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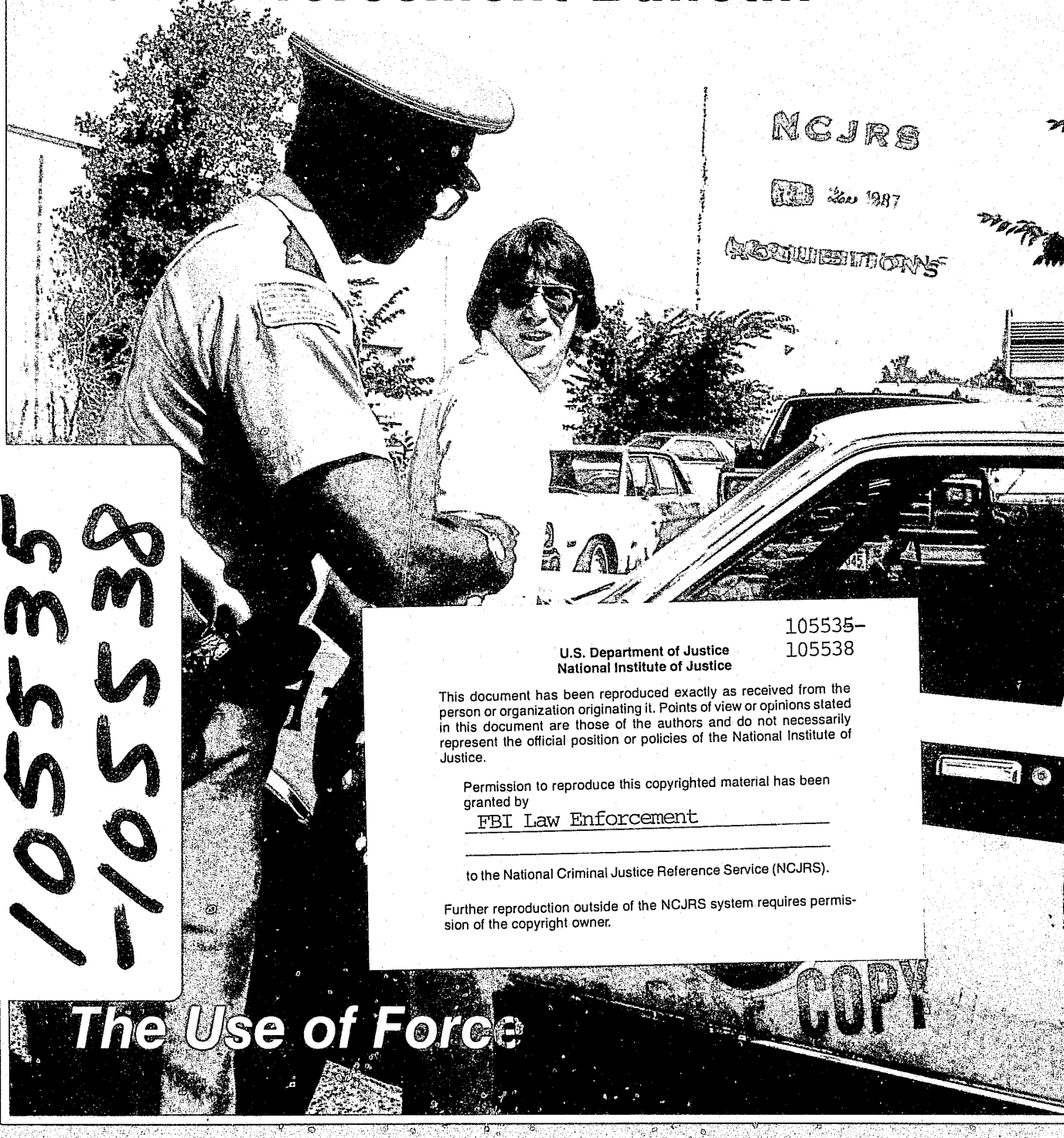

The Use of Force

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William H. Webster, Director

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The Cover:
The St. Paul, MN, Police Department developed a pure research project designed to measure the resistance encountered by police officers and the force used to overcome that resistance.
See article p. 6.

