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March 4, 2013

Angela Cavillo, Clerk of the Board
Board of Supervisors
CITY AND COUNTY OF SAN FRANCISCO
1 Dr. Carlton B. Goodlett Place
City Hall, Room 244
San Francisco, CA 94102
VIA Fax (415) 554-5163 & E-Mail

Re: BOS File No. 130040: Police Code - Possession or Sale of Law Enforcement or Military Ammunition – OPPOSITION

Dear Ms. Cavillo:

We write on behalf of our clients, the National Rifle Association ("NRA") and the California Rifle & Pistol Association ("CRPA"), as well as the hundreds of thousands of their members in California, many residing within the City and County of San Francisco. Among other things, these organizations seek to promote firearms and hunting safety, protect hunting rights, enhance the marksmanship skills of those participating in the shooting sports, and educate the public about firearms in order to reduce violence and encourage gun safety.

Our clients oppose the current proposal to ban the possession and sale of certain ammunition, File No. 130040 [Police Code – Possession or Sale of Law Enforcement or Military Ammunition], scheduled to be heard by the Board of Supervisors on March 5, 2013.

The proposed ordinance is unclear as to what ammunition it bans. But to the extent it regulates hollow-point ammunition, the proposed ordinance is unconstitutional because it would ban the possession or sale of ammunition in common use for self-defense and hunting. Contrary to remarks made by the proposal's sponsors, such ammunition is *not* "military grade," nor is it in any way unconventional. Nonetheless, the ordinance imposes criminal penalties.

I. THE PROPOSED AMMUNITION BAN IS UNCONSTITUTIONALLY VAGUE

The due process provisions of the constitutions of the United States and California each require "a reasonable degree of certainty in legislation, especially in the criminal law . . . ."[1] To pass constitutional muster, a law must "define the criminal offense with sufficient definiteness that ordinary people can understand what conduct is prohibited . . . ."[2]

Banning ammunition "that has physical properties resulting in ballistics performance identical to ammunition presently or formerly sold under the brand name Winchester Black Talon"[3] requires ordinary citizens to have expert knowledge of ballistics and the history of the Winchester Black Talon ammunition.

The proposal charges the police department with creating and maintaining a "public database of brands and product lines of ammunition meeting the [ordinance's] definition of 'Prohibited Ammunition.' "[4] But the failure of the police to create this database, or the omission of any specific ammunition "qualifying as 'Prohibited Ammunition,' " is not a defense to a charge of violating the ordinance.[5] Without the aid of a specific list, ordinary residents are left guessing what ammunition is prohibited, leaving them vulnerable to criminal prosecution for an unknowing violation of the law.

Remarks made by the proposal's sponsors indicate that the proposal is aimed at prohibiting possession of "especially lethal forms of ammunition such as *hollow-point bullets* or any *other* type restricted to military use."[6]

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[1] *People v. Heitzman*, 9 Cal. 4th 189, 199 (1994).

[2] *Kolender v. Lawson*, 461 U.S. 352, 357 (1983).

[3] S.F., Cal., File No. 130040 [Police Code -Possession or Sale of Law Enforcement or Military Ammunition].

[4] *Id.*

[5] *Id.*

[6] Supervisor Malia Cohen, San Francisco Board of Supervisors Meeting, Oral Remarks During Roll Call for Introduction (Jan. 15, 2013) (emphasis added); *see also* News Release, Office of the Mayor, City and County of San Francisco, *Mayor Lee Proposes Citywide Ban on Extra-Lethal Hollow Point Ammunition & New Notifications* (Dec. 20, 2012) (available at http://www.sfmayor.org/index.aspx?page=846&recordid=204&returnURL=%2Findex. aspx); Marisa Lagos, *SF, State Move Forward on Gun Control*, SFGate (Jan. 22, 2013), http://www.sfgate.com/news/article/SF-state-move-forward-on-gun-control- 4212298.php ("[Mayor] Lee and Supervisor Malia Cohen last week introduced legislation to make the possession of *hollow-point*, or expanding, bullets illegal. . . ."); *San Francisco May Ban Military-Grade Ammo, Track Big Purchases*, CBS Local News (Dec. 20, 2012), http://sanfrancisco.cbslocal.com/2012/12/20/san-francisco-may-ban-military-grade- ammo-track-

Hollow-point ammunition is *not* "military" ammunition. Indeed, "factual" findings of the Board of Supervisors, adopted in 2011 to bolster the City's ban on the sale of hollow-point ammunition, cite the Hague Convention of 1899, Declaration III, which bars their use in international warfare.[7] The Hague Convention is often cited as the reason many militaries do not use hollow points. Accordingly, most firearm owners and experts would not consider such ammunition to be "military ammunition." The fact that *some* militaries *may* use such ammunition under some circumstances does not make it so.

The proposed ordinance subjects ammunition possessors to prosecution without due process.

II. THE PROPOSED ORDINANCE IS UNCONSTITUTIONAL BECAUSE IT BANS COMMON SELF-DEFENSE AMMUNITION

The proposed ordinance seems to ban both the sale and possession of hollow-point ammunition – ammunition that is commonly chosen and used by law-abiding gun owners for self-defense, especially in densely populated areas like San Francisco. Because the ammunition is in "common use" for the core, lawful purpose of self-defense, the proposed ordinance seeks to impose a categorical ban on protected ammunition – an unconstitutional burden on the Second Amendment rights of San Francisco residents.

The Supreme Court's decision in *District of Columbia v. Heller*, 554 U.S. 570, 624-25 (2008), is clear that arms "typically possessed by law-abiding citizens for lawful purposes" or those "in common use" are protected by the Second Amendment. That protection surely extends to the sale and possession of commonly used ammunition, which is necessary for the meaningful exercise of the right.[8]

The proposed ordinance seeks to ban the sale and possession of "certain ammunition, including Black Talon ammunition and ammunition intended exclusively for law enforcement and military purposes."[9] As described above, it is unclear what ammunition is actually covered by this provisions, but based on the sponsors's own statements we assume it is intended to bar possession of hollow-point bullets.

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big-purchases/ ("Lee said military-grade ammunition such as hollow-point bullets 'has no reason to be in our homes and on our streets.'").

[7] S.F., Cal. Police Code, art. 9 § 613.9.5.

[8] *See Andrews v. State*, 50 Tenn. 165, 178 (1871); *see also Bateman v. Perdue*, No. 5:10-265, 2012 WL 3068580, at *4 (E.D. N.C. Mar. 29, 2012).

[9] S.F., Cal., File No. 130040 [Police Code -Possession or Sale of Law Enforcement or Military Ammunition].

Such ammunition is in common use. In fact, hollow-point ammunition is the *most common* type of ammunition for self-defense.[10] Any suggestion that such ammunition is not in general use by the law abiding "reveals egregious ignorance of the facts."[11]

Hollow-point ammunition has greater "stopping power," to defend against a violent aggressor with fewer shots fired. Through expansion, a hollow-point bullet will increase its drag to remain in the target and increase the chance that the wound will stop an attacker.[12] Solid point or round nose bullets, in contrast, often lack the ability to incapacitate an aggressor rapidly enough to prevent injury to the intended victim.[13] Even if shot through the heart with a solid point bullet, an attacker can still retain 30 to 40 seconds of activity.[14] That is enough time for the attacker to shoot or stab a victim multiple times. The purpose of hollow points is to provide the incapacitation required to effectively defend against deadly attacks.[15]

The bullet's slower velocity and ability to collapse also make it *less* likely than fully jacketed ammunition to ricochet or go through standard building materials, thereby *decreasing* the risk of harm to bystanders.[16] It is for these reasons that ammunition retailers regularly recommend hollow-point ammunition to their customers as the ammunition most suitable for self-defense. Such ammunition is regularly marketed for just that purpose.[17]

By eliminating access to and possession of hollow-point ammunition, the ordinance eliminates possession of the ammunition most appropriate to defend against a violent aggressor with the lowest risk to innocent bystanders. It also prevents San Franciscans from *fully* exercising their right to self-defense. Just as the city could not ban the sale or possession of common

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[10] Statement Martin Fackler, M.D. in Opposition to File No. 110901 [Police Code – Safe Storage and Enhanced-Lethality Ammunition Findings], at 2 (Sept. 23, 2011) (attached as Attach. GG).

[11] *Id.*

[12] Lisa Steele, *Ballistics*, in *Science for Lawyers* II (Eric Y. Drogin, ed., 2008) (attached as Attach. T).

[13] Fackler Decl. at 2.

[14] *Id.*

[15] *Id.*

[16] Kit R. Roane, *In Many Cities, New Bullets Have Not Brought Complaints*, N.Y. Times, July 9, 1998, www.nytimes.com/1998/07/09/nyregion/in-many-cities-new-bullets-have-not-brought-complaints.html (hereto as Attach. S).

[17] *See, e.g.*, Corbon & Glaser, LLC, *Glaser Safety Slug* (attached as Attach. I); Federal Cartridge Co., *Ammunition Basics*, (attached as Attach. K); Hornady Mfg. Co., *Critical Defense* (attached as Attach. L); PMC Ammunition, *PMC Gold Line - Starfire* (attached as Attach. CC); Speer Ammunition, *Gold Dot Personal Protection Ammunition* (attached as Attach. FF).

handguns, rifles, or shotguns protected by the Second Amendment simply because they have military or law enforcement applications, it cannot ban common, self-defense ammunition protected by the Second Amendment because it may be used by military or law enforcement.

III. THE PROPOSED ORDINANCE BANS COMMON HUNTING AMMUNITION

There is nothing particularly novel or unique about the type of bullets the ordinance seeks to ban. According to the attached Statement of Stephen Helsley, an expert on ammunition and firearms, the materials and methods currently used to manufacture bullets are much the same as those used over a century ago.[18]

Ammunition makers have, for the past 150 years, continually attempted to refine their bullet designs. In spite of those efforts, bullets still fall into the three basic categories that existed at the end of the 19th Century: lead, jacketed lead, and alloyed copper. Pure lead can be hardened to help control expansion by adding tin and/or antimony. Jacket thickness can also be increased (in combination with lead hardness) to slow expansion. And, of course, expansion can be enhanced for *all types of bullets* by "hollow pointing." These types of manipulations have *long* been employed by ammunition makers to manufacture ammunition that best meets the needs of sport hunters.[19]

Importantly, bullet expansion is a *desired* characteristic for most sport hunting applications. The objective is for the bullet to expand, retain a high percentage of its original weight, and yet still penetrate deeply enough to reach vital organs. And the near-immediate incapacitation of the target allows for the most ethical and humane taking of the animal. As such, it is not uncommon for modern hunters to use expanding point bullets when hunting many types of game. Indeed, many jurisdictions, including California, *require* the use of hollow-point ammunition for certain hunting applications.[20]

Again, this proposal eliminates possession of ammunition commonly used for lawful purposes and, in the case of certain hunting activities, the *only* ammunition that is lawful to use. In light of the Supreme Court's decision in *Heller*, the proposed ammunition ban is an unconstitutional restriction on the Second Amendment. Adoption of this proposal is an invitation to litigation.

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[18] Statement Stephen Helsley in Opposition to File No. 110901 [Police Code – Safe Storage and Enhanced-Lethality Ammunition Findings], at 2 (Sept. 23, 2011) (attached as Attach. HH).

[19] *Id.*

[20] *See, e.g.*, 002 Ark. Code R. § 6.02 (attached as Attach. A); Cal. Code Regs. tit. 14 § 353 (attached as Attach. D); N.J. Admin. Code § 7:25-5:23 (attached as Attach. Y); Ohio Admin. Code 901.12-1-04 (attached as Attach. AA); Wash. Admin. Code § 16-24-040 (attached as Attach. LL); N.M. Dep't of Game & Fish, New Mexico Big Game & Furbearer Rules and Information 2012-2013 (attached as Attach. Z).

VI. CONCLUSION

In light of the foregoing, we urge you to vote "no" on the ordinance presently before the Board of Supervisors. We encourage each Supervisor to research and review the full wealth of data that is available and relevant to adoption of the proposed ordinance, including the resources listed in Appendix A regarding the uses of hollow-point ammunition.

If you have any questions, or if you would like additional information, please do not hesitate to contact our office.

Sincerely,

Michel & Associates, P.C.

C. D. Michel

CDM/amb

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APPENDIX A:
RESOURCES SUPPORTING THE USE OF HOLLOW-POINT BULLETS

Earl Boyd & Zoffa Smardz,
District Police Moving to Get Bullets with More Stopping Action,
WASH. STAR (Nov. 27, 1976) . . . . . J

Federal Cartridge Company,
Ammunition Basics, *available at*
http://www.federalpremium.com/downloads/education/Ammo_Basics.pdf . . . Attach. K

Hornady Manufacturing Company,
Critical Defense, *available at*
http://www.hornady.com/assets/files/
catalog/Hornady-2013-Product-Catalog.pdf . . . . . Attach. L

Irwin K. Owen,
What About Dumdums?,
POINT OF VIEW 3 (April 1975) . . . . . Attach. M

James Rusk,
Ontario Police to Switch to Hollow-Point Bullets Government Cites Safety Issue for Officers, Public in Making Use of Expanding Ammunition Mandatory,
GLOBE & MAIL (Aug. 10, 1995) . . . . . Attach. N

Joe Gould,
Hollow-point Bullets OK'd for Post Police,
ARMY TIMES (May 17, 2010) . . . . . Attach. O

Joshua F. Berry,
Hollow Point Bullets: How History Has Hijacked Their Use in Combat and Why It Is Time to Reexamine the 1899 Hague Declaration Concerning Expanding Bullets,
206 MIL. L. REV. 88 (2010) . . . . . Attach. P

Justin Davenport,
Met Police Say New 'Dumdum' Bullets Will Help Stop Injuries to Bystanders,
LONDON EVENING STANDARD (May 11, 2011) . . . . . Attach. Q

Ont Okays Use of Hollow-Point Bullets, Public and Officer Safety to Be Enhanced, CANADIAN OCCUPATIONAL HEALTH & SAFETY NEWS (Aug. 14, 1995) ..... Attach. BB

PMC Ammunition,
PMC Gold Line – Starfire, available at
http://www.pmcammo.com/starfire.html ..... Attach CC

Richard Condon, et al., Committee on Hollow-Point Bullets,
Report of the Committee on Hollow-Point Bullets Presented to the Civilian Complain Review Board (July 8, 1998),
available at http://www.nyc.gov/html/ccrb/pdf/hollow.pdf. ..... Attach. DD

Rocca Parascandola, *Plenty of Other Cities Already Use 'Em*,
N.Y. POST (Feb. 14, 1999) ..... Attach. EE

Speer Ammunition,
Gold Dot Personal Protection Ammunition, available at
http://www.speer-ammo.com/products/gold_dot_prsnl.aspx ..... Attach. FF

Statement Martin Fackler, M.D. in Opposition to File No. 090
[Police Code – Safe Storage and Enhanced-Lethality Ammunition Findings]
(Sept. 23, 2011) ..... Attach. GG

Statement of Stephen Helsley in Opposition to File No. 090
[Police Code – Safe Storage and Enhanced-Lethality Ammunition Findings]
(Sept. 23, 2011) ..... Attach. HH

Stephen J. Lynton & Alfred E. Lewis,
City Will Change Bullets for Police to Hollow Points,
WASH. POST B1 (Nov. 27, 1976) ..... Attach. II

Stephen J. Lynton & Alfred E. Lewis,
More Powerful Bullets Studied by D.C. Police,
WASH. POST A1 (Nov. 5, 1976) ..... Attach. JJ

Trace Tully,
Region's Cops Back Use of Hollow-Point Bullets,
ALBANY TIMES-UNION (Mar. 8, 1997) . . . . . Attach. KK

Wash. Admin. Code § 16-24-040 . . . . . Attach. LL

Why Do Hollow Point Bullets Cause More Damage?,
PATROL LOG (June 1, 2010), *available at* http://www.patrol-log.com/2010/06/01/why-do-hollow-point-bullets-cause-more-damage . . . . . Attach. MM

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IMMEDIATE ATTENTION REQUESTED

FAX TRANSMITTAL SHEET

TO: Angela Cavillo, Clerk of the Board & Board of Supervisors

FIRM: CITY AND COUNTY OF SAN FRANCISCO

FAX NO.: (415) 554-5163

TEL. NO. (415) 554-5184

FROM: C. D. Michel

DATE: March 4, 2013

RE: BOS File No. 130040: Police Code - Possession or Sale of Law Enforcement or Military Ammunition – **OPPOSITION**

THIS FAX CONTAINS COVER PAGE PLUS __11__ PAGES. IF YOU DO NOT RECEIVE ALL PAGES PLEASE CONTACT Claudia Ayala **AT (562) 216-4444.**

SPECIAL INSTRUCTIONS

Will follow via electronic mail and overnight mail. Please feel free to contact me if you have any questions or concerns. Thank you

****
*** TX REPORT ***
****

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SUBADDRESS	
CONNECTION ID	
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PGS. SENT	12
RESULT	OK

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EXHIBIT A

CHAPTER 06.00 – KILLING DEVICE, FIREARM, AND AMMUNITION REGULATIONS

* * * * *

06.01 CERTAIN KILLING DEVICES AND AMMUNITION PROHIBITED FOR HUNTING CROW, RABBIT AND SQUIRREL

03-09 It is unlawful to hunt crow, rabbit or squirrel by use of:

(A) Rifled slugs or shot larger than No. T shot;
(B) Rifles or pistols larger than .22 caliber rimfire;
(C) Muzzleloading firearms larger than .40 caliber;
(D) Traps.

EXCEPTIONS:

(1) Rabbit and squirrel may be taken with muzzleloading firearms larger than .40 caliber during open muzzleloader bear and deer seasons.
(2) Crow may be taken during open coyote and gun deer seasons with firearms legal for those seasons (Code 05.01 and Addendum A1.07).
(3) Rabbits may be taken during open rabbit season with box traps having interior dimensions not larger than 8 inches in width and 10 inches in height, and no more than eight traps per individual.

PENALTY: Class 1

06.02 CERTAIN FIREARMS AND AMMUNITION PROHIBITED DURING MODERN GUN DEER SEASONS

03-06 (A) It is unlawful to hunt deer during statewide modern gun deer seasons with:

- Prohibited muzzleloading firearms (Code 06.03);
- Any .410 shotguns using ammunition other than slugs;
- Any shotguns using shot smaller than No. 4 buckshot;
- Handguns having barrels shorter than 4 inches using conventional straight-wall cased handgun calibers less than .357 caliber or bottleneck case handgun calibers less than .22 caliber;
- Rifles and handguns using rimfire cartridges, military or full-metal jacket ammunition;
- Any centerfire rifle or handgun smaller than .22 caliber.

(B) It also is unlawful for any person to hunt deer during modern gun deer seasons in Deer Zones 4, 4B, 5, 5B with any firearms other than the following:

- Shotguns (.410 or larger) with slugs only;
- Legal muzzleloading long guns (Code 06.03);

- Handguns having barrels between 4 and 10 inches in length and chambered specifically for straight-wall centerfire cartridge cases and hunting with lead and, lead alloy, soft-nose and/or hollow-point bullets no less than .30 caliber.

EXCEPTION:
In compliance with Code 05.19.
PENALTY: Class 1

06.03 **CERTAIN FIREARMS PROHIBITED DURING MUZZLELOADING SEASONS**
04-12 It is unlawful to hunt deer or bear during the muzzleloading deer or bear seasons with or to possess:

(A) Firearms capable of being loaded by means other than through the muzzle or of firing centerfire or rimfire ammunition;
(B) Muzzleloading firearms firing more than one projectile per barrel or chamber (buckshot prohibited);
(C) Muzzleloading long guns smaller than .40 caliber or with barrels shorter than 18 inches in length;
(D) Muzzleloading handguns with barrels less than 9 inches in length, of smaller than .45 caliber, and loaded with a projectile weighing less than 200 grains (.45 caliber or larger conical bullets, or .530 and larger round balls).

EXCEPTIONS:
(1) Any caliber muzzleloading handgun or (cap-and ball) percussion revolver is permitted to be carried when a legal muzzleloading long gun is in hunter's immediate possession.
(2) In compliance with Code 05.19.
(3) Hunters of a deer camp enrolled in the Deer Management Assistance Program who has been issued an Unrestricted Weapon Doe Permit or Management Buck Permit may hunt deer in compliance with the terms of the permit.

PENALTY: Class 1

06.04 **ARCHERY TACKLE RESTRICTIONS**
04-12 It is unlawful to hunt wildlife with any of the following archery tackle:

- A long or compound bow with a draw weight of less than 40 pounds;
- A crossbow without a functional mechanical safety device or with a draw weight of less than 125 pounds;
- Arrows with an arrowhead width of less than 7/8 inch when open; or,
- Arrows or arrowheads containing poisons or chemicals.

EXCEPTION:
Small game may be hunted using arrowheads less than 7/8 inch in width.
PENALTY: Class 1

06.05 **FIREARMS PROHIBITED WHILE ARCHERY OR CROSSBOW HUNTING**
04-12 It is unlawful to have a firearm in one's immediate possession while hunting bear, deer or turkey with archery tackle.

EXCEPTIONS:
(1) Legal firearms when and where a firearms bear or deer season is open.
(2) In compliance with Code 05.19.

EXHIBIT B

7/13/77
cRH

Hollow-Point Bullets Win Backing by Citizens Panel

By Alfred E. Lewis
Washington Post Staff Writer

A citizens advisory panel headed by the Episcopal bishop of Washington reasserted its support yesterday for a controversial decision by the D.C. police department to issue "hollow-point" bullets to City police officers.

"We believe matters such as this should be left to the discretion of the chief of police," the Rt. Rev. John T. Walker said at a news conference at D.C. police headquarters yesterday.

The statement by Bishop Walker, who is chairman of the 12-member Police Chief's Citizens Advisory Council, was prompted by a D. C. City Council move to restrict the use of hollow-point bullets. A Council committee approved a bill last month that would prohibit hollow points as standard ammunition for police officers, while permitting police to use hollow points in some special circumstances.

Hollow-point bullets have been issued to D. C. police officers since last January as a replacement for round-nose bullets, which previously were the department's standard ammunition. The police department contends that hollow points have more "stopping power" than do round-nose bullets.

The hollow points, police officials argue, are more likely to halt a criminal in his tracks and prevent him from firing back at a police officer.

Bishop Walker asserted that it would be a mistake for the City Council to remove the police chief's authority to decide what form of ammunition should be issued to police officers.

EXHIBIT C

THE MARYLAND GAZETTE MONDAY
AUGUST 1,1977

Police defend those hollow point bullets

By BOBBY SHRIVER
Staff Writer

A policeman pursues an armed, frenzied criminal. Trapped, the hefty lawbreaker turns, and, like a cornered animal, opens fire on the pursuing officer.

The cops ducks under cover. The criminal's mind leaps at the apparent opening. "It's a way out," he thinks. With leveled shotgun, he lets loose a barrage of firepower toward the crouching cop, and makes a run for it.

The officer, armed only with the .38 caliber police special, tries a shot. With luck, good aim, and a steady hand, he hits the crook. The shotgun-toting man roars in pain, clutches at the wound, but then, to the officer's amazement, aims the shotgun and fires again.

It's an imaginary tale of course, but when a somewhat similar story actually did happen to an Anne Arundel County policeman — it took that cop three shots to stop a man firing on him with a sawed off shotgun—the department decided it was time to purchase more powerful .38 caliber cartridges for police issue. They wanted, as Chief Ashley Vick put it, "for a man who's been shot to know he's been shot."

For the county and other area jurisdictions, the search for the increased "stopping power" led to a 128-grain .38 caliber hollow point bullet, a menacing looking cartridge developed by the U.S. Army in World War II.

To the police, the bullet was a savior, a high velocity, penetrating slug that, if nothing else, let everybody and anybody "know" they'd been shot.

To some citizen groups, however, the hollow point or "dum dum" bullet was a mangling, unnecessarily potent load that exploded on impact, creating great, cavernous wounds, maiming and killing. Several police agencies have abandoned these bullets because of community protest. Although the dum dums caused quite a clamor in Washington, D.C., council chose recently to continue their use by district police.

The object of this ongoing debate is standard police issue in both the county and Annapolis city police departments. It is a routinely constructed bullet with a hole in the nose. It is not, as its name suggests, a normal looking slug with a hollow point.

The hollow point effect is produced by a simple principle of physics: If you blow something —like a balloon — up too fast, it pops and falls flat.

The small hole or "cup" in the bullet nose creates this 'blowing up' effect. Striking a given surface, air compresses inside the soft lead head, forcing it to pop and flatten out. The copper bullet jacket makes the flattening uniform, so the slug has every chance of entering its target, whether human, automobile, or airplane tire, as a roundish disk.

A roundish, flat bullet, of course, hits more of a target than a spherical bullet. The police maintain this is a safety feature in that the hollow point slug rarely passes through a target to ricochet into an innocent bystander, a danger of the older, "hardball" slugs.

But whether you call this popping effect increased stopping power, as the police do, or mangling power, as some citizen groups do, its effect on the human body is relatively undebateable.

It makes a big, bloody mess on one's insides. In police talk, the round "leaves its kinetic energy in the target."

"We wanted instantaneous incapacitation," says Annapolis Police Chief Bernard J. Kalnoske. "This bullet leaves the largest temporary cavity" in people and so, it was selected as the new police bullet.

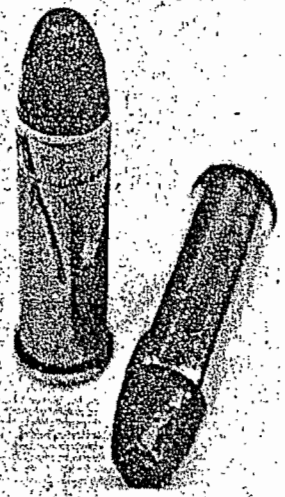
"We've had no complaints" the chief says.

The county department has used dum dums for almost three years. Although the bullet was put into use before Ashley Vick became chief, he says he agrees with and supports the decision of his predecessor, Elmer F. Hagner.

"You can't put an officer out there and tell him to say, 'Bang,'" Vick says in defense of the hollow point. "The old ammunition (the 158-grain lead round nose) just did not do the job. We needed more knock-down power."

Heavily armed contemporary criminals require the powerful slug, according to Kalnoske. "We were coming up against a lot of firepower," he says.

"A man's got to know," Vick agrees, "that when he shoots a man, the man is going to know he's been shot."



THE HOLLOW POINT bullet has given local police additional "stopping power."

EXHIBIT D

Welcome to the online source for the California Code of Regulations

14 CA ADC § 353
§ 353. Methods Authorized for Taking Big Game.

14 CCR § 353

Cal. Admin. Code tit. 14, § 353

Barclays Official California Code of Regulations Currentness
Title 14. Natural Resources
Division 1. Fish and Game Commission-Department of Fish and Game
Subdivision 2. Game and Furbearers
Chapter 3. Big Game (Refs & Annos)
§ 353. Methods Authorized for Taking Big Game.

(a) Except for the provisions of subsections 353(b) through (h), Title 14, CCR, big game (as defined by Section 350, Title 14, CCR) may only be taken by rifles using centerfire cartridges with softnose or expanding projectiles; bow and arrow (see Section 354, Title 14, CCR, for archery equipment regulations); or wheellock, matchlock, flintlock or percussion type, including "in-line" muzzleloading rifles using black powder or equivalent black powder substitute, including pellets, with a single projectile loaded from the muzzle and at least .40 caliber in designation. For purposes of Section 353, a "projectile" is defined as any bullet, ball, sabot, slug, buckshot or other device which is expelled from a firearm through a barrel by force.

(b) Shotguns capable of holding not more than three shells firing single slugs may be used for the taking of deer, bear and wild pigs. In areas where the discharge of rifles or shotguns with slugs is prohibited by county ordinance, shotguns capable of holding not more than three shells firing size 0 or 00 buckshot may be used for the taking of deer only.

(c) Pistols and revolvers using centerfire cartridges with softnose or expanding projectiles may be used to take deer, bear, and wild pigs.

(d) Pistols and revolvers with minimum barrel lengths of 4 inches, using centerfire cartridges with softnose or expanding projectiles may be used to take elk and bighorn sheep.

(e) Except as provided in subsection 354(j), crossbows may be used to take deer and wild pigs only during the regular seasons.

(f) Under the provisions of a muzzleloading rifle only tag, hunters may only possess muzzleloading rifles as described in subsection 353(a) equipped with open or "peep" type sights only except as described in subsection 353(k).

(g) Under the provisions of a muzzleloading rifle/archery tag, hunters may only possess muzzleloading rifles with sights as described in subsection 353(f); archery equipment as described in Section 354; or both. For purposes of this subsection, archery equipment does not include crossbows, except as provided in subsection 354(j).

(h) Methods of take within the California condor range. Except as otherwise provided, it is unlawful to use or possess projectiles containing more than one percent lead by weight while taking or attempting to take any big game (as defined in Section 350, Title 14, CCR) in those areas described in Section 3004.5, Fish and Game Code.

EXHIBIT E

Ontario's police bullet dangerous expert says A shot missing bone 'would go right through'
The Toronto Star
June 10, 1994
By Carl Millar

ST. CATHARINES - The head of the Chicago police firearms unit has expressed concern to a coroner's jury about the type of ammunition approved for use by police in Ontario.

Richard Chenow said yesterday there's a chance of "over-penetration" from the type of bullet recently authorized by the Ontario government.

The government has specified that police officers use .40-calibre Smith & Wesson copper-jacketed bullets.

"If shot into a body without hitting bone it would go right through," Chenow told the five-member inquest jury here yesterday.

He suggested police should carry hollow-point bullets.

"The intent of the hollow-point is to expand," he said. "It will penetrate about 12 inches (30 centimetres) into a body . . . reaching major blood vessels . . . and cause internal hemorrhage."

Chenow said U.S. police officers want ammunition that will incapacitate a suspect in a life-threatening situation.

He also said a study by the Federal Bureau of Investigation after two agents were killed in Florida showed there was no handgun model that would guarantee a one-shot kill.

Chenow said the FBI agents are told to keep firing and forget about complaints of overkill until suspects are no longer a threat.

He said Chicago has adopted that policy and the department is "getting more one-shot kills when our officers are being confronted by assailants."

Chenow was called by coroner Bonnie Porter to testify about a 1991 report that urged the Chicago police department not to approve Glock pistols for its 14,800 officers.

The jury is looking into the death of Niagara Region police Constable Jeffrey Paolozzi during a training exercise at the force's shooting range.

Paolozzi, 33, the father of two small children, bled to death Feb. 6, 1993, after being shot in the abdomen by Constable Dan Johnson, a fellow member of the emergency task unit.

Johnson earlier told the court he was attempting to unload his Glock 17 semi-automatic pistol when the weapon accidentally discharged when he was startled by Paolozzi.

Chenow said Chicago began allowing officers to carry semi-automatic pistols in 1991, but only approved weapons that were user-friendly and had the same feel as revolvers.

He said the Glock was evaluated as having a degree of slack in the trigger which wasn't consistent with revolvers that police had been using.

Chenow said the Glock was rejected because of the training required to switch officers from revolvers to the semi-automatic pistol.

During questioning by Paul Jannuzzo, lawyer and vice-president for Atlanta-based Glock Inc., Chenow admitted officers who were transferring to a semi-automatic pistol only had to fire 50 rounds to qualify on the weapon.

The inquest continues today.

EXHIBIT F

Panel Affirms Its Approval of Hollow-Point Bullet Use
The L.A. Times
June 15, 1988
By Carla Rivera

Despite entreaties from community and civil rights organizations, the Police Commission Tuesday refused to reconsider its decision allowing the Los Angeles Police Department to use hollow-point bullets on a trial basis.

Commission President Robert Talcott, while acknowledging that the issue would likely trigger an "emotional response," said the decision was in the best interests of public and officer safety and said the commission would not reopen public hearings on the matter.

"All innovative programs in the Police Department are subject to constant review; there is nothing set in concrete," Talcott said. "If, after an appropriate period of time we feel this ammunition is not doing the job, we will change it. But we will continue with the authorization we have previously given."

The commission also solicited any "new and different" information that might affect its decision and said it would review "each and every shot fired using the (hollow-point) bullet."

The commission unanimously authorized use of the ammunition in a one-year trial at its May 31 meeting without hearing from opponents. The opponents, including the American Civil Liberties Union, the Coalition Against Police Abuse and other community groups, argue that the bullets--which flatten and expand on impact--cause more serious injuries and are more likely to prove fatal than standard ammunition. Opponents also contend that they were given inadequate notice of the May 31 public hearing.

"It is no secret that accidental and wrongful shootings happen too often in Los Angeles, victimizing adults and children who are guilty of only being in the wrong place at the wrong time," said David Lynn, coordinator of the Police Misconduct Lawyers Referral Service, a California State Bar-certified organization that provides referral services throughout Southern California. "With the hollow-point bullet in the chambers of LAPD guns, there will be no room for error and no second chances."

"We only received the commission agenda late on the 31st, which was hardly enough time to put together a reasonable case in opposition," said ACLU spokesman Joel R. Maliniak. "Advance notice on a life-or-death issue like this is an absolute necessity."

In making its decision, the commission relied on a report prepared by the Police Department that rebuts arguments that the hollow-point bullet is more deadly than solid bullets. LAPD officials maintain that the bullet--already used by most metropolitan law enforcement agencies throughout the country--is less likely to pass through its target, reducing the risks of injury from ricochets.

The study of officer-involved shootings by the Los Angeles County Sheriff's Department, which uses hollow-point bullets, and the LAPD conclude that standard .38-caliber and 9-millimeter ammunition poses a "significant safety hazard to police officers as well as the general public."

Between June, 1986, and December, 1987, the LAPD recorded a total of 163 bullet hits, of which 50% passed through the subject, while the Sheriff's Department recorded 201 hits, of which only 9% passed

through the subject, according to the report. Thirty-seven percent of suspects died from wounds inflicted by LAPD officers during the period, while the percentage for the Sheriff's Department was 36%.

LAPD officials have recommended that the Remington .38 special semi-jacketed and 9-millimeter Luger-Remington ammunition be used in its two standard weapons. Use of the hollow-point bullets will be optional during the trial period, said Police Cmdr. William Booth.

Dick Dietz, a spokesman for the Remington Arms Co. of Wilmington, Del., said the bullets are preferred by police because they are more likely to disable a suspect.

Dietz said the hollow slug flattens on impact, expands more rapidly and is "more likely to transfer a greater amount of its energy to its subject" than solid bullets. "The purpose . . . is to give police firepower that is more equivalent to what they might encounter from criminals, who now pack everything, including military-style weapons," he said.

EXHIBIT G

THE NEW YORK TIMES, NEW YORK, THURSDAY, MARCH 6, 1997

Experts Support Hollow Point Bullets

Police in Many Big U.S. Cities Are Already Using the Ammunition

By CLIFFORD KRAUSS

Whether to issue police officers hollow point bullets may be provoking intense debate in New York City, but in many other big cities the issue is moot, since virtually every other major urban police department in the nation uses the bullets, according to law enforcement experts.

Even proponents admit that some people have been more seriously wounded by the bullets than by full-metal-jacket ones now used by the New York Police Department. But these experts argue that lives have probably been saved through the use of hollow points.

"I'd rather be hit by a traditional full-metal jacket bullet because it is a cleaner wound," said Lieut. Nicholas Sapienza, the range manager of the Newark Police Department. But they do more good than harm."

There is a simple trade-off between the use of the more traditional ammunition and hollow point bullets, which are capable of stopping a criminal before he can fire his gun. The hollow-points are more likely to cripple or kill, so present an added danger to police officers or bystanders shot in a crossfire.

But because the hollow point bullet expands and loses its casing on contact, it rarely ricochets or penetrates an object, thereby lessening the possibility of hitting anyone other than the target.

Studies on the issue are inconclusive. But civil libertarians have criticized the hollow point bullets, saying they are more deadly and increase the ability of police officers to maim and kill a suspect. "The introduction of the hollow point may very well exceed the bounds of reason and necessity, especially if massive internal injury is the risk," said Norman Siegel, executive director of the New York Civil Liberties Union.

Legal challenges in Los Angeles and elsewhere, however, have proved fruitless, since most big-city departments began adopting the ammunition in the 1970's and 1980's.

Still several studies show that the case for the hollow point bullet is not entirely clear cut. One in five officers who is shot is shot by himself or another officer, either by accident or suicide. And 80 percent of the shots fired in police shootouts miss their targets, meaning innocent people hit cleanly by an errant bullet will be more severely injured by the new bullets, should Mayor Rudolph W. Giuliani give his approval.

"Overall survival in shooting victims was greater with round-nose bullets," according to a 1989 study published in The Journal of Forensic Sciences.

In New York City during the last two years, seven of the bystanders shot by the police were struck by bullets that passed through other people, walls or doors, the kind of shootings that would not be expected with hollow-points. But six bystanders were struck directly by police bullets, meaning that they might have suffered more serious injuries if the new bullets had been used.

Most studies are inconclusive because the statistical samples of shootings of bystanders are so small, even in the largest cities.

James Fyfe, a Temple University criminologist who has studied shootings in New York City, Philadelphia, Dallas, Boston and Los Angeles, said, "hollow point bullets offer several advantages."

"The energy of the bullet is absorbed very quickly and although it produces a wider hole, it's not as deep, so it is much less likely to bore through a person and hit someone else," he said.

That is essentially the conclusion reached by a Federal Bureau of Investigation study almost a decade ago, as well as studies conducted by the Los Angeles, Dallas, and Newark departments since then, experts say. The Secret Service, Federal marshals and the Drug Enforcement Administration, as well as the police departments in Washington, Baltimore, Chicago and Boston, all use hollow point bullets.

Hollow-points are more likely to kill, but rarely ricochet.

Commissioner Howard Safir defended the bullets yesterday at a City Council hearing, saying, "When a police officer uses a hollow point bullet, the perpetrator, who is usually armed, is brought down with fewer shots, therefore eliminating danger to the police officer and the public."

The New York Transit and Housing Police Departments began using the hollow point bullets in 1990, and their more than 4,000 officers continued to use the ammunition when the forces merged with the New York Police Department two years ago.

Dr. Charles Hirsch, the New York Medical Examiner, expressed support of the new bullets based on his office's examination of scores of shooting victims since 1990.

"They do not produce grotesque, devastating injuries," he said, "and they are much less likely to pierce through a person, a wall, a car or some other object than are fully jacketed bullets. I think they are safer."

The New York City department conducted a series of tests in 1994 and 1995 on the bullets, but the department refuses to release the findings. William J. Bratton, who was Commissioner at the time, said the studies on hollow point bullets showed "it would take fewer rounds to stop an opponent, therefore there is less need to fire more rounds and thus you reduce the likelihood that innocent bystanders will be struck."

The traditional bullets, he added, have a ricochet potential that is "phenomenal," especially in the subway system.

"Only in New York is this an issue," Mr. Bratton said, "and people are trying to make political hay."

Clinton Stiffens Gun Rules For Foreigners in U.S.

By DAVID STOUT

WASHINGTON, March 5 — Responding to the Feb. 23 shooting at the Empire State Building, President Clinton announced steps today intended to make it harder for newcomers to the United States to buy guns.

The President ordered the Bureau of Alcohol, Tobacco and Firearms to tighten a regulation requiring legal immigrants to prove that they have been residents of the state in which they wish to buy a gun for at least 90 days. Mr. Clinton also announced his support for a bill that would ban foreign visitors from buying or carrying firearms.

If the 90-day regulation had been enforced, or if the bill that Mr. Clinton supports had been law, Al Abu Kamal might not have been able to acquire the semiautomatic handgun he used to kill a Danish tourist and wound six other people before taking his life on an observation deck of the Empire State Building.

"We were all shocked," Mr. Clinton said at a White House ceremony as he recounted how Mr. Abu Kamal, a Palestinian teacher, had been living on a tourist visa in a Florida motel for only three weeks before buying the gun that he took north.

At the ceremony attended by James S. Brady, the press secretary who was gravely wounded in the 1981 attempt on President Ronald Reagan's life, Mr. Clinton also announced that he would send legislation to Congress banning so-called cop-killer bullets, or armor-piercing ammunition. He directed all Federal agencies to require child-safety locks with every handgun issued to a law-enforcement agent.

The tightening of the 90-day regulation will require prospective buyers to attest that they are residents of the state in which they wish to buy a gun. The President specified that all immigrants prove their residencies by photo identification and documents like utility bills.

The legislation that would bar foreign visitors from buying or carrying guns was proposed four days after the Empire State Building shootings by Senators Edward M. Kennedy of Massachusetts and Richard J. Durbin of Illinois, both Democrats, and has the backing of Representative Charles E. Schumer, Democrat of Brooklyn. There would be a limited exceptions, foreigners in the country for hunting trips or firearms competitions, for instance.

The Empire State Building gunman's ability to buy his weapon despite the 90-day regulation that Mr. Clinton ordered be tightened caused widespread dismay after the facts became known. Mr. Schumer asserted that "gun runners have turned Interstate 95 into a firearms freeway."

EXHIBIT H

Hollow Point Ammunition Saves Lives, Backers Say
The New York Times
March 6, 1997
By Clifford Krauss

Whether to issue police officers hollow point bullets may be provoking intense debate in New York City, but in many other big cities the issue is moot, since virtually every other major urban police department in the nation uses the bullets, according to law enforcement experts.

Even proponents admit that some people have been more seriously wounded by the bullets than by full-metal-jacket ones now used by the New York Police Department. But these experts argue that lives have probably been saved through the use of hollow-points.

"I'd rather be hit by a traditional full-metal jacket bullet because it is a cleaner wound," said Lieut. Nicholas Sapienza, the range manager of the Newark Police Department. "But they do more good than harm."

There is a simple trade-off between the use of the more traditional ammunition and hollow point bullets, which are capable of stopping a criminal before he can fire his gun. The hollow-points are more likely to cripple or kill, so present an added danger to police officers or bystanders shot in a crossfire.

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Still, several studies show that the case for the hollow point bullet is not entirely clear cut. One in five officers who is shot is shot by himself or another officer, either by accident or suicide. And 80 percent of the shots fired in police shootouts miss their targets, meaning at least some innocent people hit cleanly by an errant bullet would be more severely injured by the new bullets.

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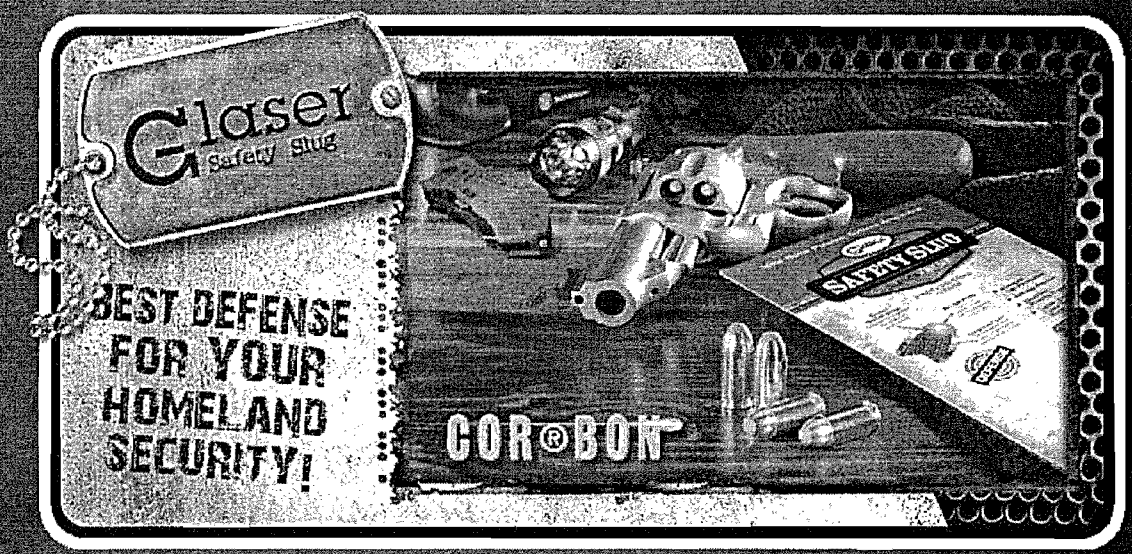
EXHIBIT I

< 1 2 > view all

Glaser Safety Slug

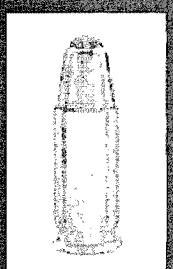


The Glaser Safety Slug was designed in 1974 in response to the possibility of having to use a handgun on an airplane by the Sky Marshals. The concerns at that time were over penetration on soft tissue and ricochets on hard surfaces and possible overall excess penetration.

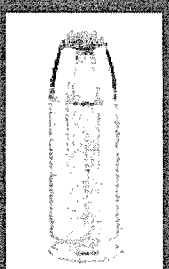
Today, Glaser offers this excellent performing round for civilian use. It is recommended for the urban dweller and anyone who is concerned with over penetration. Courthouse, hospital, amusement park and similar security agencies will also find that Glaser Safety Slug provides exactly what is needed.

Glaser Safety Slug works exactly as it was designed to do over 30 years ago. The Safety Slug uses a copper jacket and it is filled with a compressed load of either #12 or # 6 lead shot. It is then capped with a round polymer ball that enhances feeding and reloading.
The Safety Slug bullet design assures that there will be no over penetration as well as reducing the likelihood of a ricochet on hard surfaces while still causing significant soft tissue destruction.

