



## Office of Legislative Affairs

Office of the Assistant Attorney General

Washington, D.C. 20530

The Speaker  
House of Representatives  
Washington, D. C. 20515

Dear Mr. Speaker:

Enclosed for your consideration and appropriate reference is a draft bill, the "Peace Officer Protection Act of 1984", to "amend title 18, United States Code, to establish criminal sanctions for the manufacture, importation or criminal use of certain handgun ammunition."

Background

In 1971, a Justice Department employee working with the Department's technology development program became aware of a new synthetic fiber, marketed under the trade name "Kevlar", originally developed for use as a replacement for steel cords in automobile tires. Recognizing the potential of this fiber, the Department of Justice pioneered the development of a prototype vest made from "Kevlar" and, following extensive laboratory work, conducted field tests of this new type of body armor in fifteen cities. Results exceeded expectations. In addition to offering exceptional ballistics resistance, the new vests were light, flexible and could be worn unobtrusively under normal street clothes and uniforms.

By 1975, dozens of manufacturers had entered the body armor market producing a wide range of soft, lightweight body armor. Because few state or local agencies had the resources to test the quality of such body armor, the National Institute of Justice of the Department of Justice, in concert with the National Bureau of Standards of the Department of Commerce, developed a body armor standard published in December of 1978. This standard established procedures for testing body armor and created five different armor categories: Type I, Type IIA, Type II, Type III and Type IV. These body armor categories protect against increasing threat levels. For example, the Type I armor is the lightest weight providing protection against designated handgun ammunition when fired from a distance of five meters under specified conditions; the Type IV armor is the heaviest providing protection against designated armor-piercing rifle ammunition. Types I, IIA and II are soft body armor. Types III and IV incorporate metallic or ceramic materials and are normally used by special weapons teams in sniper or seige situations.

The focus of this proposed legislation is the soft body armor (Types I, IIA, and II) designed to protect wearers against threats posed by criminals armed with handguns. Surveys have shown that handguns are the weapons of choice for criminals representing more than four of every five firearms seized by police. An estimated 50% of the nation's law enforcement officials use such soft body armor, primarily due to the efforts of the Department of Justice and the International Association of Chiefs of Police, both of which strongly advocate its use. Soft body armor has saved the lives of an estimated 400 police officers during the past eight years. We are, therefore, deeply concerned over the availability of handgun ammunition capable of defeating soft body armor and have devoted substantial efforts in recent months to developing an appropriate and workable legislative remedy to the problem.

Our technicians have known from the beginning that soft body armor, like all other forms of armor, can be pierced by particular types of rounds. As noted above, the standards used for testing different classes of body armor require that the armor be able to stop specific types of bullets posing particular threat levels in order to receive a rating. It is for this reason that body armor is referred to by technicians as "ballistics-resistant" apparel. The fact that body armor is more commonly referred to by the public as "bullet-proof" has created the mistaken impression that body armor can or should be able to stop any bullet. Rather, soft body armor is designed to stop the most common threats that police officers face.

With this background, experts were not at all surprised by a network television news program in early 1982 on the "KTW" bullet and its ability to penetrate multiple thicknesses of soft body armor. Our technicians were, however, deeply disturbed that such information was so widely distributed to the public, in essence creating a shopping list for criminals.

The concern of the experts over the publicity surrounding the "KTW" bullet is two-fold. First, we fear that publicity surrounding the availability of ammunition capable of defeating body armor will encourage assassins and other criminals to search out these particularly dangerous classes of ammunition to use in their endeavors. Although our technicians have known about the "KTW" bullet for many years, this and other forms of armor-piercing ammunition were not felt to constitute a substantial threat because most criminals are not so sophisticated as to realize that the protection afforded by body armor is limited and that there are varieties of ammunition available which will penetrate it. The conclusion that armor-piercing rounds posed only a minimal threat was difficult to fault as we are unaware of any instance in which an armor-clad police officer has been

shot with armor-piercing handgun ammunition. Now, however, the publicity surrounding the "KTW" bullet has, in our view, increased the likelihood of such attacks.

Our second concern over the publicity is that it has, we believe, encouraged a fatalistic attitude among police officers resulting in reduced use of body armor. In this regard, although the new soft body armor is comfortable to wear by comparison with earlier types of armor, it is a constant problem for police administrators to ensure that body armor issued to officers is indeed worn. Too often, officers to whom body armor was issued have been killed or severely wounded because the armor was left in a dressing room locker or the trunk of a squad car. Continuing publicity about the availability of armor-piercing handgun ammunition, together with the absence of any effective statutory safeguards, has caused some police officers to decide that it is useless to wear their armor when ammunition is available on the streets that will defeat the armor. This indirect effect of armor-piercing handgun ammunition could result in more deaths and crippling injuries than the actual use of armor-piercing bullets against officers wearing body armor. In short, we believe it is important to let the law enforcement officers of the nation know that measures are being taken to prevent the criminal use of armor-piercing ammunition. In addition to banning the manufacture or importation of unreasonably dangerous handgun ammunition and providing increased sanctions for the criminal use of ammunition capable of penetrating armor, legislation in this area will, we believe, have the effect of encouraging law enforcement officers to wear body armor issued to them.