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Testing Technology for Law Enforcement Agencies

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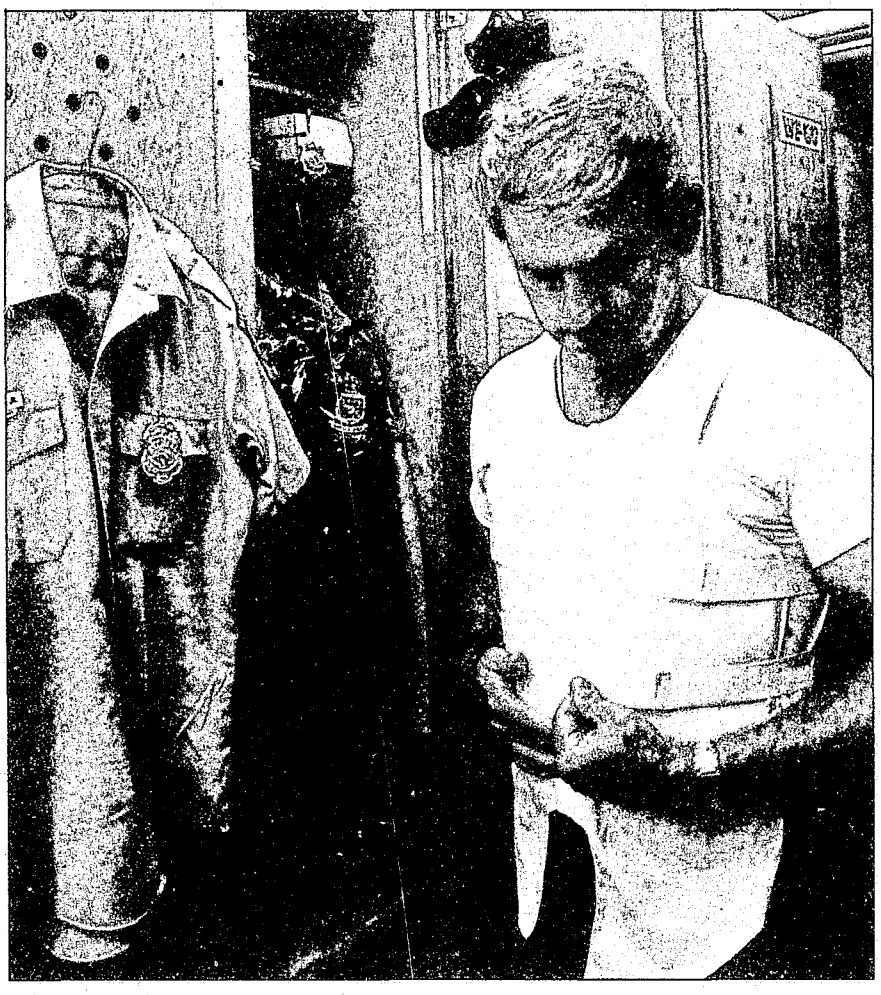


TAP tested old armor and found that the ballistic resistance of vests remains high, even in vests more than 10 years old. Bullet resistant vests remain a high priority for TAP.

"To help agencies choose the best products and to encourage manufacturers to develop better equipment, the National Institute of Justice ... has developed standards for equipment and tested products used in law enforcement work."

Mr. Shubin

Ms. Hernon

Like all consumers, law enforcement professionals want to get the most for their purchasing dollar. But unlike most consumers, they place a higher premium on safety and performance because inferior products cost not only dollars—they can cost lives.

To help agencies choose the best products and to encourage manufacturers to develop better equipment, the National Institute of Justice (NIJ) of the U.S. Department of Justice has developed standards for equipment and tested products used in law enforcement work. Through NIJ's Technology Assessment Program (TAP), scientists and engineers at the National Bureau of Standards and specialists at the TAP Information Center (TAPIC) develop standards, test equipment, analyze test data, prepare test reports, and disseminate the results.

This year, law enforcement professionals will spend millions of dollars on equipment. In an era of tight budgets, the director of NIJ has noted that such expenses are being scrutinized as never before. TAP can help make those purchases go further by ensuring that equipment meets the minimum performance standards established by NIJ.

TAP is composed of three complementary components:

— The National Institute of Justice, which provides overall guidance and direction for the programs;

— The Law Enforcement Standards Laboratory (LESL) of the National Bureau of Standards, which develops standards and assists in the testing; and

— The TAP Information Center (TAPIC), which assists NIJ in selecting laboratories to test equipment, overseeing the testing and analyzing the results, and which also disseminates the findings to as wide an audience as possible.

