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Losing Count

The Empty Case for “High-Capacity” Magazine Restrictions

MATTHEW LAROSIERE

EXECUTIVE SUMMARY

Since the early 1990s, several states have passed restrictions on firearm magazines as a purported public safety measure. To date, the Supreme Court has repeatedly refused to hear cases surrounding these “high-capacity” magazine bans.¹ This has led to a fractured and unpredictable state of the law. These laws, as well as the “assault weapon” bans they tend to come packaged with, are abridgments of the natural right to self-defense. Moreover, they fail to provide sufficient benefit to justify their inherent costs.

There are three main problems with these bans. First, the term “high-capacity” is used by legislatures to describe standard, common equipment rather than magazines that stretch a weapon’s capacity beyond its intended design. Second, discussions of the issue are replete with fundamental misconceptions about firearm magazines and their place under the Second Amendment. In fact, some courts have held that magazines have no

constitutional protection at all, contravening precedent indicating that the right to keep and bear arms protects all bearable arms in common use, including their magazines and ammunition, regardless of the arms in existence at the time of the Founding. Magazines are not mere accessories, but essential components of modern firearms.

Third, there is little evidence that high-capacity magazine restrictions have any positive effects on public safety. To support these laws, states point to horrific crimes involving large-capacity magazines. But the connection between the crime and the magazine is conjectural at best, while the prohibitions against such magazines have disrupted the lives of many otherwise law-abiding gun owners—and all without any evidence of improvements in public safety. In some courts, it seems that merely uttering the phrase “gun violence” suffices to justify any exercise of state power. These policies are ineffective, dangerous, and unconstitutional.

1. As discussed below, “high-capacity” is a relative term and therefore should not be regarded as having a definite meaning.

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INTRODUCTION

Restrictions on high-capacity magazines come either on their own or as a component of “assault weapon” legislation.² They focus on detachable firearm magazines capable of holding more than a certain number of cartridges. The Federal Assault Weapons Ban of 1994, for instance, included limitations on magazines that could hold more than 10 rounds.³

For law-abiding Americans, firearms are tools of recreation and self-defense. Defensive uses of firearms can preserve human life. Americans use firearms with magazine capacities of 10 to 30 rounds for the same reason law enforcement officers do: because they are effective tools for defensive use. For this reason alone, magazine restrictions should be understood as restrictions on weapons themselves and should thus be taken as seriously and subject to as much scrutiny as restrictions directly on firearms.

Currently, eight states, the District of

Columbia, and a number of municipal governments ban or heavily regulate magazines that they have defined as “high capacity.”⁴ Typical state bans set a limit of 10 rounds per magazine, although some limit capacity to 15. Some municipalities are more restrictive: New York City, for example, restricts magazine capacity for long guns to 5 rounds, stricter than the limit of 10 rounds for long guns and pistols in the rest of the state.⁵ Most jurisdictions allow magazines owned prior to the law to be grandfathered in, but some do not.⁶ New York had previously attempted to set the limit at 7 rounds—possession of 10-round magazines was allowed, yet loading them beyond 7 rounds was forbidden—but that law was ruled unconstitutional. The court found that the provision was “untethered from the stated rationale of reducing the number of assault weapons and large capacity magazines in circulation.”⁷

In mid-2017, Judge Roger T. Benitez of the United States District Court for the

2. America’s gun debate has been plagued by confusion over vague terms. Therefore, it is important to clearly define the terms to be used herein. A “magazine” is a vehicle for carrying ammunition. It can be either integral to the gun or detachable. Integral magazines are used in old western rifles, in which reserve ammunition is held in a tube under the barrel (called a “tube magazine”), and in bolt-action rifles, in which reserve ammunition is held under the bolt (as in the Mauser 98, a military rifle upon which most of today’s bolt-action hunting rifles are based). Detachable magazines (“box magazines”) are used in most handguns and rifles, including the AR-15. A “self-loader” is a type of firearm that does not have to be manually reloaded between shots (in contrast to “repeaters” such as bolt, lever, and pump-action firearms, which need some sort of shooter action to put a new round into the chamber between shots). Self-loaders siphon energy from either recoil or expanding gases in the barrel to eject the empty casing and load a fresh round. Self-loaders are often called “semi-automatic” and “automatic” firearms.

3. Jeffrey A. Roth and Christopher S. Koper, “Impacts of the 1994 Assault Weapons Ban,” March 1999, <https://www.ncjrs.gov/pdffiles1/173405.pdf>.

4. David Maccar, “Magazine Capacity Restrictions by State,” *Range365*, October 2017, <https://www.range365.com/magazine-capacity-restrictions-by-state#page-8>.

5. N.Y. Consolidated Laws Article 265: Firearms and Other Dangerous Weapons, <https://www.atf.gov/resource-center/docs/guide/state-laws-and-published-ordinances-2010-2011-new-york/download#23>.

6. For example, Massachusetts’s ban exempts magazines lawfully possessed before the September 1994 assault weapons ban, while New Jersey bans all such magazines, regardless of when they were made or owned. See Veronica Rose, “Laws on High Capacity Magazines,” January 2013, <https://www.cga.ct.gov/2013/rpt/2013-R-0039.htm>.