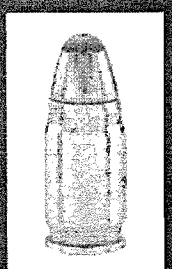
Glaser Safety Slug's features still make this a very good choice for personal protection whether in the home or on a crowded street.
Reliable feeding and reloading
Minimizes concerns with over penetration and ricochets on hard surfaces
Excellent for close quarter security



25 Auto 35gr
Glaser Blue
$13.39



32 Auto 55gr
Glaser Blue
$13.73 - $41.15



32 NAA 55gr
Glaser Blue
$14.94

380 Auto 70gr **9mm Makarov** **9mm Luger**

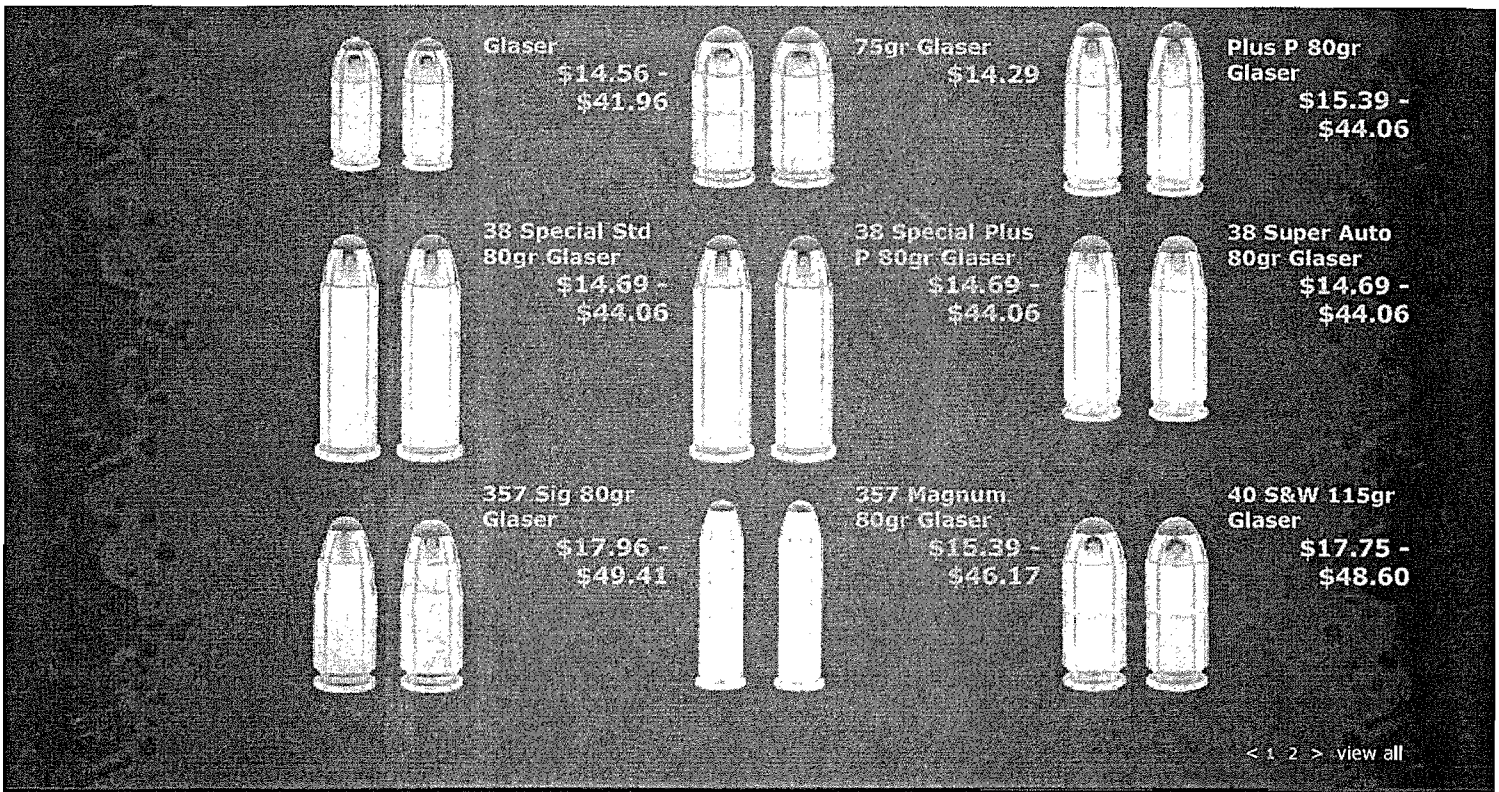


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EXHIBIT J

Saturday, November 27, 1976 The Washington Star

District Police Moving To Get Bullets With More Stopping Action

By Earl Byrd
and Zofia Smardz

Bullets were flying about the heads of customers, D.C. police, and a 35-year-old neighborhood loner named Thomas Lewis who had just stabbed to death a security guard at the Peoples Drugstore in the Southeast Naylor Road Shopping Center.

No one knew why Lewis had stabbed the guard, a 21-year-old former Army man, but now, armed with the dead man's revolver, he crouched between cars in the shopping center's parking lot.

Police converging on the parking lot began firing with their .38-caliber revolvers. Lewis was struck by at least four of the 158 grain, round nose, police bullets. Blood poured from the four wounds but the 145-pound Lewis could not be stopped.

And, as a mother lay with her baby in the roadway, bullets ricocheting about her head, Lewis got up and started a slow walk (with police crouching and following) toward a clump of bushes 200 yards away.

IT WAS ALMOST noon on a cold Monday morning in September.

Lewis, blood streaming from his body, a .38-caliber revolver swinging slowly by his right leg, started toward his nearby apartment at 1814 29th St. SE, where he had lived for five years.

"Officer James T. Nelson waited near the bushes — he must have told Lewis to halt because we heard more shots and then Nelson was hit," recalls Bob Morton of Skyland Liquors next door to the drugstore.

"When Lewis shot Nelson, police closed in and shot him a couple more times. . . . This time they stopped him."

Nelson underwent three hours of surgery and was reported in satisfactory condition the following day.

Dr. James Luke, the D.C. medical examiner, said Lewis had died of multiple (six) bullet wounds.

"It's ridiculous that police have to shoot a man six times to stop him," Morton said. "What about the mother with her baby? And that policeman (Nelson) never should have been shot — Lewis should have never made it that far."

"Yea," said a friend, "But we don't want police to have bullets so powerful that they take your leg or arm off."

"True," Morton said, "but something's got to be done."

YESTERDAY, D.C. police announced that something was going to be done about the type of bullets they use, beginning with educating the community of the dangers and differences between the streamlined bullet they use today and the hollow head bullet Chief of Police Maurice J. Cullinane would like to see his officers use.

Wednesday Cullinane began his education process by showing a film to his Citizens Advisory Council. The film explored the hazards of the 158-grain streamlined round nose lead bullet, which the department uses, as compared to the 158-grain hollow point lead bullet.

Of the 10 members present, nine voted to use the hollow point and one member abstained, electing to show the film to members of his community before casting an official of yes.

"The real differences between the two bullets," public information officer Gary Hankins explained, "is that the bullet we're using now can hurt innocent bystanders. It doesn't stop a man effectively and can go right through him and hit somebody else. And one of the worst things about the streamlined bullet is that it ricochets so badly."

"The hollow-point (which is not a dum-dum bullet like that fired from a high-powered rifle) . . . is designed to have greater impact upon contact and therefore more stopping power," Hankins said, adding that if the bullet hit a wall it would flatten itself out and decrease the possibility of ricocheting.

THE HOLLOW POINT became available in the early 1960s.

It already has been adopted locally.

The Prince Georges County Police Department switched from a round-head lead bullet to the "125 grain hollow-point," Lt. Robert Howard of the Prince Georges police said yesterday.

Several other departments have also switched. And in those which haven't, like Montgomery County, officers complain.

Chief Cullinane refuses to adopt the hollow-point without community approval.

The chief's Citizens Advisory Council will inform the neighborhood advisory councils and Cullinane has appointed two officers from Planning and Development to tour the city with vidotape presentations for citizens and the business community.

Any citizens group which would like to view the vidotape and ask questions about the hollow-point can set up a viewing date by calling the D.C. police information office on 626-2601.

Although police would like to change over to the hollow-point bullet, the chief of police would like to have responsible opinions from the community.

EXHIBIT K

EDUCATIONAL MATERIALS

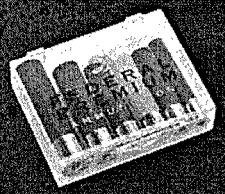
FOR MORE INFORMATION AND TO ORDER THESE PRODUCTS VISIT
THE EDUCATION SECTION AT WWW.FEDERALPREMIUM.COM

THE GOSPEL ACCORDING TO FEDERAL

This full color, two-sided 3' x 2' poster is designed for classroom use and is packed with images of ammunition construction, bullet types and side-by-side photos of 25 rifle cartridges.

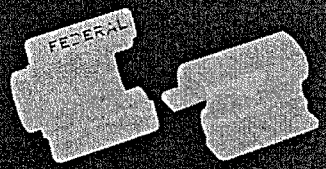
WILDLIFE PAMPHLETS

Big Game Animals, Small Game and Furbearers, Upland Game Birds and Waterfowl are written by wildlife professionals and include full color photos and illustrations, life history and distribution maps.



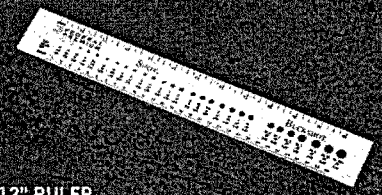
SHOTSHELL ID KIT

Box of unprimed color-coded shotshells including 10, 12, 16, 20, 28 and 410.



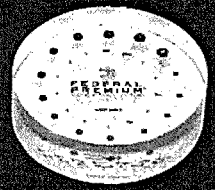
FEDERAL SAFE-T-PLUG

Place in the open chamber of an auto loader or pump shotgun so everyone can see that the chamber is open and safe.



12" RULER

The clear, 12 inch ruler shows actual sizes of 28 shot pellets from #12 to 000 Buck.



SHOT-SIZE PAPERWEIGHT

This clear acrylic paperweight contains actual shot

AMMO 101 DVD

This fast paced video is broken into Rimfire, Centerfire and Shotshell Chapters and describes with animated footage the construction and function of different ammunition types. Excellent for classroom settings.

SHOOTING INSTRUCTION 4-IN-1 DVD

Produced in cooperation with the 4H Shooting Sports Program, each chapter details how to teach a new shooter a specific shooting discipline. Basic Rifle, Basic Pistol, Basic Shotgun, and Flying Targets.

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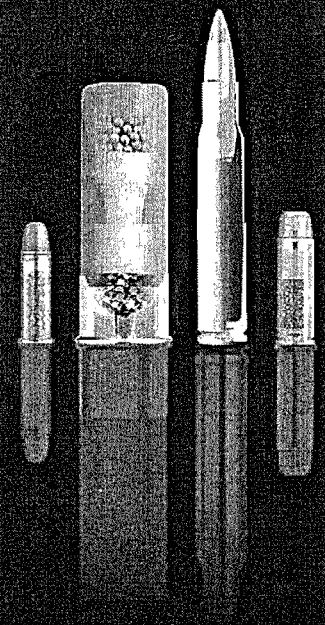
FEDERAL CARTRIDGE COMPANY • 900 EHLEN DRIVE • ANOKA, MINNESOTA 55303

FEDERAL PREMIUM® AMMUNITION



AMMUNITION BASICS

ANATOMY OF A SHOTSHELL

Federal loads six different gauges of shotshells: 10, 12, 16, 20, 28 and 410. Their lengths and shot charges vary from the 2½ inch–⅛ oz. 410 to the 3½ inch–2¼ oz. 10-gauge. They are loaded with lead, steel and HEAVYWEIGHT® shot, as well as slugs and buckshot.

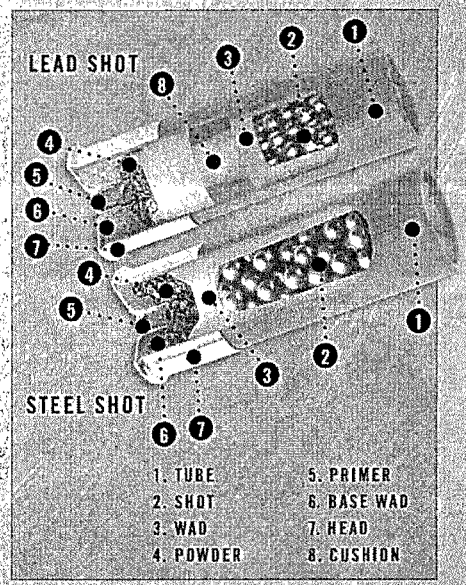
There are similarities and differences in the component parts and construction of a shotshell. The head and primer are similar in all shells. The tube and base wad are either paper or plastic. The shot wad design and powder vary with the type of shotshell.

Lead Shot: Pellets and buckshot are formed by pouring melted lead through a sieve or swaged (formed in a die). Traditional wads for lead shot are molded from flexible, low-density polyethylene plastic and have a cushion section on the bottom. The cushion helps reduce the number of deformed pellets and recoil.

Steel Shot: Made by cutting steel wire into short lengths which are formed and ground. Premium shot is coated with a rust inhibitor. Wads for steel shot are molded from high-density polyethylene. They have thick sidewalls to prevent the pellets from contacting the shotgun bore surface. Steel shot ammunition requires large charges of special slow-burning powders to give the large shot column a gentler start but a faster exit from the bore.

FLITESTOPPER™ Shot: Available in all-steel pellets for waterfowl and upland birds, and nickel-plated lead pellets for upland birds. Features a ring to cut on impact and better edge to edge patterns.

HEAVYWEIGHT® Shot: Pellets are made of tungsten-alloy. The FLITECONTROL® wad protects the bore from hard pellets. HEAVYWEIGHT shot is 35% denser than lead. This shot can be used in a steel safe barrel.



FLITECONTROL® WAD

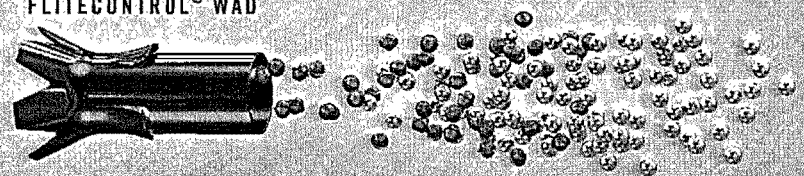
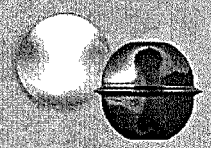


PHOTO TAKEN 19 FEET FROM MUZZLE

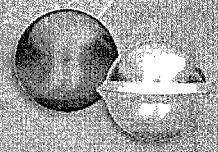
The FLITECONTROL® wad opens at the rear, creating an air brake that pulls the wad off the shot string. The pellets are released at the optimum moment for accuracy and power. The FLITECONTROL wad is combined with unique shot types by game to get better performance on target. This unique wad system is featured in Mag-Shok™ turkey, select Vital-Shok™ Buckshot, Black Cloud® waterfowl and Prairie Storm™ upland loads.

FLITESTOPPER® PELLETS

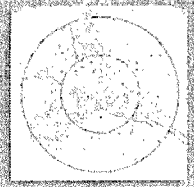
FLITESTOPPER® Steel (FS Steel®) creates consistent edge-to-edge patterns, putting lethal pellets on game even outside the pattern center. Get cutting power with no loss of penetration.



Nickel-plated FLITESTOPPER® Lead together with Premium® copper-plated lead produces consistent patterns that put more pellets on target.

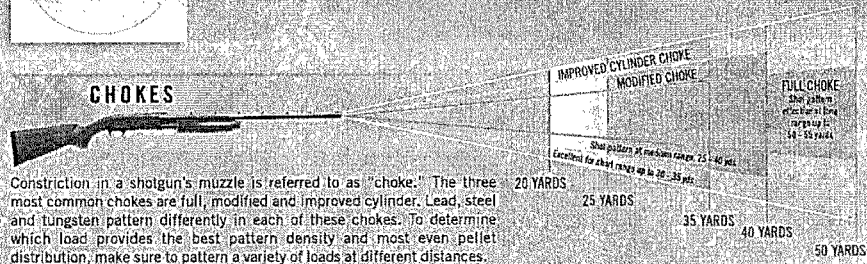


PATTERNING A SHOTGUN



1. In a safe location, set up a 40-inch square paper target with an aiming point in the center.
2. While wearing eye and ear protection, shoot once at the aiming point from 20 yards. Repeat from 30, 40 and 50 yards on separate targets.
3. Check the pattern for uniformity, gaps or holes in the shot pattern.
4. Try different chokes, loads and shot sizes to find the performance you prefer.

CHOKES

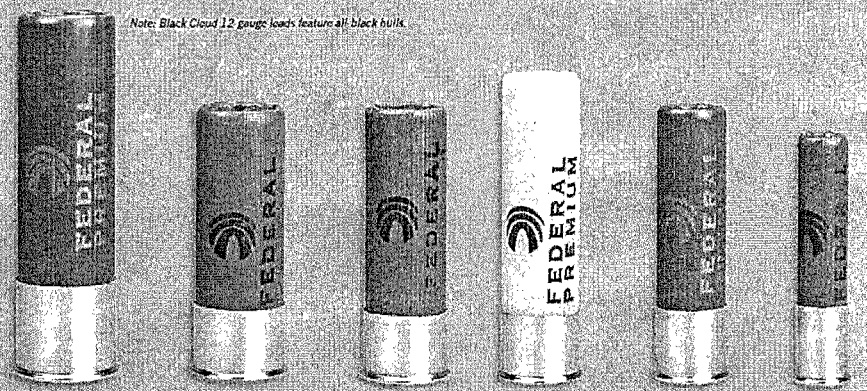


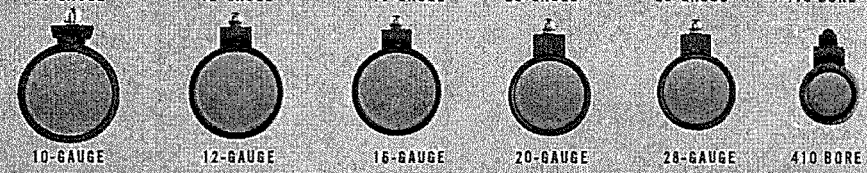
Constriction in a shotgun's muzzle is referred to as "choke." The three most common chokes are full, modified and improved cylinder. Lead, steel and tungsten pattern differently in each of these chokes. To determine which load provides the best pattern density and most even pellet distribution, make sure to pattern a variety of loads at different distances.

SHOTGUN GAUGES

The gauge of a shotgun was first determined by a simple method that used lead balls. A gun maker would use lead balls the same diameter of the shotgun bore, count how many of those balls it takes to equal one pound of weight, and that would be the gauge of the gun. For example, it will take 12 lead balls the size of a 12-gauge shotgun bore to weigh a pound. The only exception is the 410, which is measured in inches. Shotguns and shotgun shells should also be matched. Failure to properly match the ammunition to the firearm can cause firearm damage and/or personal injury.

Note: Black Cloud 12 gauge loads feature all black hulls.





SHOTGUN SLUGS

Sabot style slugs feature a lead or copper bullet enclosed in a polyethylene sleeve that grips the rifling to provide spin and increased accuracy. For rifled barrels only.

Rifled or "Foster" slug has helix ribbing to enhance stability through the bore. It has a hollow point that is designed for maximum expansion. The rifled slug is recommended for smooth bore shotgun barrels.

TruBall® Rifled Slug is the most accurate slug ever made for smooth bore shotguns. The unique TruBall locks the slug and wad in place, to punch out as tight as 2-inch groups at 50 yards with up to 75% improvement in group size consistency over standard rifled slugs.

LEAD SABOT SLUG

BARNES® EXPANDER® SABOT SLUG

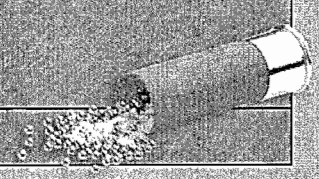
RIFLED "FOSTER" SLUG

TRUBALL RIFLED SLUG

SHOT SIZES

PELLET DIAMETER	SHOT													
	T	BBB	BB	1	2	3	4	5	6	7	7½	8	8½	9
INCHES	.20	.19	.18	.16	.15	.14	.13	.12	.11	.10	.095	.09	.085	.08
MM	5.08	4.83	4.57	4.06	3.81	3.56	3.30	3.05	2.79	2.54	2.41	2.29	2.16	2.03

PELLET DIAMETER	BUCKSHOT SIZES						
	NO.000	NO.00	NO.0	NO.1	NO.2	NO.3	NO.4
INCHES	.36	.33	.32	.30	.27	.25	.24
MM	9.14	8.38	8.13	7.62	6.86	6.35	6.10



AVERAGE PELLET COUNT

STEEL–8 G/CC

SHOT SIZE	3/4 (21.25)	7/8 (24.60)	15/16 (26.58)	1 (28.35)	1-1/8 (31.89)	1-1/4 (35.44)	1-3/8 (38.98)	1-1/2 (42.52)	1-9/16 (44.30)	1-5/8 (46.06)
7	316	369	395	422	475	527	580	633	659	685
6	236	276	295	315	354	394	433	472.5	492	512
5	182	213	228	243	273	304	334	364.5	380	395
4	144	168	180	192	216	240	264	288	300	312
3	118	138	143	158	178	197	217	237	247	257
2	94	109	117	125	141	156	172	187.5	195	203
1	77	90	97	103	116	129	142	154.5	161	167
BB	54	63	67	72	81	90	99	108	112	117
BBB	46	54	58	62	70	77	85	93	97	101
T	36	46	49	52	58	65	71	78	81	84
F	30	35	37	40	45	50	55	60		

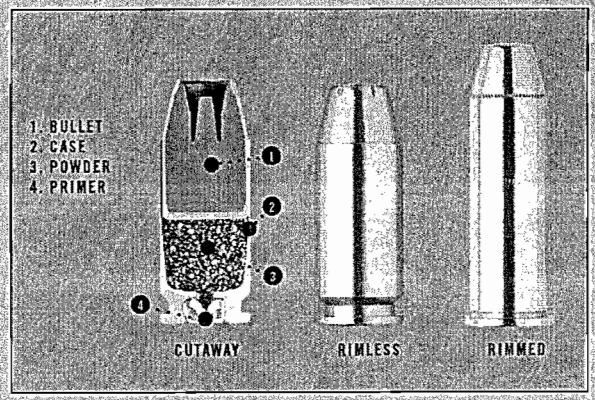
HEAVYWEIGHT® 1.5 G/CC

SHOT SIZE	1-1/8 (31.90)	1-1/2 (42.52)	1-5/8 (46.07)	1-7/8 (53.16)	2 (53.16)
5	—	187	205	231	249
6	—	223	278	312	330
7	246	337	353	408	444

LEAD–11 G/CC (3% ANTIMONY)

SHOT SIZE	1/2 (14.17)	11/16 (15.48)	3/4 (21.25)	7/8 (24.80)	1 (28.35)	1-1/8 (31.89)	1-1/4 (35.44)	1-3/8 (38.98)	1-1/2 (42.52)	1-5/8 (46.06)	1-3/4 (49.61)	1-7/8 (53.15)	2 (56.70)	2-1/4 (63.78)
9	292	402	439	512	585	658	731	834	877	951	1024	1097	1170	1316
BB	249	342	373	435	497	559	621	683	745	808	870	932	994	1118
8	205	282	307	359	410	461	512	564	615	666	718	769	820	922
7½	175	241	262	306	350	394	437	481	525	568	613	656	700	787
6	112	155	169	197	225	253	281	309	337	366	394	422	450	506
5	85	117	127	148	170	191	212	234	255	276	298	319	340	382
4	67	93	101	118	135	152	169	186	202	219	236	253	270	304
2	43	60	65	76	87	98	109	120	130	141	152	163	174	196
BB	25	34	37	44	50	56	62	69	75	81	88	94	100	112

ANATOMY OF A PISTOL CARTRIDGE



Case Design: There are two basic pistol cartridge designs. Cartridges used in revolvers or single shot pistols are generally **Rimmed**, where the case head has a rim that extends beyond the case wall. Common revolver calibers are .38 Special, .357 Magnum and .44 Magnum. Semi-automatic handguns generally utilize a **Rimless** cartridge, where the head of the cartridge does not extend beyond the diameter of the case walls, and an extractor groove is cut into the base to enable the extractor on the firearm to grip the cartridge. Common semi-automatic calibers include 9mm, 40 S&W, and 45 ACP. The smallest pistol cartridge manufactured by Federal is the .25 Auto, and the largest is the .500 S&W.

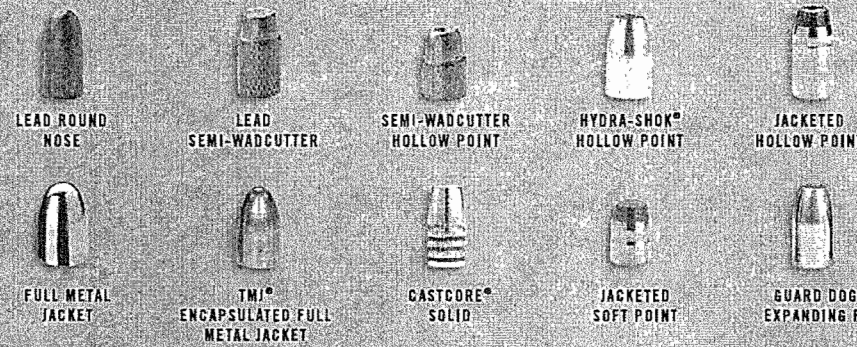
Bullet Design: Different bullets are designed for different uses. You should match the bullet style to what your application is.

Target Bullets: **Full Metal Jacket (FMJ)** bullets are often referred to as Ball Ammunition, and are designed to feed reliably in semi-automatic handguns but do not expand when they hit targets. **TMJ®** encapsulates the lead core and are generally used for indoor target ranges. **Semi-Wadcutters** are designed to cut clean holes in paper targets. Lower velocity rounds also can utilize a plain **Lead Round Nose** bullet that have no jacket.

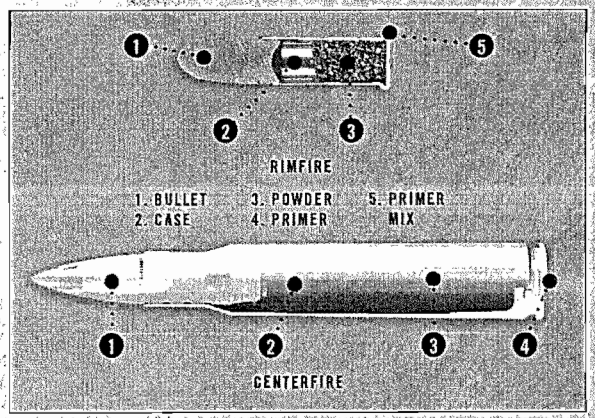
Hunting Bullets: Most hunting handgun bullets are designed to expand and deliver the maximum energy into the game to ensure clean kills. The **Jacketed Hollow Point** is a very popular hunting bullet in the magnum calibers. High quality **Jacketed Soft Points** also provide a premium bullet option, including the Fusion® and Swift® A-Frame® bullets. Sometimes a hunting application calls for a deep penetrating, non-expanding bullet such as the **CastCore® Solid**.

Personal Defense: It is very important to carry a quality bullet in a personal defense handgun that is designed to neutralize a threat as quickly as possible. While the **Jacketed Hollow Point** in common defensive calibers can be effective, the **Hydra-Shok® HP** features a center post in the hollow point and controlled expansion to deliver reliable stopping power. In jurisdictions that prohibit hollow points, or for use in homes the **Expanding Full Metal Jacket** design of the Guard Dog™ may be the best option. The EFMJ's nose is filled with an expanding polymer that will mushroom on impact, even on wallboard which often will plug a hollow point and limit its expansion.

BULLET STYLES



ANATOMY OF A RIFLE CARTRIDGE



Ignition System: The two main types of rifle cartridges are **Rimfire** and **Centerfire.** Rimfire cartridges have **primer mix** located in the rim of the case which is ignited when the firing pin strikes the rim and creates a small spark. The most common rimfire cartridges are 22 Long Rifle and 17 HMR. Centerfire cartridges have a **primer** which contains primer mix and a metal anvil inside of a small cup. The primer is placed in the center of the case head, and is ignited when the firing pin strikes the center of the primer cup and forming a spark between the cup and the anvil. Most centerfire cartridges can be reloaded.

Case: The **case** is generally made of brass and is designed to contain all of the components and fit within the chamber of a firearm. Different calibers have different shapes and sizes of cases. Some cases have a **neck,** to accommodate a bullet with a much smaller diameter than the body of the cartridge. Others have straight walls. The case must fit the chamber because of the extreme pressures created by the burning of the **powder** pushes the case out against the chamber. It is this pressure from expanding gases that pushes the bullet down the barrel. The caliber of the cartridge is stamped on the head of the case, and must be matched to the caliber stamped on the gun barrel.

Bullets: There is a wide array of bullet types, and they all perform differently. It is important to match the bullet to the application. **Accuracy** and **precision** of a bullet are important to consider, but in a **hunting bullet** it is equally important to consider a bullet's terminal performance, or what a bullet does when it hits and travels through a target. Factors important to **terminal performance** include **penetration** (how deep a bullet travels into a target), **expansion** (how much a bullet mushrooms to increase energy transfer into the target) and **weight retention** (how well the bullet stays intact).

Target bullets are designed to be accurate and/or inexpensive, but they generally don't expand reliably for use on game. The **Full Metal Jacket (FMJ)** or **"Ball"** bullet is designed for military and target applications, and the jacket that extends from the point to base gives it a flat trajectory but poor expansion.

A hunting bullet that is designed not to expand is the **solid.** These generally large caliber bullets provide deep penetration and high weight retention for use on dangerous animals like cape buffalo. An example is the **Trophy Bonded® Sledgehammer® Solid,** which features a thick bronze jacket that is bonded to the lead core, and a flat nose that minimizes deflection for a straight and deep wound cavity.

All-copper or monolithic bullets are generally designed for medium or larger game, and have high weight retention, but generally don't expand as much as soft points. Their hollow point design peels back with hydrostatic pressure in game animals to expand the frontal diameter, and penetrate deeply.

Soft points are often used on small and medium sized game because the lead nose and tapered jacket are designed to expand as much as twice their original diameter. These are often considered the standard deer bullet, and can be found in Federal's Power-Shok® line. The **Sierra® GameKing®** features a boat-tail design, meaning it has a tapered back end that improves its aerodynamics and accuracy. The **Nosler® Partition®** features improved weight retention and controlled expansion because the lead nose is divided from the lead base and limits how far the jacket can peel. Federal's **Fusion®** bullet offers a competitively priced option with a jacket that is molecularly fused to the core, increasing weight retention.

The **Trophy Bonded® Bear Claw®** is perhaps the most famous bonded bullet. Bonding means the jacket and the core are joined together chemically, similar to welding. This helps keep the bullet together and reduce separation. While this bullet is a soft point, the solid base of the bullet limits how far the jacket can peel and mushroom, improving penetration on big game and dangerous game. The **Trophy Bonded® Tip** is the next generation of medium and big game bullet and contains a number of features from other bullets. The polymer tip and boat-tail reduces the wind drag on this bullet compared to the Bear Claw making it flatter shooting and more accurate, particularly in smaller calibers. It has very high weight retention and controlled expansion like its predecessor, and is appropriate for deer, elk, and most African plains game.

The **Nosler® Ballistic Tip®** is a popular varmint to medium sized game bullet that features a polymer tip and boat-tail for fast, flat travel and very high expansion. Penetration is limited because of the rapid expansion. The tip is color coded by caliber.

A **varmint bullet** with explosive terminal performance is the **Speer® TNT Green®** bullet. This non-lead bullet is appropriate only for small game and varmints, and has a powdered metal core that breaks up completely on penetration, retaining little weight and transferring all of its energy into the target.

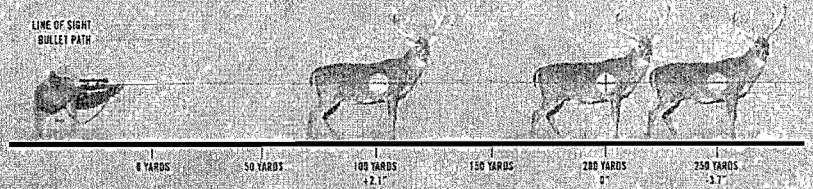
NOTE: Rifle bullets may perform differently in different rifles. To ensure the best possible results try various rifle bullet styles and weights to determine which round performs best in your rifle.

SIGHTING IN A RIFLE

THE PROCESS OF "SIGHTING IN" OR "ZEROING" CONSISTS OF MAKING THE RIFLE AND ITS SIGHT "AGREE" ABOUT WHERE THE BULLETS STRIKE. WITH PROPER PROCEDURES, SIGHTING IN IS NEITHER MYSTERIOUS NOR DIFFICULT.

1. Check sight screws or scope mounts. Bore sighting or the use of a collimator is not a substitute for actually sighting in by shooting on a range, but can speed up the process by getting "on paper."
2. Pick a safe area to shoot with an adequate backstop to stop your bullets. Wear shooting glasses and hearing protection.
3. Shoot from a solid rest, such as a benchrest or sand bags. Shoot at close range to get "on paper" but verify the final zero at expected hunting ranges.
4. From the solid rest, carefully squeeze off three aimed shots. The center of this group of bullet holes is the rifle's point of impact. Adjusting the sight moves this point of impact to your desired zero. Move open rear sights in the same direction you want the group to move. Adjust scopes following directions on the dials. Continue this process until the group is where you want it.
5. Different ammunition brands and/or bullet weights may change the point of impact and necessitate re-sighting. If your rifle gets bumped or dropped, be sure to re-verify your zero so you can bag your game with one shot.

TRAJECTORY

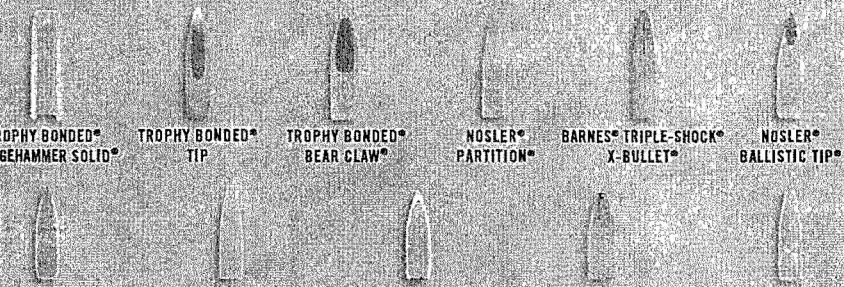


Note: 1. Drawing not to scale. 2. This example: Federal Load No. 3006B with "zero" at 200 yds.

"Trajectory" is the arc of the bullet from the firearm's muzzle. Bullets appear to "rise" because the barrel is angled up. The bullet's path crosses the line of sight twice—going up near the muzzle and going down through the downrange zero. The mid-range trajectory is the bullet's highest point above the line of sight. It usually occurs halfway between the muzzle and the zero range.

Velocity and bullet design determine trajectory. Low-velocity loads with round-nosed bullets, if sighted for long ranges, will have a very high mid-range trajectory—possibly high enough to cause a miss on close-range targets. Consult Federal's ballistic tables for velocity, trajectory and appropriate downrange zero estimates for your specific cartridge/bullet. For real time charting and quick comparison, visit www.federalpremium.com.

BULLET STYLES



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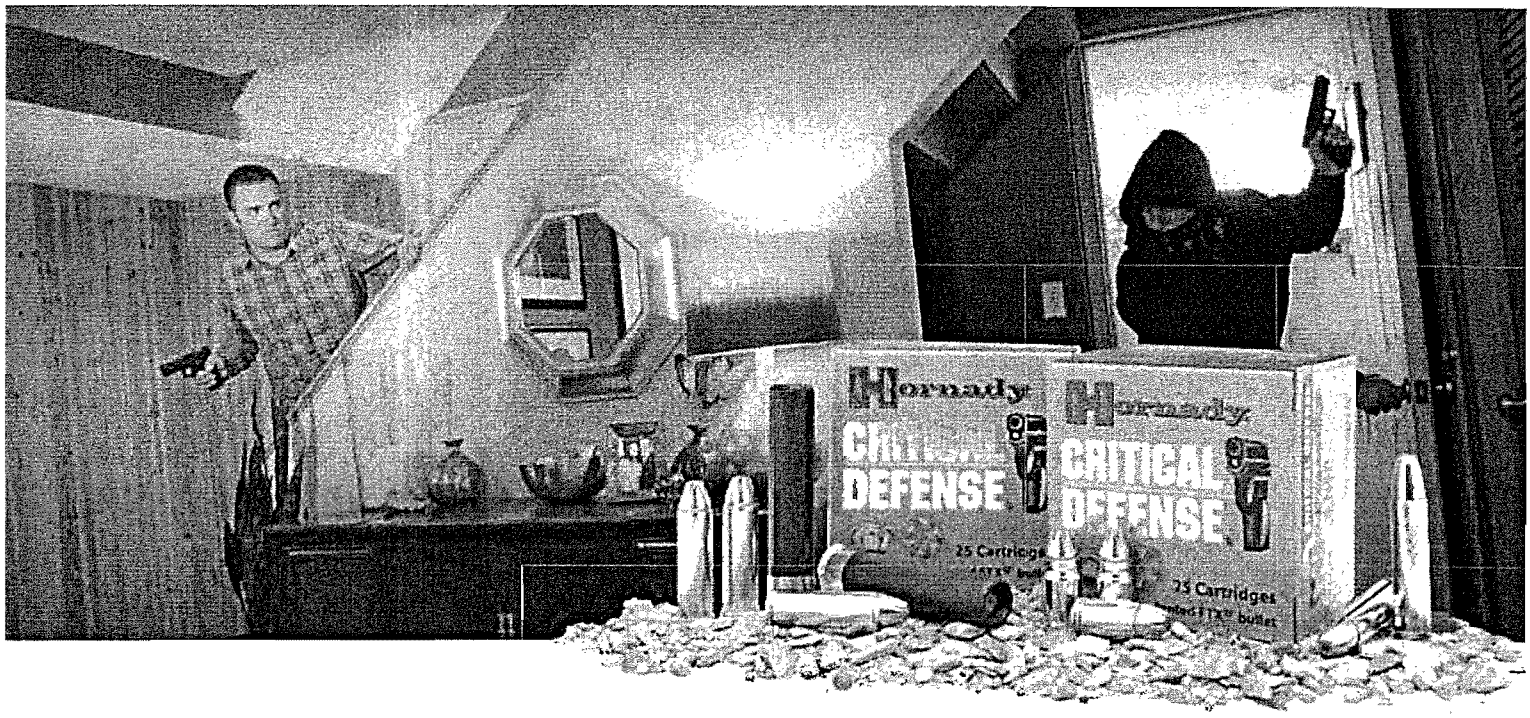


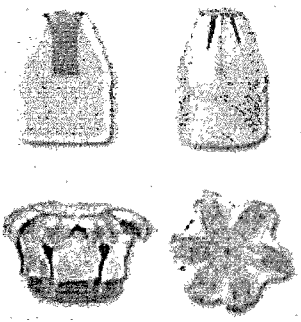
To learn more, scan the QR code. Search your phone's app store for a QR code reader.

When lives are on the line, only the best will do.

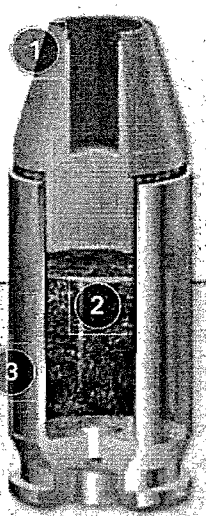
Since their inception, conventional hollow point pistol bullets have performed well, but have never delivered 100% reliability especially in self-defense situations. The patented Flex Tip® technology used in Critical Defense® ammunition eliminates the clogging and inconsistency that often plagues hollow point bullets. Hornady® achieved this by using the same tip material as used in LEVERevolution® ammunition.

All Critical Defense® ammunition is loaded in nickel cases for increased visibility in low-light situations. Premium low flash propellants deliver proven performance, even in very short-barreled handguns, and won't disrupt your vision. Reliable expansion and dependable terminal performance can be counted on for concealed carry/personal protection.

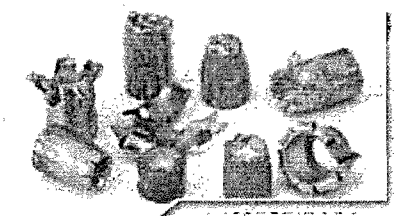
The patented FTX® bullet delivers consistent expansion you can count on.



9MM 115 gr. FTX®



HORNADY®



1. FTX® BULLET TECHNOLOGY
The patented FTX® bullet will expand reliably EVERY SINGLE TIME!

2. OPTIMIZED PROPELLANTS
Optimized propellants burn quickly, reduce recoil and limit muzzle flash to protect night vision.

3. NICKEL-PLATED CASES
Nickel-plated cases resist tarnish and greatly enhance low-light chamber checks.

Purpose-built for concealed carry guns

- Unaffected by thick and heavy clothing, including denim and leather.
- FTX® bullet delivers superior controlled expansion and large, deep wound cavities over a wide range of velocities.
- Clean burning and efficient propellants reduce recoil in lightweight handguns, and perform consistently at all temperatures.
- Minimal muzzle flash protects night vision.
- Feeds reliably in pistols.
- Silver nickel plating prevents corrosion and is easily visible in low light situations.
- Bullets are custom designed for individual loads.
- The most effective, consistent, and reliable concealed carry ammunition available today!

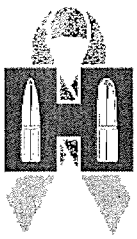
CARTRIDGE	BULLET	ITEM	COUNT
22WMR	45 gr. FTX®	83200	50
32NAA NEW!	80 gr. FTX®	90070	25
32H&R NEW!	80 gr. FTX®	90060	25
380 Auto	90 gr. FTX®	90080	25
9MM Luger	115 gr. FTX®	90250	25
38 Special Critical Defense® Lite NEW!	90 gr. FTX®	90300	25
38 Special	110 gr. FTX®	90310	25
38 Special+P	110 gr. FTX®	90311	25
357 Magnum	125 gr. FTX®	90500	25

CARTRIDGE	BULLET	ITEM	COUNT
9x18 Makarov	95 gr. FTX®	91000	25
40 S&W	165 gr. FTX®	91340	20
44 Special	165 gr. FTX®	90700	20
45 Auto	185 gr. FTX®	90900	20
45 Colt	185 gr. FTX®	92790	20
30 Carbine NEW!	110 gr. FTX®	81030	25
410 Triple Defense™ NEW!	FTX® Slug & 2 round balls	86238	20
12 Gauge 00 Buckshot	8 pellets	86240	10

☐ Indicates New for 2013.

Reference Center Spread for Ballistics Information

Critical Defense® Lite NEW!



The NEW Critical Defense® Lite™ 38 Spl load is an effective, reduced recoil option for ANY shooter looking to minimize the felt recoil of their lightweight, compact personal protection revolver.

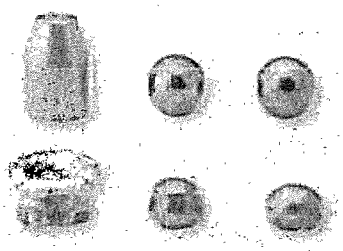
Designed with the same proven components as our Critical Defense® line of ammunition, this new offering features a 90 grain FTX® bullet with a unique PINK Flex Tip®! The pink bullet tips and pink ribbon packaging help signify our desire to share in the fight against breast cancer. A portion of the proceeds from the sale of Critical Defense® Lite™ will go to help fund breast cancer research.

Critical Defense® 410 Triple Defense™ NEW!

Delivering effective shot patterns that place all projectiles on a man-sized target at seven yards, the new Critical Defense® 410 features a unique Triple Defense™ projectile column consisting of two 35 caliber round balls topped with one non-jacketed FTX® slug.

Unique to the Critical Defense® 410, the 41 caliber FTX® slug actually engages the gun's rifling, and contacts the target nose-on, enabling the patented Hornady Flex Tip® technology to assist in expansion for greatly enhanced terminal performance. Each 35 caliber round ball is made of high antimony, cold swaged lead to resist deformation and provide excellent penetration.

Critical Defense® 410 Triple Defense™ – you be the JUDGE!



Flex Tip technology assists in expanding the slug for enhanced terminal performance and the round balls penetrate the target at 7 yards.

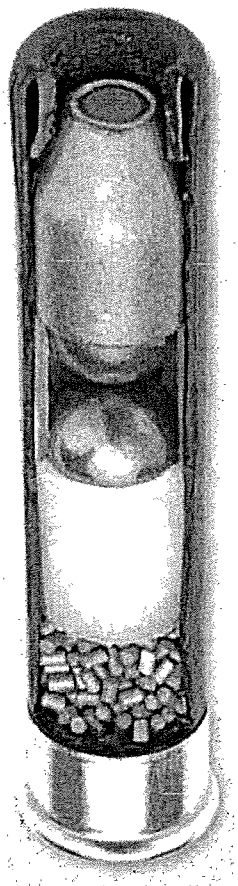


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EXHIBIT M

What About DUMDUMS?

- Were they actually outlawed in warfare?
- Is there a humane bullet with which to shoot people?
- Should police try to control the type of bullet or the use of weaponry?

By
IRVIN K. OWEN*
Director
Office of University Safety
Indiana University
Bloomington, Ind.

I am neither promoting nor recommending any specific type of bullet nor trying to influence the firearms policy of any department. I am simply concerned at the lack of correct information and logic used in the charges of individuals and organizations against the police for the use of so-called "dumdum" bullets in police work. Recent news articles have charged various police departments with using such bullets which *"are banned in warfare by international law,"* are *"outlawed by the Geneva Convention,"* are generally not accepted under the conditions *"agreed to by most nations"* at The Hague Conferences of 1899 and 1907, etc.

We must lay to rest some of these old cliches and historically twisted "old wives tales." To help set the record straight, I would like to share some observations of history, draw a few conclusions, and give the ideas of our department on the proper approach to this problem.

Several years ago, I became interested in the subject of bullets with hollow points. It was necessary to conduct research to answer the questions of my students in police classes and to develop a popular discussion topic of "Stopping Power versus Firepower." Reference material, available in any major library, quickly revealed the common misconceptions surrounding the dumdum.

One of the earliest international considerations for limiting the use of certain types of weapons appears in the Declaration of St. Petersburg in 1868. The Czar of Russia called a meeting of 17 European powers to consider an agreement to limit weapons causing "unnecessary suffering" by combatants during war. This was based upon the theory that the purpose of war was served by *any* wound which would render a combatant or soldier "hors de combat" (out of action) and that such wound should not cause unnecessary suffering. Considering the extent of medical knowledge of that time, even a flesh wound could deprive the army or navy of the services of a man in combat.

