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10	UNITED STATE	S DISTRICT COURT
11	SOUTHERN DISTI	RICT OF CALIFORNIA
12		
13	VIRGINIA DUNCAN, RICHARD LEWIS, PATRICK LOVETTE,	Case No.: 17-cv-1017-BEN-JLB
14	DAVID MARGUGLIO, CHRISTOPHER WADDELL, and	DECLARATION OF LUCY P. ALLEN IN SUPPORT OF DEFENDANTS'
15	CALIFORNIA RIFLE & PISTOL ASSOCIATION, INCORPORATED,	OPPOSITION TO PLAINTIFFS' MOTION FOR PRELIMINARY
16	a California corporation,	INJUNCTION
17	Plaintiffs,	Date: June 13, 2017
18	vs.	Time: 10:00 a.m. Dept.: 5A
19	XAVIER BECERRA, in his official	Judge: Hon. Roger T. Benitez
20	capacity as Attorney General of the State of California; and DOES 1-10,	
21	Defendants.	
22		<u>.</u>
23	I, Lucy P. Allen, declare as follow	vs:
24	1. I am a Managing Director	of NERA Economic Consulting ("NERA"),
25	a member of NERA's Securities and Fin	nance Practice and Chair of NERA's
26	Product Liability and Mass Torts Practic	ce. NERA provides practical economic
27	advice related to highly complex busine	ess and legal issues arising from
28	competition, regulation, public policy, s	strategy, finance, and litigation. NERA was
	DECLARATION OF LUCY P. ALLEN	- 1 - 17-cv-1017-BEN-JLB

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established in 1961 and now employs approximately 500 people in more than 20 offices worldwide.

- In my over 20 years at NERA. I have been engaged as an economic 2. consultant or expert witness in numerous projects involving economic and statistical analysis. I have been qualified as an expert and testified in court on various economic and statistical issues relating to the flow of guns into the criminal market. I have testified at trials in Federal District Court, before the New York City Council Public Safety Committee, the American Arbitration Association and the Judicial Arbitration Mediation Service, as well as in depositions.
- 3. I have an A.B. from Stanford University, an M.B.A. from Yale University, and M.A. and M. Phil. degrees in Economics, also from Yale University. Prior to joining NERA, I was an Economist for both President George H. W. Bush's and President Bill Clinton's Council of Economic Advisers.
- 4. This declaration addresses the results of analyses that I and others under my direction at NERA conducted with respect to the following issues: (a) the number of rounds of ammunition fired by individuals using a gun in self-defense; and (b) the use of large-capacity magazines in mass shootings.

A. Number of rounds fired by individuals in self-defense

Plaintiffs claim the banned "large-capacity magazines" (which are 5. magazines capable of holding more than ten rounds) are commonly used in the home for self-defense. In particular, the Complaint claims, "There is little dispute that magazines having a capacity over 10 rounds are popular for self-defense purposes. [...] Each available round is an additional opportunity to end a threat.

Complaint for Declaratory and Injunctive Relief, dated May 17, 2017 ("Complaint").

That is precisely why millions of Americans choose magazines over ten rounds for self-defense, including in the home."²

- 6. Data from the NRA Institute for Legislative Action ("NRA-ILA") indicates that it is rare for a person, when using a firearm in self-defense, to fire more than ten rounds. The NRA-ILA maintains a database of "armed citizen" stories describing private citizens who have successfully defended themselves, or others, using a firearm. Although it is not compiled scientifically, this is the largest collection of accounts of citizen self-defense of which I am aware. Moreover, in light of the positions taken by the entity compiling the data, I would expect that any selection bias would be in favor of stories that put use of guns in self-defense in the best possible light.
- 7. A study of all incidents in this database over a 5-year period from 1997 through 2001 found that it is rare for individuals to defend themselves using more than ten rounds. Specifically, this study found that, on average, 2.2 shots were fired by defenders and that in 28% of incidents of armed citizens defending themselves the individuals fired no shots at all.³
- 8. We performed a similar analysis of NRA-ILA stories published between January 2011 and May 2017. For each incident, the number of offenders, defenders, and shots fired were tabulated, along with the location, nature and outcome of the crime. The information was gathered for each incident from both the NRA-ILA synopsis and, where available, one additional news story.⁴

² Complaint, ¶47.

³ Claude Werner, "The Armed Citizen – A Five Year Analysis."