7. *New York State Rifle and Pistol Association v. Cuomo*, 38 (W.D.N.Y. Dec. 31, 2013). “Unlike the restrictions on assault weapons and large-capacity magazines, the seven-round limit cannot survive intermediate scrutiny.”

Southern District of California blocked Proposition 63, a law that would have effectively banned the possession of magazines capable of holding more than 10 rounds. According to Judge Benitez, California, in justifying its ban, referred to a “homogenous mass of horrible crimes in jurisdictions near and far for which large capacity magazines were not the cause.”⁸ Although courts have generally treated the right to keep and bear arms as second class and have consistently accepted state justifications for gun control, Judge Benitez subjected the state’s claims to a more critical inquiry. As he rightly pointed out, “the phrase ‘gun violence’ may not be invoked as a talismanic incantation to justify any exercise of state power.”⁹

California’s Proposition 63 joins the ranks of several other magazine restrictions that have been contested through the various courts of appeals with mixed results. Earlier in the year, Maryland’s “assault weapon”¹⁰ bans—which included a magazine restriction of 10 rounds—were upheld by the Fourth Circuit in *Kolbe v. Hogan*, and the Supreme Court declined to review the case in November of 2017.¹¹

CLEARING UP FUNCTIONAL AND TECHNICAL ISSUES

There are many misconceptions about magazines that must be corrected before there can be a coherent discussion about whether and how to restrict them. Four

commonly misunderstood points stand out. First, the term “high-capacity” does not have a precise definition. Second, a magazine’s capacity can vary based on the ammunition that is used. Third, an effective magazine is more than “just a box” for cartridges. And fourth, almost every gun that can accept a magazine is capable of accepting a high-capacity magazine, however defined; thus, it is a mistake to characterize weapons that are merely capable of using high-capacity magazines as particularly dangerous.

“High-Capacity” Is a Relative Term

Most pistols sold in the United States come equipped with magazines that hold between 10 and 17 rounds. In fact, those holding 10 rounds are generally compact or subcompact models. Full-size pistols, like those commonly used by law enforcement officers, overwhelmingly ship with 12- to 20-round magazines as standard.¹² And the most common self-loading rifles in the United States have a standard magazine capacity of between 20 and 30 rounds.

By the end of 2017, however, eight states and the District of Columbia had some sort of restriction or ban based on magazine capacity, and several set the limit at 10 rounds. If anything is arbitrary, it is these limits, since they do not comport with the normal gun market. Those states ban as “high-capacity” the “normal-capacity” magazines that come shipped with the gun and are in common use in the rest of the country.

“There are many misconceptions about magazines that must be corrected before there can be a coherent discussion about whether and how to restrict them.”

8. *Duncan v. Becerra*, 265 F. Supp. 3d 1106, 1120 (S.D. Cal. 2017).

9. *Id.*, at 1135.

10. Md. Code Ann., Crim. Law §§ 4-303(a), 4-305(b). Maryland’s law consists of banning particular firearms by name or cosmetic features—paying particular mind to AR and AK patterns of weapons—but the real heavy lifting is done by its prohibition of weapons capable of carrying more than 10 rounds.

11. *Kolbe v. Hogan*, 138 S. Ct. 469 (2017).

12. Of the five best-selling handguns of 2017, the full-size offerings were the Glock 19 and the Kel-Tec PMR-30, which come standard with a 15- and 30-round magazine, respectively (Rich Duprey, “The 5 Best-Selling Handguns of 2017,” *The Motley Fool*, December 2017, <https://www.fool.com/investing/2017/12/17/the-5-best-selling-handguns-of-2017.aspx>). Also popular with civilians and law enforcement are the Glock 17, the Springfield XD, the M&P-9, and the Walther PPQ. In the 9 mm chambering, each of those guns come standard with an 18-, 16-, 15-, and 17-round magazine, respectively.

“A magazine is an essential and deceptively complicated component of a self-loading firearm.”

A Magazine's Capacity Can Vary

Magazines can often be used for multiple calibers of cartridge, and the number of rounds they can hold depends on the caliber. For example, a certain magazine often affiliated with the AR-15 will hold 30 rounds of 5.56 mm ammunition but only 10 rounds of the larger .458 SOCOM ammunition. Many popular magazines have similarly variable capacities. This variability presents a tremendous practical issue with regard to regulating magazine capacity. How is the line to be drawn? Should the same magazine be legal or illegal depending on the cartridge used? Should firearm owners have to use half-full magazines of a certain caliber to comply with the law?

As an example, in 1991 the Canadian government limited the magazine capacity for self-loading rifles to five rounds. The Canadian law focuses on what the magazine is “designed” for, which creates some odd situations. A magazine “designed” for 5 rounds of 50 caliber ammunition can still practically—and legally—be loaded with 15 rounds of 5.56 mm ammunition. But putting that same amount of ammunition into a magazine marked for 15 rounds of 5.56 mm ammunition—a magazine which is identical to the former in all ways but markings—could result in jail time.¹³ It is hard to square this result with the intent of the law, but the technical characteristics of magazines require such distinctions to be made.

