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IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF ILLINOIS

CALEB BARNETT, et al.,)
)
Plaintiffs,)
) Case No.
-vs-) 3:23-cv-209-SPM
)
KWAME RAOUL, et al.,)
)
Defendants.)
-----)
DIANE HARREL, et al.,)
)
Plaintiffs,)
) Case No.
-vs-) 3:23-cv-141-SPM
)
KWAME RAOUL, et al.,)
)
Defendants.)
-----)
JEREMY W. LANGLEY, et al.,)
)
Plaintiffs,)
) Case No.
-vs-) 3:23-cv-192-SPM
)
BRENDAN KELLY, et al.,)
)
Defendants.)
-----)
FEDERAL FIREARMS LICENSEES OF)
ILLINOIS, et al.,)
)
Plaintiffs,)
) Case No.
-vs-) 3:23-cv-215-SPM
)
JAY ROBERT "JB" PRITZKER, et)
al.,)
)
Defendants.)

VIDEOCONFERENCE DEPOSITION OF JAMES RONKAINEN
August 2, 2024

1 The videoconference deposition of JAMES
2 RONKAINEN, taken remotely before JUNE M. STEARNS,
3 CSR, RMR, and Notary Public, pursuant to the
4 Federal Rules of Civil Procedure for the United
5 States District Courts pertaining to the taking of
6 depositions, commencing at 10:04 a.m. Eastern Time
7 on August 2, 2024.

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9 * * * * *

10
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NOTE: Exhibits were provided for inclusion with deposition transcripts.

1 THE REPORTER: Before we proceed, I will
2 ask all counsel to agree on the record that there
3 is no objection to this Certified Shorthand
4 Reporter administering a binding oath to the
5 witness remotely.

6 Will all counsel state their agreement
7 on the record, please.

8 MS. HELFRICH: No objection.

9 MR. LOTHSON: No objection.

10 MR. MAAG: No objection.

11 MR. BRADY: No objection.

12 MR. SIGALE: No objection.

13 (Whereupon the witness was
14 duly sworn.)

15 THE REPORTER: Thank you.

16 Please proceed.

17 MS. HELFRICH: Thank you.

18 JAMES RONKAINEN
19 witness herein, called for examination, having been
20 first duly sworn via videoconference, was examined
21 and testified as follows:

22 EXAMINATION

23 BY MS. HELFRICH:

24 Q Good morning, Mr. Ronkainen. Thank you

1 for being here today.

2 I'm Gretchen Helfrich. I'm an
3 attorney with the Office of the Illinois Attorney
4 General, and I'm going to be taking your deposition
5 today.

6 A Okay.

7 Q I represent the State defendants,
8 Governor Pritzker, Attorney General Raoul, and
9 Director Kelly of the ISP.

10 So I understand you've given
11 depositions many times before; is that right?

12 A I have given depositions previously as an
13 expert, as a corporate witness, and as a fact
14 witness.

15 Q Now, have you given a deposition by Zoom?

16 A No, ma'am. This is my first time.

17 Q Okay. Well, as you probably know from
18 all of those depositions, I'm going to start by
19 going over some ground rules, and there will be
20 some extras that apply to Zoom specifically.

21 A Okay.

22 Q So as you know you are, and I remind you,
23 you are testifying under oath today. Do you
24 understand that?

1 A Yes, I do.

2 Q And you understand that that is the same
3 oath you would take if we were in a courtroom in
4 front of a judge?

5 A Yes, ma'am.

6 Q All right. June, the court reporter, is
7 taking down what's being said by everybody, and she
8 can't do that or she'll have a hard time doing it
9 if we talk over each other. So I'm going to ask
10 you to let me finish my questions, let me come all
11 the way to the end of the question, before you
12 answer, okay?

13 A Okay.

14 Q And that's for two reasons. It's for
15 June, but it's also so that we can be sure that
16 you're actually answering the question that I ask
17 and not anticipating a different question. So I
18 will, likewise, try not to ask a new question until
19 you have finished answering, okay?

20 A Okay.

21 Q Now, we are both going to break that
22 rule, everybody always does, but as we go along
23 I'll try to remind us both to do that and, believe
24 me, June will remind us if she needs to. So just

1 be aware that there might be interjections of that
2 sort.

3 Mr. Lothson here is representing --
4 will be speaking on behalf of the plaintiffs. What
5 that means is he may from time to time object to my
6 questions. He's not going to, my questions are
7 wholly unobjectionable, but he may object.

8 MR. LOTHSON: Objection.

9 BY MS. HELFRICH:

10 Q He may object, and if he does you will
11 answer the question anyway. It's not like in court
12 where the judge will rule on the objection.

13 So unless he specifically instructs
14 you not to answer the question, you're going to go
15 ahead and answer it, okay?

16 A Yes.

17 Q If you don't understand a question, would
18 you please ask me -- would you please let me know
19 that you don't understand it, all right?

20 A I will.

21 Q And if you answer a question I'm going to
22 assume that you understood it. Is that fair?

23 A Yes, that's fair.

24 Q So this is a little bit personal, but I

1 have to ask. Are you on any medication today that
2 would impair your ability to give truthful
3 testimony?

4 A No, ma'am, I am not.

5 Q Anything that would impair your ability
6 to remember things accurately?

7 A No.

8 Q Is there any other circumstance existing
9 today that would impair your ability to give
10 truthful testimony or to remember things
11 accurately?

12 A No, ma'am.

13 Q All right. So specifically to Zoom,
14 since this is your first time we'll go over some
15 rules that pertain to Zoom. So you're in Kentucky.
16 I'm in Chicago. Other folks on this call are in
17 lots of different places. The only way we can talk
18 to each other while we're on the record is through
19 this screen, so that means that when we're on the
20 record the only way you're going to be able to talk
21 to your attorney is to talk out loud.

22 You understand that?

23 A Yes.

24 Q Okay. Do you have any other applications

1 open on your computer right now?

2 A I do not.

3 Q Okay. Do you have your cell phone near
4 you?

5 A I do not. It's in another room.

6 Q Okay. I would ask you to keep it that
7 way for the duration of the day, no other
8 applications, no cell phone.

9 A Understood.

10 Q All right. Thank you.

11 Do you have any documents in front of
12 you?

13 A I have my rebuttal report as well as the
14 catalogs that were referenced as part of my report.

15 Q Okay. Catalogs, do you mean Gun Digest?

16 A Gun Digest are actually soft copies.
17 These are hard copies of catalogs from Remington,
18 DPMS, Bushmaster, and Advanced Armament Company or
19 AAC. They're part of my file.

20 Q Understood, but in your report you didn't
21 list those as materials that you reviewed except
22 for the manufacturing report.

23 Oh, yes, you did. Sorry; product
24 catalogs. Gotcha. Sorry; my bad.

1 A Okay.

2 Q So what I would like to do is I would
3 like to ask you not to refer to those unless you
4 tell me that you're going to refer to them.

5 A Yes, ma'am.

6 Q So if you're drawing information from a
7 source other than your memory or your report, I'd
8 like you to let me know that, okay?

9 A Okay.

10 Q If you are having any problems with the
11 technology we're using today, please let me know
12 immediately and we will stop and fix it and make
13 sure that June hears everything that we're saying,
14 okay?

15 A Okay.

16 Q All right. Thanks.

17 Now the name of the lawsuit that
18 you're being deposed in today is Barnett versus
19 Raoul, Number 23-cv-209, pending in the U.S.
20 District Court for the Southern District of
21 Illinois. Are you aware of that?

22 A Yes.

23 Q And there are three other cases that have
24 been consolidated with the Barnett case. Those are

1 Harrel versus Raoul, 23-cv-141, Langley versus
2 Kelly, 23-cv-192, and Federal Firearms Licensees of
3 Illinois versus Pritzker, 23-cv-215.

4 Are you aware that all four cases have
5 been consolidated?

6 A Yes, I am.

7 Q In part, consolidated in part.

8 And do you understand that the
9 deposition you are giving today may be used in all
10 four of those cases?

11 A Yes, I do.

12 Q All right. Thank you.

13 So that's it for the preliminaries.
14 Now, I'd like to start with some basic information
15 and definitions. In your report you use the term
16 modern sporting rifle and you abbreviate it MSR,
17 correct?

18 A That is correct.

19 Q Can you define what you mean when you use
20 that term in your report?

21 A I'm sorry. You broke up there, ma'am.
22 Could you repeat that?

23 Q Sure. Can you tell me what you mean when
24 you use that term in your report?

1 A That term applies to AR-style rifles,
2 AK-style rifles, semiautomatic rifles in general.
3 So that's my understanding and my intention in the
4 use of that in the report.

5 Q Do you know, and I'm only asking if you
6 know, I'm not asking for a legal conclusion -- so
7 let me rephrase.

8 Is it your understanding or do you
9 have an understanding of whether the firearms that
10 are banned under the Protect Illinois Communities
11 Act -- I'm sorry. I'm saying this backwards.

12 Would your definition of firearms
13 apply to all of the firearms banned under the
14 Protect Illinois Communities Act, if you know?

15 A I believe it does. I would have to go
16 back and look at the specifics regarding which
17 particular models are banned, but in my review
18 previously of that I believe modern sporting rifles
19 were pretty much completely within the category of
20 banned products in the state of Illinois.

21 Q Okay. Now as the term as you have just
22 defined it, AR-style rifles, AK-style rifles, and
23 semiautomatic rifles generally --

24 A Yes.

1 Q -- is that the way the term was used when
2 you were the director of MSR at Remington?

3 A Yes.

4 Q Director of MSR product development.

5 A Yes, it was.

6 Q Okay. Does that category, pardon me if
7 this sounds weird, does that category include
8 pistols?

9 A In the fact that it's modern sporting
10 rifles, no, it does not. I understand that there
11 are pistols and handguns that are banned by the
12 particular law in Illinois as well as some
13 shotguns.

14 Q Okay. I understand. I'm not trying to
15 trip you up here. I'm just trying to understand
16 how you use the term.

17 So you would not include pistols in
18 your definition of MSR?

19 A You can have an AR-style firearm that is
20 a pistol, and it would include those. It's not
21 handguns such as, you know, Glocks, a conventional
22 pistol like that that -- I don't consider that to
23 be a rifle, but modern sporting rifles does include
24 AR-style pistols in my opinion.

1 Q So when you or when Remington, for
2 example, when you were there, when Remington had to
3 report manufacturing numbers for rifles to the ATF,
4 you know, for those AFMER reports would it report
5 AR-style pistols as rifles?

6 A Those are reported separately as pistols,
7 I believe.

8 Q Okay.

9 A By the rules that are applicable for the
10 AFMER sheets that were supplied by manufacturers to
11 BATF.

12 Q Okay. Does modern sporting rifle as you
13 use the term include shotguns?

14 A It does not. There are some AK-style
15 firearms that fire shotshell projectiles. Those
16 potentially I would consider based on their pattern
17 and style, but in general shotguns utilize a
18 slightly different layout for the firearm itself.

19 Q Okay. Does the category of MSR as you
20 use the term include .50 caliber rifles?

21 A If they are of a semiautomatic operating
22 system, yes, it would.

23 Q So when you were at Remington and you
24 were the head of MSR product development were you

1 overseeing the product development of pistols?

2 A Pistols in terms of what Remington did
3 were handguns and they were handled by a separate
4 director. If it was an AR-pattern pistol, that
5 would have fallen within my purview. As I recall
6 looking back on the development activities we had,
7 I don't recall doing any pistols that were AR-style
8 during my time period in that role, but the company
9 certainly had and sold those.

10 Q Had and sold pistols or had and sold
11 AR-15 style pistols?

12 A It had and sold AR-style pistols.

13 Q Okay. And did the product development of
14 any shotguns fall within your purview?

15 A We did not do any work on shotguns in an
16 AR style. Those were handled within a separate
17 group within the R&D department.

18 Q Okay. And what about .50 caliber rifles,
19 was that within your purview?

20 A It was. We did not offer any in
21 Remington, Bushmaster, DPMS, or AAC, any .50
22 caliber semiautomatic rifles. There were, I
23 believe, a bolt-action .50 caliber offered by
24 Bushmaster. That was our sole .50 caliber offering

1 that I'm aware of.

2 Q That wasn't within your purview there?

3 A That particular gun since it was for
4 Bushmaster it would have been. We didn't do any
5 development work on it. That was a design that was
6 in place when Bushmaster and Remington were
7 combined.

8 Q Okay. Are there any specific calibers or
9 cartridges that are part of the definition of MSR?

10 A Not that I'm aware of. A modern sporting
11 rifle can handle quite a large range of centerfire
12 ammunition, all the way from .204 Ruger, .223/5.56
13 NATO, .243 Winchester, .308 Winchester, up to and
14 including .338 Lapua Magnum.

15 So there's a wide range of centerfire
16 calibers that can be there. There are versions of
17 MSRs that utilize .22 Long Rifle, which is rimfire
18 cartridge as well.

19 Q Okay. Would you say that your
20 understanding of the term MSR and the understanding
21 of MSR that was in place at Remington when you
22 worked there is an understanding shared in the
23 firearms market?

24 A Generally I would agree with that. There

1 may be certain people that have slightly different
2 interpretations of that, but I think that was
3 the -- the common term that was used through the
4 industry for that style of firearm.

5 Q Okay. And at its core we're talking
6 about AR-style rifles, AK-style rifles, or
7 semiautomatic rifles generally?

8 A In general, yes.

9 Q Okay. Thank you.

10 MR. LOTHSON: And can I have one point of
11 clarification because Remington had semiautomatic
12 rifles that were not MSRs.

13 THE WITNESS: That is correct. There was
14 the Model 750 and previous to that was the Model
15 7400.

16 BY MS. HELFRICH:

17 Q Okay. I'm going to get into some
18 specifics about that --

19 A Okay.

20 Q -- later. Thank you, though.

21 Okay. Now, I am also aware that
22 Remington, and I believe this would be Remington
23 Defense, produced a modular sniper rifle and that
24 is also abbreviated MSR; is that correct?

1 A The initials of that are MSR as well,
2 yes, ma'am.

3 Q Okay. When I use the term MSR today I
4 want you to understand that I mean modern sporting
5 rifle, okay?

6 A Understood, ma'am.

7 Q And if I mean modular sniper rifle I'll
8 tell you, okay?

9 A Okay.

10 Q And if you mean modular sniper rifle when
11 you say MSR please tell me, okay?

12 A Yes, ma'am.

13 Q Fair.

14 Another term that you used in your
15 report is AR platform. Can you say what you mean
16 by AR platform?

17 A AR platform is -- kind of refers to a
18 general layout for the firearm's construction, a
19 lower receiver assembly, an upper receiver assembly
20 held together with detent pins. The functions
21 within the AR-style platform, the trigger group is
22 within the lower receiver and the bolt is within
23 the upper receiver, the barrel is part of the upper
24 receiver. So that's my interpretation of

1 AR style.

2 There are some -- I take that back.
3 Let's stick with that. I was going someplace that
4 doesn't make any sense, so I apologize.

5 Q That's okay.

6 So do you use the terms AR platform
7 and AR style interchangeably?

8 A I can, and I probably did in my report.
9 In my interpretation of that they are
10 interchangeable terms for purposes of, you know, my
11 understanding in describing the type of platform
12 that, you know, I'm discussing.

13 Q And what you just described, the lower
14 receiver held with pins, trigger group in the lower
15 receiver, bolt in the upper receiver, that could be
16 AR platform or AR style?

17 A AR platform or AR style. It's anything
18 that follows the -- you know, the traditional AR
19 pattern, if you will, for construction of a
20 firearm.

21 Q And when you say the traditional AR
22 pattern, are you talking about a pattern based on
23 the AR firearms that were designed at ArmaLite in
24 the '50s?

1 A Yes. In overall terms, yes. There are
2 also modern sporting rifles that are based on other
3 operating systems. For instance, the AK platform
4 is one and then FALs are another. They -- there
5 are differences between the AR and the AK and the
6 FAL, and, you know, those -- we worked only on
7 really AR style or AR platform weapons at Remington
8 and Remington Defense, Bushmaster, DPMS, and AAC.

9 Q So if I understand you, you just said all
10 of those companies made MSRs based on the AR
11 platform, not AK platform, not FAL platform?

12 A That is correct.

13 Q Okay. And what does AR stand for?

14 A Automatic rifle is my understanding. We
15 could go back and look at what ArmaLite used for
16 that, but, you know, it's two initials. Lots of
17 people, I think, have applied different names to
18 what those are. We just kind of ignored whatever
19 they might have connoted and it was AR for us.

20 Q Okay. So you don't care what it stands
21 for?

22 A Yes, ma'am, that's correct.

23 Q All right. Now the -- specifically the
24 AR -- Strike that.

1 When you say AR platform do you mean
2 or AR style do you mean AR-15?

3 A AR-15 and AR-10.

4 Q Okay.

5 A Which is a larger version. It's a scaled
6 version of that.

7 Q And those were both designed in the '50s
8 at ArmaLite, correct?

9 A I believe that is correct.

10 Q And they were designed in response to
11 specifications from the military, correct?

12 A They were designed at the behest of the
13 military. I'm not certain what exact
14 specifications were provided to ArmaLite and to any
15 other companies that were providing example weapons
16 when the government was looking for a new -- new
17 firearm.