The following incidents were excluded from the analysis: (1) repeat stories, (2) wild animal attacks, and (3) one incident where the supposed victim later pleaded guilty to covering up a murder. When the exact number of shots fired was not specified, we used the average for the most relevant incidents with known number of shots. For example, if the stories indicated that "shots were fired" this would indicate that at least two shots were fired and thus we used the average

9. According to this analysis, defenders fired 2.2 shots on average. Out of 736 incidents, there were two incidents (0.3% of all incidents), in which the defender was reported to have fired more than 10 bullets. In 18.2% of incidents, the defender did not fire any shots, and simply threatened the offender with a gun. For incidents occurring in the home (56% of total), defenders fired an average of 2.1 shots, and fired no shots in 16.1% of incidents. The table below summarizes some of these findings.

Number of Shots Fired in Self-Defense Based on NRA-ILA Armed Citizen Incidents in the United States January 2011 - May 2017

Shots Fired by Individual in Self-Defense

Overall	Incidents in Home
2.2	2.1
134	66
18.2%	16.1%
2	2
0.3%	0.5%
	2

Notes and Sources:

Events from NRA-ILA Armed Citizen database covering 736 incidents from January 2011 through May 2017. Excludes repeat stories, wild animal attacks and one incident where the supposed victim later pleaded guilty to covering up a murder.

10. We also performed this analysis for incidents that occurred in California. According to this analysis, defenders fired 2.0 shots on average. Out of 47 incidents, there were no incidents in which the defender was reported to have

number of shots fired in all incidents in which two or more shots were fired and the number of shots was specified.

fired more than 10 bullets. In 27.7% of incidents, the defender did not fire any shots, and simply threatened the offender with a gun. For incidents occurring in the home (60% of total), defenders fired an average of 1.9 shots, and fired no shots in 32.1% of incidents. The table below summarizes some of these findings for California.

Number of Shots Fired in Self-Defense Based on NRA-ILA Armed Citizen Incidents in California January 2011 - May 2017

Shots Fired by Individual in Self-Defense

	Overall	Incidents in Home
Average Shots Fired	2.0	1.9
Number of Incidents with No Shots Fired	13	9
Percent of Incidents with No Shots Fired	27.7%	32.1%
Number of Incidents with >10 Shots Fired	0	0
Percent of Incidents with >10 Shots Fired	0.0%	0.0%

Notes and Sources:

Events from NRA-ILA Armed Citizen database covering 47 incidents from January 2011 through May 2017. Excludes repeat stories, wild animal attacks and one incident where the supposed victim later pleaded guilty to covering up a murder.

B. Mass shootings

1. Use of large-capacity magazines in mass shootings

11. We found two comprehensive sources detailing historical mass shootings: 1) "US Mass Shootings, 1982-2017: Data From Mother Jones' Investigation," published by Mother Jones and 2) "Mass Shooting Incidents in

America (1984-2012)," published by the Citizens Crime Commission of New York City. See attached Table 1 for a summary of the combined data.

- 12. The definition of mass shooting and the period covered differed somewhat for each of the sources. Mother Jones covers 86 mass shootings from 1982 to 2017. Mother Jones includes mass shootings in which a shooter killed four or more people in one incident in a public place and excludes crimes involving armed robbery or gang violence. Starting in January 2013, Mother Jones changed its definition of a mass shooting to include instances when a shooter killed three or more people, consistent with a change in the federal definition of a mass shooting. Citizens Crime Commission covers 33 mass shootings from 1984 to 2012. Citizens Crime Commission includes mass shootings in which a shooter killed four or more people and the gun used by the shooter had a magazine with capacity greater than ten. We updated the data on shots fired for mass shootings where available.
- 13. Based on the combined data we found that large-capacity magazines (those with a capacity to hold more than 10 rounds of ammunition) are often used

The Mother Jones data includes three incidents involving two shooters (Columbine High School, San Bernardino and Westside Middle School).

^{5 &}quot;US Mass Shootings, 1982-2017: Data From Mother Jones' Investigation," Mother Jones, updated January 8, 2017. http://www.motherjones.com/politics/2012/12/mass-shootings-mother-jones-full-data, accessed June 1, 2017.

⁶ "A Guide to Mass Shootings in America," *Mother Jones*, updated April 19, 2017. http://www.motherjones.com/politics/2012/07/mass-shootings-map. See, also, "What Exactly is a Mass Shooting," *Mother Jones*, August 14, 2012. http://www.motherjones.com/mojo/2012/08/what-is-a-mass-shooting

[&]quot;A Guide to Mass Shootings in America," *Mother Jones*, updated April 19, 2017. http://www.motherjones.com/politics/2012/07/mass-shootings-map.

