No. 23-55276

IN THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

LANCE BOLAND; MARIO SANTELLAN; RENO MAY; JEROME SCHAMMEL; AND CALIFORNIA RIFLE & PISTOL ASSOCIATION, INCORPORATED, *Plaintiffs-Appellees*,

v.

ROB BONTA, ATTORNEY GENERAL OF THE STATE OF CALIFORNIA, *Defendant-Appellant.*

On Appeal from the United States District Court for the Central District of California

No. 22-cv-1421-CJC-ADS The Honorable Cormac J. Carney, Judge

EXCERPTS OF RECORD VOLUME 7 OF 7

ROB BONTA Attorney General of California THOMAS S. PATTERSON Senior Assistant Attorney General P. PATTY LI Supervising Deputy Attorney General MARK R. BECKINGTON Supervising Deputy Attorney General ANTHONY R. HAKL Supervising Deputy Attorney General CHARLES J. SAROSY Deputy Attorney General State Bar No. 302439 300 South Spring Street, Suite 1702 Los Angeles, CA 90013-1230 Telephone: (213) 269-6356 Fax: (916) 731-2119 Email: Charles.Sarosy@doj.ca.gov Attorneys for Defendant-Appellant

April 28, 2023

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 2 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-25 Filed 01/27/23 Page 1 of 8 Page ID INJURY PREVENTION AND TRAUMA/ORIGINAL RESEARCH #:1058

Unintended Shootings in a Large Metropolitan Area: An Incident-Based Analysis

Richard B. Ismach, MD, MPH Avid Reza, MD, MPH Roy Ary, MD Tomoko Rie Sampson, MPH Kidist Bartolomeos, MPH Arthur L. Kellermann, MD, MPH

From the Center for Injury Control, Rollins School of Public Health of Emory University, Atlanta, GA (Ismach, Sampson, Bartolomeos, Kellermann), and the Department of Emergency Medicine, School of Medicine, Emory University, Atlanta, GA (Ismach, Reza, Ary, Kellermann). See related article, p. 1, and editorial, p. 32.

Study objective: We determine the proportion of unintended shootings that might be prevented by promoting safe storage, safe handling, and/or safer firearm designs.

Methods: A regional firearm injury surveillance system was used to identify fatal and nonfatal unintentional shootings in a 5-county metropolitan area. Case reports were reviewed, and the causes of each shooting were independently classified by 4 members of the research team. A consensus conference was held to resolve disagreements.

Results: Between May 1, 1996, and June 30, 2000, 216 cases of unintentional firearm injury were identified, 3.8% of the shootings documented during the study period. Six (2.8%) were fatal. The majority of victims were between 15 and 34 years of age. One fourth (54) of the shootings involved victims younger than 18 years. Handguns were involved in 87% of the incidents. Enough information was available to characterize the incident in 122 (57%) cases. All but 6 fell into 1 or more of 3 broad categories of causation: child access (14%), mishandling (74%), and/or deficiencies in firearm design (32%).

Conclusion: Many unintentional shootings could be prevented by promoting safe storage of guns in the home, promoting safe handling of firearms, and requiring that all new handguns incorporate basic safety features.

[Ann Emerg Med. 2003;41:10-17.]

Copyright © 2003 by the American College of Emergency Physicians. 0196-0644/2003/\$30.00 + 0 doi:10.1067/mem.2003.7

ANNALS OF EMERGENCY MEDICINE 41:1 JANUARY 2003

DEFENDANT'S EXHIBIT 13

Case 8:22-cv-01421-CJC-ADS Document 48-25 Filed 01/27/23 Page 2 of 8 Page ID UNINTENDED SHOOTINGS IN A METROPOLITAN AREA #:1059

lsmach et al

INTRODUCTION

In 1999, firearms were implicated in 28,874 fatalities in the United States.¹ Although the vast majority of these deaths were suicides (16,599) or homicides (10,828), approximately 3% were unintentional (824), comprising 30,467 potential years of life lost. One hundred fifty-eight of these unintended deaths were pediatric (<18 years old).¹ A disproportionate number of unintentional firearm injuries involve children.²⁻⁴

The case/fatality ratio for unintentional shootings is estimated to be between 13:1 and 100:1.^{2,3,5} Although some of these injuries are relatively minor, others are severe.³⁻⁵ The costs of acute care, rehabilitation, and long-term disability caused by firearm injury are substantial, as much as \$2.3 billion in 1994.^{5,6} Total costs, including lost productivity resulting from injuryrelated death and disability, might be 15-fold greater.⁷

Despite the magnitude of the problem, little is known about the factors that contribute to unintentional shootings.^{5,8,9} To determine the proportion that might be prevented by various strategies, we identified unintentional shootings in a major metropolitan area and classified them by causation.

METHODS

An electronic firearm injury surveillance system was used to identify fatal and nonfatal shootings in a 5county area of metropolitan Atlanta, GA. The strengths and limitations of this system have been described in detail in an earlier report.¹⁰ Five medical examiner's offices, 22 area emergency departments, and 33 law enforcement agencies submitted case reports to the system. Records were linked to generate as complete a picture as possible of each event. This study was exempted by our institutional review board.

A case was defined as an injury caused by the unintentional discharge of a projectile from a powder firearm. Powder firearms included all kinds of pistols, rifles, and shotguns but excluded air rifles and BB guns. Incidents of unintended discharge that did not result in injury and incidents of injury resulting from blunt trauma (eg, gun dropped on a victim's foot) were excluded. Bystanders inadvertently shot during an attempted assault or drive-by shooting were considered victims of intentional injury and were excluded as well. The initial classification was made by the reporting agency. Our study interval was limited to shootings that occurred between May 1, 1996, and June 30, 2000.

Four members of our team (RBI, AR, RA, and ALK) independently studied each report to determine the circumstances of the shooting. Both the ED data collection form and, if available, the written law enforcement narrative were reviewed. In most instances, the police report was the only source that contained information about the circumstances of the shooting. In no case did the ED report or medical examiner's report conflict with a police report regarding injury circumstances. Cases were classified into 1 or more of 3 predefined categories: preventable by safe storage, preventable by safer handling, and preventable by safer design. When the shooter was a minor who gained access to an adult's gun without the adult's permission, we considered the incident preventable by safer storage. Preventable by safer handling was selected when the narrative indicated that the firearm discharged (1) during cleaning, (2) while clearing a jammed round or attempting to unload, (3) while playing with or showing off the firearm, or (4) while moving, handling, or catching the firearm. Preventable by safer design was selected when the narrative specifically noted any of the following: (1) the shooter did not realize the firearm was loaded; (2) the magazine was out of the firearm or removed by the shooter before the trigger was pulled; or (3) the firearm discharged when dropped or placed on a hard surface. Some cases fell into more than one of these categories and were coded as such. After initial coding, our team met to review cases that were coded differently and to seek a consensus.

Confidence intervals (CIs) were estimated by using a *z* statistic for 1-sample proportions. Interrater reliability was measured by using the proportion of cases in which investigators agreed, with cases weighted by the percentage of investigators who agreed. For example, if 3 of the 4 raters judged a case to be preventable by safer

DEFENDANT'S EXHIBIT 13

Case 8:22-cv-01421-CJC-ADS Document 48-25 Filed 01/27/23 Page 3 of 8 Page ID UNINTENDED SHOOTINGS IN A METROPOLITAN AREA #:1060

ismach et al

design, that case would receive a weight of 0.75. A sensitivity analysis was performed by assuming that all cases with missing information would not have been preventable by any of the methods described. Statistical analyses were done with SAS for Windows statistical software package (version 8.02, SAS Institute, Inc., Chicago, IL).

RESULTS

During the 49-month study period, 5,735 cases of firearm injury were reported in our 5-county metropolitan area. A total of 247 (4.3%) of these were initially classified as unintentional. After a review of these case reports, 31 of these shootings were reclassified as either intentional or of uncertain intent, leaving 216 cases (3.8% of all shootings during the study period) in our analysis. Six (2.8%) of these unintentional shootings resulted in a fatality.

A matching police offense report was linked to the ED report for 145 (67%) cases. For most of the remaining cases, the only documentation available was the 1-page reporting form that lists victim age, sex, and race, as well as the manner and severity of injury. The form does not provide enough information to classify the specific circumstances of the event.¹⁰

Eighty-seven percent (187) of the 216 victims were male, 65% (141) were black, 24% (51) were white/non-Hispanic, and 8% (18) were members of other racial or ethnic groups. The age distribution of victims is similar to the national mortality profile for unintentional firearm-related deaths; one fourth involved victims younger than 18 years (Table 1).

Nearly 40% (85) of the victims shot themselves. Sixteen percent (34) were shot by a friend or acquaintance and 5% (10) by a family member. One percent (3) were unintentionally shot by their spouse or intimate partner. Thirty-eight percent of unintended shootings (n=81; nearly two thirds of those in which the incident location was specified) occurred in a home. Seven percent (16) occurred in an automobile. Only 3 cases involved hunting. The vast majority of unintentional shootings (188 [87%]) involved a handgun (Table 2).

Table 1.

Unintentional firearm injuries in metropolitan Atlanta,	GA,
May 1996 through June 2000 (N=247).	

Variable	Included in Analysis, No. (%)	Insufficient Information, No. (%)	Excluded (Not Unintentional), No. (%)
Age distribution, y			
0–4	1 (1)	2 (2)	0 (0)
5-14	17 (14)	6 (6)	2 (6)
15–24	51 (42)	41 (44)	13 (42)
25-34	19 (16)	23 (24)	7 (23)
35–44	18 (15)	9 (10)	5 (16)
45–54	7 (6)	4 (4)	2 (6)
55–64	5 (4)	2 (2)	1 (3)
≥65	0 (0)	1 (1)	0 (0)
Not specified	4 (3)	6 (6)	1 (3)
Race distribution			
Black	79 (65)	62 (66)	17 (55)
White	33 (27)	18 (19)	12 (39)
Other	9 (7)	9 (10)	1 (3)
Not specified	1 (1)	5 (5)	1 (3)
Sex distribution			
Female	14 (11)	14 (15)	9 (29)
Male	107 (88)	80 (85)	21 (68)
Not specified	1 (1)	0 (0)	1 (3)

Table 2.

Unintentional firearm injuries in metropolitan Atlanta, GA: Incident details.

Variable	No.	%
		,,,
Type of firearm		
Handgun	188	87
Shotgun	6	3
Rifle	11	5
Unknown	11	5
Victim-shooter relationship		
Self	85	39
Family	10	5
Friend	34	16
Spouse/intimate partner	3	1
Stranger	7	3
Not specified	77	36
Incident location		
Residence	81	38
Street or sidewalk	20	9
Woods or field	4	2
Bar or tavern	3	1
Retail establishment	3	1
Automobile	16	7
Parking lot	9	4
Other	3	1
Not specified	77	36

DEFENDANT'S EXHIBIT 13

Case 8:22-cv-01421-CJC-ADS Document 48-25 Filed 01/27/23 Page 4 of 8 Page ID UNINTENDED SHOOTINGS IN A METROPOLITAN AREA #:1061

Among the 204 shootings in which information about the nature of the wounds was available, 17 were to the head or face, 21 to the chest or abdomen, 5 to the back, 53 to an arm, and 104 to a leg. Most victims had only a single wound. Of those for whom the ED disposition was recorded, 48 were admitted, 1 was transferred to another hospital, and 52 were discharged home. Three were pronounced dead in the ED.

Enough information was available to characterize incident circumstances in 122 cases (57% of the total). All but 6 of these fell into 1 or more of 3 broad categories of causation: preventable by safe storage, preventable by safer handling, or preventable by safer design (Table 3). Seventeen shootings (14% of those analyzed) occurred when one or more children younger than 18 years of age gained unsupervised access to a gun. Almost all of the firearms involved in these incidents were stored unlocked and loaded. The parents of one victim kept their gun in a combination safe, but the child discovered the combination on a slip of paper.

Ninety shootings (74% of those analyzed) were attributed to mishandling of the firearm. Eighteen occurred while the owner was cleaning the gun or clearing a jammed round, 42 occurred while the user was playing with or showing off the gun, and 30 occurred when the user moved, fumbled, or dropped (but then caught) the gun.

Thirty-nine shootings (32% of those analyzed) were attributed to potential deficiencies in the firearm's

Table 3.

Unintentional firearm injuries in metropolitan Atlanta, GA: Analysis of incidents and their causes.*

Category	No.	%	95% CI, %	Lower Limit (Sensitivity Analysis),† %
Preventable by safer storage	17	14	8–20	4
Preventable by safer handling	90	74	66–82	35
Preventable by safer design	39	32	24–40	13

*The total number of cases is 122. Categories are not mutually exclusive, and therefore, the total exceeds 100%.

¹The sensitivity analysis assumed that the lower CI was correct and that none of the cases for which there was insufficient information were preventable in any way.

design. In 17 cases, the investigating officer specifically noted that the shooter was unaware that the weapon was loaded. A loaded chamber indicator is designed to alert the user that a round is in the chamber.⁴ Six shootings occurred while the pistol's magazine was removed, possibly giving the handler the mistaken impression that the weapon was unloaded. A magazine safety is designed to block the trigger when the magazine is removed to prevent discharge of a round retained in the chamber.⁴ Nineteen shootings occurred when the gun was dropped or struck a hard surface. A firing pin block, also known as a "drop safety device," is designed to prevent a gun's firing pin from contacting the cartridge if the weapon is dropped or struck against a hard surface.⁴

Reviewers independently agreed on 98.2% of cases regarding exclusion because of lack of sufficient information. Complete agreement was reached on 94% of cases that were judged to be potentially preventable by safer storage, 78% of cases that were judged potentially preventable by safer handling, and 85% of cases that were judged to be potentially preventable by basic mechanical safety features. When disagreement occurred, there was a clear majority view in all but a handful of cases (2%, 6%, and 2%, respectively). Almost all of these initial disagreements were the result of a reviewer inadvertently overlooking a relevant fact or term in the police narrative. Once these were identified, complete agreement was reached on better than 99% of cases in each category.

DISCUSSION

Unintentional firearm injuries accounted for a small fraction of firearm-related fatalities in our community during the study interval but caused a somewhat larger percentage of nonfatal injuries (0.2% and 3.9%, respectively). Most of the victims were male patients between 15 and 34 years of age. An incident-based analysis revealed several options for prevention, including promoting safer storage of guns in the home, teaching safe handling of firearms, and incorporating basic safety features into new gun designs.^{4,5,11-13}

DEFENDANT'S EXHIBIT 13

Case 8:22-cv-01421-CJC-ADS Document 48-25 Filed 01/27/23 Page 5 of 8 Page ID UNINTENDED SHOOTINGS IN A METROPOLITAN AREA #:1062

Approximately 40% of US households contain 1 or more firearms.¹⁴ The average gun-owning household contains 4.¹⁵ Between one fourth and one third of gunowning households contain at least 1 handgun.¹⁴⁻¹⁶ Rates of firearm ownership are greater in rural areas and small towns, but households in urban areas are more likely to contain handguns.¹⁶ The rate of gun ownership in metropolitan Atlanta is similar to that noted in other metropolitan areas of the south and west.¹⁷

Persons who keep a firearm for protection are much more likely to store the weapon loaded and readily available than people who own firearms for other reasons.^{8,14,16,18,19} However, keeping an unlocked and loaded gun in the home violates a central tenet of firearm safety. The National Rifle Association's "A Parent's Guide to Gun Safety" advises owners to "always keep the gun unloaded until ready to use" and to "store guns so that they are inaccessible to children and other unauthorized users."¹¹ The *Clinician's Handbook of Preventive Services* echoes this admonition.¹² There is evidence that few gun dealers share this advice with customers, even those with young children.²⁰ In any case, many gun-owning parents store their firearms in an unsafe manner.^{19,21-24}

When children find a gun, they often play with it. Jackman et al²⁵ placed pairs and trios of 8- to 12-yearold boys in a room with a 1-way mirror and observed them for 15 minutes. An actual .38 caliber pistol, altered so it could not be fired, was concealed in a drawer. Instead of a magazine of bullets, the pistol contained a radio transmitter that activated a light whenever the trigger was pressed with enough force to discharge the weapon. Of the 29 groups tested, 21 discovered the gun within 15 minutes of being placed in the room. Members of 16 (76%) groups handled the gun, and 1 or more members of 10 (48%) groups pulled the trigger. During subsequent questioning, nearly half of the boys said that they were unsure whether the gun was real or a toy. More than 90% reported having prior gun safety instruction. Hardy et al²⁶ observed a group of young children and noted that when they were left unsupervised around guns, they touched and played with them, despite clear instructions not to do so.

When children gain unsupervised access to a gun, the consequences can be tragic. Wintemute et al²⁷ studied fatal shootings of children by children in California and noted that more than half occurred when children played with a loaded gun they found in the home. Grossman et al²⁸ studied unintentional and selfinflicted firearm injuries of children in Seattle and noted that many involved a gun found in the victim's home or the home of a relative or friend.

In hopes of teaching young children to avoid touching a gun if they find one, the National Rifle Association developed the Eddie Eagle program.²⁹ Although the curriculum has reportedly been taught to more than 12 million children in 10,000 schools, it has not been objectively evaluated to confirm that it is effective.³⁰

Adult training programs are not very effective at encouraging safe storage of guns in the home. Weil and Hemenway¹⁶ surveyed 605 adult gun owners and found that those who had received firearms training were no more likely to store their guns safely than those who did not. Cook and Ludwig¹⁴ analyzed responses to an independent survey of more than 1,600 gun owners and obtained similar findings. They did note, however, that gun owners trained by the National Safety Council were somewhat more likely to report storing their gun safely than those trained by other organizations.

Several states enacted laws that hold the owner responsible if a child gains access to the gun and is injured to promote safe storage of guns. An evaluation of these child access prevention laws concluded that enactment was associated with a 23% decrease in the rate of unintentional firearm-related deaths of children younger than 15 years of age.³¹ However, another group studied the effect of child access prevention laws in the 15 states in which they were in effect and found evidence of effect in only one, Florida.³²

Safe handling might have prevented 66% to 82% of the unintentional shootings in our study. Firearm safety training programs emphasize several worthwhile concepts, including "always keep the gun pointed in a safe direction" and "always keep your finger off the trigger until ready to shoot."³³ Trainees are taught to assume

ANNALS OF EMERGENCY MEDICINE 41:1 JANUARY 2003

Case 8:22-cv-01421-CJC-ADS Document 48-25 Filed 01/27/23 Page 6 of 8 Page ID UNINTENDED SHOOTINGS IN A METROPOLITAN AREA #:1063

that every firearm is loaded unless they can personally verify that it is unloaded by inspecting the chamber.

Despite the intuitive appeal of firearm safety training, researchers have found that education alone is often ineffective at promoting safe behavior, particularly when it involves a complex series of actions.^{34,35} Not surprisingly, the demographic group at greatest risk of unintentional injury (ie, young men) is also the group that is least receptive to safety training.³⁵ First-time applicants for a driver's license are required to demonstrate their ability to safely operate a motor vehicle, but first-time purchasers of a firearm are not required to learn or demonstrate safe handling skills.³⁶

Little thought has been given to the idea of making safer guns.³⁷ In 1988, the US General Accounting Office studied the extent to which child-proof safety devices or a loaded chamber indicator could prevent firearm-related deaths.⁵ Researchers randomly selected 107 fatal unintentional shootings from urban and rural jurisdictions across the United States and reviewed the case files to characterize each event. On the basis of the incident narratives, they concluded that a loaded chamber indicator might have prevented 23% of the deaths and that a child-proof safety device might have prevented another 8%. The remaining deaths were either judged to be nonpreventable by these 2 strategies, or the data were insufficient to make a determination. Other safety devices were not considered.

We found evidence that loaded chamber indicators, magazine safeties, and firing pin blocks might have prevented as many as one third of the unintended shootings in our series. Widespread adoption of these safety features, plus routine use of devices that prevent unauthorized child access, might have prevented as many as 46% of the unintended shootings in our series.

It is possible that other safety devices might have prevented additional shootings. For example, a grip safety device automatically locks the pistol's trigger mechanism unless the weapon's grip is properly grasped. A positive safety device is designed to prevent the firearm from being discharged unless it is purposefully disengaged.⁴ These devices might have prevented some of the shootings attributed to mishandling. Emerging technologies could produce even safer guns.³⁷ It should be possible, for example, to design a firearm that can be easily fired by adults but not by young children. Widespread adoption of child-resistant aspirin bottles prevented many unintentional poisonings; widespread adoption of child-resistant firearms might prevent many unintentional shootings.^{37,38}

The technology exists to manufacture personalized handguns that can only be fired by their owners.³⁷⁻³⁹ Personalized guns would be particularly useful for law enforcement because a surprising number of officers are shot and killed each year by an offender who grabs their service weapons.⁴⁰

Despite the potential benefits of safer gun designs, there is no impetus for the gun industry to adopt them. Federal law specifically exempts domestic handgun manufacturers from consumer product safety regulations. The public is largely unaware of this fact. Half of the respondents in 2 recent polls by the National Opinion Research Center expressed the belief that all or some guns are regulated for safety.¹⁸ Sixty-eight percent of respondents, including 64% of gun-owning respondents, supported the idea of "government safety regulations for the design of guns." Remarkably, 94% of respondents (including fully 93% of those who own guns) agreed that "handguns made in the United States should be required to meet the same federal safety and quality standards as imported handguns." Eighty-eight percent of respondents to the National Opinion Research Center surveys, including 80% of gun-owning respondents, endorsed the idea that new handguns should be legally required to be child-resistant. Seventy-one percent of respondents (including 59% of gun owners) agreed with the statement, "All new handguns should be personalized."18

There are several limitations in our study. First, the system we used to identify cases relied on voluntary reporting. Three sources of data were used to maximize rates of detection: a 1-page incident report faxed from area hospital EDs, county medical examiner's case files, and police offense reports from local law enforcement agencies.¹⁰ Between May 1996 and December 1998, an audit revealed that 13% of ED reports submitted to our

DEFENDANT'S EXHIBIT 13

Case 8:22-cv-01421-CJC-ADS Document 48-25 Filed 01/27/23 Page 7 of 8 Page ID UNINTENDED SHOOTINGS IN A METROPOLITAN AREA #:1064

system could not be matched with a corresponding police report.¹⁰ This strategy minimized the potential for missed cases, but it could not eliminate it entirely.⁴¹ Individuals who did not disclose their injury to the police or seek care in an ED, as well as those who were treated in an ED but not reported, would not be detected by using our system.

Misclassification can occur in any retrospective study. Our data on causation are only as good as the police reports on which they are based.^{3,41} To minimize misclassification, we manually reviewed each case before including it in our series. Twenty-one shootings initially classified as unintentional were subsequently reclassified as intentional or indeterminate and excluded from our analysis.

Missing data complicated our efforts to categorize the circumstances involved in these shootings. No police report was available for 95 of the cases reported by ED personnel. Even when a police report was secured, the documentation was sometimes too sketchy to accurately characterize the event. At the outset of the study, we had hoped to identify the specific make and model of firearm involved in these shootings to confirm whether it lacked specific safety features. Unfortunately, investigating officers rarely documented the specific make and model in their offense reports.

Finally, our findings are limited to a single 5-county metropolitan area of a major southern city and might not be applicable to major cities in other parts of the country, much less to smaller communities or rural areas. For example, only 3 of our incidents were linked to hunting. Nationwide, as many of one fifth of all unintentional shootings are related to hunting.

Nonetheless, our results support 2 important conclusions. First, almost all of the unintended shootings we studied could be attributed to 1 or more of 3 factors: child access, mishandling of the firearm, and deficiencies in design. All 3 causes might be amenable to intervention. Nearly half the shootings might have been prevented if the gun involved had incorporated 3 simple mechanical safety features—a loaded chamber indicator, a grip safety, and a firing pin block—and had been kept inaccessible to children. Most of the remaining incidents might have been prevented if the handler had followed the most basic safety rules. Identifying which strategy or which combination of strategies is most effective will require further research.

This study would not have been possible without access to data from a regional firearm injury reporting system. A nationwide system of this sort, with attention paid to prospective collection of high-quality data, could generate invaluable information about the circumstances, location, and contributing factors involved in thousands of shootings each year.⁴² The reports produced would not only be useful to local and state law enforcement, they would also be useful to firearm safety instructors, gun enthusiasts, gun industry executives, and others interested in preventing deaths and injuries caused by firearms.

Author contributions: The study was initially conceived, designed, and piloted by ALK, TRS, and KB. Revision of the study design was made by RBI, AR, and ALK. Final data collection and abstraction was performed by RBI and AR. Analysis and coding of each case was performed by RBI, AR, RA, and ALK. Data entry and verification was carried out by RBI and AR. Statistical analysis was carried out by RBI, with assistance from AR. All of the authors had input into the final manuscript, which was largely written by RBI, AR, RA, and ALK. RBI and ALK take responsibility for the paper as a whole.

Received for publication March 28, 2002. Revision received August 28, 2002. Accepted for publication September 3, 2002.

The views expressed are those of the authors and do not necessarily reflect those of the funding organizations or Emory University.

Supported by grants from the National Institute of Justice (#95-IJ-CX-0025), the John D. and Catherine T. MacArthur Foundation, and the Funder's Cooperative.

Address for reprints: Arthur L. Kellermann, MD, MPH, Center for Injury Control, Rollins School of Public Health, Emory University, 1518 Clifton Road, NE, Atlanta, GA 30322; E-mail akell01@emory.edu.

REFERENCES

1. National Center for Injury Prevention and Control. 1999, United States: firearm deaths and rates per 100,000. Available at: http://webapp.cdc.gov/sasweb/ncipc/mortrate10.html. Accessed August 4, 2002.

 Sinauer N, Annest JL, Mercy JA. Unintentional, nonfatal firearm-related injuries. A preventable public health burden. JAMA. 1996;275:1740-1743.

 Kellermann AL, Rivara FP, Lee RK, et al. Injuries due to firearms in three cities. N Engl J Med. 1996;335:1438-1444.

4. Karlson T, Hargarten S. *Reducing Firearm Injury and Death: A Public Health Sourcebook.* New Brunswick, NJ: Rutgers; 1997.

ANNALS OF EMERGENCY MEDICINE 41:1 JANUARY 2003

DEFENDANT'S EXHIBIT 13

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 9 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-25 Filed 01/27/23 Page 8 of 8 Page ID UNINTENDED SHOOTINGS IN A METROPOLITAN AREA #.1065Ismach et al

5. US General Accounting Office. Accidental Shootings: Many Deaths and Injuries Caused by Firearms Could Be Prevented. Washington, DC: US General Accounting Office: 1991

6. Cook PJ, Lawrence BA, Ludwig J, et al. The medical costs of gunshot injuries in the United States. JAMA. 1999;282:447-454.

7. Max W, Rice DP. Shooting in the dark: estimating the cost of firearm injuries. Health Aff (Millwood), 1993;12:171-185.

8. Sadowski LS, Munoz SR. Nonfatal and fatal firearm injuries in a rural county. JAMA. 1996;275:1762-1764.

9. Cole TB, Patetta MJ. Hunting firearm injuries, North Carolina. Am J Public Health. 1988:78:1585-1586.

10. Kellermann A, Bartolomeos K, Fuqua-Whitley D, et al. Community-level firearm injury surveillance: local data for local action. Ann Emerg Med. 2001;38:423-429.

11. National Rifle Association. A parent's guide to gun safety. Available at: http://www. nra.org. Accessed November 10, 1998.

12. Office of Disease Prevention and Health Promotion, Public Health Service, United States Department of Health and Human Services. Clinician's Handbook of Preventive Services: Putting Prevention into Practice. Washington, DC: US Government Printing Office: 1994.

13. Robinson KD, Teret SP, Vernick JS, et al. Personalized Guns: Reducing Gun Deaths Through Design Changes, 2nd ed. Baltimore, MD: The Johns Hopkins Center for Gun Policy and Research; 1998.

14. Cook P, Ludwig J. Guns in America: Results of a Comprehensive National Survey on Firearms Ownership and Use. Washington, DC: Police Foundation; 1996.

Wright J. Ten essential observations on guns in America. Society. 1995;32:63-68.

16. Weil DS, Hemenway D. Loaded guns in the home. Analysis of a national random survey of gun owners. JAMA. 1992;267:3033-3037.

17. Kellermann AL, Fugua-Whitley DS, Sampson TR, et al. Public opinion about guns in the home. Inj Prev. 2000;6:189-194

18. Teret SP, Webster DW, Vernick JS, et al. Support for new policies to regulate firearms. Results of two national surveys. N Engl J Med. 1998;339:813-818.

19. Stennies G, Ikeda R, Leadbetter S, et al, Firearm storage practices and children in the home, United States, 1994. Arch Pediatr Adolesc Med. 1999;153:586-590.

20. Sanguino SM, Dowd MD, McEnaney SA, et al. Handgun safety: what do consumers learn from oun dealers? Arch Pediatr Adolesc Med. 2002:156:777-780

21. Senturia YD, Christoffel KK, Donovan M, Gun storage patterns in US homes with children. A pediatric practice-based survey. Arch Pediatr Adolesc Med. 1996;150:265-269.

22. Webster DW, Wilson MEH, Duggan AK, et al. Parents' beliefs about preventing gun injuries to children. Pediatrics. 1992;89:908-914.

23. Becher EC, Christakis NA. Firearm injury counseling: are we missing the mark? Pediatrics, 1999:104:530-534,

24. Farah MM, Simon HK, Kellermann AL. Firearms in the home: parental perceptions. Pediatrics. 1999;104:1059-1063

25. Jackman GA, Farah MM, Kellermann AL, et al. Seeing is believing: what do boys do when they find a real gun? Pediatrics. 2001;107:1247-1250.

26. Hardy MS, Armstrong FD, Martin BL, et al. A firearm safety program for children: they just can't say no. J Dev Behav Pediatr. 1996;17:216-221

27. Wintemute GJ, Teret SP, Kraus JF, et al. When children shoot children: 88 unintended deaths in California. JAMA. 1987;257:3107-3109.

28. Grossman DC, Reay DT, Baker SA. Self-inflicted and unintentional firearm injuries among children and adolescents: the source of the firearm. Arch Pediatr Adolesc Med. 1999:153:875-878.

29. National Rifle Association. NRA's Eddie Eagle program. Available at: http://www. nra.org/eddie/eddiemain.html. Accessed November 2, 2001.

30. Fairfax V. Eddie Eagle elementary gun safety education program. In: Bilchik S, ed. Promising Strategies to Reduce Gun Violence. Washington, DC: Office of Juvenile Justice and Delinquency Prevention, US Department of Justice; 1999. Available at: http://ojjdp.ncjrs.org/pubs/gun_violence/profile49.html. Accessed December 10, 2002.

31. Cummings P, Grossman DC, Rivara FP, et al. State gun safe storage laws and child mortality due to firearms. JAMA, 1997:278:1084-1086.

32. Webster DW, Starnes M, Reexamining the association between child access prevention oun laws and unintentional firearm deaths among children. Pediatrics. 2000:106:1466-1469.

33. Brown R, Goldman L. Physician Firearm Safety Guide. Chicago, IL: American Medical Association: 1998

34. Haddon W. The changing approach to the epidemiology, prevention and amelioration of trauma: the transition to approaches etiologically rather than descriptively based. Am J Public Health. 1968;58:1431-1438.

35. Kellermann A, Todd K. Injury control. In: Tintinalli JE, Kelen GD, Stapczynski JS, eds. Emergency Medicine: A Comprehensive Study Guide. 5th ed. New York, NY: McGraw-Hill: 1999:1735-1738.

36. Koop CE, Lundberg GB. Violence in America: a public health emergency. Time to bite the bullet back [editorial] [published errata appear in JAMA. 1992;268:3074 and 1994:271:1404]. JAMA. 1992:267:3075-3076.

37. Association of Trial Lawyers of America, Johns Hopkins Center for Gun Policy and Research. Guns: A Public Health Approach; Making Changes in Making Guns Washington, DC: Johns Hopkins Center for Gun Policy and Research; 1995.

38. Kellermann AL, Holliger E. Firearm-related injuries. In: Bernstein E, Bernstein J, eds. Case Studies in Emergency Medicine and Health of the Public. Boston, MA: Jones and Bartlett: 1996:247-257.

39. Weiss D. Smart Gun Technology Project Final Report. Washington, DC: US Department of Justice; 1996

40. Wintemute GJ. Homicide, handguns, and the crime gun hypothesis: firearms used in fatal shootings of law enforcement officers, 1980 to 1989. Am J Public Health. 1994:84:561-564.

41. Kellermann AL, Bartolomeos KK. Firearm injury surveillance at the local level: from data to action. Am J Prev Med. 1998;15:109-112.

42. Barber C. Hemenway D. Hargarten S. et al. A "call to arms" for a national reporting system on firearm injuries. Am J Public Health. 2000;90:1191-1193.



Case 8:22-cv-01421-CJC-ADS Document 48-26 Filed 01/27/23 Page 1 of 5 Page ID #:1066

307

ORIGINAL ARTICLE

Unintentional and undetermined firearm related deaths: a preventable death analysis for three safety devices

J S Vernick, M O'Brien, L M Hepburn, S B Johnson, D W Webster, S W Hargarten

.....

Injury Prevention 2003;9:307-311

Objective: To determine the proportion of unintentional and undetermined firearm related deaths preventable by three safety devices: personalization devices, loaded chamber indicators (LCIs), and magazine safeties. A personalized gun will operate only for an authorized user, a LCI indicates when the gun contains ammunition, and a magazine safety prevents the gun from firing when the ammunition magazine is removed.

Design: Information about all unintentional and undetermined firearm deaths from 1991–98 was obtained from the Office of the Chief Medical Examiner for Maryland, and from the Wisconsin Firearm Injury Reporting System for Milwaukee. Data regarding the victim, shooter, weapon, and circumstances were abstracted. Coding rules to classify each death as preventable, possibly preventable, or not preventable by each of the three safety devices were also applied.

See end of article for authors' affiliations

Correspondence to: Jon S Vernick, Johns Hopkins Bloomberg School of Public Health, Center for Gun Policy and Research, 624 N Broadway, Baltimore, MD 21205, USA; JVernick@jhsph.edu **Results:** There were a total of 117 firearm related deaths in our sample, 95 (81%) involving handguns. Forty three deaths (37%) were classified as preventable by a personalized gun, 23 (20%) by a LCI, and five (4%) by a magazine safety. Overall, 52 deaths (44%) were preventable by at least one safety device. Deaths involving children 0–17 (relative risk (RR) 3.3, 95% confidence interval (CI) 2.1 to 5.1) and handguns (RR 8.1, 95% CI 1.2 to 53.5) were more likely to be preventable. Projecting the findings to the entire United States, an estimated 442 deaths might have been prevented in 2000 had all guns been equipped with these safety devices.

Conclusion: Incorporating safety devices into firearms is an important injury intervention, with the potential to save hundreds of lives each year.

Refer than relying exclusively on changing the behavior of the users of dangerous products, injury prevention efforts have also focused on changing the design of the product itself to make it safer.¹ Of consumer products in the United States, firearms are among the most deadly. From 1990 to 1999, there were more than 12 000 unintentional firearm related deaths in the United States, with an additional 4000 deaths in the "undetermined" category.² Yet firearms can be designed with built-in safety features that may prevent at least some of these deaths.³

Injury prevention efforts to improve the safe design and manufacture of guns have concentrated primarily on three safety technologies: (1) personalization devices, (2) loaded chamber indicators (LCIs), and (3) magazine safeties. A personalized gun is a firearm that will fire only for an authorized user. This can be accomplished through a variety of user-recognition technologies—for example, fingerprint readers—that can be built into the design of the gun. Unless the firearm recognizes its authorized user, it is unable to fire.^{4 5}

A LCI is a device designed to indicate that the gun's firing chamber contains ammunition.⁶ LCIs are intended to prevent firearm related deaths where the gun's operator did not know the gun was loaded. At present, loaded chamber indicators are included on about 10%–20% of new pistol models.⁶ ⁷ However, existing loaded chamber indicators generally consist of a small raised lever or button on the gun, with no additional markings to convey its meaning. Patents exist, however, for LCIs that would be far easier for operators to understand.⁶ A magazine safety (sometimes also called a magazine disconnect safety) blocks a semiautomatic pistol from firing when its ammunition magazine is removed, even if there is still a round in the chamber.⁸

Although all three of these safety devices have been widely discussed and promoted in both the public health and

popular literature, there have been few attempts to quantify their potential benefits. The United States General Accounting Office estimated that 23% of a sample of unintentional deaths were preventable by a loaded chamber indicator and 8% by a childproofing device.9 The childproofing device considered in the General Accounting Office study was intended to prevent discharge by young children only (age <6), and therefore was not a personalized gun. Similarly, Ismach and colleagues concluded that in 14% of the incidents in their sample of mostly non-fatal firearm injuries the shooter was unaware that the gun was loaded; in 5% the handgun's ammunition magazine had been removed just before the shooting.10 From a North Carolina sample, Cherry and colleagues determined that the shooter believed the gun was unloaded in 39 of 187 (21%) unintentional firearm related deaths.1

Using data from Maryland and Milwaukee, Wisconsin, this study examines the proportion of certain firearm related deaths that might be preventable by each of the three major safety devices. By including personalization technology, our analysis allows for a comparison of the relative benefits of the different devices.

METHODS Data sources

Data source

Information about firearm related deaths was obtained from two primary sources: the Maryland Office of the Chief Medical Examiner, and the Wisconsin Firearm Injury Reporting System (FIRS). We reviewed the case files for all

Abbreviations: CI, confidence interval; FIRS, Firearm Injury Reporting System; LCI, loaded chamber indicator; RR, relative risk

DEFENDANT'S EXHIBIT 14 www.injuryprevention.com

Case 8:22-304-01421-CJC-ADS Document 48-26 Filed 01/27/23 Page 2 of Sern RagerlD, Hepburn, et al #:1067

unintentional and undetermined firearm related deaths in Maryland and Milwaukee County for 1991-98. These files include information obtained from medical examiner investigations, police files, and crime laboratory reports. For each firearm related death, we abstracted a variety of information about the victim, shooter, weapon, and circumstances of the death. Deaths associated with non-powder firearms (for example, airguns and bb guns) were excluded. The combined dataset represents a convenience sample based on the ease of obtaining the data, their relative quality and completeness, and the value of increasing the overall sample size.

Medical examiners sometimes code certain, seemingly unintentional, deaths as homicides (rather than "accidents") where the gun's trigger is intentionally pulled, even if the shooter did not intend to cause the death of the victim.^{12 1} This may be based on a technical, rather than intent based. definition of a homicide as one where the actions of one person result in the death of another. Therefore, using the Wisconsin surveillance system (FIRS), we separately identified those "homicides" in Milwaukee County where (1) the circumstances of the death indicated an accidental firingsuch as playing with or cleaning a firearm and (2) the Federal Bureau of Investigation's Supplemental Homicide Reports data similarly coded the death as a "negligent manslaughter".14 In the absence of a comparable surveillance system, it would have been much more difficult to conduct a similar analysis of Maryland homicides.

Preliminary analyses of these negligent homicides in Milwaukee indicated that, as expected, their circumstances were very similar to both the accidental and undetermined deaths in Milwaukee County. Similarly, unintentional and undetermined deaths, as well as the combined data for Maryland and Milwaukee shared comparable age, sex, and type of gun characteristics. Our assessment of the circumstances of these deaths also suggested that the events surrounding unintentional and undetermined deaths were very similar. For these reasons, and to increase the precision of our point estimates, subsequent analyses combine the data from Maryland and Milwaukee.

Suicides and non-negligent homicides are not included in this analysis. Medical examiner and police records rarely contained detailed information about the circumstances of the death (for the suicides), or whether the shooter was the owner or an authorized user of the gun (for homicides). In addition, the factors associated with preventability may have been different for these intentional deaths.

Definition of a "preventable" death

Our primary goal was to estimate the proportion of the firearm related deaths in our sample that might have been prevented by one or more of the three safety devices. For each case, two reviewers (JV, MO) applied a set of rules to code the death as (1) "preventable", (2) "possibly preventable", or (3) "not preventable". The very small number of cases where reviewers disagreed were resolved by a third reviewer (SJ) or by consensus.

For LCIs, a death was coded as preventable only if the case file indicated *clear* evidence that the shooter did not realize the gun was loaded at the time of the shooting. Usually this was based on unambiguous statements of witnesses interviewed by the police. In addition, the shooter must be old enough to understand the message to be conveyed by a LCI; to be conservative in this regard, we established a minimum age of 10. We coded the death as possibly preventable if there was only some evidence that the shooter thought the gun was unloaded. We assume (based on patent information) that such devices could be applied to any firearm, and can be designed so that even an untrained user would understand that the gun was loaded.

For personalized guns, a death was considered preventable if there was clear evidence in the case file that the shooter was not the owner or authorized user of the gun. For example, personalized guns can prevent deaths where the shooter is below the legal age for gun ownership-by definition an unauthorized user. We recognize that this assumes that adult owners of personalized handguns will not provide them to children, an assumption that might not always be correct. We coded deaths as "possibly" preventable by personalized guns when the case file indicated some evidence that the shooter was not an authorized user.

For magazine safeties, our preventability criteria required clear evidence that the shooter removed the ammunition magazine from a semiautomatic pistol immediately before the shooting. Where there was less clear evidence, the deaths were coded as possibly preventable.

For all of the devices, we conservatively coded the death as "not preventable by safety devices" if it did not meet any of the above criteria. It is important to recognize that characterizing a death as "preventable" does not mean that it would certainly have been prevented by the relevant safety device-only that, applying our rules, we determine that the death could have been prevented.

Analyses

Applying our criteria, for each of the safety devices we calculate the proportion of the deaths in our sample that fit the three categories of preventability. We also conducted bivariate analyses of deaths coded as preventable, compared with those coded as not preventable, to examine factors associated with differences between these two groups. To test the statistical significance of these bivariate analyses, χ^2 tests of independence, calculation of relative risks, and confidence intervals were used. Finally, extrapolating from our data, we calculate the number of lives that might be saved in the United States by these devices.

RESULTS

There were a total of 117 unintentional, undetermined, and negligent homicide deaths in our data set for 1991 to 1998, 66 in Maryland and 51 in Milwaukee (see table 1). Males (91%) and persons aged 0-20 (53%) represent the majority of the decedents. Handguns were involved in 81% of the deaths, with roughly equal proportions of pistols and revolvers. Among the circumstances of the incident, "playing with or showing the gun to others" (51%), and "handling or transporting the gun" (21%) represented nearly three quarters of all deaths.

Among all deaths, 43 (37%) met our criteria for being "preventable" by a personalized gun, 23 (20%) by a loaded chamber indicator, and five (4%) by a magazine safety. A smaller proportion of deaths for each device were classified as "possibly preventable" (see table 2).

Overall, 52 of the deaths (44%, 95% confidence interval (CI) 35% to 53%) fit our criteria as preventable by at least one of the devices. Some were preventable by more than one device. Importantly, there was no statistically significant difference in overall preventability by site ($\chi^2 = 0.74$, p = 0.39), reinforcing our decision to combine the Maryland and Milwaukee data for analysis. Also, no type of death was significantly more likely to be preventable than any other, whether unintentional, undetermined, or negligent homicide $(\chi^2 = 0.14, p = 0.93)$. Again, this suggests that the relevant characteristics of these deaths are similar enough to justify combining the data for our purposes.

In the bivariate analyses, we compared preventable with non-preventable deaths, excluding those that were only "possibly" preventable. In these analyses, several characteristics of the deaths were associated with higher proportions

www.injuryprevention.com **DEFENDANT'S EXHIBIT 14**

Case 8:22-Effec 01/422 m 2016 AD Ses Document 48-26 Filed 01/27/23 Page 3 of 5 Page ID #:1068

309

Ξ
<u>ک</u>
Pr
e,
first publish
st
p
Ъ
Ī
ž
e C
a
l as 10.11
2
0.11
-
æ
6/ij
0
.0
136/ip.9.4.307
8
ip.9.4.307 on 23 December
g
5
23 D
~
ĕ
ecem
Ť
ğ
Φ
Σ
2003
ber 2003. D
0
≦
n
ğ
de
ď
Ŧ
ğ
7
د
ר ht
ן http:
n http://i
ำ http://inj
ำ http://injur
ר http://injuryp
า http://injurypre
n http://injurypreve
n http://injurypreven
http://injurypreventic
http://injuryprevention
njuryprevention.k
njuryprevention.bm
njuryprevention.bmj.com/ on
njuryprevention.bmj.com/ on J
njuryprevention.bmj.com/ on
njuryprevention.bmj.com/ on J
njuryprevention.bmj.com/ on J
njuryprevention.bmj.com/ on J
njuryprevention.bmj.com/ on January 5,
njuryprevention.bmj.com/ on January 5, 2
njuryprevention.bmj.com/ on January 5, 202
njuryprevention.bmj.com/ on January 5, 2
njuryprevention.bmj.com/ on January 5, 202
njuryprevention.bmj.com/ on January 5, 2023 by g
njuryprevention.bmj.com/ on January 5, 202
njuryprevention.bmj.com/ on January 5, 2023 by g
njuryprevention.bmj.com/ on January 5, 2023 by guest.
njuryprevention.bmj.com/ on January 5, 2023 by g
njuryprevention.bmj.com/ on January 5, 2023 by guest.
njuryprevention.bmj.com/ on January 5, 2023 by guest.
njuryprevention.bmj.com/ on January 5, 2023 by guest.
njuryprevention.bmj.com/ on January 5, 2023 by guest.
njuryprevention.bmj.com/ on January 5, 2023 by guest.
njuryprevention.bmj.com/ on January 5, 2023 by guest.
njuryprevention.bmj.com/ on January 5, 2023 by guest.
njuryprevention.bmj.com/ on January 5, 2023 by guest.
njuryprevention.bmj.com/ on January 5, 2023 by guest.
njuryprevention.bmj.com/ on January 5, 2023 by guest.
njuryprevention.bmj.com/ on January 5, 2023 by guest.

 Variable 1
 Selected characteristics of unintentional, undetermined, and negligent homicide firearm related deaths in Maryland and Milwaukee, 1991–98

 Variable*
 No (%)

 Age (years)
 0–17

 0–17
 46 (39)

 18–20
 16 (14)

 21–40
 37 (32)

Age (years)	
0-17	46 (39)
18-20	16 (14)
21-40	37 (32)
41+	18 (15)
Sex	. = (. = /
Male	107 (91)
Female	10 (9)
Race	
White	60 (51)
Black	54 (46)
Other	3 (3)
Site/type of death	0 (0)
Maryland $(n = 66)$	
Unintentional	20 (30)
Undetermined	46 (70)
Milwaukee (n = 51)	40 (70)
Unintentional	13 (25)
Undetermined	12 (24)
Negligent homicide	26 (51)
Circumstance	2 (2)
Cleaning	3 (3)
Handling/transporting/loading/	25 (21)
unloading	((5)
Hunting	6 (5)
Miscellaneous/other	5 (4)
Playing with/showing gun to others	60 (51)
Thought safety was on/problem with	4 (3)
safety	
Unknown	14 (12)
Type of gun	
Handgun (n = 95)	
Pistol	42 (36)
Revolver	45 (38)
Unknown/other	8 (7)
Long gun (n = 19)	
Rifle	9 (8)
Shotgun	10 (9)
Missing $(n = 3)$	
*Age, sex, and race data refer to the dee not the decedent is also the shooter. Circ of gun refer to characteristics of the even	

of preventability (see table 3). Incidents where the decedent was aged 0–17 were three times as likely to be preventable (relative risk (RR) 3.3, 95% CI 2.1 to 5.1) as those involving all older persons. Deaths involving handguns were eight times as likely to be preventable (RR 8.1, 95% CI 1.2 to 53.5) as those involving long guns. Among the circumstances of the incident, deaths that involved "playing with or showing the gun to others" were most likely to be preventable (RR 3.2, 95% CI 1.9 to 65.3).

