm low-grain blank cartridge. The RAP flew at 200 feet per second, spun at 5,000 revolutions per minute, and delivered about 39 foot-pounds of energy. Flatau created two versions: the sting RAP and the soft RAP.

The sting RAP was of particular interest to military police, who requested that it be accurate enough to hit a man-sized target from 40 to 50 meters, just outside of rock-throwing range, and a group of three people from 60 meters. Because one sting RAP could be used repeatedly, simply by rebanding it, it looked like a financially feasible tool, whether it was used for crowd control, in hostage situations, or as a training device. The sting RAP has the potential to stop a person, cause him to drop a weapon, or deter him temporarily to buy time for officers to respond to the situation. Biophysics testing showed the RAP could not break bones or injure internal organs, no matter how it was fired. It could, however, break double-pane glass, which was an advantage if one had to hit a subject inside a building.

Ironically, although the sting RAP was approved for military use, it was never used. The Army produced 500,000, but then left them on the shelves where they remained for more than 15 years. The second version, dubbed the soft RAP, offered a little extra punch—it had 18 cavities embed-

ded with tear gas that was released on impact, but it was never produced.

Enter Lt. Col. Matt Begert, who specializes in finding new technologies for the U.S. Marine Corps, including information on nonlethal weapons. It was during his research that Begert learned about Flatau's invention. And while making a presentation on promising new technologies to a group of research and development personnel, Begert mentioned the ring airfoil grenade and its more modern incarnation, the RAP. To his surprise, Flatau was in the audience. Begert and Flatau later got together, took the device off the Army's shelf, and fired it. It worked perfectly.

"It is as less-lethal as you can get," Begert says. "You can fire it pointblank and it won't be lethal. It won't knock you down, and it's round [donut shaped, larger than an eye socket], so it can't poke your eye out. What it will do is get your attention, and on some people, it will leave a bruise."

In 1997, the RAP came to the attention of the National Law Enforcement and Corrections Technology Center (NLECTC)—West in El Segundo, California, where Begert and Flatau demonstrated it to law enforcement and corrections officers. It made such an impression that the National Institute of Justice (NIJ), as part of its

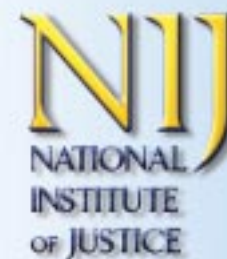
continuing search for viable nonlethal devices, has funded research into updating and adapting the RAP for use by corrections and police agencies. A grant to Guilford Engineering, of Guilford, Connecticut, is expected to produce several things: designs for a handheld, stand-alone RAP launcher that will not look like a deadly weapon; the development of a soft RAP

embedded with oleoresin capsicum (OC) that will release a 3- to 4-foot cloud on impact; and a design for a pistol-like configuration such as a flare launcher.

"This whole thing is going to be an engineering feat. The device is elegantly simple, but these new designs are going to be a lot of work," Begert says.

In the interim, existing RAPs have been taken off the shelf and are being tested by three agencies. The Los Angeles County Sheriff's Department plans to demonstrate and possibly employ them operationally. The Federal Bureau of Prisons has obtained some for testing, as has the Royal Canadian Mounted Police.

**For more information about the ring airfoil projectile, contact Sandy Newett at the National Institute of Justice, 202-616-1471.**



## From the Director

*Law enforcement, courts, and corrections officials and officers working in the field know how crucial technology is to their day-to-day operations. In some circumstances, having the right tool can even mean the difference between life and death.*

*The technological revolution that has swept society as a whole in recent years has also affected the criminal justice system. Some technologies that not long ago seemed advanced—vests that can stop bullets, and electronic monitoring of probationers—today seem commonplace. But the revolution continues apace, with ever more spectacular advances now being made, or in the testing stages, or on the drawing board.*

*As the research arm of the U.S. Department of Justice, the National Institute of Justice (NIJ) has, since its founding 30 years ago, been in the forefront in sponsoring the development, testing, and demonstration of technology to improve the justice system. The development of DNA testing standards, soft body armor, and improved fingerprint evidence are some of the many areas in which NIJ has played a leading role.*

*More recently, with strong support from the Administration and the Congress, NIJ has accelerated the pace of its efforts. Less-than-lethal technologies to minimize the use of force, computerized mapping to pinpoint and analyze crime patterns, concealed weapons detection to prevent violence, methods of stopping fleeing vehicles to apprehend suspects, and improvements in DNA laboratories to aid in evidence testing—all these capabilities, and others, are now being explored by NIJ. Their application can mean even greater transformations in law enforcement operations.*