⁸ "Mass Shooting Incidents in America (1984-2012)," *Citizens Crime Commission of New York City*. http://www.nycrimecommission.org/mass-shooting-incidents-america.php, accessed June 1, 2017.

in mass shootings. Such large-capacity magazines were used in the majority of the mass shootings with known magazine capacity since 1982 (44 out of 50 mass shootings). In the past two years, guns with large-capacity magazines were used in eight of the nine mass shootings with known magazine capacity. ¹⁰

14. The data indicates that it is common for offenders to fire more than ten rounds when using a gun with a large-capacity magazine in mass shootings. In particular, in mass shootings that involved use of large-capacity magazine guns, the average number of shots fired was 75.¹¹

2. Casualties in mass shootings with large-capacity magazine guns compared with other mass shootings

15. Based on our analysis of the combined mass shootings data in the past 35 years, casualties were higher in the mass shootings that involved large-capacity magazine guns than in other mass shootings. In particular, we found an average number of fatalities or injuries of 22 per mass shooting with a large-capacity magazine versus 9 for those without.¹²

For many of the mass shootings, the data does not indicate whether a large-capacity magazine is used. Based only on Mother Jones data, large capacity magazines were used in 42 out of 48 mass shootings with known magazine capacity.

¹⁰ During the past two years, there were six additional mass shootings in which the magazine capacity was unknown.

¹¹ There were 31 mass shootings in which the magazine capacity and the number of shots fired were known.

A 2013 study by Mayors Against Illegal Guns similarly found that when mass shootings involved assault weapons or high capacity magazine, the number of deaths was higher. The study was based on data from the FBI and media reports covering the period January 2009 through January 2013. The study found that mass shootings where assault weapons or high-capacity magazines were used resulted in an average of 14.4 people shot and 7.8 deaths versus other mass shootings that resulted in 5.7 people shot and 4.8 deaths. See, "Analysis of

3. Mass shootings with only one gun and large capacity magazines

16. Based on our analysis of the combined mass shootings data in the past 35 years, there have been 44 incidents (88% of the 50 mass shootings with known magazine capacity) in which the shooter used a large capacity magazine. There have been 36 incidents (41% of the 88 mass shootings) in which the shooter had only one gun. There were 16 incidents (32% of the 50 mass shootings with known magazine capacity) where the shooter had only one gun and used a large capacity magazine. An average of 14 people were killed or injured in each of these 16 mass shootings.¹³

4. Percent of mass shooters' guns legally obtained

17. The combined data on mass shootings indicates that the majority of guns used in mass shootings were obtained legally. Shooters in 76% of mass shootings in the past 35 years obtained their guns legally (at least 67 of the 88 mass shootings) and almost 76% of the guns used in these 88 mass shootings were obtained legally (at least 147 of the 194 guns).

Recent Mass Shootings," Mayors Against Illegal Guns, September, 2013.

An analysis of only the mass shootings identified by Mother Jones yielded similar results: 1) Large capacity magazines were used in 42 out of the 48 mass shootings with known magazine capacity; 2) The shooter had only one gun in 34 out of the 86 mass shootings; 3) The shooter had only one gun and used a large capacity magazine in 14 of the 48 shootings with known magazine capacity. An average of 14 people were killed or injured during these 14 mass shootings.

I declare under penalty of perjury that the forgoing is true and correct. Executed within the United States on June 5, 2017.

Lucy P. Allen

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Table 1 Combined Mass Shootings Data 1982 – 2017