18 Q Okay. They were designed for the
19 military?

20 A The original design for those was as a
21 weapon for the soldier to carry, which is different
22 than what civilians typically use. By the National
23 Firearms Act ownership of fully automatic firearms
24 is restricted and it's based on, you know, law.

1 Anything produced after 1986, March or May of that
2 time, is not allowed to be possessed. Guns
3 produced prior to that date are transferable with a
4 tax stamp and with a background check through the
5 BATF.

6 Q And the AR-15 that was developed at
7 ArmaLite in the '50s, that was eventually adopted
8 by the military as the M16 sometime in the first
9 half of the 1960s?

10 A I believe that is the chronology of what
11 took place. There were upgrades that were done
12 based on experience in the field with the weapon
13 system to improve the reliability. Again, it's out
14 there in the public as to exactly all the different
15 things that were done to the original design that
16 Eugene Stoner did.

17 Q Are you talking about upgrades that
18 happened before the military adopted the rifle or
19 afterwards?

20 A I believe it was afterwards.

21 Q Okay.

22 A They originally fielded the gun. In use
23 they identified certain shortcomings, and they
24 added design modifications to that in order to

1 improve the performance of the firearm in the
2 application they had there, which was, you know,
3 fighting a war.

4 Q Okay. And then the AR-15 was initially
5 sold on the civilian market as a semiautomatic by
6 Colt, right?

7 A I believe that's correct, yes.

8 Q Okay.

9 A There may have been others, other -- they
10 may have gone through another channel, another
11 company may have been involved. Colt was the large
12 producer of those for the U.S. military. There may
13 have been other companies involved with it as well,
14 though, in the commercialization for the civilian
15 market.

16 Q Okay. I want to ask you about the AK
17 platform. What does AK stand for, first of all?

18 A It is a Russian term, and I do not know
19 what -- you know, what the specific Russian name is
20 for it. It was designed by Kalashnikov. The
21 initials, again, I know what the gun looks like,
22 but they're Russian words and their English
23 equivalents I do not know.

24 Q Would you agree that the "K" stands for

1 Kalashnikov or Kalashnikova?

2 A It could. It could.

3 Q Okay. And the AK was designed by
4 Kalashnikov for the Russian military in the 1940s;
5 does that sound right?

6 A I believe that is the time frame that the
7 gun was developed in, yes.

8 Q And it was an automatic weapon as
9 developed for the military?

10 A Yes, I believe so.

11 Q And it is now -- AK-style or AK-platform
12 rifles are now sold on the civilian market in
13 semiautomatic versions, right?

14 A Yes. They're only available in
15 semiautomatic versions.

16 Q Can you tell me what constitutes the AK
17 platform in the way you did for the AR platform
18 just a few minutes ago?

19 A My familiarity with the AK platform is
20 obviously much less than what the AR platform is.
21 Again, it's a firearm that has an upper receiver
22 and a lower receiver. It's held together, you
23 know, with pins so that it can be disassembled and
24 maintenance can be conducted on it.

1 It utilizes a gas piston system as
2 opposed to the direct impingement system utilized
3 on the AR. So the gas is not entering the
4 internals of the bolt carrier group as it is on the
5 AR, it's pushing against the front of a piston, and
6 so it utilizes gas from the fired round that's bled
7 off to operate the action but it's not by directing
8 the gas back into inside the bolt as it is on the
9 AR platform. It's done into a piston and it
10 operates the action that way.

11 Q So help me understand, it's my
12 understanding that Remington Defense manufactured
13 some rifles that had a gas piston system; is that
14 right?

15 A Yes, we did.

16 Q If I'm remembering right, the Remington
17 ACR had a gas piston system?

18 A The ACR had a gas piston system as well
19 as the R5.

20 Q Okay. But you would not describe those
21 as AK platform?

22 A No, those the -- the R5 was an adaptation
23 of the AR platform to utilize a gas piston, which
24 other companies have done. In particular I think

1 Adams Arms has utilized that and there are several
2 others as well.

3 And the ACR from its inception was a
4 gas piston operated, you know, firearm similar in
5 pattern to an AR but utilizing different
6 construction methods. The upper receiver was
7 primarily an extrusion with a trunnion to hold the
8 barrel versus, you know, on an AR it's a forged
9 receiver that's machined and then the barrel is
10 mounted directly to it. So the mechanics are
11 slightly different, at least in terms of the way
12 the firearm is constructed.

13 Q Okay. This isn't quite the order I meant
14 to go in, but since we're here at the ACR I want to
15 ask you some more questions about that, if I can.

16 So it's my understanding that the
17 firearm that eventually became the Remington ACR
18 started life as a firearm produced by Magpul?

19 A That is correct. The design was
20 originated by Magpul. The rights to the design for
21 production were purchased by Bushmaster, and then
22 Remington and Bushmaster became partners, whatever,
23 you know, basically we were owned by the same
24 company, Freedom Group, and Remington Defense

1 became involved with the use of that platform then
2 potentially as a weapon for use by U.S. military.

3 Q And the weapon that was developed for use
4 by the U.S. military was a select-fire rifle?

5 A Yes, ma'am, it was.

6 Q When it started at Magpul it was a
7 semiautomatic; is that correct?

8 A I would have to go back and look and see
9 if there's any documentation. It could have. It
10 could have been, you know, the intent for a full
11 auto fire may or may not have been there. I don't
12 have personal information on that to be able to
13 answer the question for you. I'm sorry.

14 Q Okay. When it was at Bushmaster or when
15 Bushmaster got it and started selling it which,
16 correct me if I'm wrong, they sold it as the
17 Bushmaster ACR?

18 A They did sell it as the Bushmaster ACR,
19 and it was a semiautomatic only.

20 Q And then Remington modified the
21 Bushmaster ACR to create the Remington ACR for the
22 military?

23 A Yes. We actually worked somewhat early
24 on in the program in conjunction with Bushmaster on

1 that, but eventually we assumed responsibility for
2 the Remington ACR within the Remington Defense
3 group.

4 Q Okay. I'm going to ask you some more
5 questions later about the organization of the
6 companies because it's a little confusing and a
7 little bit dynamic so we'll try to pin that down a
8 little later, but let me go back to some questions
9 about you and your background.

10 A Okay.

11 Q You have a degree in mechanical
12 engineering?

13 A Yes, ma'am.

14 Q And where did you get that?

15 A University of Minnesota.

16 Q Now, can you describe what mechanical
17 engineering is as opposed to other kinds of
18 engineering?

19 A Mechanical engineering as a field is a
20 fairly broad one. It can involve a lot of things
21 that are actually mechanical. It also takes into
22 account a lot of things that are thermal; for
23 instance, HVAC systems, heating/cooling, things of
24 that nature.

1 My particular interest in the areas of
2 study I did were in mechanical design, so machinery
3 and things of that nature as opposed to the thermal
4 sciences or other areas within mechanical
5 engineering.

6 Q Okay. I believe you got a bachelor's in
7 mechanical engineering from the University of
8 Minnesota?

9 A Yes, I did.

10 Q Did you get any other degrees?

11 A I did not.

12 Q Okay. So by training you are an
13 engineer?

14 A Yes.

15 Q You are not a historian?

16 A No.

17 Q You're not a historian of firearms?

18 A No, other than just personal interest.
19 It's not my background as a historian. As you
20 said, I'm a mechanical engineer.

21 Q And you're not here today as a firearms
22 historian?

23 A No, ma'am, just by my own personal
24 recollections. I claim no expertise in that area

1 other than, you know, the little bit I do know.

2 Q Okay. And no formal training as a social
3 scientist?

4 A No, ma'am.

5 Q No formal training as a statistician or
6 data analyst?

7 A I have done a lot of data analysis as
8 part of my job and use of statistics to analyze
9 test results and, you know, items of that nature.
10 So, yes, I have done work with statistics. Am I
11 trained specifically in that? No, but it's
12 something I utilized in my job.

13 Q Are you here today as an expert in data
14 analysis or statistics?

15 A As an expert, no, ma'am. I'm here as an
16 expert on firearms.

17 Q Okay. Do you have any training in survey
18 methodology?

19 A I do not.

20 Q Okay. Would it be fair, then, to
21 characterize your training as engineering and your
22 expertise as the firearms industry during the
23 period in which you worked in the firearms
24 industry?

1 A I would say that characterizes the core
2 of what I do and what I know. As I said, data
3 analysis was part of what I did on my job. I
4 wasn't strictly design. It was analyzing test
5 results and understanding how things went. Those
6 tools apply themselves to areas outside of just
7 straight-up design and test results. I've also
8 been trained in Six Sigma by Remington and the
9 Freedom Group.

10 So I have some familiarity with it and
11 beyond what you normally would. In terms of what
12 my day-to-day job is and what I do, it is not data
13 analysis but I do have --

14 Q Can you explain --

15 A Go ahead.

16 Q Can you explain what Six Sigma is for the
17 record?

18 A Six Sigma is a statistical methodology
19 for analyzing data to understand interrelated
20 effects and it allows a more -- a more rapid means
21 of arriving at an optimal point for a given system
22 where many factors are in play. It allows you to
23 do tests that are efficient and essentially points
24 you in the right direction and gets you to the

1 finish line for an optimal design more quickly than
2 traditional one-factor-at-a-time type of testing.

3 Q So Six Sigma, it's a method?

4 A It's a methodology and, again, it
5 involves a very broad area. It can include lean
6 manufacturing and different things like that. The
7 specific areas where I worked were within
8 statistical analysis and optimization via design of
9 experiments.

10 Q Okay. And that was training you got from
11 your employer or through your employer?

12 A Yes.

13 Q Okay. Your current employment, you say
14 in your CV you are the owner and managing director
15 at Boundary Oak Enterprises, LLC; is that correct?

16 A That is correct.

17 Q Now, is that named after the tree on the
18 Lincoln farm?

19 A You got it, ma'am. Very good. I live
20 about -- I'm about two miles from Lincoln's
21 birthplace. So it was an appropriate name, I felt,
22 and it wasn't taken when I went to register my
23 business, so I took it.

24 Q Okay. And what does Boundary Oak

1 Enterprises, LLC, do?

2 A Boundary Oak Enterprises, LLC, does
3 contract firearms design work for smaller firearms
4 companies that don't have the engineering staff to
5 do product design or to supplement companies that
6 do have it, as well as I do litigation support for
7 expert witness work, corporate witness work, and
8 fact witness work as needed.

9 Q How many employees does your company
10 have?

11 A I am the only employee.

12 Q Okay. How many clients do you have?

13 A I probably have four or five. Right now
14 confidentiality agreements in our contracts don't
15 permit the disclosure of who they are. Obviously I
16 am working with Andy and his law firm, Swanson,
17 Martin & Bell, but aside from that I'm really not
18 able to disclose. I'm sorry.

19 Q Okay. No, that's fine. I understand
20 that.

21 The other you said four or five
22 clients right now?

23 A I've had four or five clients
24 historically. Right now I'm working with I believe

1 two.

2 Q Okay. Other than Mr. Lothson and his law
3 firm, are your other clients all firearms
4 manufacturers?

5 A The other clients are, yes.

6 Q Okay. Are you familiar with the National
7 Shooting Sports Foundation?

8 A Yes, I am. In fact, my business is a
9 member of the NSSF.

10 Q Oh, that was my next question.

11 So today when I use the NSSF I mean
12 the National Shooting Sports Foundation, okay?

13 A Okay.

14 Q All right. So your company is a member.
15 Are you personally a member?

16 A Businesses are allowed to join,
17 individuals are not. So Boundary Oak Enterprises,
18 LLC, is the member within the NSSF. So yes. It's
19 my business, not myself.

20 Q Okay. Have you or your business -- other
21 than membership dues, have you or your business
22 ever been donors to the NSSF?

23 A We have donated to their political action
24 committee and other than the I think once or twice

1 we did that also attended the SHOT Show which
2 requires payment of a fee to attend, and aside from
3 the annual membership dues, no.

4 Q Okay. Cumulatively do you know how much
5 you have donated other than SHOT Show attendance
6 and dues to the NSSF?

7 A I think \$250. That's what I remember is
8 somewhere in that range. It's 200 to \$250 total
9 over the life of my business, so seven years.

10 Q Okay. Are your clients, any of your
11 clients, members of NSSF?

12 A I believe they are. I would have to do a
13 little bit of investigating to confirm that,
14 though.

15 Q Okay. You believe -- let me put it this
16 way. The firearms manufacturers who are your
17 clients, it is your belief that all of those
18 companies are members of NSSF?

19 A I believe so.

20 Q Okay. And so what percentage of your
21 income let's say over the last five years has come
22 from clients who you believe are members of NSSF?

23 A Probably off, you know, a
24 back-of-the-envelope calculation maybe 75 or 80

1 percent.

2 Q And I know this is intrusive, but how
3 much income is that roughly?

4 A Oh, gosh. How many years are we talking?

5 Q Let's say five.

6 A 350, \$400,000 maybe. I'd have to
7 actually go back and look, Gretchen. I don't have
8 that information at my fingertips. I can certainly
9 go back into my accounting system and look.

10 Ballpark it's that. You know, given
11 it's a kind of off-the-top-of-my-head thing it
12 could be lower, it could be higher. I don't put a
13 lot of faith in exactly what that number is I guess
14 would be the way I'd put it.

15 Q Okay.

16 A I believe it's about that, but, again, I
17 need to confirm.

18 Q But you're relatively confident that it's
19 75 to 80 percent of your income?

20 A In years past it has been, yes.

21 Q Okay. I'd like to talk to you about your
22 work as an expert witness, as a witness in general.
23 You listed four cases in your expert report in
24 which you had been deposed or given testimony -- or

1 sorry. Let me see.

2 Okay. You know what? Let's do this
3 now.

4 A Okay.

5 MS. HELFRICH: June, can you let me share
6 screen?

7 THE REPORTER: Yes.

8 BY MS. HELFRICH:

9 Q Okay. Okay. Mr. Ronkainen, can you see
10 a document that says Rebuttal Report of James
11 Ronkainen?

12 A Yep. It's kind of small, but if I lean
13 ahead I can read it.

14 Q Let me roll it up. How's that?

15 A That's better.

16 Q Okay. I'm going to scroll through this
17 document, and I'm going to ask you to take a look
18 at it while I scroll and tell me if you recognize
19 this document. I'm happy to scroll all the way
20 through if you want me to.

21 A Based on page 1 I recognize this document
22 as my report, my rebuttal report.

23 Q So that's your rebuttal expert report in
24 Barnett versus Raoul, this case listed here,

1 23-cv-209?

2 A Yes, ma'am.

3 MS. HELFRICH: Okay. So I'd like that
4 marked as Exhibit 1, please.

5 (Document was marked Exhibit 1
6 for identification.)

7 BY MS. HELFRICH:

8 Q Here you say in the past four years I
9 have provided testimony in the following matters as
10 either a corporate witness or a firearms expert,
11 and then you list four cases, right?

12 A Yes.

13 Q Okay. Olinick versus Remington is the
14 first one, Federal District Court in Pennsylvania.
15 Were you an expert witness there or a corporate
16 witness?

17 A I was a corporate witness in that
18 particular case.

19 Q So you were a witness on behalf of
20 Remington?

21 A Remington and DuPont actually, DuPont and
22 SGPI, the predecessor for -- you know, basically
23 the company that sold Remington to the investment
24 bankers based on the time period that the firearm

1 in this particular case was produced.

2 Q And so did your testimony relate to the
3 time you were employed by DuPont?

4 A It was actually as a corporate witness
5 and talking about documents that, you know, were
6 contemporary with my employment all the way back to
7 ones that were generated well before I was born.

8 Q Okay. What was the case about?

9 A It was a claimed negligent discharge
10 where a young boy was injured.

11 Q What was the firearm involved?

12 A It was a Model 700.

13 Q And do you recall the substance of your
14 testimony? Can you summarize that for me?

15 A It was basically just going over and
16 interpreting, describing the documents that the
17 plaintiff's lawyer presented with regard to the
18 development of the product and, you know, related
19 to, you know, that litigation up through the time
20 of production of that firearm. I believe the
21 firearm was produced in the 1970s in that case, so,
22 again, it was an older gun.

23 Q Was it a semiautomatic firearm?

24 A It was a bolt-action firearm. The Model

1 700 is a bolt-action firearm.

2 Q Bolt-action.

3 The second case is Scott v. Remington,
4 Federal District Court in Alabama. Do you remember
5 that case?

6 A Yes, ma'am.

7 Q Were you an expert or a corporate
8 witness?

9 A I was a corporate witness in that case as
10 well.

11 Q And for which corporation?

12 A For Remington.

13 Q And when you say a corporate witness both
14 in this case and the previous case, do you mean
15 that you were giving testimony on behalf of the
16 corporation?