*TechBeat plays an important role as an essential link communicating the latest information about these developing technologies from the National Law Enforcement and Corrections Technology Center. By keeping law enforcement, courts, and corrections personnel current about the tools they can use, the newsletter makes a difference in controlling crime and ensuring justice.*

Jeremy Travis  
Director  
National Institute of Justice

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The National Institute of Justice is a component of the Office of Justice Programs, which also includes the Bureau of Justice Assistance, Bureau of Justice Statistics, Office of Juvenile Justice and Delinquency Prevention, and Office for Victims of Crime.



# National Law Enforcement and Corrections Technology Center System

The National Institute of Justice (NIJ), responding to recommendations by the law enforcement and corrections community, converted its Technology Assessment Program Information Center (TAPIC) into the National Law Enforcement and Corrections Technology Center (NLECTC) system. Created in 1994 as a component of NIJ's Office of Science and Technology, NLECTC's goal, like that of NIJ, is to offer support, research findings, and technological expertise to help State and local law enforcement and corrections personnel safely and more efficiently do their jobs.

NIJ's NLECTC system consists of facilities located across the country that are collocated with an organization or agency that specializes in one or more specific areas of research and development. Although each of the NLECTC facilities has a different technology focus, they work together to form a seamless web of support and technology development and information to help the law enforcement and corrections communities do their jobs more safely and efficiently.

## NLECTC-National

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Phone: 800-248-2742 • Fax: 301-519-5149 • E-mail: [nlectc@aspensys.com](mailto:nlectc@aspensys.com)

The National Center, located just 30 minutes north of Washington, D.C., is the hub of the NLECTC system. It provides information and referral services to anyone with a question about law enforcement and corrections equipment or technology. Its staff manages the voluntary equipment standards and testing program that tests and verifies the performance of body armor, metallic handcuffs, shotguns, and police vehicles and tires. This office produces consumer product lists of equipment meeting a specific set of performance standards and also operates JUSTNET (Justice Technology Information Network), an Internet World Wide Web site that provides links to the entire NLECTC system and other appropriate sites, as well as assistance to those seeking information about equipment, technology, or research findings.

## NLECTC-Northeast

26 Electronic Parkway • Rome, NY 13441  
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NLECTC-Northeast is located at the Rome Laboratories on the grounds of the Griffiss Business and Technology Park (formerly Griffiss Air Force Base). The center sponsors research and development efforts into technologies that address command, control, communications, computers, and intelligence. This center draws on the expertise of Air Force scientists and engineers in its development of technologies that can be used to detect concealed weapons on people, an effort that is expected to yield a stationary device for use in buildings and handheld devices for patrol officers. Other areas of research and development include the creation of an automatic booking system, automated firearms identification, multiband multifunction radios, transportable communication systems, and a computerized automatic language translation system.

## NLECTC-Southeast

7325 Peppermill Parkway • North Charleston, SC 29418-7404  
Phone: 800-292-4385 • Fax: 803-207-7776 • E-mail: [nlectc-se@nlectc-se.org](mailto:nlectc-se@nlectc-se.org)

Two of the focus areas of NLECTC-Southeast are corrections technologies and surplus property acquisition and distribution for law enforcement and corrections. The center facilitates the acquisition and redistribution of Federal surplus/excess property to State and local law enforcement and corrections agencies. The equipment must be used for law enforcement purposes only. Utilizing the JUSTNET Web site, the center educates law enforcement and corrections professionals about Federal surplus and purchasing programs. The efforts of NLECTC-Southeast have resulted in agencies receiving equipment they would not ordinarily have access to or might not have been able to afford due to budgetary constraints. This facility also studies the needs of corrections agencies. It is guided in this mission by a committee of criminal justice, law enforcement, and corrections practitioners that identifies requirements and sets priorities for research and development. NLECTC-Southeast is allied with the South Carolina Research Authority (SCRA) and the Naval Command, Control and Ocean Surveillance Center In-Service Engineering, East Coast Division (NISE East). NLECTC-Southeast's other areas of focus include information management and technologies, simulation training, and designated special projects.