Based on our estimates of the proportion of deaths preventable by any safety device (44%, 95% CI 35% to 53%), we can calculate the number of lives that might be saved if all firearms had all three devices. In 2000, there were 776 unintentional firearm deaths in the United States. Applying our results yields an estimate of 341 unintentional deaths (95% CI 272 to 411) that might have been prevented. There were also 230 firearm deaths of undetermined intent in 2000, producing an estimate of 101 preventable deaths (95% CI 81 to 122) in this category. Combining these data, 442 lives might have been saved in 2000 if all firearms had all three safety devices (95% CI 353 to 533).

DISCUSSION

Overall, more than 40% of the firearm related deaths in our sample were preventable by at least one of the three safety devices. Providing all three of these devices in all firearms Table 2Number (%) of preventable firearm deaths by
various safety devices in Maryland and Milwaukee,
1991–98

	Personalized gun	LCI	Magazine safety	Any of three safety devices*
Preventable	43 (37)	23 (20)	5 (4)	52 (44)
Possibly preventable†	13 (11)	15 (13)	3 (3)	19 (16)
Not preventable by safety devices	61 (52)	79 (68)	109 (93)	46 (39)
Total	117 (100)	117 (100)	117 (100)	117 (100)

*Because the same death may be preventable by more than one device, figures in this column are *not* the sum of the other three columns. †For personalized guns, this category includes deaths where the shooter was not in immediate control of the firearm when it discharged (for example, a firearm that discharged when dropped from a tree stand while hunting). For loaded chamber indicators (LCIs), this category includes so-called Russian roulette shootings (a LCI might eliminate the element of chance from this activity).

Table 3Proportion of deatleast one safety device, bycategories, and results of χ independence for each cate	selected variable ² tests of
Percent p Value preventable for γ ² *	

Variable	preventable	for χ^{2*}
Age (years)		< 0.001
0–17	88	
18–20	62	
21–40	19	
41+	13	
Type of gun		< 0.001
Handgun	62	
Long gun	8	
Circumstance		< 0.001
Hunting	33	
Handling/transporting/loading	27	
Playing with/showing gun to others	80	
Thought safety was on/problem with safety	50	
Unknown	23	
*For each of the variables (age, type of gun, circumstance), the χ^2 tests the null hypothesis that the proportion of preventable firearm related deaths across the appropriate subcategories (that is, the different age, type of gun, and circumstance groupings) is the same.		

could save more than 400 lives each year. Other research suggests that there would also be significant cost savings associated with preventing firearm related deaths, both for the victims' families and for the community as a whole.^{15 16} Of course, any assessment of the desirability of the devices should weigh the benefits in lives saved (and injuries averted) against the costs to consumers of providing or requiring the devices.

Our conclusion that 20% of the deaths were preventable by a LCI is convincingly close to prior research, falling between the General Accounting Office's 23% figure, and Ismach *et al*'s 14%. No prior research has examined the proportion of deaths preventable by a personalized gun. Yet our results suggest that personalized guns may be among the most beneficial firearm safety design changes for the future.

However, personalized guns are not uniformly supported by gun control advocates. In fact, some have argued that increased availability of these guns may even be counterproductive.¹⁷ Our research can help clarify the risk-benefit

DEFENDANT'S EXHIBIT 14 www.injuryprevention.com

Case 8:22-206-01421-CJC-ADS Document 48-26 Filed 01/27/23 Page 4 of 5ern RagerlD, Hepburn, et al #:1069

equation for these guns by providing better information about how many lives might be directly saved by personalized guns. For loaded chamber indicators and magazine safeties, these concerns are minimized because potential gun buyers already have the option to purchase guns with these features.

Just 4% of the deaths in our sample were preventable by a magazine safety. The action of removing the ammunition magazine from a pistol prior to the shooting is apparently less common than other circumstances surrounding firearm related deaths, or at least is less frequently noted in medical examiner and police reports. However, the passive or automatic nature of magazine safeties, coupled with their relatively low price and mechanical simplicity, suggests that these devices remain a useful injury intervention.

Although safer handling or storage of firearms might also have prevented some of the deaths in our sample, this was not the focus of our research. In addition, there is some evidence that it may be quite difficult to alter the firearm handling, ownership, or storage practices of children^{18 19} and adults.²⁰⁻²³

For the present study we did not examine the safety devices' effects on suicides and non-negligent homicides. Personalized guns, in particular, might prevent youth suicides, and even some homicides where the gun was recently stolen from its owner. Future research, based on newly developed surveillance systems, might therefore yield greater estimates of the number of lives saved by these devices when all deaths are included.

Limitations

Our study has several limitations. There is inherent uncertainty in any determination of whether some safety device might have prevented any given death. We have tried to minimize some of this uncertainty by establishing reasonably specific rules and by using multiple coders. With data from Maryland and Milwaukee, the generalizability of our findings to other areas or to the United States as a whole is uncertain. However, the comparability of our findings regarding preventability among the two regions, and with other research, suggests that regional variation in preventability within the United States may not be especially great. The age distribution of our sample is somewhat younger than the nation as a whole, though the gender distribution is similar to national data.

As described, we did not include negligent homicides in Maryland. However, the purpose of our analysis was not to determine the raw number of preventable deaths, but the proportion of deaths that might be prevented by the various safety devices. Only if the proportion of negligent homicides in Maryland that were preventable was very different from the rest of the deaths in our sample would their absence affect our results. The similarity in preventability of Milwaukee's negligent homicides with the rest of the deaths suggests that this is probably not the case.

For several reasons, our estimate of the number of lives that might be saved by the three safety devices may be conservative. First, the reported number of unintentional deaths in the United States is likely to be an underestimate since many of these deaths, as in our Milwaukee data, are coded as negligent homicides. Inclusion of these negligent homicides substantially increased the number of Milwaukee cases in our sample. Also, in our calculations of lives potentially saved, we use only those deaths we classified as preventable, not those classified as possibly preventable.

On the other hand, we understand the uncertainties inherent in this or any calculation of possible lives saved under various assumptions. For example, this calculation assumes that the proportion of deaths preventable in our sample would be the same for the United States as a whole. In addition, our lives saved calculations assume that all firearms would have the safety devices. Of course, even if *new* firearms were required to contain the devices, many older guns without the devices would remain in circulation. Therefore, it might be some years before the maximum benefit of the technologies would be felt. We also assume that LCIs can be designed, as a new California law requires, to be understood even by untrained users.²⁴

Some might even argue that the inclusion of new safety devices into firearms could result in the loss of lives, for example if the firearm did not function as intended during a defensive gun use, or if the increased cost forced some to forgo the purchase of a gun. Designers of personalized guns attempt to minimize or eliminate any interference with the normal operation of the firearm. LCIs and magazine safeties should result in little change to the operation or cost of a gun. The increased cost of personalized guns, and the impact this might have on purchasing decisions, is not known. In addition, despite the arguments of some researchers,²⁵ the best available evidence suggests that there are relatively few defensive uses of guns compared with gun related deaths and crimes.^{26 27}

CONCLUSION

Despite the potentially lifesaving benefits of firearm safety technologies, most firearm manufacturers have not provided these devices voluntarily.⁶ ⁷ In the United States, the public would support legislation requiring these devices. In one national poll, legislation requiring all new handguns to contain a LCI (73% in favor) or personalization technology (71% in favor) were each supported by a large majority of the respondents.²⁸

Certainly, incorporating safety devices into firearms is not the only appropriate strategy for responding to the many different causes of firearm violence. However, examples of successful design changes for other products (such as motor vehicles and prescription drug containers),^{29 30} coupled with the results of our study, suggest that product modification should remain an important intervention for firearms as well.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge funding for this research from the Funders' Collaborative for Gun Violence Prevention. We also thank Allegra Kim for her assistance, and the Offices of the Medical Examiners for Milwaukee and Maryland for collecting and making available the data for this study.

Key points

- Changing the design of products to make them safer is a proven injury prevention strategy, but for firearms this strategy has not yet been widely adopted.
- For firearms, loaded chamber indicators and magazine safeties are designed to prevent some deaths where the shooter did not know the gun was loaded; personalization devices prevent the gun from being fired by an unauthorized user.
- In this study of the lifesaving potential of these three firearm safety devices, 44% of the deaths in the sample were preventable by at least one of the devices.
- Design changes to firearms have the potential to save hundreds of lives each year in the United States.

www.injuryprevention.com

Case 8:22-Effec J. African G. Gen Address Document 48-26 Filed 01/27/23 Page 5 of 5 Page ID #:1070

Authors' affiliations

J S Vernick, S B Johnson, D W Webster, Johns Hopkins School of Public Health, Center for Gun Policy and Research, Baltimore, Maryland M O'Brien, L M Hepburn, Harvard School of Public Health, Injury Control Research Center, Cambridge, Massachusetts S W Hargarten, Medical College of Wisconsin, Firearm Injury Center,

Milwaukee, Wisconsin

REFERENCES

- National Committee for Injury Prevention and Control. Injury prevention: meeting the challenge. New York, NY: Oxford University Press, 1989:7–8.
 Centers for Disease Control and Prevention. Web-based Injury Statistics
- Query and Reporting System (WISQARS). Available at http://www.cdc.gov/
- ncipc/osp/data.htm (accessed on 10 April 2003). 3 Freed LH, Vernick JS, Hargarten SW. Prevention of firearm-related injuries among youth: a product oriented approach. *Pediatr Clin North Am* 1998;**45**:427–38.
- 4 Teret SP, Culross PL. Product-oriented approaches to reducing youth gun violence. Future Child 2002;12:119-31.
- 5 Teret SP, Lewin NL. Policy and technology for safer guns: an update. Ann Emerg Med 2003;41:32-4.
- 6 Vernick JS, Meisel ZF, Teret SP, et al. "I didn't know the gun was loaded": an examination of two safety devices that can reduce the risk of unintentional firearm injuries. J Public Health Policy 1999;**20**:427–40.
- 7 Milne JS, Hargarten SW, Kellermann AL, et al. Effect of current federal
- regulations on handgun safety features. Ann Emerg Med 2003;41:1–9. 8 Karlson TA, Hargarten SA. Reducing firearm injury and death: a public health sourcebook on guns. New Brunswick, NJ: Rutgers University Press, 1997:71-2.
- 9 United States General Accounting Office. Accidental shootings: many deaths and injuries caused by firearms could be prevented. Washington, DC: United States General Accounting Office, 1991:1–47.
 Ismach RB, Reza A, Ary R, et al. Unintended shootings in a large metropolitan
- area: an incident based analysis. Ann Emerg Med 2003;41:10–17. Cherry D, Runyan C, Butts J. A population based study of unintentional firearm fatalities. Inj Prev 2001;7:62–5. 11
- 12 Barber CW, Ozonoff VV, Schuster M, et al. Massachusetts weapon-related
- injury surveillance system. Am J Prev Med 1998;15(suppl 3):57-66.

Frattaroli S, Webster DW, Teret SP. Unintentional gun injuries, firearm design, and prevention: what we know, what we need to know, and what can be done. J Urban Health 2002;79:49–59.
 Barber C, Hemenway D, Hachstadt J, et al. Underestimates of unintentional firearm fathlike: comparing Supelmentary Hamizide Report data with the

311

<u>_</u>

- Barber C, Hemenway D, Hochstadt J, *et al.* Underestimates of unintentional firearm fatalities: comparing Supplementary Homicide Report data with the National Vital Statistics System. Inj Prev 2002;8:252–6.
 Cook PJ, Ludwig J. Gun violence: the real costs. New York, NY: Oxford University Press, 2000:97–115.
 Cook PJ, Lawrence BA, Ludwig J, *et al.* The medical costs of gunshot injuries in the United States. JAWA 1999;282:447–54.
 Surgarman L. Loched Loic: making a una smart won't stap killings like the one.
- 15
- 16
- Sugarmann J. Loaded logic: making guns smart won't stop killings like the one in Michigan. Washington Post 2002, March 5: B2. 17
- In Michigan. Washington Post 2002, March 3: B2.
 B Hardy MS, Armstrong FD, Martin BL, et al. A firearm safety program for children: they just can't say no. J Dev Behav Pediatri 1996;17:216–21.
 Jackman GA, Farah MM, Kellermann AL, et al. Seeing is believing: what do boys do when they find a real gun? Pediatrics 2001;107:1247–50.
 Brent DA, Baugher M, Birmaher B, et al. Compliance with recommendations to prove foregree in formilar pertinentiation a children trial for addecent.
- Denni DA, paugner M, Birmaner B, et al. Compliance with recommendations to remove firearms in families participating in a clinical trial for adolescent depression. J Am Acad Child Adolesc Psychiatry 2000;39:1220–6. Hemenway D, Skolnick SJ, Azrael DR. Firearm training and storage. JAMA 1995;273:46–50.
- 21 22
- Connor SM, Wesolowski KL. 'They're too smart for that'': predicting what children would do in the presence of guns. *Pediatrics* 2003;111:e109–14. Grossman DC, Cummings P, Koepsell TD, *et al.* Firearm safety counseling in
- primary care pediatrics: a randomized, controlled trial. *Pediatrics* 2001;**106**:22–6.
- 24 California Senate. Bill No 489, September 2003.
- 25 Kleck G. Gertz M. Armed resistance to crime: the prevalence and nature of self-defense with a gun. Journal of Criminal Law and Criminology 1995:86:150-87.
- 6 McDowall D, Wiersema B. The incidence of defensive firearm use by US crime victims, 1987–1990. Am J Public Health 1994;84:1982–4.
- Hemenway D. Survey research and self-defense gun use: an explanation of extreme overestimates. Journal of Criminal Law and Criminology 1997:87:1430-45.
- 28 Teret SP, Webster DW, Vernick JS, et al. Public support for innovative gun
- Verter Gr, versiter DV, vertice JS, et al. tour explored to the model we got policies: the results of two national surveys. N Engl J Med 1998;329:813–8.
 Rogers GB. The safety effects of child-resistant packaging for oral prescription drugs: two decades of experience. JAMA 1996;275:1661–5.
 National Highway Traffic Safety Administration. Effectiveness of occupant protection systems and their use, fourth report to Congress. Washington, DC: US Department of Transportation, 1999;i.

ECHO.....

Lighter balls for younger children



Please visit the Injury Prevention website [www. injuryprevention.com] for a link to the full text of this article

he incidence of hand and wrist injuries from balls used by children in sporting activities may be reduced by increasing awareness of parents and coaches, using lighter balls, and introducing weight categories for players.

The case notes of all children aged 6-13 years attending the accident and emergency department of the Royal Aberdeen Children's Hospital from January to December 2001 as a result of a wrist, hand, or finger injury sustained from a blow by a ball were reviewed and the cause, type, and severity of the injury noted.

Altogether 187 children (125 boys, 69%) were seen over the study period. Football (soccer) resulted in 120 (64%) of the injuries, with 93 (78%) sustained by boys. Serious injuries were noted in 69 cases—67 fractures and two dislocations (37% of the total presentations). The fracture rate was higher in the injuries sustained outside school.

All injuries in this study were caused by a blow from a ball. Most football injuries in youngsters are mild, but their severity increases with age as children become heavier and achieve higher skill levels. The study concluded with the following recommendations. Firstly, using lighter balls for younger children would reduce the force of a blow. Secondly, weight categories would ensure that heavier players were not kicking or throwing balls at lighter players. Thirdly, awareness of the risk of hand and wrist injuries among parents and coaches should be increased.

Wider implementation of these modifications should be considered, and a register of injuries kept by sporting bodies would be of benefit in monitoring such injuries.

ER-1313

British Journal of Sports Medicine 2003;37:351–353.

DEFENDANT'S EXHIBIT 14 www.injuryprevention.com

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 15 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-27 Filed 01/27/23 Page 1 of 1 Page ID #:1071





DEFENDANT'S EXHIBIT 15

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 16 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-28 Filed 01/27/23 Page 1 of 1 Page ID #:1072



DEFENDANT'S EXHIBIT 16

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 17 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-29 Filed 01/27/23 Page 1 of 1 Page ID #:1073





DEFENDANT'S EXHIBIT 17

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 18 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-30 Filed 01/27/23 Page 1 of 1 Page ID #:1074



DEFENDANT'S EXHIBIT 18

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 19 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-31 Filed 01/27/23 Page 1 of 1 Page ID #:1075



DEFENDANT'S EXHIBIT 19

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 20 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-32 Filed 01/27/23 Page 1 of 1 Page ID #:1076



DEFENDANT'S EXHIBIT 20

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 21 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-33 Filed 01/27/23 Page 1 of 1 Page ID #:1077



DEFENDANT'S EXHIBIT 21

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 22 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-34 Filed 01/27/23 Page 1 of 1 Page ID #:1078



DEFENDANT'S EXHIBIT 22

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 23 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-35 Filed 01/27/23 Page 1 of 15 Page ID #:1079

Saul Cornell

Paul and Diane Guenther Chair in American History Department of History Fordham University

441 East Fordham Road * Bronx, NY 10458 * 203 826-6608 (c) * scornell1@fordham.edu

	Education			
			Dissertation: "The Political Thought	
1989	University of Pennsylvania	Ph.D.	and Culture of the Anti-Federalists"	
1985	University of Pennsylvania	MA	History	
1982	Amherst College	BA	History - Magna Cum Laude	
1980-81	University of Sussex, Brighton, England			

Teaching Experience			
2009-2020	Guenther Chair in American History	Fordham University	
2011-2022	Adjunct Professor of Law	Fordham Law School	
2005-2008	Professor of History	The Ohio State University	
1997-2005	Associate Professor, History	The Ohio State University	
1995	Thomas Jefferson Chair	University of Leiden, The Netherlands	
1991-1997	Assistant Professor, History	The Ohio State University	
1989-1991	Assistant Professor, History	College of William and Mary	

Fellowships and Grants

- 2019-2020 The Gilder Lehrman Center for the Study of Slavery, Resistance, and Abolition, Yale University
- 2018-2019 Senior Research Scholar in Residence, Floersheimer Center for Constitutional Democracy, Cardozo Law School
- 2014 Senior Research Scholar in Residence, University of Connecticut Law School
- 2011 Senior Research Scholar in Residence, Yale Law School
- 2003-2008 Joyce Foundation, Second Amendment Center Grant, \$575,000
- 2003-2004 NEH Fellowship
- 2002-2005 Department of Education, Teaching American History Grant, Historyworks, \$2,000,000
- 2002 Gilder-Lehrman Fellowship
- 2001-2002 Joyce Foundation Planning Grant, \$40,000
- 2001 American Council of Learned Societies (ACLS)
- 1999-2000 Betha Grant, Batelle Memorial Endowment, Ohio Teaching Institute, \$100,000
- 1998 Thomas Jefferson Memorial Foundation, Research Fellowship
- 1995 Thomas Jefferson Chair in American Studies, Fulbright Lecturing Award
- 1994 Ohio State University Seed Grant
- 1993 Ohio State University Special Research Assignment
- 1992 Ohio State University Grant-In-Aid
- 1989-1991 NEH Post-Doctoral Fellow, Institute of Early American History and Culture

1 | Saul Cornell

DEFENDANT'S EXHIBIT 23

Case 8:22-cv-01421-CJC-ADS Document 48-35 Filed 01/27/23 Page 2 of 15 Page ID #:1080

Prizes and Awards

- 2006 Langum Prize in Legal History 2006
- 2006 History News Network, Book of the Month
- 2006 History News Network, Top Young Historian
- 2001 Society of the Cincinnati, History Book Prize, a Triennial Award for the Best Book on the American Revolutionary Era
- 2000 <u>Choice</u> Outstanding Academic Book

Book Publications

<u>The Partisan Republic: Democracy, Exclusion, and the Fall of the Founders Constitution</u> *New Histories of American Law*, series eds., Michael Grossberg and Christopher Tomlins (Cambridge University Press, 2019) [With Gerald Leonard]

The Second Amendment On Trial: Critical Essays on District of Columbia v. Heller (University of Massachusetts Press, 2013) [with Nathan Kozuskanich]

<u>Visions of America: A History of the United States</u> [co-authored with Jennifer Keene and Ed O'Donnell] (First edition, 2009),(second edition 2013) (third edition, 2016)

<u>"A Well Regulated Militia": The Founding Fathers and the Origins of Gun Control</u> (Oxford University Press, 2006) (paperback edition 2008)

Whose Right to Bear Arms Did the Second Amendment Protect? (Bedford/St. Martins Press, 2000) (Paperback 2000)

<u>The Other Founders: Anti-Federalism and the Dissenting Tradition in America, 1788-1828</u> (Institute of Early American History and Culture, University of North Carolina Press, 1999) (paperback edition 2001)

Editor, <u>Retrieving the American Past:</u> Documents and Essays on American History, (Pearson, 1994-2008)

Scholarly Articles, Book Chapters, and Essays:

"History and Tradition or Fantasy and Fiction: Which Version of the Past Will the Supreme Court Choose in NYSRPA v. Bruen?," 49 *Hastings Constitutional Law Quarterly* (2022): 145-177.

"The Long Arc of Arms Regulation in Public: From Surety to Permitting,1328–1928," 55 <u>University of California, Davis Law Review</u> (2022): 2545-2602

"Infants' and Arms Bearing in the Era of the Second Amendment: Making Sense of the Historical Record," 40 <u>Yale Law & Policy Review Inter Alia</u> 1 (2021)

"The Right to Regulate Arms in the Era of the Fourteenth Amendment: The Emergence of Good Cause Permit Schemes in Post-Civil War America" 55 <u>University of California, Davis Law Review Online</u> (2021): 65-90.

2 | Saul Cornell

DEFENDANT'S EXHIBIT 23

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 25 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-35 Filed 01/27/23 Page 3 of 15 Page ID #:1081

- "President Madison's Living Constitution: Fixation, Liquidation, and Constitutional Politics in the Jeffersonian Era", 89 Fordham Law Review (2021): 1761-1781.
- "History, Text, Tradition, and the Future of Second Amendment Jurisprudence: Limits on Armed Travel Under Anglo-American Law, 1688–1868," 83 Law and Contemporary Problems (2020): 73-95
- "Reading the Constitution, 1787–91: History, Originalism, and Constitutional Meaning." <u>Law and</u> <u>History Review</u> 37 (2019): 821–45
- "Constitutional Mythology and the Future of Second Amendment Jurisprudence after *Heller*," in <u>Firearms and Freedom: The Second Amendment in the Twenty-First Century Controversies in</u> <u>American Constitutional Law Series</u> (Routledge, 2017): 8-24
- "The Right to Keep and Carry Arms in Anglo-American Law, Preserving Liberty and
- Keeping the Peace," 80 Law and Contemporary Problems (2017): 11-54
- "Half Cocked': The Persistence of Anachronism and Presentism in the Academic Debate over the Second Amendment," 107 Northwestern Journal of Criminal Law 107 (2017): 203-218
- "The 1790 Naturalization Act and the Original Meaning of the Natural Born Citizen Clause: A Short Primer on Historical Method and the Limits of Originalism," <u>Wisconsin Law Review Forward</u> 92 (2016)
- "Constitutional Meaning and Semantic Instability: Federalists and Anti-Federalists on the Nature of Constitutional Language," in special issue on "The Future of Legal History," <u>American Journal of</u> <u>Legal History</u> 56 (2016): 21-29
- "Firearm Regionalism and Public Carry: Placing Southern Antebellum Case Law in Context," <u>Yale Law</u> Journal Forum 125(2015-16):121-135 [with Eric Ruben]
- "Originalism As Thin Description: An Interdisciplinary Critique" <u>Fordham Law Review Res Gestae</u> 84 (2015): 1-10
- "The Right to Bear Arms," <u>The Oxford Handbook of the US Constitution</u>, eds., Mark Tushnet, Sanford Levinson, and Mark Graber (2015): 739-759
- "Conflict, Consensus & Constitutional Meaning: The Enduring Legacy of Charles Beard" <u>Constitutional</u> <u>Commentary</u> 29 (2014): 383-409
- "Meaning and Understanding in the History of Constitutional Ideas: the Intellectual History Alternative to Originalism" <u>Fordham Law Review</u> 82 (2013): 721-755
- "The Right to Carry Firearms Outside of the Home: Separating Historical Myths from Historical Realities" <u>Fordham Urban Law Journal</u> 39 (2012): 1695-1726
- "Evidence, Explanation, and the Ghost of Charles Beard" William & Mary Quarterly 69 (2012): 393-4
- "Idiocy, Illiteracy, and the Forgotten Voices of Popular Constitutionalism: Ratification and the Ideology of Originalism" <u>William & Mary Quarterly</u> 69 (2012): 365-368
- "The People's Constitution v. The Lawyer's Constitution: Popular Constitutionalism and the Original Debate Over Originalism," <u>Yale Journal of Law and the Humanities</u> 23 (2011): 295-337
- "St. George Tucker's Lecture Notes, The Second Amendment, and Originalist Methodology: A Critical Comment," <u>Northwestern University Law Review</u> 103 (2009): 406-416

3 | Saul Cornell

DEFENDANT'S EXHIBIT 23

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 26 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-35 Filed 01/27/23 Page 4 of 15 Page ID #:1082

- "Heller, New Originalism, and Law Office History: 'Meet the New Boss, Same as the Old Boss'" <u>UCLA</u> <u>Law Journal</u> 56 (2009): 1095 -1125
- "Originalism on Trial: The Use and Abuse of History in District of Columbia v. Heller" <u>Ohio-State Law</u> Journal 69 (2008): 625-640
- "Consolidation of the Early Federal System," Chapter 10 of the <u>Cambridge History of A merican Law</u> (Cambridge University Press, 2008) [With Gerry Leonard]
- "The Ironic Second Amendment" <u>Albany Government Law Review</u> 2 (2008): 292-311.
- "The Original Meaning of Original Understanding: A Neo-Blackstonian Critique," <u>Maryland Law</u> <u>Review</u> (2008): 101-115
- "Mobs, Militias, and Magistrates: Popular Constitutionalism During the Whiskey Rebellion," <u>Chicago-Kent Law Review</u> (2007): 883-903
- "The Second Amendment and Early American Gun Regulation: a Closer Look at the Evidence," <u>Law</u> <u>and History Review</u> (2007): 197-204
- "St. George Tucker and the Second Amendment: Original Understandings and Modern Misunderstandings," <u>William and Mary Law Review</u> 47 (2006): 1123-55
- "The Early American Origins of the Modern Gun Control Debate: The Right to Bear Arms, Firearms Regulation, the Lessons of History," <u>Stanford Law and Policy Review</u> (2006): 571-596
- "Well Regulated: The Early American Origins of Gun Control," <u>Fordham Law Review</u> 73 (2004): 487-528 [With Nathan DeDino]
- "Beyond the Myth of Consensus: The Struggle to Define the Right to Bear Arms in the Early Republic," in <u>Beyond the Founders: New Essays on the Political History of the Early Republic</u> (UNC Press, 2005)
- "A New Paradigm for the Second Amendment," Law and History Review 22 (2004): 161-7
- "Gun Laws and Policies: A Dialogue," Focus on Law Studies: Teaching about Law in the Liberal Arts (American Bar Association, 2003)
- "The Militia Movement," Oxford Companion to American Law (Oxford University Press, 2002)
- "Don't Know Much About History: The Current Crisis in Second Amendment Scholarship," <u>Northern</u> <u>Kentucky Law Review</u> (2003)
- "A Right to Bear Quills or Kill Bears? A Critical Commentary on the Linkage between the 1st and 2nd Amendment in Recent Constitutional Theory," in <u>The Limits of Freedom in A Democratic Society</u> (Kent State University Press, 2001)
- "The Irony of Progressive Historiography: The Revival of Anti-Federalism in Contemporary Constitutional History," in <u>American Law Ways and Folkways</u> (Odense University Press, Denmark 2001)
- "Commonplace or Anachronism: The Standard Model, The Second Amendment, and the Problem of History in Contemporary Constitutional Theory," <u>Constitutional Commentary</u> (1999): 221-246

"Mere Parchment Barriers? Anti-Federalists, the Bill of Rights, and the Question of Rights Consciousness," in <u>Government Proscribed: The Bill of Rights</u> (University of Virginia Press, 1998): 175-208

4 | Saul Cornell

DEFENDANT'S EXHIBIT 23

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 27 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-35 Filed 01/27/23 Page 5 of 15 Page ID #:1083

- "Moving Beyond the Great Story: Post-Modern Prospects, Post-Modern Problems, A Forum on Robert Berkhofer, Jr. <u>Beyond the Great Story</u>" <u>American Quarterly</u> (1998): 349-357
- "The Anti-Federalists," in <u>The Blackwell Companion to American Thought</u>, eds., James Kloppenberg (London, 1995)
- "The Bill of Rights," in <u>The Blackwell Companion to American Thought</u>, eds., James Kloppenberg (London, 1995)
- "Splitting the Difference: Textualism, Contexualism, and Post-Modern History," <u>American Studies</u> (1995): 57-80
- "Canon Wars II: The Return of the Founders," <u>Reviews in American History</u> 22 (1994): 413-417
- "Moving Beyond the Canon of Traditional Constitutional History: Anti-Federalists, the Bill of Rights and the Promise of Post-Modern Historiography," <u>Law and History Review</u> (1994): 1-28
- "Early American History in a Post-Modern Age," William and Mary Quarterly 50 (1993): 329-341
- "Liberal Republicans, Republican Liberals?: The Political Thought of the Founders Reconsidered," <u>Reviews in American History</u> 21 (1993): 26-30
- "Politics of the Middling Sort: The Bourgeois Radicalism of Abraham Yates, Melancton Smith, and the New York Anti-Federalists," in <u>New York in the Age of the Constitution</u> (New York Historical Society, 1992): 151-175
- "Aristocracy Assailed: Back-Country Opposition to the Constitution and the Problem of Anti-Federalist Ideology," Journal of American History (1990): 1148-1172
- "The Changing Historical Fortunes of the Anti-Federalists," <u>Northwestern University Law Review</u> (1989): 39-73

"Reflections on the `Late Remarkable Revolution in Government,' Aedanus Burke and Samuel Bryan's Unpublished History of the Ratification of the Federal Constitution," <u>The Pennsylvania Magazine of History and Biography</u> (1988): 103-130

Book Reviews:

- Journal of American History
- William and Mary Quarterly
- American Studies Journal of the Early Republic
- Pennsylvania Magazine of History and Biography
- <u>American Quarterly</u>
- <u>American Journal of Legal History</u>
- Law and History Review

Journal Manuscript Referee:

- Journal of American History
- William and Mary Quarterly
- Diplomatic History
- <u>Pennsylvania Magazine of History and Biography</u>
- Law and <u>History Review</u>
- Harvard Law Review

5|Saul Cornell

DEFENDANT'S EXHIBIT 23

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 28 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-35 Filed 01/27/23 Page 6 of 15 Page ID #:1084

- <u>Stanford Law Review</u>
- Yale Law Journal

Book Manuscript Reviewer:

- University Press of Virginia
- University of North Carolina Press
- Stanford University Press
- University of Massachusetts Press
- Oxford University Press
- Cambridge University Press
- University of Michigan Press
- Harvard University Press

Invited Lectures:

"Race, Regulation, and Guns: The Battleground in the Debate Over the Second Amendment," Haber/Edelman Lecture: University of Vermont, Fall 2021

- "Second Amendment Myths and Realities," University of Tampa, Honors College Symposium, November 30, 2018.
- "The Common Law and Gun Regulation: Neglected Aspects of the Second Amendment Debate," Guns in Law, Amherst College, Law Justice and Society (2016)
- "The New Movement to End Gun Violence." UCLA Hammer Museum (2016)
- "No Person May Go Armed": A Forgotten Chapter in the History of Gun Regulation" The Elizabeth Battelle Clark Legal History Series, Boston University College of Law, 2016
- Legacy Speaker Series: "Guns in the United States," University of Connecticut (2016) "How does the Second Amendment Apply to Today?"
- American Constitution Society/ Federalist Society Debate, Tulane Law School, New Orleans (2016)
- "The Second Amendment and The Future of Gun Regulation: Forgotten Lessons From U.S. History," Constitution Day Lecture, Goucher College, (2015)
- Keynote Lecture: "The Second Amendment and American Cultural Anxieties: From Standing Armies to the Zombie Apocalypse" Firearms and Freedom: The Relevance of the Second Amendment in the Twenty First Century, Eccles Center, British Library (Spring 2015)
- "Narratives of Fear and Narratives of Freedom: A Short Cultural History of the Second Amendment," Comparing Civil Gun Cultures: Do Emotions Make a Difference? Max Plank Institute, Berlin (2014)
- "History and Mythology in the Second Amendment Debate," Kollman Memorial Lecture, Cornell College, Iowa (Spring, 2013)
- "Will the Real Founding Fathers Please Stand Up or Why are so few Historians Originalists" Constitution Day Lecture, Lehman College, Fall 2011
- "Lawyers, Guns, and Historians: The Second Amendment Goes to Court," SHEAR/HSP Public Lecture, Philadelphia, July, 2008

6 | Saul Cornell

DEFENDANT'S EXHIBIT 23

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 29 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-35 Filed 01/27/23 Page 7 of 15 Page ID #:1085

- The Robert H. and Alma J. Wade Endowment Lecture, Kentucky Wesleyan University, "The Early American Origins of Gun Control" (2006)
- "Jefferson, Mason, and Beccaria: Three Visions of the Right to Bear Arms in the Founding Era," Bill of Rights Lecture, Gunston Hall Plantation, Fairfax, VA (2003)
- "A New Paradigm for the Second Amendment," Finlay Memorial Lecture, George Mason University, (2001)
- "Academic Gunsmoke: The Use and Abuse of History in the Second Amendment Debate," Cadenhead Memorial Lecture, University of Tulsa, (2000)
- "Why the Losers Won: The Rediscovery of Anti-Federalism in the Reagan Years," Thomas Jefferson Inaugural Lecture, University of Leiden, Netherlands, (1995)

Presentations:

- "From Ideology to Empiricism: Second Amendment Scholarship After Heller, "Hastings Constitutional Law Quarterly Symposium, Heller at Ten, January 18, 2019
- "Firearms and the Common Law Tradition," Aspen Institute, Washington, DC (2016)
- "The Original Debate over Original Meaning Revisited," British Group in EarlyAmerican History, Annual Meeting, Cambridge, England (2016)
- "Second Amendment Historicism and Philosophy" The Second Generation of Second Amendment Scholarship" Brennan Center, NYU 2016
- "The Reception of the Statute of Northampton in Early America: Regionalism and the Evolution of Common Law Constitutionalism" OIEAHC and the USC/Huntington Library Early Modern Studies Institute May 29–30, 2015
- "The Right to Travel Armed in Early America: From English Restrictions to Southern Rights," British Group in Early American History, Annual Conference Edinburgh, Scotland (2014)
- "Progressives, Originalists, and Pragmatists: The New Constitutional Historicism and the Enduring Legacy of Charles Beard," Charles Beard, Economic Interpretation and History, Rothmere Center, Oxford University (2012)
- CUNY Early American Seminar, "The People's Constitution v. the Lawyer's Constitution," 2011
- Roundtable : "The Work of J.R. Pole," SHEAR, Philadelphia, Pennsylvania 2011)
- "The Right to Bear Arms in the Era of the Fourteenth Amendment: Gun Rights or Gun Regulation?" Bearing Arms, Policy, Policing, and Incorporation After Heller, Santa Clara Law School (2010)
- "Re-envisioning Early American History," American Historical Association Annual Meeting, San Diego (2010)
- "The Ironic Second Amendment" Firearms, the Militia, and Safe Cities: Merging History, Constitutional Law and Public Policy, Albany Law School (2007)
- "District of Columbia v. Heller and the Problem of Originalism," University of Pennsylvania Constitutional Law Workshop, Philadelphia (2007)

7 | Saul Cornell

DEFENDANT'S EXHIBIT 23

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 30 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-35 Filed 01/27/23 Page 8 of 15 Page ID #:1086

- "Progressives and the Gun Control Debate," American Constitution Society, Harvard Law School, (2006)
- "The Problem of Popular Constitutionalism in Early American Constitutional Theory," American Association of Law Schools, Annual Conference (2006)
- "Popular Constitutionalism and the Whiskey Rebellion," Symposium on Larry Kramer's <u>The People</u> <u>Themselves</u>, Chicago-Kent Law School (2005)
- Roundtable Discussion on the Second Amendment and Gun Regulation, NRA/ GMU Student's For the Second Amendment Symposium (2005)
- "The Early American Origins of the Modern Gun Control Debate: The Right to Bear Arms, Firearms Regulation, and the Lessons of History," Gun Control: Old Problems, New Problems, Joint Conference Sponsored by the John Glenn Institute and Stanford Law School (2005)
- "Original Rules for Originalists?" University of Minnesota Law School (2005)
- "The Fourteenth Amendment and the Origins of the Modern Gun Debate," UCLA, Legal History Workshop (2004)
- "Beyond Consensus, Beyond Embarrassment: The Use and Abuse of History in the Second Amendment Debate," American Society of Legal History, Austin, TX (2004)
- "Armed in the Holy Cause of Liberty: Guns and the American Constitution," NYU Legal History Colloquium (2004)
- "Digital Searches and Early American History," SHEAR Brown University (2004)
- "Well Regulated: The Early American Origins of Gun Control," The Second Amendment and the Future of Gun Regulation," Joint Conference Sponsored by the John Glenn Institute and Fordham Law School, New York (2004)
- "Minuteman, Mobs, and Murder: Forgotten Contexts of the Second Amendment," Department of History, University of California Berkeley (2003)
- "History vs. Originalism in the Second Amendment Debate," Federalist Society/ American Constitution Society, George Washington University Law School, Washington D.C. (2003)
- "Self-defense, Public Defense, and the Politics of Honor in the Early Republic," Lake Champlain Early American Seminar, Montreal (2003)
- "The Ironic Second Amendment" "Gun Control: Controversy, Social Values, and Policy," University of Delaware Legal Studies Conference, Newark, Delaware (2003)
- "Individuals, Militias, and the Right to Bear Arms: The Antebellum Debate Over Guns," Institute for Legal Studies, University of Wisconsin School of Law (2004)
- "Guns in the British Atlantic World: New Research, New Directions" Society for the Historians of the Early American Republic, Ohio State University (2003)
- "Neither Individual nor Collective: A New Paradigm for the Second Amendment," American Bar Foundation, Chicago (2003)
- "The Changing Meaning of the Armed Citizen in American History," "Americanism Conference," Georgetown University (2003)

8 | Saul Cornell

DEFENDANT'S EXHIBIT 23

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 31 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-35 Filed 01/27/23 Page 9 of 15 Page ID #:1087

- "A New Paradigm for the Second Amendment?" Supreme Court Historical Society, Washington, D.C. (2002)
- "Constitutional History as Cultural History: The Case of the Second Amendment" European American Studies Association, Bordeaux, France (2002)
- "Don't Know Much About History: The Current Crises in Second Amendment Scholarship," Salmon P. Chase College of Law, Symposium, "The Second Amendment Today," (2002)
- "History, Public Policy, and the Cyber-Age: Gun Control Policy after the Emerson Decision," Sanford Institute of Public Policy, Duke University (2002)
- "Constitutional History After the New Cultural History: The Curious Case of the Second Amendment," Society of the Historians of the Early American Republic, Baltimore (2001)
- Roundtable Discussion, "The State of Second Amendment Scholarship," American Historical Association (2001)
- "Armed in the Holy Cause of Liberty: Critical Reflections on the Second Amendment Debate," Vanderbilt University Law School (2001)
- "Neither Individual nor Collective: A New Paradigm for the Second Amendment," Boston University Law School, (2000)
- "The Current State of Second Amendment Scholarship," National Press Club Washington, D.C. American Bar Association, (2000)
- "Taking the Hype out of Hyper-Text, Or What Should Textbook Companies Being Doing for us on the Web," OAH St. Louis, Missouri (1999)
- "The Ironies of Progressive Historiography: The Revival of Anti-Federalism in Contemporary Constitutional Theory," European American Studies Association, Lisbon, Portugal (1998)
- "Deconstructing the Canon of American Constitutional History" American Society of Legal History, Seattle, Washington (1998)
- "Beyond Meta-narrative: The Promise of Hypertext," American Studies Association, Seattle, Washington (1998)
- "Text, Context, Hypertext," American Historical Association, Washington D.C. (1998)
- "Jefferson and Enlightenment," International Center for Jefferson Studies, Charlottesville, VA, (1998)
- "Copley's Watson and the Shark: Interpreting Visual Texts with Multi-media Technology," American Studies Association, Washington, D.C. (1997)
- "Multi-Media and Post-Modernism," H-Net Conference, Technology and the Future of History, East Lansing, Michigan (1997)
- Comment on Jack Rakove's <u>Original Meanings</u>, Society of the Historians of the Early Republic, State College, PA (1997)
- "Teaching with Multi-Media Technology," Indiana University, spring 1997 "Constitutional History from the Bottom Up: The Second Amendment as a Test Case," McGill University, Montreal, Canada (1996)

9 | Saul Cornell

DEFENDANT'S EXHIBIT 23

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 32 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-35 Filed 01/27/23 Page 10 of 15 Page ID #:1088

- "Just Because You Are Paranoid, Does Not Mean the Federalists Are Not Out to Get You: Freedom of the Press in Pennsylvania," University of Pennsylvania (1995)
- "Multi-Media and Post-Modernism: The Future of American Studies?" Lecture, Erasmus University, Rotterdam, Netherlands (1995)
- "Post-Modern American History? Ratification as a Test Case," St. Cross College, Oxford University, Oxford, England (1994)

"The Other Founders," NYU Legal History Seminar," NYU Law School (1994)

- "Reading the Rhetoric of Ratification," paper presented at "Possible Pasts: Critical Encounters in Early America," Philadelphia Center for Early American Studies, Philadelphia, PA (1994)
- "American Historiography and Post-Modernism," Organization of American Historians, Atlanta, GA (1994)
- "The Anti-Federalist Origins of Jeffersonianism," Columbia Seminar on Early American History (1994)
- "American History in a Post-Modern Age?" American Historical Association, San Francisco, CA (1994)
- "Post-Modern Constitutional History?" Indiana University School of Law, Bloomington, IN (1993)
- Participant, Institute of Early American History and Culture, planning conference, "New Approaches to Early American History," Williamsburg, VA (1992)
- "Mere Parchment Barriers? Federalists, Anti-Federalists and the Problem of Rights Consciousness," American Studies Association, Baltimore, MD (1991)
- "James Madison and the Bill of Rights: a comment on papers by Jack Rakove, Ralph Ketcham and Max Mintz," Organization of American Historians and Center for the Study of the Presidency Conference, "America's Bill of Rights at 200 Years," Richmond, VA, (1991)
- Symposium participant, "Algernon Sidney and John Locke: Brothers in Liberty?" Liberty Fund Conference, Houston, TX (1991)
- "Mere Parchment Barriers? Antifederalists, the Bill of Rights and the Question of Rights Consciousness," Capitol Historical Society, Washington, D.C. (1991)

"Anti-Federalism and the American Political Tradition," Institute of Early American History and Culture Symposium, Williamsburg, VA (1989)

Interviews, Editorials, Essays, Podcasts:

 "Clarence Thomas' Latest Guns Decision Is Ahistorical and Anti-Originalist" SLATE June 24, 2022

10 | Saul Cornell

DEFENDANT'S EXHIBIT 23

Case 8:22-cv-01421-CJC-ADS Document 48-35 Filed 01/27/23 Page 11 of 15 Page ID #:1089

- Cherry-picked history and ideology-driven outcomes: Bruen's originalist distortions, "SCOTUSblog (Jun. 27, 2022, 5:05 PM),
- "The Right Found a New Way to Not Talk About a School Shooting," SLATE May 25, 2022
- "The Horror in New York Shows the Madness of the Supreme Court's Looming Gun Decision," *Slate* May 19, 2022
- "Guns, Guns Everywhere: Last week's subway Shooting was Horrifying. If the Supreme Court Creates a National Right to Carry, the Future will be Worse," <u>New York Daily News</u> Apr 17, 2022
- "The Supreme Court's Latest Gun Case Made a Mockery of Originalism" *Slate* November 10, 2021
- "'Originalism' Only Gives the Conservative Justices One Option On a Key Gun Case," *Washington Post*, November 3, 2021
- "Neither British Nor Early American History Support the Nearly Unfettered Right to Carry Arms," *Slate* November 02, 2021
- "Will the Supreme Court Create Universal Concealed Carry Based on Fantasy Originalism?" *Slate* November 1, 2021
- "Biden was Wrong About Cannons, but Right About the Second Amendment," *Slate* June 29, 2021
- "Barrett and Gorsuch Have to Choose Between Originalism and Expanding Gun Rights," *Slate* April 29, 2021 Slate
- "What Today's Second Amendment Gun Activists Forget: The Right Not to Bear Arms," *Washington Post*, January 18, 2021
- "Could America's Founders Have Imagined This?" The New Republic, December 20, 2019
- "Don't Embrace Originalism to Defend Trump's Impeachment" *The New Republic*, December 5, 2019
- "The Second-Amendment Case for Gun Control" The New Republic, August 4, 2019
- "The Lessons of a School Shooting—in 1853" Politico, March 24, 2018.
- "Originalism and the Second Amendment in *District of Columbia v. Heller*," *University of Chicago Law Review*, Podcast, Briefly 1.9, Wed, 04/11/2018
- "Sandy Hook and the Original Meaning of the Second Amendment," *Time* December, 2017
- "The State of the Second Amendment," National Constitution Center, Podcast October, 2017
- "Gun Anarchy and the Unfree State: The Real History of the Second Amendment," *The Baffler On-line* October 2017
- "Five Types of Gun Laws the Founding Fathers Loved" Salon October 22, 2017
- "Half Cocked," Book Forum April 2016
- "Let's Make an Honest Man of Ted Cruz. Here's how we Resolve his "Birther" Dilemma with Integrity" *Salon* January 23, 2016
- "Guns Have Always Been Regulated," *The Atlantic Online* December 17, 2015
- "The Slave-State Origins of Modern Gun Rights" *The Atlantic Online* 30, 2015 [with Eric Ruben]
- PBS, "Need to Know: 'Debating the Second Amendment: Roundtable'" April 26, 2013
- "All Guns are not Created Equal" Jan 28, 2013 *Chronicle of Higher Education* [with Kevin Sweeney]

11 | Saul Cornell

DEFENDANT'S EXHIBIT 23

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 34 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-35 Filed 01/27/23 Page 12 of 15 Page ID #:1090

- "What the 'Right to Bear Arms' Really Means" *Salon* January 15, 2011 "Elena Kagan and the Case for an Elitist Supreme Court," *Christian Science Monitor* May 20, 2010
- "Gun Points," *Slate*, March 8, 2010 (With Justin Florence, and Matt Shors)
- "What's Happening to Gun Control," To the Point, NPR. March 11, 2010
- "Getting History Right," National Law Journal, March 1, 2010
- "History and the Second Amendment," The Kojo Nnamdi Show, WAMU (NPR) March 17, 2008
- "The Court and the Second Amendment," *On Point* with Tom Ashbrook, WBUR (NPR) March 17, 2008
- "Aim for Sensible Improvements to Gun Regulations," Detroit Free Press, April 29, 2007
- "A Well Regulated Militia," *The Diane Rehm Show*, WAMU (NPR) Broadcast on Book TV (2006)
- "Taking a Bite out of the Second Amendment," History News Network, January 30, 2005
- "Gun Control," Odyssey, Chicago NPR September 8, 2004
- "Loaded Questions," Washington Post Book World February 2, 2003
- "The Right to Bear Arms," Interview The Newshour, PBS May 8, 2002
- "Real and Imagined," New York Times, June 24, 1999

Other Professional Activities

- Editorial Board, <u>Constitutional Study</u>, University of Wisconsin Press (2014-present)
- Advisory Council, Society of Historians of the Early American Republic (SHEAR) (2007-2009)
- Program Committee, Annual Conference, Society of the Historians of the Early American Republic, Philadelphia, PA 2008
- Editorial Board, <u>American Quarterly (2004-2007)</u>
- Director, Second Amendment Research Center, John Glenn Institute for Public Service and Public Policy, 2002- 2007
- Fellow, Center for Law, Policy, and Social Science, Moritz College of Law, Ohio State University 2001- 2004
- Local Arrangements Committee, Annual Conference, Society of the Historians of the Early American Republic, Columbus, OH 2003
- Project Gutenberg Prize Committee, American Historical Association, 2004, 2002
- Program Committee, Annual Conference, Society of the Historians of the Early Republic, 2001
- Co-Founder Ohio Early American Studies Seminar
- NEH Fellowship Evaluator, New Media Projects, Television Projects
- Multi-media Consultant and Evaluator, National Endowment for the Humanities, Special, Projects, Division of Public Programs, Grants Review Committee (1999)

Court Citations, Amicus Briefs and Expert Witness Reports

US Supreme Court:

<u>N.Y. State Rifle & Pistol Ass'n v. Bruen</u>, 597 U.S. __, 50 2022 U.S. Lexis 3055 (2022)

DEFENDANT'S EXHIBIT 23

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 35 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-35 Filed 01/27/23 Page 13 of 15 Page ID #:1091

<u>N.Y. State Rifle & Pistol Ass'n v. Bruen</u>, 597 U.S. __, 26, 28, 45, 47 2022 U.S. Lexis 3055 (2022) (Breyer, J. dissenting)

<u>McDonald v. City of Chicago, Ill.</u>, 561 U.S. 742, 900, 901 n.44 (2010) (Stevens, J., dissenting). <u>McDonald v. City of Chicago, Ill.</u>, 561 U.S. 742, 914, 933 (2010) (Breyer, J., dissenting). <u>D.C. v. Heller</u>, 554 U.S. 570, 666 n.32, 671, 685 (2008) (Stevens, J., dissenting).