17 A Yes, ma'am.

18 Q Okay. So you were what's called a
19 30(b)(6) witness? Are you familiar with that term?

20 A Yes, I am, and that was the role I played
21 in those two cases.

22 Q Okay. And what was Scott v. Remington
23 about?

24 A That was a Model 770 bolt-action rifle,

1 an accidental discharge where a young teenaged girl
2 was killed as the gun was being lowered from a deer
3 stand.

4 Q And you said negligent discharge case?

5 A That's what I believe how it would be
6 characterized, yes.

7 Q Or the allegation was negligent
8 discharge?

9 A That was the allegation, yes.

10 Q Okay. And what was the substance of your
11 testimony?

12 A It was, again, as a corporate witness,
13 30(b)(6).

14 Q Talking about the characteristics of the
15 firearm or what?

16 A No, not so much. That was covered by the
17 expert in the case and the particular findings of
18 that firearm. Mine was more as the corporate
19 representative to discuss other documents related
20 to -- you know, other corporate documents related
21 to the case.

22 Q Okay. The third case is Clay v.
23 Remington, and this is state court in Alabama. Do
24 you remember that case?

1 A Yes, ma'am.

2 Q And in that case were you an expert or
3 corporate witness?

4 A I was a corporate witness. That was a
5 Model 7, Remington Model 7, bolt-action rifle that
6 was in dispute in that case.

7 Q Was that also a negligent discharge case?

8 A Yes, it was.

9 Q And you were a corporate -- you were a
10 30(b)(6) -- well, that was a state court. Were you
11 the equivalent of a 30(b)(6) witness in that case?

12 A I believe that's what you would consider
13 it, yes.

14 Q All right. And that was on behalf of
15 Remington?

16 A Yes.

17 MR. LOTHSON: And just for clarification,
18 it was actually on behalf of DuPont and a
19 subsidiary of DuPont called Sporting Goods
20 Properties, Inc. Remington was also a defendant at
21 one time in the Clay matter but has been dismissed.

22 BY MS. HELFRICH:

23 Q Is that consistent with your
24 understanding, Mr. Ronkainen?

1 A Yes, it is.

2 Q Okay. Is that case ongoing; do you know?

3 A Clay is ongoing. There's been a decision
4 offered in Scott. I believe Olinick may have come
5 to resolution. I'm not certain of that, so Andy
6 could provide the details on that with better
7 specificity than me.

8 Q Okay. Well, we'll talk to Andy some
9 other time. I want to talk to you today.

10 MR. LOTHSON: I can provide incredible
11 details on these cases, but I'm not giving a
12 deposition today.

13 MS. HELFRICH: I look forward to it.

14 BY MS. HELFRICH:

15 Q The last case is Teague v. Remington,
16 Federal District Court in Montana. Do you remember
17 that case?

18 A Yes. That was a Model 700 claimed
19 negligent discharge, involved the death of a
20 young -- I believe a 15-year-old boy in the state
21 of Montana.

22 Q And expert or corporate?

23 A Corporate witness in that one and maybe
24 as a fact witness as well. I'd have to go back and

1 check, but it was not as the expert in that
2 particular case.

3 Q Okay. So -- and corporate witness on
4 behalf of Remington?

5 A In that case it would have been -- that
6 would have been DuPont/SGPI, I believe, based on
7 the production date of the firearm in question
8 there.

9 Q Okay. You also filed an expert report in
10 a case called Tosseth v. Remington. Do you
11 remember that case?

12 A Yes.

13 Q That was in North Dakota?

14 A Yes.

15 Q And you were -- I believe you were an
16 expert witness in that case, not a corporate
17 witness, right?

18 A Yeah. That was outside of the four-year
19 period we listed here, but, yes, I was the expert
20 on that.

21 Q Yes, yes. No, I understand. You weren't
22 required to disclose it.

23 A Yep.

24 Q When was that case?

1 A Pardon? Could you repeat that?

2 Q When was that case?

3 A 2018 or '19. I'd have to go back and
4 look in my records to honestly see. It's been a
5 while.

6 Q Okay. And you were an expert on whose
7 behalf? Who engaged you?

8 A Remington engaged me in that particular
9 case.

10 Q And what was the substance of that case?

11 A It was a .22 pistol that was produced by
12 Beretta that had a misfire using, I believe,
13 Remington ammunition, and my job in that was to
14 examine the gun and provide an expert witness
15 report on behalf of Remington as to what I believe
16 happened in that particular case.

17 Q Remington manufactured the ammunition?

18 A Yes.

19 Q Was there an allegation that the
20 ammunition had malfunctioned or that was the cause
21 of the problem?

22 A It was indeterminate at the time that the
23 suit was filed, and it was Remington ammunition
24 used in a Beretta pistol. Both parties were sued.

1 I believe ultimately Remington was dismissed from
2 the case, and what eventually happened with the
3 result of that after the dismissal I didn't follow
4 any of the particulars on that case.

5 Q Okay. Have you provided expert reports
6 in any other cases that you didn't list here?

7 A There's one additional case, state of
8 Louisiana, it's Baldwin. It's a Remington Model 11
9 autoloading shotgun case. The gentleman was
10 operating the firearm in a method that was unsafe
11 and had a discharge and lost part of his hand
12 because it was over the muzzle of the gun as he was
13 demonstrating its operation to his hunting
14 partners.

15 Q Okay. And were you an expert on behalf
16 of Remington?

17 A Yes. And that would probably fall
18 underneath Remington slash -- you know, it's the
19 DuPont/SGPI entity given the production date on
20 that firearm was the early 1900s, nineteen teens.
21 It might have been 1911. It might have been 1917.
22 I'd have to go back and review my report and see
23 what the -- you know, what the serial numbers
24 showed in terms of when it was made, but it was a

1 very old gun. I believe it was about -- it was a
2 hundred years old when I examined it.

3 Q Okay. I understand that, but what I'm
4 asking is who engaged you as an expert? Was it
5 Remington?

6 MR. LOTHSON: I'll object just from the
7 standpoint of my law firm engaged Mr. Ronkainen.

8 THE WITNESS: That's correct. Swanson,
9 Martin & Bell engaged me on that particular case.
10 BY MS. HELFRICH:

11 Q Was your -- all right. I would like to
12 ask you some questions now about your patents that
13 you invented or your inventions that you patented I
14 guess is probably the better way to put it.

15 A Okay.

16 Q According to your CV you are an inventor
17 or co-inventor on nine U.S. patents; does that
18 sound right?

19 A That sounds correct.

20 Q And you say on your CV various foreign
21 patents. Do you have a number roughly?

22 A I do not. I'd have to actually go onto
23 the European patent website and search and see. I
24 know that we sought intellectual property

1 protection for several of the U.S. patents that
2 were granted. I don't have an answer as to whether
3 or not we actually were able to achieve a patent
4 issuance on all of them or, you know, which ones
5 exactly. I'd have to look.

6 Q So are the foreign patents that you have,
7 these are patents related to the same inventions
8 that you have the U.S. patents for?

9 A Yes, ma'am.

10 Q Okay. So are there any other inventions
11 that you have patents for that are not listed in
12 your -- in the U.S. patents you list in your CV?

13 A No, ma'am.

14 Q Okay. So I took a look at the patents,
15 and some of the patents are assigned to Remington
16 Arms Company; does that sound right?

17 A That would be the maj -- yeah, they
18 should all be assigned to various corporate forms
19 of the Remington Arms Company depending on when
20 they were issued.

21 Q Some were assigned to a company called RA
22 Brands, LLC. Can you tell me what that is?

23 A I believe that was a legal entity that
24 was set up by our corporate company. Why they did

1 it, I'm an engineer, not a lawyer, but there was
2 a -- they felt there was a legal reason for doing
3 that. I don't know what that particular reason
4 was, but RA Brands is one. There may be others
5 that are listed as assigned to Remington Arms.

6 You know, I'd have to look at each one
7 individually, and why they had the different
8 corporate structures I'm not privy to why that was.
9 I'm sorry.

10 Q That's fine, but RA Brands is a -- RA
11 Brands, LLC, is an entity within the Remington
12 corporate family?

13 A Yes, ma'am, I believe so.

14 Q Okay. These patents are dated from 1996,
15 the earliest is 1996, the latest is 2013, so these
16 were all from when you worked at Remington?

17 A That is correct.

18 Q All right. Several of them relate to
19 electronic firearms. Can you explain what that
20 means?

21 A In the mid to late 1990s after the sale
22 of Remington Arms from DuPont to Clayton, Dubilier
23 & Rice there was a push for developing new
24 technologies and new firearm products. During that

1 time one of the initiatives was converting the
2 ignition of firearms from mechanical percussion,
3 striking a conventional primer, to being able to
4 initiate the round with an electronically sensitive
5 or an electrically sensitive primer where a pulse
6 of a given voltage and amperage for a certain
7 period of time would ignite the primer as opposed
8 to the impact of the firing pin on the primer cup
9 itself.

10 The patents we have are with regard to
11 the firing system and the particular firearm where --
12 the aspects of the firearm of that that were unique
13 and worthy of seeking intellectual property
14 protection.

15 Q So you said that this was in the '90s and
16 there was a push for new technology; am I
17 characterizing that correctly?

18 A Yeah. Yeah. New technology was there
19 and it was just, you know, one thing that they
20 said, hey, you know, could we have a firearm that
21 rather than being initiated via percussion as they
22 conventionally had been would it be possible to do
23 one that was initiated with an electrical primer.

24 So there were patents with regard to

1 the firearm itself, which I'm part of; there are
2 also separate ones for the electronics and the
3 control aspects of it; and then there are patents
4 as well for the ammunition, specifically the primer
5 that's electronically sensitive, that I'm not part
6 of.

7 Q So it was a different primer?

8 A It was a different primer.

9 Q From a traditional. Traditional primer
10 you'd use in a firing pin type of situation?

11 A Yes, ma'am. Yes, ma'am. As I described,
12 it's one that was initiated with an electrical
13 impulse versus a mechanical impact.

14 Q So was there a specific reason in this
15 time period why Remington or any other firearms
16 manufacturer was looking for new technologies?
17 What I mean by that is was there a niche to fill in
18 the market? Was there some other -- you know, I
19 know everybody is always trying to develop new
20 products, but was there a specific push behind this
21 one?

22 A The primary thrust behind this product
23 was the ability to initiate the round more quickly
24 than you could with a mechanical system. There's a

1 term called lock time that's utilized in the
2 firearms industry where when the trigger is pulled
3 and the mechanism of the trigger releases the
4 firing pin to strike the primer, the period of time
5 from when it's released to when it's impacted and
6 set off is called lock time.

7 And on a good bolt-action rifle that
8 can be about three milliseconds, which, you know,
9 for all intents and purposes is very quick, but
10 during that three-thousandths of a second your
11 firearm is moving from where it was when you pulled
12 the trigger and released it, so there's the
13 possibility that you could have an excursion of the
14 barrel and where you're pointing it a slight amount
15 from where you intended to have it. The electronic
16 ignition system that we developed basically cut the
17 lock time down to three-millionths of a second. So
18 it was, I think, three orders of magnitude faster.

19 So there would be the opportunity for
20 less excursion of the firearm's muzzle where you're
21 pointing it at the target between when you pulled
22 the trigger and when the round initiated, and we
23 actually said that based on our measurements the
24 bullet was out of the barrel before the firing pin

1 would have even impacted the primer on a
2 conventional firearm with a mechanical firing
3 system. So it --

4 Q Can you explain what you mean by --

5 A Go ahead.

6 Q Can you explain what you mean by
7 excursion? I think I know what you mean, but could
8 you give us a definition?

9 A Excursion is the distance that the muzzle
10 moves. You know, the deviation from where you were
11 pointing when you pulled the trigger to where the
12 muzzle actually ends up in that period of time
13 given, you know, the normal motion that's imparted
14 by the human being holding the gun.

15 Q And was this electronic firearm a rifle?

16 A It was a bolt-action rifle.

17 Q Bolt-action rifle. And what -- so
18 typically bolt-action rifles are popular hunting
19 rifles; is that right? Were you thinking of this
20 as a hunting rifle?

21 A We were thinking of it primarily as a
22 hunting rifle for some uses but actually more as a
23 target rifle given the much faster lock time it
24 offered.

1 Q When you say a target rifle, do you mean
2 like a competition rifle?

3 A Yeah, something where you would use for
4 shooting benchrest competitions or other long-range
5 activities like that.

6 Q Okay. And did you ever produce this
7 firearm?

8 A Yes. It went into production I believe
9 in 1999, for sale in 2000, and it was on the market
10 for several years, two, three years as I recall.

11 Q What was it called?

12 A Model 700 -- excuse me, if I can say
13 this. Model 700 EtronX, and that's E-t-r-o-n-X.

14 Q Of course it is.

15 A Yeah.

16 Q And how many of those sold in those
17 several years?

18 A I would have to, you know, go back and
19 consult some records. I don't know. It was on the
20 order of thousands, but I think that particular
21 product was one where the technology was ahead of
22 what the marketplace was ready to accept.

23 Q What do you mean by that?

24 A The fact that you have to have in this

1 case a 9-volt battery in your firearm in order to
2 fire it. Well, in a mechanical-based system the
3 gun is always able to work. It's not dependent
4 upon a battery to be able to, you know, fire the
5 round.

6 So there was, you know, concern on the
7 part of most of the public. They didn't see --
8 necessarily feel that the benefits afforded you by
9 the faster lock time were worth what their
10 perceived reliability issues were with having to
11 have a battery as a power source. What happens if
12 you're out hunting, shooting and the battery goes
13 dead and you don't have one, well, then you're done
14 for the day is kind of the mind-set, I believe,
15 there, and ultimately, you know, the customers
16 weighed in and the product was taken out of
17 production.

18 Q Did you or have you ever received
19 royalties under any of these patents?

20 A No. They were assigned -- you know, the
21 rights were assigned to Remington. As an employee
22 that was the agreement that we had was the company
23 received the -- you know, received basically the
24 benefits of it and the individuals named on it did

1 not. There was no monetary remuneration for us.

2 Q Okay. So I believe that three of them
3 are still current, they haven't expired, and that
4 would be the patents from 2011, '12, and '13; is
5 that right?

6 A Given the statute of limitations on
7 patents and their current lives, yeah, those are
8 probably still active. I would have to even go
9 look at what those are. Those are things that are
10 on my CV but not anything that comes up as part of
11 my normal everyday discussion.

12 Q Okay. Do you know who those three
13 patents are currently assigned to?

14 A I would have to look at the individual
15 patents. I would imagine it is to Remington Arms
16 because they are related, I believe, to firearms,
17 but, again, one of them, you know, the one with
18 respect to the Remington gas piston system and the
19 plug that goes into the front of the gas block and
20 the way of camming that out, it would go to whoever
21 owns those particular rights from Remington,
22 whether it's the newest rendition of Remington Arms
23 Company, which I believe is RemArms, or if it went
24 to some other subsidiary that was sold separately.

1 I don't know.

2 MS. HELFRICH: Okay. I want to ask you
3 some questions about your employment at Remington.
4 We've been going just about an hour. I forgot to
5 say at the outset that you can ask for a break any
6 time you want one. Lots of people want a break
7 after about an hour, so would you like a break?

8 THE WITNESS: Yes, ma'am. My water glass
9 is empty, so I'd like the opportunity to fill that
10 up.

11 MS. HELFRICH: Okay. How about a
12 five-minute break, we'll come back at 10:10 Central
13 Time?

14 THE WITNESS: Sounds good.

15 MS. HELFRICH: All right; great.

16 (Whereupon, a recess was taken
17 at 11:05 a.m. ET and resumed at
18 11:10 a.m. ET as follows:)

19 MS. HELFRICH: Let's go back on the
20 record.

21 BY MS. HELFRICH:

22 Q Mr. Ronkainen, I want to ask you some
23 questions about your employment at Remington. I
24 want to start at the end, work backwards for a few

1 years, and possibly also jump around just to warn
2 you.

3 A Okay.

4 Q So the last position that you list on
5 your CV is director, DoD/Military/LE and MSR
6 product development, Remington Arms, Research &
7 Development Center, Huntsville, Alabama, correct?

8 A That is correct.

9 Q And you say that you held that position
10 from January of 2016 to June of 2016, right?

11 A That is correct.

12 Q Okay. Now I read your CV, but tell me
13 more about what you did in this role. What were
14 your responsibilities?

15 A As the director over those particular
16 areas I had engineers working for me in the
17 commercial MSR market as well as the Remington law
18 enforcement and defense stuff, and we were working
19 on, you know, product development programs for the
20 commercial market in the case of the MSR side and
21 the law enforcement and the military was for
22 typically military programs and occasionally some
23 law enforcement as well.

24 Q So when you say MSR side, military/law

1 enforcement side, are these like separate
2 divisions, separate teams working on those
3 projects?

4 A Yes, they were separate teams, separate
5 groups of engineers working on those programs.

6 Q And in this time period were there other
7 product development teams at Remington Arms?

8 A There were that concentrated on the other
9 product lines that were offered; for instance,
10 ammunition, shotguns, handguns. There were quite a
11 number of them. I want to say maybe four or five
12 total.