Setting Priorities

The marketplace now offers an almost unlimited number of law enforcement products. TAP cannot, of course, examine all of these, so the program relies on a panel of experts, the TAP Advisory Council, to help define issues and set priorities.

The TAP Advisory Council consists of Federal, State, and local law enforcement professionals who maintain close contact with NIJ and LESL. The chair of the council is the current chief of police in Huntington Beach, CA.

The council consists of three committees—Weapons and Protective Equipment, Communications, and Systems. An FBI Special Agent assigned to the Firearms Training Unit at the FBI Academy in Quantico, VA, is the chair of the Weapons and Protective Equipment Committee. The deputy commissioner of the New York Division of Criminal Justice Services heads the Communications Committee, and the executive director of the Northern Illinois Police Crime Laboratory chairs the Systems Committee.

Each year, the advisory council assesses key technological needs and recommends equipment priorities for the coming year. The council met in April 1986, and suggested more than two dozen products for TAP to evaluate. Among these priorities were a continued evaluation of body armor and examination of less-than-lethal weapons and communications equipment.

James K. Stewart
Director
National Institute of Justice

Based on the council's recommendations, NIJ selects which equipment items to test and evaluate. In 1986, TAP tested handguns (9mm and .45-caliber autoloading pistols and .38- and .357-caliber revolvers), used body armor (to determine if age has an effect on ballistic performance), and expects to issue a report on electronic monitoring devices. Additional priorities for 1987 will be selected throughout the coming months.

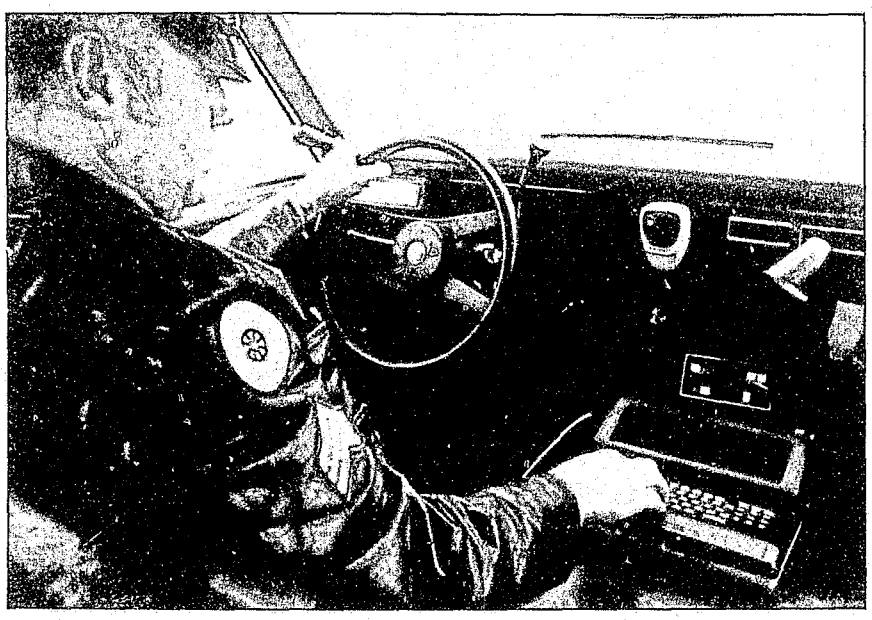
Developing Standards

Once NIJ has selected an item as a TAP priority, a standard is developed if one does not already exist. The first step in developing a standard is to determine what the performance requirements are and how they correspond to the attributes of the product. The NIJ and LESL staff consult practitioners to understand how the equipment should operate in the field. Minimum requirements are then set for each essential attribute of the equipment. For example, performance requirements for a police riot helmet would include its ability to withstand impact while attenuating cranial accelleration due to the impact, resist penetration, and provide for adequate visibility on the part of the officer wearing it. In addition to specifying what the item of equipment should do, the standards define the methods for testing the equipment so that any competent testing laboratory can determine if the product meets NIJ requirements.

Once the performance requirements are identified and laboratory evaluation is conducted, a draft standard is developed and circulated to Federal agencies, manufacturers of the equipment, universities, and other experts. After all the review comments and suggestions are returned, the draft standard is revised and finalized. The final standard is a technical document designed to help procurement officials determine if a particular product meets their needs. The overall process—from initial evaluation until the standards are published—usually takes 3 years. Criminal justice agencies who use the standards have found they can simplify the bid process and eliminate from competition equipment that does not comply with laboratory-based performance levels.