#### Efforts to Develop Workable and Appropriate Legislation

In early 1982, the Department of Justice commenced work on legislation to ban certain armor-piercing ammunition. Our initial efforts produced a draft bill very similar to H.R. 953 and other bills currently pending before the Congress. Careful review of these proposals, however, revealed that they were overbroad in their reach inadvertently banning ammunition with legitimate recreational uses. In fact, early proposals would have inadvertently deprived thousands of citizens of the use of their firearms by banning all ammunition being manufactured for certain handguns. Moreover, our early efforts at a legislative definition of "armor-piercing" bullets were imprecise with the result that they did not give adequate notice to manufacturers and importers as to precisely which bullets are legal and which are prohibited. H.R. 953 and other similar bills now before the Congress suffer from these same grave defects.

With respect to creating criminal sanctions for the criminal use of armor-piercing handgun ammunition, absolute precision is not necessary as law enforcement officials will normally be in possession of both the suspect ammunition and the handgun in which it was loaded thereby facilitating testing to ensure that the

ammunition is armor-piercing when fired from the weapon in possession of the felon. We were able, therefore, to propose legislation in 1982 to establish minimum-mandatory penalties for the use of armor-piercing ammunition during the course of a federal crime of violence. This proposal was included as Title XIV, Part E of the Comprehensive Crime Control Act of 1983 submitted to the Congress by the President on March 16, 1983 and introduced as S. 829 and H.R. 2151.

Because of the lack of a proper definition of "armor-piercing" ammunition, we funded a research project in early 1983, carried out by the Department's National Institute of Justice (NIJ) and the National Bureau of Standards (NBS) to develop a precise definition of "armor-piercing handgun ammunition." After review of preliminary research results in August, further testing was conducted and a final test procedure submitted in December of 1983. Based upon this test procedure, we have developed and are submitting the enclosed draft bill.

#### The Test Procedure

The test procedure itself is a "complete" one in that it recognizes that the penetration potential of ammunition cannot be precisely evaluated without reference to the system from which it is fired. Barrel length, the type of handgun used (i.e., pistol or revolver), the tolerances to which the weapon is manufactured, and the amount of wear to which the weapon has been subjected affect the velocity at which projectiles emerge from weapons. The test procedure, therefore, provides for firing of test ammunition from test fixtures used by manufacturers to develop ballistics tables and to test velocity of ammunition. Detailed written standards exist for these test fixtures. Furthermore, rather than using layers of "Kevlar" as the test medium, the NIJ test procedure provides for use of a series of aluminum plates to determine penetration. Metal plate is much more uniform than fabric in its composition and penetration resistance and thus yields more precise and predictable results. The use of metal plates rather than fabric as the test medium also reduces costs associated with performing penetration tests.

With respect to the penetration levels established by the proposed bill, these conform to the new armor standard currently being developed by NIJ and NBS which will establish a new Type IIIA soft body armor. To draw the line at a lower level would result in banning popular handgun ammunition with legitimate recreational uses, a result we do not believe is justifiable under the circumstances. In effect, the proposed legislation would not ban any handgun ammunition currently being produced for sale to the public by the three major American ammunition manufacturers: Remington, Olin-Winchester, or Federal. It would,

however, ban the "KTW", <sup>1/</sup> some other specialty handgun cartridges manufactured by small American manufacturers, and a number of types of foreign-made handgun ammunition being imported into the United States. Because of our desire to avoid creating a "shopping list" for criminals, we cannot, in this public letter, identify those bullets which would be banned. We will be pleased to brief Members of Congress in detail, however, so that this information can be furnished on a confidential basis. In short, we believe the proposal appropriately and accurately distinguishes between legitimate handgun cartridges and those which pose an unreasonable danger to law enforcement officers. Again, as mentioned, the proposed penetration limit is consistent with the new Type IIIA armor standard now being developed so that police departments which desire to purchase body armor capable of defeating all legal handgun ammunition will be able to do so in the near future.

#### Section-by-Section Summary

Section 1. This section provides that this bill may be referred to as the "Peace Officer Protection Act of 1984" reflecting that the sole purpose of the proposal is to protect law enforcement officers who wear soft body armor.

Section 2. This section creates a new section 929 of title 18 setting out the ban on manufacture or importation of armor-piercing handgun ammunition and incorporates by reference the test procedure developed by NIJ and NBS.

The bill provides felony sanctions of imprisonment for up to five years and a fine of up to \$50,000 for the manufacture or importation of handgun ammunition which the manufacturer or importer knows exceeds the penetration limits of the test standard. This is not to say that manufacturers and importers are entitled to operate without bothering to test the ammunition they are making or importing and thus avoid the reach of the new section. On the contrary, the testing of ammunition and the application of established quality control standards are important and persons engaged in the business of manufacturing or importing ammunition must adhere to such procedures as a cost of doing business. It is anticipated that the provisions of NIJ Standard 100-84 and acceptable standards concerning sampling will be published in the Federal Register and made available to manu-

---

<sup>1/</sup> The "KTW" is produced in a number of different calibers, some of which are of such limited velocity that they do not exceed the new penetration standard.

facturers and importers by the Department of Justice. 2/ A showing that a particular manufacturer or importer had received a copy of the test and sampling standards but had not followed them would constitute strong evidence that the violation was "knowing."