13 Q Okay. Were there product development
14 teams working that were not your teams working on
15 rifles?

16 A Bolt-action rifles, yes, for the
17 commercial market and for, you know, semiauto and
18 pump rifles commercial, you know, non-MSR firearms
19 produced by Remington and its affiliated companies.

20 Q So there were -- this is, again, going
21 back to understanding how you use the term MSR.

22 A Sure.

23 Q So there were -- there was a product
24 development team or division, if I'm using the term

1 correctly, for semiautomatic rifles that were not
2 MSRs?

3 A That would have been the Model 750, the
4 Model 7600, historical products that Remington had
5 produced for, you know, a long period of time prior
6 to that date.

7 Q But they were semiauto; yes?

8 A Semiauto. Some were pump, pump-action,
9 where the fore-end moves back and forth to operate
10 the action. So yes.

11 Q So just in terms of the organization of
12 the company, were all of those kinds of rifles in
13 one product development group?

14 A I believe they were, yes.

15 Q Okay.

16 A I believe that those particular products
17 were covered by other teams within the company.

18 Q So specifically what I'm asking is was
19 there a product development team or product
20 development division for rifles other than MSRs?

21 A Yes.

22 Q Was it just one team for all rifles that
23 weren't MSRs?

24 A I believe it was. I would have to go

1 back and check an org chart if I have one in my
2 records that -- you know, to absolutely, you know,
3 say, but my recollection is, yes, it was a separate
4 team.

5 Q So the organization would be like this.
6 Tell me if I have this right. Under you there's
7 military and law enforcement and MSR, and then out
8 here under somebody else there's other rifles?

9 A Yes.

10 Q Okay.

11 A And at various times I had other groups
12 that were underneath me as we roll back in history,
13 but yes.

14 Q Okay. Do you know who was in charge of
15 that other rifle group?

16 A I believe it was Andy Haskin at that
17 time. Again, I'd need to go back and check to see
18 exactly what the org chart was for it, but Andy was
19 the director of product development for that and it
20 was rifles and shotguns and more conventional
21 historic products for Remington.

22 Q Altogether in one product development
23 group?

24 A I believe that's how it was structured,

1 yes.

2 Q Okay. You mentioned the Model 750 and
3 the Model 7600 as both being semiautomatic rifles
4 that are not MSRs, correct?

5 A The 750 is a semiautomatic rifle. The
6 7600 is a pump-action rifle. So that's a
7 differentiation, but, yes, they're both not modern
8 sporting rifle platform style firearms.

9 Q So the Model 750 that is semiautomatic,
10 why is it not a modern sporting rifle?

11 A It's constructed differently than modern
12 sporting rifles. The barrel is permanently
13 attached to the receiver. The trigger group is
14 actually a trigger plate that drops out the bottom.

15 It was a historic product that, you
16 know, has a different design lineage or pedigree
17 than modern sporting rifles. It was an approach
18 and a design, you know, that was not within the
19 idea or the realm of MSRs.

20 Q Okay. And MSRs -- just a second. So
21 there was a time period back in 2013 when you were
22 the director of product development -- no, I'm
23 sorry. Strike that question. I'm going to ask it
24 a different way.

1 In the time that you were leading
2 product development teams at Remington were MSRs
3 and military rifles always together in the same
4 product development team?

5 A No. They were always separate. They
6 were always separate. My first role as a director
7 or leader was military and LE product development
8 and later on MSRs were added within my purview.

9 Q When was that?

10 A I have to look at the CV. I'm going to
11 pull up my report here. Hopefully my CV is at the
12 back of it.

13 Q Here, let me pull it up. I'll pull it
14 up.

15 A Please.

16 Q Then everybody can look at it.

17 A Yep.

18 Q Can you see it?

19 A Yes, I can.

20 Q Your CV is attached, so I'm going to
21 scroll to your CV.

22 Tell me if I need to keep going.

23 A Keep going. It's at the very end.

24 Okay. We're here basically in the

1 time period we're discussing and my roles at
2 Remington. So you can see from, you know, December
3 of 2013 through December of 2015 and actually
4 through June of 2016 I was the director of DoD/
5 Military/LE and MSR product development. The last
6 six months from January through June were in
7 Huntsville. We had closed the Elizabethtown
8 location at that time, and so I was commuting for
9 approximately six months working with the -- you
10 know, my teams and with the company to identify who
11 was going to take responsibility for, you know, my
12 teams after that because I chose not to move down
13 to Huntsville. It just didn't work out for my
14 family.

15 So at that point then I retired.
16 After my waiting period or my noncompete period I
17 started my own business, the Boundary Oak
18 Enterprises.

19 Q Plus you would have had to move away from
20 the Boundary Oak.

21 A Absolutely.

22 Q Okay. In your final position were you
23 designing firearms?

24 A My teams were. I was giving technical

1 guidance as needed, if people had questions I
2 offered it, but it was not my role to do the
3 day-to-day design on it. It was to lead the team.

4 So basically give them the resources
5 that they needed to accomplish their jobs in the
6 timelines we had. As we used to kind of jokingly
7 say, you know, to kick down doors and grease skids.
8 You know, my job was to make way for them so that
9 we could meet the development timelines we had.

10 For the military programs, those are
11 very hard and concise timelines. If you aren't
12 done and deliver product on the day that they say
13 that the solicitation is over, you get there an
14 hour late and your product is not accepted. So we
15 were working to very firm and hard, firm and fast
16 timelines for that particular side of the business.

17 Also with the modern sporting rifle
18 product development the commercial side was
19 utilizing those same things. The timelines on that
20 side were a little more flexible, but you don't
21 ever want to be lackadaisical about the delivery
22 dates. You worked hard and addressed the problems
23 that you identified as you went through the testing
24 programs. So I was not providing --

1 Q Were you involved in sales at all?

2 A No, I was not in sales directly. I
3 worked directly with our salespeople both in the
4 military and LE side, DoD, as well the modern
5 sporting rifles. So I interfaced to them. I
6 wasn't out calling on customers normally. I did
7 interface with some of our military customers and
8 that, but it wasn't my primary role.

9 Q Were you involved in marketing?

10 A Again, in speaking with our -- our
11 marketing teams that was my involvement, but in
12 terms of setting up advertising campaigns and
13 things of that nature, no, I was not.

14 Q So I notice that in this entry you no
15 longer list Ilion, New York, as the location of
16 this job. It was listed as a location for your
17 prior position. What is -- what explains that
18 change?

19 A Can you direct me to which date you're
20 talking about here just so I'm sure when we're
21 talking?

22 Q Sure. Can you see my cursor?

23 A Yep.

24 Q So 1/16 to 6/16, Research & Development

1 Center, Huntsville, Alabama?

2 A Yes.

3 Q In your prior position which ended
4 December 2015 you say Elizabethtown, Kentucky;
5 Ilion; Huntsville. Now you explained --

6 A That's correct.

7 Q -- that they shut down operations in
8 Elizabethtown. What about Ilion?

9 A In Ilion, New York, with the standing up
10 of the Huntsville facility models -- excuse me,
11 modern sporting rifle production was moved from the
12 Ilion, New York, facility, the commercial side of
13 it, down to Huntsville, Alabama.

14 So all of the production of the guns,
15 the manufacturing of the components, the testing,
16 the packaging, and shipping that had prior taken
17 place in Ilion was then done through the Huntsville
18 facility and modern sporting rifle production for
19 commercial purposes in Ilion, New York, ceased.

20 Q What about for military purposes?

21 A For military purposes the production and
22 the manufacturing group was still in Ilion, New
23 York, and was -- as it had been throughout the
24 time, it was a separate standalone area where that

1 production took place.

2 Q So the Ilion manufacturing facility was
3 still in operation after January of 2016?

4 A Yes, ma'am. It only, I believe, ceased
5 operation here in March of this year.

6 Q Okay. But you just weren't there for it?

7 A I was not interacting with the modern
8 sporting rifle, the product line and manufacturing
9 up there. I was working with the Remington Defense
10 team, the production team that was up there, in the
11 January of 2016 through June of 2016 time period.

12 I guess, you know, perhaps we could say I should
13 have listed that out there but, you know, I didn't.

14 Q Okay. Okay. That's all I wanted to
15 understand, if there was some reason why you had
16 stopped dealing with those folks.

17 So how did you determine what products
18 to design? Let's start off on the military side.

19 A Okay. The military side typically there
20 were military solicitations, requests for new
21 weapon systems that were put out by the Department
22 of Defense. They're formal solicitations,
23 extremely lengthy description of specifications
24 that the firearm needs to meet as well as

1 production requirements, testing requirements that
2 the firearm needs to be capable of meeting, and,
3 you know, we're talking on the order of probably
4 anywhere from 20 to 30 pages long in terms of the
5 specification requirements.

6 So when -- as the government typically
7 would start fishing, if you will, or hinting at
8 programs it would put out draft solicitations for
9 comment by industry on their different things, and
10 that was, you know, how we -- it was FedBizzOpps, I
11 believe, was the site that we utilized for seeing
12 and having visibility on the different programs
13 that were underway, and FedBizzOpps not only
14 covered like the DoD. It also covered federal
15 agencies like Secret Service, Treasury, and
16 different groups like that that would also have
17 need of our products.

18 That said, you know, we would read
19 that, understand how our products lined up, do kind
20 of a rack and stack or a ranking of our products'
21 capabilities versus what they were asking for, and,
22 you know, if we thought something was unreasonable
23 or going to be difficult to do we were able to
24 provide feedback to the customer prior to the

1 issuance of the real solicitation to allow them to
2 modify the solicitation if they saw fit. Quite
3 often they'd say -- their answer was thank you for
4 your feedback, it is what it is.

5 And so we would utilize that document
6 then as a means of lining out what our product had
7 to be and fine-tuning if we needed to meet any of
8 the requirements. It also gave us some guidance
9 with regard to the testing regimen that we had to
10 be able to pass, and so if we had not conducted
11 those tests previously on the product we envisioned
12 as offering for that we would go back and actually
13 conduct that test internally and, if needed, you
14 know, modify the design so that we performed to the
15 levels expected in the solicitation.

16 Q And you're talking about products that
17 already exist?

18 A It may exist. In some cases it was, hey,
19 this is completely, you know, brand new from
20 scratch. You know, if we have enough time and we
21 feel that it is a program worth competing on we
22 could start from scratch and come up with a new
23 product that was responsive to the solicitation.

24 Q But you didn't always do it that way,

1 sometimes you started from products you already
2 had?

3 A It really depended upon, you know, what
4 the -- how much runway we had and how much notice
5 we had that there was this particular program
6 coming.

7 For bigger programs like the
8 individual carbine program there was more than
9 adequate notice from the Department of Defense that
10 that was going to go on just because they wanted
11 everybody to be prepared for the solicitation so
12 that they could do it, and it wasn't typically just
13 a tweak or a modification of an existing item. In
14 many cases it was a new from scratch design that
15 was provided for -- for that.

16 The channels, you know, at the very
17 early on in that when they start hinting at things
18 are sometimes informal, but as the program comes
19 closer and closer to reality that's when the draft
20 product descriptions, the PD documents would come
21 out, and we would utilize those for, you know, in
22 some cases crafting a product from scratch or
23 modifying an existing product to meet whatever the
24 requirements were in particular.

1 On the commercial side of the business
2 it was a little bit different in that the feedback
3 we would get was from our marketing and our sales
4 teams for, you know, what they had heard, what they
5 envisioned, where their vision was for what the
6 customer might want next. Some of that was based
7 on customer feedback. Some of that was based on
8 intuition and experience in the marketplace.

9 Again, there were product, you know,
10 requirements listed. Obviously not as formally
11 defined as the U.S. government for the programs
12 that they had, but they followed a similar format
13 along with expected delivery dates and things like
14 that because, you know, they envisioned having this
15 product available to offer in the marketplace at
16 some certain point in time.

17 Q I'm sorry. I missed part of what you
18 said. Who is it that established the timeline for
19 developing a new commercial product?

20 A A lot of that came from our sales and
21 marketing team with feedback from the engineering
22 team because, you know, perfect world I want this
23 tomorrow. Reality is you can have that in a year,
24 you can have that in six months. You know, there

1 was a discussion.

2 And, you know, it was never to the
3 point that it's like, oh, well, go ahead and take
4 three years to develop this. It was to set
5 expectations for them when the product would be
6 reasonably available and, you know, that was -- you
7 know, we always strived to do better than that, but
8 we were always happy when we were able to meet
9 their expectations for it on the commercial side of
10 the business.

11 We always had to meet it on the
12 military side. As I mentioned, there was no slack.

13 Q So you said that sometimes the military
14 solicitation could be 20 to 30 pages long full of
15 specs and standards and testing requirements and
16 things like that?

17 A Yes.

18 Q For a commercial product you would be
19 developing all those specs and standards and
20 testing requirements internally, you'd have your
21 own specs and standards?

22 A Yes, they would exist. You know,
23 historically within the company I think they -- you
24 know, early on, and I'm talking like when I started

1 with the company, they may not have always been as
2 formal a document or as extensive a document, but
3 as we grew as a company, and, you know, it's
4 interesting to say that for a company that was 200
5 years old when I left, we got better about how we
6 did that and we got better specificity. We had
7 forms and formats for, you know, describing what
8 the requirements were based somewhat in part on the
9 structure that the government provided in their PD
10 documents.

11 And these were used not only for the
12 modern sporting rifle, commercial modern sporting
13 rifle product developments. They were for shotgun
14 programs, they were for bolt-action rimfire
15 programs, any firearms program that the company
16 might undertake.

17 Q So you'd end up with a document -- it's
18 not a solicitation that's 20 to 30 pages long but a
19 pretty substantial document saying here's our
20 product development plan for this product?

21 A Yeah, you know, the number of pages that
22 those were, it obviously was less. We weren't
23 referencing necessarily all the mill standards for
24 the anodization or the heat treatment or other

1 things that the -- that the military and LE
2 products needed to meet, but some of it was
3 implicit.

4 We understood that, you know, if it
5 was a shotgun program that the bolt would be made
6 from hardenable steel. There may be specifications
7 about what the particular finish on it was, whether
8 it was chrome-plated, whether it was black-oxidized
9 for the cosmetics, whether the receiver was
10 polished to a high level so it was nice and shiny
11 or if it was intentionally left with a matte finish
12 so that it would be less detectable.

13 All those items and, you know,
14 specific requirements were listed in the documents
15 that were available for us.

16 Q Less detectable by whom or what?

17 A Game typically. If you can imagine
18 you're out in, say, a duck blind or something or
19 hunting turkeys, and you may have never done that,
20 a lot of those guns are camouflaged, they have a
21 camouflage coating on them, or if they're not
22 camouflaged they have a nonreflective finish on
23 them so as to not draw attention to yourself in the
24 presence of the game so that you'd have the ability

1 to hopefully take the game if the opportunity
2 presented itself.

3 Q So I guess what I'm asking you is you get
4 a big package of requirements from the military,
5 but when you're designing your own commercial
6 products, when you're designing commercial MSRs,
7 you're not winging it, you're being precise about
8 every aspect of the gun and how it's going to be
9 made even if it's implicit because you've been
10 doing it for a long time, you're not just making it
11 up as you go along, you have a plan and you have
12 standards and you say we're going to do it this
13 way?

14 MR. LOTHSON: Objection; form, misstates
15 testimony.

16 BY MS. HELFRICH:

17 Q You can answer.

18 A There are documents that we had and we
19 worked with that were kind of the what we would
20 refer back to whenever there was a question about
21 what -- you know, what features and what
22 performance items the firearm was expected to have.

23 Q Okay. And in this position, I'm talking
24 about your final position from January '16 to June

1 '16, 2016 I mean, did this position require you to
2 be familiar with MSRs manufactured by other
3 firearms manufacturers?

4 A We were familiar with them as far as
5 manufactured by other companies as part of, you
6 know, just an ongoing product teardown. You know,
7 somebody would come out with a new offering and we
8 would essentially buy a copy of it and reverse
9 engineer it, tear it apart, understand how did it
10 work, what made it tick, and based on that inform
11 our designs potentially for things we might want to
12 do if they weren't protected by intellectual
13 property or, you know, could be considered for
14 patent infringement or things we could potentially
15 do better than what the competitors had.

16 So there was -- you know, that type of
17 an activity took place where it was a competitive
18 review of firearms.

19 Q And when you're doing that review did you
20 understand or did you need to understand what the
21 target audience for the firearm was; in other
22 words, whether that other manufacturer intended to
23 sell a particular firearm for hunting, for
24 self-defense, for competition?

1 A You know, looking at the firearms and
2 what their intended use was, in a lot of cases it's
3 fairly obvious. Some aspects of the design are
4 applicable across the board regardless of the final
5 end use, and that was, you know, kind of the way we
6 viewed it was, okay, you know, this is a new or a
7 different way of causing the firearm to operate in
8 this fashion or doing this, should we do something
9 like that and where is that applicable across our
10 product line, both for military and LE work as well
11 as the commercial modern sporting rifles.