## NLECTC-Rocky Mountain

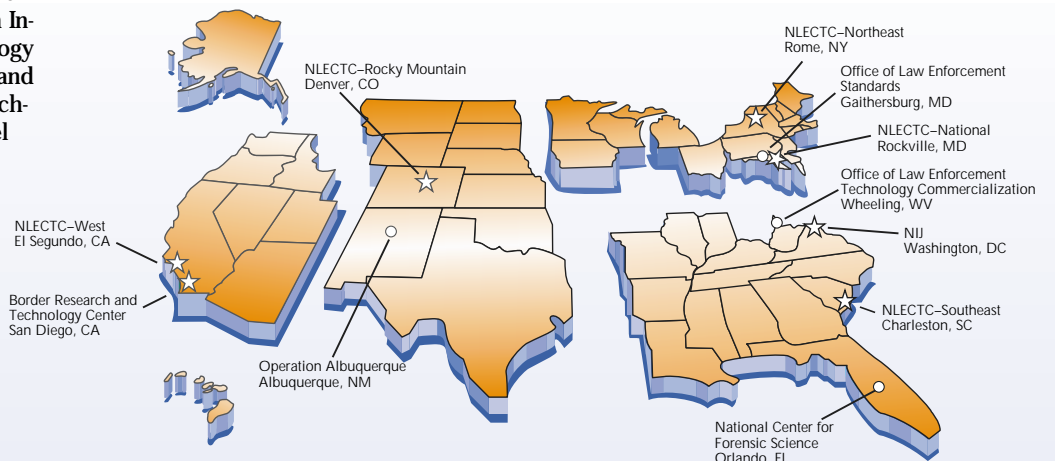
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Located at the University of Denver, NLECTC-Rocky Mountain focuses on communications interoperability and the difficulties that often occur when different agencies and jurisdictions try to communicate with one another. This facility works with law enforcement agencies, private industry, and national organizations to implement projects that will identify and field test new technologies to help solve the problem of interoperability. NLECTC-Rocky Mountain also houses the newly created Crime Mapping Technology Center, the training and practical application arm of NIJ's Crime Mapping Research Center, which is staffed by NIJ social scientists and scholars who utilize crime analysis research to improve police field operations and develop crime-mapping software for small, medium, and large departments. The Rocky Mountain facility also conducts research into ballistics and weapons technology, as well as information systems. Sandia National Laboratory has been designated as a satellite of NLECTC-Rocky Mountain. The laboratory works in partnership with NLECTC-Rocky Mountain and focuses on technology for detecting and neutralizing explosive devices (Operation Albuquerque).

## NLECTC-West

c/o The Aerospace Corporation • 2350 East El Segundo Boulevard • El Segundo, CA 90245-4691  
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NLECTC-West is housed on the grounds of The Aerospace Corporation, a nonprofit corporation that provides technical oversight and engineering expertise to the Air Force and the U.S. Government on space technology and space security systems. NLECTC-West draws on



The Aerospace Corporation's depth of knowledge and scientific expertise to offer law enforcement and corrections the ability to analyze and enhance audio, video, and photographic evidence. In cooperation with The Aerospace Corporation, this NLECTC facility also has available an extensive array of analytic instrumentation to aid in criminal investigations, such as a scanning electron microscope, an x-ray microscope, and a mass spectrometer, all of which are used to process trace evidence. Its other areas of expertise include computer architecture, data processing, communications systems, and a recent effort to identify technologies to stop fleeing vehicles.

## Border Research and Technology Center (BRTC)

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The Border Research and Technology Center works with the Immigration and Naturalization Service, the U.S. Border Patrol, the U.S. Customs Service, the White House Office of National Drug Control Policy, and the U.S. Attorney for the Southern District of California to develop strategies and technologies that will facilitate control of the Southwest border. One of its most recognized accomplishments has been the implementation of SENTRI (Secured Electronic Network for Travelers' Rapid Inspection). BRTC also works on joint ventures to identify technologies that will stop fleeing vehicles and is currently participating in a project to detect the heartbeats of people concealed in vehicles or other containers.

## Office of Law Enforcement Standards (OLES)

National Institute of Standards and Technology, Building 225 • Gaithersburg, MD 20899  
Phone: 301-975-2757 • Fax: 301-948-0978 • E-mail: [oles@nist.gov](mailto:oles@nist.gov)

Supported by NIJ, the Office of Law Enforcement Standards applies science and technology to the needs of the criminal justice community. While its major objective is to develop minimum performance standards for equipment and technology, which NIJ promulgates as voluntary national standards, OLES also undertakes studies leading to the publication of technical reports and user guides. Its areas of research include clothing, communications systems, emergency equipment, investigative aids, protective equipment, security systems, vehicles, and weapons. It also develops measurement methods for analytical techniques and standard reference materials for forensic scientists and crime labs. Since the program began in 1971, OLES has coordinated the development of nearly 200 standards, user guides, and advisory reports. Housed at the National Institute of Standards and Technology, OLES works closely with NLECTC-National to conduct tests and to guarantee the performance and quality of equipment used by police and corrections.