A Magazine Is Not “Just a Box”

The misconception that a magazine is “just a box” into which rounds are stuffed is often heard from opponents of magazine restrictions. They claim that magazines, if banned, could be easily fabricated, which would allow criminals to easily avoid restrictions and would leave law-abiding citizens to face the most severe consequences of a ban. Although it is true that black-market access to restricted magazines will always be easy, this is not because magazines are easy to make but rather because of the tremendous number of magazines already in circulation.¹⁴

Rather than being just boxes, magazines are complex and finely tuned. That complexity is why many early magazine rifles had their magazines chained to the rifle¹⁵ and why most countries avoided the use of detachable magazines into the 20th century. Even today, a large proportion of handgun magazines are manufactured by a single Italian company, Mec-Gar, because of how difficult it is to get the design right.¹⁶

A magazine is an essential and deceptively complicated component of a self-loading firearm. In fact, magazine malfunctions are the primary source of breakdowns in self-loading weapons. Every detachable magazine requires a tremendous amount of complex engineering. Tiny inconsistencies in the angle of the feed lips, the spring tension, the wall thickness, or

13. Patrick Cain, “Packing Heat: How Gun Law Loopholes Tripled Canada’s Rifle Magazine Limits,” *Global News Canada*, June 11, 2013, <https://globalnews.ca/news/619165/packing-heat-how-gun-law-loopholes-tripled-canadas-rifle-magazine-limits/>.

14. There is no firm figure for the number of magazines currently in circulation, but since most estimates indicate that there are more than 300 million firearms in the United States, it is reasonable to assume that there could be up to a billion magazines in circulation, since more magazines than firearms are produced.

15. This was the case for the Lee-Enfield rifle, the first magazine rifle adopted by Great Britain, which used an effective detachable magazine closely resembling the magazines used in modern AR-pattern rifles. Because magazine geometry was so important to reliable service, these magazines were chained to the rifle, to be removed only in emergency situations. The Swiss also used detachable magazines in their Schmidt-Rubin service rifles until 1953. In Swiss service, the magazine was tied to the rifle, and a soldier could be court-martialed for swapping magazines.

16. See the Mec-Gar website, <https://mec-gar.com/>.

other components of the magazine can render a firearm nonfunctional.¹⁷ Any properly informed discussion of magazine restrictions must take this fact into account.

Almost Every Gun Is “Capable of Accepting” a High-Capacity Magazine

Certain laws, many of which are based on the federal Public Safety and Recreational Firearms Use Protection Act of 1994,¹⁸ proscribe weapons that are “capable of accepting” a large-capacity magazine, however defined. This language is particularly concerning because magazines exist separately from the gun. If an otherwise allowable firearm is designed for use only with 10-round magazines, and a third party constructs a single 20-round magazine, does that render the firearm forbidden? If so, every gun for which the physical characteristics of that magazine allow it to be used would now be *capable of* accepting the new magazine, regardless of how many such magazines actually existed. In fact, there are many weapons that were designed to use magazines only of a certain size but are capable of accepting larger-capacity magazines built by either third-party manufacturers or hobbyists.¹⁹

Language so vague that it invites endless speculation should be avoided in law. A detachable magazine, by its nature, fits into an opening of a particular shape. Any law that refers to weapons “capable of accepting” a large-capacity magazine may just as well refer to the entirety of magazine-accepting weapons. There is no meaningful distinction between the two groups.

Sometimes studies purport to demonstrate a connection between weapons “capable of” accepting high-capacity magazines (however defined) and violent crime.²⁰ Yet this is evidence only of popularity, not of lethality. Firearms that are affordable and in common use are more likely to show up at crime scenes, as are firearms that are fashionable with certain groups of criminals, such as Glock pistols. The same reasoning could apply to black guns. Given that many guns are black, a similar study would presumably show that a significant percentage of guns used in crimes were black. Would it be rational, from this information, to propose banning black guns?

All guns are potentially dangerous and lethal, but except in rare mass shooting situations, as discussed below, increased

“Language so vague that it invites endless speculation should be avoided in law.”

17. With the complex geometry and metallurgy involved in a magazine’s construction as well as the friction inherent in a feeding mechanism (the rounds in the magazine push against the moving components of the action, potentially interrupting function), a magazine has to be just right to function well. For a deeper discussion of the subject, see Pat Cascio, “Aftermarket Gun Magazines—All Magazines Are Not Created Equal,” May 2016, <http://www.alloutdoor.com/2016/05/16/market-gun-magazines/>.

18. Commonly referred to as the “Federal Assault Weapons Ban of 1994,” the ban was a subsection of the Violent Crime Control and Law Enforcement Act of 1994 (Pub.L. 103-322, <http://legisworks.org/GPO/STATUTE-108-Pg1796.pdf>). It contained a provision proscribing semiautomatic weapons “capable of accepting a large capacity magazine.” Many state and local laws borrow from the 1994 ban with few changes, including, most recently, that of Deerfield, Illinois (see Ordinance No. O-18-06, <http://www.deerfield.il.us/DocumentCenter/View/1506>).