On the other hand, quality control in ammunition manufacture is such that an occasional "hot" round will be produced or imported, the velocity, and hence the penetration characteristics of which, will be significantly greater than normal. It is not the intention of the legislation to require any changes in ammunition manufacturing or quality control procedures or to penalize the manufacturer or importer of such a "hot" round under the new section provided the bullet can be shown to have come from a lot tested or sampled according to the standard published by the Department of Justice.

Subsection (b) sets out an exemption from the Act for ammunition produced for military or law enforcement use.

Subsection (c) sets out a procedure by which handgun ammunition that exceeds the penetration limitations of NIJ Standard 100-84 in the care, custody, or control of manufacturers of importers can be civilly forfeited to the United States. The forfeiture provision would apply whether or not the manufacturer of importer knew the bullets in question exceeded the NIJ Standard. The purpose of section 929 is to protect law enforcement officers and others who wear body armor. From the officers' perspective, an armor-piercing round is just as much of a threat

---

2/ We anticipate that the test and sampling standards will provide in essence that ammunition is not in violation if:

(1) a random sample of the ammunition in question was tested pursuant to the procedures set out in NIJ Report 100-84 and that no more than ten percentum of the rounds tested exceeded the penetration limitations of 18 U.S.C. 929; or

(2) the ammunition, although not from a lot tested for penetration, was

(A) manufactured pursuant to written specifications identical to those governing the manufacture of ammunition which has been tested and found not to exceed the limitations of 18 U.S.C. 929, and

(B) standard velocity tests of such ammunition yielded results averaging not more than fifty feet per second greater than for the lot which was tested for penetration.

if produced or imported accidentally or without knowledge that it was prohibited as is a round produced or imported in deliberate defiance of the NIJ Standard. Consequently, the forfeiture subsection is designed to prevent armor-piercing bullets from entering the channels of commerce. It should, however, be underscored that the forfeiture provisions, like the rest of the section, only apply to manufacturers and importers, not to individuals or dealers. Nothing in the section makes it illegal for any individual to possess or even sell an armor-piercing round nor could the United States seize such a round from anyone other than a manufacturer or importer. Rather, the criminal penalty and civil forfeiture provisions of the section are both designed to prevent additional armor-piercing handgun ammunition from coming onto the market and becoming readily available to criminals.

As for the forfeiture provision itself, subsection (c) provides that the procedures applicable under the customs laws are equally applicable here with the provision that the Department of Justice may designate persons to fulfill seizure and forfeiture responsibilities instead of customs officers. An important feature of the customs forfeiture provisions which is carried into subsection (c) is the ability of persons (here the manufacturers or importers) whose property has been seized to file a petition for remission or mitigation of the forfeiture. Such petitions are filed with the Attorney General. The decision to grant or reject a petition is based on whether the person whose property has been seized intended to violate the law and on his degree of care in trying to comply. For example, a manufacturer who made a good faith effort to comply but who had nevertheless produced rounds that exceeded the penetration limits could well have the ammunition returned to him if he could show that it would be segregated from his other stock and sold only to police and military departments.

Subsection (d) authorizes the Attorney General to seek an injunction to prevent the manufacture or importation of prohibited ammunition. This authority could be exercised in circumstances where there is no "knowing" violation of the Act.

Subsection (e) defines the terms "handgun ammunition" and "armor-piercing handgun ammunition". The term "handgun ammunition" is defined as that ammunition manufactured for use in firearms originally designed to be fired by the use of a single hand. Because some ammunition can be fired either from handguns or rifles, the definition provides that the Attorney General shall publish a list of handgun cartridges; this list will include all common handgun calibers (e.g., .25 auto, .32 auto, .38 special, 9 mm .357 and .44 magnum, etc.) so that the list itself will not be of aid to the criminal element by identifying which ammunition is armor-piercing. It will, however, provide notice to manufacturers and importers as to what is "handgun" ammunition as opposed to rifle ammunition. In case of dispute, the Attorney

General should refer to the best available statistics on private firearms in this country; if he concludes that there are more handguns than rifles chambered for a particular type of ammunition, that ammunition shall be deemed "handgun" ammunition for purposes of this section. The definition of "armor-piercing handgun ammunition" specifies the number of aluminum plates which equal the resistance of the new Type IIIA armor standard.

Subsection (f) provides for enforcement of this Act by the Department of Justice reflecting the Department's primary role in the development of soft body armor and its resulting responsibility to protect against manufacture or importation of handgun ammunition constituting an unreasonable menace to those who use soft body armor. It is anticipated that no increase in resources will be required for this enforcement role as the Act will be largely self-policing. Major American manufacturers, for example, have demonstrated a highly responsible approach to this problem and in 1982 voluntarily ceased production of armor-piercing handgun rounds. Occasional "spot checks" of domestic manufacturers and importers will, we believe, be sufficient to achieve compliance with the ban. To the extent that the ban applies to "handloaders", past experience does not give us reason to expect a significant enforcement problem and no effort to "spot check" handloaders is contemplated. Rather, we would expect to investigate individual handloaders only to the extent that information comes to our attention evidencing that a particular individual is producing prohibited ammunition.