## Office of Law Enforcement Technology Commercialization (OLETC)

Wheeling Jesuit University • 316 Washington Avenue • Wheeling, WV 26003  
Phone: 888-306-5382 • Fax: 304-243-2131 • E-mail: [oletc@nttc.edu](mailto:oletc@nttc.edu)

Housed at Wheeling Jesuit University, the Office of Law Enforcement Technology Commercialization provides one of the NLECTC system's most important services, that of bringing research and private industry together to put new technologies into the hands of law enforcement and corrections. OLETC actively solicits manufacturers to commercialize technologies based on requirements identified by law enforcement and corrections practitioners. For example, it is currently seeking companies interested in commercializing technologies already developed by the U.S. Department of Energy's Los Alamos National Laboratory, such as a device that lets police officers detect crack houses from a distance, microwave and acoustic sensors that detect the motion of people behind walls or doors, and a nondetectable, non-scannable transmitter for use in undercover situations. OLETC works with private industry to support its efforts and help companies streamline the commercialization process.

## National Center for Forensic Science

University of Central Florida • P.O. Box 162367 • Orlando, FL 32816-2367  
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The newest addition to the NLECTC system, this facility is housed in the University of Central Florida and initially will focus on arson and explosives research. Its mission is to conduct fundamental research into the basic nature of fire and explosion reactions, provide the support for developing standard protocols for analyzing arson and explosion debris, promote the use of electronic media to access and exchange information about the forensic sciences, and provide education opportunities to practicing professionals and full-time students. This new facility will draw on the experience and expertise of the university, which houses a forensic science program with an active research program, as well as the Institute of Simulation and Training, which is currently exploring ways to simulate explosive reactions to study various chemical processes.



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collection technologies and systems perform in the real world of police work. This project, dubbed Advanced Law Enforcement Response Technology (ALERT™), has been so successful that it recently won Vice President Al Gore's Hammer Award.

Referring to the public backlash against the government spending taxpayer dollars on the proverbial "\$600 hammer," this award recognizes Federal, State, and local employees, as well as private companies and citizens, who work together to make government more efficient. Since the Hammer Award is the Vice President's answer to yesterday's \$600 hammer, the award consists of a \$6 hammer, a little ribbon, and a card from Gore, all in an aluminum frame.

Aside from the obvious humor of the award itself, the Hammer Award recognizes cooperation, something the ALERT project exemplifies. Although originally the brainchild of FHWA, ALERT has grown into a working partnership among the U.S. Department of Transportation, which provided all of the funding for the first 2 years of the project, and the Texas Department of Transportation, the Texas Department of Public Safety, the College Station Police Department, the International Association of Chiefs of Police (IACP), the National Institute of Justice (NIJ), and several State and local law enforcement agencies. In addition, this partnership has involved major manufacturers of police equipment, including Applied Concepts, AT&T, Cardinal Tracking, CellPort Labs, Complete CAM, Eastman Kodak, Epson America, GTE, ImageNation, Kinetic Computer Corp., Kustom Signals, Litton, Lockard & White Consulting Engineers, Lucent Technologies, Motorola, Pacific Communication Sciences, Sierra Wireless, Signal Measurement Corp., Signalvations, Symbol Technologies, Trimble, UCS, and Video Systems Plus.

Together, government and industry have created the police car of the future, one that takes the masses of switches and controls out of the cockpit and integrates the vehicle's functions into a system that is entirely controlled by an onboard touch-screen computer. ALERT cars that are currently being tested are equipped with computer-driven

overhead lights, radar, magnetic stripe and bar code readers, license plate readers, enhanced video camera/recording devices, and a global positioning system/automatic vehicle locator. If the officer initiates a pursuit, for example, he simply touches the word "pursuit" on the screen to activate the lights, siren, and video camera, as well as a global positioning system that shows dispatchers the car's precise location. A video multiplexor integrates multiple cameras and lenses, allowing the officer to capture digital or video images inside and outside the vehicle in wide-angle or close-up views. Those images can then be transmitted in real-time to a communications or command center for retransmitting to other ALERT vehicles in the field.