12 Q So how did on a day-to-day basis or
13 week-to-week, whatever it was, how did you keep up
14 with what was out there in the marketplace?

15 A You know, a lot of that was through
16 media. You know, back in the day, the early 1990s,
17 there was no social media. There really wasn't
18 even an internet. Some of that was, you know,
19 keeping up via going to the gun shows, going to gun
20 stores.

21 A lot of the market awareness was
22 provided through our sales and marketing teams.
23 They had a lot of interfacing with the public,
24 different gun shows, different things like that,

1 where they could see competitive products and, you
2 know, say, hey, that looks interesting, maybe we
3 need to get one of those and, you know, look at it,
4 test it and see -- you know, understand what makes
5 it tick.

6 Q Okay. In your second to last position,
7 the position that you held from December of 2013 to
8 December of 2015 which has basically the same title
9 as the last position except in a different
10 location; is that correct?

11 A Yes.

12 Q So did anything change about your
13 responsibilities when you transitioned from the
14 second to last position to the last position?

15 A Yes, it did a little bit. Obviously when
16 I was in Elizabethtown, Kentucky, and, you know,
17 that was where I was headquartered I was an RP on
18 our FFL, so that responsibility left when the
19 Elizabethtown facility was closed and all the
20 activities were transferred down to Huntsville.
21 But in terms of --

22 Q Can I stop you there? Can you explain
23 what RP on an FFL means?

24 A It's responsible party. For an FFL for a

1 given site there are identified responsible parties
2 that the BATFE requires so that when they come to
3 make a visit they're able to say I need to -- you
4 know, we're here to do, for instance, an audit.
5 The responsible party is the person that would
6 interface with them when they came on site and also
7 for inquiries with regard to any paperwork that
8 they may need for tracing operations or anything
9 like that.

10 Q Okay. And for the record, FFL is federal
11 firearms license?

12 A Yes, ma'am, federal firearms license.

13 Q And ATF is the Bureau of Alcohol, Tobacco
14 and Firearms?

15 A Yeah, BATF, and it's actually BATFE,
16 Bureau of Alcohol, Tobacco, Firearms and
17 Explosives. BATF, ATF were also acronyms used to
18 describe that organization.

19 Q And that's what you were referring to
20 when you said ATF?

21 A Yes.

22 Q Okay. Just want a clear record.

23 Now, in your last position your
24 responsibilities -- or, sorry, in your last

1 position you were doing product development for
2 Remington Defense, Remington Arms, Bushmaster, and
3 DPMS; is that correct?

4 A Yes.

5 Q Those four brands?

6 A I believe at that point AAC may have been
7 under another director. I see it listed there,
8 but, yeah, it would have been those entities that
9 you mentioned.

10 Q Can you explain what AAC means on your
11 resume?

12 A Yeah, it's Advanced Armament Corporation.
13 It was a brand or a company that was purchased by
14 Freedom Group. Their primary product line was
15 silencers for firearms, and they also did some -- a
16 small quantity of firearms in addition to that.

17 Looking back through it, there was a
18 version of the Model 700 that was chambered in .300
19 Blackout that they offered that was kind of an
20 AAC-specific product. There was an H&R Handi Rifle
21 that was similar that they offered and there was
22 also, I believe, an AR platform firearm that was
23 .300 Blackout that they offered, but their primary
24 business was muzzle devices for silencers, flash

1 hiders as well as silencers.

2 Q Okay. And so you have them listed in the
3 position from 3/13 to 12/13, but I don't see them
4 listed in the position you held from 12/13 to
5 12/15. Is that just an oversight?

6 A No, that actually I was able to shed some
7 responsibility because at that point I was getting
8 spread pretty thin in terms of the groups I was
9 managing. I had my teams at the Elizabethtown R&D
10 Center, I also had a team up in Ilion, New York,
11 and I had the team down in Lawrenceville, Georgia,
12 and so I was running from pillar to post to kind of
13 keep track of everything. So responsibilities
14 during that time frame after December of 2013 were
15 transitioned to another gentleman that was the
16 director of product work for them.

17 And I see, you know, in the 2016 time
18 frame that it's listed as AAC brands. I do recall
19 during that time frame they were under the
20 responsibility of a separate director, and he was
21 one that ultimately succeeded me with Remington
22 Defense and the MSR product development.

23 Q Okay. So that's just an error in your
24 resume that you weren't doing --

1 A It is.

2 Q -- you weren't in charge of AAC brands?

3 A That's correct.

4 Q Okay. This isn't a test about your
5 resume.

6 Congratulations to you for getting rid
7 of some responsibility. That's not easy to do.
8 Once they give it to you, it's hard to get rid of
9 it.

10 A Sometimes, yes, ma'am.

11 Q Okay. So the position that you held from
12 March of 2013 to December of 2013 you're still --
13 is this essentially the same position? What's
14 changing?

15 A What happened there was I picked up
16 responsibility for modern sporting rifles in
17 March of 2013, so that's when Ilion, New York,
18 became the location because the Remingtons and at
19 that time Bushmaster MSRs were produced in the
20 Ilion, New York, facility, so that part of the team
21 was added to me. There were engineers on the team
22 that was at the Elizabethtown facility that was
23 doing work for DPMS products and others. They were
24 added to me.

1 So I assumed responsibility in
2 March of 2013 for modern sporting rifle product
3 development throughout the Remington Arms Company.

4 Q And the Remington Arms Company the brands
5 at that point were Remington Arms -- or Remington?

6 A Remington, yes.

7 Q Well, you say them. You know better --

8 A Remington, Bushmaster, DPMS, and AAC for,
9 you know, what activities they had with regard to,
10 you know, MSRs. It was limited, but they did some
11 work.

12 Q And then Remington Defense was --

13 A And Remington Defense as well.

14 Q Okay. So March 2013 you get it all,
15 right? Meaning you get military, you get MSR. Why
16 was that reorganization made?

17 A At about that same time the handgun
18 development group within Remington was really
19 growing and some of -- there was just a reshuffling
20 of responsibilities within the directors of product
21 development to free up a director to concentrate on
22 our handgun market, and so at the same time that he
23 was relieved of some of his other commercial
24 product development responsibilities there was just

1 a shuffling and it ended up that modern sporting
2 rifles they felt that they were aligned reasonably
3 well with the work I did as part of the DoD,
4 military, and LE so, hence, my assumption of the
5 responsibility for those teams.

6 Q But other non-MSR rifles were still
7 somewhere else, you didn't have those?

8 A That's correct.

9 Q Now I'm going to scroll down to the
10 bottom of that page of your resume, the bottom of
11 page 1, back here in the period from November of
12 2008 to January of 2011 that's where we see this
13 entry here about the adaptive combat rifle. This
14 is what we were -- this is what I intended to ask
15 about before, and I think this is what we talked
16 about before. This is the Remington ACR?

17 A That's correct. That was the --
18 Bushmaster originally had the design and did the
19 refinement on the design to make it producible.
20 The Remington Defense team then took what they had
21 and further refined the design so that it was going
22 to be -- meet the requirements for the IC
23 competition, the individual carbine competition I
24 mentioned previously.

1 Q And that's a military competition?

2 A Yes, it is, or was.

3 Q And did the modification done, the second
4 modification, not the initial modification by
5 Bushmaster but the second one to make it suitable
6 for the military, include the addition of automatic
7 fire?

8 A Automatic fire capability had come from
9 Bushmaster. They had included that as part of
10 their development. The refinement of that was --
11 took place by my teams in Elizabethtown, New York,
12 as well as design upgrades that helped the ACR meet
13 the requirements for the individual carbine
14 competition.

15 So there were several fairly
16 significant design modifications that took place
17 that removed features from the original ACR design
18 as received from Magpul by Bushmaster and, you
19 know, incorporated by Bushmaster into what we
20 ultimately submitted for the IC program.

21 Q All right. Thank you for explaining
22 that.

23 I want to ask some broader questions
24 about Remington but I do want to clarify, so you

1 worked continuously for Remington Arms from August
2 of 1990 through June of 2016; is that correct?

3 A That is correct.

4 Q But you also had this gig here in '85,
5 '86 where you were a field services engineer?

6 A That's correct. I was originally hired
7 by DuPont as a field services engineer, which is a
8 program that DuPont had for hiring engineering
9 talent and exposing them to a variety of areas
10 within the DuPont company.

11 When I was hired basically I was on
12 the fence with am I going to go to graduate school
13 for a master's in mechanical engineering or am I
14 going to go into the workforce. The opportunity to
15 go to Remington, given my interest from childhood
16 in firearms, was a real strong pull and is the
17 reason I went with that option, thinking that at
18 some point if I didn't enjoy that or if it wasn't
19 fun I could always go back for grad school later
20 on.

21 You know, 30 some -- you know, 36, 37,
22 38, 39 years later didn't make it to grad school.
23 I started off as a field engineer, did an
24 approximately two-year assignment, maybe just

1 slightly shy of that, maybe like 20 months, and
2 then moved on to another assignment because that's
3 the way the field engineering program worked where
4 I was at the Imaging Systems Department in Newark,
5 Delaware. We worked on equipment and machinery for
6 doing off-press proofing.

7 That's kind of a strange thing,
8 somebody hears that and it's like you have no idea
9 what it is. Basically for all color printing they
10 use four different colors ink. It's four process
11 colors. There's yellow, magenta, cyan, and black.
12 And in order to get the picture to turn out, we've
13 all seen pictures that have been printed that, you
14 know, they don't look good, the coloration is
15 wrong, this allowed companies to verify that
16 their -- the separations and the picture that would
17 ultimately be printed with those printing plates
18 would be good without having to make the printing
19 plates.

20 It was an off-line process that
21 simulated what the printing press would do and
22 allowed them to take and do this check and confirm
23 that they had everything, make adjustments so that
24 they weren't doing it when the press was running.

1 Q So this period was --

2 A After that -- yeah, go ahead.

3 Q This period 1/87 to 2/89, field services
4 engineer --

5 A Yes.

6 Q -- Newark, Delaware, you were not working
7 on anything to do with firearms; is that right?

8 A That is correct.

9 Q And in this period from March of '89 to
10 July of '90, Engineering Development Laboratory,
11 Wilmington, Delaware, are you doing anything
12 related to firearms?

13 A I was not doing that during that period.
14 It was with advanced composites that, you know,
15 were my primary assignments.

16 Q So when you were doing this first stint
17 with Remington in May of '85 to December '86 were
18 you employed by Remington or were you employed by
19 DuPont?

20 A I was employed by DuPont. Remington was
21 a wholly owned subsidiary of DuPont during that
22 time period, and there were several other field
23 engineers that were at the Ilion location working
24 in different roles besides myself there. So it

1 wasn't a one-off thing. As I recall, there were
2 probably three, four other engineers altogether
3 besides myself there during that time period.

4 There was an economic downturn during
5 the fall of 1986 and the plant went basically to
6 operating on three days a week and eventually had
7 to do a layoff, and it was hard to keep, as I
8 called myself jokingly, a rental engineer but it
9 was hard to keep a non-Remington direct employee
10 working there when Remington direct employees were
11 being let go. So my assignment ended about three
12 or four months early, and that's how I ended up
13 down at Imaging Systems Department in Newark.

14 Q And during this period from January '87
15 to July of '90 were you trying to get back into the
16 firearms industry?

17 A At that point I had the -- you know,
18 within the field engineering program there was the
19 opportunity to do career transfers. They typically
20 wanted you to do at least two assignments before
21 you made that transfer. They would encourage you
22 doing three or more so that you got, you know, a
23 much better idea of the breadth of the company and
24 areas where your skills aligned with the

1 requirements or the needs of those particular
2 divisions.

3 So I felt that after three assignments
4 I knew that I wanted to go back to Remington.
5 There was the opportunity to do so, and so I did.

6 Q And so from August of 1990 through to
7 June of 2016 you were an employee of Remington the
8 entire time?

9 A Yes.

10 Q Okay. You said you had a childhood
11 interest in firearms. Can you talk a bit about
12 that? Specifically what made you want to go into
13 the firearms industry?

14 A Well, growing up in, you know, northern
15 Minnesota, firearms and hunting were a big part of
16 growing up. I remember the first time I ever, you
17 know, shot a gun it was with my family. It was my
18 dad and my brother and my mother and shot a
19 Remington .22, a 572 pump-action .22 that my father
20 had, and I thought that was really cool.

21 Had the opportunity to do hunting,
22 first not carrying a gun because you had to be 12
23 years old in order to go through firearm safety and
24 I get a hunting license, so starting at about the

1 age of seven or eight I got to do a lot of walking
2 and sitting with my extended family as we deer
3 hunted and did other hunting in northern Minnesota.

4 Q Okay.

5 A So that was really the impetus and, you
6 know, the seed for my interest in firearms was
7 learning to use them as a kid and understanding,
8 you know, the enjoyment I had from them.

9 Q So during the time that you were at
10 Remington there were shifts in Remington's
11 corporate ownership, corporate structure. Can you
12 describe that to me? As best you can remember,
13 what's the timeline for Remington becoming
14 associated with Bushmaster, DPMS, and AAC?

15 A Okay. I'll do my best on this.

16 In a lot of cases I was, you know, the
17 recipient of the information rather than the
18 deliverer of it, but when I hired into Remington in
19 1985 it was a wholly owned subsidiary of DuPont. I
20 believe DuPont had purchased all of the outstanding
21 stock for Remington in the late '70s, early '80s,
22 at which point it became a wholly owned subsidiary.
23 Prior to that it was a standalone company.

24 In November of 1993, I believe, DuPont

1 sold Remington along with Stren, and Remington at
2 that time included the firearms and the ammunition
3 business, Stren was a fishing line business that
4 they owned, to an investment banking firm called
5 Clayton, Dubilier & Rice. CD&R is the acronym used
6 for them.

7 CD&R, their way of doing business was
8 they purchased divisions of larger conglomerates
9 that no longer aligned with the direction that the
10 parent corporation was going, and that was
11 basically, you know, DuPont at that time, I
12 believe, had -- probably it was no longer in the
13 gunpowder business and so as a result the affinity
14 and the alignment that they had from when they
15 originally invested in the company to that point
16 was -- had diminished and they just felt it was a
17 good thing to sell at that point so they did.

18 With the purchase of Remington by
19 Clayton, Dubilier & Rice they had the feeling that
20 the product development R&D groups would do better
21 if they were taken away from the manufacturing
22 facilities and put into a standalone facility so
23 that their attention wouldn't be diverted to
24 address manufacturing issues as they arose in the

1 plant, and so that was the impetus for the
2 selection of Elizabethtown, Kentucky, as the
3 combined R&D site for both the firearms and the
4 ammunition manufacturing.

5 They purchased the facility, they
6 refurbished it, added the laboratory space that was
7 needed to do firearms and ammunition development,
8 including a hundred-yard range, shooting -- what we
9 called shooting butts but basically a short range
10 where firearms could be tested without, you know,
11 letting bullets go outside the building. We shot
12 the firearms into special devices that caught the
13 projectiles and then allowed the recycling of the
14 material.

15 In 2008 Clayton, Dubilier & Rice, I
16 believe it was 2008, sold Remington to Cerberus
17 Capital Management, and at that point Cerberus was
18 the parent company that was over Remington. They
19 also had other firearms assets within their
20 portfolio. I believe, you know, Bushmaster was
21 owned by them prior to the purchase of Remington.
22 There may have been other entities as well. Again,
23 that wasn't something that was, you know, part of
24 my day-to-day activities as to who owned what and

1 all the things that were happening there, but my
2 recollection is that Bushmaster was there.

3 After they combined the businesses,
4 moved Bushmaster and Remington underneath the same
5 umbrella, they purchased several other
6 firearms-related businesses and some just
7 outdoor-related businesses. DPMS was purchased at
8 one point. Mountain Khakis, which was a clothing
9 company, was also purchased. There were just quite
10 a wide range of different acquisitions that took
11 place. Advanced Armament was part of that.

12 And so they built what became Freedom
13 Group, which ultimately, you know, was there until
14 I retired or, you know, finished my work with the
15 company in 2016.

16 I think that's reasonably accurate.
17 That's from my point of view how it all went down.
18 I'm sure there are a lot more specific details that
19 could be provided, but as a layman's view from
20 inside the company that's how I believe it went
21 down.

22 Q That's fine. I'm asking so we have at
23 least the same understanding, even if it's wrong.

24 Can you tell me, though, at what point

1 or by what point were Remington, Bushmaster, and
2 DPMS all in the same corporate family?

3 A Well, I know, like I had mentioned, I
4 believe Bushmaster was owned by Cerberus Capital
5 Management prior to the purchase of Remington. You
6 know, there may have been some rearrangement and
7 reorganization within the group post-acquisition of
8 Remington. What exactly that was I don't know.

9 DPMS was purchased at a point sometime
10 after Remington was purchased by Cerberus Capital
11 Management. Again, I don't have a specific date.

12 Q Okay.

13 A Bushmaster was a standalone firearms
14 development company in -- when I started my role as
15 a director of military and LE product development.
16 My management from the non-R&D side, the actual
17 business side, we're the ones that were working
18 with Bushmaster specifically for the development of
19 potential military weapons, not really doing
20 anything with regard to commercial development.
21 That was handled via Bushmaster's own internal
22 marketing and sales organization.