Subsection (g) makes clear that this statute would supersede State laws purporting to ban the manufacture, importation, or sale of handgun ammunition based on penetration capability. State laws now in existence are ineffective. Some lack a meaningful definition of what is prohibited and thus may fail to give manufacturers, importers, dealers and users adequate notice as to what is prohibited. Others attempt to ban ammunition based upon the composition of the projectile used in the ammunition, thus reaching only one of the combination of factors affecting penetration.

In short, this area is such a narrow one and the need for uniformity so great that we are strongly of the view that any federal legislation in the area must be applied to the exclusion of inconsistent state or local laws. Because we believe existing state laws on the subject are defective in any event, superseding them with this statute will not have any adverse effect upon law enforcement or the safety of law enforcement officers. It will, however, free legitimate manufacturers and dealers from a host of conflicting and vague state and local regulations. Of course, this provision would not apply to state or local laws designed to regulate firearms or ammunition on some basis other than armor-penetration capability and is not intended to take any position



with respect to state or local laws such as that involved in Quilici v. Village of Morton Grove, 695 F.2d 261 (7th Cir. 1982). Moreover, this provision would not prevent states or local governments from passing laws consistent with the federal law, e.g., establishing state or local sanctions for the manufacture, importation, sale or possession of ammunition which is banned by federal law.

Section 3 of the bill would add a new § 930 to title 18 to establish a minimum-mandatory sentence of five years for the use of certain armor-piercing ammunition during the course of a federal crime of violence. While the ban on production and importation in § 929 conforms to the new Type IIIA armor standard now being developed -- the heaviest soft body armor -- we propose that minimum-mandatory sentences be imposed for criminal use of handgun ammunition capable of penetrating Type I armor -- the lightest soft body armor, i.e. ammunition capable of penetrating one plate when tested pursuant to NIJ Report 100-84. In essence, § 930 would punish the criminal use of high-power handgun ammunition which has legitimate uses but which constitute a serious threat to the safety of law enforcement officers when used during the course of a crime. The proposed § 930 is similar to Part E, Title XIV of the President's Comprehensive Crime Control Act of 1983 except that it draws the line, for purposes of imposition of minimum-mandatory sentences, at the Type I rather than Type IIA level and provides for testing against aluminum plate rather than soft body armor. We believe this new section 930 will serve to deter the use of high-power handgun ammunition during the course of federal crimes of violence.

Section 4 conforms the analysis at the beginning of Chapter 44, title 18, to reflect the two new sections.

Section 5 conforms section 927 of title 18 to reflect the addition of the two new sections.

In conclusion, it should be noted that consideration was given to expanding proposed new section 929 to include a ban on sales or simple possession of armor-piercing handgun ammunition. Such coverage was rejected, however, as dealers and users have no means of assessing the penetration characteristics of ammunition. Moreover, because bullets do not bear individual serial numbers, any attempt to ban the sale or simple possession of armor-piercing bullets would be virtually unenforceable. Finally, because ammunition exceeding the penetration levels of the new standard are in existence and were legal when manufactured or imported, any effort to ban the sale or possession of such ammunition would raise questions as to the rights of owners, under the Due Process Clause, to reimbursement for financial losses that would result from banning the sale or possession of such

ammunition which was lawful when manufactured or imported. Again, in view of the fact that we are unaware of any instance in which an armor-clad officer has been attacked with armor-piercing handgun ammunition, we believe that the ban on manufacture and importation, together with the minimum-mandatory sanctions for criminal use during the course of a federal crime of violence, constitute a prudent and effective response to the problem facing us.

The Office of Management and Budget has advised this Department that there is no objection to the submission of this proposal from the standpoint of the Administration's program.

Sincerely,

Robert A. McConnell  
Assistant Attorney General

Enclosures

A BILL

To amend title 18, United States Code, to establish criminal sanctions for the manufacture, importation or criminal use of certain handgun ammunition.

Be it enacted by the Senate and House of Representatives of United States of America in Congress assembled, That this Act may be cited as the "Peace Officer Protection Act of 1984."

Sec. 2. (a) Chapter 44 of title 18 of the United States Code is amended by adding a new section 929 as follows:

"§ 929. Prohibited armor-piercing handgun ammunition

"(a) Whoever knowingly manufactures or imports armor-piercing handgun ammunition shall be punished by a fine of not more than \$50,000, or imprisonment for not more than five years, or both.

"(b) The provisions of this section do not apply to the manufacture or importation of armor-piercing handgun ammunition for sale to a Federal, State or local law enforcement agency for use by officers thereof authorized to carry firearms, for sale to a component of the Armed Forces of the United States for use by the members thereof, or for research activities authorized by the Attorney General, provided that the manufacture or importation of the handgun ammunition is pursuant to a written order submitted by such law enforcement agency or component of the Armed Forces.