ALERT also includes a handheld, pen-based remote terminal that can communicate with the onboard computer. When a law enforcement officer makes a stop and approaches a vehicle, that officer has the programs he or she needs in the handheld unit. Information from the stop can be downloaded to the onboard computer or electronically transmitted to the communications center. The computer that serves as the traffic cop for all of this sophisticated technology sits in the trunk, routing communications between wireless data collection devices, the vehicle itself, and the department's communications center. What makes everything work is an open architecture that lets officers add peripherals simply by plugging them in.

"We're not developing any new technology," notes Brenna Smith, program manager for ALERT. "All of the sophisticated technology is already commercially available. What we've done is find a way for them to interface together."

NIJ's involvement includes providing project funding and managing the ALERT testbed initiative, which will be underway in March 1998, in conjunction with the Federal Highway Administration.

According to Smith, the partnerships developed with the equipment manufacturers have been an integral part of ALERT from the very beginning. The manufacturers donated equipment and technical expertise, and they provided protocols that would

easily interface with the ALERT architecture and the proprietary software engineered by TTI. This kind of cooperation, she says, will ultimately be of tremendous benefit to police agencies, enabling them to combine equipment from different manufacturers to create a system that meets the needs of their department. It also will give them the ability to transfer the ALERT equipment from one patrol car to another.

But it is the officers who will truly benefit, Smith adds. They will have immediate access to State and national databases and be able to receive and transmit text and graphics in seconds, thereby allowing the transmission of photos of wanted and missing persons immediately. Digital and video cameras will capture images from accident sites and crime scenes and automatically download them to a department's records management system. Information from driver's licenses will be swiped on mag-stripe and bar code readers and automatically loaded into electronic forms. Officers will also be able to communicate with neighboring jurisdictions as well as other emergency responders.

*"Together, government and industry have created the police car of the future. . ."*

"The ALERT system is really the prototype police car of the future," Smith says. "The best part of the technology is that it's modular, so it's available to departments of all sizes. The smaller department doesn't have to buy the whole package—only what they need. The configuration at the communications center will require a compatible CAD and a records management system. And of course, all of this is being designed to integrate with the FBI's NCIC [National Crime Information Center] 2000, NIBRS [National Incident Based Reporting System], IAFIS [Integrated Automated Fingerprint Identification System], and other individual State and local systems."

In addition to funding assistance, NIJ is providing technical support in the area of interoperability through its National Law Enforcement and Corrections Technology Center (NLECTC)—Rocky Mountain facility and is fostering the commercialization of ALERT through its Office of Law Enforcement Technology Commercialization (OLETC) in Wheeling, West Virginia. OLETC will work with equipment vendors and manufacturers to bring ALERT to the law enforcement market. Because ALERT has its own set of standards engineered by TTI, manufacturers will need to make their products compatible in order to compete.

"The beauty of the ALERT project is that because of its plug-and-play compatibility with most technology, it opens the marketplace for other vendors who have state-of-the-art technology to assist the law enforcement market," Smith says.

In addition to the Gore Hammer Award, the ALERT project won the Computer World Smithsonian Award, which recognizes individuals and organizations who have found new and innovative ways to use technology. The ALERT car and 321 other technological applications from 39 States and 21 countries have been added to the Smithsonian's collection at the National Museum of American History in Washington, D.C.

**For more information about the ALERT car, contact Brenna Smith of NIJ, 202-305-3305; Joan Tatge, ALERT project manager at the Texas Transportation Institute, 409-862-2901; or visit the ALERT World Wide Web site at <http://alert.tamu.edu>.**







# Helping To Prevent In-Custody Deaths: New Video for Jail Personnel

**T**he National Institute of Justice's (NIJ's) Office of Law Enforcement Technology Commercialization (OLETC) and the National Institute of Corrections will soon have available a new informational videotape on preventing in-custody deaths related to positional asphyxia.

Targeted to the many smaller county and municipal jail facilities throughout the United States, this videotape highlights the correct procedures to use when restraining a violent prisoner as well as the safety precautions to follow to help jail personnel prevent medical problems.

"This video not only provides jail personnel information about why and how positional asphyxia occurs, but also offers suggestions and recommendations that can help reduce the potential of in-custody death," says Bill Chard, OLETC manager of support services and videotape project manager. The video, he says, details such precautions as:

- ◆ Never leave a fully restrained prisoner on his stomach for any length of time.
- ◆ Never sit on a prisoner's back while restraining him.
- ◆ Never hog-tie a prisoner.

