Ballistic Identification

Background

All firearms leave unique markings on the bullets and shell casings they fire.[1] Ballistic identification (sometimes called ballistic "fingerprinting") laws make it possible to link bullets and shell casings recovered at crime scenes to the firearm that fired them by requiring gun manufacturers to test-fire the firearms they produce. Images of the unique ballistic markings left on bullets and shell casings by each weapon are then stored in a database so that law enforcement can later determine whether a particular gun fired a particular bullet. Ballistic identification systems can identify the make, model, and serial number of the gun from which a bullet or cartridge case was fired without recovering the gun itself.[2]

In the mid-1990s, the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) pioneered the concept of using automated ballistic imaging and comparison equipment to analyze crime gun evidence.[3] ATF's National Integrated Ballistic Information Network (NIBIN) currently provides Integrated Ballistic Identification System (IBIS) equipment to numerous state and local law enforcement agencies nationwide.[4]

IBIS equipment is used to compare images of bullets and shell casings found at crime scenes to ballistic images previously entered into the NIBIN database. When a "match" is found, firearms examiners are able to conclude that the same gun was used in both crimes. Recovered crime guns are also test-fired and their ballistic images entered into the system, allowing law enforcement to determine whether those guns were used in other crimes.

ATF has found that its automated ballistics imaging database "provides an invaluable opportunity to law enforcement. . . ."[5] ATF has also concluded that "[n]umerous violent crimes involving firearms have been solved through use of the system, many of which would not have been solved without it."[6]

For NIBIN to reach its fullest potential, however, it must overcome one fundamental limitation – it only contains ballistic fingerprints from guns recovered from crime scenes. A national ballistic fingerprinting law would improve significantly upon the existing system because it would require gun makers to test-fire and ballistically image all new guns. Law enforcement officials would then be able to directly link bullets and shell

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[1] Robert M. Thompson et al., *Ballistic Imaging and Comparison of Crime Gun Evidence by the Bureau of Alcohol, Tobacco and Firearms* 4 (May 13, 2002).
[2] The Educational Fund to Stop Gun Violence, *Cracking the Case: The Crime-Solving Promise of Ballistic Identification* 2 (July 2004).
[3] National Integrated Ballistic Information Network, Bureau of Alcohol, Tobacco and Firearms, U.S. Department of Treasury, *The Missing Link: Ballistics Technology That Helps Solve Crimes* 6-7 (2001).
[4] Thompson, *supra* note 1, at 4.
[5] *Id.* at 26.
[6] *Id.* at 2.

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casings found at a crime scene to a particular gun, even if the gun itself had not been recovered.

There is strong public support for such a law. In an October 2002 poll conducted for ABC News, 73% of the respondents favored ballistic fingerprinting.[7]

Ammunition serialization is another law enforcement tool that can assist in solving more gun-related crimes. A system implementing ammunition serialization or coding would require manufacturers to stamp a unique microscopic code or serial number on all bullets.[8] At the time of purchase, the code or serial number would be recorded along with the purchaser's information by a licensed dealer. Later, when a cartridge casing is found at a crime scene, the spent cartridge could be quickly traced back to the purchaser. This aids law enforcement investigations into shooting crimes. Serialization of ammunition can also deter the use of guns in crimes and the sharing of ammunition. California considered adopting a serialization requirement in 2005, but withdrew the legislation pending further study.[9]

Summary of Federal Law

Federal law does not require ballistic identification.

SUMMARY OF STATE LAWS CONCERNING BALLISTIC IDENTIFICATION

In 2007 California passed legislation that requires handgun microstamping for every new semiautomatic handgun manufactured or sold in the state. Two states, Maryland and New York, have created statewide ballistics imaging databases for new handguns sold in those states. Connecticut operates a statewide firearms evidence databank that stores ballistic information on handguns recovered or used by police.

States With Laws Concerning Ballistic Identification

California	**Cal. Penal Code § 12126(b)(7)**
Connecticut	**Conn. Gen. Stat. § 29-7h**
Maryland	**Md. Code Ann., Pub. Safety § 5-131**
New York	**N.Y. Gen. Bus. Law § 396-ff**

[7] In the poll conducted by TNS Intersearch for ABC News, 1,032 adults nationally were asked if they favored a law requiring every gun sold in the country to be test-fired so that authorities would have its ballistic fingerprint in case the firearm were ever used in a crime. Eighty-two percent of non-gun owners favored the law. Sixty-one percent of gun owners were in favor with 73% of the respondents overall favoring such legislation. ABC News Poll (October 16-20, 2002), *at* http://pollingreport.com/guns2.htm.
[8] James P. Sweeney, *Lockyer Wants Handgun Ammo Branded*, San Diego Union-Tribune, Oct. 6, 2004, at A-1. *See also* Jeremiah Marquez, *Calif. AG Wants ID Codes on Handgun Ammo*, Associated Press Online, Oct. 8, 2004.
[9] James P. Sweeney, *Lockyer Holsters Ammo-Coding Measure*, San Diego Union-Tribune, Aug. 24, 2005, at A-3.