Federal Courts:

Jones v. Bonta, United States Court of Appeals, Ninth Circuit. May 11, 2022 --- F.4th ---- 2022 WL 1485187.

Duncan v. Bonta, United States Court of Appeals, Ninth Circuit. November 30, 2021 19 F.4th 1087 2021

Young v. Hawaii, 992 F.3d 765, 785-86 (9th Cir. 2021) (en banc).

Kanter v. Barr, 919 F.3d 437, 446 n.6, 457, 462, 464 (7th Cir. 2019) (Barrett, J., dissenting).

- Medina v. Whitaker, 913 F.3d 152, 159 (D.C. Cir.), cert. denied sub nom. Medina v. Barr, 140 S. Ct. 645 (2019).
- <u>Young v. Hawaii</u>, 896 F.3d 1044, 1066 (9th Cir. 2018), <u>reh'g en banc granted</u>, 915 F.3d 681 (9th Cir. 2019).

<u>Young v. Hawaii</u>, 896 F.3d 1044, 1077 (9th Cir. 2018) (Clifton, J., dissenting), <u>reh'g en banc granted</u>, 915 F.3d 681 (9th Cir. 2019).

<u>Teixeira v. Cty. of Alameda</u>, 873 F.3d 670, 684–85 (9th Cir. 2017).

Kolbe v. Hogan, 813 F.3d 160, 175 (4th Cir. 2016), on reh'g en banc, 849 F.3d 114 (4th Cir. 2017).

- Binderup v. Attorney Gen. United States of Am., 836 F.3d 336, 348 (3d Cir. 2016).
- Binderup v. Attorney Gen. United States of Am., 836 F.3d 336, 370–71, 371 n.17, 372 n.19 (3d Cir. 2016) (Hardiman, J., concurring).
- Binderup v. Attorney Gen. United States of Am., 836 F.3d 336, 389 n.85, 405 n.187 (3d Cir. 2016) (Fuentes, J., concurring).

Peruta v. Cty. of San Diego, 824 F.3d 919, 935 (9th Cir. 2016).

Peruta v. Cty. of San Diego, 742 F.3d 1144, 1185, 1188 (9th Cir. 2014) (Thomas, J., dissenting).

Nat'l Rifle Ass'n, Inc. v. Bureau of Alcohol, Tobacco, Firearms, & Explosives, 714 F.3d 334, 342 n.19, 343 n.23 (5th Cir. 2013) (Jones, J., dissenting).

Kachalsky v. Cty. of Westchester, 701 F.3d 81, 95 & n.21 (2d Cir. 2012).

Moore v. Madigan, 702 F.3d 933, 935 (7th Cir. 2012).

Nat'l Rifle Ass'n of Am., Inc. v. Bureau of Alcohol, Tobacco, Firearms, & Explosives, 700 F.3d 185, 200, 202–03 (5th Cir. 2012).

<u>United States v. Carpio-Leon</u>, 701 F.3d 974, 980 (4th Cir. 2012).

13 | Saul Cornell

DEFENDANT'S EXHIBIT 23

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 36 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-35 Filed 01/27/23 Page 14 of 15 Page ID #:1092

<u>United States v. Greeno</u>, 679 F.3d 510, 519 (6th Cir. 2012).

United States v. Yancey, 621 F.3d 681, 684 (7th Cir. 2010).

<u>United States v. Rene E.</u>, 583 F.3d 8, 12, 15–16 (1st Cir. 2009).

Miller v. Sessions, 356 F. Supp. 3d 472, 481 (E.D. Pa. 2019).

Grace v. D.C., 187 F. Supp. 3d 124, 138 n.11 (D.D.C. 2016).

Powell v. Tompkins, 926 F. Supp. 2d 367, 386 (D. Mass. 2013), aff'd, 783 F.3d 332 (1st Cir. 2015).

<u>United States v. Tooley</u>, 717 F. Supp. 2d 580, 589–591 (S.D.W. Va. 2010), <u>aff'd</u>, 468 F. App'x 357 (4th Cir. 2012).

United States v. Boffil-Rivera, No. 08-20437-CR, 2008 WL 8853354, 6 (S.D. Fla. Aug. 12, 2008), report and recommendation adopted sub nom.

<u>United States v. Gonzales-Rodriguez</u>, No. 08-20437-CR, 2008 WL 11409410 (S.D. Fla. Sept. 22, 2008), <u>aff'd sub nom.</u>

United States v. Boffil-Rivera, 607 F.3d 736 (11th Cir. 2010).

State Courts:

Norman v. State, 215 So. 3d 18, 30 & nn.11-12 (Fla. 2017).

Posey v. Com., 185 S.W.3d 170, 179–180 (Ky. 2006).

Posey v. Com., 185 S.W.3d 170, 185 n.3 (Ky. 2006) (Scott, J., concurring).

State v. Craig, 826 N.W.2d 789, 796 (Minn. 2013).

People v. Handsome, 846 N.Y.S.2d 852, 858 (N.Y. Crim. Ct. 2007).

Zaatari v. City of Austin, No. 03-17-00812-CV, 2019 WL 6336186, 22 (Tex. App. Nov. 27, 2019) (Kelly, J., dissenting).

State v. Roundtree, 2021 WI 1, 395 Wis. 2d 94, 952 N.W.2d 765

State v. Christen, 2021 WI 39, 958 N.W.2d 746

Amicus Briefs:

Amicus Brief, Harper v. Moore, No. 21-1271 (U.S. Supreme Court, 2022) [ISLT and Gerrymandering]
Amicus Brief KOX V. STATE OF GEORGIA, SUPREME COURT STATE OF GEORGIA Case No. S23A0167 [Second Amendment and Campus Carry]
Amicus Brief, *NYSRPA v. Bruen*, No. 20-843 (U.S. Supreme Court, 2021) [2nd Amendment]
Amicus Brief, *Young v. State of Hawaii* N O . 12-17808 (9th Cir. 2020) [2nd Amendment]
Amicus Brief, *Gould v. Morgan*, No. 17-2202 (1st Cir. 2018) [2nd Amendment]
Amicus Brief, *Flanagan vs. Becerra*, Central District of California Case (2018) [2nd Amendment]
Amicus Brief, *Gill v. Whitford* (US Supreme Court, 2017) [Partisan Gerrymandering]
Amicus Brief, *Woollard v Gallagher*, (4th Cir. 2013) [Second Amendment]

14 | Saul Cornell

DEFENDANT'S EXHIBIT 23

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 37 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-35 Filed 01/27/23 Page 15 of 15 Page ID #:1093

Amicus Brief *Heller v. District of Columbia* [Heller II] (US Court of Appeals for D.C.) (2010) [2nd Amendment]

Amicus Brief, *McDonald* v. *City of Chicago* (US Supreme Court,2010) [14th Amendment] Amicus Brief, *District of Columbia* v. *Heller* (US Supreme Court 2008) [2nd Amendment]

Amicus Brief, *Silvera* v. *Lockyer*, case on appeal(9th Circuit 2003) [2nd Amendment]

Amicus Brief, *Emerson* v. U.S. case on appeal (5th Circuit 1999) [2nd Amendment] Pro-bono Historical Consultant State of Ohio, *McIntyre* v. *Ohio*, (U.S. Supreme Court, 1995) [1st Amendment]

Expert Witness Reports

Rocky Mountain Gun Owners, Nonprofit Corp. v. Hickenlooper, 14-cv-02850 (D. Colo.). Chambers, et al., v. City of Boulder, 2018 CV 30581 (Colo. D. Ct. City of Boulder, filed June 14, 2018). Zeleny v. Newsom, 14-cv-02850 (N.D. Cal.). Miller, et al v. Smith, et al., 2018 cv 3085 (C.D. III.). Jones v. Bonta United States Court of Appeals, --- F.4th ----, 2022 WL 1485187 (9th Cir., May 11, 2022).

Baird v. Bonta, No. 2:19-cv-00617 (E.D. Cal.).

Worth v. Harrington, 21-cv-1348 (D. Minn.).

Law Review Symposia Organized

Second Amendment:

"The Second Amendment and the Future of Gun Regulation: Historical, Legal, Policy, and Cultural Perspectives," 73 *Fordham L. Rev.* 487 (2004).

"Gun Control: Old Problems, New Paradigms" 17 Stan. L. & Pol'y Rev. 671 (2006).

"A Symposium on Firearms, the Militia and Safe Cities: Merging History, Constitutional Law and Public Policy," 1 *Alb. Gov't L. Rev.* 292 (2008).

"The 2nd Amendment at the Supreme Court: "700 Years of History" and the Modern Effects of Guns in Public," 55 U.C. Davis L. Rev. 2545 (2022).

New Originalism:

"The New Originalism" 82 *Fordham L. Rev.* 721 (2013). "Historians and the New Originalism: Contextualism, Historicism, and Constitutional Meaning" 84 *Fordham L. Rev.* 915 (2015).

15 | Saul Cornell

DEFENDANT'S EXHIBIT 23

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 38 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-36 Filed 01/27/23 Page 1 of 18 Page ID #:1094

DICTIONARY

OFTHE

ENGLISH LANGUAGE;

IN WHICH

The WORDS are deduced from their ORIGINALS,

AND

ILLUSTRATED in their DIFFERENT SIGNIFICATIONS

BY

EXAMPLES from the best WRITERS.

TO WHICH ARE PREFIXED,

AHISTORY of the LANGUAGE,

AND

AN ENGLISH GRAMMAR.

BY SAMUEL JOHNSON, A.M.

IN TWO VOLUMES.

VOL. I.

THE SECOND EDITION.

Cum tabulis animum cenforis fumet honefii : Audebit quæcunque parum fplendoris habebunt, Et fine pondere erunt, et honore indigna ferentur. Verba movere loco; quamvis invita recedant, Et verfentur adhuc intra penetralia Veftæ : Obfcurata diu populo bonus eruet, atque Proferet in lucem fpeciofa vocabula rerum, Quæ prifcis memorata Catonibus atque Cethegis, Nunc fitus informis premit et deferta vetuftas.

Hor.

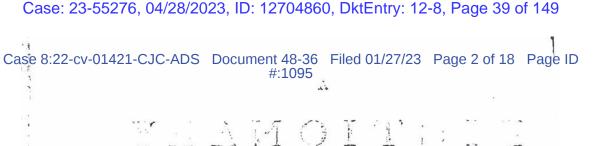
1

LONDON,

Printed by W. STRAHAN,

For J. and P. KNAPTON; T. and T. LONGMAN; C. HIT.CH and L. HAWES; A. MILLAR; and R. and J. DODSLEY. MDCCLV.

DEFENDANT'S EXHIBIT 24



11:12 10

1

2

2

HOIHW HI

THE REAL PROPERTY OF

2. A. M. GIRLENSEL STRATES IN ALCONDUCTION STRATES







AH FUGLISH GRAMMAR.

LU TWO VOLUMES.

1.107

THE SECOND EDITION.

Cast' 1 minum con' di foset li milite , we will define the matrix of the λ -form λ The second relation for the second sec Friedrich and State (State 1997) Construction of the state of the s - A fine and fair of former the arch

Distry To Tenast

and a low rest Dougland I have a list of the low of the vesses of the State the second . 4 14⁷ 14 12¹¹⁷

DEFENDANT'S EXHIBIT 24 gle

Case 8:22-cv-01421-CJC-ADS Document 48-36 Filed 01/27/23 Page 3 of 18 Page ID #:1096

ABR

6. Relating to the perfon, as a fervant. Liking very well the young gentleman, fuch I took him to be, admitted this Deiphantes about me, who well thewed there is no fervice like his that ferves becaufe he loves. Sidney, b. ii. Good maller, corporal, captain, for my old dame's fake, fand my friend: the hath no body to do any thing about her yelen I am goue, and the is old and cannot help herfelf. Subdefeare's Herre W A: Shakefpeare's Henry IV. p. ii.

ABO'UT. adu.

I. Circularly. The weyward fifters, hand in hand,

Pofters of the 'ea and land,

Thus do go about, about, Thrice to thine, and thrice to mine, And thrice again to make up nine. Shakefp. Macbeth. 2. In circuit

In circuit. My honeft lads, J'll tell you what I am about.—Two yards and more.—No quips now Piftol: indeed I am in the wafte two yards about; but I am about no wafte, I am about thrift. Shakiftarer's Marry Wives of Windfor. A tun about was ev'ry pillar there, A polifh'd mirrour fhone not half fo clear. Dryd. Fables.

- A point a management 3. Nearly. When the boats were come within *about* fixty yards of the pillar, they found themfelves all bound, and could go no far-ther; yet fo as they might move to go about, but might not ther; yet fo as they might move to go about, but might not move h nearer. 4. Here and there ; every way.
 - Up role the gentle virgin from her place, And looked all about, if the might fpy
- And looked all about, it the might fpy Her lovely knight to move his manly pace. Fairy Queen, b. i. cont. 2. flonz. 33. A wolf that was paft labour, had the wit in his old age, yet to make the beft of a bad game; he borrows a habit, and fo elest he goes, begging charity, from door to door, under the digcide of a pilgrim. With ty before a verb ; as, about to fy; upon the point, with-in a finall diffance of. There doing houses, and thuis floating form

- With tybefore a verb ; as, about to fy; upon the point, where i final diffance of.
 Thefe dying lovers, and their floating fons,
 Supend the fight, and filence all our guns:
 Beauty and youth, about to perifh, finds
 Such noble pity in brave English minds.
 Waller.
 The longeft way, in opposition to the fhort flraight way.
 Gold hath thefe natures ; greatness of weight; closeness of parts; fixation; pliantness, or foftness; immunity from rult; colour, or tincture of yellow: Therefore the fure way (though most about; to make gold, is to know the caufes of the leveral natures before rehearded.
 Bacon's Natural High. N° 328.
 Spies of the Volfcians
 Held me in chafe, that I was fore'd to wheel
 Three or four miles about; elfe had I, Sir,
 Half an hour fince brought my report.
 Sbake'p. Coriolanus,
 . To bring about; to bring to the point or flate defired; as,
 bit in braght about this purpofet.
 Whether this will be brought about, by breaking his head,
 liver much queftion.
 Specifator.
- Ivery much queftion. Special 8. To come about; to come to fome certain flate or point.

- . To
- To come about; to come to fome certain flate or point.
 Wherefore it came to pafs, when the time was come about, after Hannah had conceived, that flue bare a fon. 1 Sam. 1. 20. One evening it befel, that looking out, The wind they long had wifh'd was come about;
 Well pleas'd they went to reft; and if the gale Till morn continu'd, both refolv'd to fail. Dryd. Fables.
 To go about a thing; to prepare to do it. Dd not Mofes give you the law, and yet none of you krepth the law? Why go ye about to kill me? John vii. 19. In common language, they fay, to come about a man, to cirrowrant line. convent him.
- Some of these phrases feem to derive their original from the French à bout ; venir à bout d'une chose ; venir bout de quel-

- Itenus was, ..., since the second second
- fucceffively abraded from them by decurfion of waters. Hale's Origin of Mankind.
- ABRAHAM'S BALM. The name of an herb.

- ASRAHAN'S BALM. The name of an herb.
 ASRAHAN'S BALM. The name of an herb.
 ASRAHAN'S BALM. [See ABRADE.]
 The act of abrading; a rubbing off.
 [In medicine.] The wearing away of the natural mutcus, which covers the membranes, particularly thole of the flomach and guts, by corofive or fharp medicines, or humours. Quincy.
 The matter worn off by the attribution of bodies.
 Asa'Asr. adv. [See BREAST.] Side by fide; in fuch a po-tition that the breats may bear againft the fame line. My foul fhall think keep company to heaven: Tary, fweet foul, formine, then By abraof. Shak. Henry V.
 Yor honour travels in a Afreight to narrow, Where one but goes abreaft. Shake'p. Treitus and Creffida.

ABR

The riders rode abreast, and one his fhield, The riders rode *abreafs*, and one his fhield, His lance of cornel-wood another held; The third his bow, and glorious to behold! The coffly quiver, all of burnifh'd gold. Dryden's Fables. ABR'Corn. See APRICOT. To make fhorter in words, keeping fill the fame fubflance. All thefe fayings, being declared by Jafon of Cyrene in five books, we will eflay to *abridge* in one volume. 2 Macc. ii. 23. 2. To construct to diminish to cur thert.

- books, we will cliap to avrigge in one volume. 2 avance. 11. 25. 2. To contract, to diminify, to cut thort. The determination of the will, upon enquiry, is following the direction of that guide; and he, that has a power to act or not to act, according as fuch determination directs, is free, Such determination *abridget* not that power wherein liberty --50. confifts. Lacke
- To deprive of; in which fenfe it is followed by the particle 3.
- 3. To deprive of; in which fenfe it is followed by the particle from or of, preceding the thing taken away. I have diabled mine effate, By fhewing fomething a more fwelling port, Than my faint means would grant continuance; Nor do I now make moan to be abridg'd From fuch a noble rate. Shake/peare's Merchant of Venice. They were formerly, by the common law, difcharged from pontage and murage; but this privilege has been abridged them fince by feveral flatutes. Ayliff's Parergon Juris Canenici. ABRIJOGED OF. part. Deprived of, debarted from, cut flort. An ABRIDGER. An ABRIDGER.
- 1. He that abridges ; a fhortener.

- A writer of compendiums or abridgments.
 ABRIDGMENT. n. f. [abregement, Fr.]
 The contraction of a larger work into a fmall compas.
- Surcly this commandment containeth the law and the pro-phets; and, in this one word, is the *abridgment* of all volumes of fcripture. Hooker, b. ii. § 5.
 - Myfelf have play'd

 - The intrim, by remembring you'tis palt; Then brook abridgment, and your eyes advance After your thought, flraight back again to France? Shakepeare's Henry V.
- Idolatry is certainly the first-born of folly, the great leading paradox; nay, the very *obridgment* and furn total of all ablurdities.
 2. A diminution in general.
- A diminution in general. All trying, by a love of littlenefs, To make abridgements, and to draw to lefs, Even that nothing which at firft we were.
 Reftraint, or abridgement of liberty. The conflant defice of happinch(s, and the conflraint it puts upon us, no body, I think, accounts an abridgement of liberty, or at leaft an abridgement of liberty, to be complained of. Lacket.

- ABRO'ACH. adv. [See 7's BROACH.]
 In a poffure to run out; to yield the liquor contained; properly looken of veffels.
 The Templer foruce, while ev'ry foout's abroach, Stays 'till 'tis fair, yet feems to call a coach. Suigt's Mif. The jars of gen rous wine (Acefles' gift, When his Trinacrian fhores the navy lett) He fet abroach, and for the feaft prepar'd, In equal portions with the ven'fon fhar'd.
 In a figurative fenfe: in a flate to be diffued or advanced; in a flate of fuch beginning as promifes a progrefs.
 - a flate of fuch beginning as promifes a progrefs. That man, that fits within a monarch's heart,
- And ripens in the fundhine of his favour, Would he abufe the count nance of the king, Alack ! what milchiefs might be fet alreach, In fhadow of fuch greatnels ! Shatefpeare's Henry IV.p. ii. ABRO'AD. adv. [compounded of a and bread. See BROAD.] I. Without confinement; widely; at large. Intermit no watch Arginft a wakeful for, while I descad
- Intermit no watch Againft a wakeful foe, while l abread, Thro' all the coafts of dark deftruction, feck Deliverance. Again, the lonely fox roams far abread, On fecret rapine bent, and midnight fraud; Now haunts the cliff, now traveries the lawn, And flies the hated neighbourhood of man. 2. Out of the house.
 - Welcome, fir,

 - Welcome, fir, This cell's my court; here have 1 few attendants, And fubjects none abroad. Shukepprare's Temped. Lady—walked a whole hour abroad, without dying after it; at leaft in the time I faid; though the feended to be fainting, and had convultive motions feveral times in her head. Pope's Letters.
- 3. In another country. They thought it better to be fomewhat hardly yoked at home, than for ever *ubroad*, and diferedited. Hower, Pref. Whofoever offers at verbal translation, thall have the miffortune of that young traveller, who loft his own language *abroad*, and brought home no other initead of it. Sir. J. Deubam, D
 - D Wha:

3

DEFENDANT'S EXHIBIT 24 Google

Case 8:22-cv-01421-CJC-ADS Document 48-36 Filed 01/27/23 Page 4 of 18 Page ID #·1097

Pope.

INF

He fhould regard the propriety of his words, and get fome information in the fubject he intends to handle. The men have had longer opportunities of information, and are equally concerned with ourfelves. 2. Charge or accufation exhibited. The full formation and formati

Charge or acculation exhibited.
 The act of informing or acluating. INPO'RMER. n. f. [from inform.]
 One who gives intelligence. This writer is either byaffed by an inclination to believe the world, or a want of judgment to chule his informers. Swift.
 One who difcovers offenders to the magiftrate. There were fpies and informers fet at work to watch the company. UR formers.

company. Let no court fycophant pervert my fenfe, Nor fly *inf:rmer* watch thefe words to draw Within the reach of treafon. L'Eftrange.

Within the reach of treafon. Pop. Informary are a deteffable race of people, although fome-times neceffary. INFOTKMIDABLE. edj. [in and formidabilis, Latin.] Not to be feared; not to be dreaded Of ftrength, of courage haughty, and of limb Heroick built, though of terreffrial mold; Foe not informidable, exempt from wound. Millen. INFOTRMITY. n. j. [from informit, Latin.] Shapeleffnefs. From this narrow time of geflation may enfue a finalnefs in the exclusion: but this inferreft no informity. Brown.

the exclution ; but this inferreth no informity. Brown. INFO'RMOUS. adj. [informe, French; informis, Latin.] Shapele(s;

INFO'RMOUS. adj. [informe, French; informat, Latin.] Shapelels; of no regular figure. That a bear brings forth her young info mout and unfhapen, which fhe fafhioneth after by licking them over, is an opinion not only common with us at prefent, but hath been delivered by ancient writers. INFO'RTUNATE. adj. [infortuné; Fr. infortunatu, Latin.] Un-happy. See UNFORTUNATE, which is commonly uted. Perkin, feeing himfelf priloner, and deflitute of all hopes, having found all either falle, faint, or infortunate, did gladly accept of the condition. To INFRACT. va. [inforduné; Latin.] To break.

accept of the condition. To INFRA'CT. v a. [infraflut, Latin.] To break. Falling faft, from gradual flope to flope, With wild infrafled courfe and leffen'd roar,

With wild infrance courfe and leffen'd roar, It gains a faier bed. Thomfon's Summer. INFRA'CTON. n.f. [infraction, French; infractio, Latin.] The act of breaking; breach; violation. By the fame gods, the juffice of whofe wrath Punfih'd the infraction of my former faith. Woller. The wolves, pretending an infraction in the abule of their hoftages, fell upon the fheep immediately without their dogs. L'Eftrange's Fablet. INFRA'NGIBLE. adj. [in and frangible.] Not to be broken. Thefe atoms are fuppoled infrangible. Not to be broken. Thefe atoms are fuppoled infrangible. Sumftra-tion that nothing could be produced by them, fince they could never cohere. .f. [infrequentia, Latin.] Uncommonnels ;

INFRE'QUENCY. n. f. [infrequentia, Latin.] Uncommonnels;

rarity. The absence of the gols, and the infrequency of objects, made her yield. INFRE'OUE T. adj. [infrequent, Latin.] Rare; uncommon. To INFRI GIDATE. v. a. [in and frigidut, Latin.] To chill;

to make cold.

The drops reached little further than the furface of the li-quor, whole coldnefs did not infrigidate those upper parts of the Boyle. glafs.

glais. 70 INFRINGE. v. a. [infrings, Latin] 1. To violate; to break laws or contracts. Thole many had not dar'd to do that evil, 11 the first man that did th' edit i of ings, Had antwer'd for his deed Shakeffeare. Had aniwer d for his deed Having *infring*'d the law, I wave my right As king, and thus lubmit myfelf to fight.

Waller.

As king, and thus lubnit myfelf to fight. Waller. 2. To deftroy; to hinder. Homilies, being plain and popular inftructions, do not in-fringe the efficacy, although but read. Bright as the deathle's gods and happy, fhe From all that may infringe delight is free. Waller. INFRINCEMENT. m.f. [from infringe.] Breach; violation. The pumihing of this infringement is proper to that jurifile-tion againft which the contempt is. INFRINCER. m.f. [from infringe.] A breaker; a violator. A clergyman's habit ought to be without any lace, under a fevere penalty to be inflicted on the ir fringers of the provincial conflictution. m.f. [infundibu um and forma, Lat.] Of

fevere penalty to be inflicted on the refringers of the provincial confliction. Aplifie's Paragen. INF O'S DIRULIFORM. n. f. [infundibu'um and fermas, Lat.] Of the finape of a funnel or tundich. INFU'S LATE. adj. [in and furia, Latin.] Enraged; raging. At th' other bore, with touch of nire Dilated and infuriate. Fir'd by the torch of noon to tenfold rage, Th' infurite further the puller'd firme.

Th' infuriate hill forth fhoots the pillar'd flame.

INFUSCA'I ION. n. f. [infujcatus, Latin.] The act of darkening or blackening. To INFU'SE. v. a. [inf fer, French; infufus, Latin.]

ING

Thou almost mak'ft me waver in my faith, To hold opinion with Pythagoras,

That fouls of animals infuse themselves

Into the trunks of men. Sbakefp. Mer My early miltrefs, now my ancient mule, Sbakefp. Merchant of Venice.

My early miltrels, now my ancient mule, That ftrong Circean liquor ceafe e' infuls, Wherewith thou didi intoxicate my youth. Denham., Why fhould he defire to have qualities infuled into his fon, which himfelf never poffelfel? Meat muft be with money bought; She therefore, upon fecond thought; Inful'd, yet as it were by flealth, Some final regard for flate and wealth. 2. To pour into the mind; to infpire into. For when God's hand had written in the hearts Of our firft parents all the rules of good,

For when God's hand had written in the hearts Of our firft parents all the rules of good, So that their fkill infour d furpafed all arts That ever were before, or fince the flood. Davies: Sublime ideas, and apt words infale; The mule influed my voice, and thou infpire the mule. Rofe. He influid Bad influence into th' unwary breaft. Milton. Infulfe. Into their young breafts fuch a noble ardour as will make them renowned.

make them renowned.

make them renowned. To fleep in any liquor with a gentle heat; to macerate fo as to extract the virtues of any thing. Take violets, and *infu/e* a good pugil of them in a quart of vinegar. Bacon's Natural Hilfory.

Take violets, and infu/e a good pugil of them in a quart of bases. Natural Hiltery.
4. To make an infuíton with any ingredient; to fupply, to tincture, to faturate with any thing infufed. Drink, infu/ed with flefh, will nourifh fafter and eafier than meat and drink together. Basen's Natural Hiltery.
5. To infpire with.
Thou didft finile, Infu/ed with a fortitude from heav'n. Shake/p. Tempel?. Infu/e his breaft with magnanimity, And make him, naked, foil a man at arms. Shake/peare.
INFU'SIBLE. adj. [from irfu/e.]
Poffible to be infufed.

Folible to be infunded. From whom the doctrines being *infufible* into all, it will be more neceffary to forewarn all of the danger of them. Hamm.

more neceflary to forewarn all of the danger of them. Hamm.
Incapable of diffolution; not fuilble.
Vitification is the laft work of fire, and a fufion of the falt and earth, wherein the fufible falt draws the earth and infujble part into one continuum. Brewin's Vulgar Errearts.
INFU'SION. m. f. [infufim, French; infufio, Latin.]
The act of pouring in; infullation.
Our language has received innumerable elegancies and improvements from that infufion of Hebraifms, which are derived to it out of the poetical pallages in holy writ.
The act of pouring into the mine; infoiration.

 The act of pouring into the mine ; infpiration. We participate Chrift partly by imputation, as when those things which he did and fuffered for us are imputed to us for righteouinefs; partly by habitual and real *infufion*, as when grace is inwardly befowed on earth, and afterwards more fully both

Is inwarding between on carries and anterwards into the born over our fouls and bodies in glory. Hooker, They found it would be matter of great debate, and fpend much time; during which they did not defire their company, nor to be troubled with their infusions. Clarendom. Here his folly and his wildom are of his own growth, not the the second of other more.

Swift. echo or infusion of other men.

echo or infufion of other men. Swift.
3. The act of fleeping any thing in molflure without boiling. Repeat the infufion of the body oftener. Bacon.
4. The liquor made by infufion. To have the infufion fleeping and the body oftener. Bacon.
4. The liquor made by infufion. In those body oftener. Bacon.
5. The section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener. Bacon.
5. In the section of the body oftener.
5. In the section of the body oftener.
4. In the section of the body oftener.
5. In the section of the body oftener.

INGANNA'TION. n. f. [ingannare, Italian.] Cheat; fraud. Spanjer on Ireland.
 INGANNA'TION. n. f. [ingannare, Italian.] Cheat; fraud is deception; juggle; delufion; impoflure; trick; flight. A word neither used nor neceflary.
 Whoever fhall refign their reasons, either from the root of deceit in themfelves, or inability to refift fuch trivial inganations from others, are within the line of vulgarity. Brown.
 INGA'I HERING. n. f. [in and gathering.] The act of getting in the harveft.

INGA'I HERING. n.j. [1] and a first second s

ing, of the fame import. Gibson's Camden. To INGE'MINATE. v. a. [ingemino, Latin.] To double; to repeat.

He would often ingeminate the word peace, peace. Clar.nden. INGEMINA'TION. n. f. [in and geminatio, Latin.] Repetition; reduplication.

INGE'NDERER.

DEFENDANT'S EXHIBIT 24 ogle

4

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 42 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-36 Filed 01/27/23 Page 5 of 18 Page ID #:1098

PROOF OF FIRE ARMS. March 8, An. 1805. 259

than twice the amount of gold and filver actually in their vaults," Not to iffue be, and the fame is hereby repealed; and hereafter the faid bills for more Corporation shall not iffue and have in circulation, at any one than twice the time, bills, notes, or obligations, to a greater amount than capital. twice the capital stock actually paid in.

SECT. 2. And be it further enacted, That inflead of fix, not lefs than five Directors of the aforefaid Corporation shall con-Directors fitute a board for the transaction of business, of whom the Prefident shall always be one, except in case of sickness or neceffary absence, in which case the Directors present may choose a Chairman in his stead.

[This Act paffed March 8, 1805.]

An Act making a temporary Alteration in the Toll to be received by The Proprietors of the Locks and Canals on Connecticut River.

[This Act paffed March 8, 1805.]

An Act to incorporate the north-westerly Part of the Town of Otisfield, and the easterly Part of the Town of Bridgeton, in the County of Cumberland, into a separate Town by the Name of Harrison.

[This Act paffed March 8, 1805.]-

An Act to provide for the Proof of Fire Arms manufactured within this Commonwealth.

W HEREAS no provision hath been made by law for the proof of fire arms manufactured in this Commonwealth, by which it is apprehended that many may be introduced into use which are unfafe, and thereby the lives of the citizens be exposed: To prevent which,

SECT. 1. Be it enacted by the Senate and Houfe of Reprefentatives, in General Court affembled, and by the authority of the fame, Provers of That the Governor, by and with the advice and confent of the Council, be; and he hereby is empowered to appoint, in any part of this Commonwealth where the manufacture of fire arms is carried on, fuitable perfons to be provers of fire arms, not exceeding two in any county, who shall be fworn to the faithful difcharge of their trust, whose duty it shall be to prove all musket barrels and pistol barrels, which being sufficiently ground, bored and breeched, shall be offered to him to be proved; who shall prove the musket barrels twice in manner following, viz. first with a charge consisting of one eighteenth How arms are part of a pound of powder, one ounce of which, in a five and to be proved.

DEFENDANT'S EXHIBIT 24 gle

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 43 of 149

Case 8:22-0-01421-CJC-ADS Document 48-36 Filed 01/27/23 Page 6 of 18 Page ID

Perpetual Laws

OF THE

Commonwealth of Massachusetts,

THE ESTABLISHMENT OF ITS CONSTITUTION IN THE YEAR 1780, TO FEBRUARY, 1807.

WITH THE

CONSTITUTIONS OF THE UNITED STATES OF AMERICA, AND OF THE COMMONWEALTH, PREFIXED.

IN FOUR VOLUMES.

TO WHICH IS ADDED, IN THE THIRD FOLUME,

AN APPENDIX,

CONTAINING ACTS AND CLAUSES OF ACTS, FROM THE LAWS OF THE LATE COLONY, PROVINCE AND STATE OF MASSACHUSETTS, WHICH EITHER ARE UNREVISED OR RESPECT THE TITLE OF REAL ESTATE.



VOLUME IV.

Containing the Laws from January, 1801, to February, 1807, inclusive.

Increased by the maintener care.ev. The Japonne of Law is m Encuse for to Des. The Law is the Subject's best Birthright.

Boston.

FUELISHED BY THOMAS (S' ANDREWS, AND SOLD AT THEIR BOOKSTORE, NO. 45, NEWBURT-STREET ... JUNE, 1807.

> J. T. BUCKINGHAM, PRINTER. Doubled by Google

DEFENDANT'S EXHIBIT 24

ER-1342

6

A CONTRACTOR OF THE OWNER.

Case 8:22-cv-01421-CJC-ADS Document 48-36 Filed 01/27/23 Page 7 of 18 Page ID

260

PROCE OF FIRE ARMS. March 8, An, 1805.

an half inch howitz, at an elevation of forty five degrees, will carry a twenty-four pound that eighty yards, with a ball fuited to the bors of the barrel; the fecond proof to be with a charge confifting of one twenty-fecond part of the fame powder, with a ball fuited to the bore of the barrel; and thall prove the piftol barrels once with a charge confifting of one twenty-fecond part of a pound of powder, one ounce of which, in a five and half inch howitz at an elevation of forty-five degrees, will carry a twenty-four pound that feventy yards, with a ball fuited to the bore of the barrel; which faid powder and ball it shall be the duty of the prover to provide; and if the faid mufket and pilbol barrels fhall ftand the proof aforefaid, and shall in no respect fail, then it shall be the duty of the faid prover to ftamp the fame on the upper fide, and within one and an half inches of the breech of faid barrels, with a How approve framp confifting of the initial letters of the prover's name, and .

to be marked, over those letters the letter P. also, in the line of the faid initial letters, and further up faid barrel the figures defignating the year of our Lord in which the proof is made, and over the faid figures the letter M. which faid letters and figures schall be fo deeply impressed on faid barrel, as that the fame cannot be erased or disfigured, and shall be in the form follow-P M

> ing AB 1803. And when any barrels shall burst or shall in any manner fail in the proving as aforefaid, so that in the opinion of the prover they are unsit for use, they shall not be stamped, but the faid prover shall suffer the owner to take them away; and any prover so proving musket or pistel barrels as aforefaid, shall be entitled to receive from the owner, for each musket barrel thirty three cents, and for each pistol barrel twenty five cents, whether the same stand proof and are stamped or not.

SECT. 2. And be it further enacled, That if any perfon, after for the first day of June next, shall manufacture within this Commonwealth, any musket or piscol, without having the barrels proved and stamped as aforefaid, except such as are or may be manufactured in the armory of the United States, or in fulfilment of some contract made and entered into, or that may hereafter be made and entered into, for the manufacturing of fire-arms for the United States, shall forfeit and pay for every fuch musket or piscol the fum of ten dollars, to be recovered in an action of debt, before any Court proper to try the fame, by any perfon who shall such for and recover the fame, to his own use.

SECT. 3. And he it further enacted, That if any perfon, after the faid first day of *June* next, shall fell and deliver, or shall knowingly purchase, any musket or pistol, which shall have been manufactured within this Commonwealth after the faid

7

1,

DEFENDANT'S EXHIBIT 24 gle

Penalty for not having arms proved.

Fees

Case 8:22-cv-01421-CJC-ADS Document 48-36 Filed 01/27/23 Page 8 of 18 Page ID

MESNE PROCESS.

#:1101 March 8, An. 1805.

faid first day of June next, which shall not have the marks of Penalty proof above required, the perfon to felling and the perfon to felling or buy-ing arms not purchasing thall each forfeit the fum of ten dollars, to be recov- proved. ered by action of debt, before any Court proper to try the fame, to the use of any person who shall sue for and recover the lame.

SECT. 4. And be it further enacted. That if any perfon shall Penalty falfely forge or alter the ftamp of any prover of fire-arms, to forging ftamp. appointed as aforefaid, imprefied on any mufket or piftol barrel, purfuant to this Act, and be convicted thereof before the Supreme Judicial Court, he shall be punished by fine not exceeding fifty dollars, nor lets than twenty dollars, according to the nature and aggravation of the offence.

[This Act palled March 8, 1805.]

An Act to incorporate a Number of the Inhabitants in the Town of Limington, in the County of York. into a leparate Religious Society by the Name of The First Baptist Society in Limington.

[This Act passed March 8, 1805.]

An Act directing the Mode of attaching on Meine Process, and felling by Execution Shares of Debtors in incorporated Companies.

B^E it enacted by the Senate and House of Represent-atives, in General Court assembled, and by the au-SECT. I. thority of the fame, That the fhare or thares or interest of any Shares may be person, in any turnpike, bridge, canal or other company, which attached on megne process, heretofore has been or hereafter may be incorporated by the caken in exe-Legiflature of this Commonwealth, with all the rights and cution, privileges appertaining to fuch thares, may be attached on fold. melne process and taken on execution; and when any fuch shares or interest shall be attached on meine process, or taken on execution without fuch previous attachment, an attefted copy or copies of fuch writ of attachment or execution, fhall, by the officer holding the fame, be left with the Clerk and Treasurer or Cathier of fuch company; and fo many of faid thares or fo much of faid interest may be fold on faid execution at public vendue, to the highest bidder, as shall be fufficient to fatisfy the fame, and the charges of the fale, after notice shall have been given of the time and place of fale in manner as hereinafter provided ; and in cafe the officer making the fale, or the purchafer or purchafers of any fuch thares or interest, do caufe an attefted copy or copies. of fuch execution, and the officer's return thereon, to be left with fuch Clerk and Treasurer or -Cashier, within fourteen days after the sale is completed, and

DEFENDANT'S EXHIBIT 24

201

8

pay

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 46 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-36 Filed 01/27/23 Page 9 of 18 Page ID #:1102

1814 Mass. Acts 464, An Act In Addition To An Act, Entitled "An Act To Provide For The Proof Of Fire Arms, Manufactured Within This Commonwealth," ch. 192, § 1

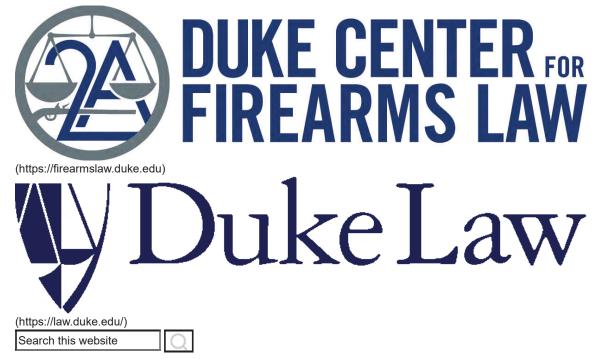
...from and after the passing of this act, all musket barrels and pistol barrels, manufactured within this Commonwealth, shall, before the same shall be sold, and before the same shall be stocked, be proved by the person appointed according to the provisions of an act . . . with a charge of powder equal in weight to the ball which fits the bore of the barrel to be proved . . . § 2. That if any person of persons, from and after the passing of this act, shall manufacture, within this Commonwealth, any musket or pistol, or shall sell and deliver, or shall knowingly purchase any musket or pistol, without having the barrels first proved according to the provisions of the first section of the same data stamped according the provisions of the first section of the act to which this is an addition . . .

DEFENDANT'S EXHIBIT 24

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 47 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-36 Filed 01/27/23 Page 10 of 18 Page ID #:1103

10/18/22, 2:26 PM 1821 Me. Laws 98-99, An Act for the Prevention of Damage by Fire, and the Safe Keeping of Gun Powder, ch. 25, § 5 | Duke Ce...



1821 Me. Laws 98-99, An Act for the Prevention of Damage by Fire, and the Safe Keeping of Gun Powder, ch. 25, § 5

Subject(s):

• Storage (https://firearmslaw.duke.edu/subjects/storage/)

Jurisdiction(s):

• Maine (https://firearmslaw.duke.edu/jurisdictions/maine/)

Year(s):

• 1821 (https://firearmslaw.duke.edu/years/1821/)

Be it further enacted, That it shall, and may be lawful for any one or more of the Selectmen of any town to enter any building, or other place, in such town, to search for gun powder, which they may have reason to suppose to be concealed or kept, contrary to the rules and regulations which shall be established in such town, according to the provisions of this Act, first having obtained a search warrant therefor according to law.

(https://twitter.com/dukefirearmslaw)

https://firearmslaw.duke.edu/laws/1821-me-laws-98-99-an-act-for-the-prevention-of-damage-by-fire-and-the-safe-keeping-of-gun-powder-ch-25-§-5/ 1/2

DEFENDANT'S EXHIBIT 24

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 48 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-36 Filed 01/27/23 Page 11 of 18 Page ID #:1104

10/18/22, 2:26 PM 1821 Me. Laws 98-99, An Act for the Prevention of Damage by Fire, and the Safe Keeping of Gun Powder, ch. 25, § 5 | Duke Ce...

- (https://www.youtube.com/playlist?list=PLPIIY2puNnqYUNnmXwbGnQFKMSaLSVDoq)
- Home (https://firearmslaw.duke.edu/)
- About (https://firearmslaw.duke.edu/about/)
- · Blog (https://firearmslaw.duke.edu/secondthoughts/)
- Videos (https://firearmslaw.duke.edu/videos/)
- Events (https://firearmslaw.duke.edu/events/)
- · Repository of Historical Gun Laws (https://firearmslaw.duke.edu/repository/)
- Teaching Resources (https://firearmslaw.duke.edu/teaching-resources/)
- Conferences (https://firearmslaw.duke.edu/conferences/)

Duke Center for Firearms Law | 210 Science Drive, Durham, NC 27708 | firearmslaw@law.duke.edu (mailto:firearmslaw@law.duke.edu)

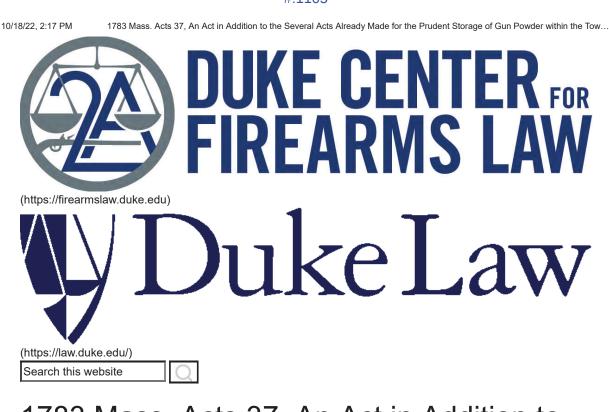
Questions or comments about the Repository of Historical Gun Laws can be sent to gunlaws@law.duke.edu (mailto:gunlaws@law.duke.edu).

Copyright © 2022. All rights reserved. Website designed by Addicott Web (https://www.wordpress-web-designer-raleigh.com/).

DEFENDANT'S EXHIBIT 24

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 49 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-36 Filed 01/27/23 Page 12 of 18 Page ID #:1105



1783 Mass. Acts 37, An Act in Addition to the Several Acts Already Made for the Prudent Storage of Gun Powder within the Town of Boston, § 2

Subject(s):

• Storage (https://firearmslaw.duke.edu/subjects/storage/)

Jurisdiction(s):

• Massachusetts (https://firearmslaw.duke.edu/jurisdictions/massachusetts/)

Year(s):

• 1783 (https://firearmslaw.duke.edu/years/1783/)

"That all cannon, swivels, mortars, howitzers, cohorns, fire arms, bombs, grenades, and iron shells of any kind, that shall be found in any dwelling-house, out-house, stable, barn, store, ware-house, shop, or other building, charged with, or having in them any gun-powder, shall be liable to be seized by either of the Firewards of the said Town: And upon complaint made by the said Firewards to the Court of Common Pleas, of such cannon, swivels, mortar, or howitzers, being so found, the Court shall proceed to try the merits of such complaint by a jury; and if the jury shall find such complaint supported, such cannon, swivel, mortar, or howitzer, shall be adjudged forfeit, and be sold at public auction.

https://firearmslaw.duke.edu/laws/1783-mass-acts-37-an-act-in-addition-to-the-several-acts-already-made-for-the-prudent-storage-of-gun-powder-withi... 1/2

DEFENDANT'S EXHIBIT 24

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 50 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-36 Filed 01/27/23 Page 13 of 18 Page ID #:1106

10/18/22, 2:17 PM

1783 Mass. Acts 37, An Act in Addition to the Several Acts Already Made for the Prudent Storage of Gun Powder within the Tow...