The Declaration of St. Petersburg dealt with the use of "any projectile of a weight less than 400 grammes (about 13½ ounces), which is either explosive or charged with fulminating or inflammable substance." This related to the use of musketry.

As the military rifle developed, it became common practice to manufacture rifle bullets which were fully jacketed to make a clean perforation. About 1897, the British found that such jacketed bullets failed to stop the charges of fanatical tribesmen on the Indian frontier. As a result, a modified rifle bullet was manufactured at the British arsenal at Dumdum, India.

*Mr. Owen was appointed to his present position in 1970, following a more than 20-year career as a Special Agent of the FBI.

This new bullet, referred to as the dumdum, obtained expansion by leaving the lead core exposed at the tip and weakening (by making thin) the casing around the shoulder of the bullet. Improvised forms of expanding bullets were used in India and the Sudan by filing down the point and making longitudinal slits in the envelope. All such forms of bullets, which were not fully encased with a hard jacket, were described colloquially, and even in diplomatic correspondence, as dumdum bullets.

The commonly referred to "Geneva Conference" actually had nothing to do with dumdum or expanding bullets. The Geneva Conference was a series of meetings at Geneva, Switzerland, between 1863 and 1864 that established the Red Cross and drew up the first code for the care of the sick and wounded soldiers irrespective of the side on which they fought.[1] Expanding bullets were dealt with in The Hague Conferences of 1899 and 1907.

Once again, in 1898, the Czar proposed an international conference which was to consider (1) limitation of armaments, (2) restrictions upon new methods of warfare, (3) prohibition of firing from balloons, (4) prohibition of submarines and rams, (5) adaptation of principles of the Geneva Convention of 1864 to naval warfare, (6) neutralization for vessels saving those overboard after battles at sea, (7) revision of rules of war on land, and (8) acceptance of principles of mediation and arbitration with a view to preventing armed conflicts. Following the suggestion of the Czar, representatives of 26 powers met at The Hague over a period of more than 2 months,[2] beginning in May 1899.

The Hague Conference of 1899 drew up three declarations, and the one pertinent to this discussion was Declaration IV, 3,[3] which states (marginal notes added to facilitate reference):

DECLARATION (IV, 3) CONCERNING EXPANDING BULLETS

Signed at The Hague, July 29, 1899

Preamble.

The undersigned, plenipotentiaries of the Powers represented at the International Peace Conference at The Hague, duly authorized to that effect by their Governments, inspired by the sentiments which found expression in the Declaration of St. Petersburg of the 29th November (11th December), 1868,

Declare as follows:

Abstention from use of expanding bullets.

The contracting Parties agree to abstain from the use of bullets which expand or flatten easily in the human body, such as bullets with a hard envelope which does not entirely cover the core, or is pierced with incisions.

Powers bound.

The present Declaration is only binding for the contracting Powers in the case of a war between two or more of them.

Exemption.

It shall cease to be binding from the time when, in a war between the contracting Powers, one of the belligerents is joined by a non-contracting Power.

Ratification.

The present Declaration shall be ratified as soon as possible.

Deposit at The Hague.

The ratification shall be deposited at The Hague.

Notification to Powers.

A *proces-verbal* shall be drawn up on the receipt of each ratification, a copy of which, duly certified, shall be sent through the diplomatic channel to all the contracting Powers.

Adhesion.

The non-signatory Powers may adhere to the present Declaration. For this purpose they must make their adhesion known to the contracting Powers by means of a written notification addressed to the Netherland Government, and by it communicated to all the other contracting Powers.

Denunciation.

In the event of one of the high contracting Parties denouncing the present Declaration, such denunciation shall not take effect until a year after the notification made in writing to the Netherland Government, and forthwith communicated by it to all the other contracting Powers.

Notifying Power only affected.

This denunciation shall only affect the notifying Power.

Signing.

In faith of which the plenipotentiaries have signed the present Declaration, and have affixed their seals thereto.

Deposit of original. Certified copies to Powers.

Done at The Hague, the 29th July, 1899, in a single copy, which shall be kept in the archives of the Netherland Government, and of which copies, duly certified, shall be sent through the diplomatic channel to the contracting Powers.

(Here follow signatures.)

RATIFICATION, ADHESIONS AND RESERVATIONS

The foregoing Declaration was *ratified* by all the signatory Powers on the dates indicated:

Austria-Hungary	September 4, 1900
Belgium	September 4, 1900
Bulgaria	September 4, 1900
China	November 21, 1904
Denmark	September 4, 1900
France	September 4, 1900
Germany	September 4, 1900
Greece	April 4, 1901
Italy	September 4, 1900
Japan	October 6, 1900
Luxemburg	July 12, 1901
Mexico	April 17, 1901
Montenegro	October 16, 1900
Netherlands	September 4, 1900
Norway	(See Sweden and Norway.)
Persia	September 4, 1900
Roumania	September 4, 1900
Russia	September 4, 1900
Servia	May 11, 1901
Siam	September 4, 1900
Spain	September 4, 1900
Sweden and Norway	September 4, 1900
Switzerland	December 29, 1900
Turkey	June 12, 1907

Adhesions:

Great Britain	August 30, 1907
Nicaragua	October 11, 1907
Portugal	August 29, 1907

Reservations: None

The United States did not sign this Declaration. The hesitation of Great Britain and the continued refusal of the United States to sign were due to the same cause. Both countries drew a distinction between explosive and expanding bullets and maintained that the latter *did not inflict* unnecessary cruelty, especially in certain conditions of warfare.

"One of the earliest international considerations for limiting the use of certain types of weapons appears in the Declaration of St. Petersburg in 1868."

All of this historical data brings us to a number of pertinent observations:

1. Practically all bullets used by police today are classified as dumdum since they have no full hard metal jacket encasing their lead core. The lone exception would be the armor-piercing shell, which has limited use.

2. Expanding bullets, referred to as dumdum, were never outlawed by international agreement in any war in which the United States participated. As a matter of fact, one would be hard pressed to identify a war, among the hundreds of wars in history, in which such bullets were outlawed since most have had combatants who were not bound by the Declaration. The Declaration itself has never been enforced.

3. No one has paid much attention to the dumdum ammunition issue in recent years when the use of claymore mines, fragmentation grenades, anti-personnel bombs, flamethrowers, and many other far more devastating warfare weapons than expanding bullets have been in common use.

4. The Geneva Convention dealt with treatment of prisoners and formation of the Red Cross. The use of expanding bullets was addressed only as one of many topics in The Hague Conferences of 1899 and 1907, which also outlawed the use of submarines and firing from balloons! Certainly, this would be a shallow justification for dismantling our air and submarine forces on whose might the safety of the free world has relied since World War II.

5. The Hague Conference Declaration was not agreed to *by most nations* of the world. Only 24 nations agreed, and 3 adhered to the principal. There were approximately 67 nations in the world in 1899. There are about 135 nations recognized by the United Nations today.

"It is astonishing that certain people cling to the idea that there may be some humane way of shooting a person with a bullet."

6. Warfare is indiscriminate. Anyone may be shot in a battle and whole cities annihilated. Killing is general rather than selective. Police use of handguns, in contrast to the barrage technique commonly employed by the military, is highly selective of its targets to afford maximum protection to innocent bystanders. Moreover, police personnel are not only accountable to their departments for the proper use of their weapons but, more importantly, to the law.

The list could go on, but it becomes clear that there is no meaningful relationship between police weaponry in the United States and The Hague Declaration of more than 75 years ago.

It is astonishing that certain people cling to the idea that there may be some humane way of shooting a person with a bullet. There are many who decry the use of a so-called dumdum bullet in a pistol, but think nothing of the use of "OO" buckshot or "slug" shot from a shotgun or, for that matter, the use of flamethrowers in international warfare.

If we truly wish to address ourselves to this matter, let us at least use logic and proper definition. In doing so, we must face several unalterable facts:

1. Police officers *do not want to kill* anyone.

2. Police officers (or anyone else) *cannot* be trained to use a handgun in a manner that insures they only will wound or disarm a person in the crisis

circumstances which require the weapon's use.

3. In most cases where firearms are used, the officer has only a split second to make his decision. Upon this decision will frequently rest his own life and the lives of others.

4. As long as criminals have ready access to firearms, police must be properly armed and trained to defend society with reasonable force at least equal to that employed by the lawless.

5. Technology has failed to invent a more reliable police weapon than the handgun or significantly improve its operation in almost a century.

Let us treat each of these separately. In my 25 years of teaching police firearms, I have never seen a police officer who wanted to kill anyone. If there is one in any department, he should be identified and dismissed. Police officers generally are solid members of society and quite commonly are devout. They are usually dedicated, much more than the general public, to the preservation of peace and order in our society. They only want to use that force necessary to legally accomplish their assigned mission of the protection of society and, incidentally, themselves.

The second problem is harder to explain without taking each citizen out to the firing range. A handgun is a difficult weapon to master, much harder than a rifle or shotgun. The pistol is necessary, however, for portability, dependability, fast action, and an accurate selection of fire to separate the criminal from the citizens being protected. Only a single bullet can be directed at a specific target. Furthermore, the pistol is much less powerful than most rifles which endanger innocent persons beyond their targets and much more selective than the shotgun which is extremely hazardous to anyone in the nearby vicinity of its target.

The difficulty lies in teaching accurate pistol shooting. The art of shooting an old .44 Colt single-action revolver from the hip while riding on a galloping horse through stampeding buffalo and hitting the gun hand of the villain 75 yards away can only be done with cameras and trick photography. I have only heard of a handful of experts who would even think of trying to shoot a gun out of a man's hand or to disarm him by wounding him in a gun battle. Even these experts would discuss such action only under clinical conditions and not when they had to "bet their life" on the action. The fact remains that a person must be taught to "shoot to kill" when it becomes unavoidable to use a pistol.

One must also realize the highly emotional nature of gun battles. All participants are extremely tense in such a situation. Usually the police officer has only a split second in which to read the situation, justify legally and morally the extent of force to be used, and make a decision of life or death. To handle such decisions in such a short period, he should have the most extensive training to react properly. The officer will have to make a quick, final, and irrevocable decision.

The next necessity for police carrying sidearms is a fact over which there is little control. Police are here to protect society, your loved ones and mine. As long as criminals prey on society with force, as long as they murder, rape, kidnap, bomb, and intimidate society, we must have a defending force to control and fight this element. The only alternatives to the police are an armed citizenry, vigilantes, the survival of the fittest, and anarchy—all unacceptable.

The last fact, concerning technology, may give us a lead to another answer. I am not qualified to answer this, only to raise the question. I ask the scientist, "Why have we been unable to change the basic design of sidearms for police in almost a century? Why can we invent rockets, lasers, computers and not a new type of sidearm? Why not a type of weapon that will instantaneously immobilize a person, even through a door or wall, for 10 minutes without ill effects?"

In my conclusion, let me suggest methods to use rather than go through a futile exercise of choosing one bullet over another. First, we must recognize that there is no humane way of shooting an individual without causing pain and suffering. If this is accepted, the weaponry becomes secondary. Then we should recognize that we can try to train and control the officer, not the weapon. If we can properly do this, we have solved the problem to the extent that it can be solved by present day circumstances and technology.

In addition to this training, the officer should be provided with a written statement of departmental policy, a regulation governing the use of firearms, and a statement for him to sign indicating he understands the policy and regulation.

By following these methods, it is hoped that we can attack this problem of weaponry by controlling how and when the firearm is used. After all, if we do not want to hurt the criminal or endanger his life, we will not shoot at him in the first place. Once it is determined, under law and policy, that it is necessary to shoot, the officer must carry out his duty to society to the best of his ability. To do this, he must be given the most effective weaponry and training available as well as clear, understandable policies.

FOOTNOTES

[1] Encyclopedia Britannica, 1968 ed., vol. 7, p. 832.

[2] Encyclopedia Americana, CR 1949, vol. 15, pp. 257, 258.

[3] Carnegie Endowment for International Peace, Division of International Law, 1915, Pamphlet No. 9.

EXHIBIT N

Ontario police to switch to hollow-point bullets Government cites safety issue for officers, public in making use of expanding ammunition mandatory

The Globe and Mail
August 10, 1995
By James Rusk

TORONTO

The Ontario government ordered police forces in the province yesterday to switch to hollow-point bullets by the end of the year.

"Ontario is the only jurisdiction in Canada that does not allow the use of controlled-expansion ammunition," Solicitor-General Bob Runciman told reporters after the weekly cabinet meeting approved the change in ammunition.

The use of hollow-point ammunition, which is also referred to as controlled-expansion ammunition, has been called for by police and many police-service boards in Ontario.

It was also recommended in March by a coroner's jury that investigated a police shooting in Mississauga in which a police bullet passed through a wall into a bedroom where an 81-year-old woman was sleeping, Mr. Runciman said.

Although officials in the Solicitor-General's Ministry recommended that the province switch to hollow-point ammunition when Ontario allowed police to switch from revolvers to semi-automatic pistols last year, the previous NDP government rejected the proposal.

Ontario's Labour Ministry ruled in March that police didn't need hollow-point bullets to do their jobs, rejecting a health-and-safety complaint from a London police officer.

Associations representing police in Ontario had been lobbying for years for the right to use the ammunition.

Critics, who also argued against Ontario's 1993 decision to replace police revolvers with semi-automatic pistols, argue that hollow points will produce a higher death toll among people who are shot by police. They say existing ammunition is sufficiently lethal.

The Tories, who supported the use of hollow-point bullets when they were in opposition, have now made them mandatory for all police forces in the province because it is a safety measure, Mr. Runciman said. "We truly believe this is a safety issue and as such it has to be mandatory."

The minister argued that the new ammunition is safer for the public because it does not pass through the body of a perpetrator or a wall, and does not easily ricochet, endangering bystanders.

It also improves safety for policemen because it is more likely to incapacitate someone than the bullet currently in use, which is likely to pass directly through a subject unless it hits a fairly large bone. The hollow-point bullets, on the other hand, "consistently penetrate a human body to depth that will cause rapid incapacitation," the ministry said in a statement.

Because police shoot only as a last resort, Mr. Runciman would not speculate how many people shot by police might die because police switch to hollow-point ammunition.

"When they (last-resort situations) do occur, we want police officers to be in the best possible situation, not only to prevent their (police) loss of life but the loss of life of others and the public at large."

He added that the hollow-point ammunition has sometimes been misrepresented in the press and by critics of the police. "These are not exploding bullets, these are not dum-dum bullets. These are a much safer ammunition. They are used by every other jurisdiction in this country, who recognize the safety element of it."

Mr. Runciman stressed that the switch to the new ammunition is being made in conjunction with the deployment of 20 state-of-the-art simulators throughout the province, which will be used in the annual recertification of police in firearms use.

The simulators produce visual images that reflect real-life situations faced by police and are designed to train officers to make accurate decisions about the appropriate force to use in a situation.

Mr. Runciman estimated that the switch to the new ammunition will initially cost police forces in the province about $500,000 - $121,000 of which will be borne by the Ontario Provincial Police - but there will be no long-term cost to taxpayers as existing ammunition supplies will be used for training.

EXHIBIT O

Hollow-point bullets OK'd for post police
Army Times
May 17, 2010
By Joe Gould

The Army's provost marshal has approved the use of jacketed hollow-point bullets for law enforcement officers on Army installations in the U.S., a decision that comes after a gunman opened fire at the Pentagon in March and a deadly shooting spree at Fort Hood in November, and almost a year to the day after the fatal shootings at Camp Liberty, Iraq.

The rounds are said to be more lethal and carry less risk for bystanders because they lose velocity on impact. The new policy, issued May 10, asserts installation police "require the tools necessary to secure our posts, camps, and stations from both internal and external active shooter threats."

With hollow tips and several lines of weakness, these rounds deform and fragment upon striking a hard-tissue target. Mushrooming into a larger diameter, the rounds create a larger wound cavity but penetrates only up to 13 inches versus ball ammo, which penetrates up to 24 inches.

A 2009 study of hollow-point-related head wounds in the journal Military Medicine found that these would create tough wounds to treat. They found embolisms and bullet fragments in the path of the bullet. Without exit wounds, kinetic energy is transferred to the body, causing more damage. This ammo is barred from combat and allowed on overseas posts only on a nation-by-nation basis. Bullets that expand or flatten are banned by the Hague Convention of 1899, one of the first international statements of the laws of war.

Although it is controversial to some, hollow-point ammo is in wide use by law enforcement agencies around the country and on some Army posts. For instance, Army Criminal Investigation Command has used it since 1998. The new policy expands the standard to all Army law enforcement personnel.

In addition to CID, military police, special reaction team personnel, and Department of the Army civilian police and security guards are authorized to get it. The agencies will have to maintain a reserve of ball ammunition, but personnel will not be allowed to carry both at once.

EXHIBIT P

Military Law Review

Winter, 2010

206 Mil. L. Rev. 88

LENGTH: 30408 words

ARTICLE: HOLLOW POINT BULLETS: HOW HISTORY HAS HIJACKED THEIR USE IN COMBAT AND WHY IT IS TIME TO REEXAMINE THE 1899 HAGUE DECLARATION CONCERNING EXPANDING BULLETS

NAME: MAJOR JOSHUA F. BERRY *

BIO:

* Judge Advocate, U.S. Army. Presently assigned as Regiment Judge Advocate, 160th Special Operations Aviation Regiment (Airborne), Fort Campbell, Kentucky. LL.M., 2010, The Judge Advocate General's School, U.S. Army, Charlottesville, Virginia; J.D., 2005, The Ohio State University Moritz College of Law; B.S., 1998, U.S. Military Academy. Previous assignments include Trial Counsel, Office of the Staff Judge Advocate, III Corps and Fort Hood, Fort Hood, Texas, 2008-2009; Chief of Current Operations, Office of the Staff Judge Advocate, Multi-National Corps--Iraq, 2006-2007; Operational Law Attorney, Office of the Staff Judge Advocate, III Corps and Fort Hood, Fort Hood, Texas, 2006; 1st Battalion, 82d Field Artillery, 1st Cavalry Division, Fort Hood Texas 1999-2001 (Fire Support Officer, 1999-2000; Fire Direction Officer, 2000; Platoon Leader/Executive Officer 2000-2001); Member of the bar of Ohio. This article was submitted in partial completion of the Master of Laws requirements of the 58th Judge Advocate Officer Graduate Course.

LEXISNEXIS SUMMARY:

... If the United States announced an intention to use expanding bullets in combat, it is likely the international humanitarian legal community would vociferously object; however, aside from the historically misconstrued 1899 Hague Expanding Bullets Declaration, such use would be sound and logical under the existing principles of unnecessary suffering, military necessity, and distinction. ... However, the prohibition on expanding bullets, which includes hollow point bullets, only applies to the armed forces of nations engaged in international armed conflict and does not apply to domestic law enforcement agencies. ... While the ICRC failed to explain its reasoning for why the use of expanding bullets is acceptable by police in domestic law enforcement situations but not by soldiers engaged in combat, the ICRC attempted to caveat its implicit approval of expanding bullets in domestic situations by stating,

> It should be noted that expanding bullets commonly used by police in situations other than armed conflict are fired from a pistol and therefore deposit much less energy than a normal rifle bullet or a rifle bullet which expands or flattens easily. ... Crozier recalled that the only evidence the Commission heard about the dumdum's potential cruelty was through discussion of the allegedly similar bullets used in Professor von Bruns's Tubingen experiments, details of which were only raised by General Ardagh to deny the cruelty of the dumdum bullet. ... This tissue "crush" and "stretch" are measured in a laboratory by firing bullets into tissue stimulants. ... There is no doubt that all bullets cause some degree of suffering, but even if expanding bullets cause greater suffering than jacketed bullets, such suffering is only considered excessive if "the inevitable result of the normal use causes an injury the nature of which is considered by the governments as excessive in relation to the military advantage anticipated from employment of the weapon or ammunition." ... The United States only fields weapons that comply with international law and strives to ensure the effects of such weapons distinguish between civilians and the enemy.

HIGHLIGHT:

[P]ublic opinion . . . would never sanction the use of a projectile which would cause useless suffering . . . but we claim the right and we recognize the duty of furnishing our soldiers with a projectile on whose result they may rely,--a projectile which will arrest, by its shock, the charge of an enemy and put him hors de combat immediately. n1

TEXT:

[*88] I. Introduction

Specialist Jonas Hayes was conducting a presence patrol in Mosul with his platoon. It was mid-morning in June and the temperature was already near 100 degrees. Specialist Hayes strained underneath the weight of his equipment: an outer tactical vest loaded down with ammunition, body armor, and communications gear. Specialist Hayes was anxious; two weeks ago, the platoon was ambushed in the narrow streets of the Old City and a soldier in 2d squad was killed. Not only did the platoon lose a soldier, but one civilian was killed and two civilians were wounded by stray bullets. As Specialist Hayes's squad moved up the street through the crowded market, he noticed what appeared to be a [*89] woman in a black burqa, about fifty meters away, moving toward them. The person appeared taller than the average woman and seemed bulky around the midsection. The platoon had received an intelligence brief that al Qaeda was conducting suicide bombings in northern Iraq using men disguised as women to avoid suspicion. Specialist Hayes shouted "*Kif! Kif!*" (Stop! Stop!), but the woman kept coming toward the squad. Specialist Hayes then aimed his M-4 carbine at the woman and again yelled for her to stop, but she kept advancing and broke into a jog. Specialist Hayes now saw what appeared to be wires protruding from the woman's burqa.

Specialist Hayes felt that the woman presented a hostile threat so he fired one round, hitting the woman, but she did not stop. Specialist Hayes hesitated because there were dozens of civilians in the market, but then fired another round, staggering the woman, but she kept coming. The woman was now about thirty meters away and was still on her feet. Specialist Hayes now engaged the woman with several rounds of 5.56 millimeter (mm) ball ammunition from his M-4 carbine. The rest of the squad had also leveled their weapons on the woman and numerous bullets began zipping down the street. Time seemed to stand still as the woman finally crumpled and then the earth went white as a deafening explosion roared through the street.

Specialist Hayes blinked as he looked up at the blue sky; his ears were ringing and his body felt numb. He pulled himself up and checked his extremities. He was okay. The rest of the squad got to their feet and they were ordered to cordon the area and provide security. As the squad fanned out past the area where the bomber had attacked, Specialist Hayes saw numerous dead civilians and blood and body parts littering the street. He had seen the aftermath of a bombing before, but he was not prepared for what he saw next. As he moved about thirty meters past the bombing site, he saw civilians shouting for help and he rushed over to see what was wrong. There were two wounded women and a boy, all with apparent gunshot wounds. Specialist Hayes began to perform first aid and yelled for a medic.

Back at the forward operating base (FOB), as Specialist Hayes cleaned the blood and dirt from his hands and clothes, he could not get over what happened that day. He had survived a suicide bombing and his platoon leader was telling Hayes he was a hero for stopping the bomber. But Specialist Hayes did not feel heroic--not when he thought of the dead civilians. Even though Hayes knew the bullets he fired were [*90] directed at a legitimate target, he could not dismiss the probability that some of those same bullets had killed innocent bystanders. Specialist Hayes did not know whether those bullets were misses, ricochets, or bullets that had passed through the bomber, but he knew he felt guilty. "Collateral damage" said his platoon sergeant. "You didn't mean to kill those people; they were collateral damage. Besides, what else were you going to do? These are the only bullets we've got to use. It's not like we're the cops back home with hollow point ammo. You've heard those ROE [rules of engagement] briefs; we aren't allowed to use hollow point." Specialist Hayes wished he could meet the people responsible for this rule and tell them what it felt like to shoot bullets that killed innocent bystanders. Maybe they could explain why he could not use a different bullet.

Although this scenario is fictional, based loosely n2 on situations American servicemembers have faced every day in Iraq and Afghanistan for the last eight years, the complaints about the effectiveness of the standard M855 5.56 mm bullet used by American forces are real. n3 The M855 has a steel penetrator core that was designed to pierce Soviet Body Armor, not "lightly clad insurgents." n4 Perhaps surprisingly, the M855 round has been described as a "weak spot in the American arsenal" that is "not lethal enough to bring down an enemy decisively" and "puts troops at risk." n5 Since the beginning of combat operations in Afghanistan and Iraq, the number of complaints about the effectiveness of the M855 [*91] round prompted the U.S. Army Infantry Center and other Department of Defense (DoD) agencies to

study rifle and ammunition performance. n6 Some operators complained that the M855 was not effective at close ranges, where most urban combat engagements occur, and that a different bullet was required for such combat. n7 However, the international laws of war limit the types of bullets that a nation can use in armed conflict.

Before any new ammunition is fielded in the United States, it must pass a formal legal review within the U.S. DoD for compliance with "all applicable domestic law and treaties and international agreements . . ., customary international law, and the law of armed conflict." n8 Within these legal reviews, there are "several potential legal and factual factors" to consider, but of these factors, military necessity and superfluous injury are usually the most critical. n9 In the legal analysis, "[t]he major consideration will be weighing military necessity against the prohibition of weapons of a nature to cause superfluous injury or unnecessary suffering." n10 The United States defines military necessity "as that principle which justifies those measures not forbidden by international law which are indispensable for securing the complete submission of the enemy as soon as possible." n11 Thus, fielding hollow point bullets to U.S. forces faces its first hurdle--the well-known prohibition against the use of expanding bullets in armed conflict.

The 1899 Hague Declaration Concerning Expanding Bullets n12 prohibits "the use of bullets which expand or flatten easily in the human body, such as bullets with a hard envelope which does not entirely cover [*92] the core or is pierced with incisions." n13 The United States never signed this treaty, but adheres to the prohibitions of the Hague Expanding Bullets Declaration. n14 However, the prohibition on expanding bullets, which includes hollow point bullets, only applies to the armed forces of nations engaged in international armed conflict and does not apply to domestic law enforcement agencies. n15 Critics of the M855 round believe it is "time to update this antiquated idea and allow U.S. military personnel to use the same proven ammunition" in combat as is used by domestic law enforcement. n16

The major impediment to updating this "antiquated idea" is the strict prohibition against the use of expanding bullets in international armed conflict. The problem with the Hague Expanding Bullets Declaration is that the true reasons for its existence are unknown, overlooked, or ignored. n17 This article argues that the 1899 Hague Expanding Bullets [*93] Declaration was the result of a sensationalized German study on expanding bullets and the political and military motivations of Britain's European rivals. As discussed later, the prohibition against expanding bullets is so entrenched in international law that the International Committee of the Red Cross (ICRC) declared it customary international law in 2005, n18 leaving in place a legal rule that, in theory, limits unnecessary suffering, but in reality may lead to increased collateral damage.

Suggesting that a long-standing rule of international law is incorrect will undoubtedly create controversy in some circles; however, the operational environments of Iraq and Afghanistan dictate a reevaluation and close scrutiny of the ban on hollow point ammunition. n19 Part II of this article seeks to dispel the deference accorded to the 1899 Hague Expanding Bullets Declaration through a comprehensive historical overview of the ban on expanding bullets, from the 1868 St. Petersburg Declaration to the 1998 Rome Statute of the International Criminal Court. In order to comprehend how the current status of the ban on expanding bullets is susceptible to challenge, it is necessary to examine the historical underpinnings of the Hague Expanding Bullets Declaration. A close historical analysis highlights the importance that political motives, under the guise of humanitarian concerns, played in the genesis of the treaty and how confusion surrounding Britain's "dumdum" bullets helped develop the foundation for the long held belief that these rounds cause unnecessary suffering.

After questioning the legal basis for the international prohibition against expanding bullets, this analysis moves to the second component of military necessity: measures "which are indispensable for securing the complete submission of the enemy as soon as possible." n20 Part III of this article looks at the current U.S. position on hollow point bullets, examines domestic law enforcement's successful use of expanding bullets to minimize civilian casualties, and discusses why United States' armed forces need this same capability in today's armed conflicts. Specifically, in the current operational environments of Iraq and [*94] Afghanistan, employing expanding bullets in urban areas would allow the United States to equip its military forces with a bullet that has a greater potential for incapacitating threats, while at the same time reducing the risk of collateral damage to innocent civilians--helping the United States to comply with the law of war principle of distinction n21 while at the same time supporting strategic counterinsurgency goals of protecting local civilian populations. n22

Finally, in order for the U.S. military to acquire expanding bullets, a legal review must find that such bullets do not cause superfluous injury nor do they cause unnecessary suffering. Part IV of this article addresses wound ballistics--the science of how bullets wound and kill--and examines common misconceptions found in wound ballistics; misperceptions likely to arise should the United States acquire and employ expanding bullets in combat. Part IV also discusses both the United States view of unnecessary suffering under Article 23(e) of the Annex to the 1907 Hague Convention

IV n23 and the prevailing international view under Article 35(1) of Additional Protocol I to the 1949 Geneva Conventions, n24 and determines that under either standard, a legal review would find that expanding bullets do not cause unnecessary suffering or superfluous injury.

Part V concludes this article with the argument that the steadfast ban on expanding bullets is actually based on fragile assumptions by international legal practitioners, and that permitting their use in armed conflict might actually better support the humanitarian underpinnings of the laws of war. Finally, Part V discusses the limitations of this paper's analysis and recommends actions the United States should take to examine the potential effectiveness of expanding bullets in combat.

[*95] II. The International Prohibition on the Use of Expanding Bullets in Combat

The international prohibition on the use of expanding bullets in armed conflict has existed for over one hundred years, dating to the 1899 Hague Expanding Bullets Declaration. In 2005, the ICRC concluded a study on the customary rules of international humanitarian law applicable in international and non-international armed conflicts. n25 This ICRC study concluded that "bullets which expand or flatten easily in the human body" are prohibited for use by state practice under customary international law. n26 Seven years earlier, the Rome Statute of the International Criminal Court summarily outlawed hollow point ammunition because it was a "clearly established classical prohibition." n27 The widely accepted belief that the ban on hollow point ammunition is customary international law raises the question of how this ban has achieved that status. Before examining the historical foundation of the prohibition against the use of hollow point ammunition in armed conflict, scrutiny of the method the ICRC used to determine its status as customary international law is appropriate to determine just how uncontroverted and unquestioned this rule is in the international legal community.

A. Expanding Bullets and Customary International Law

The International Court of Justice states that customary international law is "a general practice accepted as law." n28 Customary international [*96] law has two required elements: state practice (*usus*) and "a belief that such practice is required, prohibited, or allowed, depending on the nature of the rule, as a matter of law" (*opinio juris*). n29 However, this definition and its exact meaning have been subject to a great deal of scholarly writing. n30 In its study of customary international humanitarian law, the ICRC examined state practice through two lenses: first, "what practice contributes to the creation of customary international law (selection of State practice)" and second, "whether this practice establishes a rule of customary international law (assessment of State practice)." n31 A state's physical and verbal actions help create customary international law. n32 In assessing state practice, such practice must be "virtually uniform, extensive, and representative." n33 The ICRC apparently struggled to evaluate *opinio juris* because it was "very difficult and largely theoretical to strictly separate elements of practice and legal conviction." n34 Nonetheless, the ICRC concluded that where state practice is "sufficiently dense, an *opinio juris* is generally contained within that practice and, as a result, it is not usually necessary to demonstrate separately the existence of an *opinio juris*." n35 The ICRC also stated that treaty law is also pertinent in determining customary international law because it helps "shed light on how States view certain rules of international law." n36

The ICRC specifically concluded that "[t]he use of bullets which expand or flatten easily in the human body is prohibited" because "State practice establishes this rule as a norm of customary international law applicable in both international and non-international armed conflicts." n37 The ICRC relied on the fact that during the twentieth century, thirty-four states had ratified, acceded to, or succeeded to the Hague Expanding [*97] Bullets Declaration. n38 The ICRC also identified the listing of the use of expanding bullets as a war crime in the Rome Statute as well as the prohibition against expanding bullets in various other sources such as military manuals, state legislation, and "official statements and other practice." n39

The ICRC declared that "no State had asserted it would be lawful to use such ammunition," but that a possible exception to this rule was "the practice of the United States, although it is ambiguous." n40 The ICRC noted that several U.S. military manuals prohibit the use of expanding bullets but that three U.S. Army legal reviews of ammunition permit the use of expanding bullets when there is "a clear showing of military [*98] necessity for [their] use." n41 The ICRC concluded its discussion of the United States's position by observing that during the negotiation of the Rome Statute in 1998, "the United States did not contest the criminality of the use of expanding ammunition." n42

The ICRC further discussed the prohibition of expanding bullets in non-international armed conflicts and concluded that state practice in this realm "is in conformity" with state practice in international armed conflicts. n43 The study did

mention that "several States" employ expanding bullets for domestic law-enforcement purposes, n44 and interestingly enough, the ICRC declared that "expanding bullets may be used by police" in situations "where it is necessary to confront an armed person in an urban environment or crowd of people." n45 In these situations, police may use expanding bullets "to ensure that the bullets do not pass through the body of a suspect into another person and to increase the chance that, once hit, the suspect is instantly prevented from firing back." n46

[*99] While the ICRC failed to explain its reasoning for why the use of expanding bullets is acceptable by police in domestic law enforcement situations but not by soldiers engaged in combat, the ICRC attempted to caveat its implicit approval of expanding bullets in domestic situations by stating,

> It should be noted that expanding bullets commonly used by police in situations other than armed conflict are fired from a pistol and therefore deposit much less energy than a normal rifle bullet or a rifle bullet which expands or flattens easily. Police forces therefore do not normally use the type of expanding bullet that is prohibited for military use. n47

This superficial distinction between the lethal effects of pistol- and rifle-fired bullets raises several questions. Does the ICRC believe that expanding bullets are permissible in international armed conflict so long as soldiers fire them from a pistol? Is the need for soldiers engaged in urban combat to reduce the "pass through" of bullets less imperative than that of law-enforcement? Do soldiers engaged in combat have any less incentive than a law-enforcement officer in ensuring that a combatant, once hit, is prevented from firing back?

One commentator noted that in today's world, the "dividing line between armed conflict and some other condition falling short of it" is filled with great "ambiguity at the margins," offering the use of expanding bullets to neutralize a suicide bomber as an example. n48 Additionally, this commentator also stated that "[i]f there is a clear need. . . to 'stop' a suicide bomber, and these weapons are necessary for that purpose, arguably they should be regarded as lawful" and that "[t]o maintain a ban on a weapon that has particularly appropriate utility, given the prevailing conditions, might prove to be unwise and the customary rule subject to challenge." n49

The apparent dichotomy in the way the ICRC--and the international community--views the use of expanding bullets in armed conflict versus [*100] domestic law-enforcement--or even pistol-fired bullets versus rifle-fired bullets--begs for an examination of the history of the rule. Understanding the historical background of this prohibition is especially critical given that the rule under customary international humanitarian law relies entirely on the Hague Declaration of 1899 as the only source for the prohibition against the use of expanding bullets in combat.

B. Declaration of St. Petersburg of 1868 n50

The nineteenth century was a destructive one for the continent of Europe. Warfare in Europe was "characterized by large-scale formal battle" and sieges n51 where armies fought primarily according to linear tactics. n52 By the middle of the eighteenth century, small arms had transitioned from single-shot, muzzle-loaded guns that fired ball-shaped bullets, to rifled guns that fired repeating rounds of elongated pointed bullets, including crew-served machine guns. n53 These great advances in firepower and accuracy had far-reaching effects on tactics by the latter half of the century as armies sought to avoid "suicidal frontal assaults" on the enemy. n54 Armies became larger, and nations devoted increasing resources to equipping, moving, and sustaining their armies. n55 Within this revolution in technology, France, Britain, and Turkey battled Russia [*101] during the Crimean War of 1853-1856; n56 Russia lost an estimated 256,000 men. n57

As the industrial capabilities and size of each nation's armies increased, so too did the race to develop advanced weapons technologies. n58 Against this backdrop, in 1863, the Russian military invented a bullet that exploded on contact with a solid surface. n59 In 1867, Russia modified the bullet to explode on contact with a soft surface. n60 Some sources suggest that the Russian government of Tsar Alexander II was disinclined to use the bullet because of its concerns about the humanity of the bullet. n61 Others suggest that Russia realized that her [*102] "more industrialized potential enemies" (Britain, France, and Germany) could produce massive quantities of the bullet. n62 Given the conditions of the time, where nations were raising massive armies equipped with increasingly deadly weapons, the good intentions many international humanitarian lawyers ascribe to Russia and the other participating nations is suspect. n63

Nonetheless, the Declaration of St. Petersburg of 1868, which outlawed explosive projectiles under 400 grams, n64 is widely seen as the first real attempt by states to constrain warfare. n65 The Declaration was successful in that "few if any significant violations" have occurred in the wars since the late nineteenth century. n66 Beyond the prohibition on

exploding bullets, the Declaration is most often cited for the principle that the *intentional* infliction of superfluous injury and unnecessary suffering on combatants are prohibited in war. n67 While, in hindsight, the Declaration of St. Petersburg of 1868 was a milestone event in international law, it ultimately had little effect at the time on the rising tide of nationalism and the massive growth of militaries and arms in Europe.

[*103] C. The Hague Peace Conferences of 1899

1. From St. Petersburg to The Hague

The time period after the Declaration of St. Petersburg of 1868 saw continued wars, the transformation of nation-states into countries, treaties (both secret and open) formed, and increased competition between nations for resources and military arms. Escalating industrialization and production capacity required more raw materials, cheaper labor, and new markets. n68 Nations competed for colonies throughout the world, which led to the formation of larger navies and militaries to project and protect national power abroad. n69 By 1900, "Europe had turned into a cluster of great armed camps around the powder keg of national aggression" n70 with some asserting that the best way to guarantee peace was through the deterrent effect of weaponry, while others predicted that "the tension would explode into a total inferno unleashing all the weaponry." n71 Against this setting of international strife, on August 24, 1898, Count Michail Mouravieff, the Russian Foreign Minister, handed the ambassadors and foreign ministers posted to St. Petersburg a memorandum from Tsar Nicholas II. n72 This memorandum, or the Tsar's [*104] Rescript as it came to be known, proposed a peace conference to "put an end to . . . incessant armaments and to seek the means of warding off the calamities which are threatening the whole world." n73 The Tsar's Rescript was somewhat shocking to those who received it, for Tsar Nicholas in only four years as the Tsar of Russia, had developed a reputation as "the very incarnation of militarism . . . a menace to peace and progress wherever Russia had a frontier." n74

True enough, the Tsar's apparent motivation for peace was somewhat less than genuine. In 1897, the French and German armies had developed a quick-firing gun and in 1898, the Austrian army began procuring the weapon. n75 Russia was inclined to match her competitors in this arms race, but Russia's military was facing a budget crisis; Russia had already decided to increase spending by some seven percent on the imperial fleet, as well as to increase its military presence in Siberia. n76 The initial proposal was to approach Austria and determine if the two nations could reach a bilateral agreement to avoid purchasing the quick-firing guns. n77 Count Mouravieff rejected this suggestion for several [*105] reasons: because it gave France and Germany an advantage over Russia, such technological advances were inevitable, and monitoring any such agreement would be impossible. n78 Mouravieff's idea was to include all of Europe in the treaty, which would provide Russia an advantage by maintaining the status quo in military forces for a decade while Russia could focus on increasing its naval power in the Far East. n79 Ultimately, the Tsar approved the idea of a multinational conference, and despite his militant reputation, the Tsar had a genuine "concern for the horrors of war" that corresponded with his country's need to save money by reducing Russia's arms race with her rivals. n80

After a strong reaction from most of Europe, n81 Count Mouravieff issued a Second Circular Letter on January 11, 1899 proposing eight subjects for discussion. n82 The governments of Europe received the topics proposed in the Second Circular Letter more favorably, and eventually, Russia set The Hague in the Netherlands as the venue for the conference. n83 On May 18, 1899, the birthday of Tsar Nicholas II, the conference opened with delegations from twenty-six countries in attendance. n84 At the second plenary meeting of the conference, the President of the Conference, Baron de Staal of Russia, distributed a plan that called for three commissions to work through the proposed subjects of the conference. n85 The most important commission for the purposes of this article was the work of the First Commission, specifically its military subcommission. At the first meeting of the military subcommission, Colonel Gilinsky of Russia submitted proposals on behalf of Russia to limit the size of armies for five years, to set a specific number of authorized men in the military, and to maintain the present military [*106] budgets for five years. n86 The second and third proposals from Count Mouravieff's Second Circular were also referred to the military subcommittee, where in turn Colonel Gilinsky proposed specific restrictions on certain weapons. n87 These restrictions concerned powders and explosives, field guns, muskets, and balloons and contained proposals with specific technical limitations. n88 The Russian proposals did not mention the subject of "Dum Dum" bullets, but at the first meeting of the subcommission, during discussions concerning new weapons and methods of warfare, Colonel Kunzli of Switzerland proposed banning "projectiles which aggravate wounds and increase suffering," such as the dumdum bullet. n89 A Dutch General concurred, stating that "his government had instructed him to demand the formal prohibition" of these bullets. n90 Although expanding bullets did not originally appear anywhere as a topic of discussion, the subject of dumdum bullets quickly became the most contentious item discussed in the First Commission. n91

2. The Dumdum Bullet: The British Response to Fanatics

The dumdum bullet was so named because the British originally manufactured it at the Dum Dum arsenal, near Calcutta, India. n92 The military delegates to the subcommittee had been unable to agree on anything to that point, but the majority of the delegates were unified both in opposition to the use of the dumdum bullet and in ganging up on the British. n93 The chief British military representative, General Sir John Ardagh, soon found himself fighting against the falsities concerning the [*107] "notorious" dumdum bullet, n94 orchestrated by Russia in "a crusade against British rule in Africa." n95 General Ardagh argued that the bullets did not mutilate as described, but were "ordinary projectiles." n96 General Ardagh was more correct as the original dumdum, the Mark II, had only "about 1 mm of the jacket at the tip of the bullet . . . [removed, exposing] the soft lead inside." n97

The controversy surrounding the dumdum bullets began in April 1898 when Professor von Bruns, a German surgeon, presented the results of his experiments with expanding bullets, allegedly identical to the dumdum bullet, to the Congress of German Surgeons. n98 Professor von Bruns's results were so shocking that the meeting proposed that German military authorities should ban all bullets not completely jacketed. n99 The [*108] criticism of Britain's dumdum bullets soon spread throughout Europe, n100 and as condemnation of the bullets spread through the continent, British surgeons pointed out the glaring error in the German experiments: Professor von Bruns never tested actual dumdum bullets, but instead used what he inferred was an identical bullet, the hunting bullet fired from the powerful German Mauser rifle. n101 Despite Britain's efforts in 1898 and early 1899 to respond to the falsehoods concerning the dumdum bullet, with the Peace Conference looming, Britain foresaw widespread opposition to the dumdum. n102

At the second meeting of the military subcommission, Colonel Gilinsky and Colonel Kunzli proposed language prohibiting expanding bullets. n103 The delegates generally agreed with the proposals and [*109] committed to submitting final drafts at the next meeting of the subcommission. n104 At the third meeting of the subcommittee, the delegates of Russia, Romania, and France offered a draft text prohibiting expanding bullets. n105 The Austrian delegate, Lieutenant Colonel von Khuepach, opined that the committee should limit itself to a more general proposal that restricted bullets that caused unnecessarily cruel wounds, making the shrewd observation that any bullet has the capacity to mutilate. n106 General Ardagh then made a statement justifying the use of expanding bullets against "savages."