23 Q Okay. But by 2008 at least Bushmaster
24 and Remington are in the same corporate family and

1 then sometime within the next few years DPMS gets
2 added?

3 A That's my recollection of it, yes.

4 Q Well, let me ask you, I want to refer to
5 a chart you have in your report. You have an AFMER
6 chart of production, this is on page 4 of your
7 report, "AMFER" but I think you meant AFMER
8 Production Volumes, Bushmaster, DPMS, and it starts
9 in 2007.

10 A Yes. This is really without regard to
11 ownership or acquisition --

12 Q Who owned it, okay. All right. That's
13 what I wanted to understand.

14 A Yeah. Yeah.

15 Q Got it. That's what I wanted to
16 understand.

17 Okay. So when you're working on
18 product development for all the brands it isn't
19 necessarily the case that all the brands are one
20 company, they may be different companies, but it
21 doesn't matter, you cross lines because you're all
22 one family; fair?

23 A That is an accurate description of the
24 way we worked. You know, our engineers were

1 flexible with regard to the product line they were
2 working on. As programs for one brand wrapped up,
3 those resources as they were no longer required for
4 the program that was being launched were redeployed
5 for -- you know, on other programs that, you know,
6 could have been potentially for other brands within
7 the portfolio.

8 Q Okay. I got it.

9 Let me ask you some questions about
10 the firearms industry more broadly. When you first
11 worked for Remington in 1990 Remington was not
12 making modern sporting rifles, correct?

13 A That is correct.

14 Q What was their product line roughly?
15 What kind of product lines did they have?

16 A Their product line was primarily
17 bolt-action rifles in the Model 700 and Model 7
18 product line. There were also shotguns, the Model
19 870 pump-action shotgun, Model 11-87 semiauto
20 shotgun. There was a bolt-action pistol called the
21 XP-100, and there were rimfire products that were
22 both bolt-action, pump-action, and semiautomatic is
23 my recollection of the product line in 1990.

24 Q And were you interested in working on

1 MSRs or working on AR platform firearms at that
2 time?

3 A Regardless of what my interest would have
4 been, the opportunity wasn't there at Remington.
5 You know, personally I was working on bolt-action
6 rifles during that time period, so, unfortunately,
7 it's one of those, you know, what you want to do
8 and what you have to do are not always perfectly
9 aligned.

10 Q I've heard. But were you -- let me put
11 it this way. Were you interested in MSRs at that
12 point in your career?

13 A I was mildly interested, but it wasn't,
14 you know, a passion that I had. I'd had limited
15 exposure to them up to that point.

16 Q Do you know when you started in 1990, in
17 the early '90s, do you know how many companies were
18 making MSRs, what the size of that market was --
19 or, sorry, not the size of the market, the players
20 in the market?

21 A You know, I would have to go back and
22 look. I'm aware of certain players that were, you
23 know, active back then. You know, Bushmaster has
24 been around for quite a long time. Colt predates

1 them. ArmaLite was also a player.

2 Again, I'd have to go back and look at
3 historically who they were in that time period
4 because I didn't follow it closely. It wasn't, you
5 know, an all-consuming passion that I had
6 personally during that time period.

7 Q You state in your report at some point
8 that at the end of your career at Remington there
9 were scores of companies, that's the term you used,
10 scores, manufacturing MSRs. Do you remember saying
11 that?

12 A Yes.

13 Q I'm going to find it for you.

14 A Okay.

15 Q Because I want to get it right, too.

16 Oops. Didn't work. What happened
17 there. Here we go: Indeed, scores of other
18 companies besides mine were significantly involved
19 in this consumer MSR marketplace.

20 And you're talking about 2012 onward,
21 I believe, in this section; is that correct?

22 A Yes.

23 Q So scores means at least 40, and what I'm
24 interested in is how did that number compare to

1 what was around in 1990 or the early '90s when you
2 were first at Remington?

3 A It was substantially larger than what it
4 was, you know, during the 1990s.

5 Q Do you know what the size of the MSR
6 market was in the early 1990s?

7 A I do not. I don't have that information.
8 That was prior to my involvement with the product,
9 and, as I said, Remington during that time period
10 was not active in the production of MSRs and it
11 wasn't a personal interest I had outside of, you
12 know, what I was working on. So I don't know.

13 I'm sure data exists, you know, AFMER
14 reports from that time period that might be able
15 to, you know, hint at what the market size was, but
16 personally I don't have information from that time
17 period to share.

18 Q Okay. Do you know how many companies
19 were making MSRs in 2004 when the federal assault
20 weapons band ended?

21 A That number, you know, I've looked at
22 some of the data and it was -- you know, without
23 extensive investigation of what each company's
24 product line was, there were in excess of 20 that I

1 identified just based on my own personal knowledge
2 that the company was producing MSRs at that time.
3 There are potentially a lot of smaller companies of
4 which I had no awareness of what their specific
5 products were that may have been producing MSRs
6 during that time.

7 Q But it wasn't scores, you wouldn't use
8 the term scores?

9 A In the 2005 time frame I would say, yeah,
10 it's certainly a score and probably was scores.
11 Like I said, I personally identified about 20, but
12 I'm sure there were a lot more. Like I said, we'd
13 have to go in and investigate each company, okay,
14 were they making MSRs.

15 One of the issues with the AFMER
16 reports is that, unfortunately, they don't classify
17 rifles as anything other than rifles, so MSRs get
18 grouped in with bolt-actions and other
19 semiautomatic firearms or rifles and pump-action.
20 So if you have a company that's producing a myriad
21 of product lines or multiple product lines that
22 involve all those products you don't have the
23 ability with that data to extract exactly what the
24 MSR market is, but as I understand, you know, other

1 folks have gone and done that work and gone and dug
2 a little bit deeper and publicly
3 questioned -- not publicly but privately questioned
4 some of the manufacturers, okay, what was your
5 breakdown and they have that information.
6 Unfortunately, I don't have that information
7 personally. I only have the AFMER reports to
8 review.

9 Q Okay. I'm trying to assess -- I'm not
10 trying to pin you down on a specific number, but
11 I'm trying to assess like between 2004 when you say
12 you know of about 20 companies making MSRs and when
13 you left Remington in 2016 how many more companies
14 were there in 2016 or less or fewer?

15 A You know, in reviewing the reports and,
16 again, the number of FFLs reporting the manufacture
17 of rifles increased greatly. I mean, you take a
18 look at just the PDFs for the reports themselves
19 the rifle section grew, you know, probably doubled
20 in length.

21 A lot of these companies are small.
22 The numbers they're reporting are not particularly
23 large. Some of them -- some of the companies, some
24 of the more traditional companies, produced a

1 significant quantity as evidenced by the number
2 they reported, but, you know, by identifying
3 companies that I know produced MSR products and
4 exclusively MSR products rather than some mixture
5 where you can't differentiate given the data I had
6 access to, I would say that easily the field
7 doubled and went into the forties and, quite
8 honestly, I'd say with a more extensive examination
9 and probing of what the product line was for each
10 company it could have been even more than that.

11 Q So based on your experience, and I
12 understand all of the limitations on what you're
13 saying, but from your experience the number of
14 companies you would say roughly doubled from 2004
15 to 2016 and I'm saying the number of companies
16 manufacturing MSRs, correct, that's what you said?

17 MR. LOTHSON: Objection; misstates
18 testimony.

19 THE WITNESS: You know, what I said was
20 that from the inception of when I started looking
21 at data through about 2016, yeah, the number of
22 manufacturers I was able to identify approximately
23 doubled.

24

1 BY MS. HELFRICH:

2 Q Okay. And comparing 2004 to 1990 you
3 said -- and, again, I'm not asking you to give me a
4 specific number, but did it double, did it triple --
5 sorry, 1990 to 2004, in your experience did the
6 number of manufacturers double, triple, stay the
7 same, go down?

8 A I didn't have access to reports from that
9 time period, from the early '90s. The only ones I
10 had accessible to me were through I want to say the
11 early 2000s. If there were ones from that earlier
12 time period I did not see those.

13 So I'm not able to offer an estimate
14 of what the market change was over that time period
15 just because I don't have data for the starting
16 point.

17 Q Fair. And this growth in the number of
18 companies, is this related to a growth in the size
19 of the market for MSRs in your view?

20 A I would say it is related to a growth in
21 the size of the market because, you know, standard
22 economics are a supply-and-demand thing. You can
23 have a large supply, but if there's not demand for
24 it they wouldn't be -- you know, the firearms

1 manufacturers wouldn't be shipping the product.

2 So there was demand in the marketplace
3 for the MSR products as evidenced by, you know, the
4 increasing number of participants in the market for
5 manufacturing as well as the numbers produced.

6 Q And Remington itself entered the MSR
7 market in 2008; is that correct?

8 A I believe that's correct. It's within
9 that time frame, 2008, 2009. I would have to go
10 back and do some studying of catalogs to see what
11 the introduction date was for the R-15 and the
12 R-25.

13 Q Do you know why Remington decided to make
14 that move at that time?

15 A Well, I believe at that point in time we
16 were -- you know, Bushmaster and DPMS at a later
17 point were partners for us. We wanted to offer an
18 MSR that was tailored for hunting and for varmint
19 used them for target use. So there was a
20 rebranding, rebadging, if you will, of products as
21 well as some that were Remington-specific in terms
22 of the features that they offered.

23 Q In your view was the market for MSRs
24 expanding at that time around 2008?

1 A Yes, I believe it was. You know, with
2 the expiration of the assault weapons ban that's
3 when I think, you know, based on the data I've seen
4 with market participants and that that there was an
5 increase in the number of companies producing the
6 firearms as well as the quantities produced as
7 well.

8 Q Do you know whether it was a big increase
9 or just similar to what had come before?

10 A You know, you'd have to actually map it
11 all out, but the growth curve seemed like for the
12 first several years after the lapse of the ban was
13 a steady growth and then there were times where
14 later on the growth was steeper. And there were
15 actually in some cases, a couple cases, where there
16 were slight market declines as well, but in general
17 the trend was towards higher quantities and more
18 participants in the -- you know, in the manufacture
19 of modern sporting rifles.

20 Q So I have read, and I'm not vouching for
21 this number, but I have read that Bushmaster and
22 DPMS in 2007 had about half the market for AR-15s.
23 Does that sound right to you?

24 A They had a significant part of the

1 market. To pin me down to a specific number I'd
2 have to go back and run the numbers myself.

3 So it doesn't sound particularly
4 outrageous, but, you know, again, for specificity I
5 would really need to take and do the numbers myself
6 to confirm that.

7 Q Okay. Would it be correct to say based
8 on your experience that in 2007 AR-15s were a
9 dominant part of the MSR market?

10 A I would say that they were one of the
11 primary products that were being sold in the MSR
12 market. I think, you know, also the importation
13 bans that were in place for some of the other
14 products, with the lapse of those there was
15 interest in people, you know, in AKs and other
16 platforms that, you know, kind of fall under the
17 MSR umbrella, but the AR market I would say
18 definitely was in a growth mode.

19 Q Around that time, around 2007, 2008?

20 A It had started, yes. As I mentioned
21 previously, with the lapse of the assault weapons
22 ban the market grew and, you know, based on the
23 reported numbers in AFMER.

24 Q And is it correct to say that AR-15s were

1 a really dominant part of the market and then their
2 share is kind of shrinking as other things come in?

3 A You know, yeah, their market probably did
4 decrease, the percentage of the modern sporting
5 rifle market that they commanded decreased as other
6 products were introduced, other platforms that were
7 within that same umbrella. Again, need to take and
8 do a deeper dive on the AFMER data to understand,
9 you know, really what that shift was.

10 You know, at a high level I would say
11 it decreased some, but, you know, since there's
12 really no way to -- for me given the data I have to
13 be able to tell you exactly what it is, I can only
14 offer my estimation of what it is.

15 MS. HELFRICH: Okay. I'd like to take a
16 five-minute break, if that's all right with you.
17 So we'll come back on the record at 11:25.

18 THE WITNESS: Okay. Can we take a lunch
19 break then, say, around noon your time?

20 MS. HELFRICH: Well --

21 THE WITNESS: Or is that not -- not
22 within what you'd like to do?

23 MS. HELFRICH: How about 12:15?

24 THE WITNESS: That will work. I'm on

1 Eastern Time.

2 MS. HELFRICH: Are you on Eastern Time?

3 THE WITNESS: I am on Eastern Time. I'm
4 five miles from the timeline.

5 MS. HELFRICH: Okay. So your stomach is
6 on Eastern Time, too.

7 THE WITNESS: Yeah, unfortunately.

8 MS. HELFRICH: Okay. Well, I'll aim for
9 12:15 lunch break.

10 THE WITNESS: Excellent.

11 MS. HELFRICH: Okay. Thank you.

12 THE WITNESS: Thank you.

13 (Whereupon, a recess was taken
14 at 12:21 p.m. ET and resumed at
15 12:26 p.m. ET as follows:)

16 MS. HELFRICH: So we'll go back on the
17 record.

18 BY MS. HELFRICH:

19 Q Mr. Ronkainen, I want to ask you some
20 questions about your report, so I have to do a
21 little bit of business first to clean up the
22 record.

23 You've already said that Exhibit 1 is
24 the report you submitted in this case. You were --

1 and you've said that you were retained by Lothson's
2 firm; is that correct?

3 A That is correct.

4 Q All right. What was your assignment in
5 this case?

6 A My assignment was to provide a point of
7 view or a rebuttal to expert witnesses' reports
8 that were provided originally in this case, in this
9 matter, and to provide the perspective of somebody
10 that had been in the industry and active within it
11 in a role that involved the development of the
12 product in question and, you know, a participant in
13 the industry that worked with the sales and
14 marketing and somebody that was basically involved,
15 a player, if you will.

16 Q Do you have personal beliefs about
17 whether the firearms restricted by Illinois' law
18 should be available to civilians?

19 A I do. I support the Second Amendment
20 and -- you know, so we can leave it at that.
21 Basically, yes, I support the Second Amendment and
22 we'll leave it at that.

23 Q Did you have that view that the weapons
24 restricted by the Illinois law should be available

1 to civilians, did you have that view when you
2 started in the firearms industry in 1990?

3 A Yes.

4 Q In your report you list on page 7 to 8 --
5 no, actually 6 to 7 you list materials reviewed,
6 expert reports of Louis Klarevas, Lucy Allen, Phil
7 Andrew, and James Yurgealitis, correct?

8 A Yes.

9 Q Now, did you review the original report
10 by Mr. Klarevas or the corrected report by
11 Mr. Klarevas?

12 A I'm uncertain as to which one I actually
13 reviewed. It was probably the corrected one, but I
14 don't know. I didn't realize there were two.

15 Q Okay. I thought that might be the case
16 but let me just ask you, your rebuttal is to pages
17 7 to 21 of his report.

18 A Okay.

19 Q Here's what you say up here because I
20 think we can solve this problem pretty easily. You
21 say that his statements that he makes are wrong,
22 see Klarevas report pages 7 to 21. So that's the
23 section of the report that you're addressing?

24 A Yes.

1 Q Okay. So long as you're not addressing
2 anything else I can tell you that none of the
3 changes that were made affect pages 7 to 21, so I'm
4 going to probably show you his report later but
5 I'll show you the corrected one and I believe we
6 don't need to worry about that. Mr. Lothson can
7 have a different opinion if he thinks that you
8 reviewed a different report.

9 So did you review any -- sorry?

10 A I was going to ask when the correction
11 took place.

12 Q Just like a week later there was a --

13 A Okay.

14 Q -- change in an academic article that
15 came to Mr. Klarevas's attention.

16 A Okay.

17 MR. LOTHSON: Untimely disclosure which
18 we'll move to strike.

19 BY MS. HELFRICH:

20 Q Did you draft the report yourself?

21 A Yes, I did.

22 Q And do you stand by everything in the
23 report or do you want to change anything today?

24 A I stand by the report as written.

1 Q Okay. Let me point something out, and
2 then I'm going to ask you that question again.

3 A Okay.

4 Q You say here -- so here we're on page 4:
5 The AFMER data alone confirms that my companies,
6 e.g., Bushmaster and DPMS, respectively, produced
7 302,530 and 848,311 for a total of 1,150,841 MSRs
8 during the period for which such data directly
9 attributable to each company was available.

10 Now, those --

11 A Could you share your screen, please?

12 Q Oh, my gosh. I thought I was sharing.

13 A No.

14 Q Can you see it now?

15 A Yes, I can see it now.

16 Q Okay. So this is the sentence that I
17 just read, starts with "The AFMER data alone." Go
18 ahead and read that sentence.

19 A Can you scroll down so I can also see the
20 table?

21 Q Yeah. I want to ask you about the table.

22 A Okay.

23 Q Because for Bushmaster, for example, in
24 the first line this total here is equals rifles

1 minus exported rifles but then the second line the
2 total equals just rifles and it looks like you
3 didn't subtract exported rifles and the same for
4 the third line --

5 A Based on what you're showing me there I
6 would agree that that is -- the formulas
7 calculating the value shown and total are
8 different.