- ◆ Always keep a fully restrained prisoner under continual observation.
- ◆ Obtain medical assistance as soon as possible if a medical problem of any kind is suspected. Watch for breathing difficulties, discoloration of the skin, and profuse sweating. Also be aware that a prisoner who is suddenly violent and then just as quickly turns docile may need medical assistance.

"This is an informational video that can be shown to all jail personnel to develop better facility policies and procedures and training programs," Chard says. "We've used as many scenarios as possible to show staff how to reduce the confrontational nature of these events and to attempt to reduce the possibility of positional asphyxia and an in-custody death."

*To obtain a copy of the videotape, contact the National Law Enforcement and Corrections Technology Center (NLECTC)—National in Rockville, Maryland, at 800-248-2742. Or, contact the National Institute of Corrections in Longmont, Colorado, at 800-995-6429. An informational bulletin about positional asphyxia is available from NLECTC—National or online through JUSTNET, NLECTC's World Wide Web site at <http://www.nlectc.org>.*

# 1st International Land Transportation Security Technology Conference

**O**n April 7-9, 1998, the National Institute of Justice (NIJ) and the U.S. Departments of State and Transportation (DOT) are sponsoring the first International Land Transportation Security Technology Conference, designed to help government leaders and law enforcement practitioners improve land transportation security through the use of technology.

Transportation is one of the eight critical national infrastructures identified to be of such importance that its incapacitation or destruction would have a dramatic effect on the defense, economic security, and public welfare of the United States. "When one considers that we have 4 million miles of public roads in which 20 million trucks travel for business purposes; 100,000 miles of railroad track carrying 1.2 million operating freight cars; and 6,000 transit entities operating rapid transit rail and bus services, one can better appreciate the importance of being prepared to deal with not only a cyber attack, but also a physical attack on a land transportation system," says Dr. Marj Leaming, NIJ program manager for transportation security technology. "International rules govern attacks on air travel and shipping, but no similar conventions pertain to terrorist attacks on ground transportation. Therefore, Federal interagency efforts have been initiated to protect public transportation systems in the domestic arena. The goals of these cooperative ventures are two-pronged: (1) enhance the capability of local agencies to detect and prevent a terrorist attack and (2)

improve the emergency response and containment capabilities after an attack."

The G-7/P-8 countries (United States, Canada, Germany, Great Britain, France, Italy, Japan, and Russia) met at the Lyon Summit in Paris on July 30, 1996, and adopted a 25-point plan calling for close cooperation in international efforts to combat terrorist acts. Based on commitments made by U.S. Attorney General Janet Reno and then Transportation Secretary Federico Peña at this meeting, two gatherings for land transportation security policymakers were held in Washington, D.C., in November 1996 and April 1997 under sponsorship of the Departments of Transportation and State. The purpose of the April 1998 conference will be to place important information in the hands of State and local law enforcement and public safety officers that will strengthen the first line of defense against terrorists in the United States.

"This conference is a unique opportunity for transportation security professionals and first responders to learn from domestic and international experts who have experienced and survived terrorist attacks," says Leaming. The conference will highlight lessons learned and best practices, and showcase technologies to enhance operational effectiveness and decisionmaking. The program will focus on threats and vulnerabilities, technology and tools, and issues for policymakers. Conference topics and panel presentations will include:

- ◆ The International Association of Chiefs of Police (IACP)/Total Security Systems, Inc. (TSSI) First Responder Practical Exercise.
- ◆ Weapons, explosives, and chemical detection systems and sensors.
- ◆ Surveillance systems and solutions.
- ◆ Information system security and command and control systems.
- ◆ Emergency management.
- ◆ Simulation and training tools.
- ◆ Vulnerability assessments.
- ◆ First-responder capabilities, including chemical, biological, and radiological containment; hostage and extortion situations; and mass casualty triage and treatment.

*The conference will be held at the Marriott Marquis in Atlanta, Georgia. It is being hosted by the National Law Enforcement and Corrections Technology Center (NLECTC)—Southeast, with support from Eagan, McAllister Associates (EMA) and Government Technology magazine. For more information, contact Jim Scutt at EMA, 703-820-0600; Bill Nettles at NLECTC—Southeast, 800-292-4385; or Marina Leight at Government Technologies, 916-363-5000, ext. 3764, or e-mail [mleight@govtech.net](mailto:mleight@govtech.net).*





# Marks the Spot

**C**omputerized crime mapping may be the most versatile tool ever to find its way to policing. It is one of the few technologies that can be used by administrators and patrol officers, citizens, and city officials.