(https://twitter.com/dukefirearmslaw)

(https://www.youtube.com/playlist?list=PLPIIY2puNnqYUNnmXwbGnQFKMSaLSVDoq)

- Home (https://firearmslaw.duke.edu/)
- About (https://firearmslaw.duke.edu/about/)
- Blog (https://firearmslaw.duke.edu/secondthoughts/)
- Videos (https://firearmslaw.duke.edu/videos/)
- Events (https://firearmslaw.duke.edu/events/)
- Repository of Historical Gun Laws (https://firearmslaw.duke.edu/repository/)
- Teaching Resources (https://firearmslaw.duke.edu/teaching-resources/)
- Conferences (https://firearmslaw.duke.edu/conferences/)

Duke Center for Firearms Law | 210 Science Drive, Durham, NC 27708 | firearmslaw@law.duke.edu (mailto:firearmslaw@law.duke.edu)

Questions or comments about the Repository of Historical Gun Laws can be sent to gunlaws@law.duke.edu (mailto:gunlaws@law.duke.edu).

Copyright © 2022. All rights reserved. Website designed by Addicott Web (https://www.wordpress-web-designerraleigh.com/).

https://firearmslaw.duke.edu/laws/1783-mass-acts-37-an-act-in-addition-to-the-several-acts-already-made-for-the-prudent-storage-of-gun-powder-withi... 2/2

DEFENDANT'S EXHIBIT 24

Case 8:22-cv-01421-CJC-ADS Document 48-36 Filed 01/27/23 Page 14 of 18 Page ID #:1107

464 COMMONWEALTH FIRE ARMS. Feb. 28, 1814.

porated.

Town incor. county of Essex, by the name of Lynnfield," be, and the same hereby is incorporated into a town, by the name of Lynnfield, with all the powers. privileges, and immunities, and liable to all the duties and requisitions of other towns in this Commonwealth.

[Approved by the Governor, February 28, 1814.]

CHAP. CXCII.

An Act in addition to an act, entitled "An act to provide for the proof of Fire Arms, manufactured within this Commonwealth."

SEC. 1. BE it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, That from and after the passing of this act, all musket barrels and pistol barrels, manufactured within this Commonwealth, shall, before the same shall be sold, and before the same shall be stocked, be proved by the person appointed according to the provisions of an act, entitled "An act to provide for the proof of Fire Arms, manufactured within this Commonwealth," to which this is an addition, in manner following, viz : with a charge of powder equal in weight to the ball which fits the bore of the barrel to be proved ; and the powder used in such proof one ounce thereof in a howitzer of four and a half inch caliber, at an elevation of forty-five degrees, shall be of sufficient power to carry a twelve pound shot one hundred and thirty yards; or one ounce thereof in a howitzer of five and a half inch caliber, at an elevation of forty-five degrees, shall be sufficient to carry a twenty-four pound shot eighty yards, and the ball used in such proof shall be suited to the bore of the barrel to be proved as aforesaid.

SEC. 2. Be it further enacted, That if any person or persons, from and after the passing of this act, shall manufacture, within this Commonwealth, any musket or pis-Restrictions. tol, or shall sell and deliver, or shall knowingly purchase any musket or pistol, without having the barrels first proveu according to the provisions of the first section of this act, marked and stamped according the provisions of the first section of the act to which this is an addition; or if

Manner of proving.

DEFENDANT'S EXHIBIT 24

Case 8:22-cv-01421-CJC-ADS Document 48-36 Filed 01/27/23 Page 15 of 18 Page ID #:1108

LYNN MECHANICKS BANK.

465

Feb. 28, 1814.

any person or persons shall sell, stock or finish, or shall knowingly purchase any musket barrel or pistol barrel manufactured within this Commonwealth, which shall not have been first proved, marked and stamped according to the provisions aforesaid, the person or persons who shall so manufacture, sell and deliver, or knowingly purchase any musket or pistol without causing the same to be first proved, marked and stamped as aforesaid, and the person or persons who shall sell, stock or finish, or shall knowingly purchase any musket barrel or pistol barrel, which shall not have been proved, marked and stamped as afore. Forfeitures. said, shall severally forfeit the sum of ten dollars, to be recovered by an action of debt before any court proper to try the same, by any person who shall sue for and recover the same, to his own use : Provided however, That the Proviso. foregoing provisions and penalties shall not extend to any muskets or pistols, or musket or pistol barrels, manufactured in any armoury of the United States, for their use, or in execution of any contract made or to be made with the United States, for the manufacture of fire arms.

SEC. 3. Be it further enacted, That the second and third sections of the act to which this is in addition, and Sections realso so much of the first section thereof as prescribes the mode of proving musket barrels and pistol barrels, and the power of the powder to be used in such proof, be, and the same are hereby repealed.

[Approved by the Governor, February 28, 1814.]

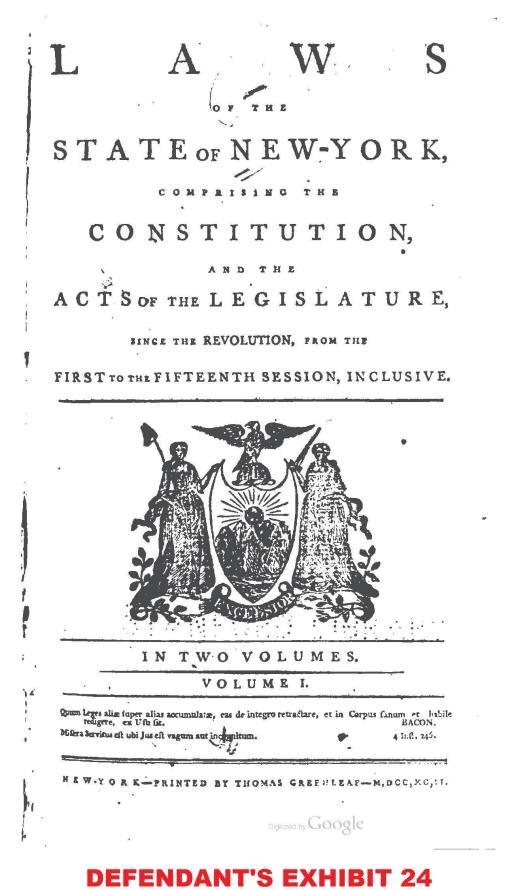
CHAP. CXCIII.

An Act to incorporate The President, Directors and Company of the Lynn Mechanicks Bank.

SEC. 1. BE it enacted by the Senate and House of Representatives, in General Court assembled, and by the authority of the same, That Daniel Silsbe, Joseph Fuller the third, John D. Atwell, Thomas Rich, Samuel Brimble-Persons incum, Micajah Burrill, Parker Mudge, Oliver Fuller, Joncorporated. athan Conner, John Alley, jr. Stephen Oliver, John Mudge, and Jonathan Bachellor, their associates, successors, and assigns shall be, and hereby are created a Cor-

DEFENDANT'S EXHIBIT 24

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 53 of 149



Case 3:23 Exp142 BCJ 6 ADS Document 48 - 26 Elled 01/27/23 Page 17 16 18 1905 ID

GEORGE CLINTON, Elq. Governor. 191

point, out of the citizens and inhabitants of the faid city of Hudfon, one fit and difcreet perfon to be mayor of the faid city, and one fit and difcreet perfon to be recorder of the faid city; which faid mayor and recorder, after fuch appointments respectively, shall continue in their faid respective offices, to do and to execute all things which to their faid feveral offices doth or may feverally and refpectively belong, or in any manner appertain, until other fe perfons be appointed and fworn in their room; and in like manner, a fit and discreet perion shall be appointed out of the faid citizens and inhabitants, to be common clerk of the faid city, who shall hold and continue in office during the will and pleafure of the governor and council of appointment, and also another fit and different perfon shall be appointed out of the citizens and inhabitants of the faid city, to be the chief marshal thereof, whose duty it shall be to execute writs, processes and precepts, to arise and be issued within the faid city, from the courts and magilitates thereof, in and about the administration of juffice, in the fame manner as the fheriffs of other cities and counties are by law authorifed to execute fuch writs, proceffes and precepts ; and which chief marshal shall be from time to time, appointed, and shall hold and exercise his office for such period as theriffs of other cities and counties by law are or ought to be appointed, or may or ought by law to hold and exercise their respective offices; which faid mayor, recorder, clerk and mar-Inal, Ihall be annually nominated and appointed in manner and form aforefaid, until otherwife directed by the legiflature.

IV. And be it further enabled by the authority aforefaid, That on the fecond Monday in May next, and on the fecond Monday in May inevery fucceeding year forever thereafter, the freemen of the faid city, being inhabitants thereof, shall and may affemble themfelves, and meet together at fuch time of the day, and at fuch public place as the mayor for the time being, or in his abfence or fickness, the recorder for the time being, shall appoint, and then and there, by plurality of voices or votes, elect and chuse out of the freemen, inhabitants of the faid city, for the enfuing year, four aldermen, four affiliants, one supervisor, and fuch a number of alleflors, constables and collectors, as the common council for the faid city shall, from time to time, deem necessary, and direct to be chosen.

V. And be it further enabled by the authority aforefaid, That the mayor, or recorder of the faid city for the time being, and two or more of the aldermen, and two or more of the affiftants of the faid city, fhall and may, on the fecond Monday in May next, and on the fecond Monday in May in every fucceeding year, forever thereafter, in common council, nominate and appoint one fit perfon, being a freeman and inhabitant of the faid city, to be the treafurer and chamberlain of the faid city, for the year enfuing; every of which faid perfons as are herein before nominated, or hereafter to be nominated, elected and appointed to any civil office within the faid city, fhall, within fifteen days next after fuch appointment or election, refpectively take and fubferibe the oath of abjuration and allegiance, now or hereafter appointed by law (or if of the people called Quakers, an affirmation) and alfo an oath or affirmation, as the cafe may require, for the faithful execution of the office to which he or they fhall fo be appointed.

VI. And be it farther enacted by the authority aforefuid. That if any one of the freemen, inhabitants of the faid city of Hudion, fuall hereafter be elected or chosen to the office of alderman, afiilant, supervisor, or allessor, collector or constable, for the faid city, and having notice of his faid election, shall refuse, deny, delay or neglect, to take upon him or them to execute such

Digitized by Google

DEFENDANT'S EXHIBIT 24

Ca Ca

192 LAWS or NEW-YORK, Eighth Seffion.

office to which he or they shall be fo chosen or clefted ; that then, and fo often as it shall happen, it shall and may be lawful for the mayor or recorder, or any two or more of the aldermen, and any two or more of the allifants of the faid city for the time being, in common council, to allefs and impose upon every fuch perfon or perfons fo refuting, delaying or neglecting, such reaionable and moderate fine and fines, fum and fams of money, as they, in common council, fhall think fit, fo as such tine for each refuial, denial, delay or neglect, fhall not exceed the fum of ten pounds, current money of New-York ; all which faid fines fhall and may be levied by diffreis and fale of the goods and chattels of fuch delinquent and delinquents, by warrant under the teal of the faid city, figned by the mayor thereof for the time being, rendering the furplufage to the owner or owners thereof (if any there be) necessary charges of making and felling fuch diffrets, being firit deducted ; or by action of debt in any court of record within the jurisdiction of the faid city, having cognizance of the fame, to be protecuted, and fhall be recovered and received by and to the use of the faid mayor, aldermen and commonalty of the faid city, and their fucceffors forever.

VII. And be it further enabled by the authority aforefuid, That in all fuch cafes forever hereafter, of the abience, fickness, or death of the mayor of the faid city for the time being, it fhall and may be lawful to and for the recorder of the faid city for the time being, to do and execute all and fingular the duties and trulls to the office of the faid mayor belonging and appertaining, to all intents, purpoles and continuctions whattoever, during the abience or fickness of fuch mayor, or until a fucced/or be duly appointed and form.

VIII. And be is further enabled by the authority aforefaid, That if it fhall happen that any of the aldermen or aflutants, supervisor, atleflors, collectors or constables, or any one of them hereafter to be elected, nominated and fworn in their refpective offices as aforefaid, fhall hap, en to die or remove out of the faid city, within the time they are or fhall be respectively named or elected for, or before other fit perfons be respectively named or elected, and fworn in their respective rooms, it shall and may be lawful for the freemen, inhabitants within the limits of the faid city, to affemble and meet together, at fuch time and place as fhall be appointed by the mayor of the faid city for the time being, and then and there, by plurality of votes, to elect one of the freemen, an inhabitant within the limits of the faid city, to ferve as alderman, affulant, fupervifor, affeffor, collector or conflable, in the room of fuch alderman, adillant, fupervifor, affeifor, collector or conflable, fo dying or removing, and fo often as fuch cafes shall happen; and in cafe of the death or removal of the treafurer or chamberlain, out of the limits of the faid city, for the common council to appoint another in his flead, at any time after fuch death or removal: And that all and every fuch perfon and perfons to be newly choken or appointed and fworn, shall ferve in their respective offices until other fit perfons be refpectively chofen or appointed, and fworn in their respective rooms.

IX. And be it furthe constead by the authority of orefuid. That the chief marshal fo to be nominated and appointed, and every marshal to be thereafter nominated and appointed, shall, before he shall be deemed capable of executing his faid office, become bound, with such surfaces, in such manner and under such penalty for the faithful discharge of the duties of his office, as the sheriffs of other cities and counties are or shall be by haw directed and required to be bound for the faithful execution of their offices.

Digitized by Google

DEFENDANT'S EXHIBIT 24

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 56 of 149

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,..., 4074 4541979...

2017 WL 4541977 (Cal.) (Appellate Brief) Supreme Court of California.

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,

and

SPORTING ARMS AND AMMUNITION MANUFACTURERS' INSTITUTE, INC., Plaintiffs and Appellants,

v.

STATE OF CALIFORNIA, Defendant and Respondent.

No. S239397.

August 21, 2017.

On Review from the Court of Appeal for the Fifth Appellate District 5th Civil No. F072310 After Appeal from the Superior Court of the State of California for the County of Fresno, Case Number 14CECG00068 Honorable Donald S. Black

Appellants' Answer Brief On the Merits

Daniel C. Decarlo, State Bar No. 160307, *Lance A. Selfridge, State Bar No. 101940, Lewis Brisbois Bisgaard & Smith LLP, 633 West 5th Street, Suite 4000, Los Angeles, California 90071, Telephone: 213.250.1800 Facsimile: 213.250.7900, Dan.DeCarlo@lewisbrisbois.com Lance.Selfridge@lewisbrisbois.com, for plaintiffs and appellants National Shooting Sports Foundation, Inc., and Sporting Arms and Ammunition Manufacturers' Institute, Inc.

*2 TABLE OF CONTENTS

I. ISSUE PRESENTED	8
II. INTRODUCTION	8
III. STATEMENT OF THE CASE	11
A. The Parties	11
B. The Enactment of Penal Code Section 31910, Subdivision (b)(7)(A) C. The Impossibility of Dual Placement Microstamping	11 16
D. The Loss to Appellants Caused by Penal Code Section 31910, Subdivision (b)(7)(A)	18
IV. PROCEDURAL POSTURE	20
A. Relief Sought in the Trial Court	20
B. Judgment from which Appellants Appeal	21
C. Reversal by the Court of Appeal	23
D. Review by the Supreme Court	25
V. ARGUMENT	25
A. The Court of Appeal Correctly Determined that Appellants' Action to Enjoin the Enforcement of	25
Penal Code Section 31910, Subdivision (b)(7)(A), Does Not Violate the Separation of Powers Doctrine 1. Appellants' Action Does Not Interfere with the Core Powers of the Legislature	26
May Not Enact Legislation that Is Palpably Arbitrary, Such as Appellants Allege Penal Code Section 31910, Subdivision (b)(7)(A), To Be	
*3 2. By Seeking to Enjoin Penal Code Section 31910, Subdivision (b)(7)(A), on the Ground that it Requires Impossible Compliance, Appellants Are Not Challenging the Wisdom of the Legislature's Underlying Goal of Crime Reduction	29
3. No Authority Permits the Enactment of Legislation that Requires the Development of Technology that Is Completely Impossible to Implement	32
B. THE MAXIM OF JURISPRUDENCE ON WHICH APPELLANTS RELY, CIVIL CODE SECTION 3531, PROVIDING THAT THE LAW NEVER REQUIRES IMPOSSIBILITIES, ALLOWS	36

DEFENDANT'S EXHIBIT 25

1

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 57 of 149

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,...., #1113

APPELLANTS TO SEEK AN INJUNCTION AGAINST PENAL CODE SECTION 31910,

SUBDIVISION (b)(7)(A), ON THE GROUND OF IMPOSS	IBLE COMPLIANCE	
1. The Separation of Powers Doctrine Requires the Judiciary		37
Operative Force as Any Other Legislative Enactment		38
(b) California's Sister Jurisdictions Recognize that the Enforc		38 42
Compliance May Be Enjoined Based on the Impossibility M	axim	
(c) In the Absence of Any Overriding Constitutional, Statutor		45
Section 3531, the Judiciary Must Acknowledge the Operative Codified Therein		
*4 2. Civil Code Section 3509 Does Not Bar Appellants from	m Relying on Civil Code Section 3531 in	47
Support of Their Claim that the Enforcement of Penal Coc	le Section 31910, Subdivision (b)(7)(A).	
Should Be Enjoined		
3. The Court of Appeal Properly Relied on Board of Supervis		53
Have the Right to Present Evidence that It Is Impossible to Co Subdivision $(b)(7)(A)$		
VI. CONCLUSION		62
	AUTHORITIES ourt Cases	
Buck v. Harton (M.D. Tenn. 1940) 33 F.Supp. 1014	3	6, 42, 43, 46, 58
District of Columbia v. Heller (2008) 554 U.S. 570		19
MacDonald v. City of Chicago (2010) 561 U.S. 742		19
Natural Resources Defense Council, Inc. v. U.S.		34, 35
<i>Environmental Protection Agency</i> (D.C. Cir. 1981) 655 F.2d 318		
Pena v. Lindley (E.D. Cal. 2015) 2015 U.S. Dist. LEXIS		20
23575		34
Union Electric Co. v. Environmental Protection Agency (1976) 427 U.S. 246		JT
	urt Cases	61
Agricultural Labor Relations Board v. Superior Court (1976) 16 Cal.3d 392		
American Coatings Association v. South Coast Air		32, 33, 34, 35
Quality Management District (2012) 54 Cal.4th 446	22 52 55 5	(57 59 50 (0
Cal.App.3d 286	22, 53, 55, 5	6, 57, 58, 59, 60
Booksa v. Patel (1994) 24 Cal.App.4th 1786		48
Carmel Valley Fire Protection District v. State of		26
California (2001) 25 Cal.4th 287		45, 46, 53
City & County of San Francisco v. Cooper (1975) 13 Cal.3d 898		,,
Coleman v. Department of Personnel Administration		63
(1991) 52 Cal.3d 1102		61
Conover v. Hall (1974) 11 Cal.3d 842		9, 23, 51
Dunn v. County of Santa Barbara (2006) 135 Cal.App.4th 1281		-, -0, 01
<i>Financial Indemnity Co. v. Superior Court</i> (1955) 45 Cal.2d		61

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 58 of 149

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,..., 201 4541977...

*6 PGigliotti v. New York, Chicago & St. Louis Railroad Co. (1958) 107 Ohio App. 174	36, 43, 44, 46, 58
<i>In re Jenkins</i> (2010) 50 Cal.4th 1167	63
Varan Lines, Inc. v. Farovi Shipping Corp. (Fla.App. 1984) 461 So.2d 123	36, 44, 46, 59
Jacobs v. State Board of Optometry (1978) 81 Cal.App.3d 1022	48
LaFranchi v. Santa Rosa (1937) 8 Cal.2d 331 Levine v. Superior Court (2005) 35 Cal.4th 935	21 14
Lockard v. City of Los Angeles (1949) 33 Cal.2d 453	26, 27, 28, 46, 51, 52
Martinez v. Coombs (2010) 561 U.S. 742	38
McMackin v. Ehrheart (2011) 194 Cal.App.4th 128	47, 52
Moore v. California State Board of Accountancy (1992) 2 Cal.4th 999	51
National Shooting Sports Foundation, Inc. v. State of California (2016) 6 Cal.App.5th 298	10, 14, 23, 24, 36, 53, 55
People v. Bunn (2002) 27 Cal.4th 1	26, 27
People v. One 1940 Ford V-8 Coupe (1950) 36 Cal.2d	49, 50, 51, 52
471	
Portnoy v. Superior Court (1942) 20 Cal.2d 375 Sherwin-Williams Co, v. South Coast Air Quality	21 35
Management District (2001) 86 Cal.App.4th 1258 Smith v. Workers' Compensation Appeals Board (2009) 46	14
Cal.4th 272 Superior Court v. County of Mendocino (1996) 46 Cal.4th 272	29, 230, 31
Sutro Heights Land Co. v. Merced Irrigation District (1931) 211 Cal. 670	58, 59, 60
Werner v. Southern California Associated Newspapers (1950) 35 Cal.2d 121	31
State Constituti	ional Provisions
Cal. Const., art. III, § 3	26 26
State Statutor	ry Authorities
Civ. Code, § 1859	54
Civ. Code, § 1861 Civ. Code, § 3423, subd. (d)	54 61
Civ. Code, § 3509	37, 47, 48
Civ. Code, § 3514	48
Civ. Code, § 353110,.23,.36,.37, Civ. Code, § 3532	38, 39, 40, 41, 42, 45, 46, 47, 48, 49, 51, 53, 54, 55, 56, 58, 60 48, 50
Code Civ. Proc., § 526, subd. (b)(4)	61
Code Civ. Proc., § 1060	21
Evid. Code, § 801, subd. (b)	17
Evid. Code, § 1200	17, 18
Evid. Code, § 1400	18
Pen. Code, § 12126 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 24, 25, 26, 28, 29, 2 Pen. Code, § 3P910, subd. (b)(7)(A)	32 33, 34, 35, 36, 37, 47,, 49, 51, 52, 53, 54, 55, 59, 61, 62, 63
Pen. Code, § 32000 subd. (a)	¹⁸ S EXHIBIT 25
	<u> </u>
WESTLAW © 2023 Thomson Reuters No claim to orig	inal U.S. Government Works

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

3

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 59 of 149

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,..., #011 14541977...

Pen. Code, § 32015, subd. (a)	11, 18
State Court Rules	
Cal. Rules of Court, rule 8.204(c)(1)	65
Cal. Rules of Court, rule 8.204(c)(3)	65
Additional Authorities	
Bouvier, Law Diet. Adapted to the Constitution & Laws of	39,40
the United States of America & the Several States of the	
American Union (6thed. 1856)	
Eisenberg, Expression Rules in Contract Law and Problems	39
of Offer and Acceptance (1994) 82 Cal. L. Rev. 1127	
Plater, Statutory Violations and Equitable Discretion (1982)	41,42
70 Cal. L. Rev. 524	
Rush (1980) "Freewill"	49
Scott, Codified Canons and the Common Law of	40, 41
Interpretation (2010) 98 Geo I I 341	

*8 I. ISSUE PRESENTED.

This Court accepted this case for review of the following issue, as presented by the petition for review filed by respondent, State of California: May a court hold a trial to determine the practical feasibility of compliance with a technical standard imposed by the Legislature as a condition on the sale of a new product in California, based on a non-constitutional claim that the statutory standard is facially invalid if a trier of fact concludes it would be "impossible" to comply with it? Specifically, this Court is being asked to decide whether appellants may seek to enjoin the enforceability of a statute that impacts only the firearms industry, on the ground that the statute requires compliance that is physically impossible to achieve.

II. INTRODUCTION.

Appellants, National Shooting Sports Foundation, Inc. ("NSSF"), and Shooting Arms and Ammunition Manufacturers' Institute, Inc. ("SAAMI"), challenge the enforceability of Penal Code section 31910, subdivision (b)(7)(A). That statute requires that all semi-automatic pistols manufactured, imported or sold in California be

equipped with a microscopic array of characters [a "microstamp"] that identify the make, model, and serial number of the pistol, etched or otherwise imprinted in two or more places on the interior surface or internal working parts of the pistol, and that are transferred by imprinting on each cartridge case when the firearm is fired.

*9 The process described by resection 31910, subdivision (b)(7)(A), is known as "dual placement microstamping."

In a single cause of action for declaratory and injunctive relief, appellants allege that dual placement microstamping technology is impossible to implement. Specifically, while appellants acknowledge that a microstamp imprinted on the firing pin of a semiautomatic pistol will occasionally transfer to the primer located at the rear of a cartridge case upon firing, the record contains uncontroverted expert testimony that it is impossible to imprint a microstamp on any other surface or part of a semi-automatic pistol that will transfer to the cartridge case when the pistol is fired. (JA 45, 48, 772.) Respondent implicitly admits the truth of appellants' allegations, by acknowledging that "the relevant technology could fairly be described as emerging." (Op. Brief

8-9.) Respondent also implicitly admits that only one of the two microstamps required by section 31910, subdivision (b) (7)(A), may be placed on a pistol's firing pin, by not seeking review of that issue. (Op. Brief 20.) Nevertheless, the trial court granted respondent's motion for judgment on the pleadings without leave to amend, despite the fact that appellants' allegations must be taken as true at this stage of the litigation. (Dunn v. County of Santa Barbara (2006) 135 Cal.App.4th 1281, 1298.) The Court of Appeal reversed, and found as a matter of statutory construction, based on the legislative history, that section 31910, subdivision (b)(7)(A), does not allow both microstamps to *10 be placed on the same part of the pistol. (National

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,..., #01114541977...

Shooting Sports Foundation, Inc. v. State of California (2016) 6 Cal.App.5th 298, 307-308, review granted March 22, 2017, S239397; hereinafter, "NSSF v. California.").

This case therefore squarely presents an issue of fundamental fairness as to whether the Legislature may require the performance of a plainly impossible act as a condition to the exercise of an otherwise lawful right. Respondent argues that the separation of

powers doctrine absolutely prevents this Court from reviewing the Legislature's decision to enact Penal Code section 31910, subdivision (b)(7)(A), but the core legislative function of passing laws does not deprive the judiciary of its own constitutional power to set aside laws that are palpably arbitrary. Respondent also argues that appellants may not assert a cause of action based on the maxim of jurisprudence contained in Civil Code section 3531 that "[t]he law never requires impossibilities," but it is actually the separation of powers doctrine itself that invests section 3531 with the same operative force as any other statute. Appellants therefore request that this Court affirm the decision of the Court of Appeal, and allow this action to be resolved on its factual merits, either through summary judgment or trial, as the case may be.

*11 III. STATEMENT OF THE CASE.

A. The Parties.

Respondent is the State of California. (JA 11.) Appellant NSSF is a nonprofit trade association for members of the firearms, ammunition, hunting and shooting sports industries whose mission is to promote, protect and preserve hunting and the shooting sports. (JA 10, 778.) Appellant SAAMI is a non-profit trade association of domestic firearms, ammunition and propellant manufacturers whose mission is to develop and publish industry recommended practices and voluntary standards pertaining to the safety, interchangeability, reliability and quality of semi-automatic pistols, other firearms and ammunition. (JA 10-11, 775.)

Both NSSF and SAAMI therefore have a natural interest in laws such as Penal Code section 31910, subdivision (b)(7)(A), which affect the design and operation of firearms.

B. The Enactment of Penal Code Section 31910, Subdivision (b)(7)(A).

The issue of microstamping semi-automatic pistols first arose in the California Legislature on February 10, 2005, when Assembly Member Paul Koretz introduced Assembly Bill No. 352. (JA 847-851.) Assembly Bill No. 352 proposed that a semi-automatic pistol that was not already listed on the Roster of Handguns Certified for Sale (the "Roster"), that Penal Code section 32015, subdivision (a), requires respondent's Department of Justice ***12** to maintain, would be deemed to be "an unsafe handgun" if "it is not designed with a microscopic array of characters, that identify the make, model, and serial number of the pistol, etched into the interior surface or internal working parts of the pistol, and which are transferred by imprinting on each cartridge case when the pistol is fired." (JA 849.) Assembly Bill No. 352 thus would have required that a semi-automatic pistol contain only one microstamp ("single placement microstamping"). Assembly Bill No. 352 ultimately died in conference on November 30, 2006. (JA 854.)

The issue of microstamping semi-automatic pistols arose in the Legislature again on February 23, 2007, when Assembly Member Michael Feuer introduced Assembly Bill No. 1471. (JA 856-858.) As originally introduced, Assembly Bill No. 1471 contained the same single placement microstamping provision as Assembly Bill No. 352. (JA 858.) However, concerns were raised in the Legislature over the ability that criminals would have to defeat a pistol's microstamping features by defacing a microstamp placed on the firing pin. For example, as an April 10, 2007 report of the Senate Republican Office of Policy succinctly stated, "Criminals could easily defeat the intended identification purpose of this bill by filing off the microstamping on a firing pin. They could also switch the firing pin from one pistol to another pistol." (JA 606.)

To address this concern. Assembly Bill No. 1471 was amended, coincidentally also on April 10, 2007, to incorporate the dual

placement *13 microstamping provisions that now appear in Penal Code section 31910, subdivision (b)(7)(A). (JA 867.)¹ Legislative history subsequent to the amendment plainly reveals the Legislature's intention that the second microstamp required **DEFENDANT'S EXHIBIT 25**

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 61 of 149

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,..., 4914 14 4541979...

under section 31910, subdivision (b)(7)(A), must be placed elsewhere than on a pistol's firing pin, because a microstamp on the firing pin can be easily defaced, and because the firing pin itself can simply be replaced with another firing pin bearing a different microstamp or no microstamp at all. For example, the September 11, 2007 analysis of the Senate Rules Committee upon the third reading of Assembly Bill 1471 states that "Bill 1471 would require newly designated semi-automatic handguns sold after January 1, 2010, be equipped with 'micro-stamping' technology. This technology consists of engraving microscopic characters onto the firing pin and other interior surfaces, which would be transferred onto the cartridge casing when the handgun is fired." (JA 633-634.)

1

The microstamping statute enacted by virtue of Assembly Bill No. 1471 was denominated Penal Code section 12126. As noted by the Law Revision Commission Comment to section 31910, section 12126 was later redenominated as Penal Code section 31910 without substantive change. (Senate Bill No. 1080, 2010 Regular Session.)

In addition, the September 19, 2007 analysis of Assembly Bill 1471 that was prepared by the Governor's Office of Planning and Research stated that "[p]roponents of the bill argue that countermeasures can be taken by the manufacturer to prevent circumvention of the technology. Specifically, *14 they suggest that parts of the gun that come into contact with the bullet casing, other than the firing pin, can be similarly microengraved to make filing the engraving away more difficult." (JA 618.)² The legislative history reveals no contrary intention whatsoever by the Legislature to permit both microstamps to be placed on the pistol's firing pin. The Court of Appeal therefore found that "the only logical interpretation of the statute is that the Legislature intended the microstamping to be on two different internal parts of the pistol. If one microstamp on the firing pin

can be easily defeated, the same is true for two." (*NSSF v. California, supra,* 6 Cal.App.5th at p. 308.)³

- ² Both of those analyses are proper sources of legislative history. (*Levine v. Superior Court* (2005) 35 Cal.4th 935, 948 [Senate floor analysis]; *Smith v. Workers' Compensation Appeals Board* (2009) 46 Cal.4th 272, 280 [Legislative Counsel's analysis].)
- ³ While initially taking a contrary view, respondent now admits that a microstamp placed on the firing pin of a semiautomatic pistol can be easily defeated (Op. Brief 11), and that the Legislature adopted dual placement microstamping as part of Assembly Bill No. 1471 to address that defect in Assembly Bill No. 352, by requiring that a second microstamp be imprinted on some surface or part of a semi-automatic pistol other than the pistol's firing pin (Op. Brief 12). Accordingly, respondent no longer contends that the placement of two microstamps on the firing pin would comply with the statute. (Op. Brief 20.)

As ultimately enacted, Penal Code section 31910, subdivision (b)(7)(A), incorporated the dual placement microstamping provisions of ***15** Assembly Bill No. 1471. Section 31910, subdivision (b)(7)(A), provides as follows:

As used in this part, "unsafe handgun" means any pistol, revolver, or other firearm capable of being concealed upon the person, for which any of the following is true:

(b) For a pistol:

(7)(A) Commencing January 1, 2010, for all semi-automatic pistols that are not already listed on the roster pursuant to Section 32015, it is not designed and equipped with a microscopic array of characters that identify the make, model, and serial number of the pistol, etched or otherwise imprinted in two or more places on the interior surface or internal working parts of the pistol, and that are transferred by imprinting on each cartridge case when the firearm is fired, provided that the Department of Justice

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,..., 4911 148-37 4541977...

certifies that the technology used to create the imprint is available to more than one manufacturer unencumbered by any patent restrictions.

On May 13, 2013, the California Department of Justice certified that the technology used to create the imprint of the microscopic array of characters required by the provisions of Penal Code section 31910, subdivision (b)(7)(A), is available to more than one manufacturer unencumbered by any patent restrictions, thereby allowing the statute to take effect. (JA 781, 787-788, 839.) The Department of Justice did not, however, certify that dual placement microstamping is possible to implement in semi-automatic pistols, nor did escetion 31910, subdivision (b)(7)(A), require it to do so.

*16 C. The Impossibility of Dual Placement Microstamping.

Microstamped characters that identify the make, model, and serial number of a semi-automatic pistol (a "microstamped alpha numeric code") can be etched or imprinted on the tip of the pistol's firing pin, and such a microstamped alpha numeric code will sometimes transfer onto the primer contained within the cartridge case, which the firing pin strikes during the pistol's firing process. (JA 45.)⁴ However, a microstamped alpha numeric code that is etched or imprinted on the breech face, chamber wall, extractor, ejector or magazine of a semi-automatic pistol cannot be imprinted or transferred to the cartridge case during the pistol's firing process. (JA 46-48, 772.) There are no interior surfaces or internal working parts of a semi-automatic pistol on which a microstamped alpha numeric code could be etched or imprinted other than the firing pin, breech face, chamber wall extractor, ejector and magazine. (JA 45, 772.) The record below is uncontroverted with respect to this point. ⁵ The foregoing facts appear in ***17** the declarations of Frederick Tulleners, who has been a forensic scientist specializing in forensic firearms identification since 1971, and who has been employed by respondent's Department of Justice as the supervising criminalist in both its Riverside and Sacramento laboratories. (JA 37.)

4

Even when it does imprint, a microstamped alpha numeric code does not satisfy the requirements of Penal Code section 31910, subdivision (b)(7)(A), because it does not by itself identify the make, model and serial number of the pistol. A database must still be consulted to convert the markings of the microstamped alpha numeric code into the information required by the statute.

⁵ Although this appeal arises from the entry of judgment following the granting of respondent's motion for judgment on the pleadings without leave to amend, much of the factual record is already developed because of the unusual procedural posture of the case. Specifically, respondent did not bring its motion for judgment on the pleadings until late in the course of this litigation, long after appellants' evidentiary motion for a preliminary injunction had already been decided. (JA 1210-1211.)

Respondent submitted no expert testimony in the trial court to contradict Mr. Tulleners, and instead relies for purposes of this appeal on statements made in the Legislature by the author of Assembly Bill No. 1471, who in turn relied on a photograph purporting to show that the breech face of a semi-automatic pistol transferred a microstamp to a cartridge case fired by that pistol. (Op. Brief, 13-15.) The comments in the Legislature by the author of Assembly Bill No. 1471 are inadmissible hearsay for purposes of this action, because they concern a statement made other than by a witness while testifying that respondent now offers as proof of the matter stated (Evid. Code, § 1200), and the record contains no evidence to show that the author even possesses the technical expertise to comment regarding the effectiveness of breech face microstamping, which deprives

his comments of any evidentiary value (Evid. Code, § 801, subd. (b).) Likewise, the photograph on which the author relied is unauthenticated hearsay for purposes of this appeal. There is no evidence in the record that ***18** the photograph is what respondent claims it to be, as required by Evidence Code section 1400, and the photograph also concerns a statement made other than by a witness while testifying that respondent now offers as proof of the matter stated, rendering it inadmissible hearsay under Evidence Code section 1200.⁶ Respondent's reliance on such material underscores the need to conduct a trial in this

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,..., 4911 148-37 4541977...

case to establish through admissible evidence the truth of appellants' allegations that dual placement microstamping is in fact impossible to implement.

⁶ Indeed, if respondent attempts to introduce evidence of this breech face photograph at trial, appellants intend to introduce rebuttal evidence that the photograph does not depict what it purports to depict.

D. The Loss to Appellants Caused by Penal Code Section 31910, Subdivision (b)(7)(A).

On January 9, 2014, the date this case was filed in Fresno County Superior Court (JA 9), there were 867 semi-automatic pistols listed on the Roster. A pistol that is not listed on the Roster is a handgun that has not been determined not to be unsafe. (Pen. Code, § 32015, subd. (a).) It is a crime in the State of California to manufacture, import or sell any such unsafe handgun.

(Pen. Code § 32000 subd. (a).)

As of July 31, 2017, there were only 504 semi-automatic pistols listed on the Roster, representing a decrease of approximately 42% over a

*19 period of slightly more than three and one-half years.⁷ If appellants have correctly alleged that dual placement microstamping is impossible to implement, the number of semi-automatic pistols listed on the Roster will continue to decrease, because older pistol models that are no longer manufactured due to obsolescence will continue to be removed from the Roster, and because newer pistol models will not be added to the Roster since they cannot comply with the dual placement

microstamping requirements of Penal Code section 31910, subdivision (b)(7)(A). This represents an annual loss to appellants' manufacturing members of approximately \$183 million, unadjusted for inflation since 2014. (JA 69.)⁸

- 7 The Roster, which appears on the internet at < http://certguns.doj.ca.gov/safeguns_resp.asp>, listed 504 semi-automatic pistols as of July 31, 2017. As of that same date, the list of de-certified handgun models maintained by the Bureau of Firearms of respondent's Department of Justice, which appears on the internet at < https://oag.ca.gov/sites/oag.ca.gov/files/pdfs/firearms/removed.pdf>, listed 363 semi-automatic pistols that have been de-certified from the Roster since January 9, 2014, the date on which appellants filed their complaint. Thus, as of January 9, 2014, there were 867 semi-automatic pistols on the Roster.
- ⁸ As the Roster continues to shrink, Second Amendment issues will obviously arise, because semi-automatic pistols are

protected firearms under the decision of the United States Supreme Court in *District of Columbia v. Heller* (2008) 554 U.S. 570, 628-629, and because the protection for semi-automatic pistols recognized in Heller extends to the States.

(*MacDonald v. City of Chicago* (2010) 561 U.S. 742, 791.) However, appellants do not raise any such Second Amendment issues in this litigation, because they are trade association plaintiffs which concern themselves with issues of economic importance to the firearms industry. (JA 10-11, 13, 15.) The Second Amendment issues are being presented by other, unrelated litigants in *Pena v. Lindley* (E.D. Cal. 2015) 2015 U.S. Dist. LEXIS 23575, which is currently on appeal in the United States Court of Appeals for the Ninth Circuit as Case No. 15-15449.

*20 IV. PROCEDURAL POSTURE.

A. Relief Sought in the Trial Court.

On January 9, 2014, appellants filed their complaint against respondent, asserting a single cause of action for declaratory and injunctive relief. (JA 9-18.) Appellants allege that "[a]n actual controversy has arisen and now exists between [themselves]

DEFENDANT'S EXHIBIT 25

ER-1362

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,..., 4911 ANT 4541977...

and the manufacturer, distributor and retailer members they represent, on the one hand, and [respondent], on the other hand, concerning their respective rights and duties pursuant to the provisions of California Penal Code section 31910, subdivision (b)(7)(A)." (JA 13.) Specifically, appellants contend that

the provisions of California Penal Code section 31910, subdivision (b)(7)(A), are invalid as a matter of law and cannot be enforced because it is impossible for a firearm manufacturer to implement microstamping technology in compliance therewith, since no semi-automatic pistol can be designed or equipped with a microscopic array of characters identifying the make, model and serial number of the pistol that are etched or otherwise imprinted in two or more places on the interior surface or internal working parts of the pistol, and that can be legibly, reliably, repeatedly, consistently and effectively transferred from both such places to a cartridge case when the firearm is fired.

(Ibid) The complaint then alleges that respondent contends to the contrary and that a judicial declaration is accordingly appropriate, before concluding ***21** by requesting that the enforcement of Penal Code section 31910, subdivision (b)(7) (A), be enjoined. (JA 13, 15-16.)⁹

Code of Civil Procedure section 1060 provides in pertinent part that "[a]ny person... who desires a declaration of his or her rights or duties with respect to another... may, in cases of actual controversy relating to the legal rights and duties of the respective parties, bring an original action... in the superior court for a declaration of his or her rights and duties in the premises...." Numerous cases hold that such declaratory relief actions are an appropriate procedural vehicle for

9

challenging invalid legislative enactments. (E.g., Portnoy v. Superior Court (1942) 20 Cal.2d 375, 378; LaFranchi v. Santa Rosa (1937) 8 Cal.2d 331, 332, 335-336.) Respondent does not contend that appellants' have failed to allege the existence of an actual controversy sufficient to satisfy the pleading requirements of section 1060.

B. Judgment from which Appellants Appeal.

On February 18, 2015, nearly a year after respondent's demurrer to appellant's complaint had been overruled, respondent moved for judgment on the pleadings with respect to that complaint. (JA 113-116, 124-126.) Prior to the hearing of that motion on April 29, 2015, the trial court issued a tentative ruling to deny the motion, finding in appellants' favor with respect to all of the issues presented by the motion, including the separation of powers issue that is one of the primary issues on this appeal. (JA 733-736.) In particular, after noting respondent's citation to authority stating, "[T]he separation of powers doctrine [holds] that in the absence of some overriding constitutional, statutory or charter proscription, the judiciary has no authority to invalidate duly enacted legislation," the trial court ***22** acknowledged that "impossibility of compliance with a state law is ground for

enjoining enforcement of a statute." (JA 733.) The trial court did so in reliance on Board of Supervisors v. McMahon (1990) 219 Cal.App.3d 286, 299-300, which appellants cited in opposition to respondent's motion. (JA 733.)

However, on July 6, 2015, while cross-motions for summary judgment were pending (JA 738-740, 899-902), the trial court mistakenly reversed itself and issued an order granting respondent's motion for judgment on the pleadings without leave to amend (JA 1139-1147). Although the trial court acknowledged that the McMahon court "found that the impossibility doctrine did not apply in that case," and thereby presumed the existence of the doctrine, the trial court nevertheless incorrectly assumed that impossibility is not a ground for enjoining the enforcement of a statute, cryptically noting that the McMahon court "did not directly address [that] issue." (JA 1143-1144.) The trial court also incorrectly stated that the McMahon court "did not 'reach any separation-of-power issues," without addressing whether the provision of the Civil Code on which the McMahon court relied is itself a statutory proscription on which a court could rely to invalidate another statute on the ground of impossibility of compliance. (JA 1144.) Then, based on its order granting respondent's motion for judgment on the pleadings without leave to amend, the trial ***23** court entered judgment in favor of respondent and against appellants on July 22, 2015. (JA 1160-1173.)

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONAL SHOOTING SPORTS FOUNDATION, INC., 2017, 37 4541977...

C. Reversal by the Court of Appeal.

In its published opinion issued on December 1, 2016, the Court of Appeal reversed the judgment and remanded the case for further proceedings. Citing Dunn v. County of Santa Barbara, supra, 135 Cal.App.4th at p. 1298, the Court of Appeal correctly recognized that "[b]ecause judgment was granted on the pleadings, we must accept the truth of the complaint's properly pleaded facts," and that "[a]ecordingly, we must accept appellants' claim that it is impossible to effectively microstamp the required

characters on any part of a semiautomatic pistol other than the firing pin." (NSSF v. California, supra, 6 Cal.App.5th at p. 302.) As previously noted, the Court of Appeal also "reject [ed] respondent's position that stamping the characters in two places on the firing pin would comply with the statute," finding that [a]ppellants have the right to present evidence to attempt to prove their claim." (Ibid.)

The Court of Appeal carefully considered the separation of powers argument on which respondent relies.¹⁰ The Court of Appeal noted that ***24** "each branch [of California's system of state government] is vested with 'certain "core"...or "essential"... functions that may not be usurped by another branch," and that "[t]he separation of powers doctrine protects each branch's

core constitutional functions from lateral attack by another branch." (NSSF v. California, supra, 6 Cal.App.5th at p. 305.) Accordingly, the Court of Appeal also noted that "the courts must defer to the Legislature's factual determination unless it is palpably arbitrary and must uphold the challenged legislation so long as the Legislature could rationally have determined a

set of facts that support it." (NSSF v. California, supra, 6 Cal.App.5th at p. 306.) However, noting once again that it "must accept as true appellants' factual allegation that it is impossible to effectively microstamp a semiautomatic pistol in two or more

places on the interior of the pistol as required by Penal Code section 31910, subdivision (b)(7)(A)," the Court of Appeal found that "[i]t would be illogical to uphold a requirement that is currently impossible to accomplish." (Ibid.) Accordingly, the Court of Appeal held that

¹⁰ In this Court, respondent also attacks the statutory value of Civil Code section 3531, the maxim of jurisprudence stating that "[t]he law never requires impossibilities," but respondent did not rely on that argument in the Court of Appeal.

appellants have the right to present evidence and if they are able to prove it is impossible to comply with the dual microstamping requirement, the separation of powers doctrine would not prevent the judiciary from invalidating that legislation. Although courts must generally defer to the Legislature's factual determination, that is not the case if such ***25** determination is arbitrary or irrational. Therefore, the trial court erred in granting judgment on the pleadings in favor of respondent based on the separation of powers doctrine.

(Ibid.) The Court of Appeal then rejected respondent's petition for rehearing on December 15, 2016.

D. Review by the Supreme Court.

This case arrives in this Court upon the granting of respondent's petition for review on March 22, 2017 by a vote of 6-0, with the Chief Justice and Justices Werdegar, Corrigan, Liu, Cuellar and Kruger participating.

V. ARGUMENT.

A. The Court of Appeal Correctly Determined that Appellants' Action to Enjoin the Enforcement of

Penal Code Section 31910, Subdivision (b)(7)(A), Does Not Violate the Separation of Powers Doctrine.

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,..., 2017 37 4541977...

Respondent asserts that appellants' action to enjoin the enforcement of Penal Code section 31910, subdivision (b)(7)(a), on the ground that it requires impossible compliance, violates the separation of powers doctrine on three separate grounds. Respondent asserts first that appellants' action interferes with the core powers of the Legislature; second that appellants' action improperly questions the wisdom of legislative enactments; and third that appellants' action prevents the enactment of technology-forcing legislation. None of respondent's arguments with respect to the separation *26 of powers doctrine withstands scrutiny, and in fact, the separation of powers doctrine is what mandates that the opinion of the Court of Appeal be affirmed.