19. One example is the French MAS Mle 1944, which uses a proprietary 10-round magazine. The rifle was fielded with only 10-round magazines; however, a handful of experimental larger-capacity magazines were made at some point. Thus, technically, the Mle 1944 is “capable of” accepting a larger magazine, although such magazines, for practical purposes, do not exist.

20. “Study Sheds New Light on Use of High-Capacity Ammunition Magazines in Violent Crime,” *The Trace*, October 11, 2017, <https://www.thetrace.org/rounds/high-capacity-ammunition-magazines-violent-crimes/>.

“The Second Amendment extends to all bearable arms in common use, even those that were not in existence at the time of the Founding.”

ammunition capacity is rarely a factor in gun crimes. Although it may be true that the use of extended magazines in handguns is correlated with an increase in crime—possibly because of the fad of pistols with “stendos,” a slang term for extended magazines—this is more about gang-appreciated aesthetics than about actual lethality. If such magazines disappeared, gang-related violence would certainly not go with them.

LEGAL BACKGROUND AND CONSTITUTIONAL CONCERNS

As recognized in *District of Columbia v. Heller*, the Second Amendment protects an individual’s right to keep and bear arms.²¹ By implication, that right is not limited to guns but extends also to the ammunition and magazines that make guns operable.²² The Court also held that the Second Amendment protects arms in “common use,”²³ which would cover the 20-round magazines that are standard equipment for a significant portion of weapons currently in lawful use. Although banning some “novelty magazines,” such as the 100-round Beta C-Mag—unpopular because of its weight, expense, and propensity to jam—might be constitutional, there is no legitimate constitutional argument for removing common magazines from the scope of Second Amendment protection.

In response, proponents of magazine restrictions often argue that Founding-era weapons did not typically carry more than 10 cartridges. More broadly, they cite language in *Heller* that seems to permit some restrictions

on firearm ownership.²⁴ Both arguments reach too far.

The Supreme Court has said that the Second Amendment extends to all instruments that constitute bearable arms in common use, even those that were not in existence at the time of the Founding.²⁵ The contention that the Constitution’s scope is in any way limited to the arms that existed in the 18th century was rejected as “bordering on . . . frivolous[.]”²⁶ In fact, handguns and carbines carrying more than 10 rounds were fairly common well before the Fourteenth Amendment was ratified in 1868, after which the Second Amendment arguably applied against the states, and before that, no one had thought that states could restrict the natural right to have such arms.

Regarding the broader claim that the Second Amendment allows some regulation, Justice Antonin Scalia does in fact mention “presumptively lawful regulations” such as those concerning “M-16 rifles and the like.”²⁷ But including firearms and magazines in common lawful use today under such regulations raises two issues. First, “M-16” is a specific military designation. Unlike “AR-15,” which refers to a “pattern” of rifle of which there are hundreds of derivatives, “M-16” refers to a particular machine gun (i.e., a fully automatic weapon that fires continuously with a single trigger pull) regulated by the 1934 National Firearms Act. Second, Scalia’s language needs to be read in the larger context of the opinion, which holds that the Second Amendment protects all arms in common lawful use. M-16s are not in common lawful use; 15- to 30-round magazines undoubtedly are.

21. *District of Columbia v. Heller*, 554 U.S. 570, 578 (2008). “‘Right of the People[.]’ . . . unambiguously refer[s] to individual rights, not ‘collective’ rights, or rights that may be exercised only through participation in some corporate body.”

22. *Duncan v. Becerra*, 265 F. Supp. 3d 1106, 1114 (S.D. Cal. 2017).

23. *District of Columbia v. Heller*, 554 U.S. at 620.

24. *Id.* at 627.

25. *Id.* at 582.

26. *Id.*

27. *Id.* at 627.

ILL-DEFINED, UNPROVEN, AND INEFFECTIVE: THE SUBSTANTIAL COSTS OF MAGAZINE RESTRICTIONS

“High-capacity” magazine restrictions are billed as safeguards of public safety aimed at combating pervasive problems with “gun violence.” Yet there is little evidence that such laws have any appreciable impact on public safety, much less enough positive impact to justify the substantial human cost attendant in their enforcement.

One can always conceive of such benefits, of course. We might imagine, for example, that a magazine capacity low enough to force constant reloading would hinder mass shooters. But even if that were true, we would need to ask whether such benefits would justify the costs, such as the attendant restrictions on the right to self-defense. And who would likely be affected by such laws—criminals and mass shooters or law-abiding gun owners? Magazine restrictions are often written as strict liability offenses, meaning that there is no defense for violating the law, even if violators do not know they possess an illegal magazine (say, if a friend had left one in their car).²⁸ Moreover, in states such as California and Maryland, the mere shape of a magazine can make criminals out of those who have one in their possession or control. Such laws might be used against mass shooters and murderers, but they will also be used against parents who use slightly noncompliant weapons in self-defense, or history-buff hobbyists or collectors who want particular pieces for their collections, or potential victims of domestic

violence who live in states that restrict magazines to six or seven rounds.