It supports both community policing and community corrections efforts while helping command staff efficiently allocate resources.

Simply put, computerized crime mapping is the high-tech equivalent of sticking colored pushpins in a wall map—something police have done for decades. But more than that, it offers law enforcement the ability to marry crime statistics with causative factors. As an example, a multidimensional map of crimes in the past 30 days can be overlaid with maps of unemployment rates in the areas of high crime, locations of abandoned houses, reports of drug activity, or geographic features such as alleys, bayous, canals, or open fields.

This ability to turn crime statistics into more meaningful information is what helped the New York City Police Department (NYPD) lower overall crime by 39 percent. The department uses *Compstat*, a process that uses mapping (done with MapInfo and a tailored front-end user interface) to identify crime problems and hold law enforcement officers—from precinct commanders to patrol officers—accountable for crime problems and preventative enforcement. Maps used during the *Compstat* process are displayed on large screens during semiweekly meetings that include uniformed officers, citizens, and representatives from probation, parole, corrections, and the district attorney's office.

But this NYPD initiative is just one among many in the United States. More and more, police agencies large and small are beginning to use mapping technologies. To support their efforts, the National Institute of Justice (NIJ) recently opened the Crime Mapping Research Center (CMRC), headquartered in Washington D.C., with a satellite office at the National Law Enforcement and Corrections Technology Center (NLECTC)—Rocky Mountain in Denver, Colorado. According to CMRC Director Nancy La Vigne, the center is undertaking several initiatives that will enable its staff to offer resources and services and guide departments in using mapping technologies.

La Vigne says that CMRC plans to lead the way in the area of research by tapping into the expertise available in other disciplines. The center will offer fellowships to practitioners, researchers, and academicians from fields where mapping has been used for many years. "It will

give them an opportunity to study crime, and give us an opportunity to learn from them," she says. "We have the best equipment and every mapping program you've ever heard of. We have lots of resources here, but we're hungry for more knowledge."

La Vigne adds that CMRC staff are also developing training programs. The center recently conducted a 3-day symposium in conjunction with NLECTC—Rocky Mountain that brought together researchers and practitioners from all areas of criminal justice. More than 400 participants attended workshops on such topics as analyzing spatial data, cluster analysis, designing a system, mapping for community policing, and mapping applications in probation, parole, and corrections.

"We had a lot of practitioners at the conference who were experienced in mapping and crime analysis. But, we had a whole lot of other people who said they knew next to nothing and wanted more information," La Vigne notes.

One of the most popular workshops at the symposium focused on incorporating geographic information systems (GIS) into planning and management. "It gave them a chance to actually see how mapping could be put to work in their own departments," states Jim Keller, director of NLECTC—Rocky Mountain. "Our job is to come up with a set of training approaches and to take the technology into the field and help departments get started. Do we do it by short course or resident education? Do we go out into the field and offer 1-week courses? How much interest is there in continuing formal education? Since we are colocated with Denver University, we have a whole set of facilities here we can use."

CMRC is also interested in offering training via the Internet, on CD-ROM, and through distance learning. Development of training strategies will be driven in part, La Vigne says, by the center's evaluation of the current state of mapping. CMRC staff are presently studying the results of a survey of 2,700 law enforcement agencies on the level, nature, and use of mapping in the United States.

Other CMRC goals include the creation of a national geocoded data archive, new analytic software, and promoting partnerships between software and data vendors and law enforcement to ensure that what is developed is really usable. According to La Vigne, one of those partnerships currently involves California's Salinas Police Department and Environmental Systems Research Institute (ESRI) of Redland, California, one of the original developers of mapping software.

The Salinas Police Department's mapping system was primarily developed to track gang activities, members, territories, hot spots, and gun use. But it also incorporates information about field contacts, citations, incident reports, and locations of burglaries, robberies, assaults, homicides, drug deals, and drive-by shootings. The result is a series of maps that shows patterns and relationships between events and gangs. This user-friendly system is easily accessed by officers, who do not necessarily need to have correct spellings or know a particular crime code. The officers have a wide range of search options and can run spatial searches and display crime patterns on a street map using different symbols for each type of crime. Officers also can map gang territories and correlate socioeconomic factors with crime-related incidents. According to Salinas Police Department statistics, results have been dramatic. Murders are down by 61 percent, drive-by shootings by 31 percent, and gang-related assaults by 23 percent.