> In civilized war a soldier penetrated by a small projectile is wounded, withdraws to the ambulance, and does not advance any further. It is very different with a savage. Even though pierced two or three times, he does not cease to march forward, does not call upon the hospital attendants, but continues on, and before anyone has time to explain to him that he is flagrantly violating the [*110] decisions of the Hague Conference, he cuts off your head. n107

Commentators have seized this language to ridicule the British rationalization for using dumdum bullets in battle, n108 but the British understood that against particularly determined enemies, a normal bullet was not sufficient to place a determined, fanatical opponent *hors de combat*. Nonetheless, Britain's argument for using "projectiles of sufficient efficacy against savage populations" set in motion a discussion on the complications of using different types of bullets against savages and "civilized peoples." n109 Lieutenant Colonel von Khuepach then made a simple, yet brilliant proposal: "[t]he use of bullets which cause uselessly cruel wounds shall be prohibited by convention." n110 Ultimately, nineteen delegates voted in favor of the final proposal with only Great Britain voting against it and Austria-Hungary abstaining. n111

The three subcommissions presented their reports to the full meeting of the First Commission on June 22, 1899. n112 At that meeting, General Ardagh rose to defend and clear up misunderstandings of the dumdum bullet. n113 General Ardagh thought language "describing technical details of construction [would make] the prohibition a little too general and absolute." n114 He believed the proposed language would abolish the permissible use of bullets that Britain sought to use: "the present or future construction of some projectile with shock sufficient to stop the stricken soldier and put him immediately *hors de combat*, thus fulfilling [*111] the indispensable conditions of warfare without, on the other hand, causing useless suffering." n115 General Ardagh went on to describe how small-caliber, jacketed bullets were not always able to put an enemy *hors de combat*, leading to the development of the dumdum bullet. n116 General Ardagh clarified that while the dumdum bullet ordinarily put an advancing opponent out of combat, "the result is by no means designed with the aim of inflicting useless suffering." n117 General Ardagh tried to explain how the dumdum "acquired a bad reputation in Europe"--namely, through Professor von Bruns's flawed experiments with the Mauser bullet, "which did not resemble the dumdum bullets at all, either in construction or effect." n118 General Ardagh argued "it is a fact that the erroneous conception formed in Europe about the character" of the dumdum bullet "is entirely due to the wholly false idea that these two projectiles are almost identical in construction." n119 General Ardagh declared that "public opinion in England would never sanction the use of a projectile which would cause useless suffering," but as

stated in the opening quote of this article, Britain claimed a right and duty to furnish her soldiers with a bullet that would immediately stop an enemy and place him *hors de combat.* n120

The President of the First Commission, Auguste Beernaert of Belgium, stated that the proposed prohibition did not refer directly to dumdum bullets, but was rather akin to the language adopted--and approved by Britain--in the Declaration of St. Petersburg. n121 General Ardagh replied that Britain objected to the specific language: "bullets with a hard casing which does not entirely cover the core or is provided [*112] with incisions." n122 Further debate continued, with Colonel Gilinsky remarking that to remove such language would strip the prohibition of its reach. n123 At this point, Captain William Crozier of the United States, agreed with General Ardagh and proposed the following language: "The employment of bullets which inflict uselessly cruel wounds, such as explosive bullets and in general every kind of bullet which exceeds the limit necessary in order to put a man *hors de combat* at once, is forbidden." n124 Colonel Gilinsky retorted that it would be too difficult to reword the proposed language and that "bullets whose casing contains incisions [causes] cruel wounds . . . . The purpose of war is to put men out of action, and ordinary bullets are sufficient for this purpose." n125

One can sense the overt tension that must have filled the meeting room at this point. General Ardagh must have added to the fervor when he stated his regret that Colonel Gilinsky could not accept modified language and stated that there was no proof "that the dumdum bullet was uselessly cruel." n126 Colonel Gilinsky fired back that the "experience of two wars in which the dumdum bullet was used has proved that the wounds produced by this projectile are fearful." n127 As the First [*113] Commission wound up business on July 17, 1899, the Reporter of the First Commission proposed a limit of five years to the three prohibitions that would go to the full conference. n128 Colonel Gilinsky insisted that the prohibition against the use of expanding bullets was meant to continue in perpetuity, as "decided several times by the subcommission and the Commission." n129

3. Blood Is Thicker Than Water n130: American Opposition to the Dumdum Ban

The full Conference considered the First Commission's work on July 21, 1899. n131 The Conference unanimously adopted the prohibition against launching projectiles from balloons n132 and the prohibition against the use of projectiles that discharge asphyxiating gases n133 --with the exceptions of Britain and the United States. n134 The next subject for vote was the prohibition against expanding bullets. Captain Crozier intervened to address the entire assembly of delegates to the Conference concerning the proposed ban, and if the contentious nature of the topic of dumdum bullets was uncertain before, Crozier's speech and the animated discussion it generated left little doubt. n135

Crozier began by recalling the language of the Declaration of St. Petersburg, which forbade weapons which "aggravate uselessly the sufferings of men already placed *hors de combat,* or would render their [*114] death inevitable," n136 and then affirmed that the object of war was to weaken the enemy's military forces and to "place *hors de combat* the greatest number of men possible." n137 Crozier then once again proposed an amended prohibition on bullets: "The use of bullets inflicting wounds of useless cruelty, such as explosive bullets, and in general all kinds of bullets which exceed the limit necessary for placing a man *hors de combat* should be forbidden." n138 Crozier went on to argue that the weakness of Russia's proposed language was that it was directed at one class of bullets: those that explode or flatten, leaving open development of other bullets that would remain outside the technical prohibitions of the language, yet still inflict unnecessarily cruel wounds that Crozier's proposal would forbid. n139 Crozier stated that if necessary to increase the "shocking power of the bullet . . . what more humane method can be imagined than to have [the bullet] simply increase its size in a regular manner?" n140

He then addressed the dumdum bullet, averring that he had no reason to defend the dumdum bullet and knew nothing about the bullet except what he had learned at the Conference. n141 Crozier then attacked Colonel Gilinsky's claim that the dumdum bullet demonstrated its "great cruelty" in two wars and highlighted Gilinsky's failure to present any evidence to support this assertion. n142 Crozier recalled that the only evidence the Commission heard about the dumdum's potential cruelty was through discussion of the allegedly similar bullets used in Professor von Bruns's Tubingen experiments, details of which were only raised by General Ardagh to deny the cruelty of the dumdum bullet. n143 Crozier declared that his proposed language would not give the dumdum bullet a license, but would prohibit the bullet *only if* "a case can be made out against it." n144 [*115] Crozier closed by asking if it would be better to secure domestic support by presenting "a case, supported by evidence, against any military practice, than to risk arousing a national sentiment in support of the practice by a condemnation of it without proof?" n145

At this point, the main supporters of the ban of dumdum bullets--Russia, France, and the Netherlands--expressed annoyance in defense of their proposal. n146 Colonel Gilinsky reaffirmed that dumdum bullets were not specifically banned, but then stated that the desire of the ban was to prohibit "the use of a certain category of bullets which have

already been manufactured." n147 Gilinsky finished by stating that the language was the result of "mature deliberations in which all the technical experts have taken part, and it would be impossible for the Conference to reverse itself." n148 Captain Crozier "riposted fervently," n149 summarizing his objection to the proposed language with three points: the ban does not prohibit all bullets which are inhumane; the ban was overly broad in that it was possible that an expanding bullet "would not produce needlessly cruel wounds"; and the minutes of the meeting showed that at least the Dutch had specific intent to "forbid the use of the bullet called 'dumdum.'" n150 Captain Crozier then read Colonel Gilinsky's quote from [*116] the minutes that when the caliber of a bullet is too small, it may be necessary to use dumdum bullets. n151 Crozier could not understand how a nation could propose to ban the dumdum bullet on one hand, and argue for the necessity of it on the other. n152

What occurred next highlights the lack of parliamentary experience that existed for most of the nations represented, namely that an amendment must be voted on before the original proposition. n153 This deficiency ultimately stymied Captain Crozier's proposal as it gained momentum before the Conference and prevented the assembled nations from voting on the amended language. n154 Mr. Raffalovich of Russia moved to vote on which formula--the term used for the language of the different provisions--would receive precedence in voting. n155 The head American delegate, Andrew White, proposed sending the issue back to the First Commission to seek language agreeable to all nations. n156 The nations present rejected this proposal by a vote of twenty to five. n157 The President of the Conference, Baron de Staal of Russia, then proposed voting on the formula approved by the First Commission, to which both General Ardagh and Captain Crozier protested. n158 President de Staal then [*117] agreed "in a conciliatory spirit . . . to have a vote first on the American formula." n159 This announcement generated even more discussion among the delegates until Jonkheer van Karnebeek, First Delegate of the Netherlands, proposed settling the issue by voting to determine which formula should receive priority. n160 Eight nations voted to give priority to the American formula and seventeen voted to give priority to formula adopted by the commission. n161 Consequently, the language drafted by the Russians, French, and Dutch and approved by the First Commission, was adopted "unanimously" with Great Britain and the United States voting against, Portugal abstaining, and Luxemburg not present. n162 Thus ended the contentious debate over dumdum bullets, and the controversy surrounding this small provision of the 1899 Hague Regulations disappeared from history, save for in the work of a few commentators.

After the American delegation returned home, Secretary of State John Hay and Assistant Secretary of State David Hill studied the Hague Conventions and decided not to send the declaration against the use of expanding bullets to the Senate for ratification. n163 To this day, the Senate has never ratified that declaration. The United States ratified the arbitration convention and the declaration against throwing projectiles from balloons on February 5, 1900; the convention adapting the Geneva Convention of 1864 to maritime warfare on May 4, 1900; and the convention on the laws and customs of land warfare in March, 1902. n164

D. The Hague Peace Conference of 1907

The attention surrounding the 1899 Peace Conference diffused rather quickly, at least in the United States. n165 The Permanent Court of Arbitration was established at The Hague n166 and heard several important cases, including the Pious Fund case, the Alaska Boundary tribunal, and [*118] the Venezuela affair. n167 Wars continued to rage throughout the world: the United States fought a rebellion in the Philippines; n168 Britain fought the Boer War in South Africa; n169 the Boxer Rebellion broke out in China; n170 and in 1904, the Russo-Japanese War began. n171 American involvement in resolving international disputes rose during this period, and by 1904, President Theodore Roosevelt was persuaded to seek a second peace conference at The Hague to address improvements and additions to the 1899 Conventions. n172

The happenings and discussions of The Hague Peace Conference of 1907 are beyond the concern of this article, save for the issue of expanding bullets. The program for the Second Conference included "Declarations of 1899" among the topics for discussion. n173 At the first meeting of the first subcommission of the Second Commission on July 3, 1907, Auguste Beernaert presided and noted that the declaration against expanding bullets was "still in force and it does not seem that there should be any occasion for modifying [it]." n174 Beernaert also noted that the subcommission had not yet received any communication on that subject. n175 On July 8, the United States delegation submitted a proposal declaring "[t]he use of bullets that inflict unnecessarily cruel wounds, such as explosive bullets and, in general, every kind of bullet that exceeds the limit necessary for placing a man immediately *hors de combat* should be forbidden." n176 As the meetings of the Second Commission continued, the Dutch would, much as the Russians did in 1899, thwart the effort of the United States to modify the restrictions on expanding bullets. At the fifth meeting of the subcommission on August 7, 1907, Beernaert stated,

> [A]ll discussion on the subject of [expanding bullets] must . . . be declared out of order. [This Declaration was] concluded for an indefinite period, [it] can be denounced [*119] only by means of a notice given one year in advance, and no Power has expressed such an intention. Moreover, the modification or abrogation of [this Declaration] does not appear in the program and the restrictive proposal of the United States is not connected therewith. n177

A plain reading of the minutes from the first meeting on July 3 clearly shows Beernaert never discussed this method of denouncing the Declaration. Fortunately, Brigadier General George B. Davis, The Judge Advocate General of the U.S. Army, saved the record at the next plenary meeting of the Second Commission. n178

At the next day's meeting of the full Second Commission, General Davis addressed Beernaert's statement of the previous day. General Davis noted that on July 8, the United States had filed a proposal seeking to modify the 1899 Hague Expanding Bullets Declaration. n179 Davis declared that on July 10, "this proposal was printed and distributed in the usual manner," and stated the United States's confusion over Beernaert's claim that no one asked to revise the expanding bullet declaration. n180 Davis further explained that on July 31, the delegation of the United States was told that, because the United States was not a signatory to the declaration on expanding bullets, it was not in a position to denounce that declaration. n181 Davis expressed frustration that the United States had no way of knowing that its proposal "could not be taken into [*120] consideration as being a modification of Declaration No. 3." n182 Davis's argument apparently did not move Beernaert. n183

Beernaert then noted that the Russian program for the Conference of "more than a year ago" did not mention modifying the declaration on expanding bullets; he evidently forgot the first meeting on July 3, where he left open the possibility of modifying the declaration. n184 Beernaert then declared that, because no Power had denounced the Declaration, their "full obligatory force" was preserved for a year. n185 Beernaert concluded by observing that General Davis's proposal was identical to that of Captain Crozier in 1899, "which was unanimously rejected as insufficient." n186

Beernaert's seeming misinterpretation of the denunciation provisions of the 1899 Declaration terminated the last meaningful opportunity to correct the ban on expanding bullets. Even if the United States had succeeded in getting its proposed modification before the subcommission, it is not clear that the United States could have persuaded a majority of nations to amend the Declaration; at the 1907 Peace Conference, Britain and Portugal announced they would sign the 1899 Hague Expanding Bullets Declaration. n187 The Final Act of the 1907 Peace Conference called for a Third Peace Conference to be held within [*121] eight years, n188 but the outbreak of World War I in 1914 prevented this third conference. No successor conference to the 1907 Peace Conference has ever been held. n189

E. Diplomatic Conferences on International Humanitarian Law, 1974-1976

Various other conferences and conventions met in the years following World War I, but other than the Geneva Protocol of 1925 n190 prohibiting the use of chemical and bacteriological weapons, no real attempt was made to regulate conventional weapons until 1974. n191 After the Geneva Conventions of 1949 were held, numerous conflicts arose that were "characterized by widespread violations of the Conventions or the simple refusal of belligerents to acknowledge that the Conventions have any application to the conflict in which they are involved." n192 As a result, during the 1970s, the United Nations and the ICRC exchanged proposals for restricting new weapons systems n193 until finally, in 1974, [*122] the Swiss Government hosted a Diplomatic Conference on the Reaffirmation and Development of International Humanitarian Law Applicable in Armed Conflicts, with 125 nations in attendance. n194 The Diplomatic Conference of 1974 and those that followed in 1975 and 1976 were expansive. n195 The majority of their work is beyond the scope of this article, save for the attention paid to bullets.

No specific ban on any type of bullets came of the Diplomatic Conferences or the Protocols Additional to the Geneva Conventions of 1949; however, a discussion of the efforts to restrict certain bullets during the 1970s is instructive in understanding the probable confusion, disagreement, and resulting inaction in changing the 1899 Hague Expanding Bullets Declaration. At the 1974 Conference, there was only an "Ad Hoc Committee on Weapons," and the discussion in this body was unremarkable. n196 Most of the real discussion on weapons, especially small caliber bullets, took placed at the various conferences of government experts. n197 Ultimately at the 1974 Conference, the discussion [*123] on bullets was "extremely technical," and even the criteria used to identify the applicable weapons and bullets were "demonstrated to be questionable." n198 Originally, some thought the problem with weapons was high muzzle velocity, but eventually small caliber bullets--that is, bullets smaller than 7.62 mm--became the focus. n199 However, numerous countries were using such bullets and felt strongly about their effectiveness. n200 This fact, coupled with the

extensive differences of opinion on the characteristic and effects of these bullets and the arbitrary and highly technical nature of any prohibition on such bullets, contributed to the failure of the Diplomatic Conferences to pass any prohibitions or restrictions on small caliber bullets. n201

F. 1977 Additional Protocols to the Geneva Convention

While the Diplomatic Conferences did not succeed in adopting a specific prohibition on any class of bullets, Article 36 of Additional Protocol I to the 1949 Geneva Conventions (Additional Protocol I) applies restrictions to new weapons systems. n202 It is noteworthy that the [*124] delegates could only agree on general language to prohibit new weapons. Some delegates had proposed creating a committee responsible for "drawing up a list of weapons or methods of use which would fall under the prohibition," but to some, this implied disarmament and "a proliferation of international bodies which would only complicate the search for a solution." n203 Article 36 is the link between weapons restrictions and the "basic rules" for weapon use outlined in Article 35. n204

Under Article 36, the 1899 Hague Declarations are applicable to Article 35 n205 thus expanding bullets are prohibited regardless of whether a nation develops the bullet Captain Crozier envisioned--one that expands uniformly--and determines that the bullet does not cause superfluous injury or unnecessary suffering. Articles 35 and 36, along with the extensive commentaries on the Diplomatic Conferences, make it clear that in the 1970s, nations could not agree on specific weapons [*125] restrictions and, therefore, opted for general principles of prohibition. The inability of Sweden and other nations to impose their desired specific restrictions on small caliber bullets raises doubt that the international community, but for the blind adherence to the traditional prohibition against expanding bullets, could today approve the language of the 1899 Hague Expanding Bullets Declaration.

G. Rome Statute of the International Criminal Court

The debate over dumdum bullets was divisive in 1899, but a century later, those disagreements were forgotten history as the Rome Statute continued the unquestioned application of the 1899 Hague Expanding Bullets Declaration. The Rome Statute lists the use of expanding bullets as a war crime in Article 8(2)(b)(xix): "[e]mploying bullets which expand or flatten easily in the human body, such as bullets with a hard envelope which does not entirely cover the core or is pierced with incisions." n206 Article 8(2)(b)(xx) also prohibits "[e]mploying . . . projectiles . . . which are of a nature to cause superfluous injury or unnecessary suffering or which are inherently indiscriminate in violation of the international law of armed conflict." n207 The language in both of these articles is identical to the language of the 1899 Hague Expanding Bullets Declaration and Article 35(2) of Additional Protocol I. What is the reasoning behind this?

The language concerning prohibited weapons was a "highly contentious issue [in the negotiations of the Rome Statute] and indeed might have derailed the Conference but for the compromise reached at the end of the Conference." n208 However, the prohibition on expanding bullets was evidently uncontroversial and was based solely on the existence of the 1899 Hague Expanding Bullets Declaration. n209 Defining the use of expanding bullets as a war crime was seen "as an extension of [*126] the customary rule prohibiting the use of weapons which inflict unnecessarily cruel wounds," n210 which the Rome Statute also codified in Article 8(2)(b)(xx). The real debate surrounded the inclusion of specific weapons, including controversial weapons like blinding lasers, landmines, and nuclear weapons. n211 Ultimately, the delegates approved restrictions on weapons "subject to the most clearly established classical prohibitions," which appear in paragraphs 8(2)(b)(xvii)-(xix), as well as the general principles of Article 23(e) of the Hague Convention and Article 35(2) of Additional Protocol I. n212 Thus continued the wayward journey of the prohibition on expanding bullets, from its beginning as a vigorously contested attempt to check Britain's military power, to the United States's failed attempt to modify the ban in 1907, to its established home in the land of unquestioned and highly-praised examples of international humanitarian law.

III. Current U.S. Operations and the Military Necessity of Expanding Bullets

The "savages" the British faced in India and Africa in the late 1800s were similar to the enemies the United States faces today: terrorists who do not use a "fixed distinctive sign recognizable at a distance," n213 do not carry their arms openly, n214 and do not conduct "their operations in accordance with the laws and customs of war." n215 A combat environment that includes densely populated civilian areas and terrorists who do not distinguish themselves from civilians compounds the threat that terrorists pose to U.S. forces today. In 1899, General Ardagh argued that the British needed the "shock" power of dumdum bullets to render their enemies *hors de combat.* n216 Today, U.S. forces need a bullet that allows them to discriminate effects between "the civilian population and combatants and between civilian objects and military objectives" n217 and [*127] also limits excessive "incidental loss of civilian life, injury to civil-

ians, [and] damage to civilian objects." n218 Comparing the rationales for the use of expanding bullets in the nineteenth century and the twenty-first century is not new; the U.S. Army recognized the use of expanding bullets in counterterrorist and hostage rescue situations in 1985. n219

A. The United States's Position on Expanding Bullets in Combat

Combat against terrorists who do not distinguish themselves from civilians is not a new phenomenon. With numerous international terrorist incidents of the 1970s and the seizure of the U.S. Embassy in Tehran in 1980, the United States began to take a more comprehensive approach to counterterrorism operations. n220 In 1985, The Judge Advocate General (TJAG) of the U.S. Army issued a legal opinion discussing the use of expanding bullets by U.S. forces in counterterrorist incidents, n221 which is the most recent official statement by the United States on the use of expanding bullets in combat situations. While TJAG's opinion "acknowledged and respected [the] applicability in conventional combat operations" n222 of the 1899 Hague Expanding Bullets Declaration, TJAG ultimately concluded that the limitations on expanding bullets in combat did not apply to counterterrorist incidents. n223 The reasoning behind the opinion is instructive.

The opinion noted that the signatories to the Hague Expanding Bullets Declaration were focused on "conventional combat operations" as traditionally fought--"combat between lawful combatants on a battlefield relatively devoid of civilians, utilizing a high volume of firepower." n224 Soldiers could not rely on their individual weapons "to defeat the enemy" but, rather, on the combined effects of massed weapons: individual, crew-served, "landmines, hand grenades, and [*128] artillery." n225 These "weapons and [their] ammunition were (and remain) designed for incapacitation rather than lethality"--which supported the prevailing doctrine that "wounding enemy soldiers increased the logistical burden on the enemy." n226 As opposed to conventional combat forces, terrorists usually attack civilians and civilian objects n227 --although the terrorists of today also fight against national armed forces. The opinion also distinguished terrorist attacks from conventional combat in that "[s]uch [terrorist] incidents frequently take place in the midst of populated areas or in close quarters where the lives of innocent civilians would be at risk." n228

The Judge Advocate General's conclusion that the Hague Expanding Bullets Declaration did not apply to U.S. military forces engaged in counterterrorism incidents relied on the fact that terrorists are not members of national armed forces entitled to the protections of the laws of war. n229 While this distinction is equally applicable to the United States's current operations in Iraq and Afghanistan, the relevance of the opinion to this article is the focus on the utility of expanding bullets in situations where civilians are intermixed with the enemy.

> The purpose for utilization of expanding ammunition in such a very close life-threatening situations is to employ a projectile that deposits all of its energy in the target. This provides for high target selectivity by maximizing the disabling effect on the target while minimizing the aforementioned risk to [innocent bystanders]. n230

While some have questioned the "knock-down" power of expanding munitions, n231 TJAG's opinion recognized that because expanding bullets are less likely to pass through a target, they reduce the risk of collateral damage to civilians. n232 Additionally, as discussed in Part III.C.2, the excessive injury traditionally attributed to expanding bullets is also questionable. Nevertheless, TJAG's opinion concludes that even "[t]he [*129] possibility of 'superfluous injury' to a terrorist is far outweighed by the humanitarian concerns for protection of the innocent civilians . . . placed at risk." n233 Similarly, in U.S. military operations in Iraq and Afghanistan, the need to reduce collateral damage to civilians is far more important than the disputable and uncertain consequences of the "excessive wounding" theory of expanding bullets.

B. Expanding Bullets and the Counterinsurgency Fight

The United States's counterinsurgency (COIN) operations in Afghanistan and Iraq further underscore the necessity of using expanding bullets in combat operations. The U.S. Army established Army doctrine for COIN in 2006 in Field Manual (FM) 3-24 n234 declaring, "[a]t its core, COIN is a struggle for the population's support. The protection, welfare, and support of the people are vital to success." n235 The ability to distinguish insurgents from civilians when using force is essential when protecting the civilian population. n236 The law of war principle of distinction is found in Additional Protocol I, Article 48, which states, "In order to ensure respect for and protection of the civilian population and civilian objects, the Parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations only against mili-

tary objectives." n237 Field Manual 3-24 states that "[d]iscrimination applies to the means by which combatants engage the enemy. The COIN environment requires [soldiers and Marines] to not only determine the kinds of weapons to use and how to employ them but also establish whether lethal means are desired--or even permitted." n238 Field Manual 3-24 further notes that

> [l]eaders must consider not only the first-order, desired effects of a munition or action but also possible second-and [*130] third-order effects--including undesired ones. . . . Fires that cause unnecessary harm or death to noncombatants may create more resistance and increase the insurgency's appeal--especially if the populace perceives a lack of discrimination in their use. . . . Proportionality and discrimination applied in COIN require leaders to ensure that their units employ the right tools correctly with mature discernment, good judgment and moral resolve. n239

Unfortunately, because expanding bullets are prohibited in combat, n240 they are not even an option for commanders who wish to minimize potential second- and third-order effects.

How, then, can a commander limit unnecessary civilian injury and death when engaging an insurgent threat in a crowded civilian area with the current, high-powered jacketed rounds, like the M855, issued to conventional U.S. forces? A commander has two real options: accept risk by restricting the use of small arms fire in certain areas or situations, or rely on escalation of force procedures to identify and respond to hostile acts or demonstrations of hostile intent. n241 As previously discussed, expanding bullets could help a commander limit the effects small arms have on civilians and reduce overall collateral damage. In 2009, retired General Stanley McChrystal, then the Commander of the North Atlantic Treaty Organization's (NATO) International Security Assistance Force (ISAF) in Afghanistan, issued a Tactical Directive to all forces in Afghanistan reinforcing the absolute importance of proportionality and discrimination in COIN: "We must avoid the trap of winning tactical victories--but suffering strategic defeats--by causing civilian casualties [*131] or excessive damage and alienating the people." n242 When General David Petraeus assumed command of ISAF in 2010, he re-emphasized this principle in an updated Tactical Directive, stating: "We must continue--indeed, redouble--our efforts to reduce the loss of innocent civilian life to an absolute minimum. Every Afghan civilian death diminishes our cause. If we use excessive force or operate contrary to our counterinsurgency principles, tactical victories may prove to be strategic setbacks." n243

Nevertheless, protecting the civilian population in urban environments like Baghdad and Kabul often requires deadly force to neutralize insurgents. For example, in early 2010, suicide bombers and other insurgents in Afghanistan attacked the Central Bank on a morning where "the streets of downtown Kabul were jammed with traffic." n244 While no U.S. forces were involved, "hundreds of Afghan commandos, soldiers and police officers surrounded Pashtunistan Square and attacked." n245 Responding to such deadly threats often requires massive amounts of firepower; in this situation "[b]ullets flew in every direction, thousands of them." n246 There is simply no telling what collateral damage thousands of these high-powered jacketed rounds caused.

In such situations where soldiers are faced with overtly hostile acts, lethal force is required, not mitigation of risk. General McChrystal's Tactical Directive instructed NATO ISAF to balance the employment of force with the risk to troops: "I recognize that the carefully controlled and disciplined employment of force entails risk to our troops--and we must work to mitigate that risk wherever possible. But excessive use of [*132] force resulting in alienated population will produce far greater risks." n247 A commander's ability to use expanding bullets, might allow him to use controlled and disciplined force in a more discriminate way, while simultaneously reducing the perception that excessive force was employed. However, because no nation uses expanding bullets in combat, we must look elsewhere to determine the potential effectiveness of munitions in urban combat. Fortunately, the experience of domestic law enforcement agencies in the United States, which have used expanding bullets for decades, offers some insights.

C. Reasoning by Analogy: Domestic Use of Expanding Bullets in the United States

Domestic law enforcement agencies in the United States have employed expanding bullets for well over three decades. n248 Law enforcement agencies generally cite three advantages expanding bullets offer over normal jacketed ammunition: (1) reduction of ricochets, n249 (2) a decrease of "pass through" bullets, n250 and (3) "stopping power." n251 All three of these advantages are linked. Because hollow point bullets expand and tend to stay in the body, they are less likely to pass through a target, n252 and law enforcement officers need fewer rounds to incapacitate [*133] a subject, reducing the potential for injury to bystanders caused by inadvertent hits and ricocheting rounds. n253 These advantages are particularly important for law enforcement officers who tend to patrol in populated urban areas. n254

Numerous law enforcement agencies currently employ hollow-point bullets as standard issue, n255 but the initial use of hollow-point bullets was controversial. n256 For example, when the Connecticut State Police decided to issue hollow-point bullets to troopers in 1974, organizations from church groups to the American Civil Liberties Union (ACLU) and the National Association for the Advancement of Colored People (NAACP) protested the "cruelty and inhumanity inherent in the use of such weapons systems." n257 When New York City decided to issue hollow-point bullets to its police officers in 1997, a similar "political storm" brewed, led by civil libertarians opposed to the alleged destructiveness of the ammunition. n258 After numerous public complaints, the New York City Civilian Complaint Review Board investigated public concerns, concluding among other things, that the use of expanding bullets was [*134] "consistent with modern, enlightened law enforcement judgments in a wide number of jurisdictions--both state and federal--and is a reasonable exercise of the Department's rights and responsibilities in this arena." n259 The Board also dismissed fears over "the dangerous propensities of so-called 'dum-dum' bullets," observing that "hollow-points are neither exploding dum-dums nor fragmenting bullets." n260 Ultimately, expanding bullets' ability to disable targets while reducing the risk of collateral injury to innocent bystanders has overcome the exaggerated claims of opponents, resulting in widespread use in the United States. However, the United States's use of expanding bullets in combat, rather than simply law enforcement, would undoubtedly raise excessive "humanitarian" angst--as evidenced in the 1990s by the controversy over Black Talon bullets.

In the early 1990s, Winchester Ammunition produced a bullet called the Black Talon, a bullet that "penetrate[d] soft tissue like a throwing star" n261 and that was notoriously known as a "cop killer[]." n262 In 1993, the bullets drew the attention of New York Senator Daniel Patrick Moynihan n263 after a man shot "twenty-three commuters, killing six," on the Long Island Railroad. n264 After the incident, the Black Talon, introduced in 1992, so inflamed anti-gun proponents that Winchester Western eventually limited their sale to law enforcement personnel in 1993. n265 The controversy over the Black Talon centered on its apparent increased ability to wound: the bullet "use[d] less powder to minimize [*135] recoil and lower velocities so it penetrate[d] but [did] not pass through a human body. On impact it expose[d] sharp penetrating edges that burrow[ed] into soft tissue." n266 Not only were opponents concerned with the alleged cruelty of these bullets, n267 surgeons became concerned "about getting infected with HIV or hepatitis from an encounter with the jagged bits while retrieving a bullet from a wound." n268 However, the "fears associated with . . . the Black Talon . . . [did] not come to pass." n269 In 1995, the Federal Bureau of Investigation (FBI) issued a report that the Black Talon was "no more lethal than other commercially produced ammunition. And no doctors have reported cutting their fingers on its sharp edges." n270

Similarly, if the United States began using expanding bullets in combat, it is likely that a variety of nations and non-governmental organizations will decry the alleged "cruelty and inhumanity inherent in the use of such" bullets, but, much like the relative silence that followed the widespread adoption of hollow point bullets by domestic law enforcement agencies, the United States should expect time to demonstrate the efficacy of these bullets in combat. n271

[*136] IV. Combat Means Fighting (and Killing) the Enemy n272

As Clausewitz recognized, the object of war has always been the "complete or partial destruction of the enemy." n273 However, as discussed earlier in Part II.B, the exponential growth in weapons technology during the nineteenth century led nations to recognize that the destructiveness of certain weapons exceeded what was required to injure or kill the enemy. As a result, various nations have gathered at different times in order to set limits on the destructiveness of certain weapons. While it is true that often times these nations were motivated more by self-interest than humanitarianism, n274 the principle of unnecessary suffering emerged as a limit on the means nations could employ against each other in combat. The primary source for this principle, The Declaration of St. Petersburg of 1868, n275 recognized that, while the object of war was to "weaken the military forces of the enemy," this objective "would be exceeded by the employment of arms which uselessly aggravate the sufferings of disabled men, or render their death inevitable." n276 Specifically, at St. Petersburg in 1868, the assembled nations acknowledged that exploding projectiles surpassed what was necessary to wound or kill the enemy (namely the impact of the projectile itself). Over the last century, some nations and groups have aggressively manipulated the principle of unnecessary suffering, both for political and humanitarian concerns, from one that limits useless destruction to one that seeks to limit any destruction. n277 As [*137] discussed earlier in this article, inaccurate and untested information provided the supposed scientific basis for banning the dumdum bullet; n278 regrettably, no one has seriously questioned the underlying scientific basis for banning expanding bullets in combat. Part III above explained the military necessity for using expanding bullets; this section explores the principle of unnecessary suffering and whether expanding bullets would pass a contemporary legal review. Because an understanding of how bullets cause injuries is crucial to realizing that they might not cause superfluous injury or unnecessary suffering, the basic principles of wound ballistics are explained first.

A. Wound Ballistics: How Bullets Cause Injury and Death

Under the Standing Rules of Engagement for U.S. Forces, a soldier can use necessary force, up to and including lethal force, in response to a hostile act or demonstration of hostile intent. n279 When using force in a hostile situation, the soldier must use only the amount of force necessary to eliminate the threat and apply such force in a proportional manner. n280 When a soldier directs lethal force at a legitimate target, he or she does so with the intent to immediately incapacitate that target in order to stop a deadly threat. n281 At least within the civilian law enforcement context, "immediate incapacitation" means "the sudden physical inability to pose [*138] any further risk of death or injury to others." n282 Much like in domestic law enforcement, for a soldier, immediate incapacitation--or rendering a target *hors de combat*--"is the only legitimate goal of any . . . use of deadly force." n283 For law enforcement, the ability to immediately incapacitate a subject "is the underlying rationale for decisions regarding weapons, ammunition, calibers and training." n284 Therefore, in order determine the ability of a bullet to incapacitate, it is necessary to understand how that bullet causes wounds.

1. The Mechanics of Wounding

There are four components of projectile wounding: n285

1. Penetration. The tissue through which the projectile passes and disrupts or destroys in passing.

2. Permanent Cavity. This is the volume of space once occupied by tissue that has been destroyed by the passage of the projectile. It is a function of penetration and the frontal area of the projectile. Quite simply, it is the hole left by the passage of the bullet.

3. Temporary Cavity. This is the expansion of the permanent cavity by stretching due to the transfer of kinetic energy during the projectile's passage.

4. Fragmentation. Projectile pieces or secondary fragments of bone which are impelled outward from the permanent cavity and may sever muscle tissues, blood vessels, etc., apart from the permanent cavity. Fragmentation is not necessarily present in every projectile wound. It may or may not occur and should be considered a secondary effect.

Projectiles incapacitate only by damaging or destroying the central nervous system or by causing significant blood loss. n286

[*139] Bullets fired from a handgun and bullets fired from a rifle will have different wounding effects due to their differing velocities (rifle-fired bullets have higher velocities). n287 Bullets fired from a handgun will produce penetration, permanent cavity, and temporary cavity, but will not reliably cause fragmentation "due to the relatively low velocity of handgun bullets." n288 Fragmentation occurs reliably with unjacketed or hollow point bullets that have a high velocity because "the permanent cavity is stretched so far, and so fast, that tearing and rupturing can occur in tissues surrounding the wound channel that may have also been weakened by fragmentation damage." n289

2. The Human Target: Physiological, Psychological and Physical Factors

The only way to reliably incapacitate a target immediately is with a gunshot to the brain or upper spinal cord. n290 There are many complexities with the human target, including physiological, psychological, and physical factors that are relevant to the probability of incapacitation. n291 From a physiological standpoint, the only reliable way to immediately stop a human is a gunshot causing a wound that disturbs the brain or upper spinal cord; otherwise, the only other way incapacitation occurs is through blood loss that lowers the blood pressure, inducing unconsciousness through oxygen deficits in the brain. n292

A young, healthy adult can lose about 25% of his blood volume without a substantial effect or permanent injury through compensating mechanisms initiated during physical trauma. n293 However, the body [*140] cannot compensate for blood loss beyond 25%. n294 Simply put, incapacitation through blood loss does not happen quickly; even if "the thoracic artery is severed, it will take almost five seconds at a minimum for a 20% blood loss to occur in an average sized male." n295 This discussion of blood loss does not take into consideration the oxygen in the blood already in the brain; even if "the heart stops beating and blood flow to the brain ceases, there is enough residual oxygen in the brain to support willful, voluntary action for 10 to 15 seconds." n296 Even pain is not normally incapacitating because the

"fight or flight" response usually suppresses pain for some time. n297 In sum, beyond a wound to the brain or upper central nervous system, physiological factors do not account for immediate incapacitation, even for fatal wounds. n298

Psychological factors are more important than physiological ones to immediate incapacitation, at least concerning gunshot wounds to the torso. n299 Minor wounds can cause incapacitation in this manner through "[a]wareness of the injury (often delayed by the suppression of pain); fear of injury, death, blood, or pain; intimidation by the weapon or the act of being shot; preconceived notions of what people do when they are shot; or the simple desire to quit." n300 Interestingly, "psychological factors are also the primary cause of incapacitation failures." n301 Determination, instinctual survival, "or sheer emotion such as rage or hate can keep a grievously injured individual fighting." n302 For example, there are [*141] numerous examples of battlefield heroics involving soldiers who continued to fight despite mortal wounds, and all humans, whether Soldiers or terrorists, can "fight and function effectively despite horrific and even fatal wounds." n303

Chemicals can also prevent or delay incapacitation. "Adrenaline alone can be sufficient to keep a mortally wounded adversary functioning and fighting." n304 Drugs, such as cocaine, PCP, and heroin, as well as "[s]timulants, anesthetics, painkillers, or tranquilizers can all prevent incapacitation by suppressing pain, awareness of injury, or eliminating normal inhibitions arising from a concern over the injury." n305 In short, the psychology of wounds can either contribute to or detract from the seriousness of a gunshot wound, depending on an individual's response.

Physical factors, including "energy deposit, momentum transfer, and size of the temporary cavity" are insignificant or have no effect on immediate incapacitation. n306 The belief that bullets have "knock-down" power or "shock" are false; a "bullet simply cannot knock a man down." n307 This is a proven matter of physics, which has been known for centuries. n308 A bullet deposits about as much energy on the body as getting hit by "a Major League fastball." n309 The only real physical effect a bullet has on incapacitation is tissue damage, but as stated earlier, except for wounds to the central nervous system, this damage will not cause immediate incapacitation. n310 To conclude, the only way to consistently and immediately incapacitate a human with a gunshot wound is through "the disruption or destruction of the brain or upper spinal cord. Otherwise, incapacitation is subject to a random host of [*142] variables, the most important of which are beyond the control of the shooter." n311

3. Misconceptions in Wound Ballistics

A bullet's mass and velocity at impact determine a bullet's potential for damaging tissue; a bullet's shape and construction controls the degree of actual damage that this potential causes. n312 Once a bullet enters tissue, it "crushes the tissue it strikes during penetration, and it may impel the surrounding tissue outward (centrifugally) away from the missile path." n313 This concept is important because "[t]issue crush is responsible for what is commonly called the permanent cavity and tissue stretch is responsible for the so-called temporary cavity. These are the sole wounding mechanisms." n314 This tissue "crush" and "stretch" are measured in a laboratory by firing bullets into tissue stimulants. n315 Because firing bullets into live bodies, cadavers, or even animals presents obvious problems, the tissue stimulant employed is fundamental to achieving valid results; unfortunately, "[t]his requirement is frequently ignored by wound ballistics investigators." n316

Many in the field of wound ballistics either don't understand wound ballistics or they manipulate results to suit other agendas. n317 For example, [*143] in the 1970s while the Swedes were attempting to outlaw the M16 rifle and 5.56 mm bullet, a deceptive video circulated purporting to show the horrific effects of a U.S. 5.56 mm bullet on an anesthetized pig. n318 Similarly, the type of tissue stimulant used in testing a projectile is imperative. "For validity, the stimulant must reproduce the physical effects of the projectile-tissue interaction on the projectile." n319 The two predominantly used tissue stimulants are gelatin and soap. n320 The advantages of gelatin are that its elasticity resembles human soft tissue; it is transparent, which allows for filming to show the effects of a projectile as it moves; and it is cheap. n321 The major disadvantage to gelatin is that it does not preserve the temporary cavity. The advantages of soap are that it preserves the temporary cavity created by a bullet and it is easy to handle. n322 The major criticism of soap is that it can mislead due to the "dramatic preservation of the maximum temporary cavity. Such demonstrations give a false impression that these cavities represent the potential for tissue destruction rather than the potential for tissue stretch." n323

As Professor von Bruns showed in 1898 and Sweden demonstrated in the 1970s, one can alter the testing methods to support a desired [*144] outcome, so it is important to understand how they work. n324 If the United States were to announce its intention to use expanding bullets in combat, some nations, as well as the ICRC and other humanitarian organizations, would likely respond with test results purporting to show the incredibly inhumane effects of such bullets. n325 A familiarity with ballistics testing would be critical to evaluating and responding to that evidence.

B. In War, There Will Be Suffering

1. A Brief History of the Principle of Unnecessary Suffering

Unnecessary suffering is a "core principle" n326 of the Law of Armed Conflict (LOAC); however, the term has "not been formally defined within international law." n327 After the initial pronouncement of the principle in The St. Petersburg Declaration of 1868, the term "unnecessary suffering" explicitly entered international law during the Brussels Conference in 1874. n328 From that conference, Article 13(e) of the Brussels Declaration forbade "[t]he employment of arms, projectiles or material calculated to cause unnecessary suffering, as well as the use of projectiles prohibited by the Declaration of St. Petersburg of 1868." n329 Literature explaining the intent behind Article 13(e) is scarce, but the Brussels Declaration later served as the basis for fifty-two out of the [*145] sixty articles in the 1899 Hague Convention II, n330 including the prohibition against unnecessary suffering. n331

Article 23(e) of the 1899 Hague Convention II prohibits the employment of "arms, projectiles, or material of a nature to cause superfluous injury." n332 Unlike dumdum bullets, the delegates to the 1899 Hague Peace Conference apparently did not find this provision controversial, as there is little discussion of the rule in the translations. The 1907 Hague Peace Conference essentially restated the 1899 language with a minor change: the new Article 23(e) forbade the employment of "arms, projectiles, or material *calculated* to cause unnecessary suffering" (emphasis added). n333 The English translation of "calculated" seems to narrow the restriction by invoking a *mens rea* requirement, a view later rejected by the ICRC in the commentary to Article 35(2) of Additional Protocol I. n334

2. The Current Law of Unnecessary Suffering

The time period between 1907 and the 1970s saw continued advancement in weapons technology with increasing destructiveness. The ICRC noted that "[t]he discovery of a new means of attack leads to the introduction of a new means of defence, which in turn provokes the introduction of an even more powerful projectile." n335 This back and forth led to a world-wide arms race that "developed with a dizzying speed," unrestricted by "a number of [failed] attempts . . . aimed at prohibiting [*146] certain weapons for disinterested humanitarian motives." n336 Nonetheless, in 1977, the ICRC and most of the world's nations, finalized the Additional Protocol I, reaffirming the core principle prohibiting unnecessary suffering, and setting the current state of the law.

With the adoption of Article 35(2) of Additional Protocol I, there is more available explanation concerning the meaning of the term unnecessary suffering. Article 35 states that: '[i]t is prohibited to employ weapons, projectiles and material and methods of warfare of a nature to cause superfluous injury or unnecessary suffering." n337 Article 35 did specifically remove the "calculated to cause" language of Article 23(e) of the 1907 Hague Convention because it "was not appropriate." n338 The ICRC took the position that "any injury or suffering of the combatants in excess of that necessary to put the enemy *hors de combat*" constituted unnecessary suffering. n339 The ICRC recognized this language requires balancing "the nature of the injury or the intensity of suffering on the one hand, against the 'military necessity', on the other hand, before deciding whether there is a case of superfluous injury or unnecessary suffering as this term is understood in war." n340 Unfortunately, this balancing test provides no "bright-line rules" as to what constitutes unnecessary suffering. The Commentaries did draw a firm line as pertaining to previously restricted weapons such as dumdum bullets, poison and poisoned weapons, and bayonets with serrated edges, stating that such weapons had been prohibited in various conventions because they cause unnecessary suffering. n341

Additional Protocol I also provides some guidance to nations on how to implement Article 35(2) in their weapons programs by way of Article 36, establishing "a link between its provisions, including those laid down in Article 35 *(Basic rules)* and the introduction of a new weapon by States." n342 Article 36 requires contracting parties to determine whether new weapons or means or methods of warfare under "study, development, acquisition or adoption" are prohibited by Additional [*147] Protocol I or "any other rule of international law." n343 The United States has not ratified Additional Protocol I and is not bound by its provisions, but does follow the guidance found in Article 36 through the legal review of weapons program instituted by the U.S. DoD. n344 The U.S. review program helps explain the U.S. view and approach to unnecessary suffering, especially as applied to weapons development.

3. Weapons Reviews and Unnecessary Suffering

The United States began a formal legal review of weapons program in 1974 as implemented by DoD Directive 5500.15, *Review of Legality of Weapons under International Law.* n345 Department of Defense Directive 5500.15 gives responsibility for legal reviews of weapons to the DoD and charges The Judge Advocate Generals of each respective military service with conducting legal reviews of all weapons acquired by their respective departments. n346 Each

military department has in turn issued its own regulations for carrying out this assigned responsibility. n347 There is no authority to conduct such legal reviews below this national level. n348 In 1991, DoD integrated the requirement for a legal review into the DoD acquisition program through DoDD 5000.2, increasing awareness in the acquisition community of the necessity of incorporating the legal review early in the contracting process. n349

In the United States, there are three primary reasons for conducting legal reviews of weapons. First, the United States has a legal obligation to implement those treaty obligations ratified in accordance with the U.S. Constitution. n350 Second, the "legal review provides the Program Manager as well as the military commander with the acknowledgement of the legality of the weapon or munition in question." n351 This allows a commander to presume that all issued weapons are legal. n352 Finally, the [*148] weapons review itself provides "an instant resource for responding to questions that may arise as to the legality of a particular weapon system or its ammunition." n353

In most legal reviews, the ultimate issue is either unnecessary suffering or the principle of distinction. n354 As to unnecessary suffering, "[t]he main consideration . . . [is] weighing military necessity against the prohibition of weapons of a nature to cause superfluous injury or unnecessary suffering." n355 Military necessity is therefore, "an essential factor and important consideration in [conducting] legal reviews." n356 It is important to note that weapons that produce more serious wounding to a combatant do not necessarily cause unnecessary suffering; however, "without some legitimate military necessity, such as increased range or improved accuracy," the reviewer is unlikely to find the weapon legal. n357 Thus, in determining whether a weapon causes unnecessary suffering, the United States follows the approach outlined in the Commentaries to Article 35(2) of Additional Protocol I: (1) the United States assesses weapons for "compliance with the terms of any treaty [the United States is a party to], taking into account any reservations . . . entered upon ratification"; n358 and (2) weighs the injury caused by the weapon in its "normal intended use" with the military necessity of the weapon. n359 149

[*149] *4. Use of Expanding Bullets in Combat Is Consistent with International Law*

Using the methodology described above, the proposed use of expanding bullets in combat should pass legal review. Under the first prong of the analysis, the United States is not a party to the 1899 Hague Expanding Bullets Declaration, "but United States officials over the years have taken the position that the armed forces of the United States will adhere to its terms to the extent that its application is consistent with the object and purpose of article 23e of the Annex to Hague Convention IV." n360 While the "calculated to cause suffering" language of the 1907 Hague Convention is out of favor with the international community, it remains the current law for the United States. Thus, while the prohibition against the use of expanding bullets is unquestionably considered customary international law, such use would not violate any of the United States's current treaty obligations. However, because the prohibition against the use of expanding bullets is customary international law, it is binding upon all nations, including the United States (although as argued extensively in the first half of this article, the basis for the status as customary international law is questionable). n361

The second prong of the legal analysis is weighing the injuries produced by an expanding bullet in its normal intended use with the military necessity of the weapon. The starting point for this part of the analysis is recognizing "that *necessary suffering* to combatants is lawful, and may include severe injury or loss of life." n362 This author is not aware of any publicly available testing results concerning expanding bullets, but as the discussion in Part IV.A above highlights, it is not clear that expanding bullets cause wounding that is extreme or excessive. Certainly, more data is needed in this area, but it is reasonable to believe that if numerous domestic law enforcement agencies employ such munitions, a rational assumption is that expanding bullets do not produce [*150] the horrific wounds described by Professor von Bruns. n363 There is no doubt that all bullets cause some degree of suffering, but even if expanding bullets cause greater suffering than jacketed bullets, such suffering is only considered excessive if "the inevitable result of the normal use causes an injury the nature of which is considered by the governments as excessive in relation to the military advantage anticipated from employment of the weapon or ammunition." n364 Thus, the ultimate test "is whether the suffering is needless, superfluous, or manifestly disproportionate to the military advantage expected from the use of the weapon." n365

The military advantage of using expanding bullets in some combat situations is clearly demonstrated by domestic law enforcement agencies' actual use of expanding bullets: reduction of ricochets, decrease in "pass through" bullets, and greater stopping power. n366 With bullets that are less likely to pass through a target, fewer rounds are required to render an enemy *hors de combat*; n367 fewer rounds fired means there is a reduced potential for collateral damage to innocent bystanders, both through a reduction in actual bullets fired and through a reduction in ricochets of those bullets. n368 This reduction in the number of bullets fired will allow American combat forces to better comply with the principle of distinction and to reduce collateral damage caused when engaging lawful targets. In short, as TJAG's 1985

opinion noted earlier, "[t]he possibility of 'superfluous injury' to a terrorist is far outweighed by the humanitarian concerns for protection of the innocent civilians . . ." n369 If the United States announced an intention to use expanding bullets in combat, it is likely the international humanitarian legal community would vociferously object; however, aside from the historically [*151] misconstrued 1899 Hague Expanding Bullets Declaration, such use would be sound and logical under the existing principles of unnecessary suffering, military necessity, and distinction.

