NSSF® FAST FACTS

MICROSTAMPING TECHNOLOGY: PROVEN FLAWED AND IMPRECISE

WHAT IS MICROSTAMPING?

Microstamping is a patented process that micro-laser engraves a unique alpha-numeric code on the tip of the gun's firing pin so that, in theory, it imprints the information on discharged cartridge cases.

MICROSTAMPING DOES NOT WORK

Microstamping is not ready for use as a crime solving technology. That's the conclusion of a peer-reviewed study published in the scientific journal of forensic firearms examiners based on work conducted by a team of experts and funded by the U.S. Department of Justice. The patent holder of the technology, Mr. Todd Lizotte, was himself involved in the research that concluded "...legitimate questions exist related to both the technical aspects, production costs, and database management associated with microstamping that should be addressed before wide scale implementation is legislatively mandated."[i]

As the journal article said, "...microstamping involves more than just 'blasting a number' onto a firing pin using a laser, which to the layman may seem how the technique works." Instead, the process would have to be optimized for each model of firearm made by all manufacturers, a costly and time-consuming process that threatens the employment of thousands in the firearms industry.

A follow-up study, co-authored by Mr. Lizotte, the holder of the microstamping patent, conceded several major problems with the technology that occur even in an "optimized" situation. Because the alpha-numeric codes are frequently illegible, the study attempted to use expensive Scanning Electron Microscopes (SEM) to read the corresponding gear codes also imprinted on fired cartridges. The gear codes are meant to contain the same information as the alpha-numeric code. The study concluded that even with advanced technology, "a full gear code appears to be rare and dependent on the weapon that made the impression."[ii]

Independent studies prove that microstamping is easily defeated by criminals, unreliable, flawed, and must be studied further before any legislature even considers mandating the "technology."

The authors argue that despite the poor performance, "if one knows or could safely assume that all ten cartridges found at a crime scene came from a single magazine of ammunition, the entire identifier could be reconstructed using the combined information for every magazine examined in this study."[iii] What the authors do not

Independent Studies Conclude Microstamping Should Not Be Mandated

"Further studies are needed on the durability of microstamping marks under various firing conditions and their susceptibility to tampering, as well as on their cost impact for manufacturers and consumers."

— National Academy of Science Study

nap.edu/catalog/12162/ballistic-imaging

"Implementing this technology will be much more complicated than burning a serial number on a few parts and dropping them into firearms being manufactured."

— Professor George Krivosta, The professional scholarly journal for forensic firearms examiners

http://efsgv.org/wp-content/uploads/2013/06/Microstamping-Technology-Precise-and-Proven-Memo.pdf

"At the current time it is not recommended that a mandate for implementation of this technology be made. Further testing, analysis and evaluation is required."

— University of California at Davis on Firearms Microstamping

nssf.org/PDF/UC-Davis-Microstamping-Study.pdf

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acknowledge is that in cases of criminal misuse of firearms, assailants fire less than four shots on average; far short of the 10 cartridges from one firearm required to make a "reasonable guess" at identification.[iv]

There is also the variety of ammunition to consider. Working with just a sample of ammunition available to the public, both of these studies found that the presence of a lacquer coating on the casing of one brand degraded the ability to transfer the identifier number.

Not only did the use of SEM technology fail to solve the problems associated with microstamping, but the authors also note that few crime labs have the imaging technology at their disposal to begin with. And all of this effort would be in pursuit of a technology that is easily defeated in seconds by using common tools or by switching out the engraved firing pin for an unmarked, readily available spare firing pin.

For these reasons, NSSF and other groups, including major law enforcement organizations, have expressed opposition to the mandating of the unproven and unreliable concept of microstamping. The passage of legislation requiring its use would raise the cost of legal firearms by well over $200 per gun for both law-abiding citizens and our law enforcement personnel.

Based on the costly and unsuccessful decade-long New York State experience with ballistics imaging that had a similar goal of crime scene gun identification, but that was actually never used to solve a single crime, there is no reason to repeat a law-making mistake. Instead, let's take a lesson from that recent history.

Before mandating microstamping technology and incurring the costs that would be borne by taxpayers and law-abiding gun purchasers alike, let's be certain that there are clear answers to the "legitimate questions" raised by the firearms forensics experts themselves. Until then, microstamping is only another unworkable technology and, many suspect, a backdoor approach to limiting or even banning handgun ownership.

"BACKDOOR HANDGUN BAN IN CA"

Despite all of the facts and feedback from the patent holder and researchers of microstamping technology, California elected to enact AB 2847, which was signed by Gov. Gavin Newsom (Sept 2020). The law will require one source of microstamping on all new handgun models that are approved for the state's Roster of Handguns Certified for Sale, amending the previous requirement of two sources. Additionally for every new handgun added to the approved list, three older models must be removed. When the initial microstamping law took effect in 2013, there were 953 pistols on the Roster. As of November 2020, there were only 497. The problem is that adding one approved firearm while taking away three from the current list is a roundabout way to restrict legally available firearms in the Golden State. This law ultimately bans a slew of firearms that the rest of the nation would otherwise be able to readily purchase legally. Manufacturers routinely make new models of firearms for safety improvements but microstamping is currently not possible. The requirement essentially creates a very short list of state-approved firearms that citizens can purchase; thereby, preventing Americans from exercising what little Second Amendment rights remain in California.

I L.S. Chumbley, J. Kreiser, T. Lizotte, O. Ohar, T. Grieve, B. King, D. Eisenmenn, "Clarity of Microstamped Identifiers as a Function of Primer Hardness and Type of Firearm Action" AFTE Journal, Vo. 44, No. 2, 2012, pp. 145-155.

II T. Grieve, L.S. Chumbley, J. Kreiser, T. Lizotte, O. Ohar, "Gear Code Extraction from Microstamped Cartridges," AFTE Journal, Vol. 45, No. 1, 2013, pp. 64-74. Cartridges," AFTE Journal, Vol. 45, No. 1, 2013, pp. 73-74.

III T. Grieve, L.S. Chumbley, J. Kreiser, T. Lizotte, O. Ohar, "Gear Code Extraction from Microstamped Cartridges," AFTE Journal, Vol. 45, No. 1, 2013, pp. 64-74. Cartridges," AFTE Journal, Vol. 45, No. 1, 2013, pp. 64-74.

iv Christopher S. Koper, "An Updated Assessment of the Federal Assault Weapons Ban: Impacts on Gun Markets and Gun Violence, 1994-2003," Report to the National Institute of Justice, United States Department of Justice, June 2004. p.90.

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