9 Q So was it your intention, were these
10 totals intended to represent, the totals you give
11 in the text up here, intended to represent rifles
12 produced minus rifles exported?

13 A I believe that's what my intent was, and
14 obviously with the math equation issue it did not
15 reduce the number of rifles exported, which would
16 have made a difference of about 5,600 perhaps,
17 5,800, somewhere in that neighborhood. So it would
18 reduce the total --

19 Q Yeah, it's not a huge difference, but I
20 just wanted to understand what your intention was.

21 So can I assume, then, that the total
22 attributable to each company is the number of
23 rifles produced, so the second column from the
24 left, minus rifles exported, fourth column from the

1 left?

2 A That would be the intent, yes, ma'am.

3 Q Okay. That's fine. I just wanted to
4 understand. I did not see that issue arising in
5 the DPMS data. It was just Bushmaster, who knows
6 why.

7 So with that correction do you stand
8 by everything that's in your report?

9 A I do stand by everything that's in my
10 report with the exception of those total numbers
11 would vary based on correction of the math there
12 that took place there.

13 Q Okay.

14 A With the magnitude of the error being
15 approximately 56 to 5,800 units in total for the
16 time period in question.

17 Q And is everything in the report true to
18 the best of your knowledge?

19 A Yes, ma'am, it is.

20 Q Okay; great.

21 Now, I want to ask you some more about
22 the market for MSRs. So you say on page 3: I have
23 also reviewed the report submitted by the State's
24 expert, Mr. Klarevas. Mr. Klarevas's suggestion

1 that MSR production volumes did not result in
2 significant quantities of MSRs being produced for
3 the civilian marketplace is wrong.

4 Did I read that correctly?

5 A Yes.

6 Q Okay. And, as you said earlier, your
7 rebuttal is aimed at pages 7 to 21 of his report,
8 correct?

9 A Yes.

10 Q All right. Then you go on to say:
11 During my tenure as the director of MSR new product
12 development for Remington, DPMS, and Bushmaster,
13 MSR production volumes for lawful sales to
14 civilians stayed robust year over year. ATF AFMER
15 data for DPMS and Bushmaster confirms this point.
16 Overall, the market has been consistent or
17 expanding, not contracting on the whole.

18 Did I read that correctly?

19 A Yes.

20 Q Okay. So when you say during my tenure
21 as director of MSR new product development for
22 Remington, DPMS, and Bushmaster, could you say what
23 time period you are referring to?

24 A That is when I had responsibility for the

1 product development, which would have been
2 starting, I believe, in 2013 by my CV.

3 Q So 2013 to 2016?

4 A Yes, would have been in that time period.

5 Q Okay. I want to ask you about some
6 numbers that Mr. Klarevas gives, so let me stop
7 sharing and show you a different document.

8 Can you see a document that has a
9 title Declaration of Louis Klarevas?

10 A Yes, I see that.

11 Q Okay. And just to make Mr. Lothson
12 happy, I'm going to use Mr. Klarevas's first report
13 since pages 7 to 21 are unchanged.

14 Do you recognize this document as
15 something that you reviewed?

16 A Yes.

17 Q I'm going to scroll.

18 Do you recognize this?

19 A Yes.

20 Q Okay. I'm going to go to page 14 of this
21 report. I need to make this bigger.

22 Can you still see it, the chart?

23 A Yes, I can still see it.

24 Q Okay. This is a chart that Mr. Klarevas

1 included in his report. Now, these are numbers
2 that the NSSF provides regarding annual production
3 of MSRs. Now I assume that you are not able to
4 vouch for the accuracy of these numbers, but if I'm
5 wrong please let me know.

6 A I am unable to vouch for those. The only
7 access I would have had for those would have been
8 in Mr. Klarevas's report.

9 Q That's fine.

10 What I want to ask you about is the
11 pattern that these numbers show, so the specific
12 numbers don't matter. What I want to ask you is
13 whether the pattern of growth is the same pattern
14 of growth that you experienced in this market, and
15 what I want to point out especially is I want to
16 divide it up into sort of three different decades.

17 So if we look in the '90s, and I
18 understand that you don't -- you didn't study the
19 data from the 1990s, in the 1990s we've got a much
20 smaller market than we do between, let's say, 2010
21 and 2021. That would seem to jibe with what you've
22 told me; is that right?

23 A That's correct. The numbers that
24 Mr. Klarevas is listing there are all firearms,

1 which are handguns and everything else. MSRs is a
2 part of the total market --

3 Q Well, hang on because this first column
4 here is MSRs annual. MSRs --

5 A Yes.

6 Q This column --

7 A For calculation of the percentages he's
8 using all firearms annually. My data when I've
9 looked at it has been with regard to rifles only,
10 so I'll make that caveat.

11 Q Do you mean your data has been -- I don't
12 understand. Could you explain again?

13 A In the third column there where it says
14 All Firearms (Annual).

15 Q Yeah.

16 A That's all firearms, shotguns, rifles,
17 pistols, everything, and so the data I've done in
18 terms of, you know, MSR and market analysis has
19 been looking strictly with regard to rifles. It
20 doesn't count in handguns, which are a significant
21 part of the market, or other firearms. It's
22 strictly looking at rifles in total.

23 Q So you have no thoughts about this
24 percentage of MSRs as a percentage of total

1 firearms produced?

2 A I would say that it's, you know, the
3 trend that's indicated there is, you know, similar
4 to I think what I showed. I would say the absolute
5 value of the numbers that are shown there are low
6 because of the denominator used to calculate them,
7 all rifles -- or, excuse me, all firearms versus
8 rifles.

9 Q Understood. What about the pattern of
10 growth from 2 percent in 1990 to 18 percent in
11 2021?

12 A Again, as I said, generally it's
13 directionally correct. My estimations were in
14 terms of part of the market a little bit higher
15 because I was looking strictly at rifles, not all
16 handguns and shotguns and other things, but, yes,
17 directionally it's the same.

18 There are economic downturns that are
19 indicated there, specifically 2010 was a slow year,
20 and there have been different times, I think, like
21 some of the financial crises affected the overall
22 growth, but in general if you were to draw a trend
23 line from 1990 to 2021 it's definitely a positive
24 slope and going up with individual variations based

1 on some years being less than previous years but
2 the trend line is definitely a growth trend line.

3 Q And would you agree that the slope gets a
4 lot steeper maybe starting 2007, 2008?

5 A Based on the data Mr. Klarevas has in
6 this table I would agree that, yes, it does get
7 steeper.

8 Q Does that square with your experience,
9 does that jibe with your experience of the market?

10 A As I said during my time period, yes. In
11 the data analysis I did for times prior to my
12 involvement in the MSR market, prior to the
13 expiration of the assault weapons ban in 2004, you
14 know, it was a very slow-moving market,
15 consistently, you know, 150 to 200,000 units in
16 total going in, but then when the sales were able
17 to increase you'll notice that all of a sudden you
18 went up to, you know, six-digit production numbers
19 in certain years where, you know, people were
20 purchasing a lot of the products.

21 Q Okay. So without endorsing these
22 specific numbers, this growth pattern at least from
23 the mid 2000s onward is consistent with your
24 experience, the pattern?

1 A The pattern and the trend are consistent
2 with my experience.

3 Q Okay. And, again, not asking you to
4 vouch for these specific numbers, this last column
5 that Mr. Klarevas has, which I have to say, I'm not
6 a numbers person, it took me a while to figure out
7 how to read this column, what this column suggests
8 is that if these numbers were accurate, and we're
9 not saying they are, then half of the MSRs produced
10 between 1990 and 2021 were actually produced just
11 between 2015 and 2021 -- sorry, 2016 and 2021. So
12 that's this group here.

13 Without vouching for a specific
14 number, does that square with your view of the
15 market?

16 A Yeah, I believe that -- you know, as I
17 stated before, that the number of manufacturers
18 increased as well as the volumes they were
19 producing based on the rudimentary analysis I
20 conducted of the AFMER numbers during certain
21 sections of that time period.

22 So there's growth, and based on
23 Mr. Klarevas's numbers, if you accept those as, you
24 know, accurate, yeah, about 50 percent of them

1 produced in -- you know, from that 2016 to the 2021
2 time period.

3 Q Well, just to be clear, these are NSSF
4 numbers, not Mr. Klarevas's, but that's okay, but I
5 want to be clear. I'm asking you whether your
6 experience of the market is consistent with what's
7 shown here.

8 A As I stated previously, yes. The market
9 has grown. I'd say in recent years it has grown
10 more steadily or at a higher rate than it had
11 previously, and some of that was due to, like I
12 said, the assault weapons ban expiring and the
13 availability of the product to more people in more
14 configurations that weren't limited by what the
15 previous law had in it.

16 Q Okay. Now in terms of rebutting
17 Mr. Klarevas's report, I just want to ask you, did
18 you review the English survey?

19 A English survey?

20 Q Yes. Are you familiar with the English
21 survey?

22 A I don't recall what that is. Can you
23 show me what it is and I'll tell you if I've seen
24 it?

1 Q Yeah. I'm going to go back to sharing.

2 Can you see the chart again?

3 A Yes.

4 Q Okay. So page 7 of Professor Klarevas's
5 report, Section IIIA says Assault Weapons, and then
6 Section IIIAi says The English Survey. In 2021
7 Georgetown University professor William English
8 conducted a survey of gun owners.

9 Have you reviewed that survey?

10 A I have not reviewed that survey in
11 particular. I've seen a reference of it in this
12 document, but I have not gone through that survey
13 personally to analyze the details that are there.

14 Q Okay. Here on page 12, Section IIIAii,
15 it's titled NSSF Publications. Did you review the
16 NSSF publications that Mr. Klarevas is referring to
17 in this section of his report?

18 A As I said before, I didn't have access to
19 those.

20 Q Sorry for all the scrolling.

21 Here on page 19 of his report, Section
22 IIIAiii, The Washington Post/Ipsos Survey, did you
23 review the Washington Post/Ipsos survey?

24 A I have not reviewed that survey in

1 particular. I reviewed Mr. Klarevas's comments on
2 it, but I have not gone back and personally read
3 the survey and the details with regard to it.

4 MS. HELFRICH: All right. I'm going to
5 stop sharing.

6 I was hoping to go back to your
7 report, but I seem to have lost it. Here we go.
8 I'm going to share again.

9 Just a second. June, I don't think --
10 I don't remember whether I asked that the Klarevas
11 report be marked as Exhibit 2. I would like to ask
12 that it be marked as Exhibit 2.

13 THE REPORTER: You had not.

14 (Document was marked Exhibit 2
15 for identification.)

16 BY MS. HELFRICH:

17 Q Okay. Mr. Ronkainen, can you see your
18 report?

19 A Yes.

20 Q I want to ask you about some statements
21 in your report. On page 2 you say -- let me find
22 it. Well, now I can't find it.

23 Here we go: During my time in the
24 firearms industry, demand and sales of commercial

1 MSR's climbed markedly and steadily.

2 Do you see that?

3 A Yes.

4 Q When you say commercial sales -- sorry,
5 when you say sales of commercial MSR's, does
6 commercial MSR's include any MSR's sold to law
7 enforcement?

8 A Typically, no. Those would have been
9 sold -- they are on some occasions sold,
10 semiautomatic versions, to law enforcement agencies
11 that require that, but by far and away the majority
12 were sold to the general public as opposed to LE
13 sales.

14 Q When you report rifle sales to ATF, the
15 Bureau of Alcohol, Tobacco, Firearms and
16 Explosives, when you report rifle sales that data
17 includes any sales to law enforcement, correct?

18 A Yes, it does. They're disposed of in
19 commerce, so they would be included on that report.

20 Q It does not include sales to the
21 military, correct?

22 A Sales to the military, I believe, were
23 not part of that. These are strictly ones that are
24 into commerce.

1 Q Okay.

2 A The rules for the AFMER reporting, you
3 know, delineate exactly what needs to be reported.
4 Based on my recollection of having read those, I
5 believe military sales are excluded from that.
6 Again, I'd have to go back and read that in detail
7 to confirm that for you.

8 Q Okay. In this statement that we just are
9 looking at here, when you say demand and sales of
10 commercial MSRs climbed markedly and steadily, are
11 you referring to demand and sales at your companies
12 or in the market overall?

13 A Specifically based on my recollection of
14 what was going on with our company, but, you know,
15 being involved in the industry you could see that
16 there were a lot of competitors coming into the
17 marketplace and the overall numbers of the products
18 being sold into commerce was increasing as well.

19 So, I mean, our salespeople had access
20 to the specific data, albeit on the time lag that
21 happens by the reporting period. It's typically
22 trailing data by 12 to 18 months, I believe, based
23 on when the ATF finally generates the report. So,
24 you know, our experience was that sales were

1 growing, both, you know, with Bushmaster,
2 Remington, DPMS, as well as what we saw our
3 competitors doing.

4 Q Okay. Now other than that AFMER chart on
5 page 4, which we're going to look at in a second,
6 other than that AFMER chart you don't provide any
7 sales numbers in here, in your report, correct?

8 A That is correct.

9 Q Why not?

10 A Basically I only needed them to prove
11 what I had to, you know, the statements I was
12 making in the table. Specific sales data it's all
13 available, it's available in the references that I
14 have for my report. It's from the AFMER data, so
15 it would be redundant to do that I felt.

16 Q So it's in the data from your report. Do
17 you mean the materials you reviewed?

18 A Yes. It's available within that.

19 Q In the Annual Firearms Manufacturing and
20 Export Reports?

21 A Yes.

22 Q Okay. But as we said, that might include
23 sales to law enforcement, correct?

24 A Let's talk about that a little bit. You

1 know, sales to law enforcement, yes, that would be
2 in there. It would be a very small percentage.
3 You look at the total volumes that were produced
4 and sold, if those volumes were going in any
5 quantities, any large percentage into law
6 enforcement, there would be so many guns in the
7 cars of the officers that are out there policing
8 our streets that it wouldn't be possible for them
9 to do anything but sit in the car themselves.

10 So, yes, there were sales, but to
11 claim that it's, you know, any significant
12 percentage is I think -- you know, it's incorrect.

13 Q Okay. Let me ask you, when you say that
14 are you talking about sales from your companies or
15 the market overall?

16 A I'm saying, you know, from sales from my
17 company and I would expect that by extrapolation
18 that it wouldn't be any different for other
19 companies. There aren't any other of the
20 competitors that we had that I'm aware of that were
21 selling exclusively into the LE market and not into
22 the commercial modern sporting rifle market.

23 Q Now, the BATF AFMER reports show
24 production of rifles, right, it doesn't separate

1 out modern sporting rifles, correct?

2 A That is correct. That data is
3 confounded. So for a company like Remington that
4 produced both types of products, you're not able to
5 extract from the reported data, you know, which is
6 which. I believe the NSSF data, as I understand
7 it, there was contact outside of the AFMER reports
8 to get information from the companies firsthand as
9 to what the actual breakdown was. As I said,
10 though, I didn't have access to that information to
11 include it in my analysis.

12 Q Okay. But I actually can't tell from ATF
13 data how many MSRs a particular company produced
14 because they're just going to list rifles, right?

15 MR. LOTHSON: Objection; misstates
16 testimony. That's not what he said.

17 BY MS. HELFRICH:

18 Q I'm asking.

19 A The data can be parsed in a way for
20 companies that produce modern sporting rifles
21 exclusively or nearly exclusively compared to gun
22 companies that produce both lines of products and
23 it obscures what the modern sporting rifles
24 component of their sales were.

1 For example, Springfield Armory
2 produces the M1A as well as a line of AR rifles. I
3 can't tell what the percentage is for them, I don't
4 have access to that information, but for a company
5 like Arrow Precision or another company that's
6 producing exclusively ARs, that's data that I can
7 rely upon to say, okay, that is truly AR sales,
8 it's not commingled with other rifle sales; and
9 based on adding that up for known AR producers and
10 excluding producers that, you know, have both
11 product lines where it's impossible for me to tell
12 what's -- what percentage of the total number
13 reported is MSRs, even with that, you know, it
14 looks like based on the data analysis I've
15 conducted, you know, you're looking at 30 -- you
16 know, anywhere from -- you know, arising from the
17 teens of percentages up to probably 25 to even 30
18 percent of the total sales conservatively are
19 modern sporting rifles of the total number of
20 rifles reported.

21 The actual number I would expect to be
22 higher, but, again, I don't have the ability to
23 disambiguate that data to be able to tell, okay,
24 Remington Arms from Ilion, New York, produced

1 53,207 or something like that. That's data and
2 information that the NSSF was able to get via
3 contact through additional --

4 (Audio Interruption.)

5 MS. HELFRICH: I'm sorry. Can someone
6 mute?

7 MR. LOTHSON: That would be Troy Owens is
8 unmuted.

9 Troy, we're hearing your conversation
10 relative to a different case.

11 THE REPORTER: I just muted him, but I
12 would like to hear the end of the answer again
13 because he was speaking over you. You said "That's
14 data and information that the NSSF was able to get
15 via contact through additional..."