1. Appellants' Action Does Not Interfere with the Core Powers of the Legislature Because the Legislature May Not Enact Legislation that Is Palpably Arbitrary, Such

as Appellants Allege Penal Code Section 31910, Subdivision (b)(7)(A), To Be.

The separation of powers doctrine arises from the California Constitution. As stated therein, "[t]he powers of state government are legislative, executive, and judicial. Persons charged with the exercise of one power may not exercise either of the others except as permitted by this Constitution." (Cal. Const., art. III, § 3.) Each branch of government is thereby vested with certain core functions that may not be usurped by either other branch. (People v. Bunn (2002) 27 Cal.4th 1, 14.) In the case of

the Legislature, that core power is the power to legislate. (Cal. Const., art. IV, § 1.) The power to legislate is of course the power

to pass laws. (Carmel Valley Fire Protection District v. State of California (2001) 25 Cal.4th 287, 297.)

Citing Cockard v. City of Los Angeles (1949) 33 Cal.2d 453, 461, respondent suggests that "courts have a 'duty to uphold the legislative power,' unless one of the Legislature's acts transgresses constitutional ***27** bounds." (Op. Brief 28.) But the constitutional system from which the separation of powers doctrine arises assumes some degree of mutual oversight and influence among the three branches of government. (People v. Bunn, supra, 27 Cal.4th at p. 14.) Thus, in Cockard, where the trial court had declared invalid certain provisions of a zoning ordinance presenting no constitutional issue (33 Cal.2d at p. 455), the court described the duty of the judiciary to uphold legislative power in terms significantly less deferential than respondent acknowledges, and specifically retained for the judiciary a power to exercise oversight with regard to the legislative process extending beyond constitutional challenges:

The courts will, of course, inquire as to whether the scheme of classification and districting is arbitrary or unreasonable, but the decision of the zoning authorities as to matters of opinion and policy will not be set aside or disregarded by the courts unless the regulations have no reasonable relation to the public welfare or unless the physical facts show that there has been an unreasonable, oppressive, or unwarranted interference with property rights in the exercise of the police power.... In passing upon the validity of legislation it has been said that "the rule is well settled that the legislative determination that the facts exist which make the law necessary, must not be set aside or disregarded by the courts, unless the legislative decision is clearly and palpably wrong and the error appears beyond reasonable doubt from facts or evidence which cannot be controverted, and of which the courts may properly take notice."

(**I**d. at p. 461; emphasis added.)

Lockard therefore recognizes that the core legislative function of passing laws does not deprive the judiciary of its own constitutional power *28 to set aside laws that are palpably arbitrary, regardless of whether those laws are also unconstitutional. The record in Lockard contained undisputed facts supporting the validity of the zoning ordinance at issue, as a result of which

the court reversed the judgment of the trial court. (733 Cal.2d at pp. 463, 468.) The court would not have reached that result based on the factual record if, as respondent contends, the court simply had a mandatory "duty" to uphold the ordinance at issue

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,..., 2017 37 4541977...

because it transgressed no constitutional prohibition. (Op. Brief 28.) Rather, the Lockard court examined the facts and upheld the ordinance because the court found nothing palpably arbitrary about the ordinance.

By conducting its examination of the record to determine that the ordinance at issue was not palpably arbitrary, the Lockard court

performed the same judicial function that appellants ask the judiciary to perform in this case. Appellants allege that Penal Code section 31910, subdivision (b)(7)(A), requires impossible compliance (JA 13), and a statute that requires impossible compliance is palpably arbitrary. Appellants are entitled to the opportunity to prove at trial that their allegation of impossible compliance is meritorious.

*29 2. By Seeking to Enjoin Penal Code Section 31910, Subdivision (b)(7) (A), on the Ground that it Requires Impossible Compliance, Appellants Are Not Challenging the Wisdom of the Legislature's Underlying Goal of Crime Reduction.

Appellants seek to enjoin Penal Code section 31910, subdivision (b)(7)(a), on the ground that it requires impossible compliance. Appellants thereby challenge the statute on the ground that it is palpably arbitrary, which presents an appropriate issue for judicial review, as just noted. Appellants do not challenge, and in fact wholeheartedly support, the wisdom of the

Legislature's goal of crime reduction, which of course has motivated the enactment of Penal Code section 31910, subdivision (b)(7)(A). (JA 605, 609, 613.) It is not the wisdom of the legislative goal, but rather the impossible method the Legislature has chosen to achieve that goal, that lies at the heart of this case.

A case cited by respondent, Country of Mendocino (1996) 13 Cal.4th 45, shows that one branch of state government may indeed exercise a degree of oversight over another branch of government, without violating the separation of powers doctrine or impermissibly questioning the wisdom of legislative decisions. In that case, the Superior Court of Mendocino County challenged the power of the County of Mendocino to decree that the Superior Court observe certain unpaid furlough days as a cost saving measure. (Id. at p. 1049.) Although cost saving is plainly a legitimate legislative goal, the Supreme Court found that ***30** while a court has inherent power to control the hours and days of its operations, "the Legislature generally may adopt reasonable regulations affecting a court's inherent power or the fulfillment of its constitutional function." (Id. at p. 1055.) Similarly, if a court enjoined the enforcement of a single piece of legislation that was palpably arbitrary, that judicial act would not defeat or materially impair the Legislature's exercise of its constitutional power to pass other laws regarding the same subject matter.

The Mendocino court also noted that

unlike those instances in which it has been held that the separation of powers doctrine bars the Legislature from exercising an exclusive judicial function (such as readjudicating or setting aside a final judicial judgment), the Legislature's power to designate legal holidays or other nonjudicial days on which courts generally will be closed does not inevitably threaten the integrity or independence of the judicial process. The circumstance that a court will be closed on a particular day is unlikely to affect the resolution of a particular controversy or prevent a court from proceeding in accordance with its own view of the governing legal principles.

(Id. at pp. 1059-1060.) Likewise, a finding in the instant case that dual placement microstamping is impossible to implement would not intrude upon the Legislature's authority to adopt other crime reduction measures that would be possible to implement.



WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,..., 2017 37 Filed 01/27/23 Page 13 of 25 Page ID

*31 Finally, the Superior Court in Mendocino argued that the legislation permitting the imposition of unpaid furlough days was "invalid under the separation of powers doctrine because it limits the public's 'access to justice,' a subject that the Superior Court suggests lies exclusively within the province of the judicial branch." (Id. at p. 1060.) The Supreme Court rejected that argument, stating that

[t]he objective of preserving and promoting the public's access to justice and the judicial system, however, is by no means solely the concern or province of the judicial branch. The legislative and executive branches are necessarily and centrally involved in the formulation of a great variety of measures that vitally affect the public's "access to justice" through the judicial system, from determining the number and location of new judgeships and courthouses to establishing which court-related expenses should be financed at the state level and which at the local level.

(Ibid.) Likewise, the judiciary plainly involves itself in crime reduction efforts, from the trial of criminal suspects to the sentencing of those who are convicted, so the Legislature can hardly usurp unto itself the sole responsibility for fighting crime in California.

Citing Werner v. Southern California Associated Newspapers (1950) 35 Cal.2d 121, 130, respondent also asserts that courts may not invalidate legislation that they deem unwise, because "they may summarily put an end to certain laws that may be foolish but also to certain laws that may be wise." Werner involved a suit for defamation arising from a false charge that the plaintiff had been convicted of a crime, which was dismissed *32 because the plaintiff did not allege that he had suffered any special damage as required by the statute at issue. (FId. at pp. 123-124.) While the wisdom of a statute requiring special damage as an element of the tort of defamation may legitimately be the subject of conflicting opinion, there can be no legitimate disagreement that a statute requiring impossible compliance is not wise, because it cannot possibly achieve its legislative goal, which in the case of Penal Code section 31910, subdivision (b)(7)(A), is literally impossible, and the purpose of trial in this action is to determine the truth of that allegation. Regardless of the outcome at trial, no wise law will be enjoined as a result of appellants' action.

3. No Authority Permits the Enactment of Legislation that Requires the Development of Technology that Is Completely Impossible to Implement.

Respondent tries to save Penal Code section 31910, subdivision (b)(7)(A), from the injunctive relief appellants seek by relying on American Coatings Association v. South Coast Air Quality Management District (2012) 54 Cal.4th 446. According to respondent, which argues by analogy to the pollution control industry, "lawmakers and regulators regularly adopt technology-forcing standards - laws and regulations that are 'are expressly designed to force regulated sources to develop pollution control devices *33 that might at the time appear to be economically or technologically infeasible." (Op. Brief 31; emphasis added.)

According to American Coatings, statutes may impose technology-forcing standards only where those standards "are reasonably anticipated to exist by the compliance deadline." (~54 Cal.4th at p. 452.) The statutory standards that were enforced in American Coatings were based on several studies conducted by outside consultants concluding that the standards could be

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,..., 2017 37 4541977...

reasonably anticipated to become feasible by the compliance deadline. (**F**Id. at p. 457-458.) Finally, the legislation under consideration expressly required that the required technology be achievable. (**F**Id. at p. 451.)

American Coatings thus differs markedly from the present litigation. First, appellants allege that the dual placement microstamping requirements of Penal Code section 31910, subdivision (b)(7)(A), are impossible, and thus certainly not achievable at any time. (JA 13.) A proposed technology that violates the laws of physics now will always violate the laws of

physics. Second, section 31910, subdivision (b)(7)(A), contains no compliance deadline, and instead demands immediate compliance, now that it has been certified by the Department of Justice. Third, appellants do not allege, and respondent does not argue, that any study has ever been conducted showing any reasonable anticipation that dual placement microstamping will ever be possible to implement. In fact, *34 uncontroverted, expert evidence submitted by appellants in support of their motion for a preliminary injunction and their motion for summary judgment (which had not been decided before the trial court granted respondent's motion for judgment on the pleadings) shows that it is impossible to microstamp any surface or part of a semi-automatic pistol other than its firing pin. (JA 45-48, 772.) Finally, the value of the annual market for semi-automatic pistols in California is approximately \$183 million. (JA 69.) Firearms manufacturers would have a strong financial incentive to

comply with section 31910, subdivision (b)(7)(A), if dual placement microstamping were in fact possible, in order to share in such a lucrative market. ¹¹

Respondent argues that firearms manufacturers have made no effort to comply with the statute's dual placement microstamping requirements, simply because no manufacturers have submitted any new pistol models for inclusion on

the Roster. (JA 18.) That argument begs the question of how firearms manufacturers could seek to comply with \square Penal Code section 31910, subdivision (b)(7)(A), if they had no available means to manufacture a compliant firearm.

The technology-forcing statutory standards that American Coatings court found acceptable were therefore specific to the pollution control industry. ¹² That is hardly surprising, because filtering has been practiced ***35** for centuries, and pollution control is simply high-technology filtering. Accordingly, absent any showing that the factors on which the American Coatings court based its decision apply also to the firearms industry, American Coatings actually supports appellants' position. The factual record developed in this litigation after summary judgment or trial will show the actual state of microstamping technology in the firearms industry, and thus whether there is any reasonable expectation that dual placement microstamping technology can ever be developed for semi-automatic pistols.

Other technology-forcing cases of which appellants are aware likewise concern only the pollution control industry, and likewise concern regulations that do not require immediate compliance. (See, Union Electric Co. v. Environmental

Protection Agency (1976) 427 U.S. 246, 249-250 [challenge to state implementation plan under Clean Air Act]; Natural Resources Defense Council, Inc. v. U.S. Environmental Protection Agency (D.C. Cir. 1981) 655 F.2d 318, 322 [challenges to Environmental Protection Agency standards governing emissions of particulate matter and oxides of nitrogen from diesel vehicles]; Sherwin-Williams Co. v. South Coast Air Quality Management District (2001) 86 Cal.App.4th 1258, 1265 [challenge to rules promulgated by the South Coast Air Quality Management District regarding reduction in use of flat paint containing air pollutants].)

By making its argument in reliance on technology-forcing standards under the circumstances of this litigation, respondent tacitly admits that it is not aware of any expert evidence tending to show that dual placement microstamping technology can ever be developed for semi-automatic pistols. In that regard, it is important to note that appellants merely ask that the enforcement of

Penal Code section 31910, subdivision (b)(7)(A), be enjoined. (JA 16.) If dual placement microstamping technology ever

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 70 of 149

NATIONAL SHOOTING SPORTS FOUNDATION, INC., ..., 2017 37 4541977...

*36 becomes possible to implement, respondent could return to court and seek to have the injunction against the enforcement of section 31910, subdivision (b)(7)(A), lifted. ¹³

13

In a footnote, respondent suggests that it would be possible to comply with Penal Code section 31910, subdivision (b)(7)(A), simply by not selling any semi-automatic pistols in California that do not comply with the dual placement microstamping requirements of the statute. (Op. Brief 32.) Respondent's suggestion is illusory, because it evades the issue of impossible compliance, and because any statute imposing impossible requirements on a voluntary, lawful activity could be "complied" with under respondent's reasoning simply by not performing the activity toward which the impossible requirements are directed. Three cases cited in the text below that enjoined the enforcement of statutes requiring impossible compliance, *Buck v. Harton* (M.D. Tenn. 1940) 33 F.Supp. 1014, *Gigliotti v. New York*,

Chicago & St. Louis Railroad Co. (1958) 107 Ohio App. 174, and *Ivaran Lines, Inc. v. Farovi Shipping Corp.* (Fla.App.1984) 461 So.2d 123, implicitly reject respondent's suggestion, because it did not matter to the courts in those cases that the statutes at issue could have been complied with by not performing the otherwise lawful activities the statutes purported to forbid. The Court of Appeal of course dismissed respondent's suggestion for the obvious reason

that it does not provide appellants with the relief they seek. (*NSSF*, *Supra*, 6 Cal.App.5th at p. 308.)

B. THE MAXIM OF JURISPRUDENCE ON WHICH APPELLANTS RELY, CIVIL CODE SECTION 3531, PROVIDING THAT THE LAW NEVER REQUIRES IMPOSSIBILITIES,

ALLOWS APPELLANTS TO SEEK AN INJUNCTION AGAINST PENAL CODE SECTION 31910, SUBDIVISION (b)(7)(A), ON THE GROUND OF IMPOSSIBLE COMPLIANCE.

The maxim of jurisprudence contained in Civil Code section 3531 succinctly provides that "[t]he law never requires

impossibilities." Appellants' cause of action, seeking "a judicial declaration that the ***3**7 provisions of California Penal Code section 31910, subdivision (b)(7)(A), are invalid and cannot be enforced because it is impossible for a firearm manufacturer to implement microstamping technology in compliance therewith," plainly relies on that maxim. (JA 15.)

Respondent did not challenge appellants' reliance on section 3531 in the motion for judgment on the pleadings from which this appeal arises (JA 127-148), so the Court of Appeal did not consider the effect of the maxim in its opinion. Respondent has now pivoted to challenge section 3531, and in fact asserts that challenge as the primary argument in its brief. (Op. Brief 20-26.) Respondents' challenge to section 3531 fails, however, because the separation of powers doctrine requires the judiciary to accord maxims the same operative force as any other statute. It also fails because section 3531 is not barred by Civil Code section 3509 as respondent asserts, and because the right to challenge the enforcement of a statute is already recognized both in California and in its sister states.

1. The Separation of Powers Doctrine Requires the Judiciary to Accord Civil Code Section 3531 the Same Operative Force as Any Other Legislative Enactment.

Civil Code section 3531 is obviously a statute. As such, in construing the meaning of the statute, the Supreme Court's "fundamental task is to ascertain the intent of the lawmakers so as to effectuate the purpose of the statute." In ***38** this search for what the Legislature meant, "[t]he statutory language itself is the most reliable indicator, so [the Supreme Court] start[s] with the statute's words, assigning them their usual and ordinary meanings, and construing them in context. If the words themselves are not ambiguous, [the Supreme Court] presume[s] the Legislature meant what it said, and the statute's plain meaning governs..."

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,..., 2017 37 4541977...

(**Martinez v. Coombs (2010) 49 Cal.4th 35, 51.)** Thus, the construction of section 3531 is not at issue in this appeal. It plainly expresses exactly what the Legislature meant when it adopted the statute in 1872: "The law never requires impossibilities." Never means never, and respondent does not contend otherwise.

(a) Maxims of Jurisprudence Have Historically Carried the Force of Law.

Citing several cases and a 1994 law review article, respondent seeks to devalue section 3531 's operative force as a statute. Respondent asserts that because section 3531 is a maxim of jurisprudence, it is a mere, nonbinding "rule of thumb," simply an "aid to the just application of statutory law." (Op. Brief 21.) But significantly, respondent cites to no case holding that codified maxims are not entitled to the same dignity as any other statutory law. Citing only the law review article, respondent ***39** asserts that maxims do nothing more than "sum up legal experience... without compelling decisions." (Ibid.) ¹⁴

¹⁴ Eisenberg, Expression Rules in Contract Law and Problems of Offer and Acceptance (1994) 82 Cal. L. Rev. 1127, 1140.)

This dismissive interpretation of maxims in general, and of section 3531 in particular, has simply been pulled out of thin air. There is no legal justification in any cases or commentaries for the dubious proposition that codified maxims are not entitled to the same operative force as any other statute. Codified maxims are, after all, statutes that the Legislature duly enacted nearly 150 years ago. Respondent has not cited to any legislative history or any other statute that suggests that codified maxims in general or Civil Code section 3531 in particular are mere "rules of thumb" that are not entitled to the full operative force that the law bestows on any statute.

John Bouvier was a Philadelphia lawyer best known for his legal writings. ¹⁵ In 1856, sixteen years before the adoption of the Field Code in California, the sixth edition of his "Law Dictionary Adapted to the Constitution and Laws of the United States of America and the Several States of the American Union" (the "Bouvier Law Dictionary") was published. The Bouvier Law Dictionary defines a maxim as follows:

¹⁵ See, < https://en.wikipedia.org/wiki/John_Bouvier> [as of Aug. 2, 2017].

*40 1. An established principle or proposition. A principle of law universally admitted, as being just and consonant With reason.

2. Maxims in law are somewhat like axioms in geometry. They are principles and authorities, and part of the general customs or common law of the land; and are of the same strength as acts of parliament....

(<http://www.lawfulpath.com/ref/bouvier/maxims.shtml> [as of June 27, 2017]; emphasis added.) Included among "some of the more important maxims" summarized in the Bouvier Law Dictionary is the following: "A l'impossible nul n'est tenu. No one is bound to do what is impossible." (Ibid.) That is the maxim that the California Legislature ultimately codified as Civil Code section 3531, and the fact that it was originally written in Law French should not escape notice. The maxim is such an indelible part of the common law that it dates to the Middle Ages.

A far more incisive and recent commentary on the purpose of maxims appeared in 2010. Equitable maxims such as that codified by Civil Code section 3531 (which are sometimes referred to as "codified canons" or "common law canons") "focus on the imperfections in the legislative process and address unforeseen consequences common to the enactment of a wide variety of statutes." (*Scott, Codified Canons and the Common Law of Interpretation* (2010) 98 Geo. L.J. 341, 391.) The enactment of such maxims shows that

many legislatures want judges to limit statutes where their application would be unworkable. Although commentators *41 may criticize [such] canon[s] because [they] result[] in some measure of judicially exercised policymaking authority, no one can

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 72 of 149

NATIONAL SHOOTING SPORTS FOUNDATION, INC., ..., 4541977...

call a judge who uses this canon a usurper of legislative authority (at least in jurisdictions with such a rule). Ten legislatures are comfortable with judges making policy choices in this regard. The common codification declares that "[i]n enacting a statute, it is presumed that:... A result feasible of execution is intended." Thus, interpreters faced with ambiguous statutes are on notice to steer away from impossibly onerous or burdensome interpretations unless that presumption can be overcome. Another state codifies this canon implicitly, allowing interpreters faced with "unworkable results" to consult "extratextual evidence of the meaning of the statute" to illuminate the statute. Montana's legislature advises that "[t]he law never requires impossibilities." No legislature rejects this canon--even a legislature that stresses plain meaning builds in unworkable results as an exception to the plain meaning rule.

(Id. at p. 395; emphasis added.) Montana's impossibility maxim is of course identical to California Civil Code section 3531, both in language and effect.

A somewhat earlier commentary in the California Law Review concurs. The author addressed the issue of impossible statutory compliance as follows:

In other cases, the courts properly may take account of the infeasibility of immediate compliance. Assume that the case arises in which immediate compliance is physically impossible, where, for example, a court has determined under a water pollution statute that all dam operators must immediately obtain permits if they are to continue discharging water downstream. There is a simple answer to the apparent dilemma between the statutory requirement and the realities of the situation. The answer lies in the principle that courts cannot require the doing of an impossibility: Equity will not decree a vain thing.

*42 (Plater, Statutory Violations and Equitable Discretion (1982) 70 Cal. L. Rev. 524, 580; emphasis added.) This commentary properly recognized that impossible compliance is an existing defense in equity to statutory enforcement. ¹⁶ The Court of Appeal, in recognition of that existing defense, asked at oral argument below whether an impossibility challenge could be raised to a law requiring that all automobiles operate as hovercrafts, implying that such a challenge indeed could be raised, (Resp's RJN, Ex. A [11/16/2016 Ct. of App. RT, 35-36].)

16 This commentary also assumed that a court had been asked to compel impossible compliance. The instant case presents the obverse situation, because appellants ask the judiciary to enjoin a statute requiring impossible compliance. There is no meaningful difference between the two situations, because in both the dispositive issue is that a legislative body may not enact a law imposing requirements with which persons subject to the law cannot possibly comply.

(b) California's Sister Jurisdictions Recognize that the Enforcement of a Statute Requiring Impossible Compliance May Be Enjoined Based on the Impossibility Maxim.

Since California's maxims of jurisprudence are codifications of common law principles, authority from other common law jurisdictions respecting the effect of maxims is highly persuasive regarding the operative effect of Civil Code section 3531 and the maxim it codifies. Thus, in *Buck v. Harton, supra*, a statute required that the price for performance of musical compositions

be fixed upon a per piece basis. (***43** 33 F.Supp. at p. 1018.) However, because the public performance rights for musical compositions fluctuated, it was impossible to ascertain what the performance price should be at any given time, and it was

therefore also impossible to comply with the statute. (**r**Id. at pp. 1018-1019.) Because of that impossibility, "[c]omplainants [were] entitled to a decree granting a permanent injunction restraining defendants... from bringing or permitting to be

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONAL SHOOTING SPORTS FOUNDATION, INC., 2017 37 4541977...

brought... any proceeding at law or in equity for the purpose of enforcing said Statute against complainants...." (**r**-Id. at p. 1021; emphasis added.)

In another impossibility case, *Gigliotti v. New York, Chicago & St. Louis Railroad Co., supra,* a statute required train engineers to sound their train's whistle "at least 80 and not further than 100 rods" from highway crossings. (107 Ohio App. at p. 181.) At a railroad spur crossing, the plaintiff's car collided with a train which had not sounded its whistle. (117-1178.) However, there was no evidence that the spur track was at least 80 rods long, so "a literal compliance with the statute was impossible." (117-118.) Based on that finding of impossibility, the court held as follows:

It is well settled that the law is not so unreasonable as to require the performance of impossibilities... and, when Legislatures use language so broad as to lead to such results, courts may properly say that the Legislature did not intend to include those cases in which a literal obedience has become impossible. *If a statute apparently requires the performance of something which cannot be performed, a court may hold* *44 *it inoperative.* [¶] Under these circumstances, the statute requiring the blowing of a whistle "at a distance of at least 80 and not further than 100 rods" from the crossing was inoperative..."

(Ibid.; emphasis added.)

Finally, in Ivaran Lines, Inc. v. Farovi Shipping Corp., supra, the defendants shipped an automobile abroad without obtaining a

certificate of right of possession, as required by a Florida penal statute. (~461 So.2d at p. 124.) However, no such certificates of right of possession became available until after the date on which the automobile was shipped abroad. (Ibid.) The court excused the violation of the statute, explaining that "[g]enerally, the violation of a duty prescribed by statute is negligence per se but exceptions to this rule have been recognized where compliance with the provisions of the statute is impossible or

where noncompliance is excusable." (**I**d. at p. 125.) The court added that "[t]he law does not require the performance of impossibilities as a condition to assertion of acknowledged rights, and if a statute requires performance of something which cannot be performed, the court may hold it inoperative." (Ibid.) Thus, the court held "in accordance with the prevailing law that violation of a statute or regulation, whether deemed prima facie evidence of negligence or negligence per se, is excused where

it appears without dispute that compliance with the statute is impossible even in the exercise of reasonable diligence." (**1** Id. at p. 126; emphasis added.)

*45 The foregoing cases from California's sister jurisdictions all hold, with support from the maxim that the law never requires impossibilities, that statutes may be enjoined on the ground that they require impossible compliance. The instant case, addressing the same issue, is one of first impression in California. If California deviates from the uniform holdings of its sister states, California would become the first common law jurisdiction to deny maxims the operative legal effect that they historically have always had. California's maxims of jurisprudence were not codified merely to add advisory commentary or simple clutter to the Civil Code. California's maxims of jurisprudence were purposefully codified in 1872 as law, and they have remained so ever since.

(c) In the Absence of Any Overriding Constitutional, Statutory or Charter Proscription to Civil Code Section 3531, the Judiciary Must Acknowledge the Operative Force of the Maxim of Jurisprudence Codified Therein.

Ironically, in the final analysis, it is the separation of powers doctrine itself, on which respondent unsuccessfully relies in its effort to deny appellants their right to trial in this action, that compels the judiciary to acknowledge the operative force of Civil

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 74 of 149

NATIONA 2: SHOOTING SPORTS FOUNDATION, INC., 454187, 01/27/23 Page 19 of 25 Page ID

Code section 3531. This Court's definitive statement of the separation of powers doctrine appears in City & County of San Francisco v. Cooper (1975) 13 Cal.3d 898. That is a *46 case on which respondent relied in the trial court in support of its motion for judgment on the pleadings (JA 139-140), but which respondent no longer embraces. ¹⁷

17 Cooper was decided much more recently than Lockard v. City of Los Angeles, supra, on which respondent now prefers to rely. Whether respondent relies on either Lockard or Cooper today does not matter, because both cases recognize that challenges to statutes are not limited only to constitutional challenges. As stated in Lockard, statutes must not be set aside "unless the legislative decision is clearly and palpably wrong and the error appears beyond reasonable doubt from

facts or evidence which cannot be controverted, and of which the courts may properly take notice." (1-33 Cal.2d at p. 461.) The notion that courts retain the power to invalidate only those statutes that are unconstitutional is demonstrably incorrect.

The separation of powers doctrine "recognizes that in the absence of some overriding constitutional, statutory or charter

proscription, the judiciary has no authority to invalidate duly enacted legislation." (Cooper, supra, 13 Cal.3d at p. 915.) Neither respondent, any California court, nor any commentator has ever identified any constitutional provision, statute or charter provision that overrides Civil Code section 3531. Furthermore, respondent cites no cases that hold that statutes may not be enjoined on the ground of impossible compliance, in contradistinction to Buck, Gigliotti or Ivaran Lines.

In the absence of any such constitutional, statutory or charter proscriptions, and in the absence of any cases that reach holdings contrary to Buck, Gigliotti or Ivaran Lines, the separation of powers doctrine *47 requires the judiciary to accord section 3531 its due weight as a statute embodying the force of law. If section 3531 is to be in any way emasculated, the Legislature, not the judiciary, must be the branch of state government to undertake that task. Since the Legislature has not done so, section 3531, as a codified maxim, retains just as much operative force as any other statute, as maxims were originally intended to have. (Bouvier Law Dictionary, supra.)

2. Civil Code Section 3509 Does Not Bar Appellants from Relying on Civil Code Section 3531 in Support of

Their Claim that the Enforcement of Penal Code Section 31910, Subdivision (b)(7)(A), Should Be Enjoined.

Civil Code section 3509 provides that "[t]he maxims of jurisprudence hereinafter set forth are intended not to qualify any of the foregoing provisions of this code, but to aid in their just application." The language of section 3509 simply does not purport to prevent any maxim of jurisprudence from being applied in cases arising under statutes not contained in the Civil Code. This accords with the historical fact that the maxims of jurisprudence themselves have existed as part of the common law since the Middle Ages and are still part of the common law today.

The maxims of jurisprudence as "[p]rinciples of equity have long been enshrined as a vital part of California's jurisprudence." (McMackin v. Ehrheart (2011) 194 Cal.App.4th 128, 131, 135, 142; emphasis added.) *48 Thus, in Booksa v. Patel (1994) 24 Cal.App.4th 1786, the court relied on another codified maxim, Civil Code section 3514, providing that "[o]ne must so use his own rights as to not infringe upon the rights of another," to find that while an owner has the right to possess his land and everything beneath it, he had no right to sever the roots of a neighbor's tree that extended beneath his land. (I Id. at pp. 1790, 1792.) And in Jacobs v. State Board of Optometry (1978) 81 Cal.App.3d 1022, the court held that administrative review of a certain matter was unnecessary where the agency had already made clear what its ruling on that matter would be, relying on yet another codified maxim, Civil Code 3532, which provides that "[t]he law does not require

the performance of a useless or idle act." (PId. at pp. 1029-1030.) The foregoing cases involved the application of codified, equitable maxims to statutes contained in codes other than the Civil Code, but Civil Code section 3509 did not restrict those

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONAL SHOOTING SPORTS FOUNDATION, INC., ..., 2017 37 4541977...

courts from relying on the maxims at issue for that purpose. Likewise, it does not restrict the judiciary from applying Civil Code section 3531 to the determination of appellants' impossible compliance claim.

Respondent does still assert that Civil Code section 3531, as well as the other maxims, binds the legislative prerogative of future Legislatures. (Op. Brief 21-22.) That argument ignores the power of Legislatures to repeal previously enacted legislation. As a necessary part of their elective duties, Legislatures regularly repeal outdated statutes when those statutes ***49** no longer serve society's purposes. A law that remains in effect does so because the current Legislature allows it to remain in effect. In the words of a popular song, "If you choose not to decide you still have made a choice." (Rush (1980) "Freewill" [lyrics by Neil Peart].) Civil Code section 3531 remains in effect by legislative design, and therefore is a proper statutory proscription to the

enforcement of Penal Code section 31910, subdivision (b)(7)(A).

Respondent cites People v. One 1940 Ford V-8 Coupe (1950) 36 Cal.2d 471 to support its argument that a statute may not be nullified or defeated by a maxim. (Op. Brief 22-23.) In that case, an automobile registered to a private owner, which a bank claimed to own pursuant to a conditional sales contract, was seized because the registered owner had used the automobile

unlawfully to transport narcotics. (**C** 36 Cal.2d at p. 472.) A section of the Health and Safety Code provided that the claimant of an interest in a vehicle seized for that reason could prove that its interest was bona fide if the interest was created after a reasonable investigation of the moral character of the purchaser and without knowledge that the vehicle was used for an unlawful purpose. (Ibid.) Although the bank did not know that the seized automobile was to be used for the unlawful transportation of

narcotics, the bank never conducted the investigation contemplated by the Health and Safety Code. (Hand Lat p. 473.)

*50 Judgment was rendered after trial for the bank in One 1940 Ford because evidence was introduced at trial that an investigation, if it had been conducted, would have shown that the registered owner of the seized automobile was a person of good repute. (Ibid.) In that regard, the bank was allowed to rely at trial on Civil Code section 3532, the maxim of jurisprudence providing that the law does not require an idle act. (136 Cal.2d at p. 473.) Nevertheless, the Supreme Court reversed the judgment in favor of the bank, finding that performing the investigation was not an idle act, and that the maxim thus did not apply. (147.) The court explained as follows:

Inquiry prior to entering into the contract is thus related to the legislative purpose and if reasonably pursued would produce the facts as to the moral responsibility, character and reputation of the purchaser. Such investigation may not be said to be an idle act even though the proof at the trial may be entirely in his favor.

(Ibid.)

One 1940 Ford thus supports appellants' position rather than respondent's position. The One 1940 Ford court did not find that Civil Code section 3532 had no operative force, as respondent would like to argue. Instead, the One 1940 Ford court found that

section 3532 did not apply because the required investigation was not an idle act within the scope of the maxim. (**1** 36 Cal.2d at p. 477.) By making that finding, the court expressly acknowledged the operative force of section 3532. ***51** Expressed differently, in deciding One 1940 Ford, this Court found in 1950 that a codified maxim carries the full force of law like any other statute.

Civil Code section 3531, by contrast, providing that "[t]he law never requires impossibilities," directly applies to the instant case, because appellants have alleged that "it is impossible for a firearm manufacturer to implement microstamping technology

in compliance with Penal Code section 31910, subdivision (b)(7)(A)," and that allegation must be taken as true on appeal

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 76 of 149

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,..., 2017 37 4541977...

from a judgment arising from a pleading motion. (JA 13; Dunn v. County of Santa Barbara, supra, 135 Cal.App.4th at p. 1298.) Moreover, the One 1940 Ford decision by its terms applied only to the specific statutes then under consideration, namely certain provisions of the State Narcotics Act contained in the Health and Safety Code. (In Id. at p. 472, 476.) The case did not consider the applicability of section 3531, and even if it had, the statutory compliance at issue in One 1940 Ford was found to be plainly possible. (In Id. at p. 477.)¹⁸

18

Respondent also cites Moore v. California State Board of Accountancy (1992) 2 Cal.4th 999 to support its argument that a statute may not be nullified or defeated by a maxim. (Op. Brief 21.) Moore adds little to the present analysis,

because it contains only a passing reference in dicta to maxims, none of which were actually at issue in the case. (**-**Id. at p. 1012.)

As noted above, the Legislature may not act in ways that are palpably arbitrary in enacting legislation. (***52** Lockard v. City of Los Angeles, supra, 33 Cal.2d at p. 461.) The required statutory compliance in One 1940 Ford was not palpably arbitrary, and the bank could have easily complied with the statute at issue by undertaking the simple administrative task of conducting an investigation, which this Court held would not have been an idle act. The instant case arises in a much different context: There is no better example of a palpably arbitrary legislative enactment than one requiring an act that is physically impossible to perform, as appellants allege. The Legislature in this case simply chose, perhaps as a matter of political expedience, to blithely

ignore the impossible compliance that Penal Code section 31910, subdivision (b)(7)(A), requires. ¹⁹ Ignoring the required impossible compliance is what invokes the pre-existing impossibility defense to statutory enforcement that the McMahon court

acknowledged twenty-seven years ago, and which remains a vital part of California jurisprudence today. (McMackin v. Ehrheart, supra, 194 Cal.App.4th at p. 131,135, 142.)

19

Respondent euphemistically refers to the impossible compliance required by Penal Code section 31910, subdivision (b)(7)(A), as "the challenges that implementing microstamping presented." (Op. Brief 24; emphasis added.)

*53 3. The Court of Appeal Properly Relied on Board of Supervisors v. McMahon in Ruling that Appellants Have the Right to Present Evidence that It

Is Impossible to Comply with Penal Code Section 31910, Subdivision (b)(7)(A).

As noted above, the separation of powers doctrine "recognizes that in the absence of some overriding constitutional, statutory or

charter proscription, the judiciary has no authority to invalidate duly enacted legislation." (City & County of San Francisco v. Cooper, supra, 13 Cal.3d at p. 915; emphasis added.) The trial court relied on Cooper for a statement of the separation of powers doctrine when it granted respondent's motion for judgment on the pleadings (JA 1144-1145), but the trial court did not analyze the effect of any such statutory proscription in this action. By failing to do so, the trial court committed reversible error

in granting respondent's motion for judgment on the pleadings, as the Court of Appeal recognized. (NSSF v. California, 6 Cal.App.5th at p. 306.)

The impossibility challenge that appellants assert to section 31910, subdivision (b)(7)(A), arises directly from the codified equitable maxim that "[t]he law never requires impossibilities." (Civ. Code, § 3531.) "Consistent with this maxim, the law

recognizes exceptions to statutory requirements for impossibility of performance." (Board of Supervisors v. McMahon, supra, 219 Cal.App.3d at p. 300; emphasis added.) By making that statement, the McMahon court recognized that Civil Code

section 3531 is an overriding statutory proscription to the enforcement of other statutes. *54 Since Penal Code section
DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONAL SHOOTING SPORTS FOUNDATION, INC.,..., 2017 37 4541977...

31910, subdivision (b)(7)(A), requires performance with which it is impossible to comply, as appellants allege in their complaint (JA 15), section 3531 proscribes its enforcement.

Civil Code section 3531 does not equivocate. It declares absolutely that "[t]he law never requires impossibilities." (Emphasis added.) Respondent provided no citations below to any authority that reduces the impact of that statutory edict, and neither respondent nor the trial court explained how a statute that is fatally defective for impossibility of compliance can nevertheless be enforced either as a legal or a practical matter. Indeed, the judgment below can be reversed simply by applying the common rules of statutory construction that "[i]n the construction of a statute the intention of the Legislature... is to be pursued, if possible" (Civ. Code, § 1859), and that "[t]he terms of a writing are presumed to have been used in their primary and general acceptation..." (Civ. Code, § 1861.) As the McMahon court understood, when the Legislature used the word "never" in Civil Code section 3531, it meant "never." Appellants are entitled to show as a factual matter upon summary judgment or at trial that it is impossible to comply with Penal Code section 31910, subdivision (b)(7)(A). If they make that showing, Civil Code section 3531 will prevent the enforcement of Penal Code section 31910, subdivision (b)(7)(A), without the need for any further inquiry.

*55 McMahon is central to the determination of this appeal, and the Court of Appeal correctly determined that it provides the basis for appellants' cause of action to enjoin the enforcement of \bigcirc section 31910, subdivision (b)(7)(A). (NSSF v.

California, supra, 6 Cal App.5th at p. 306.) First, as noted, it was the McMahon court that unambiguously declared, in reliance on the statutory proscription of Civil Code section 3531, that "[c]onsistent with this maxim, the law recognizes exceptions

to statutory requirements for impossibility of performance." (\sim 219 Cal.App.3d at p. 300.) Perhaps even more significant, however, is the fact that the McMahon court carefully analyzed the claim of impossibility of compliance that the respondent asserted. The McMahon court would not have undertaken that analysis if impossibility of compliance were not a defense to the enforcement of a statute in the first place.

At issue in McMahon was the liability for payment of the state's fifty percent share of funding for the federal Aid to Families

with Dependent Children (AFDC) program, in which California has elected to participate. (**FId.** at p. 291)²⁰ A provision of the Welfare and Institutions Code required counties to pay 5.4 percent of the total cost of AFDC grants. (Ibid.) However, the

County of Butte adopted an ordinance, Measure E, *56 that prohibited the use of any county funds for AFDC funding. ([-I] Id. at p. 292.) The state petitioned for a writ of mandate and sued for injunctive relief against the county, contending that Measure E violated state law, and the county cross-complained for declaratory and injunctive relief, seeking to compel the state to fund the entire nonfederal portion of the AFDC program. (Ibid.)

20

The federal government paid the other fifty percent share of AFDC funding. (~219 Cal.App.3d at p. 291.)

The county's chief administrative officer, Martin Nichols, testified at trial that the increased welfare costs imposed on the county by the AFDC program had forced the county to cut local services such as police and fire protection, road maintenance, and

libraries. Nichols also projected that the county would run out of money for other local programs and services. (PId. at p. 293.) The county claimed based thereon that it could not comply with the funding mandate of the Welfare and Institutions Code, and it asked the court "to invoke the equitable doctrine excusing performance where circumstances make such performance impossible." (PId. at p. 299.) Acknowledging, as noted above, that "[c]onsistent with [Civil Code section 3531], the law recognizes exceptions to statutory requirements for impossibility of performance" (Pid. at p. 300), the McMahon court meticulously analyzed the county's claim of impossibility. If the McMahon court had not considered impossibility as a defense to compliance with the statute at issue, it would have (and indeed should have) treated the county's arguments as irrelevant.

DEFENDANT'S EXHIBIT 25

ER-1376

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONA 2: SHOOTING SPORTS FOUNDATION CHIMMENT 48-37 454187 01/27/23 Page 23 of 25 Page ID

*57 Rather than simply disregarding the county's position altogether, the McMahon court made the factual finding that "Nichols's testimony demonstrates no literal impossibility of County funding for the AFDC program at the heart of this dispute. Nichols's revenue projections do not show that the County will ever be unable to make the AFDC payments at the heart of this dispute." (Ibid.; emphasis in original.) Moreover, "the County has at least five years before projected increases in statemandated program costs would halt local County programs completely," as a result of which "Nichols's window gave the County

and the Legislature some time to address the County's problems." (**PId.** at p. 301.) The court found that "the record lacks the extensive factual development sufficient to justify affirmative relief," and that "[t]he County simply has not demonstrated

that it has exhausted its ability to raise new revenues or deliver services differently." (**F**Id. at p. 303.) The court thus could not "conclude that, on the record before the trial court, the County demonstrated a reasonable probability of prevailing on its 'impossibility' claim." (Ibid.; emphasis added.)

The *McMahon* opinion makes sense because impossibility of compliance is a recognized defense to the enforcement of a statute. The *McMahon* court devoted significant effort to showing that the county had failed to prove its asserted inability to comply with its AFDC funding obligations. That effort would not have been justified if impossibility of ***58** compliance were not a defense to the enforcement of a statute. Indeed, it would have been a waste of valuable judicial time for the McMahon court to undertake that effort simply as an academic exercise if no such defense to statutory enforcement existed.

McMahon is the only California case known to appellants wherein the impossibility doctrine is addressed in light of Civil Code section 3531.²¹ Appellants know of no case from any jurisdiction reaching a contrary result, and given the absolute nature of the declaration in section 3531 that "[t]he law never requires impossibilities," one would not expect any such contrary case to exist. In any event, impossibility of compliance as a ground to enjoin the enforcement of a statute is not a new or novel concept. Civil Code section 3531 was enacted in 1872 as a codification of a common law principle that is centuries old. *McMahon* itself was decided a quarter of a century ago.

21

Impossibility as a defense to statutory enforcement was also addressed in Sutro Heights Land Co. v. Merced Irrigation District (1931) 211 Cal. 670, but without reliance on Civil Code section 3531. Appellants discuss Sutro on the next two pages.

Moreover, impossibility of compliance as a ground to enjoin the enforcement of a statute is not a doctrine peculiar to California. As demonstrated by Buck v. Harton, supra, 33 F.Supp. 1014, Gigliotti v. New York, Chicago & St. Louis Railroad Co., supra, 107 Ohio App. 174, and ***59** Ivaran Lines, Inc. v. Farovi Shipping Corp., Supra, 461 So.2d 123, it has been equitably applied across the United States when necessary to prevent the miscarriage of justice. By relying on impossibility of compliance

as the basis for their suit to enjoin the enforcement of Penal Code section 31910, subdivision (b)(7)(A), appellants are hardly asking this Court to make a radical departure from existing law. Under these circumstances, the trial court's judgment suggesting that the separation of powers doctrine renders courts powerless to enjoin the enforcement of a statute that seeks impossible compliance ignores both sound judicial policy and common sense. By this appeal appellants seek redress from this inequitable result.

Respondent admits that McMahon supports the "unremarkable" proposition that a court exercising its equitable powers may decline to require an impossible act. (Op. Brief 25.) The proposition is unremarkable indeed, as respondent states, because it has long existed in equity. The proposition also captures the exact relief appellants seek in this action. Appellants simply ask this

Court to decline to require them to comply with Penal Code section 31910, subdivision (b)(7)(A), if appellants can prove their allegation that the statute imposes impossible dual placement microstamping requirements.

Finally, respondent describes the McMahon case as being consistent with this Court's decision in Sutro Heights Land Co. v. Merced Irrigation District, supra. (Op. Brief 25.) Indeed it is. In Sutro, this Court refused to ***60** compel an irrigation district

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONA 2: SHOEYING SPORTS FOUNDATION, INC., 48-37 454 97. 01/27/23 Page 24 of 25 Page ID

to drain certain lands as required by statute, because the facilities and work necessary to accomplish that drainage would have brought "financial ruin upon the district." (211 Cal. at pp. 673, 699-700, 703.) This Court in essence found that the Legislature did not intend to compel the performance of an impossible act, explaining as follows:

We do not believe that, under this state of facts, it was ever intended by those responsible for the enactment of the Drainage Act of 1907 [namely, the Legislature], that an irrigation district, situated as is the defendant in this action, should be compelled to work its own destruction by undertaking to provide drainage facilities for the district, the expense of which is beyond its financial ability to meet or pay for.

(**I**d. at p. 703.)

Sutro, like McMahon and the instant case, presented no constitutional claim. The Sutro court nevertheless upheld the impossibility claim made by the irrigation district, without even relying on Civil Code section 3531. The Sutro court identified the element of factual impossibility that was missing in McMahon (and as a result of which the McMahon court issued no injunction), but which appellants allege is present in the instant action. This Court should provide appellants the same opportunity that the irrigation district had in Sutro to prove that the statute ***61** at issue requires impossible compliance, and that its enforcement should therefore be enjoined.²²

Respondent concludes its discussion of the maxims of jurisprudence with a one-sentence footnote apparently relying on Code of Civil Procedure section 526, subdivision (b)(4), which provides that "[a]n injunction cannot be granted... [t]o prevent the execution of a public statute by officers of the law for the public benefit," and Civil Code section 3423, subdivision (d), which provides in almost identical language that "[a]n injunction may not be granted... to prevent the execution of a public statute, by officers of the law, for the public benefit." Many cases, however, hold that that the public benefit exemption does not apply to an invalid statute, the execution of which courts have full authority to enjoin.

(E.g., Financial Indemnity Co. v. Superior Court (1955) 45 Cal.2d 395, 402; Conover v. Hall (1974) 11 Cal.3d 842, 850; Agricultural Labor Relations Board v. Superior Court (1976) 16 Cal.3d 392, 401.) Those statutes are therefore red herrings as applied to this appeal, because respondent's reliance on them begs the question of whether Penal Code section 31910, subdivision (b)(7)(A), is an invalid statute. If section 31910, subdivision (b)(7)(A), is indeed invalid by reason of statutory proscription as appellants argue, no court need ever consider whether it is subject to the public benefit exemption of Code of Civil Procedure section 526, subdivision (b)(4), or Civil Code section 3423, subdivision (d).

*62 VI. CONCLUSION.

Respondent sprinkles the word "freestanding" throughout its opening brief, with pejorative intent. "The maxims of jurisprudence," respondent says, "do not authorize a freestanding facial 'impossibility' claim empowering a court to invalidate a statute." (Op. Brief 20.) "Recognizing NSSF's freestanding impossibility claim," respondent adds, "would violate the separation of powers doctrine." (Op. Brief 26.) Respondent essentially argues that appellants' cause of action to enjoin the enforcement of

Penal Code section 31910, subdivision (b)(7)(A), is not tethered to any supporting legal principles. Respondent is wrong.

Appellants have shown above, based on long-established authority, that the separation of powers doctrine does not foreclose judicial review of legislative enactments that are palpably arbitrary. Appellants have also shown above, based on authority that reaches back to the early common law, that the codified maxims of jurisprudence are entitled to the same operative force as any

DEFENDANT'S EXHIBIT 25

WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

NATIONAL SHOOTING SPORTS FOUNDATION, INC., ..., 4541977...

other statute, and that the separation of powers doctrine itself restrains courts from devaluing those maxims as organic law. By repeatedly characterizing as "freestanding" the legal foundations that support appellants' cause of action, respondent merely tries to mask the fact that courts have long possessed the power to enjoin the enforcement of laws that require impossible compliance.