V. Conclusion

The ICRC categorizes the prohibition on expanding bullets in combat as customary international law, a stance that flows naturally from the historically unquestioned application of the 1899 Hague Expanding Bullets Declaration by the international community. However, as this article has argued, the ban on expanding bullets was not solely the product of humanitarian concerns, but rather, the unfortunate outcome of a concerted political effort by Britain's rivals to constrain her military power. As a result of a grievously flawed German experiment and widespread misinformation in the European court of public opinion, dumdum bullets were condemned at The Hague without even a single test or accurate report on their actual performance. Captain William Crozier recognized the overly broad language of the prohibition forbade an entire category of bullets, and, over a hundred years later, U.S. military forces remain constrained by that language.

The U.S. operations in Iraq and Afghanistan have revealed a gap in the capabilities of small caliber bullets currently in the military's arsenal. The only option U.S. forces have are high-powered, jacketed bullets that may "pass-through" their intended target, requiring additional bullets to incapacitate a threat. The need to fire additional rounds increases the probability that civilians, who are ever-present in urban combat areas, may be injured or killed. This type of collateral damage is always tragic and runs counter to the COIN objective of protecting the population.

Although the United States is not a party to Additional Protocol I, the United States recognizes many of its articles as reflecting customary international law, including the principle of distinction. The United States only fields weapons that comply with international law n370 and strives to ensure the effects of such weapons distinguish between civilians and the enemy. n371 Unfortunately, the unquestioned application of the 1899 Hague Expanding Bullets Declaration by the international [*152] community has precluded the use of a simple bullet that could improve combatants' ability to discriminate when employing lethal force. Combat experience in the urban environments of Iraq and Afghanistan shows that it is time for the United States to lead an effort to reexamine the use of expanding bullets in certain combat scenarios. Domestic law enforcement use of these bullets has already demonstrated that in certain situations, these bullets are better at stopping criminals, reducing the number of shots fired, and lowering the risk for injury or death to bystanders.

This author does not propose to replace the existing bullet inventory of the United States' armed forces with expanding bullets. There are certainly technical reasons why expanding bullets may not be practical for all weapons systems, and commanders may not want to employ them in many tactical situations. Nevertheless, a historically misconstrued rule should not prevent a commander from outfitting his soldiers with a bullet that could more effectively stop a terrorist and limit collateral damage. While this article has been limited to an analysis of law and policy, determining whether expanding bullets in combat offers actual, practical advantages requires detailed, multi-disciplinary research and analysis. n372 If such research determines that expanding bullets do offer significant advantages, the United States should undertake a concerted reevaluation of the 1899 Hague Expanding Bullets Declaration and the actual humanitarian benefits of employing expanding bullets in combat. There can be no doubt that any such effort will cause a colossal uproar among international humanitarian legal scholars who will argue that expanding bullets cause unnecessary suffering. However, as this article argues, any rational legal review should find that expanding bullets do not cause unnecessary suffering or superfluous injury as those terms are defined under Article 35(2) of Additional Protocol I.

General Ardagh's observations in 1899 about the difficulties in fighting "savages" may seem racist to some, but he knew that fighting radicals was not the same as fighting uniformed soldiers. Continental [*153] soldiers were likely conscripts, and a bullet wound was good reason to lie down and wait for an ambulance. In contrast, radicals were hell-bent on the destruction of their enemies and were far more likely to fight until death, without regard for the collateral consequences. This is precisely the difficulty the armed forces of the world face today: extremists who seek to kill as many as possible, with little regard for collateral damage or the laws of war. Because these terrorists and extremists often carry out attacks in heavily-populated urban environments, it is time to re-examine the traditional justification for prohibiting the use of expanding bullets in armed conflict. As General Sir John Ardagh recognized, it is the emphatic right and duty of the United States to furnish "our soldiers with a projectile on whose result they may rely," a bullet whose shock is sufficient to stop "the charge of an enemy and put him *hors de combat* immediately," n373 while at the same time reducing useless civilian deaths.

[*154] **Appendix**

Terminology: Guns and Bullets

Any discussion of bullets requires a basic understanding of the terminology associated with them. First, "firearm" refers generally to guns, although the term "gun" is rather broad, referring to "true guns," howitzers, mortars, and recoilless rifles; obviously, this article focuses on guns in the traditional sense. n374 Guns are further divided into handguns (pistols or revolvers) and long guns (rifles or shotguns). n375 Guns are either single-shot (the user must remove and load each bullet) or they are semi-automatic or automatic (the spent bullet case ejects itself and the gun automatically loads another bullet). n376

"Bullet," "ammunition," "projectile," and "cartridge" are all terms that are used interchangeably, although they all have different meanings. Ammunition is the complete package that a gun fires. n377 Ammunition consists of: the bullet (the actual projectile that a gun discharges from its barrel); the cartridge (the metal casing that holds the bullet, gunpowder, and primer); the gunpowder (the propellant that the primer ignites, causing an explosion and forcing the bullet to separate from the cartridge and move through the gun barrel); and the primer (when the gun's trigger is depressed, the gun's firing pin strikes the primer, setting off a small explosion that ignites the gunpowder). n378 In general, "caliber" refers to the diameter of the cartridge, and, in theory, the diameter of the gun barrel. n379 For example, the M855 cartridge used in the M16 and M4 series rifles is a 5.56 millimeter cartridge. n380

[*155] The next important term is "grain," which refers to the weight of the bullet; a grain is 1/7000 of a pound. n381 The weight of the bullet influences "how much force (kinetic energy) the bullet has when it strikes a target." n382 "Core" refers to the actual material of the bullet and is usually used as an expression when the bullet is jacketed. n383 The next principal term is "jacket" and refers to a thin covering on the bullet, usually made of copper, brass, or steel. n384 Jackets serve a few purposes: jacketed bullets travel further than unjacketed bullets; n385 the jacket prevents malfunctions caused when pieces of lead from an unjacketed bullet are deposited in the gun's chamber during high rates of fire; n386 and jackets reduce the amount of lead dust (a health concern) generated when bullets are fired. n387 Finally, "tip" refers to the nose of the bullet, and the tip can be rounded, pointed, or hollow-pointed. n388 A bullet with a pointed-tip is more aerodynamic; a rounded-tip bullet is less aerodynamic and travels slower than a pointed-tip bullet; a hollow point bullet "sometimes widens when it enters the body," n389 thus "increasing its drag and [tending] to remain inside the target." n390

"Ballistics" is a broad phrase that generally refers to the study of firearms, or "guns." n391 Ballistics is then generally divided into three major fields: interior ballistics, exterior ballistics, and terminal ballistics. n392 Interior ballistics deals with everything that happens with the bullet inside the gun until it leaves the gun barrel. n393 Exterior ballistics refers to what occurs with the bullet between leaving the gun and striking [*156] the target. n394 Terminal ballistics refers to the function of the bullet in the vicinity of and on the target. n395

Legal Topics:

For related research and practice materials, see the following legal topics:
International LawDispute ResolutionLaws of WarInternational LawSources of International LawSecurities LawBlue Sky LawsGeneral Overview

FOOTNOTES:

n1 JAMES BROWN SCOTT, THE PROCEEDINGS OF THE HAGUE PEACE CONFERENCES 277 (1921) (quoting General Sir John Ardagh in a declaration before the First Commission of the Hague Peace Conference on June 22, 1899, defending the use of the "Dum Dum" bullet by the British Army).

n2 *See, e.g.*, Mudhafer Al-Husaini & Richard A. Oppel, Jr., *Suicide Bomber Is Spotted and Shot, but Kills 3 in Baghdad*, N.Y. TIMES, Feb. 18, 2008, at A4 (describing an Iraqi response to a suicide bomber).

n3 *See, e.g.*, Major Glenn Dean & Major David LaFontaine, *Small Caliber Lethality: 5.56mm Performance in Close Quarters Battle*, INFANTRY MAG., Sept.--Oct. 2006, at 26 (summarizing efforts to research and address complaints with the performance of the M855 bullet in combat); Matthew Cox, *Deadlier Round Denied*, ARMY TIMES, Mar. 8, 2010, at 18 (describing complaints about the current M855 round and why the Army will not field the new Special Operations Science and Technology (SOST) 5.56 mm round); *Do U.S. Bullets Pack Enough Punch?; Ammunition Designed for Cold War Battles Doesn't Fit Iraq Fighting*, GRAND RAPIDS PRESS, May 27, 2008, at A1 (arguing that the smaller M855 bullet was designed to kill Soviets wearing body armor at long distances, not insurgents at close ranges in urban environments); C.J. Chivers, *How Reliable Is the M-16 Rifle*, http://atwar.blogs.nytimes.com (Nov. 2, 2009, 9:29 EST) (discussing complaints with the effectiveness of the M16/M4 rifles and the possibility that the M855 bullet is to blame).

n4 Chivers, *supra* note 3; Dean & LaFontaine, *supra* note 3, at 29-32.

n5 *Do U.S. Bullets Pack Enough Punch?, supra* note 3. Some soldiers complain that when the M855 round strikes an enemy "wearing only a shirt it can travel through him like an ice pick." Chivers, *supra* note 3.

n6 Dean & LaFontaine, *supra* note 3, at 26.

n7 *Do U.S. Bullets Pack Enough Punch?, supra* note 3. The U.S. Army has also "acknowledged that the M855 'has not been providing the "stopping power" the user would like at engagement ranges less than 150 yards.'" Cox, *supra* note 3, at 18.

n8 U.S. DEP'T OF DEFENSE, DIR. 5000.01, THE DEFENSE ACQUISITION SYSTEM para. E1.1.15 (May 12, 2003) (certified current as of Nov. 20, 2007) [hereinafter DOD DIR. 5000.01].

n9 W. Hays Parks, *Conventional Weapons and Weapons Reviews*, 8 YEARBOOK OF INT'L HUMANITARIAN L. 55, 130 (2006) (describing the legal reviews of conventional weapons generally and within the United States specifically).

n10 *Id.* at 131.

n11 U.S. DEP'T OF ARMY, FIELD MANUAL 27-10, THE LAW OF LAND WARFARE para. 3 (18 Jul. 1956) (C1, 15 July 1976) [hereinafter FM 27-10].

n12 Hague Declaration (IV, 3) Concerning the Prohibition of the Use of Expanding Bullets, July 29, 1899, 26 Martens Nouveau Recueil (ser. 2) 1002, 187 Consol. T.S. 459 [hereinafter Hague Expanding Bullets Declaration].

n13 *Id.* This article generally refers to "expanding bullets"; however, "hollow point" bullets fall under the broad category of expanding bullets.

n14 W. Hayes Parks, *Memorandum of Law--Sniper Use of Open-Tip Ammunition*, ARMY LAW., Feb. 1991, at 86, 87. Parks stated,

> The United States is not a party to [the Hague Expanding Bullets Declaration], but United States officials over the years have taken the position that the armed forces of the United States will adhere to its terms to the extent that its application is consistent with the object and purpose of article 23e of the Annex to Hague Convention IV.

Id.

n15 *See* 1 JEAN-MARIE HENCKAERTS & LOUISE DOSWALD-BECK, CUSTOMARY INTERNATIONAL HUMANITARIAN LAW: RULES 270 (2007). *Contra* Jordan J. Paust, *Does Your Police Force Use Illegal Weapons? A Configurative Approach to Decision Integrating International and Domestic Law, 18 HARV. INT'L L.J. 19, 23 (1977)* (arguing that international law prohibits the use of hollow point bullets by law enforcement agencies in the United States).

n16 *Do U.S. Bullets Pack Enough Punch?, supra* note 3.

n17 *See* INGRID DETTER DE LUPIS, THE LAWS OF WAR 194 (1987) (stating the existence of the regulation against dumdum bullets without describing its historical origins); LESLIE C. GREEN, ESSAYS ON THE MODERN LAW OF WAR 21 (2d ed. 1999) (categorizing dumdum bullets as "explosive" and focusing on Britain's use of them against "fanatical savage[s]"); FRITS KALSHOVEN & LIESBETH ZEGVELD, CONSTRAINTS ON THE WAGING OF WAR 22-23, 42 (3d ed. 2001) (describing the "horrible" wounds caused by expanding bullets and describing the passage of the ban on such bullets as the application of the "necessities of war with the laws of humanity"); HOWARD S. LEVIE, THE CODE OF INTERNATIONAL ARMED CONFLICT 73 (1986) (acknowledging Britain's use of the dumdum bullet to stop "a fanatical opponent" but overlooking reasons for the ban); HILAIRE MCCOUBREY, INTERNATIONAL HUMANITARIAN LAW 232 (2d ed. 1998) (comparing the effects of dumdum bullets to those used for hunting and explosive bullets, but ignoring the debate behind the passage of the ban); DOCUMENTS ON THE LAWS OF WAR 39 (Adam Roberts & Richard Guelff eds., 1982) (noting, in a prefatory note on the 1899 Hague Declaration 3 Concerning Expanding Bullets, British and American objections to the ban and noting the ban's status as customary international law).

n18 HENCKAERTS & DOSWALD-BECK, *supra* note 15, at 268-69.

n19 *See infra* Part IV.B.

n20 FM 27-10, *supra* note 11, para. 3.

n21 Discussed in Part IV, *infra*.

n22 Discussed in Part IV.B, *infra*.

n23 Convention Respecting the Laws and Customs of War on Land (Hague IV), art. 23e (18 October, 1907), *entered into force* January 26, 1910.

n24 Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I), art. 35, June 8, 1977, 1125 U.N.T.S. 3 [hereinafter Additional Protocol I].

n25 Jean-Marie Henckaerts, *Study on Customary International Humanitarian Law: A Contribution to the Understanding and Respect for the Rule of Law in Armed Conflict*, 87 INT'L REV. RED CROSS 175, 176-77 (Mar. 2005).

n26 *Id.* at 193. Henckaerts noted that the "study on customary international humanitarian law" was "undertaken by the ICRC at the request of the International Committee of the Red Cross and Red Crescent." *Id.* at 175. Dr. Jakob Kellenberger's foreword to CUSTOMARY INTERNATIONAL HUMANITARIAN LAW, *supra* note 15, makes it clear that the International Committee of the Red Cross (ICRC) has institutionally adopted the findings of the study as the views of the on customary international humanitarian law. As such, this article refers to the findings of the study as the views of the ICRC. For a U.S. Government response to the ICRC study, see John B. Bellinger, III & William J. Haynes, II, *A U.S. Government Response to the International Committee of the Red Cross Study* Customary International Humanitarian Law, 89 INT'L REV. RED CROSS 443 (June 2007).

n27 THE INTERNATIONAL CRIMINAL COURT, THE MAKING OF THE ROME STATUTE 116 (Roy S. Lee ed., 1999).

n28 Statute of the International Court of Justice art. 38(1)(b), June 26, 1945, *59 Stat. 1031*.

n29 Henckaerts, *supra* note 25, at 178.

n30 *Id.*

n31 *Id.* at 179.

n32 *Id.* For example, physical acts include "battlefield behaviour, the use of certain weapons and the treatment afforded to different categories of persons." *Id.* Verbal acts include "military manuals, national legislation, national case-law, instructions to armed and security forces, military communiques during war, diplomatic protests, opinions of official legal advisers, comments by governments on draft treaties, executive decisions and regulations, pleadings before international tribunals, statements in international fora, and government positions on resolutions adopted by international organizations." *Id.*

n33 *Id.* at 180.

n34 *Id.* at 182.

n35 *Id.*

n36 *Id.*

n37 HENCKAERTS & DOSWALD-BECK, *supra* note 15, at 268.

n38 *Id.* The ICRC website lists thirty-one nations that have signed, ratified, or acceded to the Hague Expanding Bullets Declaration. State Parties and Signatories to the Hague Expanding Bullets Declaration, INT'L COMM. RED CROSS, http://www.icrc.org/IHL.nsf/WebSign?ReadForm&id=170&ps=P (last visited Jan. 17, 2010) [hereinafter State Parties and Signatories to the Hague Expanding Bullets Declaration]. Of these thirty-one listed parties, all but four had signed or ratified the Declaration by 1907. *Id.* Belarus acceded to the Declaration in 1962, Ethiopia in 1935, Fiji in 1973, and South Africa in 1978. *Id.* This hardly seems like overwhelming support for the ICRC's assertion of direct international adherence to the Declaration.

n39 HENCKAERTS & DOSWALD-BECK, *supra* note 15, at 268-69. Rome Statute of the International Criminal Court, art. 8(b)(xix), July 17, 1998, 2187 U.N.T.S. 90 [hereinafter Rome Statute]. The Rome Statute forbade "[e]mploying bullets which expand or flatten easily in the human body, such as bullets with a hard envelope which does not entirely cover the core or is pierced with incisions" and is discussed in further detail in Part II.G, *infra*. The other listed sources prohibiting expanding bullets included: INSTITUTE OF INTERNATIONAL LAW, MANUAL OF THE LAWS OF NAVAL WAR art. 16(2) (1913) [hereinafter OXFORD MANUAL]; COMMISSION ON THE RESPONSIBILITY OF THE AUTHORS OF THE WAR AND ON THE ENFORCEMENT OF PENALTIES, REPORT PRESENTED TO THE PRELIMINARY PEACE CONFERENCE (1919), *reprinted in 14 AM. J. INT'L L. 95, 112-17 (1920));* U.N. Secretary-General, *Observance by United Na-*

tions Forces of International Humanitarian Law, sec. 6.2, U.N. Doc. ST/SGB/1999/13 (Aug. 6, 1999); and UNTAET Reg. 2000/15, On the Establishment of Panels with Exclusive Jurisdiction over Serious Criminal Offences sec. 6(1)(b)(xix) (June 6, 2000) (establishing panels with exclusive jurisdiction over serious criminal offenses in East Timor). HENCKAERTS & DOSWALDBECK, *supra* note 15, at 268. However, the text of all these documents are nearly verbatim restatements of the prohibitory language found in the Hague Declaration of 1899 and the Rome Statute. The citations to the "military manuals," "State legislation," and "official statements and other practice" are not specific and are not important for the purposes of this article as they likely use language identical to that found in the Hague Declaration of 1899. All of the cited materials make it clear that the Hague Declaration of 1899 is the exclusive basis for the ICRC and the U.N. prohibition against expanding bullets.

n40 HENCKAERTS & DOSWALD-BECK, *supra* note 15, at 269.

n41 *Id.* While the ICRC study does not clarify which specific "United States Field Manual" prohibits the use of expanding bullets, FM 27-10 is considered the definitive source of the U.S. views on the international law of war. The ICRC stated that U.S. Army weapons reviews will "adhere to the Hague Declaration to the extent that the rule is consistent with Article 23(e) of the 1907 Hague Regulations, i.e., the prohibition of weapons causing unnecessary suffering." HENCKAERTS & DOSWALD-BECK, *supra* note 15, at 269. Field Manual 27-10 interprets Article 23(e), declaring that "[w]hat weapons cause 'unnecessary injury' can only be determined in light of the practice of the States in refraining from the use of a given weapon because it is believed to have that effect." FM 27-10, *supra*, note 11, para. 34b. Field Manual 27-10 acknowledges that

> [u]sage has, however established the illegality of the use of . . . irregular-shaped bullets, and projectiles filled with glass, the use of any substance on bullets that would tend unnecessarily to inflame a wound inflicted by them, and the scoring of the surface or the filing off of the ends of the hard cases of bullets.

Id. If FM 27-10 is, indeed, the military manual, cited by the ICRC, that prohibits the use of expanding bullets, the prohibition is hardly apparent. This article addresses the U.S. Army legal review of ammunition in Part IV.A, *infra*.

n42 HENCKAERTS & DOSWALD-BECK, *supra* note 15, at 269. The Rome Statute is discussed in further detail in Part III.G, *infra*.

n43 *Id.* at 270.

n44 *Id.* The study does not mention which States employ expanding bullets for domestic law enforcement use.

n45 *Id.*

n46 *Id.*

n47 *Id.*

n48 Steven Haines, *Weapons, Means and Methods of Warfare, in* PERSPECTIVES ON THE ICRC STUDY ON CUSTOMARY INTERNATIONAL HUMANITARIAN LAW 272 (Elizabeth Wilmshurst & Susan Breau eds., 2007).

n49 *Id.*

n50 Declaration Renouncing the Use, in Time of War, of Certain Explosive Projectiles, *entered into force* Nov. 29/Dec. 11, 1868, 18 Martens Nouveau Recueil (ser. 1) 474, 138 Consol. T.S. 297 [hereinafter Declaration of St. Petersburg of 1868].

n51 R. ERNEST DUPUY & TREVOR N. DUPUY, THE ENCYCLOPEDIA OF MILITARY HISTORY 732 (2d rev. ed. 1986).

n52 *See, e.g., id.* at 732-43.

n53 *Id.* at 822. There were numerous other advances in weaponry during the eighteenth century, including a transition from smoothbore, muzzle-loading cannon to rifled, breech-loading artillery pieces that fired armor-piercing and explosive shells. *Id.*

n54 *Id.* at 823.

n55 *Id.* at 820-22. The American Civil War was the first "modern war" that implemented the new technologies and increased manufacturing power created by the Industrial Revolution. *Id.* The Civil War also brought about a new concept of a "nation at war" where the national economy was fully integrated into the war effort. *Id.* Additionally, the transition from agricultural economies to industrialization allowed more men to serve in the armed forces and work in the war industry. *Id.* This transition combined with improvements in transportation, which allowed armies to be moved and supported on an increasing scale, to promote larger and larger armies. *Id.*

n56 DUPUY & DUPUY, *supra* note 51, at 825-29.

n57 *Id.* at 829. To the west of Russia, France, Austria, and Prussia engaged in various wars from 1859-1871, culminating in the Franco-Prussian War of 1870-71. *Id.* at 829-37. Major wars during this period included the War of Austria with France and Piedmont of 1859, the Seven Weeks' War of 1866 between Austrian and Prussia, and the aforementioned Franco-Prussian War of 1870-71. *Id.* During this same time period, numerous other wars were conducted on a smaller scale. *See id.* at 838-46. To Russia's east, China and Japan were expanding and transforming themselves into military powers. *See* 3 J.F.C. FULLER, A MILITARY HISTORY OF THE WESTERN WORLD, FROM THE SEVEN DAYS BATTLE, 1862, TO THE BATTLE OF LEYTE GULF, 1944, at 136-41 (1956).

n58 *See* A.P.V. ROGERS, LAW ON THE BATTLEFIELD 1-2 (1996). Rogers notes,

> It was during . . . [the second half of the eighteenth century] that some European states were developing powerful armies and navies and expanding their influence throughout the world. Some theorists, mainly German . . . advanced the view that such military power should not be restrained by the uses and customs of war."

Id. at 2.

n59 DIETRICH SCHINDLER & JIRI TOMAN, THE LAWS OF ARMED CONFLICTS 95 (2d ed. 1981). The primary purpose of this bullet was to detonate on contact with ammunition wagons. *Id.*

n60 *Id.* This bullet was smaller in caliber and was fired from a handheld weapon. MCCOUBREY, *supra* note 17, at 231; Hans-Peter Gasser, *A Look at the Declaration of St. Petersburg of 1868*, 33 INT'L REV. RED CROSS, No. 297, at 511-14 (Nov.--Dec. 1993).

n61 *See* Gasser, *supra* note 60, at 511. Jakob Kellenberger, the President of the ICRC, reminded the world that the St. Petersburg Declaration prohibited a weapon that had not yet been used on the battlefield.

> It was enough to just imagine the horrific effects of exploding bullets on the human body to motivate States to sign the Declaration, recognising that a soldier should not suffer more serious injury than is necessary to put him or her out of action. The spirit of St. Petersburg to which I refer is also evident in that the initiative to prohibit these bullets came from the very State that had developed them.

Jakob Kellenberger, President ICRC, Speech at the International Conference on IHL Dedicated to the 140th Anniversary of the 1868 St. Petersburg Declaration (Nov. 24, 2008), *available at* http://www.icrc.org/web/eng/siteeng0.nsf/html/st-petersburg-declaration-281108; KALSHOVEN & Zegveld, *supra* note 17, at 20-21 (limiting discussion of the 1868 St. Petersburg Declaration to the humanitarian concerns of that commission).

n62 MCCOUBREY, *supra* note 17, at 231.

n63 The ICRC affirmed the Declaration of St. Petersburg of 1868 was "an international initiative, prompted by humanitarian considerations, to restrict the development of new weapons of a nature to cause superfluous injury or unnecessary suffering." *125th Anniversary of the Declaration of St. Petersburg of 1868*, 33 INT'L REV. RED CROSS, No. 297, at 509 (Nov.--Dec. 1993). The Declaration "revolutionized military thinking by prohibiting, on humanitarian grounds and citing 'the laws of humanity', the use of a weapon of war developed as a result of advances in technology." *Id.* at 511.

n64 Declaration of St. Petersburg of 1868, *supra* note 50.

n65 *See* Michael Howard, *Constraints on Warfare, in* THE LAWS OF WAR: CONSTRAINTS ON WARFARE IN THE WESTERN WORLD 5-6 (Michael Howard, George J. Andreopoulos & Mark R. Shulman eds., 1994).

n66 MCCOUBREY, *supra* note 17, at 232.

n67 *Id.*; GREEN, *supra* note 17, at 346.

n68 *See* ARTHUR EYFFINGER, THE 1899 PEACE CONFERENCE 10-11 (1999).

n69 *See id.* at 10-12. Britain had enjoyed unmatched global colonial domination, with control over land from Ireland to India, Egypt, and South Africa, but increased competition with Germany caused Britain to continue to look to expand its colonial influence. *Id.* at 11. After France's defeat in the Franco-Prussian War in the early 1870s, France attempted to expand its influence abroad. *Id.* At the same time, the rising national powers of Germany and Italy sought stature through colonies. *Id.* Russia also sought to project power through global influence, and by the end of the century, the Far East became a focal point as European powers--and even the United States--sought to influence China and Japan. *Id.* at 11-12.

n70 *Id.* at 12. As one author observed,

> The face of war changed in the nineteenth century . . . . Technology magnified the power of weapons in the nineteenth century, while mass propaganda demonized the intended targets. Destruction was possible on a scale wider than ever before, and this breadth of scale was matched by an increase in the size of the contesting forces.

David D. Caron, *War and International Adjudication: Reflections on the 1899 Peace Conference, 94 AM. J. INT'L L. 7 (2000).*

n71 *Id. at 13.* It is probably difficult for one today to imagine this persistent state of tension. As David D. Caron stated, "[i]n earlier times, war--like disease--was a part of life. There existed then a fatalism about war that no doubt persists in many parts of the world today." *Id.* at 4.

n72 *Id.* at 16.

n73 EYFFINGER, *supra* note 68, at 17.

n74 *See id.* at 16-17 (quoting MERZE TATE, THE DISARMAMENT ILLUSION: THE MOVEMENT FOR A LIMITATION OF ARMAMENTS TO 1907, at 169 (1942)).

n75 *Id.* at 21.

n76 *Id.* The Russians were beginning a program to respond to the growing naval power of Japan in Far East. *Id.*

n77 CALVIN DEARMOND DAVIS, THE UNITED STATES AND THE SECOND HAGUE PEACE CONFERENCE 5 (1975). The Minister of War, General Kuropatkin, had drafted a document to the Minister of Finance, Sergius Witte, explaining the dilemma of keeping pace with Austria and the difficulty in financing the acquisition. *Id.* Evidently, Witte recognized this predicament and told Count Mouravieff that

> he and Kuropatkin should not think of approaching Austria-Hungary alone, for in Vienna such a proposal would no doubt seem proof of Russian weakness. Besides, Witte doubted that an agreement not to buy new artillery could mean an important saving. To him, militarism was the enemy. Although he did not believe that any nation should disarm or leave itself "inadequately protected," he hoped for a reduction of armaments . . . [and] told Muraviev that if the Russian government were to do anything about armaments it must approach many nations . . . [Witte] saw it as "an ideal worthy of the generous initiative of the Tsar."

Id. Witte and Mouravieff had different motives. Witte saw disarmament in terms of economic survival; in 1899 Russia had a foreign debt of approximately six billion rubles. EYFFINGER, *supra* note 68, at 22. Witte was focused on a strategy to increase productivity and promote commercial and industrial development of Russia's provinces through capital investments in projects like the Trans-Siberian Railway. *Id.* In Witte's view, "peace and disarmament were the keys to economic survival in the short term and prosperity in the long run." *Id.* at 23.

n78 EYFFINGER, *supra* note 68, at 22.

n79 *Id.*

n80 *Id.* at 25.

n81 *See* DAVIS, *supra* note 77, at 6-9; EYFFINGER, *supra* note 68, at 25-35.

n82 EYFFINGER, *supra* note 68, at 36-37.

n83 *See id.* at 37-40.

n84 *See* DAVIS, *supra* note 77, at 22; EYFFINGER, *supra* note 68, at 102-24; WILLIAM I. HULL, THE TWO HAGUE CONFERENCES AND THEIR CONTRIBUTION TO INTERNATIONAL LAW 10-13 (1908). For an in-depth discussion of the countries represented and their delegates, see EYFFINGER, *supra* note 68, at 126-202.

n85 EYFFINGER, *supra* note 68, at 121-23; HULL, *supra* note 84, at 28-31. The three commissions were organized as follows: I Commission, focused on arms and the use of new weapons in war; II Commission, focused on the laws and customs of war; and III Commission, focused on arbitration and other methods of preventing war between nations. *Id.* at 28-29.

n86 FREDERICK W. HOLLS, THE PEACE CONFERENCE AT THE HAGUE 72 (1914). Colonel Gilinsky also made similar proposals related to naval forces. *Id.* These proposals "failed miserably" as evidenced by the absence of any such limitations in the final Hague Regulations. EYFFINGER, *supra* note 68, at 204. For a detailed discussion on the inability of the nations to agree to limit arms, forces, or military budgets, see *id.* at 204-19.

n87 *Id.* at 98; HULL, *supra* note 84, at 170. The second and third proposals of the Second Circular are listed in EYFFINGER, *supra* note 68, at 36.

n88 HOLLS, *supra* note 86, at 98; HULL, *supra* note 84, at 170-81.

n89 HULL, *supra* note 84, at 181.

n90 *Id.*

n91 HOLLS, *supra* note 86, at 98 ("The subject of unnecessarily cruel bullets gave rise to more active debate, and developed more radical differences of opinion than any other considered by the First Committee.").

n92 *Id.* at 99.

n93 *Id.*

n94 CALVIN DEARMOND DAVIS, THE UNITED STATES AND THE FIRST HAGUE PEACE CONFERENCE 114 (1962). General Sir John Ardagh initially "pretended to take little notice of" the movement to prohibit the dumdum bullet. *Id.*

n95 EYFFINGER, *supra* note 68, at 227. Dumdum bullets were defined by the Dutch as "inhuman projectiles which make incurable wounds; which have very soft points and very hard jackets, and, with a softer inner substance, explode within the body, thus causing a small hole on entering, but an enormous one on leaving, the body of the victim." HULL, *supra* note 84, at 181. Furthermore, the Dutch thought that such a ban would be in accordance with the principle of unnecessary suffering endorsed by the St. Petersburg Declaration of 1868. EYFFINGER, *supra* note 68, at 224.

n96 SCOTT, *supra* note 1, at 332.

n97 Ronald F. Bellamy & Russ Zajtchuk, *The Evolution of Wound Ballistics: A Brief History, in* CONVENTIONAL WARFARE: BALLISTIC, BLAST, AND BURN INJURIES 89 (Ronald F. Bellamy & Russ Zajtchuk eds., 1991). Until the middle of the nineteenth century, bullets were made of soft lead, but after the American Civil War, militaries began producing jacketed bullets "in order to increase the muzzle velocity--and thus the range--of small-arms projectiles." *Id.* However, the jacketed bullets became less effective from a military standpoint "because the wounds to nonvital areas were less severe" than unjacketed bullets. *Id.* The British also produced a bullet called a "dumdum" that was hollow pointed, called the Mark V bullet. *Id.* at 89-90. It was during the middle to late nineteenth century that surgeons began describing wounds from newer conoidal bullets as "explosive" in order to describe the effects of the expansion of the bullet. *Id.* at 87-89.

n98 Alexander Ogston, *The Peace Conference and the Dum-Dum Bullet*, 2 BRIT. MED. J. 278 (July 29, 1899). Sir Ogston's writings in the *British Medical Journal* provide an excellent overview of the debate in Europe over Professor von Bruns's experiment and an in-depth critique of von Bruns's experimental methods. The title of Professor von Bruns's presentation was "On Inhumane Military Projectiles." Alexander Ogston, *The Wounds Produced by Modern Small-Bore Bullets*, 2 BRIT. MED. J. 813 (Sept. 17, 1898).

n99 Ogston, *The Peace Conference and the Dum-Dum Bullet, supra* note 98, at 278. This led to Professor Friedrich von Esmarch, a famous German surgeon, to write an influential and critical letter to the *Deutsche Review* calling for a ban on dumdum bullets at the upcoming Hague Peace Conference. *Id.* at 279. Professor von Esmarch stated that the dumdum bullet produced injuries that "exceeded the worst anticipations." Alexander Ogston, *English Rifle Bullets*, 1 BRIT. MED. J. 752, 754 (Mar. 25, 1899).

n100 *See, e.g.*, Ogston, *English Rifle Bullets, supra* note 99, at 755 (discussing the use of von Bruns's publication by the French press to criticize Britain's use of the dumdum bullet).

n101 Ogston, *The Wounds Produced by Modern Small-Bore Bullets, supra* note 98 at 814-15; Ogston, *English Rifle Bullets, supra* note 99, at 753-55 (including a translation of Professor von Bruns's work as well as criticism of his methods); Ogston, *The Peace Conference and the Dum-Dum Bullet, supra* note 98, at 278-79 (describing Mauser bullets as hunting bullets used to "shoot elephants, rhinoceros, lions, and big game" and "immensely powerful and destructive, and are at present displacing the elephant gun"). These experiments have been described as "marred by extremely emotional political considerations." Bellamy & Zajtchuk, *supra* note 97, at 97.

> Hostilities between Germany and Great Britain were intensifying, and the Germans conducted experiments to show that deforming bullets fired into long-dead cadavers caused especially massive wounds, and should therefore be banned. However, the bullets that the Germans used in these experiments had higher velocities and much more lead core exposed at the tip than the dumdum bullets did. British and American investigators countered by citing anecdotes to show that the then-new jacketed bullets caused just as much damage as the dumdums did.

Id. The biggest issue with the German experiments was that "important methodological standards--such as comparing bullets of like velocities and designs and using similar tissue stimulants in comparable experiments--were ignored." *Id.*

n102 *See* Ogston, *English Rifle Bullets, supra* note 99, at 755.

n103 SCOTT, *supra* note 1, at 338. The Russian proposal read,

> The use of bullets whose envelope does not entirely cover the core at the point, or is pierced with incisions, and, in general, the use of bullets which expand or flatten easily in the human body, should be prohibited, since they do not conform to the spirit of the Declaration of St. Petersburg of 1868.

Id. The Swiss proposal stated, "Prohibition of infantry projectiles such as have the point of the casing perforated or filed, and whose direct passage through the body is prevented by an empty interior or the use of soft lead." *Id.*

n104 *See id.* at 338-39. General Mounier of France proposed a more general definition for fear that later inventions would allow a nation to avoid a specific definition and asked the committee to confine itself to the use of the term "expansive bullet." *Id.* at 338. The other delegates agreed with this proposition, and Colonel Kunzli withdrew his proposal and endorsed the Russian and French language. *Id.* at 339. General Mounier later proposed the wording "The use of expansive or dilatable bullets is prohibited." *Id.* Colonel Coanda of Romania, sensing apparent confusion, clarified that unjacketed "soft" bullets expanding (or dilated) through mechanical effect and proposed mentioning "nonexplosive bullets." *Id.*

n105 *Id.* at 343. The joint proposal read, "The use of bullets which expand or flatten easily when penetrating the human body, such as bullets with a hard envelope which does not entirely cover the core or is pierced with incisions, should be prohibited." *Id.*

n106 *Id.* Specifically, Lieutenant Colonel von Khuepach proposed a

> provision embodying a conventional restriction of the use of bullets which produce unnecessarily cruel wounds, without entering into details, especially as it would be impossible to entirely avoid mutilations; for a bullet constructed in any manner will cause such mutilations if it should be deformed by striking on a rock or other hard object before striking the human body.

Id.

n107 *Id.* at 343.

n108 *See* MCCOUBREY, *supra* note 17, at 232 (noting that the British arguments were "manifestly racist in tone and intention"); GEOFFREY BEST, HUMANITY IN WARFARE 162 (1980) (stating that the British argument "was not [edifying], inasmuch as it placed these alleged 'savages' on the same level as big game").

n109 SCOTT, *supra* note 1, at 343-44. Interestingly enough, Colonel Gilinsky conceded that "[b]y constantly diminishing the caliber [of a bullet] too small a caliber is reached [to stop an attacking enemy], and hence the necessity perhaps of using the dumdum bullet." *Id.* at 344. Colonel Gilinsky pointed out that, "[a]s to savages, they are of course not guaranteed against the use even of explosive bullets" because of a gap in the St. Petersburg Declaration that applied the Declaration only to the contracting Powers. *Id.*

n110 *Id.* It is unknown why this proposal did not advance; the official record makes no mention of further discussion on the proposal. General Mounier then modified the earlier proposal of France, Romania, and Russia by adding the term "explosive" to the definition of the prohibited bullets. *Id.* at 347.

n111 *Id.* at 276; DAVIS, *supra* note 77, at 114-15.

n112 DAVIS, *supra* note 77, at 121.

n113 SCOTT, *supra* note 1, at 276.

n114 *Id.*

n115 *Id.*

n116 *Id.*

n117 *Id.*

n118 *Id.* Ardagh conceded that Bruns's "experiment prove[d] that a bullet . . . [without a hard jacket] works in a certain sense like an explosive bullet and produces a terrible effect," but he cautioned that this could not "be accepted as evidence or proof against the dumdum bullet," which was an entirely different bullet. *Id.* at 277.

n119 *Id.* at 276.

n120 *Id.* Ardagh noted that no nation raised humanitarian concerns with the use of 20 mm, musket-fired bullets or the 12 mm bullet of the Martini musket, both of which were larger than the 8 mm bullet fired by the Lee-Metford rifle, the rifles used by the British at the time. *Id.* at 277-78. Ardagh affirmed British devotion to the humanitarian principles of the Declaration of St. Petersburg but declared that the proposal before the commission was too technical and instead proposed affirming "the principles enunciated in the Convention of St. Petersburg, that is to say, the prohibition of the use of bullets whose effect is to aggravate uselessly the sufferings of men placed *hors de combat* or to render their death inevitable" *Id.* at 278.

n121 *Id.*

n122 *Id.*

n123 *Id.* General Sir John Ardagh declared that he was "obliged to maintain his negative vote inasmuch as the wording amounts to a condemnation of the dumdum bullet." *Id.*

n124 *Id.* at 278-79. General Zuccari of Italy observed that Captain Crozier's proposal was similar to one made by Lieutenant Colonel von Khuepach of Austria-Hungary and stated his preference for less specific language. *Id.* at 279.

n125 *Id.*

n126 *Id.* General Sir John Ardagh stated that the Tubingen bullet--the one created by Professor von Bruns for his experiments at Tubingen--was a cruel bullet. *Id.* Colonel Gilinsky responded that "the Tubingen bullet has never been used in war." *Id.* The German delegate, Colonel Gross von Schwarzhoff, apparently took offense with the discussion of the Tubingen bullet, stating that "there is no firearm factory at Tubingen," only a "celebrated university . . . [where Professor von Bruns] has spent much of his time studying the effect of small caliber projectiles." *Id.* Colonel Gross von Schwarzhoff did not know what bullet Professor Bruns used in his experiment, but declared that "it was not the bullet of the German army. And never has there been any question of introducing therein a bullet whose core would not be completely covered by the casing." *Id.*

n127 *Id.* After some more debate, Russia moved for a vote on the original text; twenty nations confirmed the original text, with Britain and the United States voting against and Portugal abstaining. *Id.* at 279-80. Count de Macedo of Portugal declared that the "difference of opinion among technical delegates" would prevent him from voting on the issue. *Id.* General den Beer Poortugael (Netherlands), Colonel Gilinsky, and Mr. Beernaert thought that Captain Crozier's proposal was "far too vague." *Id.* The debate that day must have been contentious because at the next meeting the following day, various delegates requested that the entire record of the debate and discussion on dumdum bullets be attached to the record. *Id.* at 298.

n128 *Id.* at 324. The Reporter believed the lack of unanimity on the three issues--expanding bullets, projectiles emitting asphyxiating gases, and dropping projectiles from balloons--required attention and felt the best way to address the anomaly was to extend the provisions of the St. Petersburg Declaration to the three issues for five years. *Id.*

n129 *Id.* at 325. The reference to perpetuity does not appear in Scott's record.

n130 DAVIS, *supra* note 70, at 174. The United States's attack on the declaration against expanding bullets and cooperation with Britain "brought wry comments." *Id.* One delegate "observed that 'blood is thicker than water.' Another laughingly responded, "Yes, the English and Americans do good business."' *Id.*

n131 *Id.* at 79.

n132 Hague IV, Declaration I, Concerning the Prohibition, for the Term of Five Years, of the Launching of Projectiles and Explosives from Balloons or Other New Methods of a Similar Nature, July 29, 1899, *32 Stat. 1839, I Bevans 270, 26* Martens Nouveau Recueil (ser. 2) 994.

n133 Hague IV, Declaration II, Concerning the Prohibition of the Use of Projectiles Diffusing Asphyxiating Gases, July 29, 1899, 26 Martens Nouveau Recueil (ser. 2) 998, 187 Consol. T.S. 453.

n134 DAVIS, *supra* note 77, at 79.

n135 *Id.*

n136 SCOTT, *supra* note 1, at 79-80.

n137 *Id.* at 80.

n138 *Id.*

n139 *Id.* at 80-81. It is notable that Captain Crozier was able to discuss the characteristics of bullets in the same technical manner as is used today. For example, he observed that the advantages of smaller bullets (coinciding with the primary arguments in support of the 5.56 mm round) were a flatter trajectory, greater range, less recoil, and reduced weight. *Id.* at 80. Crozier also discussed the ability to produce a bullet that would tumble end-over-end, noting that "it is well known how easily a projectile can be made to act in this way." *Id.* at 81.

n140 *Id.* Captain Crozier was referring to expanding bullets.

n141 *Id.*

n142 *Id.*

n143 *Id.*

n144 *Id.*

n145 *Id.* at 81-82.

n146 *Id.* at 82. The Netherlands began by reminding the Conference that the First Commission had already considered and rejected Crozier's proposal and that to allow the amending language would destroy the work of the

First Commission. *Id.* General den Beer Poortugael continued that there was no condemnation of the dumdum bullet, for the dumdum was "a bullet that is not known." *Id.*

n147 *Id.* at 83. Colonel Gilinsky stated that

> [b]ullets of this kind inflict needlessly cruel wounds because the incision permits the lead to come out of the hard envelope and to expand; and not only do these projectiles wound, but they carry away bits of flesh. Such an effect goes beyond the aim of war which is merely to place *hors de combat.*

Id. Gilinsky declared that small caliber bullets, such as the Russian 7.5 mm round, were sufficient to place a man out of combat. *Id.* All other tales of men being shot several times without rendering them *hors de combat* were exceptions that happened "if the bullet touches only the muscles of soft parts of the body, and not the bone, which is comparatively rare." *Id.*

n148 *Id.* The Russian and Dutch insistence that the Conference could not re-examine the ban on expanding bullets indicates their unwillingness to allow the entire body of nations to engage in a factual discussion about the subject.

n149 EYFFINGER, *supra* note 68, at 250.

n150 SCOTT, *supra* note 1, at 83-84. Quoting from the minutes of the First Commission must have been a slap in the face to General den Beer Poortugael, who had just insisted before the entire Conference that there was no intent to specifically ban the dumdum bullet.

n151 *Id.* at 84.

n152 *Id.* Crozier closed this round of debate by reiterating that, when he originally introduced this language to the subcommission, the amendment was not put to a vote before that body. *Id.* Colonel Gilinsky reiterated the two months of work in the subcommission where the issue "was conscientiously studied . . . and the [language] worked out in detail." *Id.* The back and forth of this debate highlighted the lack of experience of parliamentary rules. *See* EYFFINGER, *supra* note 68, at 250-54.

n153 EYFFINGER, *supra* note 68, at 251.

n154 SCOTT, *supra* note 1, at 84-87. Originally, only Britain stood against the ban on dumdum bullets, but as discussed earlier, the United States later adopted the position. After hearing the debate, the Danish representative remarked that he was not familiar with the dumdum and was not convinced of its cruel effects. *Id.* at 85. The

subsequent voting on procedural matters concerning the Crozier amendments seem to indicate that other nations were more satisfied with the general language of the proposal. *See id.* at 84-87.

n155 *Id.* at 85.

n156 *Id.* at 85-86. Ambassador White also apologized that the United States could not agree with the Commission on the language, but expressed his view that the weakness of the proposed prohibition was the ban on the specific, rather than the general, allowing the future creation of inhumane bullets not specifically prohibited by the language. *Id.* He stated, "[T]his is a case in which the letter kills and the spirit gives life". *Id.*

n157 *Id.* at 87. The United States, Denmark, Great Britain, Greece, and Portugal voted to send the issue back to the First Commission. *Id.*

n158 *Id.*

n159 *Id.*

n160 *Id.*

n161 *Id.* The United States, Belgium, China, Denmark, Great Britain, Greece, Portugal, and Serbia voted to give priority to Captain Crozier's amendment. *Id.* Luxemburg did not participate in the vote. *Id.*

n162 *Id.*

n163 *Id.* at 196. There is no explanation as to why Secretary Hay and Assistant Secretary Hill thought it "unwise" to send this declaration to the Senate, but it is probably attributable to Crozier and Mahan's strong opposition at the Conference. *Id.*

n164 *Id.*

n165 DAVIS, *supra* note 77, at 35.

n166 *Id.* at 35-36.

n167 *See id.* at 37-90 (providing an overview of these cases).

n168 *Id.* at 37. This rebellion lasted from February 1899 until July 1902. *Id.*

n169 *Id.*

n170 *Id.*

n171 *Id.* at 91.

n172 *See id.* at 91-162 (providing an in-depth discussion surrounding the motives, politics, and events leading to the Second Peace Conference).

n173 HULL, *supra* note 84, at 187.

n174 3 JAMES BROWN SCOTT, THE PROCEEDINGS OF THE HAGUE CONFERENCES: THE CONFERENCE OF 1907, at 98 (1921).

n175 *Id.*

n176 *Id.* at 15.

n177 *Id.* at 153-54. Nowhere in the minutes of this meeting is there a discussion concerning General Davis's proposal to modify the declaration on expanding bullets.

n178 Then-Brigadier General George Breckenridge Davis graduated from the United States Military Academy in 1871. *Gen. George B. Davis Dead*, N.Y. TIMES, Dec. 17, 1914, at 13. General Davis was appointed a judge advocate in 1888 and was then assigned as Professor of Law at West Point. *Id.* General Davis received his law

degree from Columbia University in 1891. *Id.* In 1901, General Davis was appointed as The Judge Advocate General of the U.S. Army. *Id.* General Davis was a delegate of the United States to the Second Hague Peace Conference, as well as an accomplished writer on international and military law. *Id.*

n179 *Id.* at 15.

n180 *Id.*

n181 *Id.* Apparently, only a power that had signed a declaration of the 1899 Hague Convention could denounce a declaration and suggest a modification, so the United States was "not in a position to denounce it in the manner and form prescribed in the Convention." *Id.*

n182 *Id.* The full text of the 1899 Hague Expanding Bullets Declaration addresses denunciations of the Declaration:

> In the event of one of the High Contracting Parties denouncing the present Declaration, such denunciation shall not take effect until a year after the notification made in writing to the Netherlands Government, and forthwith communicated by it to all the other Contracting Powers. This denunciation shall only affect the notifying Power.