Since NIJ established the Technology Assessment Program 10 years ago, 45 standards have been developed for items ranging from chemical spot test kits for identifying drugs to weapons detectors used by corrections agencies to screen visitors. Courts have used NIJ standards to select video as well as audio recording equipment for courtrooms. Standards for organic vapor detectors are helping investigators in the battle against arson.

In cooperation with the Law Enforcement Standards Laboratory of the National Bureau of Standards, TAP has developed performance standards for mobile digital equipment and personal mobile FM transceivers.



Testing Equipment

Few law enforcement agencies who purchase equipment have the facilities or finances to test their equip-

"The final standard is a technical document designed to help procurement officials determine if a particular product meets their needs."

ment against NIJ standards. So TAP certifies independent laboratories to conduct all the testing for the program. To select laboratories, the TAP Information Center first announces its plans to test equipment and issues a request for proposals. Then with the assistance of the National Bureau of Standards Law Enforcement Standards Laboratory and National Voluntary Laboratory Accreditation Program, TAP reviews the proposals from laboratories and selects the lab that offers the best technical and financial plan for testing equipment.

NIJ, LESL, and TAP staffs then oversee the actual testing, analyze the results, and determine the appropriate medium for presenting the findings to the criminal justice community. The TAP Information Center disseminates the results in a number of ways, including equipment performance reports, articles in widely read criminal justice periodicals, and presentations at conferences.

Publicizing Test Results

One of TAP's most important functions is the dissemination of the testing program results. Naturally, the program is only useful if the findings are widely available to those who need them. TAP uses several vehicles to disseminate testing information.

Equipment performance reports contain the full results of equipment testing. Most recently, TAP published an equipment performance report on the results of the Michigan State Police Vehicle Test and a revised edition of transceiver battery testing. These reports do not recommend individual products or endorse particular manufacturers, but they do discuss tradeoffs to consider before purchasing equipment.

Sometimes a manufacturer introduces a new model of a particular product *after* the main testing for that product is complete. If the manufacturer submits the product for testing, TAPIC publishes the results in an equipment performance supplement. These brief reports keep law enforcement personnel up to date on the testing of the most recently developed equipment. The most recent supplements have been on the results of additional testing on handcuffs and on transceiver batteries.

TAP also keeps law enforcement agencies informed of developments through a periodic newsletter called the *TAP Alert*, which informs subscribers about the program's activities and contains brief articles about the uses of new technology. A recent issue of the *Alert* presented the results of testing on used body armor. TAP has received many questions about the ballistic resistance of used armor, and in response, has tested 48 panels of 10-year-old armor. The results showed that age alone does not contribute to the deterioration of the ballistic resistance of armor. There was no significant degradation in vests that had been used for 10 years.

One issue of the *Alert* described the various methods now available to test blood and urine for the presence of illegal drugs. Another issue described how the Metropolitan Council of Governments in Washington, DC, coordinated the use of an emergency communications network among the 38 law enforcement agencies that operate within a 100-mile radius of the city.

Simple, easy-to-use guides on how to purchase equipment also are available. These guides describe the various factors to consider when deciding which equipment to purchase. TAP guides cover body armor, communications systems, and electronic facsimile equipment to mention a few.

Occasionally, TAP publishes special reports on technology that is still evolving. The program is developing a report on electronic monitoring devices—the bracelets and necklaces that can transmit a signal to probation offices. The devices are used in a few jurisdictions as alternatives to incarcerating less serious offenders.

Improving Products

Involving manufacturers and others in the standard-setting and testing processes enhance the program's benefits. Sharing information with private industry gives manufacturers the opportunity to design equipment that more closely meets the demands of criminal justice job requirements. After publication of a report on handcuffs, for example, two manufacturers introduced completely new designs of improved handcuffs that complied with the standard. The process thus improves the product and can prevent unnecessary, even wasted, expense in production.

TAP is not just for law-related agencies. Other agencies have used the program as a prototype for developing accurate technical information. Recently, the National Highway Traffic Safety Administration used the TAP assessment process, drawing upon LESL, to test radar speed-measuring units to their model performance specifications.

Where to Find More Information

Most publications of NIJ's Technology Assessment Program are available through the TAP Information Center. Readers who would like more information about these publications or about the Technology Assessment Program, may call 1-800-24-TAPIC (in Maryland and Metropolitan Washington, DC, call 251-5060.)

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