*63 The very fact that this is a firearms case makes it a case of significant public importance. Its importance is enhanced by the issue of first impression it presents as to the effect to be accorded to California's codified maxims of jurisprudence. Its importance is further enhanced by the question of fundamental fairness it presents as to whether the Legislature may require the performance of a plainly impossible act as a condition to the exercise of an otherwise lawful right. Appellants submit that this Court should answer that question in the negative. Thus, for the foregoing reasons, appellants respectfully request that this Court affirm the decision of the Court of Appeal, reverse the judgment against appellants, and remand this case to the trial court for further proceedings.²³

23

Respondent includes a section in its opening brief discussing the effect of a due process challenge to Penal Code section 31910, subdivision (b)(7)(A), that appellants could possibly make. (Op. Brief 33-36.) Appellants had mentioned in a footnote in their answer to respondent's petition for review that they would have the right to seek to amend their complaint upon remand to assert a due process claim under Article I, Section 7, of the California Constitution. (Ans. Pet. Rev. 18.) Appellants included that footnote because at the hearing in the Court of Appeal below, Justice Franson asked why appellants did not originally bring a constitutional challenge on grounds other than the Second Amendment. (Resp's RJN, Ex. A [11/16/2016 Ct. of App. RT, 48-49].) But since appellants have not yet actually made any such due process challenge, it is not properly before this Court now. It is sufficient to say at present that if appellants ever do raise a due process challenge to section 31910, subdivision (b)(7)(A), the challenge would be meritorious, because a statute requiring impossible compliance is not a statute that reasonably relates to a proper legislative goal, or one that is based on rational speculation. (See, Coleman v. Department of Personnel Administration (1991) 52 Cal.3d 1102,

1125; In re Jenkins (2010) 50 Cal.4th 1167, 1181.)

End of Document

© 2023 Thomson Reuters. No claim to original U.S. Government Works.



WESTLAW © 2023 Thomson Reuters. No claim to original U.S. Government Works.

Case 8:22-cv-01421-CJC-ADS Document 48-38 Filed 01/27/23 Page 1 of 2 Page ID #:1137

1/18/23, 7:50 PM

Firearms micro-stamping feasible but not ideal, experts say - The Aggie

Firearms micro-stamping feasible but not ideal, experts say

UC Davis forensic science program researchers testing new microscopic engraving technology on gun firing pins have concluded that while it is feasible, the technology did not work well for all guns and ammunition tested.

"My study shows that while this technology works with some firearms, it also has problems in other firearms," said UC Davis forensic science graduate student Michael Beddow. "At the current time, it is not recommended that a mandate for implementation of this technology in semiautomatic handguns be made. Further testing and analysis is required."

Todd Lizotte of ID Dynamics, located in Londonderry, N.H., developed a way to use an ultraviolet laser to engrave microscopic markings onto firing pins, similar to how codes are engraved onto computer chips.

When the trigger is pulled, the micro-stamped firing pin will hit the primer of the cartridge case and leave the marked code on it. The idea is that the ejected cartridge can be matched to the gun from which it was fired, which is the premise for the Crime Gun Identification Act of 2007.

Governor Arnold Schwarzenegger passed the Assembly Bill 1471 in October 2007, requiring all new models of semiautomatic pistols sold in California after Jan. 1, 2010 to be engraved with a micro-stamped code in at least two areas of the "internal surface or internal workings parts of a pistol."

Fred Tulleners, director of the Forensic Science Graduate Group, discovered issues with the process.

"When trying new things, we want to really investigate it," he said. "We found it is technologically flawed." Tulleners is the former director of crime labs in the Sacramento and Santa Rosa areas as well as the former director of the California Criminalistics Institute.

Beddow tested the micro-stamped firing pins of six different semiautomatic handguns, two semiautomatic rifles and one pump action shot gun at the California Criminalistics Institute and the California Highway Patrol Academy.

Each firing pin contained three different types of codes: an alpha-numerical code on the tip of the firing pin surrounded by a gear code with a bar code going down the length of the firing pin. Recruits fired 2,500 rounds of ammunition to test the durability of repeated firing, Beddow said.

The ammunition was labeled in numerical order and shot through various guns. The cases were then collected in order to see potential change in the legibility of the characters. The firing pins themselves were photographed at intervals to determine if there had been any changes.

"We had mixed results. By and large, [in] most cases, the bar codes and gear codes did not succeed in impact. It has to do with how the firing pin operates. Sometimes they do multiple hits," Tulleners said. "For instance, [in] the AK-47 gangs use, the firing pins make multiple hits [to the cartridge]."

Multiple hits from the firing pin will mar imprints to the cartridge, thus nullifying the effectiveness of the micro-stamping. The most successful code was the alpha-numerical code.

"The alpha-numerical code provided the best quality of the numerical codes. The quality of forgeability of the impression ranged from firearm to firearm; every gun shoots differently and functions different so the legibility was different," Beddow said. "Bottom line, the technology is feasible. However, [it] does not function equally."

The study was supervised by David Howitt, a UC Davis chemical engineering and materials science professor, and was completed and informally released a year ago. The study was peer reviewed by six external reviewers, the National Research Council among them. This March, the council came out with

https://theaggie.org/2008/05/23/firearms-microstamping-feasible-but-not-ideal-experts-say/

DEFENDANT'S EXHIBIT 26

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 82 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-38 Filed 01/27/23 Page 2 of 2 Page ID #:1138

1/18/23, 7:50 PM

Firearms micro-stamping feasible but not ideal, experts say - The Aggie

the same conclusions in their report: more research would be needed to prove that firearms identification rests on firmer scientific footing.

Other concerns with the new technology include the cost of implementing codes on all firing pins and how beneficial the technology will be. According to Tulleners, there are three types of shootings: crimes of passion, professional hits and assassinations (which are less solvable) and gang shootings.

"This research conceivably affects gangs. However, we routinely link cartridge cases to guns," Tulleners said. "Without DNA, gangs are notorious for passing guns, and just because you link a cartridge does not mean you'll find who did it. Gangs can deface the firing pin or buy a whole bunch of firing pins and replace them."

As for the cost of the firing pins, Tulleners estimated the engraved firing pins would cost \$7.87 or \$6.72 each, which is a very conservative estimate. "There is no real benefit to society, and the money is better spent on other progressions in society," he said.

WENDY WANG can be reached at campus@californiaaggie.com.

https://theaggie.org/2008/05/23/firearms-microstamping-feasible-but-not-ideal-experts-say/

DEFENDANT'S EXHIBIT 26

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 83 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 1 of 50 Page ID #:1139

What Micro Serialized Firing Pins Can Add to Firearm Identification in Forensic Science: How Viable are Micro-Marked Firing Pin Impressions as Evidence?

David Howitt, PhD, Frederic A. Tulleners, and Michael T. Beddow Forensic Science Graduate Group University of California, Davis

> Funded by the California Policy Research Center University of California

DEFENDANT'S EXHIBIT 27

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 84 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 2 of 50 Page ID #:1140

Research for this report was funded in part by the California Policy Research Center, an academic public service of the University of California, bringing UC expertise to bear on major policy issues facing Californians in support of more informed state policymaking. The views and recommendations expressed are those of the authors and do not necessarily represent those of the CPRC or the regents of the University of California

David Howitt, PhD, is a professor in the Department of Chemical Engineering and Materials Science at the University of California, Davis and serves on the faculty of the UC Davis Forensic Science Graduate Group. He may be reached by email at dghowitt@ucdavis.edu. Frederic A. Tulleners is the director of the Graduate Forensic Science Program within UC Davis Extension and former California Department of Justice laboratory director of the California Criminalistics Institute. He may be reached by email at ftulleners@ucdavis.edu Michael T. Beddow, UC Davis M. S. graduate in forensic science at UC Davis, conducted the core tests on which this study is based. He may be reached by email at michael.beddow@hotmail.com.

CD copies of this report in *PDF* format can be obtained from: Forensic Science Graduate Program, UC Davis Ext., 1333 Research Park Drive, Davis, CA 95618

DEFENDANT'S EXHIBIT 27

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 85 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 3 of 50 Page ID #:1141

CONTENTS

ACKNOWLEDGEMENTS	5
EXECUTIVE SUMMARY	6
INTRODUCTION	15
Basic Firearm Physics and Forensics	
The Forensic Potential of Micro-machined Serial Number Technology	
Issues with Laser Machining	
Research Objectives, Methods and Materials	
KEY FINDINGS AND DISCUSSION	25
Durability and Longevity of Micro-characters	
Legibility of Impressed Characters	
Micro-character Defacement / Obliteration	
Issues with Firing Pin Machining	
Estimated costs for Firing Pin Fabrication	
External Independent Review of the Micro Serialized Report	

POLICY IMPLICATIONS AND RECOMMENDATIONS FOR FURTHER 47 RESEARCH

- 1. Criteria to determine the transfer rate required for identification
- 2. Decoding protocols for properly interpreting radial bar and gear codes
- 3. Firearm-related crime statistics to be compiled
- 4. Implementation strategies to be developed collaboratively
- 5. Technology implementation prototype to be piloted

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 4 of 50 Page ID #:1142

APPENDICES

Appendix A	Images of Unfired Micro-Serialized Firing Pins	A-1
Appendix B	Issues with Laser Machining	B-1
Appendix C	Smith & Wesson Model 4006 .40 S&W Semi-Automatic Pistol Tables, Data, Graphs and Images	C-1
Appendix D	Ruger MK I, .22 LR Semi-Automatic Pistol Tables, Data, Graphs and Images	D-1
Appendix E	Seecamp .25 ACP LWS Semi-Automatic Pistol Tables, Data, Graphs and Images	E-1
Appendix F	AMT "backup" .380 Auto Semi-Automatic Pistol Tables, Data, Graphs and Images	F-1
Appendix G	Sig Sauer P229 .40 S&W Semi-Automatic Pistol Tables, Data, Graphs and Images	G-1
Appendix H	Colt 1911 .45 ACP Semi-Automatic Pistol Tables, Data, Graphs and Images	H-1
Appendix I	Colt AR-15 .223 Semi-Automatic Rifle Tables, Data, Graphs and Images	I-1
Appendix J	Norinco AK-Series 7.62x39mm Semi-Automatic Rifle Tables, Data, Graphs and Images	J-1
Appendix K	Mossberg 500A 12 Gauge Pump Action Shotgun Tables, Data, Graphs and Images	K- 1
Appendix L	Micro-Character Defacement/Obliteration	L-1
Appendix M	Blind Test of Impressed Character Legibility Results	M-1
Appendix N	Cost for Equipment Setup and Machining of Micro-Serial Numbered Firing Pins	N-1
Appendix O	External Independent Peer Review of the Microserial Number Report	O-1

DEFENDANT'S EXHIBIT 27

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 87 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 5 of 50 Page ID #:1143

Acknowledgements

The authors would like to thank the following individuals and organizations for their assistance and advice on this project:

The California Policy Research Center for providing funding for this study.

Mike Giusto, Assistant Program Manager of the Firearm & Toolmark Program at the California Criminalistics Institute of the California Department of Justice.

The staff of the Weapons Training Unit and Weapons Control Unit of the California Highway Patrol Academy in West Sacramento.

Todd Lizotte of ID Dynamics in Londonderry, New Hampshire.

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 6 of 50 Page ID #:1144

EXECUTIVE SUMMARY

Every time a semiautomatic firearm is discharged, a bullet will leave the barrel and the cartridge case, which initially contained the bullet and powder charge will be ejected from the firearm. During the discharging process, working surfaces inside the firearm impart microscopic markings onto various areas of each bullet and cartridge case. One of these working surfaces is the *firing pin*, an object that strikes the primer surface in the base or back of the cartridge case, thereby causing the powder charge to deflagrate and fire the bullet. These ejected cartridge cases are one of the key pieces of evidence used in solving firearm-related crimes. More precisely, it is the microscopic markings, such as those impressed onto the back of the cartridge case by the firing pin, that forensic firearms examiners scrutinize in order to determine whether an identification with the crime gun can be made. This examination and comparison process is highly meticulous, time consuming and requires a forensic scientist with specialized equipment, training and experience.

The transfer of intentional microscopic impressions of intentional microscopic marking from the working surfaces of a firearm to each fired cartridge case was the goal behind the recent development of a micro-machining technology designed to machine an array of microscopic characters onto the face of a firing pin. The surface area of a firing pin is sufficiently large enough for a wide variety of alphanumeric characters, symbols, barcode lines, or other encoding structures to be machined on it. Todd Lizotte of ID Dynamics, located in Londonderry, New Hampshire, developed a micro-machining method that utilizes an ultraviolet laser to engrave micro-encoding structures onto firing pins. The method is similar to that used to engrave codes on computer chips.

When the trigger is pulled, the firing pin strikes the softer primer portion of the cartridge case in a center fire firearm cartridge or the rim of a rimfire caliber cartridge depending on the type of firearm in question. This process stamps the laser-machined code into the primer or rim of the cartridge case. In principle, the code impressed on the spent cartridge case could be looked up in a database and matched to a specific firearm, considerably facilitating the work of forensic science or police investigators. Through continuous testing and development, this technology has progressed from a basic alphanumeric code laser-machined on the face of the firing pin (known as first-generation firing pins) utilizing a masking method, to the current direct-writing process that can place three different encoding formats on a given firing pin: an alphanumeric code, a gear code and a radial bar code. (The latter are known as second-generation firing pins).

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 7 of 50 Page ID #:1145

The viability of this emerging technology will impact the recent California Assembly Bill No. 1471 (AB 1471), the Crime Gun Identification Act of 2007, which was chaptered into to law and amended California Penal Code section 12126 on October 13, 2007. This law requires that all new models of semi-automatic pistols have the capability of placing an microscopic array of characters that identify the make, model, and serial number of the pistol, etched in 2 or more places on the interior surface or internal working parts of the pistol, and that are transferred by imprinting on each cartridge case when the firearm is fired.

The goal of this study, which was funded in 2005 by the California Policy Research Center (CPRC) as part of its annual competitive grant cycle offering to UC faculty, was to evaluate the efficacy of this new technology so that policymakers could make informed decisions in support of facilitating the identification of forensic science evidence in firearm-related crimes.

Research Objectives, Methods and Materials

A series of tests were conducted using a sample of readily available firearms to determine (1) the durability and longevity of an array of micro-characters lasermachined onto various firing pins, (2) the effect of repeated firings on the legibility of impression of the micro-characters on the ejected cartridge cases, and (3) the ease with which laser-machined micro-characters could be intentionally defaced or obliterated, and (4) to evaluate the cost of the proposed technology.

A primary question regarding the technology of laser-machined micro-characters laser-machined onto firing pins has to do with their ability to withstand repeated firing. To assess their durability, six firing pins for a .40 caliber Smith and Wesson Model 4006 semi-automatic pistol were equipped with second-generation encoding structures (containing the dot code). These six firing pins were placed in six different Smith and Wesson pistols at the California Highway Patrol Academy and issued to six different cadets for testing during their firearms training. Each cadet fired approximately 2500 rounds of ammunition. Photomicrographs were taken of the firing pins before and after test firing with a Philips FEI XL-30 Scanning Electron Microscope (SEM) so that direct comparison of any changes could be assessed. The range of firearms used for this study included pistols; a rifle and a shotgun because these are all used in crimes of violence and may leave cartridge case evidence. They consist of various handgun models (including new pistols at the CHP Academy) and firearms that will be in use for the foreseeable future. This allowed us to observe the effects of different firing pin impressions

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 8 of 50 Page ID #:1146

made by firearms that have different discharge pressures. These firearms and their future model derivations are expected to provide similar results.

The vendor was supplied with 14 firing pins which were subsequently engraved at a cost of 3,500 or ~ 250.00 per firing pin. These firing pins were obtained after their initial laser machining without any additional processing steps such as deburring, etching and diamond coating or initial test firing. The study showed that these additional steps are not needed because the failure mechanism is primarily influenced by the firearm design and these secondary processes including diamond coating would not resolve that issue.

In order to determine the legibility of the impressed characters made by secondgeneration firing pins, five different semi-automatic pistols (of varying make, model and caliber), two different caliber semi-automatic rifles and one pump action shotgun where chosen. The firearms tested were:

- Ruger Mark I, .22 Long Rifle (rimfire semi-automatic pistol)
- SeeCamp, .25 ACP-LWS (semi-automatic pistol)
- AMT "Backup", .380 auto (semi-automatic pistol)
- Sig Sauer P229, .40 Caliber (semi-automatic pistol)
- Colt 1911 Government Model, .45 ACP (semi-automatic pistol)
- Colt AR-15, .223 Caliber (semi-automatic rifle)
- Norinco AK-Series, 7.62x39mm (semi-automatic rifle)
- Mossberg 500, 12 gauge (pump action shotgun)

These firearms were chosen based not only upon their availability but also for the sake of diversifying the caliber and quality of firearm tested. For each of the above firearms, a single second-generation (containing gear code) micro-serial numbered firing pin (i.e., bearing a gear code) was obtained¹ and documented using an SEM.

In addition to testing this technology with the above firearms, a variety of different ammunition brands were also tested with each firearm. The point of introducing such variance in ammunition brand was to observe how the transfer and legibility of the impressed micro-characters were affected by varying primer cup composition and primer cup hardness. (The brands of ammunition tested with each firearm can be seen in Table 3.)

¹ The firing pin for the Ruger, 22LR only contains the alphanumeric encoding structures. This is due to the design of the firing pin and the nature of rim fire firearms. Due to the firing pin geometry for the Norinco, radial bar coding was not possible.

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 9 of 50 Page ID #:1147

The type of ammunition one uses, can affect the impressions made by a firing pin. This has been well documented. We used ammunition that was available in the local community. This ammunition can be commercial, import or military surplus. The subjects who commit crimes of violence are not selective about the type of ammunition they use. The Norinco type AK rifle is one of the popular rifles used by street gangs as are some of the 9 mm and .45 ACP type pistols. The Colt 1911 .45 ACP pistol continues to be one of the most popular pistols with a substantial after-market parts support. A detailed study of the California database could provide a frequency breakdown for new handguns sales but it is difficult because this database is not structured for easy sorting. Furthermore, the California new handgun sales profile may not be reflective of what is routinely used in gang shootings.

Every cartridge case was collected in order of firing and analyzed with a variable magnification stereo-microscope equipped with a ring light and polarizing filter. From these analyses a data table was created for each firearm documenting the number of characters from each encoding format that were legible on each and every cartridge case. This data was translated into a transfer percentage for each encoding format for each cartridge case. An average transfer percentage was then calculated for each brand of ammunition tested. During the course of the experiment, the serial numbers where extensively documented with photomicrographs. Finally, the averages for each brand of ammunition were plotted for each firearm. These charts can be found in the appendix associated with each firearm.

Two different methods were designed to evaluate the ease with which lasermachined micro-characters could be intentionally defaced or obliterated. In the first method, the firing pin for an AMT "Backup" 380 Auto semi-automatic pistol was held perpendicular to a household sharpening stone and rubbed back and forth for 30 seconds. The second method involved placing the firing pin for a Sig Sauer P229 semi-automatic pistol on its side on an anvil and rolling it back and forth while lightly peening it with a ball peen hammer for 15 seconds. The firing pin was then stood on its base and the tip was peened for an additional 15 seconds.

Key Findings

The legibility and quality of the micro-stamped characters for all three encoding formats varied among the set of firearms tested. The function and design of each firearm affected the manner in which the firing pin struck the primer or rim of the cartridge case, thereby controlling the depth of the firing pin impression and the presence or absence of firing pin drag, multiple strikes of the firing pin and flow

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 10 of 50 Page ID #:1148

back. Three of the firearms tested demonstrated an overall decline in transfer rate, while the transfer rate for all firing pins tested demonstrated a direct relationship between the brand of ammunition tested and the transfer rate. Each brand of ammunition produced a different transfer rate. This ammunition-specific transfer rate was reproducible upon repeated testing. (These results are illustrated in the "Encoding Structures Transfer Trend" graphs located in the appendix for each firearm.)

Overall, the alphanumeric characters and the gear code structures proved more durable under repeated firings (i.e., these characters were still legible on the firing pins upon completion); however, some degree of degradation—i.e., flattening—was seen on the alphanumeric structures of the firing pins tested. The dot code structures on the Smith and Wesson firing pins suffered severe degradation and deposition of foreign material, making them illegible on the firing pins (arguably a function of their small dimensions).

The radial bar code structures on eight out of the fourteen firing pins tested exhibited severe degradation, including all six of the Smith and Wesson firing pins and those for the SeeCamp .25 ACP and AMT .380 Auto. The degradation observed involved the flattening/peening of the radial bar code structure by continual contact with the walls of the firing pin aperture during repeated firing. With the exception of the radial bar code structures on the Sig Sauer firing pin, which showed moderate degradation, the radial bar codes on the remainder of the firing pins showed minimal signs of degradation, consisting only of the deposition of foreign material.

Because of patent issues we could not obtain the coding sequence of the radial, dot and gear codes. For order to remain usable there will be a minimum size for these alternate coding technologies and decoding information must be provided.

Finally, both defacement/obliteration methods demonstrated that the microcharacters could easily be intentionally destroyed with the firing pin removed from the firearm. The destruction of these characters while the firing pin was installed in the firearm would be difficult.

Due to the varying amounts of degradation seen on all of the firing pins, a determination of what constitutes a suitable lifespan of these characters needs to be developed. At the current time only the alphanumeric encoding format has the potential to reliably transfer information from the firing pin to the cartridge case, thereby facilitating the identification of crime guns outfitted with micro-stamping technology. If any numbering system has the future potential to handle a large database and have some survivability, it is the alpha–numeric system. Future research effort should begin focus on alpha-numeric coding and it's applicability

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 11 of 50 Page ID #:1149

to the various firearms that are used in gang related shooting. The other area that needs more research is to evaluate the effectiveness of firing pin serial number impressions (or the equivalent breech face engraved serial numbers) on brass cartridge cases (excluding the primer area). Our study so far shows that this is a significant problem area based on our limited evaluation of impressions made by the firing pin in the .22 caliber pistol.

Our expectation is that the results of the firing pins used in this study will be relevant to the current models we tested and their future derivation. In this study we also used the Scanning Electron Microscope (SEM) to image the firing pins. However in a typical laboratory, such imaging will have to done by trained laboratory staff using a properly configured stereomicroscope. The SEM will be off-limits to the cartridge case because most crime labs use the SEM for the detection of Gunshot residue on shooters hands and the presence of a cartridge case would severely contaminate the SEM.

The basis for this report, in the form of a thesis was also reviewed by Professor Michael Hill in the Mechanical Engineering Department and the report, as submitted to the CPRC, was externally reviewed by Lucian Haag, an independent Firearms expert and Professors Simon Cole and George Tita of the UC Irvine Department of Criminology. The report fulfilled and exceeded the purpose of the original grant and the reviewers' comments are provided in <u>Appendix O: External</u> Review of the Micro-Serialized Report.

Policy Implications and Recommendations for Further Research

The findings of this study will have a direct impact on any legislation involving micro-serialized firing pins including the recently enacted revisions to California Penal Code section 12126 application which proposed the application of second-generation micro-serialized firing pins manufactured by ID Dynamics to *all* semiautomatic handguns sold in the state of California. As shown, while the technology works with some firearms, it does not perform equally well for every encoding structure or for every semiautomatic handgun tested. As only a limited number of firing pins, encoding sequences, and firearms were tested in this study, it is not known how this emerging technology would perform across the board in relation to the over 2000 different makes and models of semiautomatic handguns sold in California each year. *At the present time, therefore, because its forensic potential has yet to be fully assessed, a mandate for the implementation of this technology in all new semiautomatic handguns sold in the state of California is counter-indicated. We specifically propose further research on alpha-numeric*

DEFENDANT'S EXHIBIT 27

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 94 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 12 of 50 Page ID #:1150

serial numbers on firearms mostly in gang related shootings, suitability of such alpha-numeric imprint on fired cartridge case areas other than the soft primer area, realistic and accurate production cost estimates for such micro-engraving and a evaluation as to what percent of gang related shooting could realistically be solved by such technology given current gang firearms usage.

The recent release of the National Research Council of the National Academies report on <u>Ballistics Imaging</u>, March 5, 2008 supports the concept of our research and they (NRC) recommend further research on "microstamping," a technique that imprints unique marks on guns or ammunition-"

Several areas for further research recommend themselves, including:

1. Criteria to determine the transfer rate required for identification

The data collected for each cartridge case in this study only provides the transfer rate of each encoding format. In order for this information to be useful, criteria need to be set stipulating exactly what transfer rates (for each encoding format) constitute a sufficient quantity of characters to allow for the potential identification of the firing pin that produced them. These criteria should be created in conjunction with practicing firearms examiners, the state of California and the personnel responsible for the creation of the database for this technology.

2. Decoding protocols for properly interpreting radial bar and gear codes

At the current time no protocols have been provided regarding the interpretation of the radial bar codes and gear codes. Without such protocols the impressions of these encoding structures are nothing more than that: impressions. This could affect the current California Penal Code 12126 section if the intent of this law requires the implementation of this unproven secondary technology. Decoding conventions need to be obtained from ID Dynamics for these two encoding formats to be interpretable. Once this information is obtained, testing will need to be conducted to determine what factors affect their interpretation, such as changes in width and spacing. Without these instructions the radial bar codes and gear codes are rendered mute, unable to provide any identifying information.

3. Firearm-related crime statistics to be compiled

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 13 of 50 Page ID #:1151

A survey of crimes committed with semiautomatic handguns needs to be compiled and sorted into two specific categories: crimes committed by the registered owner of the firearm and firearm crimes committed by someone with a firearm not registered to the end user, such as gang related shootings. This is especially important in the area of gang related shootings since firearms are frequently recovered, linked to past homicides but the holder of the firearms cannot be charged for prior homicides. This information will aid considerably in determining the forensic potential this technology holds for the law enforcement community in the identification of possible suspects in firearm-related crimes.

4. Implementation strategies to be developed collaboratively

The development of a viable commercial implementation strategy for this technology is a necessity. This must be completed in collaboration with officials from the state of California, firearms manufacturers and ID Dynamics. Many different implementation strategies for this technology may be possible. The laser micro-machining could be conducted by each individual firearm manufacturer, a consortium, an independent company, or by the state although the latter possibility is unlikely. These and other scenarios should be prototyped and evaluated prior to any implementation of this technology. The role of the State could be one of developing specific technical detail as to the form and sequence of the micro-serial numbers that would complement the State's firearms databases. The State would also have to ensure that this technology is not proprietary and can be competitively bid by interested parties at a reasonable cost. Ideally these scenarios should be prototyped and evaluated prior to any legislative or commercial implementation of this technology.

5. Technology implementation prototype to be piloted

Prior to implementing this technology statewide, a smaller-scale prototype should be piloted. The ideal scenario for testing such a prototype would involve a group of selected law enforcement agencies equipped with a variety of handguns so that about 3,000 firing pins from assorted handgun models can be evaluated. This number of firearms equipped with micro-machined firing pins should be sufficient to allow for a more accurate evaluation of this technology and allow for interested parties to provide a realistic bid on firing pin manufacturing costs. This study would provide beneficial information as to the time required and cost incurred for the laser machining of micro-characters onto firing pins. It would also address the suitability of such micro-numbers in handguns other than the CHP Smith and Wesson firearms. As an example, Glock firing pins are substantially different and

DEFENDANT'S EXHIBIT 27

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 96 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 14 of 50 Page ID #:1152

have different dynamics. Furthermore if radial and gear code technology is to be contemplated, we need to test the coding structure with realistic serial numbers.

Along with this we would recommend that a survey be conducted as to the utility of this technology in gang and non-gang related shooting incidents and compare this to the current NIBIN technology which images the cartridge cases found at crime scenes and conduct a preliminary automated comparison.

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 15 of 50 Page ID #:1153

INTRODUCTION

When a firearm is discharged, microscopic toolmarks are imparted from the firearms' internal surfaces onto the bearing surface of each bullet and cartridge case. It is these individual toolmarks that forensic firearms examiners scrutinize, through a comparison microscope, to classify and identify the firearm from which these items were fired. More specifically, a microscopic comparison is conducted to determine if a match can be made between the evidence bullet or cartridge case and test-fired specimens obtained from the firearm in question. This identification process is highly time consuming, as the number of microscopic toolmarks that must be compared can vary in position, illumination and orientation, and requires specialized equipment, training and extensive experience.

Basic Firearm Function and Firearms Evidence

Every time a firearm is discharged, a specific series of events occur that in turn leave unique toolmarks on the bullet and cartridge case. When the trigger is depressed the firing pin travels forward, striking either the primer (with center fire cartridge cases) or the rim of the cartridge case (with rimfire cartridge cases). Upon impact, the shape of the firing pin as well as any imperfections and/or residual manufacturing tool marks on the firing pin are transferred into the firing pin impression. This impact initiates the deflagration of the friction-sensitive priming compound. In turn this ignites the gunpowder, causing an instantaneous expansion of hot gases.

The deflagration creates pressure that forces the bullet through and out of the barrel. As the bullet travels down the barrel, and engages the rifling, microscopic imperfections from the barrel's manufacturing processes are transferred to the bullet, creating a series of striations (*striae*).

The increase in pressure also has an effect on the cartridge case, causing it to expand outwards against the chamber walls as well as rearward against the breach face. This expansion causes the transfer of chamber markings onto the sides of the case and as well as breach face markings onto the head or rim of the case and the primer. Additional toolmarks are impressed on the cartridge case as it is extracted and ejected from the action of the firearm. An extractor pulls the cartridge case out of the chamber. This motion will result in extractor markings being produced on the rim of the cartridge case. As it is being extracted, the cartridge case will come into contact with the ejector which will cause it to rotate towards the ejection port. The ejector also produces markings that are left of the head of the cartridge

DEFENDANT'S EXHIBIT 27

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 98 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 16 of 50 Page ID #:1154

case. During ejection, the cartridge case can also sustain toolmarks from contacting the ejection port.

Each ammunition component (bullet and cartridge case) and the markings imparted on these two items during the discharge of a firearm are the key items of firearms evidence. All of the markings created on the ammunition components will contain both class and individual characteristics. *Class characteristics*—generally, manufacturing and design features that are transferred to the bullet or cartridge case—constitute a family of firearms or specific firearms manufacturers. *Individual characteristics* are the markings, imperfections and striae transferred to the cartridge case or bullet that serve as crucial evidence in the identification of a specific firearm.

Micro-machining Technology

Todd Lizotte of ID Dynamics, LLC developed a micro-machining technology that utilized a solid-state ultraviolet laser to machine an array of microscopic characters onto the tip of a firearm's firing pin. By normal standards, the tip of a firing pin is small (typically about 0.075 inches in diameter), however in the micro-machining world this diameter is sufficiently large enough that a wide variety of letters, numbers, symbols and or barcodes can be machined on its surface. These characters are not readily visible to the naked eye, but can be easily viewed under an optical microscope at approximately 20 times magnification or with a scanning electron microscope (SEM). The principle behind this technology is that every time a firearm is discharged, the characters machined on the firing pin will be impressed into the primer or cartridge case rim, thereby allowing for the identification of the gun from which the cartridge case was fired by merely reading off the impressed characters and looking them up in a database of all engraved firing pins and their associated firearms.

Since the advent of this technology, ID Dynamics has continuously made changes to the morphology and arrangement of the micro-characters. The first-generation engraved firing pins contained only an array of alphanumeric characters on the face of the firing pin. Proof of concept testing on this generation of firing pins was conducted by ID Dynamics as well as by George G. Krivosta of the Suffolk County Crime Laboratory in Hauppauge, New York² and Lucien C. Haag of Forensic Science Services.³

DEFENDANT'S EXHIBIT 27

² "NanoTagTM Markings From Another Perspective," Krivosta, George G., Suffolk County Crime

Laboratory, Hauppauge, NY. AFTE Journal, Vol. 38, No. 1, Winter 2006.

³. Ballistic ID Tagging' A Further Look", Haag, Lucien C., Forensic Science Services, Carefree, AZ. PowerPoint Presentation.

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 17 of 50 Page ID #:1155

Subsequently two formats of second-generation firing pins have been produced see Figures 1 and 2 below—each containing three different types of encoding structures. The first of the two formats (*Figure 2*) contained alphanumeric characters on the tip of the firing pin surrounded by a dot code a radial barcode. The second layout (*Figure 1*) was based on the same design as the first; however the dot code was replaced by a gear code.

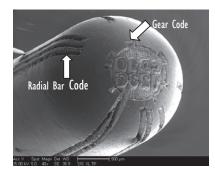


Figure 1

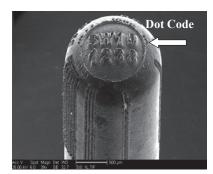


Figure 2

The alphanumeric coding on the tip of the firing was provided in two different formats: uncorrected and corrected. The uncorrected format was such that the characters were directly legible on the face of the firing pin thereby the impressions they left were backwards. The corrected format provided the alphanumeric characters written backwards on the firing pin so that their impression would be directly legible.

According to proposed Assembly Bill 1471 (formerly AB 352),⁴ (missing footnote #4 and need to update) the "make, model and serial number" of every semiautomatic handgun sold in California must be machined on its firing pin. However, due to geometry and size constraints, the manufacturer placing an eight-digit alphanumeric tracking/reference code (i.e., two lines of 4 characters) on the face of the firing pins. By reducing the number of characters machined on the face of the firing pin, the size of each character can be increased which will enhance the legibility of their impressions on the primer. This eight-digit alphanumeric code provides enough possible combinations to allow for an individual tracking code to be assigned to all semiautomatic handguns sold in the State of California. The concept is that a database will be created that will pair the alphanumeric tracking code placed on each firing pin with the make, model and serial number of the firearm in which it is placed. As long as the tracking code in the firing pin impression is legible, a basic database search can be conducted to identify the registered owner of the firearm in question.

⁴. Subsequently chaptered into law in October of 2007.

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 18 of 50 Page ID #:1156

Issues with Laser Machining

The firing pin in a particular firearm is typically unique to that specific make and model of firearm. It is not generally interchangeable with other makes and models of firearms. For this reason, every different geometry of a firing pin will have a unique a fixture that must be manufactured so that it will hold the firing pin perfectly in line with the laser. If this alignment is not obtained, the encoding structure will be improperly placed on the firing pin and/or the encoding structures may be deformed or damaged. This will cause an unsatisfactory or illegible transfer of the encoding structures into the firing pin impression. As this microcharacter laser machining process is still in the developmental stage, the above issues were encountered in five out of the fourteen firing pins that were machined for this study. The manufacturer was notified of these issues and the fixtures were corrected; replacement micro-serialized firing pins were obtained and subsequently used in this research. See appendix B for images and details of specific the issues encountered.

Issues with Firing Pin Machining

For the purpose of this study, we wanted firing pins that came directly from the laser machining without any subsequent process such as deburring, etching, diamond coating and preliminary test firing. Some of the subsequent firing pins provided by the vendor had this deburring/etching process completed. In particular; the process of diamond coating is a common industrial technique to increase the abrasion resistant of a particular tool that is subject to lateral abrasion. The technique consists of placing a very thin coating/layer of diamond like material on the surface of the tool. The mechanism of wear of a firing pin microserial number is impact abrasion and this result is not in surface wear but in structural deformation. Impact deformation results in structural change of the micro engraved numbers and a diamond coating that reduces surface wear would have no effect this structural change. The subsequent result of the CHP pistol tests and their alpha-numeric data shows that these additional machining steps appear to be unnecessary.

The issue is not with the micro-engraved alphanumeric number reproducibility but with the fact that certain combinations of firearms and ammunition will not allow legible reproduction of the micro-engraved numbers, alphanumeric numbers and the radial codes. In this test, only the alphanumeric encoding performed well on

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 19 of 50 Page ID #:1157

the new CHP Smith & Smith & Wesson pistols, the radial bar codes and the dot codes being illegible.

Research Objectives, Methods and Materials

A series of tests were conducted using a sample of readily available firearms to determine (1) the durability and longevity of an array of micro-characters lasermachined onto various firing pins, (2) the effect of repeated firings on the legibility of the imprint of the micro-characters on the spent ammunition, and (3) the ease with which laser-machined micro-characters could be intentionally defaced or obliterated.

Durability and Longevity of Micro-Characters

The initial question regarding the laser-machined micro-characters is their durability to withstand repeated firing. To answer this question, six firing pins for a .40 caliber Smith and Wesson Model 4006 semi-automatic pistol were equipped with second-generation encoding structures (containing the dot code). These six firing pins were documented prior to firing by imaging with a Philips FEI XL-30 Scanning Electron Microscope (SEM). The California Highway Patrol (CHP) Academy provided assistance for the durability study, in that they allowed these firing pins to be installed in six of the Smith and Wesson Model 4006 firearms issued to their cadets. Their assistance was requested because of the number of rounds of ammunition fired by each cadet in a relatively short period of time. During the course of the academy, each recruit fired approximately 2500

Table 1 Encoding Data for Smith & Wesson Firing Pins				
Pin	Alphanumeric	Dot Code	Bar Code	
А	SW10, 1234	20	22	
В	SW10, 1235	19	22	
С	SW10, 1236	21	23	
D	SW10, 1237	21	23	
Е	SW10, 1238	21	20	
F	SW10, 1239	19	21	

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 20 of 50 Page ID #:1158

rounds of ammunition (Winchester Ranger SXT). The alphanumeric encoding structures for all six firing pins were identical except for one character so as to allow for the inter-comparison of the wear patterns on the characters of all six firing pins. The encoding characters for the six Smith and Wesson firing pin are listed in Table 1 above.

The first ten cartridge cases fired from each of the six Smith and Wesson pistols were collected to determine if the character impressions undergo an initial break in period.⁵ Six more cartridge cases from each firearm were collected during the remainder of the cadets' firearms training. Upon completion of the CHP cadets' firearms training, the serialized firing pins were removed and imaged once again utilizing the SEM. A comparison of the firing pins was then conducted utilizing analysis TM imaging software.

Legibility of Impressed Characters

In order to analyze the legibility of the impressed characters in the firing pin impressions, five different semi-automatic pistols (of varying make, model and caliber), two different caliber semi-automatic rifles and one pump action shotgun where chosen. These firearms were:

- Ruger Mark I, .22 Long Rifle (rimfire semi-automatic pistol)
- SeeCamp, .25 ACP-LWS (semi-automatic pistol)
- AMT "Backup", .380 auto (semi-automatic pistol)
- Sig Sauer P229, .40 Caliber (semi-automatic pistol)
- Colt 1911 Government Model, .45 ACP (semi-automatic pistol)
- Colt AR-15, .223 Caliber (semi-automatic rifle)
- Norinco AK-Series, 7.62x39mm (semi-automatic rifle)
- Mossberg 500, 12 gauge (pump action shotgun)

These firearms were chosen based upon their availability as well as to diversify the calibers and quality of firearm tested. For each of the above firearms, a single second-generation (containing gear code) micro-serial numbered firing pin was obtained⁶ and documented using an SEM. Images of all the unfired firing pins are illustrated in Appendix A.)

⁵ A ten round break in period was suggested by Todd Lizotte, ID Dynamics.

⁶ The firing pin for the Ruger, 22LR only contains the alphanumeric encoding structures. This is due to the design of the firing pin and the nature of rim fire firearms. Due to the firing pin geometry for the Norinco, radial bar coding was not possible.

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 21 of 50 Page ID #:1159

Table 2 Encoding Structures for Each Second-generation Firing Pin Tested				
Firearm	Alphanumeric Code	# of Teeth in Gear Code	# of Lines in Radial Bar Code	
Ruger	SR10123K (Single Line of Text)	N/A	N/A	
SeeCamp	SC10, 123C (Uncorrected Format)	7	11	
AMT	AM10, 123E (Corrected Format)	9	12	
Sig Sauer P229	SS10, 1232 (Corrected Format)	7	13	
Colt 1911	CD10, 123G (Corrected Format)	7	11	
Colt AR-15	CD10, 123H (Corrected Format)	8	12	
Norinco AK	NC10, 123D (Uncorrected Format)	9	N/A	
Mossberg	MS10, 123B (Corrected Format)	8	12	

In addition to the testing of this technology with multiple calibers of firearms, there was also a need to conduct testing with different brands of ammunition because of the differences in primer cup composition and primer cup hardness. A study conducted by Fred Tulleners⁷ illustrates the hardness of a primer can vary depending on the manufacturer of the cartridge case. The brands of ammunition chosen for this study were based upon public abundance and availability (see Table 3). For each of the five semi-automatic pistols tested, fifty rounds of each brand of ammunition were fired. Upon completion of the first series of test firing, further test firing was conducted keeping the order of ammunition brand constant. This second test firing sequence allowed cartridge cases of the same brand of ammunition to be compared when fired several hundred rounds apart from one another, allowing for more complete documentation of any possible changes in transfer of the characters to the firing pin impressions. For the two rifles the brands of ammunition were changed every 60 rounds for the first series of test firing, and every 40 rounds for the second test firing. (It should be noted that the order of ammunition brand was kept constant between the two test firing series.) The number of rounds per brand of ammunition was altered in the case of the rifles due to the number of rounds of ammunition per box.

DEFENDANT'S EXHIBIT 27

⁷ "Vickers Hardness Values of Selected 40 S&W Primers," Tulleners, Fred, California Department of Justice, Sacramento, CA; Randich, Erik, Lawrence, Livermore National Laboratories, Livermore, CA; Giusto, Michael, California Criminalistics Institute, Sacramento, CA. *AFTE Journal*, Spring 2003, Vol. 35, No 2, pp. 204-8.

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 22 of 50 Page ID #:1160

Table 3			
List of Firearms and Ammunition Brands Tested			
Firearm	Ammunition Manufacturers		
Ruger, 22 LR	Winchester, Remington, Federal (American Eagle), PMC, CCI Blazer		
SeeCamp, 25 ACP	Winchester, Remington, Federal (American Eagle), CCI Blazer		
AMT, 380 Auto	Winchester, Remington, Federal (American Eagle), PMC, Armscor, Cor-Bon		
Sig P229, 40 S&W	Winchester, Remington, Federal, Speer, PMC, Corbon, CCI		
Colt 1911, 45 ACP	Winchester, Remington, Federal (American Eagle), PMC, Wolf, Armscor, Cor-Bon		
Colt AR-15, .223	Winchester (USA, Military), Remington, Federal, PMC, Golden Bear, Squires Bingham, Corbon ⁸		
Norinco AK, 7.62 x 39 mm	Winchester, Remington (UMC), Federal, PMC, Wolf, Foreign Steel Case		
Mossberg 500A 12 gauge	Winchester, Remington, Federal, PMC, Wolf, miscellaneous		

The test firing series was conducted in a slightly different manner for the shotgun. The first series consisted of 50 rounds of each brand of ammunition and for the second series mixed brand bulk ammunition was used: the brand of ammunition for each shot was random. Prior to the beginning of the test firing process, all ammunition, except for the mixed bulk 12 gauge, was engraved numerically identifying the location in the order of which it would be fired.

Throughout the test firing process, the firing pins were removed and imaged with the SEM. The intervals at which firing pins were imaged are as follows: after one shot, after 10 shots, after 100 shots and upon completion of test firing.

Every cartridge case was analyzed visually utilizing a 7.5-64-power variable magnification Olympus stereo zoom microscope. To reduce the amount of glare and reflection from the metallic surface of the primers, a Schott ring light equipped with a polarizer/analyzer was used. On the majority of the cartridge cases, the impressed encoding characters were best visualized under crossed

⁸ The Cor-Bon ammunition utilized for this research was packaged and distributed by Corbon, but assembled with Remington cartridge cases (headstamp R-P) and unknown primer manufacturer

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 23 of 50 Page ID #:1161

polarized light. This method of examination was chosen, as the stereo zoom microscope is one of the key pieces of instrumentation present in forensic firearms The use of alternative methods such as Scanning Electron laboratories. Microscopy (SEM) or confocal microscopy to identify the illegible characters was not investigated since these instruments are not readily available for the analysis of firearms evidence within forensic laboratories. The purpose of most SEM's in forensic laboratories is for Gun Shot Residue (GSR) and trace evidence analysis, thus the placement of firearms evidence into the sample chamber of the SEM would be prohibited due to GSR contamination issues. A data table was created for each of the firing pins based upon the visual the observation of the cartridge cases and documenting the number of characters from each type of encoding that were readily legible within the firing pin impressions. For any individual alphanumeric character to be counted as a positive transfer, it had to be fully legible; partial character transfers were not counted. For the bar code characters to be counted, both edges of each individual line had to be visible. For the gear code characters to be counted, all three edges of each individual structure had to be visible.

Although the above listed firearms were intended to test the legibility of the impressed characters, micro-character durability and longevity data was also obtained and analyzed as the firing pins were documented throughout the test firing process.

Micro-Character Defacement/Obliteration

The ease in which these micro-characters can be removed or obliterated was questioned. In order to answer this question, two different methods for character obliteration were chosen. The methods were chosen based upon common household tools and objects readily available to the general public. The firing pins that were selected were the AMT .380 Auto and the Sig Sauer P229 semi-automatic pistols.

The first obliteration method tested entailed rubbing the face of the AMT firing pin on the fine-grain side of a household sharpening stone. This method attempted to obliterate the alphanumeric and gear code structures from the firing pin while leaving the radial bar code undamaged. The firing pin was held perpendicular to the fine grain side of the sharpening stone and rubbed back and forth with moderate pressure for 30 seconds. No further action was taken. The firing pin was then installed in the firearm and ten rounds of Winchester ammunition were test fired.

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 24 of 50 Page ID #:1162

In the second obliteration method a 16-oz. ball peen hammer was used to lightly peen the Sig Sauer P229 firing pin containing all three encoding structures. To do so, the firing pin was laid on its side on the anvil portion of a steel bench vice and rolled back and forth while lightly peening the radial bar code. This process was conducted for 15 seconds. The firing pin was then placed with its base on the anvil and the face of the firing pin containing the alphanumeric and gear code structures was lightly peened for 15 seconds. No further action was taken to obliterate the encoding structures. The firing pin was then installed in the firearm and ten rounds of Winchester ammunition were test fired.

DEFENDANT'S EXHIBIT 27

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 107 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 25 of 50 Page ID #:1163

KEY FINDINGS AND DISCUSSION

Durability and Longevity of Micro-Characters

The SEM images of all micro-serialized firing pins were analyzed using analySISTM imaging software. For each firing pin, measurements were obtained (in microns) of the width and height of every alphanumeric character. These measurements were taken prior to test firing, at set intervals throughout test firing, and then once again after test firing: measurements were only taken before and after test firing for the six Smith and Wesson Model 4006 firing pins.

Smith and Wesson Model 4006, 40 S&W Semi-Automatic Pistol

Comparing the measurements of the height and width of the alphanumeric characters before and after firing 2500 rounds of ammunition, only minor changes were seen on all of the firing pins except for Pin F. All of the firing pins showed a softening⁹ of the alphanumeric characters' visual appearance. Two of the alphanumeric characters on firing pin F, "W1", in the top row of text showed a large amount of deformation. Both of the characters where flattened and shifted slightly to the right. The number "6" in the second row of text on firing pin C also showed a slight deformation in character. One other issue noticed amongst the alphanumeric characters was the deposition of foreign material in and around the characters. This deposited material is from byproducts of the discharge of the ammunition as well as from the softer primer material.