"(c)(1) Any armor-piercing handgun ammunition in the care, custody, or control of a manufacturer or importer shall be subject to forfeiture to the United States, except in cases where

the handgun ammunition has been manufactured or imported for the purpose specified in subsection (b) of this section.

"(2) The provisions of law relating to the seizure, summary and judicial forfeiture, and condemnation of property for violation of the customs laws; the disposition of such property or the proceeds from the sale thereof; the remission or mitigation of such forfeitures; and the compromise of claims shall apply to seizures and forfeitures incurred, or alleged to have been incurred under the provisions of this section, insofar as applicable and not inconsistent with the provisions hereof; except that such duties as are imposed upon the customs officer or any other person with respect to the seizure and forfeiture of property under the customs laws shall be performed with respect to seizures and forfeitures of property under this section by such officers, agents, or other persons as may be authorized or designated for that purpose by the Attorney General.

"(d) Whenever there is reason to believe that any person is engaged or is about to engage in the manufacture or importation of armor-piercing handgun ammunition, the Attorney General may initiate a civil proceeding in a district court of the United States to enjoin such manufacture or importation. The court shall proceed as soon as practicable to the hearing and determination of such an action and may, at any time before final determination, enter such a restraining order or prohibition, or take such other action as is warranted to prevent a continuing and substantial danger to the public. A proceeding under this section is governed by the Federal Rules of Civil Procedure, except that, if an

indictment has been returned against the respondent, discovery is governed by the Federal Rules of Criminal Procedure.

"(e)(1) As used in this section and section 930, the term 'handgun ammunition' means ammunition manufactured or imported primarily for use in a pistol, revolver or other firearm originally designed to be fired by the use of a single hand. The Attorney General shall publish a list of the various types of handgun ammunition. If his review indicates that there are in the United States more privately held handguns than long guns chambered for such ammunition, he shall designate such ammunition as 'handgun ammunition' for purposes of this section.

"(2) As used in this section, the term 'armor-piercing handgun ammunition' means that handgun ammunition which, when tested in accordance with the procedure specified in NIJ Report 100-84, perforates

"(A) five (5) or more plates of the test target if the ammunition is of 3550 caliber (nominal 9mm) or less; or

"(B) seven (7) or more plates of the test target if the ammunition is of greater than 3550 caliber.

"(f) The detection and investigation of offenses in violation of this section shall be the responsibility of the Attorney General and persons designated by him.

"(g) Any state law or local ordinance purporting to restrict the manufacture, importation, sale or possession of handgun ammunition based upon its penetration capability and which is inconsistent with the provisions of this section shall be null and void."

(b) The table of sections for chapter 44 of title 18, United States Code, is amended by adding at the end thereof the following:

"§ 929. Prohibited armor-piercing handgun ammunition."

Sec. 3. (a) Chapter 44 of title 18, United States Code, is amended by adding at the end thereof the following:

"§ 930. Criminal use of high-power handgun ammunition

"(a) Whoever, during and in relation to the commission of a Federal crime of violence including a crime of violence which provides for an enhanced punishment if committed by the use of a deadly or dangerous weapon or device for which he may be prosecuted in a court of the United States, uses or carries any handgun loaded with high-power handgun ammunition as defined in subsection (b), shall, in addition to the punishment provided for the commission of such crime of violence be sentenced to a term of imprisonment of not less than five nor more than ten years. Notwithstanding any other provision of law, the court shall not suspend the sentence of any person convicted of a violation of this subsection, nor place him on probation, nor shall the term of imprisonment run concurrently with any other terms of imprisonment including that imposed for the felony in which the armor-piercing handgun ammunition was used or carried. No person sentenced under this subsection shall be eligible for parole during the term of imprisonment imposed herein."

"(b) For purposes of this section --

"(1) 'high-power handgun ammunition' means handgun ammunition which, when tested in accordance with the procedure specified in NIJ Report 100-84, perforates one (1) or more plates of the test target; and

"(2) 'crime of violence' means --

"(A) an offense that has as an element the use, or threatened use of physical force against the person or property of another, or

"(B) any other offense that is a felony and that, by its nature, involves a substantial risk that physical force against the person or property of another may be used in the course of committing the offense."

(b) The table of sections for chapter 44 of title 18, United States Code, is amended by adding at the end thereof the following:

"930. Criminal use of high-power handgun ammunition."

Sec. 4. The analysis at the beginning of chapter 44 of title 18 is amended by adding at the end thereof the following:

"929. Prohibited armor-piercing handgun ammunition.

"930. Criminal use of high-power handgun ammunition."

Sec. 5. Section 927 of title 18 is amended by striking out the phrase: "No provision of this chapter" where it appears at the beginning thereof and inserting in lieu thereof: "Except as provided in section 929 with respect to the manufacture or importation of handgun ammunition, no provision of this chapter".