An Ineffective Solution

Magazine restrictions do not have appreciable effects on crime or violence. In an oft-cited study, Christopher Koper analyzed the effects of the 1994 Federal Assault Weapons Ban, which banned new magazines of more than 10 rounds but did little more than drive up the price of already-existing magazines. While presenting his findings at a Johns Hopkins summit on reducing gun violence in America, Koper was decidedly noncommittal on the ban’s utility.²⁹

In general, we found, really, very, very little evidence, almost none, that gun violence was becoming any less lethal or any less injurious during [the course of the Assault Weapon and Large Capacity Magazine (LCM) ban]. So on balance, we concluded that the ban had not had a discernible impact on gun crime during the years it was in effect.³⁰

Koper did go on to opine that the 1994 law’s grandfathering provisions for LCMs may have meant that its effects would occur “only very gradually over time.”

It seems that those effects were still unfolding when the ban was lifted, and indeed they may not have been fully realized for several more years into the future even if the ban had been extended in 2004. The evidence is too limited for

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28. See, for example, N.Y. Consolidated Laws Article 265: Firearms and Other Dangerous Weapons. <https://www.atf.gov/resource-center/docs/guide/state-laws-and-published-ordinances-2010-2011-new-york/download#23>.

29. Christopher S. Koper et. al., *Updated Assessment of the Federal Assault Weapons Ban: Impacts on Gun Markets and Gun Violence, 1994-2003*, June 2004, <https://www.ncjrs.gov/App/Publications/abstract.aspx?ID=204431>.

30. “Christopher Koper speaks on his evaluation of the Assault Weapons Ban for the US Department of Justice,” C-SPAN, January 14, 2013, <https://www.c-span.org/video/?c4304369/christopher-koper-george-mason-university>.

“In general, there is insufficient time to take any action based on the fact that a shooter is reloading.”

any firm projections, but it does suggest that long term restrictions on these guns and magazines could potentially produce at least a small reduction in shootings.³¹

Yet even if the LCM ban had been extended to today, it is doubtful that it would have had significant long-term effects. With as many as a billion magazines in circulation, it would take immense and constitutionally dubious law-enforcement efforts to make even a dent in the extant “high-capacity” magazine population. Moreover, any potential reduction in lethality or violent crime by magazine restrictions would occur only in extremely rare circumstances—namely, in shootings involving the discharge of more than 10 rounds. As Florida State University criminologist Gary Kleck highlighted in his 2005 book *Point Blank*:

It is doubtful whether a high volume magazine is currently relevant to the outcome of a large number of violent incidents. The rare mass killings notwithstanding, gun assaults usually only involve a few shots being fired. Even in a sample of gun attacks on armed police officers, where the incidents are more likely to be mutual combat gunfights with many shots fired, the suspects fired an average of only 2.55 times.³²

And even when the volume of bullets increases potential lethality, such as in a mass shooting, shooters can easily substitute

several lower-capacity magazines for one “high-capacity” magazine, especially those shooters who plan ahead, as mass shooters usually do.

Changing Magazines

Magazine restrictions are often predicated on the belief that forcing more frequent magazine changes would reduce lethality. But magazine changes typically take a couple of seconds at most to complete.³³ Moreover, increased magazine capacity makes feed malfunctions more likely, since each additional round in a magazine imparts friction and rolling resistance to feeding into the firearm. It takes longer to clear a feed malfunction than to change a magazine. This fact highlights a potential paradox in the debate over magazine restrictions: although there is not enough practical data to say for sure (because truly high-capacity magazines are rarely used and mass shootings are rare), it is entirely possible that shootings with extremely high-capacity magazines, such as “drums” with 100 or 200 rounds, would be *less* lethal than other shootings because of the higher likelihood of malfunctions.

Perhaps magazine changes reduce lethality by providing practical opportunity to subdue a shooter. Again, this would occur only in the rare shooting that involves a magazine change. In support of this idea, some cite the popular myth of the M1 Garand “ping.” During the Second World War, the primary service arm of the United States—the M1 Garand—produced an audible pinging noise when it ran out of ammunition. This led to a myth that the “ping” sound would prompt German infantry to

31. *Id.*

32. Gary Kleck, *Point Blank: Guns and Violence in America* (Piscataway, NJ: Aldine Transaction, 2005), p. 79.

33. There are no studies specifically examining reload speed, and the speed of a reload, of course, depends on the skill of the operator. Extremely skilled operators can change magazines in a fraction of a second (see “On the Range: Alternate Method for Mag Changes,” August 2013, https://www.youtube.com/watch?v=_cB68gavUJM). Generally speaking, reloading a modern firearm is simply a matter of pressing a button to release the empty magazine and then inserting a fresh one. See also Larry Celona, “NY Limits on Magazine Size Won’t Slow Determined Killers, Firearms Experts Say,” *New York Post*, January 17, 2013, <https://nypost.com/2013/01/17/ny-limits-on-magazine-size-wont-slow-determined-killers-firearms-experts-say/>.

charge American soldiers while they reloaded. But, like magazine changes today, it took only seconds to reload an M1 Garand, and such German infantry would have been gunned down during their charge. The myth has been thoroughly debunked.³⁴ And in general, there is insufficient time to take any action based on the fact that a shooter is reloading.