The dot code structures surrounding the face of the firing pin showed extreme wear and degradation. On all six of the firing pins, the multiple dot code structures were obliterated from repeated firing, or were filled completely with foreign material: The filling of these structures with foreign material was common to all six firing pins. The majority of the dot code structures did not survive through the full test firing cycle.

The radial barcode structures also showed extreme wear and degradation. First noted was obliteration of the bar code structures near the tip of the firing pin by the firing pin aperture. Enough size difference between the diameter of the firing pin and the diameter of the firing pin aperture (*Figure 3*) was present to allow the firing pin to move from side to side while at full extension during firing. The

⁹ "Softening" describes the smoothing out of the characters' surfaces, rounding of the characters edges, and disappearance of rough/jagged fragments on the characters' surfaces left from the laser machining process.

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 108 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 26 of 50 Page ID #:1164

impact of the firing pin against the walls of the firing pin aperture caused a peening affect, thus pounding a portion of the bar code structures flat (*Figure 4*). This effect was noticed on all six of the firing pins. The remaining portion of the bar code structures between the obliterated section and the tip of the firing pin were filled with deposited foreign material.

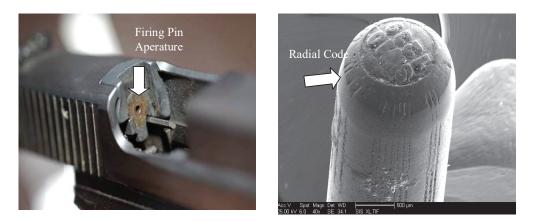


Figure 3

Figure 4

Of the three forms of encoding structures present on the six Smith & Wesson firing pins tested, the bar code structures and dot code structures were the most susceptible to degradation from repeated firing. The alphanumeric encoding structures on the face of the firing pins demonstrated moderate-to-good durability and retention of overall shape, except for the few above-mentioned characters on firing pins C and F. The testing of the durability and longevity of the micro-characters over a period of firing 2500 rounds of ammunition was felt to be adequate in comparison to the average number of rounds of ammunition fired over the lifetime of most semi-automatic pistols. The measurements for the alphanumeric characters and supporting images are illustrated in Appendix C.

Ruger MK I, .22 LR Semi-Automatic Pistol

The evaluation of the micro-machined characters for the Ruger .22 LR firing pin was based upon alphanumeric encoding only, as most of the firing pins for .22 caliber rimfire firearms are not amenable for gear and radial bar code labeling. The first issue to address regarding this firing pin is the quality of its original manufacture. The quality of the alphanumeric characters on this firing pin was inferior to those found on the rest of the firing pins tested. The edges of the

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 27 of 50 Page ID #:1165

characters lacked crispness and their alignment was poor. The largest issue was that the first character in the encoding sequence, "S," was machined off the face of the firing pin. The manufacturer informed the investigators that the geometries to be utilized for this technology on rimfire firing pins had not yet been perfected.

The second issue has to do with the fact that this is a rimfire firearm in which case the firing pin strikes the rim of the brass cartridge case rather than an exposed primer. Thus every time the firearm is discharged; the firing pin is contacting a much harder material. The last issue with the firing pin for a rimfire firearm is that only a portion of the end of a rectangular firing pin strikes the cartridge case, thus allowing for only part of the encoding structures to come into contact with the rim of the case.

This firing pin was test fired for a total of 250 rounds of ammunition. Over this test firing period, the alphanumeric characters showed extreme signs of degradation, so much so that no character dimensions were obtainable. The degradation and deformation of the alphanumeric characters were documented through SEM images only. These images can be seen in Appendix D.

SeeCamp .25 ACP LWS Semi-Automatic Pistol

The alphanumeric characters on the SeeCamp firing pin showed negligible degradation over the course of test firing 394 rounds of ammunition.¹⁰ The only change in the alphanumeric characters that was noted was the softening of the characters' appearance in comparison to their original state. By the completion of the test firing, some build up of foreign debris was noticed in and around the alphanumeric characters.

The gear code structures did not appear to incur any major changes during testing. The only noticeable event was the slight narrowing of the structures; however, this narrowing was not significant.

The radial bar code structures suffered the same degradation as the radial bar codes on the Smith & Wesson Model 4006 firing pins. After ten cartridges were fired, the effects of the firing pin contacting the firing pin aperture were observed. By the completion of the test firing, a section of the radial bar code structures was showing severe peening from this lateral pin movement. The remaining portion of the radial bar code structures, between the damaged section and the tip of the

This malfunction was in no way related to the testing of the laser-machined firing pin.



¹⁰ Test firing of the SeeCamp firing pin was ceased at 394 rounds of ammunition due to firearm malfunction. An integral component within the firearm broke disallowing continued use of the firearm.

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 28 of 50 Page ID #:1166

firing pin, contained deposits of foreign material. All measurements and images for the above results are illustrated in Appendix E.

AMT "Backup" .380 Auto Semi-Automatic Pistol

The appearance of the alphanumeric characters was softened after firing ten rounds. Both the "A" and the "3" showed slight deformation after the completion of test firing 600 rounds of ammunition. The left side of the "A" began to collapse toward the center of the character and the number "3" was slightly flattened and gained in height by approximately 28 microns. Both of these characters were still legible.

The gear code structures showed no major signs of degradation. The deposition of foreign material in the gear code structures was noticed throughout the test firing; however, the location and severity of these deposits were not constant.

The radial bar code structures suffered the same degradation as those on the Smith & Wesson firing pins. After ten rounds had been fired, the effects of the firing pin striking the aperture of the firing pin port were noticed. By the completion of the test firing, a section of the radial bar code structures showed severe peening to complete obliteration from this lateral firing pin movement. All of the radial bar code structures, except one, were damaged all the way to the tip of the firing pin. The data and images for the above results can be seen in Appendix F.

Sig Sauer P229, .40 S&W Semi-Automatic Pistol

The alphanumeric characters on the Sig Sauer firing pin showed signs of softening after ten rounds of ammunition had been fired. Throughout the remainder of 1000 rounds test fired, no major signs of character degradation or deformation were noticed. The number "3" in the bottom row of text showed the most signs of degradation. Large amounts of foreign material deposits were noticed in and around the alphanumeric characters. In some areas these deposits were level with the top of the characters. However, the location and size of the deposits did not remain constant throughout the test firing.

The gear code structures showed minimal to no signs of degradation. Throughout the test firing process, deposits of foreign material were noticed accumulating within the gear code structures. None of the deposits remained constant except for one; the gear code structure directly above the second "S" in the top row of text was almost completely filled with foreign material at 100 rounds of ammunition fired and remained this way through 1000 rounds fired.

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 29 of 50 Page ID #:1167

The firing pin material that separates one radial bar code structure from the next suffered the most degradation within the radial bar code structures. These separating structures began to fail near the tip of the firing pin, creating the appearance of one wide bar code structure as opposed to the intended two structures. However, these separating structures were exceptionally narrow on this firing pin prior to testing. Large quantities of foreign material deposits were visible in the entire length of most radial bar code structures. These deposits were also not constant throughout the test firings. See Appendix G for the data and images for the above results.

Colt 1911, .45 ACP Semi-Automatic Pistol

In the laser machining of this firing pin, the fixture issues were apparently not resolved. The ends of the radial bar code structures are uneven and one set of radial bar code structures continue through the gear code almost reaching the alphanumeric structures. The continuation of these two radial bar code structures causes them to join together at the tip of the firing pin and looked like one wide structure.

The softening of the appearance of the alphanumeric characters on the Colt 1911 firing pin was not noticed until 100 rounds of ammunition were fired. At this point in the test firing sequence a large quantity of foreign debris had been deposited around the alphanumeric characters. By completion of test firing, at 750 rounds fired, no major degradation of the alphanumeric characters was noticed; however, a large quantity of foreign debris was present around the characters making the "3" difficult to visualize.

The gear code structures showed no sign of degradation. Throughout the test firing process, varying quantities of foreign debris deposits were noticed within each gear code structure. The most sever deposits were noticed upon completion of the test firing.

The separating structure between two radial bar code structures, located below the "12" in the second line of text, was the only portion of the radial bar code that showed any degradation. A portion of this separating structure was destroyed within the first 100 rounds fired (This degradation is indicated in the images on page 4 of Appendix H with the white arrows). Throughout test firing, varying quantities of foreign debris were noticed within the radial bar code structures. See Appendix H for data and images associated with the above results.

DEFENDANT'S EXHIBIT 27

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 112 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 30 of 50 Page ID #:1168

Colt AR-15, .223 Semi-Automatic Rifle

The alphanumeric characters on the Colt AR-15 firing pin were not as rough before firing as those on some of the other firing pins. This was due to a secondary process performed by ID Dynamics to remove unwanted debris left behind by the laser machining process. Even with the removal of the machining debris from the face of the firing pin, a softening of the alphanumeric characters was noticed after 10 rounds were fired; after 100 rounds, there was noticeable degradation. The top of the number "1" in the bottom row of text was beginning to disintegrate and the rest of the characters, except for the "C", were beginning to flatten out. Upon completion of test firing, through 760 rounds of ammunition, all of the alphanumeric characters had begun to flatten and lose surface material.

The only sign of degradation exhibited by the gear code structures was a softening in their edges. Deposits of foreign material were minimal throughout test firing except for one of the gear code structures after 760 cartridges were fired, the one directly to the right of the number "1" in the bottom line of text, had been filled with a foreign substance.

Throughout the test firing, the quantity of foreign material deposition present in the radial bar code structures increased to a maximum upon completion of the test firing. See appendix I for the data and images for the above results.

Norinco AK, 7.62x39mm Semi-Automatic Rifle

All of the encoding characters on the Norinco AK firing pin were extremely crisp prior to firing. After ten cartridges had been fired, a softening of the alphanumeric characters was noticeable. Also, at ten rounds fired, the right side of the letter "N" was beginning to slant to the left and the letter "D" was beginning to rotate clockwise on the base. Imaging at 100 and 600 rounds of ammunition fired revealed the continued deformation of the letters "N" and "D" as well as the elongation of the letter "C" and the number "3." Various quantities of foreign deposits were seen throughout test firing, however at 600 rounds, severe deposition of foreign material had accrued, covering over half of the letter "N" and the number "1" (in the bottom row). All alphanumeric characters were readily legible upon completion of test firing except for the "N" and "1". The "D" could potentially be mistaken for a deformed "0" or "O".

The gear code structures showed discernable signs of degradation. Throughout test firing, varying quantities of foreign material deposits were observed. The most severe deposits were seen after 600 rounds by which point three of the structures

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 31 of 50 Page ID #:1169

were completely filled and not readily visible and a fourth partially filled but still visible. The images and data for the above results are illustrated in Appendix J.

Mossberg 500A, 12 Gauge Pump Action Shotgun

Post machining, secondary processes were conducted on the Mossberg firing pin by the manufacturer to remove unwanted debris left behind by the laser machining process. No noticeable changes occurred to the alphanumeric characters after 10 rounds of ammunition were fired. After 100 rounds, a softening of the characters was noticeable. At this point, minor degradation to the number "1" in the top row was observed as a loss of material in the center of the character. Also at this point minor deposition of foreign material around the characters was noticed. In the images taken upon the completion of the test firing, after approximately 850 rounds fired, significant flattening of the characters was noticed. The spacing between the top and bottom rows of text had collapsed, as had some of the spacing between the characters in each row. At this point a larger quantity of deposited foreign material had accrued around the alphanumeric characters.

Throughout test firing, varying quantities of foreign material were deposited in the gear code structures. After 100 rounds, damage to the face of the firing pin was noticed, consisting of a small depression that caused the narrowing of the gear code structure located above the number "1" in the top row. Through the remainder of the test firing the edges of the gear code structures were rounded causing a slight change in their dimensions.

The radial bar code structures showed no visible sign of degradation; however, throughout test firing varying quantities of foreign material deposits were visible. The quantity of foreign material present in the radial bar code structures was not constant. See Appendix K for images and data for the above results.

Legibility of Impressed Characters

Each firearm tested produced a unique shape and depth of firing pin impression. Due to this variation in the firing pin impressions the results for the legibility of the impressed characters will be presented separately for each firearm.

There were three main factors that contributed to the quality of the impressed characters as well as the quantity of the characters that were transferred: depth of firing pin impression, firing pin drag and multiple strikes of the firing pin in the

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 32 of 50 Page ID #:1170

same impression. Firing pin drag is caused by the cartridge case beginning its ejection prior to the firing pin being fully retracted from the firing pin impression. This causes the firing pin to be drug out of the firing pin impression and across part of the surface of the primer. In some instances this action obliterated some of the transferred characters. Firing pin drag did not occur on all of the firearms tested.

Firing pins striking more than once in the same firing pin impression can cause several different issues. Each time the firing pin strikes the primer it does not strike in the exact same location as the original impression. The method by which the firing pin is secured in the firearm as well as the design of the firearms bolt assembly will dictate the impending results, the character orientation and location of each subsequent strike. The analysis of cartridge cases that were struck more than once by the firing pin was conducted in a specific manner. Many of the cartridge cases containing multiple firing pin strikes showed more legible characters than are present on the firing pin. In these cases, whichever strike produced the greatest number of impressed legible characters was counted. Any legible characters produced by one of the other firing pin strikes were not counted.

Smith and Wesson Model 4006, .40 S&W Semi-Automatic Pistol

Seventeen cartridge cases were collected, throughout the micro-character longevity study from each of the six Smith & Wesson firing pins tested. All six Smith & Wesson firearms produced, on average, firing pin impression of sufficient depth to allow for the engagement of all three types of encoding structures with the primer. Instances of multiple firing pin strikes in the same impression were observed in at least two of the cartridge cases collected from each firing pin. Firing pin drag was also observed from each of the six firing pins tested. In the majority of instances, where firing pin drag was observed, it was responsible for the obliteration of some of the transferred characters.

The alphanumeric characters, for the cartridge cases from all six firing pins, showed an average overall transfer rate of 90%. The percent transfer for any one cartridge case ranged from a complete transfer (100%) to as low as a 38% transfer. The crispness of the alphanumeric characters impressions was diminished through continued firing. This was especially noticed in the evaluation of the first 10 cartridge cases. No discernable overall pattern was identifiable for their transfer rate. The deformation of the "W1" seen on the firing pin had a direct affect on the transferred characters. The flattened "W1" caused these two characters as well as the "S" and the tops of the "2" and "3" not to be legible in the impression.

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 33 of 50 Page ID #:1171

The dot code structures were the most difficult of the encoding structures to visually identify in the firing pin impressions. An average overall transfer rate of 62% was observed. The percent transfer of dot code structures for any one cartridge case ranged from a complete transfer (100%) to no transfer (0%). A general decreasing trend throughout test firing was noticed in the transfer rate of the dot code structures for all of the firing pins except for firing pin F. The transfer rate of the dot code structures for pin F was sporadic. This decreasing transfer rate can be attributed to the accumulation of foreign debris within the dot code structures.

The transfer of the radial bar code structures to the firing pin impression was directly dependent upon the depth of the firing pin impression. All instances where zero impressed bar code structures were identifiable, the firing pin impression lacked sufficient depth to allow the radial bar code to engage the primer. The average overall transfer rate of 66% for the radial bar code structures was observed. The percent transfer for the number of radial bar code structures transferred to any one cartridge case ranged from a complete transfer (100%) to no transfer (0%). The transfer rate for each of the six firing pins was sporadic, except for firing pin E that showed a general decreasing transfer rate. The quality of transfer of the radial barcode structures. The peening of a section of radial barcodes by the firing pin aperture caused the transferable length of each bar code structure to be greatly shortened. All tables, graphs and images for the above results are illustrated in Appendix C.

Ruger MK I, .22LR Semi-Automatic Pistol

Given the nature of this rimfire firing pin and firearm design, it was determined that a maximum of five out of the eight alphanumeric characters can contact the rim of the cartridge case, thus providing a maximum possible transfer rate of 63%. Over the 250 rounds of ammunition test fired, the average transfer rate of legible alphanumeric characters was 16%. The percent transfer rate for any one cartridge case ranged from no transferred characters (0%) to a maximum observed transfer rate of 38%. The transfer rate of these alphanumeric characters demonstrated an overall decreasing trend over the course of test firing. This decrease in character transfer rate can be directly correlated to the continual degradation of the alphanumeric characters seen on the firing pin throughout test firing. None of the impressions contained a readily legible "S". The lack of this character's presence in the firing pin impression is due to the character being improperly machined off of the face of the firing pin.

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 34 of 50 Page ID #:1172

Seventy-eight out of the 250 cartridge cases analyzed showed instances where the firing pin struck more than one time in the same impression. These multiple strikes of the firing pin made the characters, already difficult to decipher, more difficult to interpret. This same situation of multiple strikes of the firing pin along with insufficient and poor quality character transfer, by a .22 caliber rimfire, was observed in a study conducted by Krivosta.¹ All data and images for the above results are illustrated in Appendix D.

SeeCamp, .25 ACP LWS Semi-Automatic Pistol

The major issues facing the rate and quality of character transfer for this firearm were the shallow firing pin impressions, multiple strikes of the firing pin within the same impression and flowback. Flowback is the bulging of the primer into and around the firing pin port. This is caused by a combination of the firearm design, weak primer cup material and the high pressure in the cartridge case upon discharge. Flowback was noticed with all brands of ammunition tested; Remington produced the most severe. On cartridge cases with nickel plated primers, the flowback caused this plating to crack, thus increasing the difficulty of impressed character identification.

Of the 394 rounds of ammunition fired, 356 of the cartridge cases showed multiple strikes of the firing pin within the same firing pin impression. In the majority of the multiple strike impressions, the subsequent firing pin strikes displayed a lateral movement. This lateral movement, in some instances, created impressions that appeared to contain more characters in each row of alphanumeric text than were actually on the firing pin. Multiple instances of impressions appearing to contain two rows of five or six characters were observed. This firearm also failed to discharge multiple rounds of ammunition in all brands of ammunition except for Winchester. The ammunition showing the worst failure to discharge rate was CCI Blazer: thirty out of fifty rounds of CCI Blazer ammunition tested failed to discharge.

The alphanumeric characters on this firing pin displayed an average overall transfer rate of 78%. The percent transfer rate for any one cartridge case ranged from a complete transfer (100%) to a minimum transfer of 13%. No overall pattern was identifiable for the transfer percentage of the alphanumeric characters. Each brand of ammunition tested demonstrated a different transfer rate.

The quantity and quality of gear code structures that were identifiable in the firing pin impressions were directly related to the depth of the firing pin impression and the extent of flowback. With increased flowback, the legibility of the gear code structures decreased. An average overall transfer rate of 58% was documented for

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 35 of 50 Page ID #:1173

the transfer of gear code structures. For any one cartridge case a range from complete transfer (100%) to no transfer (0%) was observed for the gear code structures. No discernable overall pattern was noticed for the transfer rate of the gear code structures throughout test firing: the transfer rate was ammunition brand specific.

The radial bar code structures on the SeeCamp firing pin did not transfer to a single cartridge case. This total lack of transfer for this encoding structure was due to the shallow depth of the firing pin impression. The depth of all of the firing pin impression for this firearm was insufficient to allow the radial bar code structures to engage the primer. All data and images for the above results can are illustrated in appendix E.

AMT "Backup" .380 Auto Semi-Automatic Pistol

The only major issue facing the transfer of the encoding structures on the AMT firing pin was shallow firing pin impressions. Throughout the test firing, 224 out of the 700 rounds of ammunition fired showed signs of multiple firing pin strikes in the same firing pin impression.

The alphanumeric characters transferred with an average overall transfer rate of 95%. The transfer rate for any one cartridge case varied from a maximum of 100% to a minimum of 25%. The transfer rate remained relatively constant throughout test firing, except for test fires conducted with Armscor and Corbon ammunition. These two brands of ammunition showed a 10% decrease in the transfer rate.

The gear code structures transferred at almost the exact same pattern as the alphanumeric characters, demonstrating a fairly constant transfer rate except when test fires were conducted with Armscor and Corbon ammunition. The average overall transfer rate for the gear code structures was 94%. The transfer rate for any one cartridge case ranged from a maximum of 100% to a minimum of 22%.

The transfer of the radial bar code structures showed a completely different transfer pattern. The first fifty rounds of ammunition fired demonstrated an average barcode transfer rate of 43%, with a range from 0% to 92% for any one cartridge case. The remaining 650 rounds of ammunition test fired showed a significant drop in the transfer rate of the alphanumeric characters. The average transfer rate for test fires 51-700 was just over 1%. The depths of the firing pin impressions were too shallow to allow for the radial bar code structures to engage the primer. The data and images related to the above results are illustrated in Appendix F.

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 36 of 50 Page ID #:1174

Sig Sauer P229, .40 S&W Semi-Automatic Pistol

The major issue that affected the legibility of the impressed characters for the Sig Sauer P229 firing pin was firing pin drag. Every brand of ammunition tested, showed signs of firing pin drag, indicating that this is a result of the firearm's function rather than being ammunition brand specific. The gear code and radial bar code structures suffered the most damage from the firing pin drag, however in some cases the alphanumeric characters were affected as well.

Some ammunition manufacturers stamp an identifying character into the surface of the primers placed in their ammunition. Of the ammunition brands tested in this study, CCI Blazer and Speer contained primer stamps. These primer stamps interfered with the transfer and subsequent legibility of the impressed encoding structures. Multiple strike situations were also noticed, but only in 113 cartridge cases out of the 1000 rounds of ammunition test fired. The transfer rates for all three encoding structures followed almost the exact same ammunition brand based trends. CCI Blazer and Remington ammunition produced the worst transfer rates.

The alphanumeric characters showed an overall average transfer rate of 94%. The transfer rate for any one cartridge case ranged from a complete transfer (100%) to a minimum of no legible transfer (0%). The transfer rate of these characters was directly dependent upon the brand of ammunition being tested as well as the severity of the firing pin drag.

The gear code structures provided an overall average transfer rate of 88%, with a range from complete transfer (100%) to as low as 14%. The legibility of the transferred gear code structures was also dependent upon the presence and severity of firing pin drag as well as the brand of ammunition being tested. No correlation was present between the transfer rate of these characters and the number of rounds of ammunition fired.

The radial bar code structures transferred at a much lower percentage when compared with the other two encoding structures. However, the same patter of transfer rate based upon ammunition brand was observed. The overall transfer rate for the radial bar code structures was 29%, ranging from 0-69% for any one cartridge case. All data and images for the Sig Sauer P229 results are illustrated in Appendix G.

Colt 1911, .45 ACP Semi-Automatic Pistol

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 37 of 50 Page ID #:1175

As previously documented by Krivosta¹, the micro-character impression for the Colt 1911 collected in this study demonstrated a high rate of multiple firing pin strikes in each firing pin impression. Out of the 750 rounds of ammunition test fired 459 of the tests revealed multiple strikes within the same firing pin impression. This was the major issue facing the legibility of impressed characters for this firing pin.

The alphanumeric characters transferred with an overall average rate of 76%, ranging from no transfer (0%) to complete transfer (100%) for any one cartridge case. Around 100-150 rounds of ammunition fired the number "3" began to loose legibility. This decrease in legibility can be associated with the deposition of foreign material seen on the firing pin beginning at 100 rounds of ammunition fired. The transfer rate for the alphanumeric characters was dependent upon the brand of ammunition being tested.

The gear code structures transferred with an average overall rate of 90%. The transfer rate of these structures for any one cartridge case ranged from 57% to 100%. The transfer rates for the gear code structures closely followed the ammunition brand specific pattern.

The radial bar code structures once again showed the lowest transfer rates of the three encoding structures, but still followed the same pattern as that seen with the other two types of encoding structures. The radial bar code produced an overall average transfer rate of 59%, ranging from 0% to 91%. The initial micro-machining errors on this firing pin precluded a complete transfer of the radial bar code structures. The two adjacent bar code structures that did not remain separated at the tip of the firing pin transferred into the firing pin impression as a single bar code structure that was twice as wide as the rest. Since only one large structure was legible, instead of two narrower structures, it was counted as one line. The data and images for the Colt 1911 45 ACP results are illustrated in Appendix H.

Colt AR-15, .223 Semi-Automatic Rifle

Out of the 760 rounds of ammunitions test fired with the AR-15 firing pin only 77 of them had multiple strikes within the same firing pin impression. Golden Bear and Remington ammunitions caused shallow firing pin impressions. This reduction in firing pin impression depth was observed both times each ammunition was tested. Trends for the transfer rates of all three types of encoding structures were noticed following similar patterns specific to the brand of ammunition being tested.

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 38 of 50 Page ID #:1176

The alphanumeric characters had an observed overall average transfer rate of 88%. The transfer rate for any one cartridge case ranged from no transfer (0%) to complete transfer (100%). A decreasing trend in the transfer rate of the alphanumeric characters was seen over the course of test firing.

The gear code structures on this firing pin transferred with great success. This can be attributed to the lack of firing pin drag and few instances of multiple strikes within the same impression. The overall average transfer rate for the gear code structures was 100%, ranging for any one cartridge case from 75% to 100%.

The transfer rates for the radial bar code structures varied greatly between each brand of ammunition tested. Upon repeated testing, the transfer rate observed for each brand of ammunition was seen to be the same. The overall average transfer rate for the radial bar code structures was 45%. The transfer rate for any one cartridge case ranged from 0% to 92%. The two brands of ammunition that caused shallow firing pin impression showed the lowest transfer rates for the radial bar code structures. The data and images for the Colt AR-15 results are illustrated in Appendix I.

Norinco AK-Series, 7.62x39mm Semi-Automatic Rifle

Without the incorporation of radial bar code structures, the Norinco AK firing pin was evaluated based on the transfer rates of the alphanumeric and gear code structures. This firearm demonstrated the most severe instances of multiple firing pin strikes in the same firing pin impression. Every cartridge case collected had been stuck multiple times by the firing pin. The severity of these multiple strike situations were enhanced due to the change in direction of each impression. Each time the firing pin struck the primer, during one cycle of the firearm, the orientation of the encoding structures was different. This made the identification of the encoding structures impression extremely difficult.

The alphanumeric characters had an overall average transfer rate of 41%. The transfer rate for any one cartridge case ranged from 0% to 100%. These characters showed a decreasing trend in transfer rate through continued test firing. Each brand of ammunition provided a different transfer rate between the first and second test firing, except for the foreign steel case ammunition. The foreign steel case ammunition showed very similar transfer rates between the first and second test firing. The degradation that was noticed on the firing pin was transferred to the quality of its impression. In many of the impressions, the deformed "D" looked like a "0" or "O" in the impression. The other degraded alphanumeric characters increased the difficulty of interpreting the impression. It was not apparent if the deposition of foreign material on the firing pin affected the transfer

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 39 of 50 Page ID #:1177

of the characters into the firing pin impression, due to the severity of the multiple strikes of the firing pin.

The gear code structures followed the same decreasing transfer rate trend and ammunition dependent transfer rates as that of the alphanumeric characters. The overall average transfer rate was 52%, ranging from 0% to 100%. The effects of the foreign material deposits that were seen in the gear code structures could not be identified, once again due to the affects of the multiple strikes of the firing pin. Each additional strike of the firing pin made the identification of the gear code structures very difficult, and in many cases their orientation unknown. The data and images for the Norinco AK results are illustrated in Appendix J.

Mossberg 500A, 12 gauge Pump Action Shotgun

The impressions created from the Mossberg firing pin showed a decreasing trend in the transfer rate in two of the encoding structures: the alphanumeric and gear code structures. These two encoding structures followed similar decreasing patterns. No correlations between transfer rate and the brand of ammunition can be drawn, as each brand of ammunition was only fired once: the first 300 rounds of ammunition fired. The remaining 552 rounds of ammunition fired can only provide individual and overall transfer rates, as the ammunition utilized was of mixed brands and the order of firing was random. One further issue facing the legible transfer of the encoding structures was the presence of oxidation on the surface of some of the primers. The oxidation filled many of the impressions preventing the impressed characters from being identified: the oxidation also hindered the viewing of the impression with cross-polarized light. Throughout test firing 172 of the 852 rounds of ammunition fired showed signs of multiple firing pin strikes. Shallow firing pin impressions were also seen in roughly 100 of the shot shells collected.

The alphanumeric characters transferred at an overall average rate of 50%, ranging from 0% to 100% for any one shot shell. The degradation and flattening of the characters seen on the firing pin was also observed in the impressions. Beginning at around 150-200 rounds of ammunition fired the quality of the impressed characters began to rapidly decrease. The transfer rate for the alphanumeric characters in the first fifty rounds of ammunition fired was 98%, decreasing to a transfer rate of 16% for the last 50 rounds of ammunition fired.

The overall average transfer rate for the gear code structures was 67%. The transfer rate for any one shot shell ranged from 0% to 100%. The transfer rate of the gear code structures decreased with increased test firing; this can be correlated

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 40 of 50 Page ID #:1178

to the identified degradation of these structures and deposition of foreign material with in them.

The transfer of the radial bar code structures to the primer provided no increasing or decreasing trend. The average overall transfer rate for these structures was 63%, ranging from 0% to 100% for any one shot shell. Instances of shallow firing pin impression depth directly affected the percent transfer of the radial bar code structures. See Appendix K for data and images supporting the Mossberg 500A results.

Micro-Character Defacement/Obliteration

Due to the location of the firing pins within the firearms, defacement of the microcharacters while the firing pin is in the firearm will be extremely difficult. The two micro-machined firing pins that were defaced in this study were removed from the firearm.

The time and tools required for the removal of a firing pin varies between firearms. Table 4 lists the time and tools required to remove and immediately replace the firing pin in all of the firearms utilized in this study.

Table 4 Time and Tools Required to Remove and Replace Firing Pins			
Firearm	Tool Required to Change Firing Pin	Time	
Ruger, .22 LR	3/32" punch	4 min., 30 sec.	
SeeCamp, .25 ACP	1/16" punch, needle nose plies	3 min.	
AMT, .380 Auto	1/8" roll pin punch, hammer, bench block	1 min	
Sig P229, .40 S&W	3/32" punch, hammer, bench block	3 min.	
Colt 1911, .45 ACP	1/8" punch	30 sec.	
Colt AR-15, .223 caliber	No tools required	1 min.	
Norinco AK, 7.62x39mm	1/16" punch, hammer, bench block	1 min., 15 sec.	
Mossberg 500A, 12 gauge	1/16" punch, 1/8" punch, hammer, bench block	3 min.	

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 123 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 41 of 50 Page ID #:1179

AMT "Backup", .380 Auto Semi-Automatic Pistol

The AMT firing pin was chosen for the defacement test due to the overall shallow firing pin impressions precluding the transfer of the radial bar code structures. One of the intentions of ID Dynamics for machining the radial bar code onto the firing pins was to allow for the transfer of potentially identifying characters in the event that the characters on the face of the firing pin were damaged or intentionally removed. The method of defacement for this firing pin was chosen to test when the alphanumeric characters and gear code structures were removed, whether or not the radial bar code structures would be transferred into the firing pin impression.

The rubbing of the firing pin for 30 seconds on the sharpening stone completely removed the alphanumeric and gear code structures while leaving the radial bar code structures intact. Of the ten rounds of ammunition test fired none of the impressions contained any of the encoding structures, except for one. Cartridge case number seven had two out of the nine radial bar code structures transfer, however they were very faint.

The defacement method was successful and it was documented that even with the removal of the encoding structures from the face of the firing pin the firing pin impressions were too shallow to allow for the transfer of the radial bar code structures. The transfer data and images of the defaced AMT 380 Auto firing pin and cartridge cases are illustrated in Appendix L.

Sig Sauer P229, .40 S&W Semi-Automatic Pistol

The Sig firing pin was chosen for defacement because the majority of the cartridge cases in the legibility study contained impressions of all three encoding structures. The method chosen for the obliteration of the encoding structures on this firing pin was intended to observe the transfer rate upon defacement of all three encoding formats.

The light peening of the encoding structures, for an overall time of 30 seconds, was a successful method of defacement. Through ten rounds of ammunition test fired, no alphanumeric characters were legible in the firing pin impressions. The gear code structures transferred with an average rate of 21%. At least one gear code structure was visible in each impression. Five out of the ten firing pin impressions contained 1 out of the eight radial bar code structures. The transfer data and images of the defaced Sig Sauer firing pin and cartridge cases are illustrated in Appendix L.

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 42 of 50 Page ID #:1180

Blind Test of Impressed Character Legibility

All character legibility and character transfer data for this study was collected by this author. The author having knowledge of exactly what characters and number of encoding structures were present on each firing pin prior to the observation of their subsequent impressions, analyses of a select number of cartridge cases by impartial parties were conducted to remove any biased conclusions. To conduct this blind test, two cartridge cases were chosen from each of the firearms tested in this study (except for the Smith and Wesson Model 4006 firearms tested at the CHP Academy) for a total of 16 cartridge cases. Table 5 seen below lists the cartridge case number selected for each of the firearms.

Table 5 List of Cartridge Case Numbers Chosen for Blind Test			
Firearm	Cartridge Case Number		
Ruger	53,93		
SeeCamp	76, 177		
AMT	4, 104		
Sig Sauer	9, 70		
Colt 1911	29, 215		
Norinco	126, 130		
Colt AR	24, 183		
Mossberg	51, 680		

The cartridge cases selected for this test were chosen to demonstrate different quality and quantity of micro-character legibility.

Prior to analysis, each of the test participants were provided with a general description of the geometry of the different types of micro-characters that were machined on the second-generation firing pins. A variable magnification stereomicroscope equipped with a ring light and polarizing filter was used for the analyses. The participants were instructed to view each cartridge case and record the number of characters from each encoding format that were legible. This data was then directly compared to the transfer data obtained by this author for each of the sixteen cartridge cases used in this test.

The results obtained from this test varied by participant. The results obtained by this author and those obtained by the two participants in this test were placed into

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 43 of 50 Page ID #:1181

bar graphs so as a direct comparison of transfer results for each encoding format from each cartridge case analyzed could made. The analysis of these comparisons shows variability in the interpretation of the impressed characters. For the sixteen cartridge cases forty-eight comparisons were made. In only nine of the forty-eight comparisons did the results obtained by the two test participants, match those obtained by this author. In the remainder of the comparisons at least one of the sets of results differed, with fourteen comparisons in which all three sets of transfer data differed. The comparisons of these results are illustrated in appendix M.

This blind test demonstrates the occurrence of variability in the transfer data results obtained through visual analysis of the micro-characters' impressions. Each individual that analyzes these cartridge cases will potentially obtain different results. This is due to each individual's interpretation of the "legibility" of the encoding structures and alphanumeric characters.

The concept of laser-machined micro-characters on firing pins explored by ID Dynamics can be a feasible technology. Overall, the alphanumeric characters and the gear code structures proved to be capable of withstanding repeated firing, however, some degradation of the structures was seen with specific firearms. Since varying amounts of degradation of the micro characters was observed between all of the firearms tested, a determination of what constitutes an acceptable lifespan for these characters needs to be developed. Further research and development are required for the use of this technology on rimfire firing pins.

The dot code structures tested on the Smith and Wesson firing pins were determined to be an unsuitable form of encoding structure for this technology. Due to their relatively small dimensions (in comparison to the other encoding structures) they suffered severe degradation as well as severe deposition of foreign material making them illegible on the firing pin. These same issues were realized by the manufacture and were the reasons for the change to the gear code structures on the second-generation firing pins.

The radial bar code structures withstood repeated test firing overall, however issues with specific firearms were noted. The flattening/obliteration of a portion of the radial bar code structures by the continual contact with the firing pin aperture was observed on eight out of the fourteen firing pins tested: the SeeCamp 25 ACP, AMT 380 Auto and all six of the Smith & Wesson Model 4006. Since a limited number of firearms were tested in this study, it is unknown how many different firearms will produce this same result. A second issue facing the radial bar codes arose with the observed degradation of the separating structures between groups of bar code structures on the Sig Sauer firing pin. It was unknown if this degradation was a result of these separating structures being machined too narrow,

43 DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 44 of 50 Page ID #:1182

or if it was due to the material from which the firing pin was manufactured. This degradation will directly affect the width of the radial bar code structures as well as their impressions, thereby directly affecting the legibility and potential decoding.

The quality and legibility of the impressions of the three encoding formats were firearm and ammunition brand specific. Each firearm demonstrated a different transfer pattern. The function and design of each firearm affected the manner in which the firing pin struck the primer or rim of the cartridge case, thereby controlling the depth of the firing pin impression and the presence or absence of firing pin drag, multiple strikes of the firing pin and flowback.

Three of the firearms tested showed signs of decreasing overall transfer rates throughout test firing, however the transfer rates for each of the encoding formats was seen to be directly dependent upon the brand of ammunition tested. Each brand of ammunition provided a different transfer rate that can be seen in the "Encoding Structures Transfer Trend" graphs locate in the appendix for each firearm. In most all instances the transfer rate for each brand of ammunition was constant upon repeated test firing. The testing of such a wide array of ammunition brands demonstrated that the brand of ammunition utilized plays a direct role in the percent transfer and legibility of the micro-characters. Unfortunately, the brands of ammunition available to the public are most likely uncontrollable.

It was demonstrated that the encoding structures on the firing pin can be damaged or obliterated with relative ease once the firing pin is removed from the firearm.

The alphanumeric encoding format is currently the only one of the three encoding structures utilized on the second-generation firing pins that will allow for the potential identification of a firearm. ID Dynamics could provide no information regarding the reading and decoding the impressed radial bar code and gear code structures. This lack of information precludes the analysis, assessment and viability of these two encoding formats.. Without decoding protocols, it is unknown what factors and quantity of degradation will negate a positive identification of a firearm from these two encoding formats. The results provided in the text above and in the appendices only provide the quantity of the radial bar code and gear code structures that were transferred into each firing pin impression. No data was collected regarding changes in the dimensions and or spacing of the structures for these two encoding formats. In order for the radial bar code and gear code firing pins, the methods for reading and decoding these two encoding formats must be obtained from the manufacturer and tested.

Estimated Costs for Firing Pin Fabrication

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 45 of 50 Page ID #:1183

We developed cost estimations based upon two scenarios. The cost estimates assume a large production effort and serialization of numerous firing pins. The details of the cost estimate and the source of the data is listed in <u>Appendix N Estimated Cost for Equipment Setup and the Machining of Micro-Serialized Firing Pins</u>. These costs assume full-scale production of serial firing pin for all new handgun sold in California. If micro-serial requirement applies only to a few selected new models, one can logically expect a dramatic increase in manufacturer production costs which would invalidate the cost efficiencies we used in our estimate.

Scenario 1:

Stand alone processing station capable of engraving 100-200 firing pins per day. First year cost per engraved firing pin - $\underline{\$7.87}$

Scenario 2:

Fully automated processing station, capable of engraving 1000 plus firing pins per day. First year cost per engraved firing pin <u>-\$6.72</u>

These costs are very conservative costs and can be much higher. In fact, <u>if additional</u> processing steps are added such as deburring, etching, and diamond coating, then the end cost can be much more than what has been calculated in Appendix N

External Review of the Micro-Serial Number Report.

The initial report submitted to the CPRC was reviewed by three external reviewers; Lucian Haag, a well known independent firearms expert, and former president of the Association of Firearms and Toolmark Examiners (AFTE) and Simon A. Cole and George Tita from the UC Irvine Department of Criminology, Law & Society, School of Social Ecology. These unedited reviews and the responses to some of the suggestions appear in <u>Appendix O. External Review of the Micro-Serialized Report</u>.

In summary Mr. Haag said: "The research presented not only fulfills the general objectives stated in the Report but goes beyond in that it also addresses the second generation micro-serialization---" "The authors clearly understand forensic science and forensic firearms evidence. Their appendices also demonstrate skilled use of stereo microscopes and scanning electron microscopes. Other forensic scientists should have no difficulty in reaching similar conclusions from a detailed inspection of the data and illustrations in this Report".

Professor Cole said: "This is a comprehensive and informative report. The research was performed appropriately and competently, and the report clearly and coherently reports the results of the research". "The investigators have appropriately performed the research they set out to do. They have also addressed some important issues that I do not recall from the original proposal (e.g., Recommendation #3, which is excellent and insightful".

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 46 of 50 Page ID #:1184

Professor Tita said: "I have found the research report to be written in a clear and concise manner ----. The authors have also done a solid job in fulfilling the stated purpose of the originally funded research proposal. It is my opinion that the report provides extremely valuable information with regards to the pending legislation regarding the implementation of a micro-imagine process for firing pins on all guns sold in California (Assembly Bill 1471). The research findings and recommendations, all of which are supported by the careful and compelling analyses conducted by the authors, clearly demonstrate that funding such a program would be wasteful without further research".

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 47 of 50 Page ID #:1185

POLICY IMPLICATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

The finding of this study have direct implications for the Crime Gun Identification Act of 2007's (AB 1471's) proposed application of second-generation microserialized firing to all semiautomatic handguns sold in the state of California. As shown, while micro-stamping technology works with some firearms, it does not perform equally well for every encoding format or in every semiautomatic handgun. As only a limited number of firing pins, encoding sequences, and firearms were tested in this study, it is unknown how this emerging technology would function across the board in relation to all the different makes and models of semiautomatic handguns sold in California each year. Given this uncertainty this research suggests that is this technologies current stage of development it is likely inadequate to provide the satisfactory transfer of the micro-character from all firearms currently on the California Safe Handgun List. To determine if any other firearms equipped with this technology will inadequately provide a satisfactory transfer of the micro-characters, one of every make and model of semi-automatic handgun sold in the state of California would have to be tested. This would implicate that over 2000 different firearms would have to be equipped with micro-serialized firing pins and thoroughly tested.

Furthermore, it must be determined if the current placement of an eight-digit alphanumeric code (consisting of two lines of four characters) on the face of the firing pin will accurately allow for the inclusion of sufficient information to create a searchable database associating this encoding format with the "make, model and serial number of the pistol" as required by AB 1471 (and by AB 352. *At the present time, therefore, because its forensic potential has yet been fully assessed, a mandate for the implementation of this technology in all semiautomatic handguns sold in the state of California is counter-indicated. Further testing, analysis, and evaluation are required.*

Several areas calling for further research recommend themselves, including:

1. Criteria to determine the transfer rate required for identification

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 48 of 50 Page ID #:1186

The data collected for each cartridge case in this study only provides the transfer rate of each encoding format. In order for this information to be useful, criteria need to be set stipulating exactly what transfer rates (for each encoding format) constitute a sufficient quantity of characters to allow for the potential identification of the firing pin that produced them. These criteria should be created in conjunction with practicing firearms examiners, the state of California and the personnel responsible for the creation of the database for this technology.

2. Decoding protocols for properly interpreting radial bar and gear codes

At the current time no protocols have been provided regarding the proper interpretation of the radial bar codes and gear codes. Without such protocols the impressions of these encoding structures are nothing more than that: impressions. Decoding conventions need to be obtained from ID Dynamics for these two encoding formats to be interpretable. Once this information is obtained, testing will need to be conducted to determine what factors affect their interpretation, such as changes in width and spacing. Without these instructions the radial bar codes and gear codes are rendered mute, unable to provide any identifying information.

3. Firearm-related crime statistics to be compiled

A survey of crimes committed with semiautomatic handguns needs to be compiled and sorted into two specific categories: crimes committed by the registered owner of the firearm and firearm crimes committed by someone with a firearm not registered to the end user, such as gang related shootings. In the crime laboratory, it is the firearms used in gang related shootings that are of most concern. It is not unusual to link several homicides based on fired cartridge case identifications from the IBIS system. When the responsible handgun is later recovered from a suspect, they are unable to charge the suspects with the prior homicides because the gang participants pass the handguns between their fellow members. By looking at the source/history of these recovered handguns we can estimate whether or not the issue of firing pin serialization would have a significant effect on linked the suspect to the actual homicide. This information will aid considerably in determining the potential benefit this technology will provide to the law enforcement community for the identification of possible suspects and potential leads to the identification of individuals responsible in firearm-related crimes.

4. Implementation strategies to be developed collaboratively

DEFENDANT'S EXHIBIT 27

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 49 of 50 Page ID #:1187

The development of a viable commercial implementation strategy for this technology is a necessity. This must be completed in collaboration with officials from the state of California, firearms manufacturers and ID Dynamics. Many different implementation strategies for this technology may be possible. The laser micro-machining could be conducted by the state, each individual firearm manufacture, a combined effort of the two, or by another private entity. These and other scenarios should be prototyped and evaluated prior to the legislative and commercial implementation of this technology.

5. Technology implementation prototype to be piloted

Prior to implementing this technology statewide, a smaller-scale prototype should be piloted. The ideal scenario for testing such a prototype would be a group of selected law enforcement agencies equipped with about 3,000 semiautomatic This number provides an incentive for vendors with firing pin handguns. engraving technology to come up with competitive bids to manufacture such serialized firing pins, which would have unique serial numbers. It would also expand the study by providing for a mix of different handgun and calibers for those that we have not tested. This number of firearms equipped with micromachined firing pins should be sufficient to allow for a more accurate evaluation of this technology. This study would provide beneficial information as to the time required and cost incurred for the laser machining of micro-characters onto firing pins. It would also address the suitability of such micro-numbers in handguns other than the CHP Smith and Wesson firearms. As an example, Glock firing pins are substantially different and have different dynamics. Furthermore if radial and gear code technology is to be contemplated, we need to test the coding structure with realistic serial numbers.

6. Relevance to Current Firearms

The firearms and firing pins used in this study are relevant to current firearms and most of their future model changes. The manufacture of firearms is a traditional and incremental process and any changes happen over a long period of time. Many model variations of firearms involve only incremental change to that particular firearm. The CHP Smith and Wesson pistols used in this study were new pistols purchased by the CHP. The Colt 1911 design pistol is still produced both in the traditional design and new model variation with interchangeable parts. Thus our expectation is that the results of the firing pins used in this study will be relevant to the current models we tested and the future derivatives.

DEFENDANT'S EXHIBIT 27

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 132 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-39 Filed 01/27/23 Page 50 of 50 Page ID #:1188

What Micro Serialized Firing Pins Can Add to Firearm Identification in Forensic Science: How Viable are Micro-Marked Firing Pin Impressions as Evidence?

APPENDICES

Appendix A thru Appendix O are listed in a separate PDF document.

DEFENDANT'S EXHIBIT 27

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 133 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-40 Filed 01/27/23 Page 1 of 3 Page ID #:1189

ROB BONTA Attorney General State of California DEPARTMENT OF JUSTICE



DIVISION OF LAW ENFORCEMENT BUREAU OF FIREARMS P O BOX 160487 SACRAMENTO, CA 95816-0487 Telephone: (916) 210-2377 E-Mail Address: bofregulations@doj.ca.gov

December 23, 2022

Firearms Manufacturers and Interested Parties

Re: <u>Invitation for Preliminary Comments on Proposed Rulemaking</u> Regarding Firearm Microstamping

Background

Since 2001, California's Unsafe Handgun Act has established baseline safety and certification standards for handguns. The Act places restrictions on the manufacture, sale or importation of "unsafe handguns" that do not meet these minimum standards. Over a decade ago, California lawmakers expanded these restrictions by enacting the Crime Gun Identification Act, the nation's first law mandating that newly developed semiautomatic pistols incorporate microstamping technology to assist law enforcement in solving gun crimes. This technology transfers a microscopic array of characters ("microstamp") from the firearm to the ammunition cartridge when the firearm is fired. Law enforcement could then use the microstamped cartridge to identify the handgun that fired the ammunition.