	tained Number of gally? Guns
(2) (3) (4) (5) (6) (7) (8) (9)	10) (11)
ı, CA 4/18/2017 MJ No 3 0 3 16 ^a -	1
auderdale, FL 1/6/2017 MJ - 5 6 11 - Yo	\mathbf{s} 1
gton, WA 9/23/2016 MJ - 5 0 5	1
Rouge, LA 7/17/2016 MJ Yes 3 3 6	3 X
TX 7/7/2016 MJ Yes 5 11 16 - Yes	s 3
lo, FL 6/12/2016 MJ Yes 49 53 102 - Yo	s 2
ın, KS 2/25/2016 MJ Yes 3 14 17 - Ye	s 2
azoo County, MI 2/20/2016 MJ - 6 2 8 - Yo	s 1
ernardino, CA 12/2/2015 MJ Yes 14 21 35 150 b Yes	s 4
do Springs, CO 11/27/2015 MJ - 3 9 12	1 .
do Springs, CO 10/31/2015 MJ Yes 3 0 3 - Yes	s 3
urg, OR 10/1/2015 MJ - 9 9 18 - Ye	s 6
nooga, TN 7/16/2015 MJ Yes 5 2 7 - Ye	s 3
ston, SC 6/17/2015 MJ Yes 9 1 10 - Yes	s 1
ha, WI 6/11/2015 MJ - 3 1 4 - Ye	s 2
ville, WA 10/24/2014 MJ - 5 1 6 St	olen 1
Barbara, CA 5/23/2014 MJ Yes 6 13 19 Yes	s 3
ood, TX 4/3/2014 MJ - 3 12 15 - Ye	s
s, CA 2/20/2014 MJ - 4 2 6	. 2
ngton, D.C. 9/16/2013 MJ - 12 8 20 . Ye	s 2
h, FL 7/26/2013 MJ Yes 7 0 7 10 ° Ye	s 1
Monica, CA 6/7/2013 MJ Yes 6 3 9 70 d Ye	s 2
ıl Way, WA 4/21/2013 MJ - 5 0 5 - Ye	s 2
ner County, NY $3/13/2013$ MJ - 5 2 7 Ye	s 1
wn, CT 12/14/2012 MJ/CC Yes 28 2 30/28 154 Sto	olen 4/3

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Table 1 Combined Mass Shootings Data 1982 – 2017

Location	Date	Source	Large Cap. Mag.? ¹	Fatalities ²	Injuries ²	Total Fatalities & Injuries ²	Shots Fired	Gun(s) Obtained Legally?	Offenders' Number of Guns
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
apolis, MN	9/27/2012	MJ/CC	Yes	7	1/2	8/9	46	Yes	
reek, WI	8/5/2012	MJ/CC	Yes	. 7	3	10	-	Yes	. 1
ı, CO	7/20/2012	MJ/CC	Yes	12	70	82	80	Yes	4
, WA	5/30/2012	MJ	· -	6	1	7	<u>-</u>	Yes	2
ıd, CA	4/2/2012	MJ	No	7	3	10		Yes	1 .
oss, GA	2/22/2012	MJ	-	5	0	5	· -	Yes	1
each, CA	10/14/2011	MJ		8	1	9		Yes	3
ı City, NV	9/6/2011	MJ/CC	Yes	5	7	12	-	Yes	3
Rapids, MI	7/7/2011	CC	Yes	8	2	10	10		1
ı, AZ	1/8/2011	MJ/CC	Yes	6	13	19	33	Yes	1
ester, CT	8/3/2010	MJ/CC	Yes	. 9	2	11	11	Yes	2
nd, WA	11/29/2009	MJ	-	4	1	5	-	Stolen	2
ood, TX	11/5/2009	MJ/CC	Yes	13	30/32	43/45	214	Yes	1
amton, NY	4/3/2009	MJ/CC	Yes	14	4	18	99	Yes	2
ge, NC	3/29/2009	MJ	No	8	3	11		Yes	2
rson, KY	6/25/2008	MJ	-	6	1	7	-	Yes	. 1
b, IL	2/14/2008	MJ/CC	Yes	6	21	27	54	Yes	4
ood, MO	2/7/2008	MJ	-	6	. 2	8	-	Stolen	2
ì, NE	12/5/2007	MJ/CC	Yes	9	4/5	13/14	14	Stolen	
on, WI	10/7/2007	MJ	-	6	1	7		Yes	1
burg, VA	4/16/2007	MJ/CC	Yes	32/33	23/17	55/50	176	Yes	2
ike City, UT	2/12/2007	MJ	No	6	4	10	-	No	2
ster County, PA	10/2/2006	MJ		6	5	11		Yes	3
:, WA	3/25/2006	MJ	-	7	2	9	-	Yes	4
, CA	1/30/2006	MJ/CC	Yes	8	0	8		Yes	1

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Table 1 Combined Mass Shootings Data 1982 – 2017