# Technology Assessment Program

## TEST PROCEDURE FOR ARMOR PIERCING HANDGUN AMMUNITION

NIJ REPORT 100-84

**PRELIMINARY DRAFT**



The Technology Assessment Program is sponsored by the Office of Development, Testing, and Dissemination of the National Institute of Justice (NIJ), U.S. Department of Justice. The program responds to the mandate of the Justice System Improvement Act of 1979, which created NIJ and directed it to encourage research and development to improve the criminal justice system and to disseminate the results to Federal, State, and local agencies.

The Technology Assessment Program is an applied research effort that determines the technological needs of justice system agencies, sets minimum performance standards for specific devices, tests commercially available equipment against those standards, and disseminates the standards and the test results to criminal justice agencies nationwide and internationally.

The program operates through:

The Technology Assessment Program Advisory Council (TAPAC) consisting of nationally recognized criminal justice practitioners from Federal, State, and local agencies, which assesses technological needs and sets priorities for research programs and items to be evaluated and tested.

The Law Enforcement Standards Laboratory (LESL) at the National Bureau of Standards, which develops voluntary National performance standards for compliance testing to ensure that individual items of equipment are suitable for use by criminal justice agencies. The standards are based upon laboratory testing and evaluation of representative samples of each item of equipment to determine the key attributes, develop test methods, and establish minimum performance requirements for each essential attribute. In addition to the highly technical standards, LESL also produces user guides that explain in nontechnical terms the capabilities of available equipment.

The Technology Assessment Program Information Center (TAPIC) operated by the International Association of Chiefs of Police (IACP), which supervises a national compliance testing program conducted by independent agencies. The standards developed by LESL serve as performance bench marks against which commercial equipment is measured. The facilities, personnel, and testing capabilities of the independent laboratories are evaluated by LESL prior to testing each item of equipment, and LESL helps the Information Center staff review and analyze data. Test results are published in Consumer Product Reports designed to help justice system procurement officials make informed purchasing decisions.

All publications issued by the National Institute of Justice, including those of the Technology Assessment Program, are available from the National Criminal Justice Reference Service (NCJRS), which serves as a central information and reference source for the Nation's criminal justice community. For further information, or to register with NCJRS, write to the National Institute of Justice, National Criminal Justice Reference Service, Washington, DC 20531.

James K. Stewart, Director  
National Institute of Justice

# *Technology Assessment Program*

TEST PROCEDURE FOR ARMOR PIERCING HANDGUN AMMUNITION

NIJ Report 100-84

by the

Law Enforcement Standards Laboratory  
National Engineering Laboratory  
National Bureau of Standards  
Washington, DC 20234

December 21, 1983

U.S. Department of Justice  
National Institute of Justice

*Office of Development, Testing, and Dissemination*

National Institute of Justice  
James K. Stewart  
Director

**ACKNOWLEDGMENTS**

This report was prepared by the Law Enforcement Standards Laboratory (LESL) of the National Bureau of Standards under the direction of Daniel E. Frank, Protective Equipment Program Manager, and Lawrence K. Eliason, Chief of LESL. This work was sponsored by the National Institute of Justice, Lester D. Shubin, Standards Program Manager.

## FOREWORD

The Law Enforcement Standards Laboratory (LESL) of the National Bureau of Standards (NBS) furnishes technical support to the National Institute of Justice (NIJ) program to strengthen law enforcement and criminal justice in the United States. LESL's function is to conduct research that will assist law enforcement and criminal justice agencies in the selection and procurement of quality equipment.

LESL is: (1) Subjecting existing equipment to laboratory testing and evaluation and (2) conducting research leading to the development of several series of documents, including national voluntary equipment standards, user guides, and technical reports.

This document covers research on law enforcement equipment conducted by LESL under the sponsorship of NIJ. Additional documents are being issued under the LESL program in the areas of protective equipment, communications equipment, security systems, weapons, emergency equipment, investigative aids, vehicles, and clothing.

Technical comments and suggestions concerning this document are invited from all interested parties. They may be addressed to the Law Enforcement Standards Laboratory, National Bureau of Standards, Washington, DC 20234.

Lester D. Shubin  
Program Manager for Standards  
National Institute of Justice

TEST PROCEDURE FOR ARMOR PIERCING HANDGUN AMMUNITION

CONTENTS

	Page
Foreword . . . . .	
Purpose . . . . .	
Scope . . . . .	
Definitions . . . . .	
Perforated Plate . . . . .	
Test Plate . . . . .	
Test Plate Holder . . . . .	
Test Equipment . . . . .	
Test Procedure . . . . .	

## TEST PROCEDURE FOR ARMOR PIERCING HANDGUN AMMUNITION

### PURPOSE

This test procedure was developed as a discriminator between armor piercing handgun ammunition and non-armor piercing handgun ammunition. The test procedure is intended to be used with a companion document, the industry standard for commercial handgun ammunition.\*

### SCOPE

The scope of this report is limited to specifying a test method that determines the penetration ability of handgun bullets. Since this procedure only measures the number of target plates which are perforated by a given bullet, other applicable documents must be consulted before the particular ammunition is labelled "Armor Piercing."

### DEFINITIONS

#### Perforated Plate

A test target plate through which the light from a 60 W light bulb will pass when the plate is held up to the bulb is deemed to be perforated. If a bullet passes partially through a plate and becomes lodged therein the plate is deemed to be perforated even-though no light passes around the bullet.