In the Virginia Tech shooting, for several years the deadliest mass shooting in American history, the shooter changed magazines a total of 17 times during the course of his rampage, rapidly and frequently exchanging 10-round magazines that would be compliant with most magazine bans.³⁵ Similarly, in the 1991 shooting at Luby's cafeteria, which left 24 dead, the shooter changed magazines again and again, yet patrons had no opportunity to escape.³⁶ There have been rare instances in which a shooter could be stopped before reloading. During the 2011 attack on U.S. Representative Gabrielle Giffords, for example, the shooter was tackled by bystanders after dropping a fresh magazine during a reload.³⁷ However, this was a rare occurrence in the context of already rare mass shootings. Such incidents should not be the basis for our policy choices,

especially if those choices compromise the ability of law-abiding citizens to defend themselves against more common attacks.³⁸

The recent shooting at Marjory Stoneman Douglas High School in Parkland, Florida, is an example of how little difference magazine restrictions make. The critical statistic to consider is the number of shots fired over a period of time. With some back-of-the-envelope calculations, we can see whether larger magazines would have significantly affected this shooting's rate of fire.

The Parkland shooter fired 150 rounds over the course of about seven minutes, reportedly using 10-round magazines that would be compliant with almost every current and proposed magazine restriction.³⁹ Assuming the shooter used fifteen 10-round magazines, he would have reloaded fourteen times over the course of seven minutes. If he had spent three seconds per magazine change (an estimate on the slow side), he would have spent a total of 42 seconds reloading and 378 seconds firing, averaging one shot every 2.5 seconds.

Would using 30-round magazines have made him significantly more lethal? Probably not. Reloading four times instead of fourteen while

“Would using 30-round magazines have made the Parkland shooter significantly more lethal? Probably not.”

34. Jonathan Ferguson, “Myths & Misconceptions: the M1 ‘ping,’” Ares Armament Research Services, December 31, 2016, <http://armamentresearch.com/myths-misconceptions-the-m1-ping/>.

35. “[T]he Virginia Tech shooter used handguns and 17 magazines—mostly of 10-round (but also some 15-round). Two of the highest profile mass shootings in recent history and [sic] shooters used 10-round magazines; they just brought a lot of them. These magazines would not have been affected at all by the proposed ban.” Matt MacBadaigh, “Gun Control Facts: Why a ‘High Capacity’ Magazine Ban Would Not Prevent Mass Shootings,” *Mic*, January 2013, <https://mic.com/articles/24263/gun-control-facts-why-a-high-capacity-magazine-ban-would-not-prevent-mass-shootings#.UeMA2bJqD>.

36. Paula Chin, “A Texas Massacre,” *People*, November 1991, <http://people.com/archive/a-texas-massacre-vol-36-no-17/>.

37. “Congresswoman’s responses after Arizona shooting called encouraging,” *CNN*, January 9, 2011, https://archive.is/20120717021022/http://articles.cnn.com/2011-01-09/justice/arizona.shooting_1_arizona-congresswoman-gabrielle-giffords-people-shot-doctors.

38. It is also worth noting that the Columbine massacre took place during the federal assault weapons ban and employed the use of compliant magazines. “[O]ne of the Columbine shooters used a Hi-Point 995 carbine[], which uses 10 round magazines. He just carried 13 of them.” MacBadaigh, *supra* note 35.

39. Mairead McArdle, “Report: Parkland Shooter Did Not Use High-Capacity Magazines,” *National Review*, March 1 2018, <https://www.nationalreview.com/2018/03/report-parkland-shooter-did-not-use-high-capacity-magazines/>.

“Magazine capacity has a complicated and nonlinear relationship with practical rate of fire.”

firing the same amount of ammunition would have allowed him to fire one shot every 2.3 seconds. Such a minuscule difference in practical fire rate would be unlikely to have any appreciable effect on lethality. The tiny reduction could be made up for by simply carrying more magazines, as the Parkland shooter did, and continuing the rampage a few seconds longer.

As mentioned above, magazine capacity has a complicated and nonlinear relationship with practical rate of fire. Because extremely-large-capacity magazines tend to experience feed malfunctions, they can actually decrease a weapon's effective rate of fire. For example, consider some high-profile crimes in which the shooter employed a truly “high-capacity” magazine—one that actually extended the weapon's capacity beyond the limitations of its design. In the 2012 Aurora, Colorado shooting, for example, the perpetrator used a 100-round drum; it seized after a handful of shots, forcing him to switch to another weapon. Unlike with a quick magazine change, the fumbling that followed allowed people to escape.⁴⁰ In contrast, at Newtown, Connecticut, the shooter changed magazines seven times before his rifle malfunctioned and people were able to flee.⁴¹ From these few data points, from which little can be said conclusively due to sample size, one can argue that true high-capacity magazines would be “safer” in a mass shooting situation than multiple low-capacity magazines.

Most guns can fire fairly quickly, and magazine changes allow high rates of fire to be

maintained. The fundamental question is: when do slight changes in the rate of fire make a difference? As Professor Kleck has pointed out when comparing self-loading rifles to revolvers:

The effective rate of fire of any gun is limited by its recoil. . . . It cannot be fired again effectively until the shooter puts the gun back on target. Thus the somewhat higher rate of fire of semi-automatic weapons cannot be fully exploited, reducing the effective difference between these weapons and revolvers.