Hague Expanding Bullets Declaration, *supra* note 12. The plain language of the Declaration does not appear to prohibit a later modification to the Declaration.

n183 Beernaert responded by telling General Davis that no other delegation had opposed his exclusion of the proposal during the previous day's meeting. SCOTT, *supra* note 174, at 16. Beernaert flatly stated, "The question can therefore no longer be discussed, but [Beernaert] thinks too that it has been decided correctly." *Id.*

n184 *Id.*

n185 *Id.* As discussed in note 182, *supra*, Beernaert appears to have mistakenly interpreted the denunciation provisions of the Declaration.

n186 *Id.* The record of Captain Crozier's passionate proposal to modify the Declaration in 1899 and the debate it inspired appears to undercut the support Beernaert's accords to the Conference unanimous rejection *See* discussion at Part III.C.3, *supra*.

n187 SCOTT, *supra* note 174, at 154.

n188 Final Act of the Second Peace Conference, Oct. 18, 1907, 3 Martens Nouveau Recueil (ser. 3) 323, 205 Consol. T.S. 216.

n189 DAVIS, *supra* note 77, at 339.

n190 Protocol for the Prohibition of the Use of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, Feb. 8, 1928, 94 L.N.T.S. 65.

n191 R.R. Baxter, *Conventional Weapons Under Legal Prohibitions*, 1 INT'L SEC. 45 (Winter 1977).

n192 R.R. Baxter, *Humanitarian Law or Humanitarian Politics? The 1974 Diplomatic Conference on Humanitarian Law, 16 HARV. INT'L L.J. 1, 4 (1975).* These conflicts included:

> outbreaks of violence between Israel and the Arab States, the Nigerian Civil War, the Bangladesh War of Independence, the Vietnam War, the Korean War, several wars between India and Pakistan, a conflict between India and China, the Congo operation by the United Nations, chronic violence over Cyprus, [and] civil war in the Dominican Republic.

Id.

n193 *Id.* In 1968, the United Nations held an International Conference on Human Rights in Tehran, Iran, which resolved to request a U.N. study on how to supplement the Geneva Conventions to better protect civilians and other war victims. *Id. at 5.* The United Nation's incursion into the Geneva Conventions created a conflict with the ICRC. *Id.* The ICRC had "historically considered itself the guardian of the Geneva Conventions of 1949 and of the "Geneva law" in general. *Id.* For years the ICRC "was widely regarded as highly knowledgeable about international humanitarian law and as neutral and apolitical." *Id.* However, the ICRC became more political and soon "the very neutrality and detachment of the I.C.R.C. were to be challenged." *Id.* In response, in 1971 and 1972, the ICRC hosted two Conferences of Government Experts to examine and draft new principles of international humanitarian law. Baxter, *supra* note 191, at 46. In 1972, the United Nations then adopted a resolution identifying a potential gap in the ICRC's work, one of which was the "prohibition or restriction of the use of specific weapons which are deemed to cause unnecessary suffering." *Id.* at 46-47. In 1973, the ICRC held a meeting of government experts and agreed to further examine small caliber projectiles. *Id.* at 50. The ICRC took up the task of considering the "prohibition or restriction of certain conventional weapons which cause unnecessary suffering or have indiscriminate effects." *Id.* This caused both internal and external concern at the ICRC. *Id.* For the first time, the ICRC was asked to "assist in the assessment of weapons and their effects--to move from humanitarian law to the law of combat." *Id.* At the 1973 working group of experts, it became obvious to the ICRC that "there was much to be learned about weapons--about their characteristics and their effects." *Id.*

n194 Baxter, *supra* note 191, at 47-51; Baxter, *supra* note 192, at 6-9.

n195 For example, the 1974 Conference "produced some 4.5 million pages of reports, amendments, summary records, and the like." David P. Forsythe, *The 1974 Diplomatic Conference on Humanitarian Law: Some Observations, 69 AM. J. INT'L L. 77, 88 (1975).* The official record of the three Conferences is ten volumes long. *See* INT'L COMM. RED CROSS, DIPLOMATIC CONFERENCE ON THE REAFFIRMATION AND DEVELOPMENT OF INTERNATIONAL HUMANITARIAN LAW APPLICABLE IN ARMED CONFLICTS (1974-1977) (1978).

n196 Baxter, *supra* note 191, at 51. The United States "viewed the proceedings with a great deal of caution . . . [because] a number of governments, without full information or consideration of the issues, had apparently already made up their mind what weapons were lawful." *Id.*

n197 *See id.* at 51-52, 55-56. The real concern arose because nations were using small caliber bullets, like the NATO 5.56 mm round, that had high muzzle velocities, and the bullets tended to tumble in flight. *Id.* at 55. These bullets were alleged to cause wounds that were "very severe and resemble those caused by dum-dum bullets." *Id.* Because of this, some nations believed that small caliber bullets caused unnecessary suffering and sought to restrict or ban such weapons and bullets. *Id.*

n198 *Id.* at 56.

n199 *Id.*

n200 *Id.*

n201 *Id.* at 56-57. The debate over weapons was between the "haves" and the "have-nots." *Id.* at 51. Developing nations "resented the technological superiority of the major military powers and of other developed countries." *Id.* The Soviet Union was "in a difficult position throughout the negotiations. Itself a power of high military technology, the Soviet Union could not welcome placing restraints on weapons, but at the same time as the steadfast ally of Third World states," the Soviet Union could not "take a hard line against the technologically-deprived developing states." *Id.* Only the Swedish were really prepared to discuss specific language on bullets. *Id.* In 1976, the Swedish proposed a broad ban on bullets that contained arbitrary and technical language that clearly would have been difficult to enforce. *Id.* at 56. For further analysis of the discussion of small caliber bullets at the Diplomatic Conferences, see FRITS KALSHOVEN, REFLECTIONS ON THE LAW OF WAR: COLLECTED ESSAYS 175-76 (2007).

n202 Article 36 reads:

> In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would, in

> some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party.

Additional Protocol I, *supra* note 24.

n203 INT'L COMM. RED CROSS, COMMENTARY ON THE ADDITIONAL PROTOCOLS OF 8 JUNE 1977 TO THE GENEVA CONVENTIONS OF 12 AUGUST 1949, at 421-22 (Yves Sandoz, Christophe Swinarski & Bruno Zimmerman eds., 1987) [hereinafter COMMENTARY ON ADDITIONAL PROTOCOL I]. The commentaries recognized that "military or political considerations [would] necessarily elude a humanitarian forum." *Id.* at 422.

n204 Article 35 states:

> 1. In any armed conflict, the right of the Parties to the conflict to choose methods or means of warfare is not unlimited.
>
> 2. It is prohibited to employ weapons, projectiles and material and methods of warfare of a nature to cause superfluous injury or unnecessary suffering.
>
> 3. It is prohibited to employ methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment.

Additional Protocol I, *supra* note 24, art. 35. Article 36 requires Contracting Powers to "determine the possibly unlawful nature of a new weapon, both with regard to the provisions of the Protocol, and with regard to any other applicable rule of international law." COMMENTARY ON ADDITIONAL PROTOCOL I, *supra* note 203, at 423. Nations make this determination "on the basis of normal use of the weapon as anticipated at the time of evaluation." *Id.* There is no body to monitor these determinations; rather, "the Contracting Parties have an obligation to determine themselves" whether the weapons they currently possess or "expect to produce or acquire in the future, are an object of a prohibition or not." *Id.* at 426.

n205 The commentary to Article 36 states, "Article 36 remains, together with the Hague Regulations, the only instrument in the law of armed conflict that can act as a brake on the abuses resulting from the arms race or on the possibility of future abuses, a possibility that must never be lost sight of . . . !" *Id.* at 427.

n206 Rome Statute, *supra* note 39.

n207 *Id.*

n208 THE MAKING OF THE ROME STATUTE, *supra* note 27, at 113.

n209 Michael Bothe, *War Crimes, in* 1 THE ROME STATUE OF THE INTERNATIONAL CRIMINAL COURT: A COMMENTARY 408 (Antonio Cassese, Paola Gaeta & John R.W.D. Jones eds., 2002); THE MAKING OF THE ROME STATUTE, *supra* note 27, at 107 ("Those provisions from the Hague Regulations . . . were generally accepted."). In Bothe's writing, the commentary on expanding bullets is under the title of "Dumdum Bullets," reflecting how the 1899 prohibition on expanding bullets is still exclusively linked to Britain's bullet. Bothe, *supra*, at 209.

n210 Bothe, *supra* note 209, at 408. This is interesting given that during the Diplomatic Conferences of 1974-1976, hundreds of nations could not agree on what the effects were of small caliber bullets; apparently, most nations can agree that there was a better understanding of these effects in 1899.

n211 THE MAKING OF THE ROME STATUTE, *supra* note 27, at 113-16.

n212 *Id.* at 116.

n213 Geneva Convention Relative to the Treatment of Prisoners of War, art. 4(A)(2)(c), Aug. 12, 1949, *6 U.S.T. 3316*, 75 U.N.T.S. 135 [hereinafter GC III].

n214 *Id.*

n215 *Id.* art. 4(A)(2)(d).

n216 *See* Part II.C.2, *supra*.

n217 Additional Protocol I, *supra* note 24, art. 48.

n218 *Id.* art. 51(5)(b).

n219 Use of Expanding Ammunition by U.S. Military Forces in Counterterrorist Incidents, Op. JAG, U.S. Army, DAJA-IA/No. 7026, 23 Sept. 1985, *as reprinted in* ARMY LAW., Nov. 1985, at 45 [hereinafter Op. JAG, U.S. Army, No. 7026].

n220 *See, e.g.*, Captain James K. Jackson, *Legal Aspects of Terrorism: An Overview*, ARMY LAW., Mar. 1985, at 1 (discussing Department of Defense and Army responsibilities for terrorism within the larger framework of the U.S. Government).

n221 *See* Op. JAG, U.S. Army, No. 7026, *supra* note 219.

n222 *Id.* para. 2.

n223 *Id.* para. 4.

n224 *Id.* para. 3.

n225 *Id.*

n226 *See id.*

n227 *Id.* para. 4.

n228 *Id.*

n229 *Id.* The opinion also noted that most counterterrorist missions were likely not recognized as acts of war. *Id.*

n230 *Id.* para. 4b.

n231 *See* Part III.B.2, *supra*.

n232 Op. JAG, U.S. Army, No. 7026, *supra* note 219, para. 4b.

n233 *Id.* para. 5.

n234 U.S. DEP'T OF ARMY, FIELD MANUAL 3-24, COUNTERINSURGENCY (15 Dec. 2006) [hereinafter FM 3-24].

n235 *Id.* para. 1-159.

n236 *See id.* paras. 7-30 to 7-37.

n237 Additional Protocol I, *supra* note 24, art. 48. The United States has not ratified Additional Protocol I but considers Article 48 to represent customary international law. *See* W. Hays Parks, *Air War and the Law of War, 32 A.F. L. REV. 1, 113 (1990)* ("Article 48 states the fundamental principle of discrimination, a principle with which there should be no disagreement.").

n238 FM 3-24, *supra* note 234, para. 7-36.

n239 *Id.*

n240 Though, as mentioned in the discussion of Op. JAG, U.S. Army, No. 7026, *supra* 219, it is debatable whether the provisions of the 1899 Hague Expanding Bullets Declaration prohibits the use of expanding bullets in the current conflicts in Iraq and Afghanistan; however one chooses to define those conflicts, they are no longer considered international armed conflicts. *See, e.g.*, S.C. Res. 1546, U.N. Doc. S/RES/1546 (June 8, 2004); S.C. Res. 1623, U.N. Doc. S/RES/1623 (Sept. 13, 2005). Additionally, neither Iraq nor Afghanistan are parties to the 1899 Hague Expanding Bullets Declaration. *See* State Parties and Signatories to the Hague Expanding Bullets Declaration, *supra* note 38.

n241 *See* State Parties and Signatories to the Hague Expanding Bullets Declaration, *supra* note 40, paras. 1-142 to 1-43, 7-22 to 7-23; *see also id.* para. 142 ("In a COIN environment, it is vital for commanders to adopt appropriate and measured levels of force and apply that force precisely . . . .").

n242 Memorandum from Headquarters, Int'l Sec. Assistance Force, to See Distribution, subject: Tactical Directive (6 July 2009) [hereinafter Tactical Directive Memo], *available at* http://www.nato.int/isaf/docu/official_texts/Tactical_Directive_090706.pdf. While this Tactical Directive is largely concerned with the use of force from close air support (CAS), General McChrystal clearly intended that the principles encompass all uses of force, from small-arms fire to airstrikes from B-1 bombers. *See id.*

n243 Press Release, Afg. Int'l Sec. Assistance Force, General Petraeus Issues Updated Tactical Directive: Emphasizes "Disciplined Use of Force" (Aug. 4, 2010), *available at* http://www.isaf.nato.int/article/isaf-releases/general-petraeus-issues-updated-tacticaldirective-emphasizes-disciplined-use-of-force.html.

n244 Dexter Filkins, *Taliban Assault Rattles Capital of Afghanistan*, N.Y. TIMES, Jan. 19, 2010, at A1.

n245 *Id.*

n246 *Id.* As one Afghan commando remarked, "Either we are going to kill them, or they are going to kill us." *Id.*

n247 Tactical Directive Memo, *supra* note 242.

n248 *See* Paust, *supra* note 15, at 20-23.

n249 N.Y. CITY CIVILIAN COMPLAINT REV. BOARD, REPORT OF THE COMMITTEE ON HOLLOW-POINT BULLETS PRESENTED TO THE CIVILIAN COMPLAINT REVIEW BOARD ON JULY 8, 1998, at 1 (1998) [hereinafter NYC HOLLOW-POINT BULLET REPORT], *available at* http://www.nyc.gov/html/ccrb/pdf/hollow.pdf.

n250 *Id.*

n251 Tom Hester & Kinga Borondy, *Cops Recite Virtues of Hollow-Point Bullet*, THE STAR-LEDGER (Newark, N.J.), Mar. 5, 1997, at 17 (quoting N.J. State Police Capt. Carl Leisinger, who explained, "A main reason for carrying [hollow-point bullets] is that they have better incapacitating ability. When a hollow-point hits a body, the shock is more incapacitating than a solid-nose bullet"); Rocco Parascandola, *Plenty of Other Cities Already Use 'Em*, N.Y. POST, Feb. 14, 1999, at 2 ("'It increases the knockdown power,' Officer James Cypert, an LAPD spokesman, [said]. 'The [old bullets] weren't stopping the suspects'"); Matthew Teague, *Hollow-Point Police Bullets Old Hat Here*, MOBILE REG. (Ala.), July 10, 1998, at A1 ("Because the bullets are quicker to take down a criminal, fewer shots are usually fired, therefore reducing risk to people nearby.").

n252 Mike Baird, *Police May Switch to Semi-Autos*, CORPUS CHRISTI CALLER-TIMES, Mar. 15, 2004, at B1 ("Hollow-point bullets take in fluid and tissue while tearing through a body, which causes the slug to expand and slow down. . . . Depending on the angle of the shot, distance, and how it hits, the slug often doesn't exit the body."); Hester & Borondy, *supra* note 251 ("When a bullet has a full metal jacket, it is very hard; it could overpenetrate the target . . . . It could pass through the person and hit someone standing behind them, or go through a wall, strike someone in their home."); Timothy Williams, *Controversy Swirls in N.Y. in Death of Immigrant*, THE STAR-LEDGER (Newark, N.J.), Feb. 14, 1999, at 37 ("Hollow-point ammunition has a much more stop-

ping-power effect than ball ammunition, which tends to go through individuals and cause injuries to innocent civilians as well.").

n253 Parascandola, *supra* note 251 ("In San Francisco, where cops are armed with .40 caliber hollow-point bullets, the number of rounds fired per shooting incident has dropped since the department started using [hollow-point bullets] in the late 1980s."); Hester & Borondy, *supra* note 251 ("Studies conducted by the FBI and other agencies have found that in combat situations about 20 percent of bullets fired by police find their intended targets."); Teague, *supra* note 251.

n254 *See, e.g.*, NYC HOLLOW-POINT BULLET REPORT, *supra* note 249, at 1 ("Ricochet bullets were particularly problematic in the steel and concrete environments of housing project halls and subway stations. Pass-through bullets were particularly problematic in crowded urban situations."); Teague, *supra* note 251.

n255 Hester & Borondy, *supra* note 251 (noting that the U.S. Drug Enforcement Administration and U.S. Bureau of Alcohol, Tobacco, and Firearms also used hollow-point ammunition); Parascandola, *supra* note 251 ("[Hollow-point ammunition] has been standard issue in big-city police departments across America, including Los Angeles, Chicago, Boston, Dallas, San Francisco and Honolulu--as well as by the FBI and United States Marshall Service.").

n256 Paust, *supra* note 15, at 20-21 (discussing the "heated national controversy" that arose in 1974 when the Connecticut State Police Department adopted the .357 magnum revolver with hollow-point bullets as its standard issue."). Paust's article argued the illegality of domestic use of expanding bullets because they are "violative of international law." *Id.* at 23.

n257 *Id.* at 21-22.

n258 Hester & Borondy, *supra* note 251.

n259 NYC HOLLOW-POINT BULLET REPORT, *supra* note 249, at 2.

n260 *Id.* at 1, 2. The fact that people evoked the internationally banned--and as argued in this article, completely misunderstood--dumdum bullet as a rallying cry to ban hollow-point bullets in New York City underscores the sensationalism surrounding expanding bullets.

n261 Judy Pasternak, *Taking Aim at Exotic Bullets*, L.A. TIMES, Jan. 11, 1994, at A1.

n262 John Kifner, *Terror in Oklahoma: The Suspect; Authorities Hold a Man of "Extreme Right-Wing Views,"* N.Y. TIMES, Apr. 22, 1995, at A9. The bullets were dubbed "cop killers" because of their ability to "pierce armored vests." *Id.* Timothy McVeigh was arrested "carrying a 9-millimeter Glock semi-automatic pistol . . . partly loaded with Black Talon bullets." *Id.*

n263 Daniel Patrick Moynihan, *Guns Don't Kill People. Bullets Do.*, N.Y. TIMES, Dec. 12, 1993, at D15. Senator Moynihan described the Black Talon as "specifically designed to rip flesh." *Id.*

n264 *Id.* Colin Ferguson was ultimately convicted of killing six passengers on the Long Island Railroad in 1993. Adam Liptak, *Legal Analysis; Rights and Wrongs*, Oct. 21, 2003, at A24. Ferguson received a 200-year sentence. *Id.*

n265 Betty Barnacle, *S.J. Police Ban Cop Use of Black Talon Bullets*, SAN JOSE MERCURY NEWS, Dec. 16, 1993, at B1; Ronald Smothers, *Manufacturer to Withdraw Controversial Ammunition*, N.Y. TIMES, Nov. 23, 1993, at B9.

n266 Barnacle, *supra* note 265.

n267 An editorial in the N.Y. TIMES described the Black Talon as "a destructive, razor-fingered bullet . . . [that] grinds up internal organs and threatens surgeons who try to remove it." *High Tech Death from Alabama*, N.Y. TIMES, Dec. 28, 1994, at A14.

n268 Pasternak, *supra* note 261; *see also* Jane Gross, *New Group Joins Battle Over Guns: Physicians*, N.Y. TIMES, Nov. 16, 1993, at A18. Doctors worried that a "surgeons glove could be easily punctured. 'It's like an Osterizer with blades,' [one surgeon] said." Pasternak, *supra* note 261.

n269 Joe Hallinan, *FBI Finds Dreaded Bullet No More Lethal Than Others*, CLEV. PLAIN DEALER, Jan. 28, 1995, at A4.

n270 *Id.*

n271 *See* Paust, *supra* note 15, at 21; *Soldiers Accused of Using 'Dum-Dum' Bullets*, COPENHAGEN POST, Sept. 30, 2009, *available at* http://www.cphpost.dk/news/international/89-international/47059-soldiers-accused-of-using-dum-dum-bullets-.html (describing an incident in Afghanistan where three Danish soldiers were found possessing "illegal ammunition" and now "face severe penalties . . . that could see them face life imprison-

ment"). The Danish branch of Doctors Without Borders described the case of these Danish soldiers as "completely unacceptable." *Id.*

n272 CARL VON CLAUSEWITZ, ON WAR 303, 304 (F.N. Maude ed., J.J. Graham trans., Pelican Books 1968) (1832). Clausewitz said:

> Combat means fighting, and in this the destruction or conquest of the enemy is the object, and the enemy, in the particular combat, is the armed force which stands opposed to us . . . What is overcoming the enemy? Invariably the destruction, of his military force, whether it be by death, or wounds, or any means; whether it be completely or only to such a degree that he can no longer continue the contest; therefore as long as we set aside all special objects of combats, we may look upon the complete or partial destruction of the enemy as the only object of all combats.

Id.

n273 *Id.*

n274 *See* discussion in Part II.B and II.C, *supra.*

n275 Declaration of St. Petersburg of 1868, *supra* note 50.

n276 *Id.*

n277 *See, e.g.*, Human Rights Council, *Report of the United Nations Fact Finding Mission on the Gaza Conflict*, 5, A/HRC/12/48 (15 September 2009), *available at* http://www2.ohchr.org/english/bodies/hrcouncil/specialsession/9/docs/UNFFMGC_Report.pdf. Though the Law of Armed Conflict permits white phosphorous use in combat operations, see Major Shane Reeves, *The "Incendiary" Effect of White Phosphorous in Counterinsurgency Operation*, ARMY LAW., Jan. 2010, at 85-88, the Goldstone Report concludes with a recommendation that the General Assembly conduct "an urgent discussion on the future legality" of white phosphorous use "in light of the human suffering and damage" caused in the Gaza Strip.

n278 *See* discussion in Part II.B.2, *supra*, surrounding Professor Von Bruns faulty bullet experiments.

n279 CHAIRMAN OF THE JOINT CHIEFS OF STAFF, INSTR. 3121.01A, STANDING RULES OF ENGAGEMENT FOR US FORCES, at A-4 (15 Jan. 2000) [hereinafter SROE]. The current SROE is found in Chairman of the Joint Chiefs of Staff Instr. 3121.01B, *Standing Rules of Engagement for US Forces.* CHAIRMAN OF THE JOINT CHIEFS OF STAFF INSTR. 3121.01B, STANDING RULES OF ENGAGEMENT FOR US FORCES (13 June 2005). The overall classification of the current SROE is "secret," but the principles de-

scribed here are found in an unclassified annex and are substantially the same as the cited 2000 SROE provisions.

n280 *Id.*

n281 *See* UREY W. PATRICK & JOHN C. HALL, IN DEFENSE OF SELF AND OTHERS. . . ISSUES, FACTS & FALLACIES--THE REALITIES OF LAW ENFORCEMENT'S USE OF DEADLY FORCE 57 (2005). The authors are retired agents from the Federal Bureau of Investigation.

n282 *Id.*

n283 *Id.*

n284 *Id.*

n285 *Id.* at 58.

n286 *Id.*

n287 PATRICK & HALL, *supra* note 281, at 59.

n288 *Id.*

n289 *Id.* Rifle bullets that fragment can significantly increase tissue damage; however, any fragmentation caused by a handgun bullet is "inconsequential" due to the low velocity of handgun-fired bullets. *Id.* at 59-60.

n290 *Id.* at 62.

n291 *Id.*

n292 *Id.*

n293 *Id.* at 62-63. For example, the body can release hormones that cause the heart to beat faster and contract more strongly, increasing heart output. *Id.* at 63. The nervous system constricts the venous system "which contains 60% of the circulating blood volume." *Id.* When blood pressure decreases, "body fluids enter the capillaries to further replenish vascular volume." [Starting quotation marks missing here.] *Id.*

n294 *Id.*

n295 *Id.* Most gunshot wounds do not bleed this quickly because:

> (1) bullets usually do not transect (completely sever) blood vessels; (2) as blood pressure falls, the bleeding slows; (3) surrounding tissue acts as a barrier to blood loss; (4) the bullet may only penetrate smaller blood vessels; (5) bullets can disrupt tissue without hitting any major blood vessel resulting in a slow ooze rather than rapid bleeding; and (6) the above mentioned [in the text to this note] physiological compensatory mechanisms.

Id.

n296 *Id.* at 63-64; Cox, *supra* note 3, at 18 ("Even if you take the guy's heart apart, he can still shoot back at you for 15 seconds because he's still got enough oxygen in the blood in his brain to do it.").

n297 PATRICK & HALL, *supra* note 281, at 64.

n298 *Id.*

n299 *Id.* at 65.

n300 *Id.*

n301 *Id.*

n302 *Id.* at 67.

n303 *Id.* at 65-66.

n304 *Id.* at 67.

n305 *Id.*

n306 *Id.* at 68.

n307 *Id.* at 68-69. This fact seems to counter General Sir John Ardagh's argument that the dumdum bullet was necessary to "arrest, by its shock, the charge of an enemy and put him *hors de combat* immediately." SCOTT, *supra* note 1, at 277. However, it is likely that Ardagh meant that the greater wounding power of the dumdum bullet required fewer shots than a jacketed bullet to put an enemy out of combat. Experts have noted that "[t]here isn't a bullet in the world" that will cause an enemy to drop every time after just one shot. Cox, *supra* note 3, at 18.

n308 PATRICK & HALL, *supra* note 281, at 68-69.

n309 *Id.* at 69.

n310 *Id.*

n311 *Id.*

n312 Martin L. Fackler, *Wounding Patterns of Military Rifle Bullets*, 1 INT'L DEF. REV. 59, 63 (1989). Dr. Fackler retired as a colonel from the U.S. Army and is a well-known wound ballistics expert. *See, e.g.*, W. Hays Parks, *A Symposium in Honor of Edward R. Cummings, 30 GEO. WASH. INT'L L. REV. 511, 536 (2006)* (discussing Colonel Fackler's expertise as a "combat-experienced surgeon" whose "pioneering work in the field of wound ballistics through firing small arms projectiles into ten percent ballistic gel was adopted as the NATO standard, and has been accepted by other governments").

n313 M.L. Fackler, *What's Wrong with the Wound Ballistics Literature, and Why*, LETTERMAN ARMY INST. OF RESEARCH, July 1987, at 2.

n314 *Id.* (emphasis omitted).

n315 *Id.*

n316 *Id.* at 11.

n317 MARTIN L. FACKLER, EFFECTS OF SMALL ARMS ON THE HUMAN BODY 7 (n.d.) (last visited June 2, 2011), *available at* http://ammo.ar15.com/project/Fackler_Articles/effects_of_small_arms.pdf. Fackler noted,

> Both those who produce weapons and those who treat the wounds they cause need valid information on *how* projectiles affect the human body. In this regard, *both groups have been seriously misled.* The body of science in wound ballistics has been badly contaminated to the detriment of all. Some of the misconceptions have resulted from well-meaning attempts by those who forgot the basic precepts of scientific method, and others from politically motivated exaggerations and distortions masquerading as "science".

Id. (citations omitted).

n318 Fackler, *supra* note 313, at 1-2. In that case,

> [n]o scale or any other item was included to provide size orientation. How large was the pig? Most would assume the animal to be in the 100- to 150-kg range [220-330 pounds]. It was actually a mini-pig, weighing about one tenth that much. The exaggeration of effects so introduced is obvious.

Id. at 2.

n319 *Id.* at 11.

n320 INT'L. COMM. RED CROSS, WOUND BALLISTICS; AN INTRODUCTION FOR HEALTH, LEGAL FORENSIC, MILITARY AND LAW ENFORCEMENT PROFESSIONALS 11(2008), *available at* http://www.icrc.org/web/eng/siteeng0.nsf/htmlall/f00943/$ FILE/wound-ballistics-brochure.pdf (last visited Feb. 18, 2010).

n321 *Id.*

n322 *Id.* The ICRC believes that the only disadvantages of soap are: it is opaque; it must be produced in a factory; and it is expensive. *Id.*

n323 Fackler, *supra* note 313, at 11.

n324 W. Hays Parks argues that Sweden's objections to many U.S. weapons systems "were not entirely humanitarian." Parks, *supra* note 9, at 70. Parks also observed that Sweden's efforts to "slow North Atlantic Treaty Organization . . . adoption of it as a second calibre so that the Swedish 4.5x26R would be considered." *Id.*

n325 For example, in 1999, the ICRC challenged the 12.7 mm Raufoss Multipurpose round as a "projectile designed to explode upon impact with the human body." *Id.* at 92. After reviewing and discussing the ICRC's test results, the United States and other nations determined that the ICRC testing was fundamentally defective and rejected the ICRC challenge to the round as "both flawed and . . . unacceptable." *Id.* at 97; *see also id.* at 90-98 (providing an overview of the ICRC objection to the 12.7 mm Raufoss Multipurpose round).

n326 *See, e.g.*, GARY D. SOLIS, THE LAW OF ARMED CONFLICT 250-51, 269-72 (2010); INT'L & OPERATIONAL LAW DEPT, THE JUDGE ADVOCATE GEN.'S LEGAL CTR. & SCH., U.S. ARMY, JA 422, OPERATIONAL LAW HANDBOOK 10-13 (2009).

n327 Parks, *supra* note 9, at 87.

n328 *See, e.g.*, BEST, *supra* note 108, at 156. The 1874 Brussels Conference was an effort led by Russia to codify the laws of war. *Id.*

n329 Project of an International Declaration Concerning the Laws and Customs of War [Brussels Declaration], art. 13, Aug. 27, 1874, 4 Martens Nouveau Recueil (ser. 2) 219.

n330 Captain Grant R. Doty, *The United States and the Development of the Laws of Land Warfare, 156 MIL. L. REV. 224, 235-36 (1998).*

n331 *Id.*

n332 Convention with Respect to the Laws and Customs of War on Land (Hague, II), art. 23e (29 July 1899), *entered into force* September 4, 1900. The ICRC translation follows the French term of "superfluous injury" whereas most English translations use the phrase "unnecessary suffering." The terms, although similar, tradi-

tionally expressed slightly different meanings. SOLIS, *supra* note 326, at 270. This article primarily uses the term "unnecessary suffering," but views both terms as synonymous.

n333 Convention Respecting the Laws and Customs of War on Land (Hague IV), art. 23e (18 October, 1907), *entered into force* January 26, 1910.

n334 INT'L. COMM. RED CROSS, WEAPONS THAT MAY CAUSE UNNECESSARY SUFFERING OR HAVE INDISCRIMINATE EFFECTS 12 (1973). The ICRC noted that, "[i]n conformity with the authoritative French text, the principle must be stated to be that--irrespective of the belligerents' intentions--any means of combat are prohibited that are *apt* to cause unnecessary suffering or superfluous injury." *Id.*

n335 COMMENTARY ON ADDITIONAL PROTOCOL I, *supra* note 203, at 401.

n336 *Id.*

n337 Additional Protocol I, *supra* note 24, art. 35.

n338 COMMENTARY ON ADDITIONAL PROTOCOL I, *supra* note 203, at 406-07.

n339 *Id.* at 400.

n340 *Id.* at 407-08

n341 *Id.* at 404-06. As discussed in Part II.C.2, *supra*, the proof that expanding bullets cause unnecessary suffering is limited to a faulty German experiment conducted in the 1890's.

n342 *Id.* at 423.

n343 Additional Protocol I, *supra* note 24, art. 36.

n344 Parks, *supra* note 9, at 109.

n345 *Id.*

n346 *Id.*

n347 *Id.* at 113. For example, Army guidance is found in Army Regulation (AR) 27-53, *Review of Legality of Weapons under International Law* and Air Force guidance is found in Air Force Instruction 51-402, *Weapons Review. Id.*

n348 *Id.* at 110.

n349 *Id.* at 112-13.

n350 *Id.* at 105-6.

n351 *Id.* at 106.

n352 *Id.*

n353 *Id.* Parks cites an instance where a sniper bullet with a hollow tip raised concerns by lawyers in Iraq in 2006; the already conducted legal review allowed a quick response to silence the erroneous apprehension over the bullet. *Id.*

n354 *Id.* at 129. Parks notes that the U.S. uses the standard found in the 1907 Hague Convention because the U.S. is not a party to Additional Protocol I. *Id.*

n355 *Id.* at 131.

n356 *Id.* at 124.

n357 *Id.* at 133.

n358 *Id.* at 130.

n359 *Id.* at 130. It is important to note that, a weapon may have an "increased probability of rendering *hors de combat* enemy combatants," because of its increased effectiveness against an armored target, "increased accuracy," or "improved fragmentation design," but this does not change the unnecessary suffering analysis because the stated objective of these improvements is military necessity, not to "increase enemy combatant lethality." *Id.* at 125.

n360 Parks, *supra* note 14, at 86-87.

n361 *See, e.g., id.* at 87 ("[a]lthough the United States has made the formal decision that for military, political, and humanitarian reasons it will not become a party to Protocol I, Unites States officials have taken the position that the language of article 35(2) of [Additional] Protocol I . . . is a codification of customary international law, and therefore binding upon all nations."). *Id.*

n362 Memorandum for Office of the Project Manager, Maneuver Ammunition Systems, Picatinny Arsenal, New Jersey 07806-5000, subject: Legal Review for the 5.56MM Lead Free Ball Ammunition, M855 LFS para. 5a (23 June 2008) [hereinafter M855 LFS Legal Review] (copy on file with author).

n363 It is also important to note that the bullets Professor von Bruns tested were large caliber hunting bullets fired from a rifle, versus the smaller (*e.g.*, 9mm, 40mm, 45mm) bullets commonly employed in the pistols used by many domestic law enforcement agencies. *See, e.g.*, Ogston, *The Peace Conference and the Dum-Dum Bullet, supra* note 98, at 278-79.

n364 M855 LFS Legal Review, *supra* note 362, para. 5a.

n365 *Id.* (quoting M. BOTHE, K. PARTSCH, AND W. SOLF, NEW RULES FOR VICTIMS OF ARMED CONFLICTS 196 (1982)).

n366 *See* discussion at Part III.C.

n367 *See, e.g.*, Baird, *supra* note 252, at B1; Hester & Borondy, *supra* note 251; Williams, *supra* note 252, at 37.

n368 *See, e.g.*, Parascandola, *supra* note 251, at 2; Hester & Borondy, *supra* note 251; Teague, *supra* note 251, at A1; NYC HOLLOW-POINT BULLET REPORT, *supra* note 249, at 1.

n369 *See* Op. JAG, U.S. Army, No. 7026, *supra* note 219.

n370 *See, e.g.*, Parks, *supra* note 9, at 109-13 (describing the United States's program for legal review of new weapons and munitions).

n371 *See id.* at 128-30.

n372 For example, a Joint Services Wound Ballistics (JSWB) Integrated Product Team (IPT) convened to analyze the reported shortcomings of the M855 bullet. Dean & LaFontaine, *supra* note 3, at 26. This group consisted of "technical agencies from within the Army, Navy, and Department of Homeland Security; medical doctors, wound ballisticians, physicists, engineers from both the government and private sector; and user representatives from both the Army, U.S. Marine Corps, and U.S. Special Operations Command." *Id.* A similar collection of experts should also evaluate the potential effectiveness of expanding bullets in combat.

n373 SCOTT, *supra* note 1, at 277.

n374 DONALD E. CARLUCCI & SIDNEY S. JACOBSON, BALLISTICS: THEORY AND DESIGN OF GUNS AND AMMUNITION 2 (2008). True guns are "direct-fire weapon[s] that predominantly [fire] a projectile along a relatively flat trajectory," and are either rifled or smooth-bored. *Id.*

n375 Lisa Steele, *Ballistics, in* SCIENCE FOR LAWYERS 7-9 (Eric Y. Drogin ed., 2008). The bore of a rifle is "rifled," meaning it has grooves that impart a twist on the bullet; shotguns do not have rifling. *Id.* at 7.

n376 *Id.* Semi-automatic weapons require the user to pull the trigger to fire each shot; automatic weapons will continue to fire while the trigger is depressed. *Id.*

n377 *Id.* at 2-6, 9-12.

n378 *See id.* at 2-12.

n379 *Id.* at 10.

n380 U.S. DEP'T. OF ARMY, FIELD MANUAL 3-22.9, RIFLE MARKSMANSHIP, M16-/M4-SERIES WEAPONS tbl.2-8 (12 Aug. 2008) [hereinafter FM 3-22.9]..

n381 Steele, *supra* note 375, at 10. For example, the bullet in a M855 bullet weighs 62 grains. FM 3-22.9, *supra* note 380, tbl.2-8.

n382 Steele, *supra* note 375, at 10.

n383 *See id.* at 10-12. For example, the M855 bullet is a "lead alloy core bullet with a steel penetrator." FM 3-22.9, *supra* note 380, tbl.2-8. This means the lead bullet also contains a steel penetrator designed to "penetrate ceramic and metal armor plates used in tactical body armor." Steele, *supra* note 375, at 12.

n384 *Id.* at 10-11; BARBARA B. ROLLINS & MICHAEL DAHL, BALLISTICS 17 (2004).

n385 ROLLINS & DAHL, *supra* note 384, at 17.

n386 Steele, *supra* note 375, at 11.

n387 *Id.*

n388 *Id.*; ROLLINS & DAHL, *supra* note 384, at 17.

n389 ROLLINS & DAHL, *supra* note 384, at 17.

n390 Steele, *supra* note 375, at 11. Steele also notes that hollow point bullets are "less likely to go through standard building materials if [they miss] the target and more likely to be stopped by police body armor if an officer gets in the way of a round fired by another officer." *Id.*

n391 *Id.* at 1.

n392 CARLUCCI & JACOBSON, *supra* note 374, at 4.

n393 *Id.* at xi.

n394 *Id.*

n395 *Id.*

EXHIBIT Q

Met Police say new 'dumdum' bullets will help stop injuries to bystanders
The London Evening Standard
May 11, 2011
By Justin Davenport

Scotland Yard announced that the ammunition was being issued as standard to its firearms officers "in a commitment to making London safer."

Police experts say there is less risk of injuries to innocent parties and bystanders because regular ammunition passes straight through the body, while hollow point ammunition expands and stops when it hits the target.

The so-called "dum dum" bullets were used by police marksman when they shot 27-year-old Mr de Menezes at Stockwell underground station in 2005.
Firearms officers believed they were confronting a suicide bomber about to detonate a device and fired seven bullets into his head.

Police said the new ammunition was being introduced today after 12 weeks of testing.
The bullets are used by U.S. air marshals because they kill instantly and do not pass through an aircraft fuselage after hitting a target, unlike conventional bullets.

They got their name from "dum dum" ammunition created by the British in an arsenal of the same name near Calcutta, in India, at the end of the 19th century.

The ammunition has been outlawed in formal warfare under the Hague Declaration of 1899.

The met said today the ammunition had been used occasionally but 9mm hollow point will now be used as standard in its Glock pistols and Heckler and Koch carbines and soft point 5.56mm in the G36 rifles.

Commander Jerry Savill, who is in charge of the Met's CO19 firearms section, said : "The occasions we open fire are very few, but when this difficult decision does have to be taken it means we need to stop a subject immediately with as little risk to anyone else as possible.

"Our firearms officers need to be able to rely on their ammunition and this new jacketed hollow point has been proven to be more effective at stopping someone instantly. This means there is less risk to surrounding members of the public."

In 2009 the Independent Police Complaints Commission raised concern that police use of conventional ammunition may endanger innocent bystanders.

The warning followed the police shooting of David Sycamore outside Guilford Cathedral in November. Mr Sycamore was shot and killed with Heckler and Koch G36 rifles and hard shell bullets when he went to the cathedral armed with a replica gun and refused to put it down.

One of the two bullets which hit him then 'went through a window, hit a wall, went through another window and came to rest within the cathedral'.

EXHIBIT R

Napper says hollow-point bullets would be safer for use by police
The Atlanta Journal Constitution
March 7, 1987
By Kathy Scruggs

Atlanta Public Safety Commissioner George Napper has told City Council members he wants to change the ammunition issued to law enforcement officers to reduce the risk of stray bullets wounding innocent bystanders.

The semi-wadcutter ammunition now used by the Atlanta Police Department has the potential to ricochet and often passes through the target, according to a March 4 letter Napper sent to Mayor Andrew Young and the City Council.

Napper recommended the city switch to lead hollow-point bullets, which he said "contributeto the safety of both police officers and innocent bystanders."

The concern over semi-wadcutter ammunition resurfaced after the Feb. 6 fatal shooting of Atlanta police Sgt. Willie D. Cameron at the West End Mall, according to City Councilwoman Barbara Asher.

Officers chased Cameron's assailant, Clarence Eugene Smith, and killed him in an exchange of gunfire in the Sunshine Department Store.

Of the five bullets that struck Smith, three exited his body and one ricocheted off another object before entering his right knee, according to a letter Associate Fulton County Medical Examiner Randy Hanzlick wrote Young on Feb. 8.

Hanzlick's letter warned Young of the potential dangers of semi- wadcutter bullets.

Young said he supports changing to hollow-point ammunition. "I have always felt that that's a professional decision up to the law enforcement community," he said. "I support changing it."

The mayor said the change must be approved by the council.

The city has been using the semi-wadcutters since 1973, when charges of polic e brutality led former Public Safety Commissioner A. Reginald Eaves to ban the scoop-nosed hollow-points. In 1980, the City Council prohibited the hollow-point ammunition and in 1984 reaffirmed the ban by a 10-7 vote.

Despite testimony by Fulton County Medical Examiner Robert Stivers that semi-wadcutter bullets are just as lethal as hollow-point ammunition, opponents claimed the hollow-points were inhumane and caused extensive internal damage when they explode on impact.

A 1984 Department of Public Safety review determined hollow-point bullets had more "stopping power" and were more effective for an urban police agency.

Mrs. Asher, chairwoman of the council's Public Safety Committee, said Napper will have to present his case to the City Council before she will vote for hollow-point bullets.

"I really need a little more explanation before I can say yea or nay," Mrs. Asher said Thursday night. "Cameron's death had a lot to do with this. There were 20 bullets that just went everywhere. The information that I've received is every other jurisdiction is using it hollow-point ammunition, and I think we really need to revisit it the issue."

EXHIBIT S

The New York Times

Archives

In Many Cities, New Bullets Have Not Brought Complaints

By FOX R. ROANE
Published: July 09, 1998

The decision by the New York City Police Department to issue hollow-point bullets to its officers has generated debate, but the ammunition has been standard issue in many other metropolitan police departments for years and have generated few, if any, complaints, law enforcement officials in those cities say.

Besides Federal law enforcement agencies, including the Federal Bureau of Investigation and the United States Marshals Service, at least 19 police departments in large cities across the country either issue or allow officers to use hollow-point ammunition. The bullets are relatively slow-moving projectiles that expand quickly on impact. By comparison, the fully jacketed ammunition that is standard in most military forces and is still used by some police departments often travels at a greater speed and does not readily break apart when it hits a target.

The San Francisco Police Department began issuing hollow-point ammunition about a decade ago in the hope that the bullets would have greater stopping power, said Sgt. Michael J. Griffin, the department's range-master. All San Francisco officers now use a .40-caliber subsonic hollow-point bullet, he said.

"Fully jacketed ball ammunition is designed to produce wounds, not necessarily incapacitate a person immediately," Sergeant Griffin said. "The idea in a war situation is that the wounded will tie up more support personnel than the dead. But the issue in law enforcement is survival. You want to stop an attacker as quickly as possible."