Previously, California Penal Code section 31910 had required the microstamp to be imprinted in two or more places on the internal working parts of the handgun. Effective July 1, 2022, Assembly Bill (AB) No. 2847 revised the criteria by requiring the microstamp to be imprinted in only one place on the interior of the handgun. This change was made to encourage manufacturers to equip handguns with a microstamping mechanism.

Invitation for Comments

Existing regulations implementing the law do not require the unique microstamp on each handgun to be transmitted to and recorded by the Department of Justice (Department). Without a record of this information, law enforcement is unable to use the microstamp to identify firearms that are used in criminal activity.

In accordance with California Government Code sections 11346, subdivision (b), and 11346.45, the Department seeks input from stakeholders in developing a procedure for each handgun's unique microstamp to be transmitted to the Department so that it can be recorded for future reference.

Comments on the following topics will assist the Department in developing new regulations to achieve the law's objectives in the most effective manner:

DEFENDANT'S EXHIBIT 28

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 134 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-40 Filed 01/27/23 Page 2 of 3 Page ID #:1190

Firearms Manufacturers and Interested Parties December 23, 2022 Page 2

- Who is best suited to provide the microstamp to the Department? Is it manufacturers, U.S. distributors, a U.S. regional distribution location, or dealers?
- When should the microstamp be provided to the Department? For example, manufacturers could be required to report the microstamp to the Department prior to the firearm being offered for sale in California, or manufacturers could be required to report the microstamp to the Department shortly after the sale of each microstamp-equipped handgun.
- How should the microstamp be provided to the Department? For example, the microstamp could be transmitted via an Excel document through a secure transfer protocol.
- If the firearm part that creates the microstamp imprint needs to be replaced (e.g., a firing pin is broken), should the regulated replacement part have the same microstamp as the original part, or should the manufacturer be able to provide a replacement part with a different microscopic array?

The public is invited to submit comments related to any issue regarding the implementation of this procedure.

Commenters are encouraged to review the short "Tips for Submitting Effective Comments" guide for help formulating and submitting effective comments, found here:

https://oag.ca.gov/sites/all/files/agweb/pdfs/meeting/tips-effective-comments.pdf

This invitation for comments is not a proposed rulemaking action under Government Code section 11346. This invitation for comments is part of the Department's preliminary rulemaking activities under Government Code section 11346, subdivision (b). The public will have the opportunity to provide additional comments on any proposed regulations or modifications when the Department proceeds with a notice of proposed rulemaking action.

Time for Comments

The Department invites interested parties to submit comments by 5 p.m., February 1, 2023.

How to Submit Comments

Comments may be submitted by email or mail:

- E-mail: <u>bofregulations@doj.ca.gov</u> Please include "Microstamp" in the subject line.
- Mail written comments: Kelan Lowney Department of Justice P.O. Box 160487 Sacramento, CA 95816

DEFENDANT'S EXHIBIT 28

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 135 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-40 Filed 01/27/23 Page 3 of 3 Page ID #:1191 Firearms Manufacturers and Interested Parties

December 23, 2022 Page 3

Please note that comments submitted to the Department are public records.

Further Information

Information regarding the rulemaking will be posted to <u>https://oag.ca.gov/firearms/regs</u>. To receive email notifications of future rulemaking activities, please e-mail: <u>bofregulations@doj.ca.gov</u>.

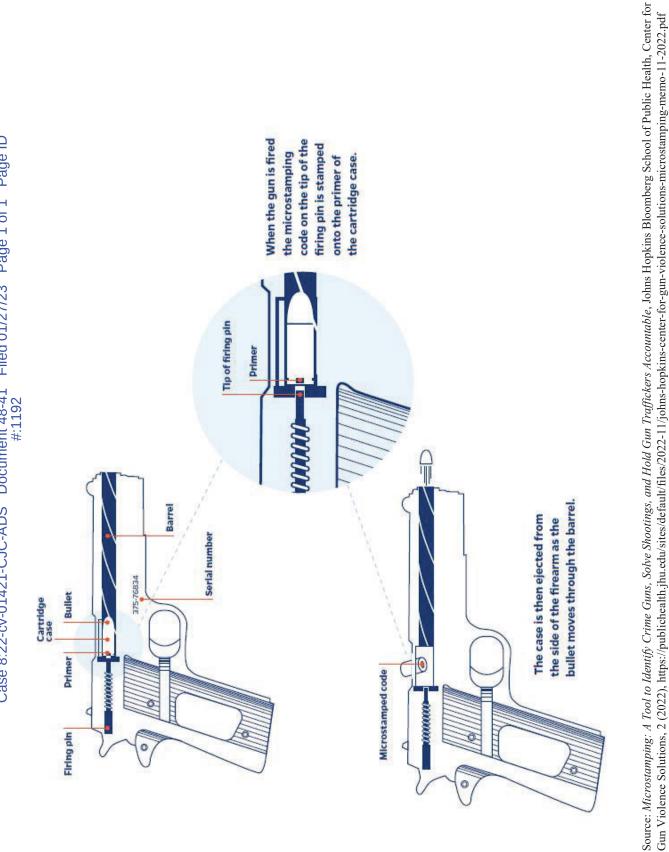
Sincerely,

allian Mendaz

ALLISON MENDOZA, Acting Director Bureau of Firearms

For ROB BONTA Attorney General

DEFENDANT'S EXHIBIT 28

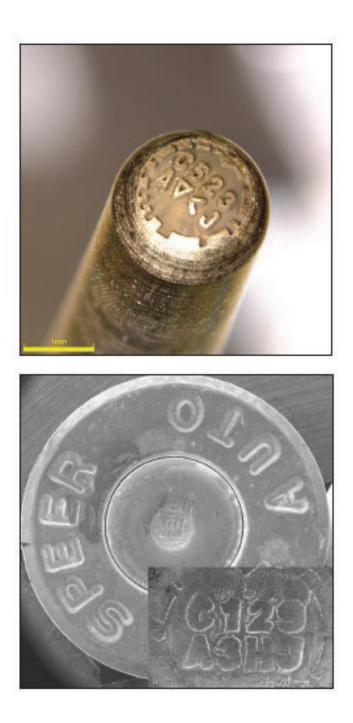


DEFENDANT'S DEMONSTRATIVE EXHIBIT



Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 137 of 149

Case 8:22-cv-01421-CJC-ADS Document 48-42 Filed 01/27/23 Page 1 of 1 Page ID #:1193



Source: *Microstamping: A Tool to Identify Crime Guns, Solve Shootings, and Hold Gun Traffickers Accountable,* Johns Hopkins Bloomberg School of Public Health, Center for Gun Violence Solutions, 2 (2022), https://publichealth.jhu.edu/sites/default/files/2022-11/johns-hopkins-center-for-gun-violence-solutionsmicrostamping-memo-11-2022.pdf

DEFENDANT'S DEMONSTRATIVE EXHIBIT 2

Case 8:22-cv-01421-CJC-ADS Document 62 Filed 03/27/23 Page 1 of 3 Page ID #:2065

1	ROB BONTA Attorney General of California		
2	MARK R. BECKINGTON Supervising Deputy Attorney General		
3	ROBERT L. MEYERHOFF, SBN 298196 GABRIELLE D. BOUTIN, SBN 267308		
4	S. CLINTON WOODS, SBN 246054 CHARLES J. SAROSY, SBN 302439		
5	Deputy Attorneys General 300 South Spring Street, Suite 1702		
6	Los Angeles, CA 90013-1230 Telephone: (213) 269-6356		
7	Fax: (916) 731-2119 E-mail: Charles.Sarosy@doj.ca.gov		
8	Attorneys for Rob Bonta, in his official cap as Attorney General of the State of Califor	pacity	
9	us Allorney General of the state of Califor	niù	
10	IN THE UNITED STAT	TES DISTRICT	COUDT
11			
12	FOR THE CENTRAL DIS	OTRICT OF CA	LIFUKINIA
13			
14		I	
15	LANCE BOLAND, ET AL.,	Case No. 8:22	-cv-01421-CJC-ADS
16	Plaintiffs,		PRELIMINARY
17	v.	INJUNCTIO	
18	ROB BONTA, IN HIS OFFICIAL CAPACITY AS ATTORNEY GENERAL OF	Judge: Courtroom:	Hon. Cormac J. Carney 9B
19	THE STATE OF CALIFORNIA, ET AL.,	Action Filed:	August 1, 2022
20	Defendants.		
21			
22			
23			
24			
24			
24 25			
24 25 26			

Notice of Appeal (8:22-cv-01421-CJC-ADS)

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 139 of 149

Case 8:22-cv-01421-CJC-ADS Document 62 Filed 03/27/23 Page 2 of 3 Page ID #:2066

1	PLEASE TAKE NOTICE that Defend	dant-Appellant Rob Bonta, in his					
2	official capacity as Attorney General of the State of California, hereby appeals to						
3	the United States Court of Appeals for the Ni	the United States Court of Appeals for the Ninth Circuit from this Court's Order					
4	Granting Plaintiffs' Motion for Preliminary I	njunction and the Preliminary					
5	Injunction, issued on March 20, 2023 (Dkts.	60, 61).					
6							
7	Dated: March 27, 2023	Respectfully submitted,					
8		ROB BONTA Attorney General of California					
9		Attorney General of California MARK R. BECKINGTON Supervising Deputy Attorney General ROBERT L. MEYERHOFF					
10		GABRIELLE D. BOUTIN					
11		S. CLINTON WOODS Deputy Attorneys General					
12		1 5 5					
13		<u>/s/ Charles J. Sarosy</u>					
14		CHARLES J. SAROSY					
15		Deputy Attorney General Attorneys for Rob Bonta, in his					
16 17		Deputy Attorney General Attorneys for Rob Bonta, in his official capacity as Attorney General of the State of California					
17							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
	2						

Notice of Appeal (8:22-cv-01421-CJC-ADS)

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 140 of 149

Case 8:22-cv-01421-CJC-ADS Document 62 Filed 03/27/23 Page 3 of 3 Page ID #:2067

CERTIFICATE OF SERVICE

Case Name: Boland, Lance, et al. v. Robert Bonta, et al. Case No. 8:22-cv-01421-CJC-ADS

I hereby certify that on March 27, 2023, I electronically filed the following document with the Clerk of the Court by using the CM/ECF system:

NOTICE OF PRELIMINARY INJUNCTION APPEAL

I certify that **all** participants in the case are registered CM/ECF users and that service will be electronically accomplished by the CM/ECF system.

I declare under penalty of perjury under the laws of the State of California and the United States of America the foregoing is true and correct. Executed on March 27, 2023, at San Francisco, California.

> Vanessa Jordan Declarant

<u>Vanessa</u> Oor*dan* Signature

ACCO,(ADSx),APPEAL,DISCOVERY,MJDAP_OUT UNITED STATES DISTRICT COURT CENTRAL DISTRICT OF CALIFORNIA (Southern Division – Santa Ana) CIVIL DOCKET FOR CASE #: 8:22-cv-01421-CJC-ADS

Lance Boland et al v. Robert Bonta Assigned to: Judge Cormac J. Carney Referred to: Magistrate Judge Autumn D. Spaeth Case in other court: 9th CCA, 23–55276 Cause: 28:2201 Constitutionality of State Statute(s) **Plaintiff**

Lance Boland an individual Date Filed: 08/01/2022 Jury Demand: None Nature of Suit: 950 Constitutional – State Statute Jurisdiction: Federal Question

represented by Alexander Asch Frank

Michel and Associates PC 180 East Ocean Boulevard Suie 200 Long Beach, CA 90802 562–216–4444 Fax: 562–216–4445 Email: <u>afrank@michellawyers.com</u> *LEAD ATTORNEY ATTORNEY TO BE NOTICED*

Joshua R Dale

Michel and Associates PC 180 East Ocean Boulevard Suite 200 Los Angeles, CA 90802 562–216–4444 Fax: 562–216–4445 Email: <u>idale@michellawyers.com</u> *LEAD ATTORNEY ATTORNEY TO BE NOTICED*

Konstadinos T. Moros

Michel and Associates P.C. 180 East Ocean Boulevard Suite 200 Long Beach, CA 90802 562–216–4444 Fax: 562–216–4445 Email: <u>kmoros@michellawyers.com</u> *LEAD ATTORNEY ATTORNEY TO BE NOTICED*

Sean Anthony Brady

Michel and Associates PC 180 East Ocean Boulevard Suite 200 Long Beach, CA 90802 562–216–4444 Fax: 562–216–4445 Email: <u>sbrady@michellawyers.com</u> *ATTORNEY TO BE NOTICED*

Carl Dawson Michel

Michel and Associates PC 180 East Ocean Boulevard Suite 200 Long Beach, CA 90802 562–216–4444 Fax: 562–216–4445 Email: <u>cmichel@michellawyers.com</u> *ATTORNEY TO BE NOTICED*

<u>Plaintiff</u>

represented by

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 142 of 149

Mario Santellan an individual Alexander Asch Frank (See above for address) LEAD ATTORNEY ATTORNEY TO BE NOTICED

Joshua R Dale (See above for address) LEAD ATTORNEY ATTORNEY TO BE NOTICED

Konstadinos T. Moros (See above for address) LEAD ATTORNEY ATTORNEY TO BE NOTICED

Sean Anthony Brady (See above for address) ATTORNEY TO BE NOTICED

Carl Dawson Michel (See above for address) *ATTORNEY TO BE NOTICED*

<u>Plaintiff</u>

Reno May an individual represented by Alexander Asch Frank

(See above for address) LEAD ATTORNEY ATTORNEY TO BE NOTICED

Joshua R Dale (See above for address) LEAD ATTORNEY ATTORNEY TO BE NOTICED

Konstadinos T. Moros (See above for address) LEAD ATTORNEY ATTORNEY TO BE NOTICED

Sean Anthony Brady (See above for address) ATTORNEY TO BE NOTICED

Carl Dawson Michel (See above for address) *ATTORNEY TO BE NOTICED*

<u>Plaintiff</u>

Jerome Schammel an individual represented by Alexander Asch Frank

(See above for address) LEAD ATTORNEY ATTORNEY TO BE NOTICED

Joshua R Dale (See above for address) LEAD ATTORNEY ATTORNEY TO BE NOTICED

Konstadinos T. Moros (See above for address) LEAD ATTORNEY

ATTORNEY TO BE NOTICED

Sean Anthony Brady

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 143 of 149

(See above for address) ATTORNEY TO BE NOTICED

Carl Dawson Michel (See above for address) *ATTORNEY TO BE NOTICED*

<u>Plaintiff</u>

California Rifle & Pistol Association, Incorporated *a California corporation* represented by Joshua R Dale

(See above for address) LEAD ATTORNEY ATTORNEY TO BE NOTICED

> Sean Anthony Brady (See above for address) *ATTORNEY TO BE NOTICED*

Carl Dawson Michel (See above for address) ATTORNEY TO BE NOTICED

V.

Defendant

Robert Bonta

in his official capacity as Attorney General of the State of California

represented by Charles Joseph Sarosy

CAAG – Office of Attorney General California Department of Justice 300 South Spring Street Suite 1702 Los Angeles, CA 90013 213–269–6356 Fax: 916–731–2144 Email: <u>Charles.Sarosy@doj.ca.gov</u> *ATTORNEY TO BE NOTICED*

Gabrielle D Boutin

CAAG – Office of the Attorney General California Department of Justice 1300 I Street PO Box 944255 Sacramento, CA 94244 916–210–6053 Fax: 916–324–8835 Email: gabrielle.boutin@doj.ca.gov ATTORNEY TO BE NOTICED

Robert Leslie Meyerhoff

CAAG – Office of Attorney General California Department of Justice 300 South Spring Street Suite 1702 San Francisco, CA 94111 213–269–6177 Fax: 916–731–2144 Email: <u>robert.meyerhoff@doj.ca.gov</u> *ATTORNEY TO BE NOTICED*

Sean Clinton Woods

CAAG – Office of Attorney General of California California Department of Justice 455 Golden Gate Avenue Suite 11000 San Francisco, CA 94102–7004 415–510–3807 Fax: 415–703–5480

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 144 of 149

Email: <u>Clint.Woods@doj.ca.gov</u> ATTORNEY TO BE NOTICED

Defendant DOES 1-10

Date Filed	#	Docket Text
08/01/2022	1	COMPLAINT Receipt No: ACACDC-33728314 – Fee: \$402, filed by Plaintiff Jerome Schammel, Lance Boland, Reno May, Mario Santellan, California Rifle & Pistol Association. (Attorney Carl Dawson Michel added to party Lance Boland(pty:mov), Attorney Carl Dawson Michel added to party California Rifle & Pistol Association(pty:mov), Attorney Carl Dawson Michel added to party Reno May(pty:mov), Attorney Carl Dawson Michel added to party Mario Santellan(pty:mov), Attorney Carl Dawson Michel added to party Jerome Schammel(pty:mov))(Michel, Carl) (Entered: 08/01/2022)
08/01/2022	<u>2</u>	COMPLAINT with filing fee previously paid (402.00 paid on 08/01/2022, receipt number 33728314), filed by Plaintiff Jerome Schammel, Lance Boland, Reno May, Mario Santellan, California Rifle & Pistol Association.(Michel, Carl) (Entered: 08/01/2022)
08/01/2022	<u>3</u>	CIVIL COVER SHEET filed by Movants Lance Boland, Reno May, Mario Santellan, Jerome Schammel, Respondent Robert Bonta. (Michel, Carl) (Entered: 08/01/2022)
08/01/2022	<u>4</u>	CORPORATE DISCLOSURE STATEMENT filed by Movants Lance Boland, California Rifle & Pistol Association, Reno May, Mario Santellan, Jerome Schammel (Michel, Carl) (Entered: 08/01/2022)
08/01/2022	<u>5</u>	CERTIFICATE of Interested Parties filed by Plaintiffs All Plaintiffs, (Michel, Carl) (Entered: 08/01/2022)
08/01/2022	<u>6</u>	Request for Clerk to Issue Summons on Complaint (Attorney Civil Case Opening),, <u>1</u> filed by Plaintiffs Lance Boland, California Rifle & Pistol Association, Reno May, Mario Santellan, Jerome Schammel. (Michel, Carl) (Entered: 08/01/2022)
08/03/2022	7	NOTICE TO COUNSEL re Magistrate Judge Direct Assignment Program. This case has been randomly assigned to Magistrate Judge Douglas F. McCormick. (Attachments: $# 1 \text{ CV11C}$) (jtil) (Entered: $08/03/2022$)
08/03/2022	<u>8</u>	21 DAY Summons Issued re Complaint (Attorney Civil Case Opening) <u>2</u> as to Defendant Robert Bonta. (jtil) (Entered: 08/03/2022)
08/05/2022	2	PROOF OF SERVICE Executed by Plaintiff Jerome Schammel, Lance Boland, Reno May, Mario Santellan, California Rifle & Pistol Association, upon Defendant Robert Bonta served on 8/4/2022, answer due 8/25/2022. Service of the Summons and Complaint were executed upon Robert Bonta, in his official capacity as Attorney General of the State of California in compliance with Federal Rules of Civil Procedure by personal service.Original Summons returned. (Michel, Carl) (Entered: 08/05/2022)
08/17/2022	<u>10</u>	NOTICE of Appearance filed by attorney Robert Leslie Meyerhoff on behalf of Defendant Robert Bonta (Attorney Robert Leslie Meyerhoff added to party Robert Bonta(pty:dft))(Meyerhoff, Robert) (Entered: 08/17/2022)
08/17/2022	<u>11</u>	STIPULATION Extending Time to Answer the complaint as to Robert Bonta answer now due 9/20/2022, filed by Defendant Robert Bonta.(Meyerhoff, Robert) (Entered: 08/17/2022)
09/14/2022	<u>12</u>	DECLINED STATEMENT OF CONSENT TO PROCEED before the assigned Magistrate Judge (Meyerhoff, Robert) (Entered: 09/14/2022)
09/14/2022	<u>13</u>	DECLINED STATEMENT OF CONSENT TO PROCEED before the assigned Magistrate Judge (Attorney Joshua R Dale added to party California Rifle & Pistol Association(pty:pla))(Dale, Joshua) (Entered: 09/14/2022)

09/15/2022	<u>14</u>	NOTICE OF REASSIGNMENT of MJDAP case from Magistrate Judge Douglas F. McCormick to Judge Cormac J. Carney for all further proceedings. Any discovery matters that may be referred to a Magistrate Judge are assigned to U.S. Magistrate Judge Autumn D. Spaeth. The case number will now reflect the initials of the transferee Judges 8:22–cv–01421 CJC(ADSx). (rn) (Entered: 09/15/2022)
09/16/2022	<u>15</u>	Second STIPULATION Extending Time to Answer the complaint as to Robert Bonta answer now due 9/23/2022, re Complaint (Attorney Civil Case Opening),, <u>1</u> filed by Defendant Robert Bonta.(Meyerhoff, Robert) (Entered: 09/16/2022)
09/22/2022	<u>16</u>	Joint STIPULATION for Order to Dismiss Second Claim for Relief with Prejudice filed by Plaintiffs Lance Boland, California Rifle & Pistol Association, Reno May, Mario Santellan, Jerome Schammel.(Dale, Joshua) (Entered: 09/22/2022)
09/23/2022	<u>17</u>	FIRST AMENDED COMPLAINT against Defendant Robert Bonta amending Complaint (Attorney Civil Case Opening),, <u>1</u> , filed by Plaintiffs Jerome Schammel, Lance Boland, Reno May, Mario Santellan, California Rifle & Pistol Association(Michel, Carl) (Entered: 09/23/2022)
09/23/2022	<u>18</u>	NOTICE TO FILER OF DEFICIENCIES in Electronically Filed Document RE: Stipulation for Order <u>16</u> . The following error(s) was/were found: Proposed document was not submitted or was not submitted as a separate attachment. Other error(s) with document(s): No [Prop] Order. In response to this notice, the Court may: (1) order an amended or correct document to be filed; (2) order the document stricken; or (3) take other action as the Court deems appropriate. You need not take any action in response to this notice unless and until the Court directs you to do so. (lom) (Entered: 09/23/2022)
09/26/2022	<u>19</u>	NOTICE OF LODGING filed re Stipulation for Order <u>16</u> (Attachments: # <u>1</u> Proposed Order Re Stipulation for Dismissal of Second Claim for Relief)(Michel, Carl) (Entered: 09/26/2022)
09/26/2022	<u>20</u>	ORDER RE: STIPULATION TO DISMISS SECOND CLAIM FOR RELIEF WITH PREJUDICE <u>16</u> by Judge Cormac J. Carney. (SEE DOCUMENT FOR FURTHER DETAILS.) (rolm) (Entered: 09/27/2022)
10/07/2022	<u>21</u>	ANSWER to Amended Complaint/Petition <u>17</u> filed by Defendant Robert Bonta.(Meyerhoff, Robert) (Entered: 10/07/2022)
10/07/2022	<u>22</u>	NOTICE OF INTENT by Judge Cormac J. Carney. Scheduling order to be issued on December 8, 2022. (rrp) (Entered: 10/07/2022)
11/15/2022	23	NOTICE OF MOTION AND MOTION for Preliminary Injunction re Enforcement of the UHA statutes California Penal Code sections 31900 through 32110 filed by Plaintiffs Lance Boland, California Rifle & Pistol Association, Incorporated, Reno May, Mario Santellan, Jerome Schammel. Motion set for hearing on 12/19/2022 at 01:30 PM before Judge Cormac J. Carney. (Attachments: # <u>1</u> Memorandum of Points and Authorities, # <u>2</u> Declaration of Jerome Schammel, # <u>3</u> Declaration of Lance Boland, # <u>4</u> Declaration Mario Santellan, # <u>5</u> Declaration of Reno May, # <u>6</u> Declaration of Richard Minnich, # <u>7</u> Proof Of Service) (Michel, Carl) (Entered: 11/15/2022)
11/15/2022	<u>24</u>	REQUEST FOR JUDICIAL NOTICE re NOTICE OF MOTION AND MOTION for Preliminary Injunction re Enforcement of the UHA statutes California Penal Code sections 31900 through 32110 23 filed by Plaintiffs Lance Boland, California Rifle & Pistol Association, Incorporated, Reno May, Mario Santellan, Jerome Schammel. (Attachments: # <u>1</u> Exhibit 1, # <u>2</u> Exhibit 2, # <u>3</u> Exhibit 3, # <u>4</u> Exhibit 4, # <u>5</u> Proof of service)(Michel, Carl) (Entered: 11/15/2022)
11/16/2022	<u>25</u>	NOTICE TO FILER OF DEFICIENCIES in Electronically Filed Document RE: NOTICE OF MOTION AND MOTION for Preliminary Injunction 23. The following error(s) was/were found: Proposed document was not submitted or was not submitted as a separate attachment. In response to this notice, the Court may: (1) order an amended or correct document to be filed; (2) order the document stricken; or (3) take other action as the Court deems appropriate. You need not take any action in response to this notice unless and until the Court directs you to do so. (twdb) (Entered: 11/16/2022)

11/17/2022	<u>26</u>	NOTICE OF LODGING filed re NOTICE OF MOTION AND MOTION for Preliminary Injunction re Enforcement of the UHA statutes California Penal Code sections 31900 through 32110 23 (Attachments: # 1 Proposed Order)(Michel, Carl) (Entered: 11/17/2022)
11/17/2022	<u>27</u>	STIPULATION for Extension of Time to File Response and Reply to Motion for Preliminary Injunction filed by Defendant Robert Bonta. (Attachments: $\# \underline{1}$ Proposed Order, $\# \underline{2}$ Proof of Service)(Meyerhoff, Robert) (Entered: 11/17/2022)
11/18/2022	<u>28</u>	MINUTE ORDER IN CHAMBERS by Judge Cormac J. Carney: ORDER GRANTING IN PART STIPULATION TO EXTEND TIME RE: PLAINTIFFS MOTION FOR PRELIMINARY INJUNCTION AND CONTINUING HEARING DATE <u>27</u> . Deadline for Defendant to respond to the Motion to December 5, 2022, and to continue the deadline for Plaintiffs to file their reply in support of the Motion to December 12, 2022. The Court further ORDERS that the hearing on the Motion be continued to January 23, 2023, at 9:00 a.m. (Motion hearing continued to 1/23/2023 at 09:00 AM before Judge Cormac J. Carney.) (twdb) (Entered: 11/18/2022)
11/30/2022	<u>29</u>	JOINT REPORT Rule 26(f) Discovery Plan ; estimated length of trial 5 days, filed by Plaintiffs Lance Boland, California Rifle & Pistol Association, Incorporated, Reno May, Mario Santellan, Jerome Schammel (Michel, Carl) (Entered: 11/30/2022)
12/05/2022	<u>30</u>	OPPOSITION Defendant's Opposition to Motion for Preliminary Injunction re: NOTICE OF MOTION AND MOTION for Preliminary Injunction re Enforcement of the UHA statutes California Penal Code sections 31900 through 32110 <u>23</u> Defendant's Opposition to Motion for Preliminary Injunction filed by Defendant Robert Bonta. (Attachments: # 1 Objections to Plaintiffs' Evidence in Support of Motion for Preliminary Injunction, # 2 Declaration Declaration of Salvador Gonzalez, # <u>3</u> Certificate of Service)(Attorney Gabrielle D Boutin added to party Robert Bonta(pty:dft))(Boutin, Gabrielle) (Entered: 12/05/2022)
12/08/2022	<u>31</u>	NOTICE of Appearance filed by attorney Charles Joseph Sarosy on behalf of Defendant Robert Bonta (Attorney Charles Joseph Sarosy added to party Robert Bonta(pty:dft))(Sarosy, Charles) (Entered: 12/08/2022)
12/08/2022	<u>32</u>	SCHEDULING ORDER by Judge Cormac J. Carney. Discovery cut-off 10/19/2023. LAST DATE TO HEAR MOTIONS is 12/18/2023. Last date to conduct settlement conference is 11/2/2023. Pretrial Conference set for 2/12/2024 at 3:00 p.m. Bench Trial set for 2/27/2024 08:30 AM (rrp) (Entered: 12/09/2022)
12/08/2022	<u>33</u>	ORDER REGARDING SETTLEMENT PROCEDURES, PRETRIAL CONFERENCE AND TRIAL by Judge Cormac J. Carney. (rrp) (Entered: 12/09/2022)
12/12/2022	<u>34</u>	REPLY in Support of NOTICE OF MOTION AND MOTION for Preliminary Injunction re Enforcement of the UHA statutes California Penal Code sections 31900 through 32110 23 filed by Plaintiffs Lance Boland, California Rifle & Pistol Association, Incorporated, Reno May, Mario Santellan, Jerome Schammel. (Attachments: # 1 Declaration of Michael Holley, # 2 Plaintiffs' Response to Defendant's Objections to Plaintiffs' Evidence in Support of Preliminary Injunction)(Michel, Carl) (Entered: 12/12/2022)
12/14/2022	<u>35</u>	ORDER Requiring Evidentiary Hearing on Plaintiffs' Motion For A Preliminary Injunction by Judge Cormac J. Carney. It is hereby ORDERED that Plaintiffs Lance Boland, Mario Santellan, Reno May, Jerome Schammel, and the California Rifle & Pistol Association, Incorporated, and Defendant Robert Bonta, in his official capacity as the Attorney General for the State of California, present live percipient and expert testimony as well as documentary and other evidence at the hearing scheduled on January 23, 2023, at 9:00 a.m. on the following topics: SEE DOCUMENT FOR FURTHER INFORMATION. (twdb) (Entered: 12/14/2022)
01/04/2023	<u>36</u>	NOTICE of Appearance filed by attorney Sean Clinton Woods on behalf of Defendant Robert Bonta (Attorney Sean Clinton Woods added to party Robert Bonta(pty:dft))(Woods, Sean) (Entered: 01/04/2023)
01/13/2023	<u>37</u>	First EX PARTE APPLICATION for Leave of Witness Dr. Saul Cornell to Appear for Testify via Video Conference or Phone <i>Defendants Ex Parte Application to Permit Witness to Testify by Video or Phone at January 23 2023 Hearing</i> filed by Defendant's Robert Bonta. (Attachments: # <u>1</u> Memorandum, # <u>2</u> Declaration, # <u>3</u> Proposed Order, #

Case: 23-55276, 04/28/2023, ID: 12704860, DktEntry: 12-8, Page 147 of 149

		<u>4</u> Certificate of Service) (Boutin, Gabrielle) (Entered: 01/13/2023)
01/13/2023	<u>38</u>	ORDER by Judge Cormac J. Carney: Granting <u>37</u> Defendant's Ex Parte Application to Permit Witness to Testify by Video or Phone at January 23, 2023 Hearing. SEE DOCUMENT FOR FURTHER INFORMATION. (twdb) (Entered: 01/13/2023)
01/18/2023	<u>39</u>	NOTICE of Appearance filed by attorney Sean Anthony Brady on behalf of Plaintiffs Lance Boland, California Rifle & Pistol Association, Incorporated, Reno May, Mario Santellan, Jerome Schammel (Attorney Sean Anthony Brady added to party Lance Boland(pty:pla), Attorney Sean Anthony Brady added to party California Rifle & Pistol Association, Incorporated(pty:pla), Attorney Sean Anthony Brady added to party Reno May(pty:pla), Attorney Sean Anthony Brady added to party Mario Santellan(pty:pla), Attorney Sean Anthony Brady added to party Mario Santellan(pty:pla), Attorney Sean Anthony Brady added to party Jerome Schammel(pty:pla))(Brady, Sean) (Entered: 01/18/2023)
01/18/2023	<u>40</u>	EX PARTE APPLICATION to Permit Remote Testimony of Plaintiffs' Witnesses Stephen Helsley, Salam Fatohi and Clayton Cramer <i>at January 23rd Hearing on</i> <i>Plaintiffs' Motion for Preliminary Injunction</i> filed by Plaintiffs Lance Boland, California Rifle & Pistol Association, Incorporated, Reno May, Mario Santellan, Jerome Schammel. (Attachments: # <u>1</u> Memorandum of Points & Authorities, # <u>2</u> Declaration of Sean A. Brady, # <u>3</u> Proposed Order) (Brady, Sean) (Entered: 01/18/2023)
01/18/2023	<u>41</u>	ORDER by Judge Cormac J. Carney: Granting <u>40</u> EX PARTE APPLICATION to Allow Stephen Helsley, Salam Fatohi, and Clayton Cramer to Appear and Testify Remotely. SEE DOCUMENT FOR FURTHER INFORMATION. (twdb) (Entered: 01/18/2023)
01/23/2023	<u>42</u>	MINUTES OF Evidentiary Hearing on Plaintiffs' Motion for A Preliminary Injunction held before Judge Cormac J. Carney <u>23</u> : Case called and counsel state their appearance. The evidentiary hearing is held. Witnesses called, sworn, and testified. Exhibits identified and admitted. For the reasons stated on the record, the Court continues this matter to January 24, 2023, at 9:00 a.m. Court Reporter: Suzanne McKennon. (twdb) (Entered: 01/24/2023)
01/24/2023	<u>43</u>	MINUTES OF Evidentiary Hearing On Plaintiffs' Motion for A Preliminary Injunction held before Judge Cormac J. Carney. Witnesses called, sworn, and testified. Exhibits identified and admitted. For the reasons stated on the record, counsel shall file a joint stipulation of witness and admitted exhibit list. Counsel shall also file the admitted exhibits by January 27, 2023. Court Reporter: Debbie–Hino Spaan. (twdb) (Entered: 01/25/2023)
01/24/2023	<u>44</u>	CONFIRMATION OF EXHIBIT REVIEW AND AUTHORIZATION TO SUBMIT EXHIBITS TO COURT filed by Lance Boland, Robert Bonta, California Rifle & Pistol Association, Incorporated, Reno May, Mario Santellan, Jerome Schammel. (twdb) (Entered: 01/25/2023)
01/24/2023	<u>45</u>	ORDER REGARDING CLOSING BRIEFING FOLLOWING EVIDENTIARY HEARING ON PLAINTIFFS' MOTION FOR A PRELIMINARY INJUNCTION by Judge Cormac J. Carney. It is hereby ORDERED that the parties file briefs no longer than twenty (20) pages in length by February 24, 2023. It is further ORDERED that the parties submit response briefs no longer than ten (10) pages in length by March 10, 2023. (twdb) (Entered: 01/25/2023)
01/26/2023	<u>46</u>	TRANSCRIPT ORDER as to Defendant Robert Bonta for Court Reporter. (Woods, Sean) (Entered: 01/26/2023)
01/27/2023	<u>47</u>	STIPULATION for Order Re Plaintiffs' and Defendant's List of Witnesses for the January 23–24, 2023 Evidentiary Hearing Accepted and Entered Into the Record filed by Plaintiffs Lance Boland, California Rifle & Pistol Association, Incorporated, Reno May, Mario Santellan, Jerome Schammel. (Attachments: # <u>1</u> Proposed Order)(Brady, Sean) (Entered: 01/27/2023)
01/27/2023	<u>48</u>	STIPULATION for Order Re Plaintiffs' and Defendant's Exhibits Admitted at the Evidentiary Hearing on Motion for Preliminary Injunction filed by Plaintiffs Lance Boland, California Rifle & Pistol Association, Incorporated, Reno May, Mario Santellan, Jerome Schammel. (Attachments: # <u>1</u> Exhibit Plaintiffs' Exhibit 1, # <u>2</u>

		Exhibit Plaintiffs' Exhibit 2, # <u>3</u> Exhibit Plaintiffs' Exhibit 3, # <u>4</u> Exhibit Plaintiffs' Exhibit 4, # <u>5</u> Exhibit Plaintiffs' Exhibit 5, # <u>6</u> Exhibit Plaintiffs' Exhibit 6, # <u>7</u> Exhibit Plaintiffs' Exhibit 7, # <u>8</u> Exhibit Plaintiffs' Exhibit 8, # <u>9</u> Exhibit Plaintiffs' Exhibit 9, # <u>10</u> Exhibit Plaintiffs' Exhibit 10, # <u>11</u> Exhibit Plaintiffs' Exhibit 11, # <u>12</u> Exhibit Plaintiffs Exhibit 1 to Request for Judicial Notice I/S/O Mtn. for Preliminary Injunction, # <u>13</u> Exhibit Defendant's Exhibit 1, # <u>14</u> Exhibit Defendant's Exhibit 2, # <u>15</u> Exhibit Defendant's Exhibit 3, # <u>16</u> Exhibit Defendant's Exhibit 4, # <u>17</u> Exhibit Defendant's Exhibit 5, # <u>18</u> Exhibit Defendant's Exhibit 6, # <u>19</u> Exhibit Defendant's Exhibit 7, # <u>20</u> Exhibit Defendant's Exhibit 8, # <u>21</u> Exhibit Defendant's Exhibit 9, # <u>22</u> Exhibit Defendant's Exhibit 10, # <u>23</u> Exhibit Defendant's Exhibit 11, # <u>24</u> Exhibit Defendant's Exhibit 12, # <u>25</u> Exhibit Defendant's Exhibit 13, # <u>26</u> Exhibit Defendant's Exhibit 12, # <u>25</u> Exhibit Defendant's Exhibit 13, # <u>26</u> Exhibit Defendant's Exhibit 14, # <u>27</u> Exhibit Defendant's Exhibit 15, # <u>28</u> Exhibit Defendant's Exhibit 16, # <u>29</u> Exhibit Defendant's Exhibit 17, # <u>30</u> Exhibit Defendant's Exhibit 18, # <u>31</u> Exhibit Defendant's Exhibit 19, # <u>32</u> Exhibit Defendant's Exhibit 20, # <u>33</u> Exhibit Defendant's Exhibit 21, # <u>34</u> Exhibit Defendant's Exhibit 22, # <u>35</u> Exhibit Defendant's Exhibit 23, # <u>36</u> Exhibit Defendant's Exhibit 24, # <u>37</u> Exhibit Defendant's Exhibit 25, # <u>38</u> Exhibit Defendant's Exhibit 26, # <u>39</u> Exhibit Defendant's Exhibit 27, # <u>40</u> Exhibit Defendant's Exhibit 28, # <u>41</u> Exhibit Defendants Demonstrative Exh. 1, # <u>42</u> Exhibit Defendant's Exhibit 28, # <u>41</u> Exhibit Defendants Demonstrative Exh. 1, # <u>42</u> Exhibit Defendants Demonstrative Exh. 2, # <u>43</u> Proposed Order)(Brady, Sean) (Entered: 01/27/2023)
01/30/2023	<u>49</u>	TRANSCRIPT ORDER as to Plaintiffs Lance Boland, California Rifle & Pistol Association, Incorporated, Reno May, Mario Santellan, Jerome Schammel for Court Reporter. Court will contact Christina Castron at ccastron@michellawyers.com with further instructions regarding this order. Transcript preparation will not begin until payment has been satisfied with the court reporter. (Dale, Joshua) (Entered: 01/30/2023)
01/30/2023	<u>52</u>	ORDER by Judge Cormac J. Carney, Granting Stipulation As To List Of Witnesses At Evidentiary Hearing On Motion For Preliminary Injunction <u>47</u> . 1. Plaintiffs ' and Defendants List of Witnesses for the January 23–24, 2023 Evidentiary Hearing on Plaintiffs' Motion for Preliminary Injunction is accepted and entered into the record of the proceedings. (twdb) (Entered: 01/31/2023)
01/30/2023	<u>53</u>	ORDER by Judge Cormac J. Carney Granting Plaintiffs' And Defendant's Stipulation As To Exhibits Admitted At Evidentiary Hearing On Motion For Preliminary Injunction <u>48</u> . (twdb) (Entered: 01/31/2023)
01/31/2023	<u>50</u>	TRANSCRIPT, DAY 2, for proceedings held on 1/24/2023 at 9:05 a.m. ****Transcript may be viewed at the court public terminal or purchased through Court Reporter DEBBIE HINO–SPAAN at: WEBSITE www.debbiehinospaan.com; E-mail, dhinospaan@yahoo.com before the deadline for Release of Transcript restriction. After that date, it may be obtained from the Court Reporter or through PACER. Additional formats of the transcript (ASCII, Condensed, and Word Indexing/Concordance) are also available to be purchased at any time through the Court Reporter. Notice of Intent to Redact due within 7 days of this date.**. Redaction Request due 2/21/2023. Redacted Transcript Deadline set for 3/3/2023. Release of Transcript Restriction set for 5/1/2023. (dhs) (Entered: 01/31/2023)
01/31/2023	51	NOTICE OF FILING TRANSCRIPT filed for proceedings 1/24/2023 at 9:05 a.m. re Transcript <u>50</u> THERE IS NO PDF DOCUMENT ASSOCIATED WITH THIS ENTRY. (dhs) TEXT ONLY ENTRY (Entered: 01/31/2023)
02/03/2023	<u>54</u>	TRANSCRIPT for proceedings of Evidentiary Hearing, Day 1, held on 01–23–23; 9:11 a.m. Court Reporter: Suzanne M. McKennon, CSR, CRR, RMR, phone number (559) 658–0362. Transcript may be viewed at the court public terminal or purchased through the Court Reporter before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Notice of Intent to Redact due within 7 days of this date. Redaction Request due 2/24/2023. Redacted Transcript Deadline set for 3/6/2023. Release of Transcript Restriction set for 5/4/2023. (McKennon, Suzanne) (Entered: 02/03/2023)
02/03/2023	55	NOTICE OF FILING TRANSCRIPT filed for proceedings 01–23–23; 9:11 a.m. re Transcript <u>54</u> THERE IS NO PDF DOCUMENT ASSOCIATED WITH THIS ENTRY. (McKennon, Suzanne) TEXT ONLY ENTRY (Entered: 02/03/2023)

02/24/2023	<u>56</u>	DEFENDANTS FIRST CLOSING BRIEF FOLLOWING EVIDENTIARY HEARING ON PLAINTIFFS MOTION FOR A PRELIMINARY INJUNCTION re NOTICE OF MOTION AND MOTION for Preliminary Injunction re Enforcement of the UHA statutes California Penal Code sections 31900 through 32110 23 filed by Defendant Robert Bonta. (Attachments: # 1 Request for Judicial Notice in Support of Defendant's First Closing Brief Following Evidentiary Hearing on Plaintiff's Motion for Preliminary Injunction with Exhibits 29–30, # 2 Declaration of S. Gonzalez in Support of Defendant's First Closing Brief, # 3 Declaration of S. Cornell in Support of Defendant's First Closing Brief with Exhibit 31)(Sarosy, Charles) (Entered: 02/24/2023)
02/24/2023	<u>57</u>	PLAINTIFFS POST-HEARING SUPPLEMENTAL MEMORANDUM IN SUPPORT OF PLAINTIFFS MOTION FOR PRELIMINARY INJUNCTION re NOTICE OF MOTION AND MOTION for Preliminary Injunction re Enforcement of the UHA statutes California Penal Code sections 31900 through 32110 <u>23</u> filed by Plaintiffs Lance Boland, California Rifle & Pistol Association, Incorporated, Reno May, Mario Santellan, Jerome Schammel. (Attachments: # <u>1</u> Declaration of Alexander Frank, # <u>2</u> Declaration Brian Marvel)(Michel, Carl) (Entered: 02/24/2023)
03/10/2023	<u>58</u>	DEFENDANTS SECOND CLOSING BRIEF FOLLOWING EVIDENTIARY HEARING ON PLAINTIFFS MOTION FOR A PRELIMINARY INJUNCTION re NOTICE OF MOTION AND MOTION for Preliminary Injunction re Enforcement of the UHA statutes California Penal Code sections 31900 through 32110 23 filed by Defendant Robert Bonta. (Attachments: # 1 Defendant's Objections to Declaration of B. Marvel Supporting Plaintiffs' First Closing Brief Following Evidentary Hearing on Plaintffs'Motion for Preliminary Injunction)(Sarosy, Charles) (Entered: 03/10/2023)
03/10/2023	<u>59</u>	PLAINTIFFS' REBUTTAL BRIEF IN RESPONSE TO THE STATE'S SUPPLEMENTAL BRIEF POST MPI BRIEFING (ECF NO. 56) re NOTICE OF MOTION AND MOTION for Preliminary Injunction re Enforcement of the UHA statutes California Penal Code sections 31900 through 32110 23 filed by Plaintiffs Lance Boland, California Rifle & Pistol Association, Incorporated, Reno May, Mario Santellan, Jerome Schammel. (Michel, Carl) (Entered: 03/10/2023)
03/20/2023	<u>60</u>	ORDER by Judge Cormac J. Carney: GRANTING PLAINTIFFS MOTION FOR PRELIMINARY INJUNCTION [Dkt. 23]. SEE DOCUMENT FOR FURTHER INFORMATION <u>23</u> . (twdb) (Entered: 03/20/2023)
03/20/2023	<u>61</u>	PRELIMINARY INJUNCTION by Judge Cormac J. Carney. This preliminary injunction shall not take effect until fourteen days from the date hereof to allow the government to file an appeal and seek a further stay of this preliminary injunction. SEE DOCUMENT FOR FURTHER INFORMATION. (twdb) (Entered: 03/20/2023)
03/27/2023	<u>62</u>	NOTICE OF APPEAL to the 9th Circuit Court of Appeals filed by Defendant Robert Bonta. Appeal of Preliminary Injunction, <u>61</u> , Order on Motion for Preliminary Injunction <u>60</u> . (Appeal Fee – \$505 Fee Paid, Receipt No. ACACDC–35029752.) (Sarosy, Charles) (Entered: 03/27/2023)
03/27/2023	<u>63</u>	NOTIFICATION from Ninth Circuit Court of Appeals of case number assigned and briefing schedule. Appeal Docket No. 23–55276 assigned to Notice of Appeal to 9th Circuit Court of Appeals, <u>62</u> as to defendant Robert Bonta. (mat) (Entered: 03/28/2023)
03/31/2023	<u>64</u>	ORDER from Ninth Circuit Court of Appeals filed re: Notice of Appeal to 9th Circuit Court of Appeals, <u>62</u> filed by Robert Bonta. CCA # 23–55276. The motion to take judicial notice in support of the opposition to the emergency motion for partial stay is granted. The emergency motion to stay in part the district courts March 20, 2023 preliminary injunction pending appeal is granted. See Nken v. Holder, 556 U.S. 418, 434 (2009). The preliminary injunction is stayed as to the chamber load indicator and magazine disconnect mechanism requirements of California's Unsafe Handgun Act. [See document for more details.](mat) (Entered: 04/03/2023)
04/06/2023	<u>65</u>	REPRESENTATION STATEMENT re Notice of Appeal to 9th Circuit Court of Appeals, <u>62</u> . (Sarosy, Charles) (Entered: 04/06/2023)

CERTIFICATE OF SERVICE

Case Name: Boland, Lance, et al. v. Robert No. 23-55276 Bonta, et al.

I hereby certify that on <u>April 28, 2023</u>, I electronically filed the following documents with the Clerk of the Court by using the CM/ECF system:

EXCERPTS OF RECORD

I certify that **all** participants in the case are registered CM/ECF users and that service will be accomplished by the CM/ECF system.

I declare under penalty of perjury under the laws of the State of California and the United States of America the foregoing is true and correct and that this declaration was executed on <u>April 28</u>, <u>2023</u>, at Sacramento, California.

Eileen A. Ennis

Declarant

/s/ Eileen A. Ennis

Signature

SA2023301763 37113005.docx