Location	Date	Source	Large Cap. Mag.? ¹	Fatalities ²	Injuries ²	Total Fatalities & Injuries ²	Shots Fired	Gun(s) Obtained Legally?	Offenders' Number of Guns
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
ake, MN	3/21/2005	MJ	-	10	5	15	-	Stolen	3
field, WI	3/12/2005	MJ	•	7	4	11		Yes	1
bus, OH	12/8/2004	MJ	-	5	7	12	_	Yes	. 1
r, WI	11/21/2004	CC	Yes	6	3	9	20		1
ian, MS	7/8/2003	MJ	-	7	8	15	-	Yes	5
se Park, IL	2/5/2001	MJ		5	4	9		Yes	4
ïeld, MA	12/26/2000	MJ/CC	Yes	7	0	7	37	Yes	3
ı, FL	12/30/1999	MJ		5	3	8	- 1	Yes	2
ulu, HI	11/2/1999	MJ/CC	Yes	7	0	7	28	Yes	1
orth, TX	9/15/1999	MJ/CC	Yes	8	7	15	30	Yes	2
a, GA	7/29/1999	MJ	-	9	13	22		Yes	4
on, CO	4/20/1999	MJ/CC	Yes	13/15	24	37/39	188	No	4
field, OR	5/21/1998	MJ/CC	Yes	4	25	29	50	No	3
ioro, AR	3/24/1998	MJ/CC	Yes	5	10	15	26	Stolen	9/10
gton, CT	3/6/1998	MJ/CC	Yes	5	1/0	6/5	5	Yes	1
e, CA	12/18/1997	MJ/CC	Yes	5	2	7	144	Yes	1
, SC	9/15/1997	MJ	<u>.</u>	4	3	7		No	1
auderdale, FL	2/9/1996	MJ		6	1	7	•	Yes	2
s Christi, TX	4/3/1995	MJ	<u>.</u> 	6	0	6	- 	Yes	2
ild Base, WA	6/20/1994	MJ/CC	Yes	5/6	23	28/29		Yes	1
ı, CO	12/14/1993	MJ	# 	4	1	5	i i		1
n City, NY	12/7/1993	MJ/CC	Yes	6	19	25	30	Yes	1
eville, NC	8/6/1993	MJ	<u>.</u>	4	8 .	12	-	Yes	3
ancisco, CA	7/1/1993	MJ/CC	Yes	9	6	15	75	No	3
as Glen, NY	10/15/1992	MJ		5	0	5	-	Yes	1

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Table 1 Combined Mass Shootings Data 1982 – 2017

			Large		Total			Gun(s)	Offenders'
Location	Date	Source	Cap. Mag.? ¹	Fatalities ²	Injuries ²	Fatalities & Injuries ²	Shots Fired	Obtained Legally?	Number of Guns
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
urst, CA	5/1/1992	MJ		4	10	14		Yes	2
Oak, MI	11/14/1991	MJ	<u>.</u>	5	-5	10	-	Yes	1
City, IA	11/1/1991	MJ	No	6	1	7		Yes	1
ı, TX	10/16/1991	MJ/CC	Yes	24	20	44	100	Yes	2
nville, FL	6/18/1990	MJ/CC	Yes	10	4	14	14	Yes	2
ʻille, KY	9/14/1989	MJ/CC	Yes	9	12	21	21	Yes	5
on, CA	1/17/1989	MJ/CC	Yes	6	29/30	35/36	106	Yes	2
vale, CA	2/16/1988	MJ	-	7	4	11	-	Yes	7
Зау, FL	4/23/1987	MJ/CC	Yes	6	14/10	20/16		Yes	3
ıd, OK	8/20/1986	MJ	-	15	6	21		Yes	3 .
sidro, CA	7/18/1984	MJ/CC	Yes	22	19	41	257	Yes	3
, TX	6/29/1984	MJ/CC	Yes	6	· 1	7	-	No	1
,FL	8/20/1982	MJ	No	8	3	11		Yes	1
			Average	8.0	7.7	15.7	73		
Large Capacity Magazine Average Non-Large Capacity Magazine Average				10.0	11.8	21.8	75		
				6.3	2.3	8.7	-		

tings, 1982-2017: Data from Mother Jones' Investigation," accessed June 1, 2017) and the Citizens Crime Commission of New York City ("Citizens ass Shooting Incidents in America (1984-2012)," accessed June 1, 2017). MJ indicates Mother Jones data. CC indicates Citizens Crime Commission on data, "/" is added between values. In these instances, values from MJ are listed first. Except where noted, all data on shots fired obtained from CC. a capacity to hold more than 10 rounds of ammunition.

s and injuries.

ed After Gunman Kills 3 White Men in Downtown Fresno," LA Times, April 19, 2017.

ets Left Trail of Clues, but No Clear Motive," New York Times, December 3, 2015.

in Fire in Hialeah Shooting Rampage," NBC News, July 28, 2013.

ica Gunman 'Ready for Battle,'" New York Times, June 8, 2013.