For those reasons, he said, hollow-point bullets "have become pretty standard in law enforcement."

While the hollow-point bullets are deadlier, law enforcement officials said that the ammunition's slower velocity and its ability to collapse make it less likely to travel through walls or ricochet off hard surfaces, thereby reducing the risk of injury or death to bystanders.

Sergeant Griffin added that the greater stopping power of the bullets has also allowed police officers in San Francisco to fire fewer rounds during violent confrontations. "We train to fire two or three shots at a minimum and on average we now see about three rounds fired per incident," he said. "Before it was closer to four or five."

Dennis Tanabe, a firearms technician with the Honolulu Police Department, said violent movies and television shows had generated what he said were needless concerns about hollow-point bullets.

"Critics usually don't understand the dynamics of a bullet and go by the prejudices of Hollywood when looking at this one," he said. "They make it out to be a magic bullet, like it tears people's arms off."

Critics have worried that a hollow-point bullet could be much more deadly to bystanders. They have also criticized use of the ammunition because of the damage it does to a body when it strikes, calling it "cruel and unusual punishment," said Aaron Rosenthal, a retired assistant chief in the New York City Police Department. But Mr. Rosenthal said that, in general, officers are sufficiently trained to hit their targets and avoid accidentally hitting bystanders.

"You are not taught to fire at arms and legs because that's a way to get you to an inspector's funeral," he said. "The idea is to stop the combatant as quickly as possible and it is assumed that, with the training an officer receives, he will be successful and not hit anything else."

EXHIBIT T

CHAPTER 1

BALLISTICS

LISA STEELE

INTRODUCTION

Ballistics, in the most general sense, is the study of firearms—"guns" in the vernacular. As a term of art, ballistics technically refers to the study of a bullet's path from the firearm, through the air, and into a target. In criminal investigations, however, ballistics is a shorthand term for firearms identification: the art of matching recovered bullets and their casings to the firearm from which they were fired.

Firearms identification is often treated as a subspeciality of toolmark identification. A toolmark expert attempts to match tools like screwdrivers and crowbars to the marks they make when used on objects. This chapter focuses solely on firearms and the forensic specialists who make these matches. "Ballistics" experts are more than toolmark specialists. They are generally experts in many aspects of firearms and testify about topics ranging from whether a specific object is, legally, a firearm, to intricate reconstructions of crime scene evidence.

The first use of "ballistics" as a synonym for firearms matching was by Calvin Goddard, an early pioneer in the field. Goddard picked the term "Forensic Ballistics" in the 1920s after much consideration, in an effort to employ terms that would be concise and meaningful. He later regretted that decision. Goddard noted in 1953 that "from that day onward, scientific identification of firearms has popularly been known as ballistics, and the more I struggle to correct the trend that I so innocently started, the wider the usage becomes."

either of these terms in its statutes or regulations, defense counsel should object if an examiner characterizes a firearm in this manner. These colloquial phrases can be highly prejudicial and are not relevant to most criminal trials. These terms suggests that the handgun is the type of firearm that would only be used by a criminal and is not useful for target-shooting, hunting, or self-defense. Indeed, these handguns generally are not designed for target-shooting or hunting—they are small, very basic, inexpensive handguns that can be carried in a pocket rather than in a special holster and are intended to be accurate at short ranges, such as those typically encountered in a self-defense situation. Thus, they are affordable by people who intend to carry and use them solely for self-defense and who do not want or need the features of a larger multipurpose handgun. Also, some jurors may be aware that there is a racial component to phrases like "Saturday night special." Many statutes banning inexpensive handguns are based on laws passed in Tennessee, Arkansas, Alabama, and other southern states after the Civil War to ban firearms that newly enfranchised black citizens could afford. For example, in the Florida case of *Watson v. Stone* (1941), a concurring opinion noted that "the Act was passed for the purpose of disarming the negro laborers.... The statute was never intended to be applied to the white population and in practice has never been so applied."

Not all rifles and handguns use gunpowder, or modern metal ammunition. Compressed-air-powered handguns and rifles are often lightly regulated, if regulated at all. Many states also exempt historic firearms, and working replicas thereof, which cannot use modern ammunition, like muskets, matchlocks, flintlocks, and percussion-cap-based weapons from most regulations. The "black-powder" firearms are primarily owned and used by collectors and hobbyists—they are rarely involved in crimes.

What Kind of Ammunition Is It?

Examiners may also be asked to describe bullets and ammunition to juries explaining different *calibers* (diameters of bullets) and bullet types, such as the difference between a jacketed and unjacketed bullet, or between a round-nosed bullet and a hollow-point bullet. Some kinds of bullets are regulated by federal or state law. Armor-piercing bullets, for example, are regulated by federal law that defines armor-piercing ammunition and limits its sale to law enforcement and the military. In New Jersey, it is illegal for anyone other than military and law enforcement personnel to possess hollow-point ammunition.

Ideally, an examiner will describe ammunition using precise language. The standard cartridge issued to New York City Police Department (NYPD) officers is a CCI-Speer 124-grain Gold Dot +P JHP (a jacketed hollow-point design) for 9mm semiautomatic handguns and a Federal 158-grain +P Nyclad LHP (a lead hollow-point design) for .38 Special revolvers. What does this mean?

The most basic information about a cartridge is its caliber. "Caliber" is a confusing term of art. In theory, the caliber is the diameter of the associated firearm's barrel, not including the depth of the rifling groves. Caliber is usually given in 1/100th of an inch (.22, .45), in millimeters (9mm, 40mm), or in "gauges" (12 gauge, 20 gauge). However, there are many customs and historical variations—".38 Smith & Wesson" ammunition is not the same width as ".38 Special" ammunition, even though one might assume both to be 38/100ths of an inch wide. The .38 Special cartridge is closer to .357 inches in diameter (and indeed can be fired from a handgun designed for .357 ammunition). A .38 Smith & Wesson cartridge will not physically fit into a firearm designed for .38 Special ammunition. Precision, especially where .38 caliber bullets are involved, can be very important.

Revolver and semiautomatic cartridges are not readily interchangeable—the revolver cartridge has a small rim around its base to hold the cartridge in place when it is loaded into the revolver cylinder. The base of a semiautomatic cartridge is flush with the cartridge sides, but there is a small groove cut for the extractor to grip when it ejects the round. It is possible to load a semiautomatic pistol cartridge into a revolver; there are ammunition clips designed for this purpose. If one loads a revolver cartridge into a semiautomatic pistol, the firearm is likely to malfunction in use.

Returning to the example, the first words in the description name the manufacturer. The semiautomatic handgun bullet is made by Cascade Cartridge, Inc. (CCI). The revolver bullet is made by the Federal Cartridge Company. The name of the manufacturer may tell the expert and the jury something about the bullet's construction and quality.

The next piece of information is the bullet's weight. The semiautomatic bullet weights 124 grains; the revolver bullet weights 158 grains. (The weight of bullets and of powder is traditionally given in *"grains"* which are 1/7000 of a pound. In this case, the weight is that of the bullet, plus jacket, if any.) The bullet's weight is important because it affects how much force (kinetic energy) the bullet has when it strikes a target. Doubling the bullet's weight doubles the kinetic energy, assuming that the bullet's velocity is constant.

Next, the style or type of bullet is described. CCI's Gold Dot bullet has a copper jacket, which is electrochemically bonded to the lead core,

instead of just pushing or pouring the lead core into the jacket. This makes it less likely that the jacket and core will separate on impact. (Separation can cause the bullet to behave oddly—tumbling or breaking apart, and having less than the expected wounding effect.) The Nyclad bullet has a nylon jacket around the lead bullet. These jackets were not designed to affect damage; jackets were designed for semiautomatic weapons to prevent malfunctions caused when bits of lead from a plain lead bullet are deposited on the ramp and action of the firearm when large numbers of lead bullets are fired. A semiautomatic weapon can fire lead bullets at the risk of malfunctions. Jackets do not affect a revolver's operation, but they can keep down the amount of lead dust released when the bullet is fired—a health concern for officers, especially those using indoor firing ranges for training.

Both bullets are designated as "+P". The firearms industry has a standard for the gas pressure generated by each type of ammunition. A +P cartridge generates higher gas pressure than the standard cartridge, which translates into a higher muzzle velocity, without making the cartridge physically larger. Doubling a bullet's velocity quadruples the amount of kinetic energy it has when it strikes a target. *Magnum* has similar connotations of higher muzzle velocity in the same diameter cartridge. A magnum bullet, such as the .357 Magnum, or Harry Callahan's .44 Magnum, is generally longer than an equivalent round of the same diameter. The longer cartridge holds more gunpowder and can generate a higher muzzle velocity. (Both "+P" and "Magnum" have associated industry standards for gas pressures generated in the chamber.)

Finally, both bullets are hollow-point, which means that they literally have a small hole in their "nose" and are designed to expand when they hit a target. Hollow-point ammunition is commonly used by police officers, federal agents, and citizens for self-defense. By expanding, the bullet increases its drag and tends to remain inside the target—this is believed to increase the chance that the wound will stop an aggressor, although medical examiners have been unable to show any difference in lethality between hollow-point and traditional round-nosed lead bullets. Also, the bullet is less likely to go through standard building materials if it misses the target and more likely to be stopped by police body armor if an officer gets in the way of a round fired by another officer. (Body armor is not commonly used by criminals.)

Occasionally, an examiner will describe a piece of evidence as a "cop killer" bullet. Again, defense counsel should object to this misleading and prejudicial term. The phrase was created by media reports about the Teflon-coated "KTW bullet," named for its three inventors. The KTW

bullet has a brass or tungsten core, which helps it penetrate automobile glass instead of being deflected by the angled surface. It also has a Teflon coating, which protects the handgun barrel from excessive wear and makes it better able to penetrate smooth surfaces like automobile glass and metal when it strikes at an oblique angle.

These bullets have not been available for sale to the general public since the 1960s. They were only available to the military and law enforcement. In 1982, NBC television ran a sensational story falsely claiming that the KTW bullet could penetrate police body armor, creating a mythical "cop killer" bullet. The publicity resulted in a federal law which limits the sale of actual armor-piercing ammunition to law enforcement and the military. Winchester's Black Talon bullet was another victim of hysteria about its purported effects.

As an aside, police body armor has to balance comfort and wearability with protection. If the armor is too bulky and uncomfortable, officers will not wear it routinely, which risks their safety. The federal government sets standards for police body armor—the most common type is designed to protect officers from most handgun ammunition. Handguns are the most common weapon faced by police. However, nearly any bullet fired from a rifle will penetrate typical body armor because rifle ammunition is designed to shoot game at a distance and so has a higher muzzle velocity. This does not make rifle bullets armor-piercing or cop killer bullets. Actual armor-piercing ammunition has a solid metal core and is designed to penetrate ceramic and metal armor plates used in tactical (SWAT and military) body armor.

Where Was the Bullet Fired From?

The distance between the muzzle of a firearm and the object or person shot may distinguish between an accident, a self-defense shooting, suicide, and homicide. In some states, examiners perform gunshot residues analysis to estimate the distance between the muzzle of a firearm and whatever the bullet struck. A medical examiner may be responsible for this estimate if the bullet killed a victim.

When the firing pin ignites the gunpowder, most of the gases produced come out of the barrel, along with bits of unburned and burning gunpowder, soot, and sometimes tiny fragments of the bullet as it scrapes along the rifling.

If the firearm's muzzle is directly in contact with an object, all of that material has nowhere else to go but into the object—the gases may tear clothing, or flesh; particles will be found in the bullet hole.

EXHIBIT U

LAPD Gets Approval to Switch Officers to Hollow-Point Ammo : Law enforcement: Police contend that it's a safer bullet, but some activists claim it will result in more deaths.

April 18, 1990 | LOUIS SAHAGUN | TIMES STAFF WRITER

After years of dispute and study, the Los Angeles Police Commission on Tuesday gave approval for the city's police force to use hollow-point bullets, a controversial type of ammunition that expands on impact with its target.

The decision, which takes effect immediately, replaces solid-nosed bullets that Police Chief Daryl F. Gates and others in his department contend are more likely to pass through a suspect and ricochet, possibly striking innocent bystanders.

The commission, comprised of five civilians appointed by the mayor, reached its unanimous decision after reviewing the results of yearlong study conducted by the LAPD.

The report found that hollow-point ammunition reduces the incidence of "through-and-through" penetration without increasing fatalities.

By granting the department approval to use hollow-points in its .38-caliber revolvers and 9-millimeter pistols, the LAPD joins police agencies throughout the country that have switched to the new ammunition.

But the change to hollow-point ammo drew strong criticism Tuesday from various community and civil rights organizations, which have decried their use as inhumane.

"Anybody who has seen color photographs of the damage that hollow-points do to the body will understand why we object strenuously to their use," said Hugh Manes of the Police Misconduct Lawyer Referral Service, a group that provides attorneys for people who believe they have been subjected to police brutality.

"It tears up the body and causes unnecessary damage, often permanent impairment," Manes added. "A regular bullet would not have that consequence as often."

It was unclear whether civil rights organizations would take legal action to try to overturn the decision.

Ramona Ripston, executive director of the American Civil Liberties Union of Southern California, agreed that the bullets jeopardize more lives and pointed out that they have been outlawed over the years by the United Nations and even the U.S. Army.

"They will stop more people, but suspects will have graver injuries and the bullets will kill more often," Ripston said. "Although we want our police to have the best tools available, we want them to apprehend suspects more often, not kill them."

Nonetheless, the report found that in 1987, when only solid-nosed bullets were used, a slightly higher percentage of people died after being shot by police officers than in 1989, when hollow-point bullets were tested.

The report also showed, however, that a substantially higher percentage of solid-nosed bullets passed through suspects, potentially risking innocent bystanders.

Police officials say the findings seem to knock down a widely held belief that hollow-points--which have a concave nose and expand to the size of a dime on impact--are more likely to tear up human organs than solid bullets.

"If that were true you would expect more people to die," said Lt. Gary A. Lee, who helped conduct the study. The report, he added, "basically took away the argument that hollow-points are more lethal."

Rank-and-file LAPD officers lauded the commission's ruling Tuesday. They pointed out that hollow-point ammunition is already used by the Los Angeles County Sheriff's Department as well as dozens of other police agencies in the Southland. The bullets are also used in Dallas, Chicago and San Diego, though not in New York City.

Some officers said they were particularly impressed with the "stopping power" of the hollow-point ammunition.

"They are long overdue and a much more effective bullet as far as stopping power goes--and that is what we want," said Sgt. John Colella of the LAPD's Hollenbeck Division, east of downtown Los Angeles.

"We need more firepower today because the people we are coming up against these days use fully automatic weapons and high-powered rifles," Colella added. "I really feel more comfortable with a 9-millimeter loaded with hollow-points."

Such comments, however, were downplayed by police brass, including Deputy Chief Mark Kroeker.

"The importance of using a hollow-point is that the bullet will not go all the way through a person and increase the possibility of an innocent bystander being hit as well," Kroeker said. "That is the main reason we are going to this new round."

In the past, Chief Gates has made vigorous pitches to the Police Commission for the hollow-point, but those requests had been derailed

after community activists accused the department of "asking for a license to kill more blacks and Chicanos."

"We'd be very surprised if anyone tried to take court action to stop the adoption of this ammunition," said police spokesman Cmdr. William Booth.

EXHIBIT V

Safir Says a Report Finds New Bullets Less Deadly
The New York Times
March 7, 1997
By Michael Cooper

Three days after announcing his intention to give police officers new, hollow-point bullets, Police Commissioner Howard Safir released a report yesterday that he said bolstered his argument that the new ammunition would make the public safer.

The report reviewed incidents in which bystanders or other police officers were struck by police gunfire, comparing shootings involving conventional bullets with those involving hollow-point bullets. Transit and housing officers have used the hollow-point ammunition since 1990, and Mr. Safir wants the rest of the force to adopt the bullets, arguing that they are safer because they do not ricochet or pass through their initial target.

In fact, the report does list instances in which hollow-point bullets caused injury after ricocheting or passing through another person or object. Such incidents were rarer with the hollow-point ammunition than with conventional bullets, but the total number of cases appeared too small for any conclusion.

Commissioner Safir has also argued that the hollow-points, which expand upon impact, have greater "stopping power," meaning that they can bring down their targets with fewer shots fired. That, too, lessens the risk to bystanders, he says.

But several criminologists, forensics experts and politicians expressed fears that the bullets are more lethal because their hollow tips tend to spread out, or mushroom, upon contact with flesh and that they tend to make wider wounds. And although the police department has already spent $500,000 on 9 million rounds of hollow-point bullets, Mayor Rudolph W. Giuliani has said he will not allow them to be used until he has studied the issue more thoroughly.

The report released yesterday covers shootings from 1995 and 1996. Of the six innocent bystanders struck by hollow-point bullets fired by police officers in the Transit Bureau, one was hit by a bullet that ricocheted and another by a bullet that passed through an object. Of 15 bystanders shot by conventional, full-metal-jacket bullets, five were hit by bullets that had passed through another person and two by bullets that had gone through an object.

Forty-four police officers accidentally shot themselves or were accidentally shot by other officers over the same two years, according to the report. Of the 40 officers shot by full-metal-jacket bullets, two were hit by ricochets, 17 were hit by bullets that passed through other people and two were struck by bullets that passed through objects. Of the four police officers shot by hollow-points, one was hit by a bullet that passed through another person.

"I'm always concerned about friendly fire or accidental discharges, but I think the advantage of more stopping power far outweighs the disadvantages," Lou Matarazzo, the president of the Patrolmen's Benevolent Association, said this week.

Fifty-six suspects were shot and killed by police officers over the last two years. Forty-one of them were killed by full-metal-jacket bullets, 14 of which passed through other people first and one of which first

passed through an object. Fifteen others were killed by hollow-point bullets, four of which passed through other people first.

The release of the report capped a week in which Commissioner Safir found himself in the center of a debate over ballistics and politics. It began Monday when he mentioned almost in passing that the department would switch to hollow-points. On Tuesday Mayor Giuliani put the plan on hold, saying the issue needed further study. Then, when Commissioner Safir went to the City Council on Wednesday to testify about the budget, he found himself peppered with questions about bullets.

Mr. Safir approved the $500,000 purchase of the hollow-point bullets last November and the Department of Citywide Administrative Services gave its approval in January. But until yesterday he refused to make public any department reports about the bullets.

In the meantime, several criminologists, forensic experts and politicians said that hollow-point bullets were more likely to be lethal and caused more damage than full-metal-jacket bullets because they expand upon impact.

To counter their claim, Commissioner Safir yesterday also released excerpts from a book called "Gunshot Wounds" by Dr. Vincent J. M. Di Maio, the chief medical examiner of San Antonio, Tex. Dr. Di Maio wrote that after studying the bodies of 75 people who were shot by hollow-point bullets, he was unable to conclude that any of their deaths might have been prevented had other bullets been used.

Finally, Commissioner Safir released a report comparing the ammunition used by different law enforcement agencies around the country. It says that the New York State Police as well as officers in Nassau and Suffolk counties, Boston, Dallas, Los Angeles, Washington, San Francisco and St. Louis use hollow-point bullets.

EXHIBIT W

CITY / CCRB OKs Cops' Use Of More Lethal Ammunition
New York Newsday
July 9, 1998
By Mohamad Bazzi

The Civilian Complaint Review Board yesterday agreed with the Police Department's decision to switch to hollow-point bullets, sparking an outcry from civil rights groups that oppose the powerful ammunition.

The panel released a carefully worded report more than a year after Police Commissioner Howard Safir announced a plan to abandon full-metal-jacket bullets and arm the Police Department with the more lethal hollow-point ammunition.

Safir argued that the hollow-points, which mushroom on impact, were safer for the public because they do not ricochet or pass through their targets after being fired. Hollow-point bullets have been used by transit and housing police since 1990.

"In reading every study we could find, the only thing that seems definite is that full-metal-jacket bullets do ricochet more often and are more likely to pass through targets," said Richard Condon, a CCRB member and former police commissioner who served on a three-person committee that studied the issue.

Opponents argue that because the bullets expand upon impact, they tend to make bigger wounds. In the event a bystander is mistakenly hit by the new bullet, they say, the injuries would be more serious.

"I don't think a public debate around the use of these bullets has really taken place," said Norman Siegel, executive director of the New York Civil Liberties Union, who urged the board to take up the issue last year.

Siegel said he wanted the board to hold public hearings before drafting its three-page report, which is supported by several hundred pages of studies and other documents.

But board members defended their research process, saying that in addition to gathering studies, they interviewed ammunitions experts and tested the bullets at the Police Department's firing range.

"Norman Siegel never requested that we hold public hearings," said Condon. "If he has information that we're not aware of, it's because he chose not to share it with us."

Other board officials privately said the entire matter was beyond their jurisdiction, since they did not have resources to hire independent experts. Moreover, the Police Department is under no obligation to follow the board's recommendation.

Safir proposed using the new bullets after the transit and housing police forces merged into the Police Department. He has already earmarked $500,000 of the department's budget to buy 9 million hollow-point bullets.

EXHIBIT X

Police : weapons

BALTIMORE

More effective bullets issued to police officers

Bullets designed to create larger wounds were issued yesterday to Baltimore police officers, who for years have complained that their conventional bullets don't stop armed suspects fast enough.

The nose of the new .38-caliber bullets, known as hollow-point or "dum-dum" bullets, expands when fired and flattens on impact, making a larger wound than the standard .38-caliber bullets city police traditionally have used.

Lt. Larry Leeson, a spokesman for the city department, said officers are often confronted by suspects who are better armed than they are, with 9mm semiautomatic pistols, for example, that fire much faster and carry nearly three times as many bullets as the standard service revolver.

He said many suspects have been able to flee or return fire after being shot by the standard .38-caliber bullets.

This year, the Maryland State Police, as well as officers in some local departments, were issued 9mm handguns, which carry 15 rounds of ammunition compared with six rounds in the traditional service revolver.

Lieutenant Leeson said switching to more effective bullets is much less expensive than equipping the entire city force with new guns. Also, the city department has resisted switching to more high-powered weapons because it's in an urban area where bystanders might be injured.

Balt Sun 8-26-88 9

EXHIBIT Y

N.J.A.C. 7:25-5.23

NEW JERSEY ADMINISTRATIVE CODE

*** This file includes all Regulations adopted and published through the ***
*** New Jersey Register, Vol. 44, No. 16, August 20, 2012 ***

TITLE 7. ENVIRONMENTAL PROTECTION
CHAPTER 25. DIVISION OF FISH AND WILDLIFE RULES
SUBCHAPTER 5. 2011-2012 GAME CODE

N.J.A.C. 7:25-5.23 (2012)

§ 7:25-5.23 Firearms and missiles, etc.

(a) Except when legally engaged in deer or black bear hunting during the prescribed firearm seasons, respectively, no person shall have in his or her possession in the woods, fields, marshlands or on the water any shell or cartridge with missiles of any kind larger than No. 4 fine shot. This shall not apply to persons properly licensed and permitted for hunting during the special eastern coyote, red fox and gray fox hunting season, exclusively, who may use fine shot no smaller than #4 (.13 inches in diameter) or larger than #T (.20 inches in diameter). This shall not preclude farmers or their agents from using shot not larger than No. 4 buckshot to control woodchuck causing damage or a properly licensed person from hunting woodchuck with a rifle during the woodchuck season. For hunting woodchuck, center-fire rifles of .25 caliber or smaller or rim-fire rifles may be used. Center-fire rifles larger than .25 caliber may also be used provided that the bullets used do not exceed 100 grains in weight. All center-fire rifle ammunition used in hunting woodchucks must be hollow point, soft point or expanding lead core bullets. All rim-fire rifle ammunition used in hunting woodchuck must be hollow point or soft point type. Also excepted is the use of a muzzleloading rifle, .36 caliber or smaller, loaded with a single projectile during the prescribed portion of the squirrel season in designated areas. Waterfowl hunters may possess and use shotgun shells loaded with T (.200") steel fine shot or smaller or other non-toxic shot authorized by Federal regulations no larger than T (.200") shot and properly licensed persons hunting for raccoon or opossum with hounds or engaged in trapping for furbearing animals may possess and use a .22 caliber rifle and raccoon, or opossum or legally trapped furbearing animals other than muskrat. Notwithstanding the foregoing, this subsection shall not preclude agents and/or permittees operating under an approved Special Deer Management Permit (N.J.A.C. 7:25-5.32) from shooting deer with a rifle or a rifle equipped with a silencer or suppressor if that permit so specifically provides. Rifles for this purpose shall be restricted as specifically provided in that permit to include only .22, .223, .270 and .45 caliber or other calibers approved by the Division. Only highly frangible bullets shall be employed in .223 and .270 caliber rifles. Bullets employed in .22 and .45 caliber rifles shall be restricted to those designed to provide maximum expansion and limited penetration. As a part of a Special Deer Management Permit, use of .22 rim-fire ammunition is restricted to euthanasia of captive deer only.

(b) All persons in possession of a rifle while hunting or trapping must have in addition to their proper license, a valid and proper rifle permit.

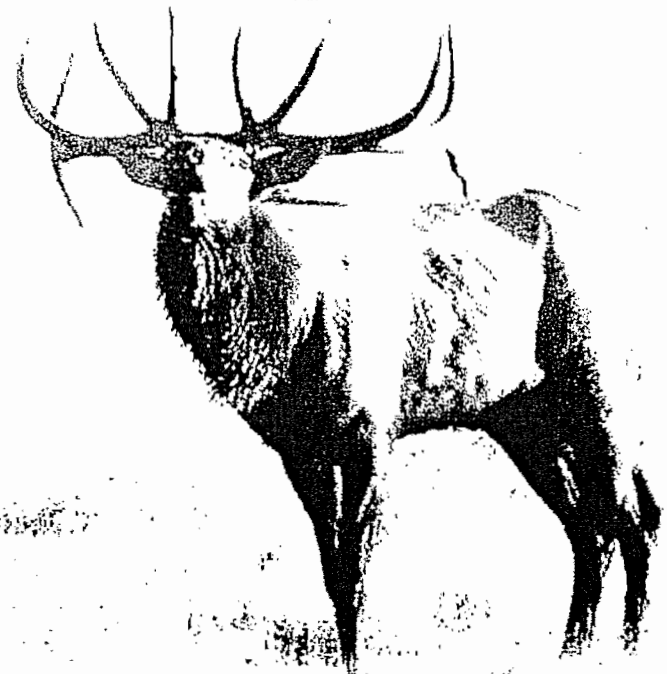
(c) Except as may be permitted for waterfowl hunting in accordance with Federal regulations and as provided for agents and/or permittees operating under an approved Special Deer Management Permit (N.J.A.C. 7:25-5.32), no person shall use in hunting fowl or animals of any kind, any shotgun capable of holding more than three shells at one time or that may be fired more than three times without reloading. Except as provided for agents and/or

EXHIBIT Z

New Mexico Big-Game & Furbearer Rules & Information

GO PAPERLESS! APPLY ONLINE! ATTENTION HUNTERS! NEW FOR 2012-2013

- Deer
- Elk
- Pronghorn Antelope
- Ibex
- Oryx
- Javelina
- Bighorn Sheep
- Barbary Sheep
- Bear
- Cougar
- Turkey
- Furbearers



2012 - 2013 LICENSE YEAR

Visit Our Website
www.wildlife.state.nm.us

Table of Contents

What's New in 2012-2013

SIGNIFICANT CHANGES To This Year's Hunting Rules:

- New draw hunt quotas,
- Applications for draw hunts will be accepted only online or by phone,
- New Annual Game-hunting License required,
- Nonresident hunting restrictions,
- Full fee required at time of application.

ALL HUNTERS - Read pages 3-4 of this booklet before applying for or purchasing any hunting license.

NEW Application Deadlines:

February 1 is the deadline to apply for bear WMA permits and turkey draw permits. Applications must be made BEFORE 5 p.m. Mountain Standard Time.

March 28 is the deadline to apply for oryx, deer, elk, pronghorn antelope, ibex, Barbary sheep, javelina, bighorn sheep draw licenses and all population management hunts. Applications must be made BEFORE 5 p.m. Mountain Daylight Time.

Customer ID Number

Anyone applying for a draw hunt, any student registering for a hunter/bowhunter education class, or hunters and trappers reporting their harvest, first must obtain their unique Customer Identification Number (CIN). It's available free online on the Department's website at: **www.wildlife.state.nm.us.**

Applicants must make certain the information in their CIN Account is current and correct BEFORE applying, registering or reporting.

Definitions and Terms

Ammunition
Hunters may use only soft-nosed or hollow-point bullets. Full metal-jacketed and tracer bullets are not legal. The use of sabots is legal in muzzleloading rifles, except restricted muzzleloader hunts. See page 7 for definition of restricted muzzleloaders.

Antler Point Restricted Elk (APRE/6)
A legal APRE/6 elk must have six or more points of any length on at least one antler for an APRE/6 hunt. A brow tine or eye guard counts as one point. A burr at the base of the antler does not count as a point.

Antlerless Deer or Elk (A)
Any male or female deer or elk without antlers.

Big-game Species
Include deer, elk, bear, cougar, pronghorn antelope, Barbary sheep, bighorn sheep, javelina, oryx and ibex.

Bighorn Sheep Ram
Any male bighorn sheep.

Bighorn Sheep Ewe
Any female bighorn sheep.

Bow and Arrow
Bows include compound, recurved and longbows. Sights on bows may not magnify targets or project light. Arrows must have broadheads (fixed or mechanical) with steel cutting edges. No drugs may be used on arrows. Arrows cannot be driven by explosives.

Broken-Horn Oryx
An oryx of either sex that has one or more horns missing at least 25% of its normal growth.

Crossbow and Bolt
Crossbow use is legal during "Any Legal Sporting Arm" hunts and "Muzzleloader" hunts. Sights on crossbows may not magnify targets or project light. Bolts must have broadheads with steel cutting edges. No drugs may be used on bolts. Bolts cannot be driven by explosives.

Depredation Damage Fee
A fee required of all big-game hunters that has been included in the price of each big-game license. The fee is $3 for each resident and $10 for each nonresident big-game license. Money generated is being used to develop permanent solutions to chronic wildlife depredation problems throughout the state.

Either Sex (ES)
Any male or female of the big-game species.

Either Sex White-tailed Deer (ESWTD)
Any male or female white-tailed deer.

Established Road
A road built and/or maintained by equipment and which shows no evidence of ever having been closed to vehicular traffic by such means as berms, ripping, scarification, reseeding, fencing, gates, barricades or posted closures.

Female or Immature Ibex (F-IM)
An ibex with horns less than 15 inches long.

Female or Immature Pronghorn Antelope (F-IM)
A pronghorn antelope without horns or with both horns shorter than its ears.

Fork-Antlered Deer (FAD)
Any deer possessing an antler which has a definite fork, showing two or more distinct points. A burr at the base does not constitute a point or fork.

Fork-Antlered Mule Deer (FAMD)
Any mule deer possessing an antler which has a definite fork, showing two or more distinct points. A burr at the base does not constitute a point or fork.

Fork-Antlered White-tailed Deer (FAWTD)
Any white-tailed deer possessing an antler which has a definite fork, showing two or more distinct points. A burr at the base does not constitute a point or fork.

Fourth Choice Deer or Elk Hunt
Applicants marking a fourth choice indicate they WILL accept a deer or elk license for ANY HUNT in a specific quadrant of the state. Be aware that success rates for some fourth choice hunts may be low due to small, localized populations of deer or elk. A hunter drawing a fourth choice elk hunt could receive a license with an antlerless bag limit even if their first three choices were for bull licenses and vice versa. No refunds will be made to successful applicants. The fourth choice assignment will always be for the same sporting arm type as the first choice on an application. See pages 21 and 32 for more information. Not all hunts are included in the fourth choice pool.

Game-hunting or combination Game-hunting and Fishing License
An annual **Game-hunting License** is valid for hunting all small game, both upland and migratory game birds. An annual combination **Game-hunting and Fishing License** is valid for fishing in addition to hunting small game. Both types of licenses may be purchased at license vendors statewide including all Department offices and online at the Department's website.

All hunters must purchase one of these licenses in order to apply for any big game license or before purchasing any over-the counter big game or turkey license.

Habitat Management and Access Validation
All hunters, trappers and anglers on any lands must purchase and possess a $4 Habitat Management and Access Validation once during the year (April 1-March 31). Fees will be used to lease private land for public use, provide public access to land-locked areas of public land and provide for the improvement, maintenance, development and operation of property for fish and wildlife habitat management. This fee will NOT be charged to anglers or trappers younger than 12 years of age, 100% Disabled Resident Veterans or resident anglers 70 years of age and older will not be charged for this validation in conjunction with their free licenses. This Validation does NOT replace the Habitat Stamp. See page 9.

Handicapped Hunter
To obtain a reduced-fee Game-hunting or Game-hunting and Fishing License, a handicapped hunter must have a severe physical impairment that substantially limits one or more major life activities. See page 9.

High-Demand or (HD) Hunt
An elk or deer draw hunt which had at least 22% nonresident applicants for the previous two license years.

Junior Elk or Junior Deer Hunting License
Reduced-fee elk or deer licenses are available to resident hunters younger than 18 years of age. See page 8 for fees.

License Year
A 12 month period, April 1 through March 31.

Hunting Information

Legal Sporting Arms

Sporting arms legal for hunting big-game species are listed on the individual species' pages. Exceptions to the following descriptions are noted where applicable.

Hunters may use only soft-nosed or hollow-pointed bullets. Full metal-jacketed or tracer bullets are illegal. No fully automatic arms may be used.

Sights on bows may not magnify targets or project light. Arrows must have broadheads (fixed or mechanical) with steel cutting edges. No drugs may be used on a hunting arrow and arrows cannot be driven by explosives.

Crossbow use is legal during "Any Legal Sporting Arm" hunts and "Muzzleloader" hunts. Sights on crossbows may not magnify targets or project light. Bolts must have broadheads (fixed or mechanical) with steel cutting edges. No drugs may be used on bolts. Bolts cannot be driven by explosives.

Scopes, sabots, in-line ignition and belted bullets may be used with muzzleloaders but not Restricted Muzzleloaders. See page 7 for definition.

Criminal Trespass Is Against the Law!

A. Criminal trespass consists of knowingly entering or remaining upon posted private property without possessing written permission from the owner or person in control of the land. The provisions of this subsection do not apply if:

1. The owner or person in control of the land has entered into an agreement with the Department granting access to public hunters for the purpose of taking any game animals, birds or fish by hunting, fishing or trapping; or

2. A person is in possession of a landowner authorization given to him by the owner or person in control of the land that grants access to that particular private land for the purpose of taking any game animals, birds or fish by hunting, fishing or trapping.

B. Criminal trespass also consists of knowingly entering or remaining upon the unposted lands of another knowing that such consent to enter or remain is denied or withdrawn by the owner or occupant thereof. Notice of no consent to enter shall be deemed sufficient notice to the public and evidence to the courts, by the posting of the fenced property at all vehicular access entries.

C. Criminal trespass also consists of knowingly entering or remaining upon lands owned, operated or controlled by the state or any of its political subdivisions knowing that consent to enter or remain is denied or withdrawn by the custodian thereof.

D. Any person who enters upon the lands of another without prior permission and injures, damages or destroys any part of the realty or its improvements, including buildings, structures, trees, shrubs or other natural features, is guilty of a misdemeanor and shall be liable to the owner, lessee or person in lawful possession for civil damages in an amount equal to double the value of the damage to the property injured or destroyed.

E. Whoever commits criminal trespass is guilty of a misdemeanor. Additionally, any person who violates the provisions of Subsection A, B or C of this section, in connection with hunting, fishing or trapping activity, shall have his hunting or fishing license revoked by the State Game Commission for a period of not less than three years, pursuant to the provisions of NMSA Chapter 17-3-34, 1978.

F. Whoever knowingly removes, tampers with or destroys any "No Trespassing" sign is guilty of a petty misdemeanor; except when the damage to the sign amounts to more than $1,000,

Criminal Trespass continued

in which case he or she is guilty of a misdemeanor and shall be subject to imprisonment in the county jail for a definite term less than one year or a fine not more than $1,000 or to both imprisonment and fine, at the discretion of the judge.

Unlawful Taking of Game On Private Property

It is unlawful to hunt, capture, take, attempt to take or kill any game animal or furbearer on posted private property without written permission of the landowner or person in control of the land or if consent to remain on the property has been denied or withdrawn.

Unlawful Taking of Game On Unposted Private Property

It is unlawful to knowingly enter upon any private property to hunt, capture, take, attempt to take or kill any game animal or furbearer without written permission of the landowner or person in control of the land. Any game animals or furbearers taken in violation of the above, shall be subject to seizure.

Military Closures

The U.S. Forest Service and the Military may delay or cancel hunts in portions of GMUs 10, 13, 18, 19, 20 and 28 due to concerns for public safety. Closures of these areas could occur on several occasions throughout the year and may affect a number of hunts listed in this booklet.

Closures typically will occur between the hours of 3 am and 8 am. Evacuation of all people from these areas is required. Roadblocks will be positioned along all roads leading into the closed areas.

The area subject to closure in GMU 10 includes approximately 29 square miles of the Mount Taylor Ranger District, Cibola National Forest, located in the Zuni Mountains directly south and east of Fort Wingate Launch Complex and south of I-40.

The area subject to closure in GMU 13 includes approximately 200 square miles of the western portion of the Magdalena Ranger District, Cibola National Forest, located in the Datil Mountains north of U.S. Highway 60 and northeast of Datil, N.M.. Authority for the closures is 36 CFR 261.53 (E) and 36 CFR 261.54 (E) New Mexico.

Law Prohibits Harassing Legal Hunters

New Mexico has a law (NMSA 1978, Chapter 17-2-7.1) prohibiting "hunter harassment" or interfering with another person who is lawfully hunting, trapping or fishing in an area where those activities are permitted. The first offense is a petty misdemeanor, the second a misdemeanor.

If a person who commits interference possesses a license, certificate or permit issued to him/her by the State Game Commission, the license, certificate or permit will be subject to revocation.

Interference means:

1. Intentionally placing yourself in a location where a human presence may affect the behavior of a game animal, bird or fish or the feasibility of killing or taking a game animal, bird or fish, with the intent of interfering with or harassing another person who is lawfully hunting, trapping or fishing.
2. Intentionally creating a visual, aural, olfactory or physical stimulus for the purpose of affecting the behavior of a game animal, bird or fish, with the intent of interfering with or harassing another person who is lawfully hunting, fishing or trapping.
3. Intentionally affecting the condition or altering the placement of or removing personal property used for the purpose of killing or taking a game animal, bird or fish.

EXHIBIT AA

901:12-1-04 Physical methods.

(A) Penetrating captive bolt

(1) Captive bolt guns are powered by gunpowder or compressed air and must provide sufficient energy to penetrate the skull of the species on which they are being used.

(2) Penetrating captive bolt shall be suitably placed so that the projectile sufficiently disrupts a cerebral hemisphere and the brain stem causing a sudden loss of consciousness and resulting in humane death.

(3) The penetrating captive bolt gun should be held firmly against the head.

(4) All manufacturer's directions regarding caliber and powerload must be followed.

(B) Nonpenetrating captive bolt

(1) The nonpenetrating captive bolt does not have a projectile and is powered by gunpowder or compressed air; and must deliver a percussive blow which produces unconsciousness.

(2) The non penetrating captive bolt gun should be held firmly against the head.

(3) Must not be used as a sole means of euthanasia, except for animals weighing equal to or less than twelve pounds and poultry.

(4) All manufacturer's directions regarding caliber and powerload must be followed.

(C) Blunt force trauma

A single decisive blow that produces immediate depression of the central nervous system and destruction of brain tissue resulting in rapid unconsciousness and humane death.

(D) Gunshot

(1) Shooting must only be performed by personnel proficient in the use of firearms and only in jurisdictions that allow for legal firearm use. Personnel, the public, and nearby animal safety and well-being must be considered; as well as control of the animal whenever feasible.

(2) Gunshot must utilize bullets of suitable caliber depending on the size of the animal to be euthanized, and that expand on impact. The projectile must enter the brain causing instant loss of consciousness and humane death.

(3) Ammunition for most animals must be a minimum caliber .22 hollow point long rifle. For large mature animals, such as cattle and swine, the minimum caliber must be .22 magnum hollow point long rifle.

(4) The gun is to be held as close as reasonably possible but not less than two inches from the head.

(E) Cervical dislocation – is the manual stretching or instrument assisted separation of the cervical vertebrae from the skull.

(F) Decapitation – is the rapid separation of the head from the neck.

(G) Electrocution

(1) One-step electrocution – must use alternating current applied to the head and the opposite side of the body behind the heart at the flank skin fold, causing simultaneous stunning and inducing cardiac fibrillation resulting in cerebral hypoxia.

(2) Two-step stunning and electrocution – the animal is first rendered unconscious by passing an alternating current across the head and followed immediately, in less than fifteen seconds, by passing the current from the head to the opposite side of the body behind the heart.

(H) Foam – is a water based product, utilizing a specialized delivery system that produces foam of the appropriate consistency to occlude the upper respiratory tract causing hypoxia in a rapid and humane manner.

(I) Maceration – is the use of a mechanical apparatus having rotating blades or projections that cause immediate fragmentation and death.

(J) Exsanguination – As a stand alone method is limited to use for ritual slaughter pursuant to sections 945.01 and 945.02 of the Revised Code. Exsanguination may be used to ensure death subsequent to stunning or in otherwise unconscious animals.

Effective: 01/20/2011

R.C. 119.032 review dates: 01/20/2016

Promulgated Under: 119.03

Statutory Authority: 904.03

Rule Amplifies: 904.03, 904.04

EXHIBIT BB

Ont okays use of hollow-point bullets, public and officer safety to be enhanced
Canadian Occupational Health & Safety News
August 14, 1995
Vol. 18, No. 32

Police representatives are praising the Ontario government's move to acknowledge safety concerns by ensuring officers throughout the province are armed with ammunition that is appropriate for today's policing environment.

Solicitor General Bob Runciman announced last week that the Equipment and Use of Force Regulation under the Police Services Act will be amended to permit the use of controlled expansion -hollow-point - ammunition. The amendments were approved on August 9 and are expected to be filed sometime this week.

"This change in firearm ammunition brings Ontario into line with standard police practice throughout North America," Runciman says in a statement.

The move has gained full support from police officers and administrators. "The minister has clearly recognized the community safety and officer safety factors in this issue and has listened to the input provided by the collective of the Police Association of Ontario, the Ontario Senior Officers' Association and the Ontario Association of Chiefs of Police (OACP)," says a statement from the OACP.

"This is long overdue," says Rick Cazabon of the Ontario Provincial Police Association. "We're pleased that the government has seen fit to equip police officers with quality ammunition" that will serve to improve both officer and public safety, Cazabon told COHSN.

The decision to go ahead with the ammunition follows recommendations made last March by a coroners' jury examining a police-related shooting death.

"It was concluded that hollow-point ammunition was the best means of ensuring incapacitation of a subject without over-penetration by the ammunition and consequent risk to the public," the ministry statement says.

The conclusion has been supported by expert testimony at other inquests, a ministry backgrounder adds.

The Ontario Ministry of Labour ruled in March that the full-metal jacket ammunition now issued to most police services does not constitute a workplace hazard (COHSN March 20, 1995). A ministry inspector ruled the complainants "have not demonstrated that the current ammunition fails to" penetrate sufficiently to achieve incapacitation.

Officers argue that full-metal jacket ammunition could pass through a subject, providing less stopping power and presenting more of a potential danger to the public.

The ministry ruling was being appealed by numerous police organizations in the province.

Officers must have best tools to provide protection

Runciman said last week, however, that "the Ontario government is committed to providing police services with the best available tools to make police work safer in their efforts to ensure public safety."

Services have until the end of the year to change ammunition in accordance with the amended regulation. All duty ammunition must be factory loaded.

The regulation now specifies that revolver bullets will be of a hollow-point configuration and semi-automatic bullets will be of a jacketed hollow-point configuration.

Ammunition is only one part of the larger Use of Force training program, the ministry backgrounder notes, which includes weapons safety, empty-hand control techniques, aerosol weapons and communications skills.

New state-of-the-art simulators will help to enhance officer training in critical thinking, judgement and decision making. Runciman last week announced that 20 simulators will be deployed throughout the province for use during the annual firearms recertification process. Two simulators will remain at the Ontario Police College.

The simulators use laser-disc technology to produce visual images. "Each scenario was developed to represent Ontario-based policing situations that are authentic, based on law, reflective of the provincial Use of Force model, sensitive to community situations, geographically varied and applica ble province-wide," the backgrounder says.

During a simulation, it notes, an officer will be able to choose from the various use of force options depending on the behaviour of the subject presented in each situation.

Although simulators have been in use for a number of years, Cazabon says they will now be a lot more accessible. Simulators are "a great innovation," he says.

EXHIBIT CC

PMC®

AMMUNITION

"Precision Made Cartridges"

CREATING A LEGEND... ONE SHOOTER AT A TIME

PMC GOLD LINE – STARFIRE

For well over a decade, Starfire high performance cartridges have been chosen by thousands of consumers as their chief means of home and personal defense. The Starfire bullet, brainchild of Tom Burczynski – the "dean" of high performance handgun bullet designers – was a forerunner in the new era of advanced bullet design, and its still going strong today.

The secret of Starfire's impressive performance lies in a unique, patented rib-and-flute hollow point cavity design that is like no other. Upon impact, the pre-notched jacket mouth begins to peel back, separating into five uniform copper petals and allowing expansion to begin. Pressure from incoming material creates lateral pressure on the ribs in the cavity wall, forcing them apart and allowing nearly instantaneous expansion of the lead core to the depth of the deep hollow point cavity. The sharp ribs are then exposed and form the leading edge of the expanded bullet, helping it cut its way through. The result is broad temporary and permanent wound cavities and impressive stopping power.