#### Test Plate

One of a series of aluminum squares at which the handgun bullet will be fired.

#### Test Plate Holder

A framework similar to that shown in figure 1 that holds the test plates perpendicular to the initial line of flight of the bullet being tested.

\*Sporting Arms and Ammunition Manufacturers' Institute, Inc. Voluntary industry performance standards for pressure and velocity of centerfire pistol and revolver ammunition for the use of commercial manufacturers. Volume II. ANSI Standard Z299.3 approved February 15, 1979. Available from the American National Standards Institute, Sales Department, 1430 Broadway, New York, NY 10018.

### TEST EQUIPMENT

- o Test layout for instrumental velocity as prescribed in ANSI Z299.3\* (see fig. 2).
- o Universal receiver and mount.\*
- o Standard velocity and pressure barrels (non-vented).\*
- o Suitable test area with a backstop capable of safely stopping the bullets to be tested.
- o Test target per figure 1.
- o Square aluminum test plates, 2024-T3,  $6 + \frac{1}{32}$  in (15.24 + 0.08 cm) on each side x  $0.090 \pm 0.004$  in ( $0.023 \pm 0.010$  cm) thick.

### TEST PROCEDURE

Set up the test equipment as prescribed in ANSI Z299.3.\* Use the universal receiver mount to firmly clamp the universal receiver, with the barrel horizontal, in such a manner that the alignment of the weapon is not altered when it is discharged.

Position a sheet of cardboard behind the second screen of the velocity layout and fire a pretest round through the cardboard to determine the line of flight and the point of impact of the bullet. Place the test target in back of the sheet of cardboard, with the center of the first target plate in line with the bullet hole made by the test round, and then remove the cardboard. Fire one round of the ammunition to be tested in the test gun. Count the number of plates in the test target that are perforated by the bullet just fired.

The laboratory which employs this single-round procedure should repeat it based on a recognized sampling plan to assure statistical reliability in sampling and labelling as "Armor Piercing."

Note: Plates of the test target may not be reused if they underwent any impact during a previous test.

---

\*Ibid.