Ordinary revolvers can easily, with aimed fire, [connect] six rounds in 3 seconds without special skill or modification. Even assuming a semiautomatic can fire at twice this rate, it would only mean that a shooter could fire six rounds in 1.5 instead of 3 seconds. The issue comes down to this: How many violent incidents occur each year in which a shooter has 1.5 seconds to shoot the victim(s), but not 3 seconds? Such incidents are probably fairly rare, although there are no hard data on the matter.⁴²

Those observations underline a core issue: when a motivated murderer wants to cause a lot of damage, he plans accordingly. Be it a handgun, a revolver with a speed-loader, or a self-loading rifle, what really matters for sustaining a high rate of fire is having multiple magazines, not the capacity of those magazines.⁴³

40. “These after-market extended magazines have a tendency to jam[.]” Susan Candiotti, “Colorado Shooter's Rifle Jammed during Rampage,” *CNN*, July 22, 2012, <http://www.cnn.com/2012/07/22/us/colorado-shooting-investigation/index.html>.

41. In Newtown, the shooter employed an aftermarket polymer magazine, which eventually caused a feed malfunction. See Corinne Lestch, “Slain Newtown Boy Jesse Lewis, 6, Yelled ‘Run!’ When Adam Lanza's Gun Jammed, Allowing Six Classmates to Run to Safety,” *New York Daily News*, October 19, 2013, <http://www.nydailynews.com/news/national/slain-newton-boy-yelled-classmates-run-6-escaped-article-1.1490325>.

42. Kleck, *supra* note 32 at 78.

43. See “Sherriff's Demo of How Magazine Size Makes Very Little Difference,” February 2013, <https://www.youtube.com/watch?v=MCSySuemiHU>.

To meaningfully limit practical fire rate, a magazine regulation would have to be incredibly restrictive. If magazines were limited to six shots, putting them on pace with revolvers, a motivated criminal with a bag full of spares could still keep up a high rate of fire. Going even further, perhaps limiting magazines to one or two rounds and outlawing revolvers, would cause a meaningful reduction in fire rate, reducing lethality in the incredibly rare mass shooting. But such draconian magazine restrictions would not only severely hinder effective self-defense; they would also require intrusive, objectionable, and constitutionally dubious enforcement mechanisms to be effective. In a country with hundreds of millions of guns, which are vastly outnumbered by magazines, confiscating existing magazines would be nothing short of a civil liberties nightmare, with little to show in terms of public-safety benefits. Such a prohibition would have to meet a heavy burden of proof to justify its tremendous practical and constitutional concerns.

Unintended Victims

Instead of discouraging criminal conduct using certain weapons and magazines, current magazine bans draw an arbitrary line that can ruin lives and tear families apart with little to no countervailing benefit. We need not engage in the theoretical to grasp the difficulties inherent in these laws, as court records are rife with harrowing scenarios caused by their implementation.

In March of 2010, mechanic and tinkerer Tien Duc Nguyen was arrested for possession of a box of parts and magazines he happily showed to investigators visiting his shop. Nguyen was charged and sentenced under an assault weapon and large-capacity magazine statute. In an opinion that opens with a particularly strange warning to “[b]eware of the

dangers of the Internet[,]” the California 4th District Court of Appeal upheld Nguyen’s six-year sentence for “attempted assault weapon activity,”⁴⁴ despite the fact that the parts Nguyen purchased were completely unregulated, unassembled, and could have been assembled into any manner of compliant firearms.

In 2002, Daniel G., a minor, was torn from his family and made a ward of the state for holding a weapon capable of accepting a “high-capacity” magazine.⁴⁵ A neighbor spotted Daniel and several other youths handling around a rifle and called the Los Angeles County sheriff’s department. When the deputies found the rifle, the youths were charged with possession of an assault weapon. Nobody was shot, robbed, or hurt, and no ownership of the rifle was established. Daniel’s crime was simply the curious handling of a popular rifle.

On December 5, 1996, 16-year-old Jorge M. was taken from his home and made a ward of the state for as long as three years because a rifle with a “banana mag” was left in his room.⁴⁶ Despite no evidence that the minor had ever “played with” the rifle or its magazine, and despite the fact that all family members testified that the rifle belonged to his father, he was charged with possession of the rifle and placed in state custody for the remainder of his childhood.

These examples highlight the human cost of these poorly reasoned and ill-conceived laws. Such laws are used with startling regularity to ruin lives absent any violent conduct. Given the number of “high-capacity” magazines in private hands, the difficulty of policing grandfather exceptions in this context, and the stringency with which such laws are generally enforced, any highly restrictive magazine law would instantly make criminals of millions of people. Many people would be punished, and many families disrupted, for harmless conduct.

“To meaningfully limit practical fire rate, a magazine regulation would have to be incredibly restrictive.”

44. *People v. Nguyen*, 212 Cal. App. 4th 1311 (2013).

45. *In re Daniel G.*, 120 Cal. App. 4th 824 (Cal. Ct. App. 2004).