THE ULTIMATE IN CONTROLLED EXPANSION

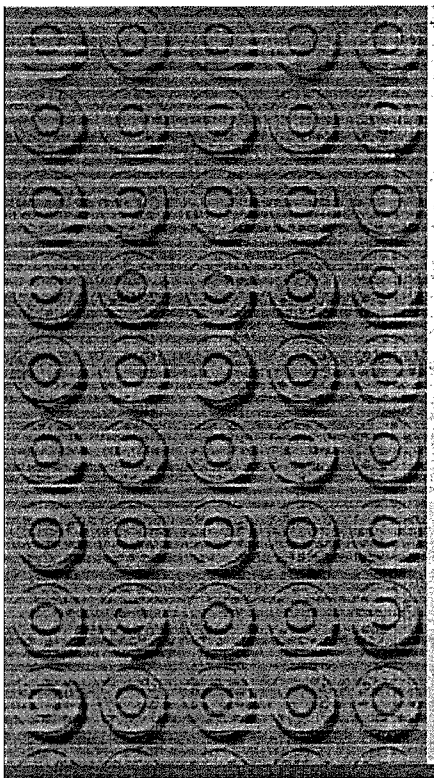
Starfire bullet integrity is excellent in weight retention.

While the bullet design of all Starfire cartridges facilitates smooth and reliable feeding in semiautomatic handguns, the bullet ogive and propellant impulse of the 9mm Starfire have been specifically engineered to provide trouble-free, completely reliable feeding in fully automatic weapons. This enables the use of high performance hollow point cartridges that feed just as dependably as ball ammunition when the full auto setting is necessary.

GOLD LINE PREMIUM PISTOL & REVOLVER STARFIRE AMMUNITION

CALIBER	ITEM NO.	BULLET TYPE	WEIGHT (Grains)		ENERGY (ft. lbs.)	
380 Auto*	380SFA	SFHP	95		180	
		MUZZLE	25 Yds	50 Yds	75 Yds	100 Yds
VELOCITY (feet/second)		925	884	847	813	783
BULLET PATH (inches)			+1.14	0.00	-4.12	-11.49

CALIBER	ITEM NO.	BULLET TYPE	WEIGHT (Grains)	ENERGY (ft. lbs.)
38 Special +P*	38SFA	SFHP	125	251



	MUZZLE	25 Yds	50 Yds	75 Yds	100 Yds
VELOCITY (feet/second)	950	918	889	863	838
BULLET PATH (inches)		+1.06	0.00	-3.77	-10.45

CALIBER	ITEM NO.	BULLET TYPE	WEIGHT (Grains)	ENERGY (ft. lbs.)
357 Magnum*	357SFA	SFHP	150	480

	MUZZLE	25 Yds	50 Yds	75 Yds	100 Yds
VELOCITY (feet/second)	1200	1131	1076	1031	992
BULLET PATH (inches)		+0.60	0.00	-2.47	-6.97

CALIBER	ITEM NO.	BULLET TYPE	WEIGHT (Grains)	ENERGY (ft. lbs.)
9mm Luger*	9SFB	SFHP	124	327

	MUZZLE	25 Yds	50 Yds	75 Yds	100 Yds
VELOCITY (feet/second)	1090	1043	1003	969	939
BULLET PATH (inches)		+0.75	0.00	-2.89	-8.03

CALIBER	ITEM NO.	BULLET TYPE	WEIGHT (Grains)	ENERGY (ft. lbs.)
40 S&W*	40SFA	SFHP	180	388

	MUZZLE	25 Yds	50 Yds	75 Yds	100 Yds
VELOCITY (feet/second)	985	958	933	910	889
BULLET PATH (inches)		+0.93	0.00	-3.45	-9.58

CALIBER	ITEM NO.	BULLET TYPE	WEIGHT (Grains)	ENERGY (ft. lbs.)
44 Rem Mag*	44SFA	SFHP	240	900

	MUZZLE	25 Yds	50 Yds	75 Yds	100 Yds
VELOCITY (feet/second)	1300	1212	1138	1079	1030
BULLET PATH (inches)		+0.49	0.00	-2.13	-6.08

CALIBER	ITEM NO.	BULLET TYPE	WEIGHT (Grains)	ENERGY (ft. lbs.)
45 Auto*	45SFA	SFHP	230	369

	MUZZLE	25 Yds	50 Yds	75 Yds	100 Yds
VELOCITY (feet/second)	850	830	811	792	775
BULLET PATH (inches)		+1.32	0.00	-4.63	-12.67

This ballistics table was calculated by using current data for each load. Velocity figures are from test barrels; user velocities may vary from loads listed. The data in the table represents the approximate behavior of each loading under the following conditions: 59°F, barometric pressure of 29.52 inches, sea level altitude.

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EXHIBIT DD

REPORT OF THE COMMITTEE ON HOLLOW-POINT BULLETS PRESENTED TO THE CIVILIAN COMPLAINT REVIEW BOARD ON JULY 8, 1998

On March 3, 1997, Police Commissioner Howard Safir announced that the New York City Police Department intended to employ hollow-point bullets in place of full metal jacket bullets. The Commissioner announced that this would result in a standardization of bullets used by members of the service since, for several years, members of the Transit and Housing Police Departments had used hollow-points. The Commissioner and his top commanders further stated that the reason for the change at Transit and Housing had been to keep the problem of ricochet bullets and pass-through bullets to a minimum. Ricochet bullets were particularly problematic in the steel and concrete environments of housing project halls and subway stations. Pass-through bullets were particularly problematic in crowded urban situations.

Many members of the public expressed concern, both in print, on television and radio, and in the public comment portions of our public meetings that hollow-point bullets demonstrated the dangerous propensities of so-called "dum-dum" bullets; there were also several expressed concerns about excessive rotation, large exit wounds and explosive internal damage. Serious questions were raised about the propriety of such bullets in an urban environment. Concerns were raised both with respect to officers, in effect, acting as judge, jury and executioner on the one hand and with respect to officers being the possible victims of friendly fire fatalities on the other. After extensive debate a formal vote of the Board was held and a committee was established on March 12, 1997, to examine these concerns and to report our views to the full board for its consideration.

The Committee consisted of Commissioners Condon, Livingston and Kuntz, with Chairman Barkan as an ex officio participating member. The first order of business of the Committee was to examine publicly available literature concerning hollow-point bullets. After examining the extensive literature, a copy of which is appended to this report, the members of the Committee met at the New York City Police Academy Training Facility on July 8, 1997, with firearms experts from the New York City Police Department. In the course of that meeting the Committee examined full metal jacket bullets both before and after they had been fired. We also examined hollow-point bullets both before and after they had been fired. The firearms experts provided us with a map listing all the jurisdictions in which hollow-point bullets were currently in use in the United States of America, as well as other information pertaining to the Department's desire to effect uniform use of hollow-point bullets for all its members.

The Committee then arranged to actually load, discharge and retrieve hollow point and full metal bullets at the New York City Police firing range in the Rodman's Neck section of the Bronx. We spent the better part of a day at the firing range. Each member of the Committee fired both full metal and hollow point bullets. Each member of the Committee reviewed the post firing bullets. The Committee brought with it to the range a commercially produced gelatin identified by the Federal Bureau of Investigation reports as approximating the density of human bone, flesh and tissue. We observed the firearms experts discharge both full metal and hollow-point bullets into the gelatin we provided. The Committee and the firearms experts then jointly examined the bullets in the gelatin, observing their path, how they did or did not fragment, and how far they traveled.

CONCLUSION

The Committee unanimously concluded as follows:

First, the selection of appropriate ordnance to protect the members of the public and the members of the New York City Police Department is among the most significant responsibilities a Police Commissioner faces. The decision must be made in a thoughtful, deliberate manner which balances the risks and rewards in what is truly a life and death choice for all concerned.

Second, the Committee, while by no means expert in the area of firearms discharge, did come to appreciate the seriousness of the decision and the seriousness of purpose and consideration of the various factors the Police Department and its experts demonstrated in making their decisions in this area.

Third, the Committee unanimously concludes that the decision to move from full metal jackets to hollow-points is consistent with modern, enlightened law enforcement judgments in a wide number of jurisdictions - both state and federal-and is a reasonable exercise of the Department's rights and responsibilities in this arena. The problem of ricochets and pass-throughs is a significant one: there is no question that lives are always at risk when bullets are discharged. The issue is how to minimize damage.

Fourth, the Committee can state from its own observations that hollow-points are neither exploding dum-dums nor fragmenting bullets. With one exception the hollow-points we discharged and those we observed being discharged flattened slightly. The one exception was a hollow-point which hit a frozen bit of the gelatin: it did not explode, but left minor fragments near the path of the bullet. In every instance we observed, the hollow

point bullet penetrated the gelatin substance far less extensively than the full metal jacket. Thus, the Department's assessment that full metal jacket bullets present a great risk of pass through and ricochet dangers is consistent with our observations.

Fifth, the Committee unanimously commends both the Police Department and the Public for the serious and somber discussion of this issue. In assessing the risks and rewards of ordnance selection, the Committee has attempted to discharge its duties with the care and attention this important matter deserves.

Respectfully submitted,

Richard Condon
William F. Kuntz, II
Deborah Livingston
Mel Barkan, Chairman

EXHIBIT EE

PLENTY OF OTHER CITIES ALREADY USE 'EM
The New York Post
February 14, 1999
By Rocco Parascandola

"We train to fire two or three shots at a minimum, and on average, we now see about three rounds fired per incident. Before it was close to four or five."'SGT. MICHAEL GRIFFIN, SAN FRANCISCO POLICE DEPARTMENT

The use of hollow-point bullets is not the explosive issue in other cities across America that it is here.

The ammo has been standard issue in big-city police departments across America, including Los Angeles, Chicago, Boston, Dallas, San Francisco and Honolulu - as well as by the FBI and United States Marshal Service.

Almost without fail, those departments say, hollow-point bullets have proven more effective than the full-metal jacket bullets the NYPD has traditionally used.

"It increases the knockdown power," Officer James Cypert, an LAPD spokesman, told The Post recently. "The [old bullets] weren't stopping the suspects."

In San Francisco, where cops are armed with .40 caliber hollow-point bullets, the number of rounds fired per shooting incident has dropped since the department started using them in the late 1980s.

"We train to fire two or three shots at a minimum and on average we now see about three rounds fired per incident," Sgt. Michael Griffin, the department's range master, reportedly said. "Before it was close to four or five."

While the official bullet of the NYPD has been the full-metal-jacket type, several thousand cops on the force already use hollow-point bullets. Cops in Transit and Housing got hollow-points before their units were merged into the NYPD in 1995.

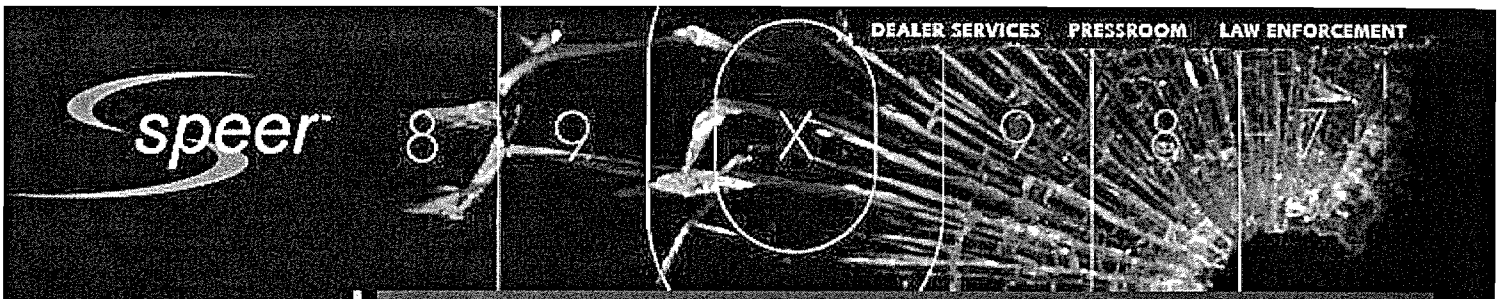
Those departments made the switch because officials were worried about officers and innocent bystanders being hit by ricocheting bullets.

Indeed, officers in the Transit Bureau struck six bystanders in 1995 and 1996.

Four of them were hit directly, one was hit by a bullet that ricocheted and another was hit by a bullet that passed through an object.

In the same period, 15 innocent bystanders were hit by cops using full-metal jacket bullets. Eight were hit directly and seven were hit by bullets that passed through people or objects.

EXHIBIT FF



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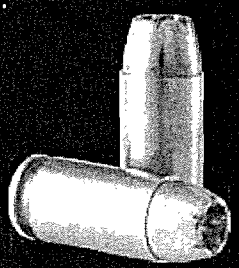

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EXHIBIT GG

STATEMENT OF MARTIN FACKLER, M.D.

EXPERTISE

1. I am a retired medical doctor with extensive experience in the study of wound ballistics and the treatment of firearms wounds. After 31 years of active duty service (including as a combat surgeon in Vietnam) in 1991 I retired from the U.S. Army Medical Corps with the rank of colonel. From 1981 to 1991, I directed the Army's Wound Ballistics Laboratory at the Letterman Army Institute of Research at the Presidio in San Francisco.

2. I am the author of 15 invited review articles and 14 book chapters on projectile wounding effects as well as more than 200 other wound ballistics related publications. I have testified as an expert in 211 cases involving wound ballistics and surgery – including two cases in which I testified on behalf of the City of San Francisco.

3. I am Affiliate Clinical Assistant Professor of Pathology, University Florida Medical School, Gainesville, and a consultant to the Department of Defense and the Department of State, Forensic Science Laboratories, Industry, Canadian General Standards Board, FBI, RCMP, and other law enforcement agencies. From 1993 to 1997, I was Visiting Professor of Wound Ballistics, Forensic Science Faculty, University of Marseille, and I am Honorary President of the French Wound Ballistics Society.

4. I was formerly a rifle marksmanship instructor and a competitive rifle shooter. For the past 62 years of my life I have been an active shooter and hunter in the United States, England, and Germany.

FACTS

5. I am informed that San Francisco has or is considering an ordinance which it interprets to forbid the sale of "hollow point" ammunition and to distinguish such ammunition from ammunition that serves a "sporting purpose," which it allows. This is an oxymoron. Hollow point ammunition is paradigmatically "sporting purpose" ammunition, i.e., ammunition used for

hunting game and for target shooting. The fact that the ordinance seek to contrive a nonexistent difference, betrays a surprising lack of competence regarding the pertinent facts.

6. Hollow point ammunition was, in fact, developed for hunting and is widely used for that purpose because hunting regulations often require its use or specify that only hollow point or other "expanding" bullets (e.g. soft-point bullets) may be used for hunting. Hollow point bullets are also widely used in target shooting, especially for long range shooting and benchrest shooting – since the hollow point bullet design is inherently the most accurate bullet type.

7. As applied to hollow point ammunition, the proposed ordinance is vague, ambiguous and confusing. Ultimately, the ordinance will be unintelligible to hunters, sellers of this ammunition, law enforcement officials, and the general public.

8. I am informed that the ordinance claims that "hollow point" ammunition is "not in general use." Such a claim reveals egregious ignorance of the facts. There exists no evidence to support such a claim. Hollow point ammunition is among the most common types of ammunition used in the United States. It is used by tens of thousands of American hunters (including myself) and by 98% of Federal, State, and local law enforcement groups.

9. Additionally, hollow point ammunition is used generally for self-defense. It is the most common form of ammunition for that purpose. It is approved for use by – and is often the only approved ammunition of – most police departments throughout the United States. That has been verified by my experience in having testified as an expert witness in dozens of cases involving hollow point ammunition throughout the United States (including two defending the city of San Francisco: *Yip v. San Francisco Police Department* and *Roberts v. Sawyer & Furminger*).

10. A non hollow point bullet typically lacks the capacity to incapacitate an aggressor rapidly enough to prevent injury of the victim. As one extreme example, even if shot through the heart by a non-expanding bullet, an attacker still can retain 30 to 40 seconds of activity. That is enough time for the attacker to empty a gun into a victim or stab the victim multiple times.

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11. The purpose of hollow point ammunition is to provide the near-immediate incapacitation required to protect victims from deadly attacks. That is why police departments all over the nation have adopted and issue hollow point ammunition to their officers.

Martin Fackler, M.D.

EXHIBIT HH

STATEMENT OF STEPHEN HELSLEY

FIREARMS AND AMMUNITION EXPERT QUALIFICATIONS

1. I am retired from the California Department of Justice (DOJ). During my 26-year career, I spent 6 years as the Chief of the Bureau of Forensic Services (BFS) and then Assistant Director of the Division of Law Enforcement. Both assignments involved management of the 12 forensic laboratories operated by DOJ. One of the functions carried out by BFS forensic scientists was the examination of firearm related evidence.

2. Since my retirement from DOJ, I have authored at least 50 published articles on firearm and ammunition related issues. I have also co-authored two books – the second of which is scheduled for publication in December of this year. Both books address firearm and ammunition related issues.

3. For the past 19 years I was first a state liaison and then a consultant for the National Rifle Association. In those positions, I have repeatedly dealt with legislative issues involving firearms and ammunition.

4. I am currently a member of the American Academy of Forensic Sciences and a technical advisor to the Association of Firearm and Tool Mark Examiners.

5. I have collected firearms and related books for over 50 years. I have a firearms library that contains approximately three thousand books. I reload for approximately 100 different types of cartridges and cast lead bullets for many of them. I have been a competitive shooter for over forty years and was the chief firearms instructor for DOJ for many years. I have toured firearm-manufacturing facilities in England, Germany, Italy, and Russia, as well as an ammunition manufacturer in the United States.

HISTORICAL PERSPECTIVE

6. The assertion in "SEC. 613.10 License – Conditions" that certain types of ammunition "serve no sporting purpose" is not accurate. As the ordinance makes no attempt to distinguish between cartridges used in handguns versus those used in rifles or shotguns, some historical perspective is necessary. But one thing is clear: despite the message of the "factual" findings purporting to justify the ban of the sale of "enhanced lethality ammunition," there is nothing

particularly novel or unique about the type of bullets the ordinance seeks to regulate. In fact, the materials currently used to construct bullets are much the same as those used a century ago.

7. Rifled barrels designed to use conical shaped bullets came into general use in the 1850s. By the late 1860s, breech-loading firearms using drawn brass or brass wrapped (coiled) cases with conical bullets were commercially available. One popular type of bullet was a paper-patched hollow-point that contained a copper tube. These bullets were loaded in British cartridges such as the .500 3" BPE (coiled), the .450 3 ¼" BPE (coiled), and the .300 Rook, all of which were used for hunting across the considerable British Empire of the 19th Century.[1]

8. With the arrival of smokeless powder in the late-1880s, the higher velocities produced necessitated a new bullet design. The Swiss were among the first to use a copper/zinc (tombac) envelope around a lead core. In 1898, the French introduced their non-lead Balle D bullet that was 90% copper and 10% zinc. By the beginning of the 20th Century, the "soft nose" jacketed-lead expanding hunting was a standard with hunters. In 1907, the Hoxie Ammunition Company of Chicago, Illinois, placed a steel ball in the cavity of their hollow point bullets to accelerate expansion.

9. Ammunition makers have, for the past 150 years, continually attempted to refine their bullet designs. In spite of those efforts, bullets still fall into the three basic categories that existed at the end of the 19th Century: lead, jacketed lead, and alloyed copper. Pure lead can be hardened to help control expansion by adding tin and/or antimony. Jacket thickness can also be increased (in combination with lead hardness) to slow expansion. Expansion can be enhanced for all types of bullets by "hollow pointing." These types of manipulations have long been employed by ammunition makers to manufacture ammunition that best meets the needs of sport hunters.

10. For most sport hunting applications, bullet expansion is a *desired* characteristic. The objective is for the bullet to perhaps double its diameter, retain a high percentage of its original weight, and yet still penetrate deeply enough to reach vital organs. As such, it is not uncommon for modern hunters to use expanding point bullets when hunting certain types of game.

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[1] More detail on these and other cartridges loaded with "copper tube" bullets can be found in *British Sporting Rifle Cartridges* by Bill Fleming.

11. Expansion is determined by impact velocity, bullet design/construction, and the resistance encountered. High velocity impacts with bone or other materials can result in bullet fragmentation and/or the bullet taking an irregular shape with sharp edges of jacket material. Neither benign nor willful ignorance can change the well-established facts of how bullets react when striking tissue and bone.

12. For the reasons described above, the findings regarding so-called "enhanced-lethality ammunition" is a cynical fiction.

Stephen Helsley

EXHIBIT II

City Will Change Bullets for Police To Hollow-Points

THE WASHINGTON POST NOV 27 1976

By Stephen J. Lynton
and Alfred E. Lewis
Washington Post Staff Writers

The D.C. police department, in a long-debated move, announced yesterday that city police officers will soon be issued "hollow-point" bullets for use in their service revolvers.

In announcing the switch in ammunition, police officials indicated that the department now believes it has headed off a possible public furor over the controversial issue. Police officials noted that the change in ammunition had already been approved by a citizens' advistory panel, and officials said the department has embarked on an elaborate public-education campaign to dispel "misconceptions" about hollow-point bullets.

The hollow-point bullets—whose lead tips are hollowed out to make them mushroom, or flatten out, on impact with their target—will replace the standard, round-nose bullets long carried by police officers here. The new bullets will have the same weight as those now in use. The hollow-point bullets will travel at a slightly higher velocity than the traditional .38 caliber round-nose bullets used by D.C. police.

The police department said the hollow-point bullets will have more "stopping power" than do round-nose bullets. As a result, the department argued, they are more likely to halt a criminal in his tracks and prevent him from firing back at a police officer.

The department also said the hollow-point bullets are less likely to hit an innocent bystander. The hollow-point bullets, the department said are less apt to pass through their intended victim's body and hit another person. They are also less likely to ricochet, the department said.

The local police officers' union and many rank-and-file members of the city police force have long pressed for a shift to hollow-point bullets. But the change has been resisted because of fears of sparking a public controversy over the move. Hollow-point bullets are often referred to—incorrectly, according to some authorities—as "dumdums," a similar form of bullet that causes an ugly wound.

Since The Washington Post disclosed Nov. 5 that the police department was seriously considering the switch to hollow-point bullets, however, there has been little apparent opposition to the change in ammunition.

The only public criticism of the proposal came from the American Civil Liberties Union. "I just do not believe that a bullet that is going to stop someone faster does not have greater wounding power," Ralph Temple, the head of the ACLU's Washington office, said earlier this month. Temple could not be reached yesterday for comment on the police department's announcement.

In its announcement, the police department did not say how soon hollow-point bullets would be issued to its officers, but the switch apeared unlikely to occur for several months. Chet Johnson, a management analyst for the police department who directed a study of hollow-point and other bullets, said two to three months may be required for the department to solicit bids from hollow-point bullet manufacturers and for the bullets to be delivered.

In the meantime, the department plans to carry out its public education campaign, which includes a newly prepared 10-minute videotape film designed to "dispel any misconceptions" caused by previous publicity about the issue. The department, Johnson said, will show the videotape to citizen advisory councils in each of the city's seven police districts and to any other sizable group that wants to see it.

In recent years, police departments throughout much of the Washington area and across the United States have changed their standard ammunition and begun issuing hollow-point or other specially designed bullets with more apparent "stopping power."

According to data compiled by the D.C. police department, the hollow-point bullets that will be issued to city police officers here are identical to those already in use by the Federal Bureau of Investigation and the Arlington County police. The Montgomery and Prince George's county police departments, the Secret Service, the Executive Protective Service, and the Drug Enforcement Administration also use hollow-point bullets, though of lighter weights and different design. Fairfax County police carry soft-point bullets, which also flatten on impact.

To bolster their arguments for the switch to hollow-point bullets, D.C. police officials pointed yesterday to studies by Dr. Vincent J. M. DiMaio,

See BULLET, D3, Col. 5

City Police to Be Issued Hollow-Point Bullets

BULLET, From B1

deputy medical examiner for Dallas County, Tex., who is regarded as one of the nation's authorities on hollow-points. DiMaio has reported that wounds caused by hollow-point bullets fired from police pistols are "basically the same" as those from round-nose bullets.

DiMaio, D.C. police officials and some other authorities assert that hollow-point bullets differ significantly from dumdums. Dumdums, they say, are crudely produced, soft-pointed bullets fired at high velocities from rifles. They tear through a victim's body, often causing severe, gaping wounds. Hollow-point bullets used by urban police departments, they argue, are fired from pistols at lower velocities. These hollow-points, they say, do not mutilate a victim's body or internal organs and do not usually break into fragments.

Both hollow-point and dumdum bullets do, however, bear some resemblance—to the extent that both have points that flatten on impact with their targets. Dumdum bullets, named for a town near Calcutta, India, where they were first made during the 19th century, have largely been barred in international conflict because of the wounds they cause.

While lending some apparent support for the D.C. police department's shift to hollow-point bullets, DiMaio's studies also cast some doubt over the issue. In a 1974 article written by DiMaio and distributed yesterday by the city police department, DiMaio said:

"What police agencies desire is a pistol cartridge that will stop a person 'dead in his tracks.' There is not and never will be such a cartridge. This is because 'stopping' an individual depends not only on the 'stopping power' of the bullet, but also on the organs injured and the physiological make-up of the person shot."

How the police department's switch to hollow-point bullets will be viewed by city politicians and neighborhood groups was unclear yesterday. A spokesman for Mayor Walter E. Washington reported the mayor unavailable for comment. Several key City Council members also could not be reached.

The Citizens Advisory Council that consults with D.C. Police Chief Maurice J. Cullinane reportedly voted 8 to 1 Wednesday with one abstention to back the police department's decision. The Rt. Rev. John T. Walker, the council's chairman, did not attend the meeting and said yesterday he had not yet formulated an opinion on the issue.

By Joe Heiberger—The Washington Post

Present police bullet, at left, contrasts with hollow-point ammunition.

EXHIBIT JJ

THE WASHINGTON POST Friday, November 5, 1976

More Powerful Bullets Studied By D.C. Police

By Stephen J. Lynton
and Alfred E. Lewis
Washington Post Staff Writers

The D.C. police department, after years of debate, is now seriously considering changing the type of ammunition carried by city police officers to allow the use of "hollow-point" bullets.

While the change in police ammunition is still under study, D.C. Police Chief Maurice J. Cullinane said in an interview yesterday, "From all I have been able to ascertain, I am of the opinion that you need this (hollow-point) ammunition that has the knock-down power."

Cullinane added, however, that he is uncertain whether such a shift in ammunition would be acceptable to other city officials and the public.

A switch to hollow-point bullets from the standard round-nose bullets now carried by city police has long been advocated by the local police officers' union and by rank-and-file members of the police force. They argue that hollow-point bullets are more likely to stop a criminal in his tracks, prevent him from firing back at a police officer and reduce chances of a police officer's death in a gun battle.

But use of hollow-point bullets here has met resistance because of fears of setting off a public furor over the issue. Hollow-point bullets are often referred to—incorrectly, according to Cullinane and other authorities—as "dumdums," a similar form of bullet that causes an ugly wound. City police, concerned about a possible controversy, are already mapping out a public education campaign in the event they decided to make the switch to hollow-points.

As more and more police departments throughout the United States have made the change from round-nose to hollow-point or other, recently designed bullets, the issue has undergone wide-ranging debate and considerable study.

Dr. Vincent J. M. DiMaio, deputy medical examiner for Dallas County, Tex., who is regarded as one of the nation's experts on hollow-point bullets, has detected as much misinformation as truth in the controversy. "The problem is that the advocates are wrong and the opposition is wrong. There's a lot of garbage put

See POLICE, A4, Col. 1

More Powerful Ammo Studied By D.C. Police

POLICE, From A1

out about this," he said in a telephone interview yesterday.

DiMaio, expressing agreement with some D.C. police officials and police union leaders, drew a sharp distinction between hollow-point bullets and dumdums. Dumdums, he said, are soft-pointed bullets, fired at a high velocity from a rifle. Dumdums tear through a victim's body, he noted, usually causing a severe wound.

The hollow-point bullets used by many police departments, DiMaio said, are fired from a pistol at a lower velocity. The wound caused by these hollow-point bullets, DiMaio added, does not differ from that caused by a round-nose bullet. "They look exactly the same," he said.

Hollow-points do, however, resemble dumdums to the extent that both usually have heads that expand on impact with their target.

Dumdum bullets are named for a town near Calcutta, India, where they were first produced during the 19th century. Because of the ugly wound caused by dumdums, the use of expanding bullets was forbidden in international conflict by the second Hague conference, in 1899, in a declaration to which the United States did not subscribe. State Department officials have said in recent years, however, that the U.S. armed forces do not use expanding bullets because of a subsequent Hague convention to which the U.S. is a party.

Hollow-point bullets are now used by the Federal Bureau of Investigation, as well as other federal police agencies. An FBI spokesman noted yesterday that FBI agents carry weapons only for self-defense and said the bureau uses hollow-point bullets mainly because "you can neutralize the individual with a minimum number of shots."

In recent years, suburban Washington police departments, including those in Prince George's, Montgomery and Fairfax counties, have joined the growing national trend to use of various forms of expanding bullets.

Advocates of the use of hollow-point bullets by city police departments argue that the bullets offer several advantages in addition to greater effectiveness in stopping a criminal from returning a police officer's gunfire. The hollow-point bullets are said to be less likely than round-nose bullets to ricochet. They are also described as less likely to travel through an intended victim's body and then strike an innocent bystander.

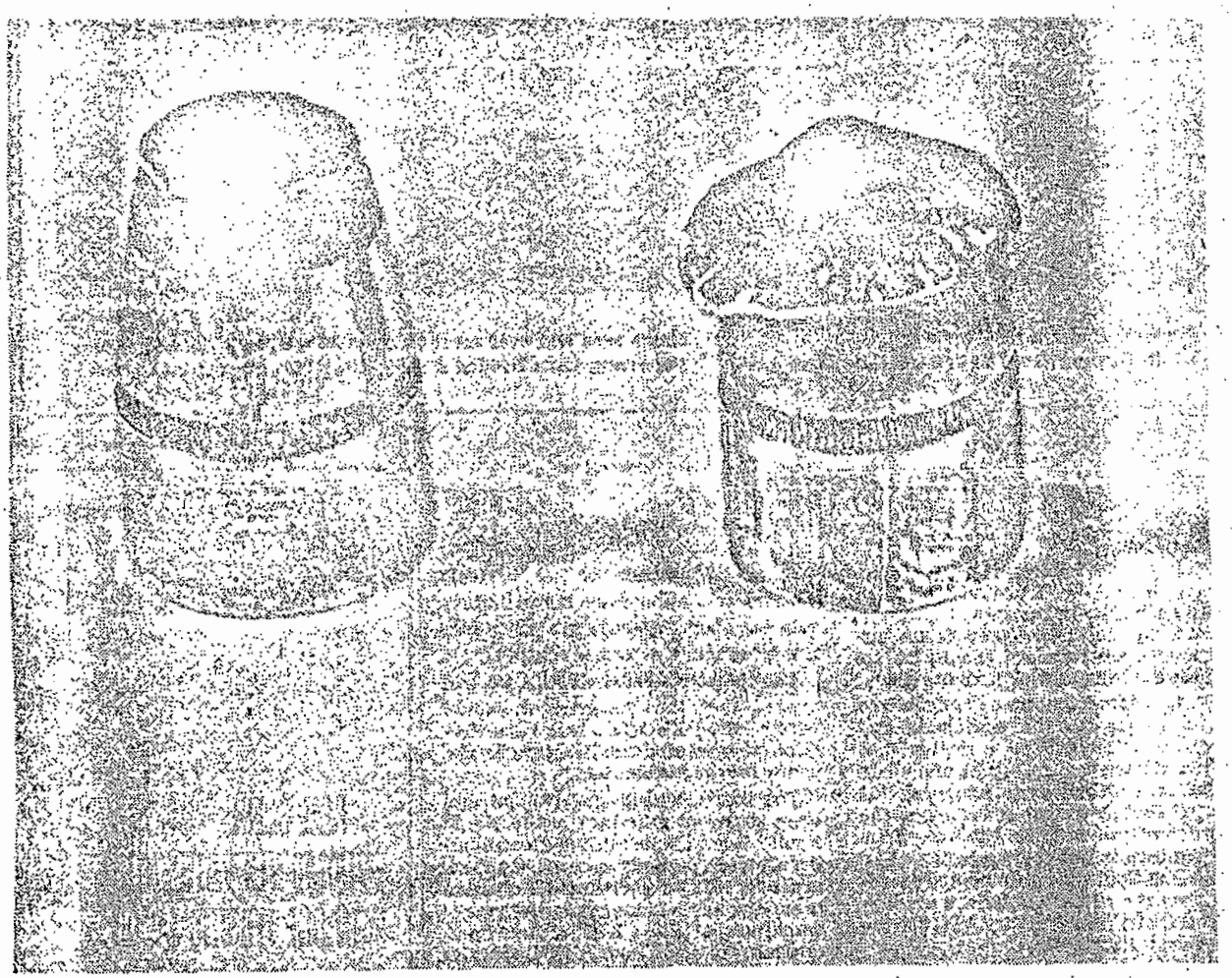
Use of hollow-tip bullets was considered here, however, by former D.C. Police Chief Jerry V. Wilson, who rejected them after a study was made. A D.C. police ballistics specialist said in 1972, when suburban county police departments were shifting to expanding-head bullets, that the city police would not chage to hollow-points because of fears of a public controversy.

D.C. Police Chief Cullinane said yesterday that he would make no decision on whether to switch to hollow-point bullets until he has examined an extensive study of the issue now under way by his department. Deputy Chief Bernard D. Crooke, who is in charge of the study, said it would be complete in about 10 days.

Cullinane repeatedly stressed his concern over what he described as "public acceptance" of any change in police ammunition and his worries about apparent confusion between hollow-point and dumdum bullets. "A hollow-point has totally nothing to do with a dumdum," he remarked.

"The men in the department are concerned about this. I'm concerned about their safety and I'm concerned about the ammunition," Cullinane added. Officials of Local 442 of the International Brotherhood of Police Officers, which represents city police, said yesterday that they have long pressed for use of hollow-point bullets here.

D.C. City Council member Willie J. Hardy, whose Council committee reviews police matters, said yesterday that she is aware of discussion of a possible change in police ammunition but has not decided whether to support such a move.



At left, a hollow-point bullet before firing. At right, a hollow-point bullet after its impact with a target.

EXHIBIT KK

Region's cops back use of hollow-point bullets
The Albany Times-Union
March 8, 1997
By Trace Tully

They say ammunition is right for the job, despite New York City dispute

As New York City debates the merits of hollow-point bullets, local cops who have used them for years say they can't imagine working with anything else.

"They're safer for the public, the police and maybe even the bad guy," said Albany Assistant Chief William M. Murray, a firearms expert.

Albany, like the State Police and all other local police departments, use hollow-point bullets, which expand inside the body, making them deadlier, but less likely to exit the target and strike an innocent bystander.

The New York Police Department recently announced it intended to switch to hollow point bullets, drawing quick criticism from community activists and questions from Mayor Rudy Giuliani. The Rev. Al Sharpton, who is seeking the Democratic nomination for mayor, has threatened a legal fight to keep police from using hollow points.

"I intend to fight this move legally. I plan to enjoin a judge to keep police from using those deadly bullets," Sharpton said.

He said that in communities that have experienced police brutality, "this is like pouring salt on their wounds." He called the decision to use the new bullets "a sort of mobile death penalty strategy."

Locally, police noted that all bullets can be deadly.

"When you're shooting, you're shooting to kill," said Troy Officer Jack Rogers, the city's firearms instructor who has been training officers to shoot with hollow points for about five years. "It sounds crude, but that's what these guns are made for. To pretend otherwise, it's semantics."

About 90 percent of all policing agencies in the country use controlled expansion bullets, commonly known as hollow points, Murray estimated. Many sporting goods stores sell controlled expansion bullets, which are available to the public without any special permit, officials said.

"It's crazy to be on the street with anything else," said Sgt. Dan Mazzone, a firearms instructor with the Schenectady Police Department. Schenectady police recently traded their 9mm handguns for more powerful .40-caliber Glocks, but have been using hollow-point bullets for more than 10 years, Mazzone said.

The hollow-point bullets, which are more expensive than the full-metal jacket bullets, are designed to include an internal cavity. Fluid gets trapped in the cavity upon impact, forcing the bullet to expand, shatter and come to rest within the body.

"The full metal jacket (bullet) will tend to penetrate an object and has less stopping power," said Officer Paul Kirwan, who runs Albany's firing range. "The danger is that it could go through a person and strike another person that was not the intended target."

This is what happened in New York City two weeks ago, when a Manhattan woman lost her eye to a cop's stray round-tipped bullet that tore through her front door. Howard Safir, commissioner of the NYPD, said seven bystanders were wounded last year by police bullets that passed through their targets.

Capital Region police said they cannot remember a single incident in the last five years involving a person who was struck by a bullet that had exited its target. In fact, although precise statistics were not available Friday, police here said they rarely discharge their weapons. For example, Albany County Sheriff James Campbell said he can't remember a single deputy firing a weapon in the seven years he's been in office.

Murray said he braced for a similar type of controversy now facing New York City when Albany made the switch to hollow points 10 years ago. There was little, he said.

"We were afraid and ready for the big debate here," Murray said. "But it was just the right thing to do."

EXHIBIT LL

WAC 16-24-040
Mechanical — Gunshot.

The slaughtering of cattle, calves, sheep, swine, goats, horses and mules by shooting with firearms and the handling in connection therewith, in compliance with the provisions contained in this section, are hereby designated and approved as humane methods of slaughtering and handling of such animals under the law.

(1) Utilization of firearms, required effect; handling.

(a) The firearms shall be employed in the delivery of a bullet or projectile into the animal in accordance with this section so as to produce immediate unconsciousness in the animal by a single shot before it is shackled, hoisted, thrown, cast, or cut. The animals shall be shot in such a manner that they will be rendered unconscious with a minimum of excitement and discomfort.

(b) The driving of the animals to the shooting areas shall be done with a minimum of excitement and discomfort to the animals. Delivery of calm animals to the shooting area is essential since accurate placement of the bullet is difficult in case of nervous or injured animals. Among other things, this requires that, in driving animals to the shooting areas, electrical equipment be used as little as possible and with the lowest effective voltage.

(c) Immediately after the firearm is discharged and the projectile is delivered, the animal shall be in a state of complete unconsciousness and remain in this condition throughout shackling, sticking and bleeding.

(2) Facilities and procedure.

(a) General requirements for shooting facilities; operator.

(i) On discharge, acceptable firearms dispatch free projectiles or bullets of varying sizes and diameters through the skull and into the brain. Unconsciousness is produced immediately by a combination of physical brain destruction and changes in intracranial pressure. Caliber of firearms shall be such that when properly aimed and discharged, the projectile produces immediate unconsciousness.

(ii) To assure uniform unconsciousness with every discharge when small-bore firearms are used, it is necessary to use one of the following type projectiles: Hollow pointed bullets, frangible iron plastic composition bullets, or powdered iron missiles. When powdered iron missiles are used, the firearms shall be in close proximity with the skull of the animal when fired. Firearms must be maintained in good repair. For purposes of protecting employees, inspectors, and others, it is desirable that all firearms be equipped with safety devices to prevent injuries from accidental discharge. Aiming and discharging of firearms should be directed away from operating areas.

(iii) The provisions contained in WAC 16-24-030 (2)(a)(iii) with respect to the stunning area also apply to the shooting area.

(iv) The shooting operation is an exacting procedure and requires a well-trained and experienced operator. He must be able to accurately direct the projectile to produce immediate unconsciousness. He must use the correct caliber firearm, powder charge and type of ammunition to produce the desired results.

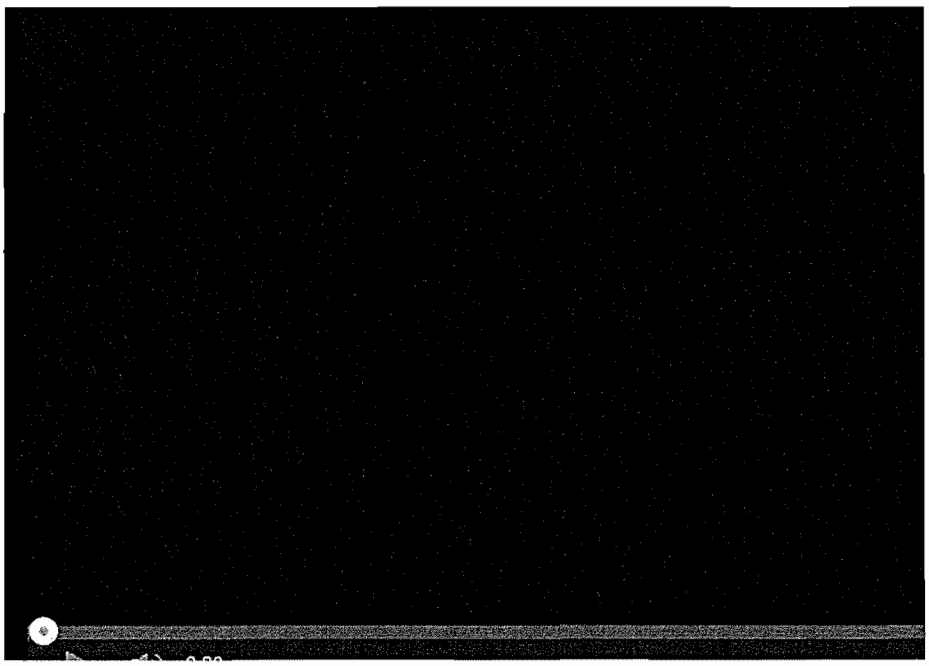
(b) Special requirements: Choice of firearms and ammunition with respect to caliber and choice of powder charge required to produce immediate unconsciousness varies, depending on age and sex of the animal. In the case of bulls, rams, and boars, small-bore firearms may be used provided they are able to produce immediate unconsciousness of the animals. Small-bore firearms are usually effective for stunning other cattle, sheep, swine, goats, calves, horses and mules.

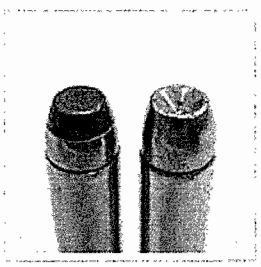
[Order 1067, Regulation 8, filed 9/19/67, effective 10/20/67; Order 804, Regulation 1.04, effective 3/18/60.]

EXHIBIT MM

[ARTICLE & VIDEO] Why Do Hollow Point Bullets Cause More Damage?

JUNE 1, 2010 0 COMMENTS





Hollow point bullets generally cause much more tissue damage than soft point bullets, also known as "ball ammunition." The reason is because hollow point bullets expand in diameter to up to three times it original size (known as "mushrooming") after hitting the target, which results in a larger wound cavity. However, this expansion of the bullet also means that hollow point bullets do not penetrate as far into the target – they penetrate only up to 13 inches versus ball ammunition, which penetrates up to 24 inches. As a result, soft point bullets are far more likely to pass completely through the target and exit through the other side.

A 2009 study published in the journal Military Medicine found that hollow-point-related head wounds are particularly difficult to treat. They found embolisms and bullet fragments in the path of the bullet. Additionally, without exit wounds, kinetic energy is transferred to the body, resulting in more damage.

For these reasons, hollow point bullets are often used by police agencies – they are more

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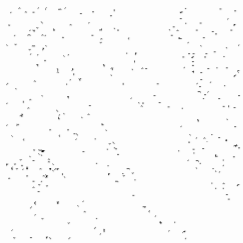
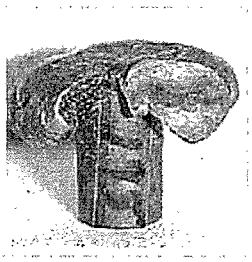


[ARTICLE] Father Beheads Daughter's Alleged Rapist

likely to incapacitate the target quickly as a result of the increased tissue damage done, but because they do not penetrate the target as far, they are less likely to travel through the target and cause collateral damage (hitting bystanders or ricocheting). Interestingly, while police in many countries are allowed to use hollow point bullets, military use of hollow point bullets is actually banned among signatory nations under the Hague Convention of 1899, which produced one the first formal statements of the laws of war and war crimes. This ammunition is barred from combat and allowed on overseas posts only on a nation-by-nation basis.



On hitting the target, a hollow point bullet's expansion is known as mushrooming because it will have the appearance of a widened, rounded nose on top of a cylindrical base, like a mushroom. The greater frontal surface area of the expanded bullet limits its depth of penetration into the target, and causes more extensive tissue damage along the wound path.

The term "hollow-cavity bullet" is used to describe a hollow point where the hollow is unusually large, sometimes dominating the volume of the bullet, and causes extreme expansion or fragmentation on impact.

Accuracy

Hollow point bullets also tend to be more accurate than soft point bullets. The hollowed out nose section of the bullet shifts the center of gravity to the bullet's tail section, which results in an improved ballistic coefficient (the ability to overcome air resistance in flight), greater down-range velocity retention (the bullet does not lose as much of its speed), and greater resistance to deflection by crosswinds. This increased accuracy at long range is one reason why US military snipers use hollow point bullets in some of their rifles.

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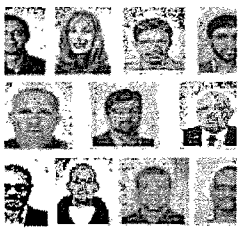

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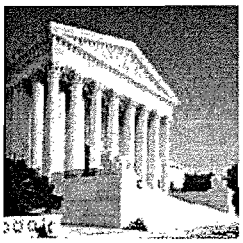

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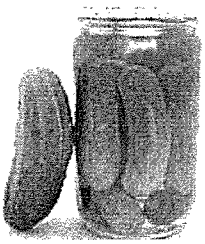

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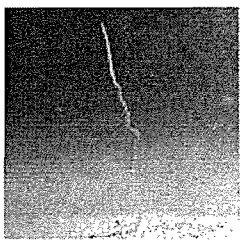

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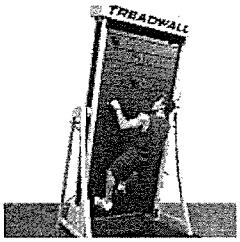

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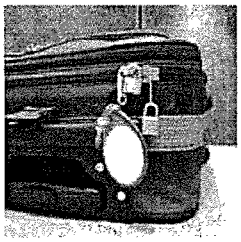

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