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Description of State Laws Governing Ballistic Identification

1. *California:* With legislation passed in 2007, California became the first state to require the use of handgun microstamping, an innovative technology that enables law enforcement to match cartridge cases found at a crime scene to the gun's owner. On October 13, 2007, Governor Arnold Schwarzenegger signed into law the Crime Gun Identification Act, which requires all new semiautomatic handguns manufactured or sold in California after January 1, 2010 to be etched with a microscopic array of characters that identify the make, model and serial number of the firearm. These characters would be transferred to each cartridge case when the handgun is fired, thereby enabling law enforcement to match a cartridge case found at a crime scene to the gun that fired it and, ultimately, through an existing database maintained by the California Department of Justice, to the gun's owner.

2. *Maryland*: Maryland requires manufacturers to test-fire all handguns shipped into the state after October 1, 2000, and provide a spent shell casing to the purchasing firearms dealer. Once the gun is sold, the dealer must forward the casing to the state police, who then enter its unique markings in a database for possible use in future criminal investigations.

3. *New York*: New York enacted legislation similar to Maryland's in August of 2000, which requires ballistic fingerprinting of all handguns shipped into the state after March 1, 2001.

4. *Connecticut:* Connecticut requires that the Division of Scientific Services ("Division") of the Connecticut Department of Public Safety establish a firearms evidence databank. The databank is a computer-based system that scans a "test fire" from a handgun and stores an image of the test fire in a manner suitable for retrieval and comparison to other test fires and to other evidence in a criminal investigation. All handguns recovered by the police through a criminal investigation, as found property, or for destruction must be submitted to the Division laboratory for collection of a test fire. Police departments are also required to submit test fires from all handguns issued to employees.

SUMMARY OF SELECTED[10] LOCAL LAWS REQUIRING BALLISTIC IDENTIFICATION

LCAV has not identified any local laws requiring ballistic identification.

[10] This section is based on research and analysis of existing firearms laws in: Boston, Massachusetts; Chicago, Illinois; Hartford, Connecticut; Los Angeles, California; Newark, New Jersey; New York, New York; Omaha, Nebraska; and San Francisco, California. LCAV selected these cities because they are located in states that grant local jurisdictions broad authority to regulate firearms. It also includes existing laws in Cleveland and Columbus, Ohio. Note, however, that in 2006, the Ohio Legislature passed House Bill 347 (overriding the Governor's veto), which created Ohio Rev. Code Ann. § 9.68(A), a provision that purports to preempt all local authority to regulate firearms with few, limited exceptions. Legal challenges to the law are pending. Additional information about state laws governing local authority to regulate firearms is contained in the section of this report titled "The Legal Background."

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FEATURES OF COMPREHESIVE LAW REQUIRING BALLISTIC IDENTIFICATION

The features listed below are intended to provide a framework from which policy options may be considered and debated. LCAV has not attempted to include every provision or every creative approach identified in the analysis above, nor have we addressed appropriate exceptions so that the regulation does not produce unintended consequences. A jurisdiction considering modifying existing, or developing new legislation in this area should consult with counsel to ensure its legal sufficiency and compatibility with existing codes and statutes, as appropriate.

- Manufacturers are required to provide ballistic identification for all new handguns manufactured or sold in the jurisdiction, and dealers are required to submit that information to state law enforcement when the gun is sold *(Maryland, New York)*
- A ballistics imaging database is established for new handguns sold in the jurisdiction *(Maryland, New York)*[11]
- An alternative approach is to require that all new handguns manufactured or sold in the jurisdiction be microstamped with an array of microscopic characters that identify the make, model and serial number of the firearm, so that the markings will be recorded on the cartridge case when the gun is fired *(California)*[12]
- In jurisdictions that require registration of handguns, current handgun owners are required to deliver their weapons to a ballistic testing center for purposes of ballistic identification to secure or maintain the registration[13]
- For other weapons of particular concern to law enforcement, such as assault weapons and 50 caliber rifles, ballistic identification also may be required *(proposed in New York for grandfathered assault weapons)*

[11] A 2007 report by the International Association of Chiefs of Police (IACP) recommends that state and local governments should mandate that a ballistic fingerprint be recorded for every gun sold. International Association of Chiefs of Police, *Taking a Stand: Reducing Gun Violence in Our Communities* 15 (Sept. 2007). IACP noted that recording the ballistic fingerprint of every gun sold cold enhance public safety and curtail gun violence.

[12] This approach also requires the jurisdiction to establish and maintain a database of handgun owners, as in California. *See supra* at 175.

[13] Additional information on registration of firearms is contained in the section on Registration of Firearms.

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