46. *In re Jorge M.*, 23 Cal. 4th 866 (Cal. 2000).

“Unlike mass murderers, who usually spend weeks or months planning their crimes, people who use guns defensively rarely carry spare magazines.”

SELF-DEFENSE IMPLICATIONS

Whether or not one accepts the claim that widespread gun ownership deters crime, the fact remains that an unknowable but large number of would-be victims of crimes use their guns in defense of themselves and their property every year. Estimates on total defensive gun uses range from 100,000 to 4.7 million per year.⁴⁷ These estimates vary wildly because, by their nature, most incidents go unreported: people who have used guns defensively tend to fear repercussions and thus to not report such incidents.⁴⁸ A ban on high-capacity magazines is likely to reduce ownership more among law-abiding people than among criminals (because law-abiding people tend to follow the law); thus, the use of such magazines would be disproportionately reduced in defensive uses.

The same factors that make a magazine potentially useful for offense make it useful in a defensive situation. Increased reserve capacity means more opportunities to hit the target, whether a potential victim or an assailant. According to a 2015 study by the *International Journal of Police Science & Management*, novice shooters have a 39 percent hit probability over typical engagement distances, compared to 48 percent for intermediate and 49 percent for expert shooters.⁴⁹ That, combined with the fact

that an assailant is rarely stopped by a single bullet, makes magazine capacity all the more important for effective defensive use of firearms.⁵⁰

This is especially true in situations involving concerted criminal action. For example, in 2015, two armed men (one with a gun, one with a fake gun) attempted to ambush a group leaving a Houston bar. The assailants attacked one member of the group, prompting a would-be victim to draw his gun. The would-be victim fired twice at the first robber and then 10 times at the second. The first robber was hit twice, and the second was hit seven times. Despite those hits, the second robber continued to run, only to be apprehended at a hospital some time later. Both survived.⁵¹

Unlike mass murderers, who usually spend weeks or months planning their crimes and anticipate the need for spare magazines,⁵² people who use guns defensively rarely carry spares. This decreases the efficacy of guns in defensive situations, making their effectiveness even more a function of the would-be victim's skill. A 5- or 10-round magazine could severely limit the ability of crime victims to defend themselves, especially against multiple assailants. Firearms are effective for self-defense because they are “the great equalizer,” but putting law-abiding citizens

47. Otis Duncan, “Gun Use Surveys: In Numbers We Trust?,” *The Criminologist*, January 2000, <http://www.asc41.com/Criminologist/2000/January-February%202000.htm>; Philip J. Cook, “Defensive Gun Uses: New Evidence from a National Survey,” *Journal of Quantitative Criminology* 14, no. 2 (1998).

48. Kleck, *supra* note 32 at 184.

49. William J. Lewinski et al., “The Real Risks during Deadly Police Shootouts: Accuracy of the Naïve Shooter,” *International Journal of Police Science & Management* 17, no. 2 (2015): 117–27, <http://www.forcescience.org/articles/naiveshooter.pdf>.

50. A. K. Mandal and S. S. Oparah, “Unusually Low Mortality of Penetrating Wounds of the Chest,” *Journal of Thoracic and Cardiovascular Surgery* 97, no. 1 (1989): 119–25; Dr. Jim Kornberg, “The Myth of the Single Shot Kill,” *True West Magazine*, July 17, 2010, <https://truewestmagazine.com/the-myth-of-the-single-shot-kill/>.

51. G. Halek, “Houston Concealed Carriers Unload on Armed Muggers,” *Concealed Nation*, December 21, 2015, <http://concealednation.org/2015/12/ccw-in-action-houston-concealed-carriers-unload-on-armed-muggers-why-we-travel-in-packs/>.

52. J. Michael Mostwick, “A Good Idea Shot Down: Taking Guns Away from the Mentally Ill Won’t Eliminate Mass Shootings,” *Mayo Clinic Proceedings*, November 2013, [http://www.mayoclinicproceedings.org/article/S0025-6196\(13\)00823-9/pdf](http://www.mayoclinicproceedings.org/article/S0025-6196(13)00823-9/pdf).

at a disadvantage against criminals is likely to result in more victims. Effective self-defense should not be available only to those who are skilled and physically capable.

CONCLUSION

Current restrictions on “high-capacity” magazines are not only ineffective but dangerous. Standard magazines designed for the weapon in question are the most effective tools for lawful defense. It bears repeating that these restrictions would only affect the outcome of the incredibly rare shooting in which more than a few shots are fired.

A coherent approach to gun safety will have

to take honest account of the various costs of proposed regulations, especially as they affect self-defense. In a country with possibly a billion magazines in circulation, enforcing a ban against commonly owned magazines would be impossible without draconian police actions and the criminalization of peaceful behavior. Regarding truly high-capacity magazines, the fact that they are more likely than standard magazines to cause malfunction makes them more useful as shooting-range novelties than as equipment for mass shooters. Thus, a ban on those magazines would likely have little effect on gun violence. In sum, it is likely, on balance, that more severe magazine restrictions could do more harm than good.

“Effective self-defense should not be available only to those who are skilled and physically capable.”