CMRC also wants to promote partnerships among police agencies, La Vigne says. "Spatial crime analysis tends to be hindered by the fact that analysts are limited to data within their departments' jurisdictional boundaries, precluding the identification of patterns for mobile crimes such as auto theft. We'd like to help neighboring agencies share data. A good example of this type of partnership is a consortium formed by a number of departments in and around Baltimore County, Maryland, that share a common suspect and offense database and then link it with a mapping program. We're trying to promote what they're doing as a model for others."

Finally, she says, CMRC plans to promote mapping as a resource in other areas of criminal justice such as corrections, probation, parole, and the courts. For example, it could be used to map parolees for monitoring purposes or probationers in assigning caseloads to probation officers. It could track where a sex offender plans to live in relation to schools and day care centers. It also could be used in court to support prosecution efforts.

Although the center opened only recently, La Vigne says that it is well on its way to providing a host of services to law enforcement and corrections. One fellowship has already been completed, and CMRC is currently accepting applications for more. A number of grants have been funded to enable further study or implementation of mapping technology. A listserv is online, boasting practitioners, researchers, and academicians from the United States as well as Canada, England, Australia, and South Africa. "And if the success of the mapping symposium in Denver is any indication," she says, "the center's future, especially in the area of training, looks especially bright."

**For more information about the Crime Mapping Resource Center and its services, contact Nancy La Vigne in Washington, D.C., at 202-616-4531, or Jim Keller at NLECTC—Rocky Mountain at 800-416-8086. The CMRC World Wide Web site can be accessed at <http://www.nlectc.org/cmrc>. Instructions for subscribing to the listserv can be accessed through CMRC News and Notes on the center's Web site.**



## New Publications

The following publications are available from the National Law Enforcement and Corrections Technology Center:

**TechBeat, October 1997.** This issue of TechBeat includes articles on developments in image analysis and concealed weapons detection technologies, innovations in technology to stop fleeing vehicles, and efforts to improve security along the Nation's borders.

**Technology for Community Policing Conference Report.** This report covers a series of five regional conferences held during the summer and fall of 1996 that focused on how technology can enhance community policing. The conferences featured presentations on approaches to using technology to strengthen partnerships between the community and police and to develop strategies to fight crime.

**Equipment Performance Report: 1997 Patrol Vehicle Tires.** This report provides results of comprehensive testing of 1997 patrol vehicle tires. The report contains a large amount of data generated throughout the evaluation, which was conducted under a variety of test conditions.

**1997 Evaluation of Replacement Brake Pads for Police Patrol Vehicles.** This bulletin summarizes the results of the May 1997 comprehensive evaluation of replacement brake pads for police patrol vehicles. The evaluation can help police departments evaluate these vital auto parts before they stake their officers' lives on them.

**Police Body Armor Consumer Product List Update Fall 1997.** This consumer product list (CPL) identifies models of armor that were tested and found to comply with the NIJ standard. CPLs are updated to include new models that have passed the test. This edition is an update to the Spring 1994 edition of the CPL; both documents are required to have a complete listing of NIJ-approved models.

**Michigan State Police Tests 1998 Patrol Vehicles.** Every year, the Michigan State Police tests new patrol vehicles as part of their procurement policy. This bulletin summarizes test results of the 1998 patrol vehicles.

The following publications will be available soon:

**Selection and Application Guide to Police Body Armor.** While body armor is a household word in the law enforcement community, questions about its selection and use are frequently asked. This guide responds to commonly expressed concerns. It provides information to assist in determining the level of protection required for individual officers consistent with the threats to which they are exposed.

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**Equipment Performance Report: 1997 Evaluation of Replacement Brake Pads for Police Patrol Vehicles.** This report provides complete results of the May 1997 comprehensive evaluation of replacement brake pads for police patrol vehicles. The report contains a large amount of data generated throughout the evaluation, which was conducted under a variety of test conditions.

**Equipment Performance Report: 1998 Model Year Patrol Vehicle Testing.** This report provides complete data on the 1998 Michigan State Police patrol vehicle testing.

To obtain any of the above publications or to receive additional copies of the TechBeat newsletter at no cost, write NLECTC, P.O. Box 1160, Rockville, MD 20849-1160; telephone 800-248-2742; or download from JUSTNET at <http://www.nlectc.org>.

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