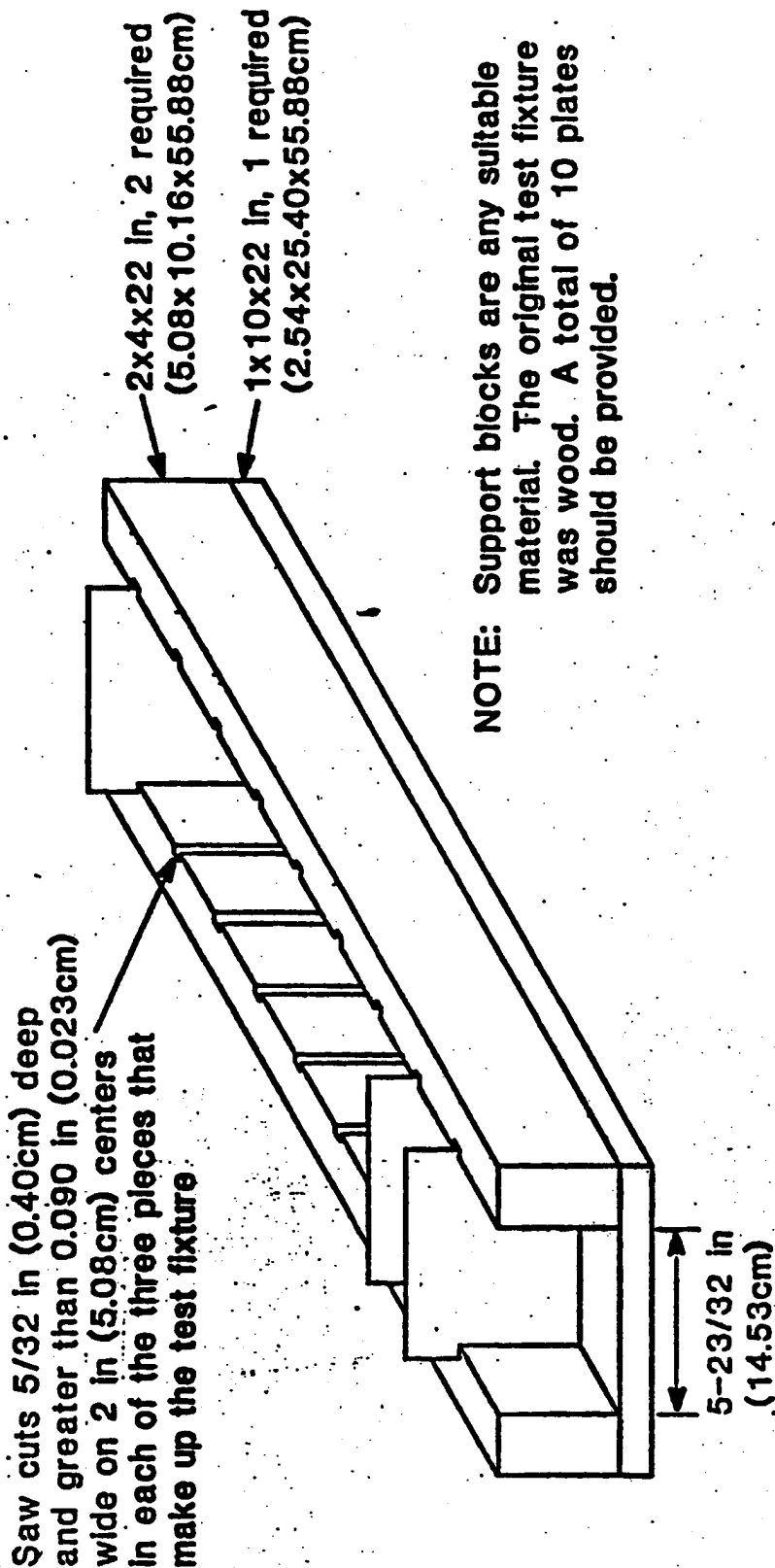


Figure 1. Test target.



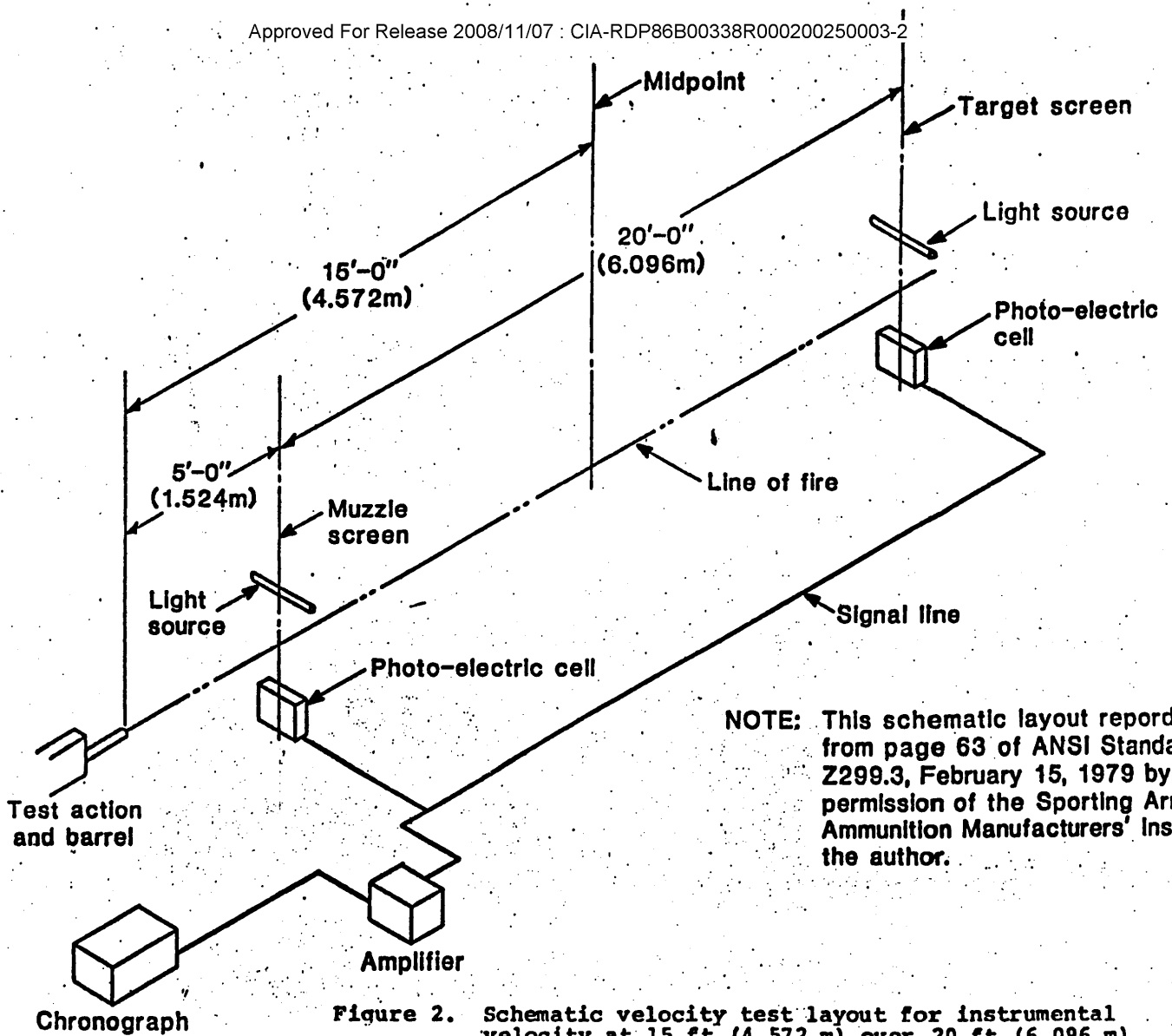


Figure 2. Schematic velocity test layout for instrumental velocity at 15 ft (4.572 m) over 20 ft (6.096 m).