16 THE WITNESS: It was data that the NSSF
17 was able to get via contact directly with the
18 companies for their own disambiguated production
19 numbers for modern sporting rifles.

20 BY MS. HELFRICH:

21 Q Okay. I asked you a while ago why you
22 didn't include sales numbers and you said it was in
23 the materials reviewed so you didn't think you
24 needed to repeat it, but in actual fact I can't

1 disambiguate modern sporting rifles from rifles
2 total by looking at ATF reports, AFMER reports,
3 right?

4 A You probably cannot --

5 MR. LOTHSON: Objection.

6 THE WITNESS: Go ahead.

7 MR. LOTHSON: I'll object. That's not
8 his testimony.

9 BY MS. HELFRICH:

10 Q I'm asking. Can I disambiguate --
11 looking at just -- let me rephrase.

12 Looking at just the AFMER reports, can
13 I know the number of modern sporting rifles that
14 were sold in a given year?

15 A An exact number you would be unable to do
16 that. You can estimate it based upon companies
17 that sell only modern sporting rifles and excluding
18 others that sell a mixture, which tends to be a
19 more conservative estimate of the number of guns
20 produced because you're disregarding or not able to
21 incorporate production volumes of modern sporting
22 rifles from companies that offer both, you can't
23 disambiguate their data, but for ones that where
24 you know that their sole product lines are

1 MSR-based you can add those up and come up with an
2 estimation of what the sales are. That's what I've
3 done.

4 Q But you haven't stated that number in the
5 report. You haven't stated an annual total of MSRs
6 produced in your report. You've only given data
7 for Bushmaster and DPMS, correct?

8 A Because that was data that I was able to,
9 you know, look at and answer based on my own
10 personal experience. For companies outside of the
11 Remington Arms Company and Bushmaster and DPMS and
12 AAC, I have to use my knowledge of the industry to
13 say who's producing what.

14 You know, I can look at the AFMER list
15 and I can say that, okay, Rock River Arms, they're
16 producing exclusively modern sporting rifles, so
17 their number, we'll add that to the tally of guns
18 being produced. For somebody like Sturm Ruger or
19 Remington, some portion of what they're producing
20 and reporting is modern sporting rifles. I'm not
21 able to disambiguate that, so I'll disregard it.

22 But using the ones of known producers
23 of modern sporting rifles that I was able to do
24 based on my own personal knowledge and experience

1 with the competitors that were in the marketplace I
2 was able to develop, you know, what their
3 approximate sales numbers were and, as I said, it's
4 a conservative estimate. It is actually probably --
5 it isn't probably, it is higher, but I'm not able
6 to tell you exactly how much higher.

7 The NSSF data may help that because
8 they did actually reach out to the firearms
9 manufacturers for disambiguation of that data. I
10 didn't, and I didn't have access to their numbers
11 to run myself when I did my analysis.

12 Q So when you did your analysis did you
13 come up with an estimate using the method you've
14 described of annual sales of MSRs for the years
15 that you were in the firearms industry or for the
16 years when you were director of product development
17 for MSRs?

18 A I did not go through and do that
19 particular activity. I was looking strictly at the
20 Bushmaster and DPMS. The more extensive look at
21 overall within the industry wasn't in place at that
22 time.

23 Q What do you mean wasn't in place?

24 A I hadn't done the analysis at that time.

1 Q At the time --

2 A That's not in my report.

3 Q -- of your report?

4 I'm sorry. We spoke over each other.

5 A The overall sales numbers are not in the
6 report.

7 Q And when you wrote the report you had not
8 done that analysis?

9 A I had not completed the analysis at that
10 point.

11 Q Have you completed that analysis now?

12 A Rudimentary pass at it, yes, I have.

13 Q Okay. All right. I want to ask a few
14 more questions. We're very close to lunch, I
15 promise you.

16 Okay. This is page 4 of your report.
17 I'm going to read the first sentence of this
18 paragraph here: As a family of companies, with
19 Remington as the head, we reviewed the marketplace
20 and our competitors. Other manufacturers
21 experienced similar growth during this time frame,
22 which confirmed that this was a market-wide sales
23 expansion and not a phenomenon experienced only by
24 Remington/Bushmaster/DPMS.

1 Do you see that statement?

2 A Yes, I do.

3 Q At the time you wrote the report what was
4 your basis for saying that this was a market-wide
5 sales expansion?

6 A Anecdotally that was the experience. The
7 exact amount or the magnitude of same I didn't have
8 that number. That was actually something that I
9 needed to do the analysis on to be able to report
10 that. That was not done, but we could see based on
11 the fact that our sales were peaking that the same
12 thing was happening at other companies.

13 There was a lot of advertising.
14 There's, you know, information from point of sale
15 that, you know, not only was our product moving but
16 so were the products of other manufacturers. So
17 it's an anecdotal recollection of what was going on
18 within the market.

19 Q Okay. Going back to the earlier
20 statement on page 2 that during my time in the
21 firearms industry demand and sales of commercial
22 MSRs climbed markedly and steadily, do you remember
23 we talked about that sentence?

24 A Yes.

1 Q So I want to ask you about -- well, let
2 me find it. I realized I can highlight these and
3 they'll be easier to see. I'm a little slow
4 sometimes.

5 So this sentence, climbed markedly and
6 steadily, I would like you to flesh that out for
7 me. What do you mean by markedly?

8 A Well, Remington's sales, and Remington
9 being Remington, DPMS, and Bushmaster, the sales
10 volumes increased. There was year-to-year
11 variation, there was occasions where you had
12 contraction, but to throw a trend line on it the
13 growth was positive. In some cases, you know, the
14 production numbers would jump a hundred percent
15 year over year, in other cases they would decline
16 some, but the general trend was upward and it was
17 steadily upward.

18 You know, and it really depends on how
19 you want to define steadily. Is it always
20 increasing? No, there were times when economic
21 conditions in the marketplace caused a downturn in
22 the market for Remington and for the market in
23 general, but the general trend line, as I said, was
24 increasing, was positive slope, and was steady.

1 Q Okay. Not to be a noodge, but isn't a
2 trend line always steady?

3 A Generally I would agree with you, yes.

4 Q Okay. So I -- even if the trend is
5 upward, is it still correct to say that the growth
6 is steady?

7 A With the annual and year-to-year
8 downturns steadily is not maybe the most succinct
9 way of saying that. It was looking at it over a
10 period of time, the years you had contractions,
11 follow-up years were growth, and the level was to
12 above what it had been previously.

13 So in general, yes, it was growing.
14 Steadily implying that there was no decline, well,
15 maybe that's not an accurate statement completely,
16 but, you know, in general, as I've stated, the
17 market was growing, sales were growing.

18 Q Let's look at this chart again, the AFMER
19 production values. For DPMS you have a value at
20 2007 of 58,674 rifles produced?

21 A Yep.

22 Q Net of exports, 58,269. Eight years
23 later in 2015 you're at a lower number 50,455.
24 You've gone way up. You've gone way down. Are you

1 saying that you would characterize that as steady?

2 A With the exception of the last two years
3 reported there, I would say, yes, it demonstrated
4 growth.

5 As I said, there are years where you
6 had a hundred percent increase in production volume
7 over previous years and then there were obviously
8 declines. So if you want to argue about the word
9 steadily, you know, go ahead and strike that from
10 the report. You know, it grew. Did it grow year
11 over year without ever a contraction? I would say,
12 well, the data doesn't support that statement
13 exactly, but the general trend was for it to grow.

14 Q All right.

15 A And I think Mr. Klarevas's data
16 demonstrates the same thing, that it was -- the
17 market grew as well over that time period. There
18 were times where it slowed, but the general trend
19 was up.

20 Q And, again, to be clear, that's NSSF
21 data, it's not Mr. Klarevas's data?

22 A It's his analysis of it, yes, that's
23 correct.

24 MS. HELFRICH: Okay. This is a good time

1 to break for lunch. So 30 minutes, is that enough
2 time?

3 THE WITNESS: Sounds good.

4 MS. HELFRICH: Okay. Thank you, and
5 we'll see you back here -- well, let's call it
6 12:40 Central Time.

7 MR. LOTHSON: Gretchen, may I ask -- and
8 we're off the record now I assume.

9 MS. HELFRICH: That's fine.

10 (Whereupon, a recess was taken
11 at 1:07 p.m. ET and resumed at
12 1:41 p.m. ET as follows:)

13 BY MS. HELFRICH:

14 Q Mr. Ronkainen, I want to ask you about
15 the innovations you talk about in your report. I
16 want to talk about them individually, and I want to
17 understand what they are but I also want to
18 understand which ones happened while you were in
19 charge of product development or if any of them are
20 from other time periods, okay?

21 A Okay.

22 Q All right. On page 2 of your report, and
23 I will share it, can you see the chart?

24 A Yes.

1 Q All right. I'm going to page 2. You
2 say: Some of the many innovations in MSR design
3 include modifying the gas system design to work
4 reliably with cartridges besides .223 Rem/5.56x45
5 NATO and .308 Win/7.62x51 NATO; is that correct?

6 A That is correct.

7 Q .223 Rem/5.56 NATO, those are common
8 cartridges used with AR platform MSRs, correct?

9 A Those are cartridges used with an AR-15.
10 The AR-10 or the larger pattern uses a .308
11 Win/7.62x51 NATO as its parent cartridge, and
12 there's actually -- there have been modifications
13 to the AR-10 platform that allow for a smaller
14 package than the AR-10 to handle the .308 family of
15 cartridges and other similar cartridges. So...

16 Q I think that's one of the innovations
17 we're going to talk about.

18 A Okay.

19 Q But just back up a second. I believe you
20 just used the phrase parent cartridge?

21 A Yes.

22 Q What does that mean?

23 A There are families of cartridges that are
24 based upon a parent case. For example, on the .308

1 Winchester, that same case, the body of the case we
2 all know and understand, it looks like a bottleneck
3 case, the diameter of the neck where the bullet
4 actually is seated in the cartridge can vary in
5 diameter based on, you know, the particular needs
6 of the gun.

7 So, for example, if a bullet is in the
8 243-thousandths diameter there's a cartridge called
9 .243 Win, which the actual dimensions of the bullet
10 and that may differ by a few thousandths but it
11 uses the .308 cartridge with the shoulder that's on
12 there where it's neck down just with the reduced
13 diameter to hold the smaller bullet. Likewise, the
14 .260 Remington, 7mm-08 are other children of the
15 parent .308 cartridge.

16 There are other cartridges that have
17 been developed that don't use the .308 as the
18 basis, as the parent case for it. Some of the PRC
19 cartridges which have come out in the last several
20 years utilize a newly designed cartridge that's
21 approximately the size of a .308. It fits within
22 the envelope of what the AR-10 or other platforms
23 that are capable of handling .308s but aren't
24 necessarily dimensionally the same as the .308.

1 It's the shoulder may be in a different position,
2 the body diameters may be larger or smaller as the
3 case may be, so there are differences dimensionally
4 in other cases.

5 But when I say parent I'm talking
6 about other calibers, other cartridges that are
7 reliant upon the parent case with modifications, as
8 I've discussed.

9 Q Do you know roughly in the market for
10 AR-15 platform MSRs what percentage are chambered
11 in .223 or 5.56?

12 A With any great degree of specificity, no.
13 I would say that the majority, more than 50
14 percent, of the MSRs made are for cartridges in
15 that range, but, you know, to hang a number, an
16 exact number on it, I don't have that information
17 and it's not available through, you know, the BATF
18 or others that I'm aware of.

19 Q Okay. Same question for the .308
20 Win/7.62 with regard to the AR-10 platform, can you
21 give me a percentage of AR-10 style MSRs that are
22 chambered in these calibers, these cartridges?

23 A Again, there's not any cartridge-specific
24 data. Most -- of the AR-15, the .223 and the 5.56

1 are probably the majority of them. You know, who
2 knows. I won't even offer a percentage, but the
3 .308 family, though, there are enough other options
4 there that, you know, the .308/7.62x51, is it 50
5 percent, is it 40 percent, is it 70 percent? I
6 don't have that information, and I'm not sure how
7 I'd get it.

8 Q Okay. All right. So why was Remington
9 interested in modifying the gas system design to
10 work with other cartridges?

11 A Well, for other applications for the
12 AR-15, for instance, as I mentioned here, the .204
13 Ruger was a cartridge that was developed primarily
14 for varmint hunting. So people that wanted to hunt
15 coyotes or other type of game like that wanted to
16 utilize an AR MSR-style firearm that was capable of
17 shooting .204 Rugers.

18 So first you have to create the barrel
19 with the chamber that is for the .204 Ruger because
20 the .204 Ruger will not shoot safely within a .223,
21 and then the pressure time characteristics of the
22 cartridge as the bullet is moving down the barrel
23 affect the amount of gas and the pressure that's
24 available for operating the action. As we

1 discussed previously, the AR-15 basically bleeds
2 off gas and puts it inside of the bullet in order
3 to operate the action, and the pressure time
4 characteristics and pressure displacement
5 characteristics of the .204 Ruger cartridge are
6 different than the -- than the .223. So you have
7 to modify the design in order to make the gun
8 function reliably with that cartridge.

9 Q Okay. Let me ask you some specific
10 questions about the .204 Ruger, but before I do
11 that I think you said, and I'm not trying to put
12 words in your mouth so tell me if this is right,
13 you said that one of the motivations for modifying
14 the gas system was to be able to use AR-15s or
15 AR-10s for other purposes like varmint hunting?

16 A It was to utilize that cartridge for
17 people that wanted to varmint hunt with it. A .223
18 is a perfectly acceptable gun for using for varmint
19 hunting. The .204 Ruger has the slight advantage
20 in terms of it has a higher muzzle velocity and the
21 arc of the bullet as it's flying through the air,
22 it's not as much of a rainbow, it's a flatter
23 shooting cartridge. So --

24 Q So let me ask you to explain that

1 because -- I'm sorry to interrupt you, but I want
2 to go carefully and make a clean record about this
3 because I want to understand the terms.

4 You say -- you describe the .204 Ruger
5 as a high velocity, flat shooting cartridge adapted
6 to permit the ethical and reliable harvesting of
7 predators and varmints using AR-15 type platform
8 MSRs, right?

9 A That's what it says, yes.

10 Q Okay. Can you explain, I think you were
11 doing it right now, but can you explain what flat
12 shooting is?

13 A Okay. Every gun when it shoots a bullet
14 regardless of, you know, what type it is, there's
15 this thing called gravity in this world, and the
16 gravity starts pulling the bullet towards the
17 ground from the moment it leaves the muzzle until
18 it finally impacts the ground. The faster a
19 cartridge is traveling typically the less drop it
20 experiences, but it will always reach the ground.
21 It will have a trajectory that is flatter; that is,
22 it's not as arced in the center as, you know, other
23 cartridges perhaps with heavier bullets or
24 slower-moving bullets. So in this instance the

1 .204 Ruger, the muzzle velocities on that cartridge
2 as loaded are higher than what .223 Remingtons are.

3 One other thing to help everybody
4 understand is if a barrel is level and just, you
5 know, the center line is perfectly level, if you
6 were to shoot a round and drop the bullet at the
7 same time, if you were physically able to do that,
8 the bullet would land at the ground at your feet
9 that you dropped, you manually dropped, at the same
10 time the bullet would impact the ground at some
11 distance out from the muzzle.

12 And so when we talk about flat
13 shooting, it's with respect to how far the bullet
14 will travel before it impacts the ground. The
15 farther it goes, the flatter shooting it is.

16 There's also when you shoot sometimes,
17 this is intentional, the muzzle will be pointed
18 slightly upwards and so that gives it a launch-up,
19 so the bullet climbs until gravity is such that the
20 climbing ceases and then it starts to travel down
21 towards the ground. That is where, when I
22 mentioned the rainbow-type trajectory, that gives
23 you an idea. It's not a line, it's a curve, and in
24 the case of a rainbow it goes up and it eventually

1 goes down. How much and how -- how rainbow-like it
2 is is essentially, you know, a less desirable form
3 or a less desirable trajectory for that particular
4 bullet because it makes accuracy in hitting what
5 you're shooting at, especially at a longer
6 distance, more difficult because the drop that it
7 experiences from its maximum or its apogee of its
8 trajectory down to where you want it to impact is
9 more, and you have to estimate what that is if a
10 cartridge like the .204 Ruger, which has a higher
11 muzzle velocity, experiences less drop over a given
12 distance than a slower-moving bullet such as the
13 .223 or some other caliber.

14 Q So am I right in thinking that there is a
15 different meaning -- that there's a second meaning
16 for flat shooting that has to do with movement of
17 the muzzle as you fire the firearm?

18 A There is -- the term is used in that
19 same -- in an alternate thing, and the way you
20 describe it is yes. Flat shooting, the way you
21 describe it is a little less common usage of that
22 phrase.

23 Q That's not what you mean here, correct?

24 A That's not necessarily what I mean here.

1 This is more with respect to the trajectory of the
2 bullet.

3 Q Okay. I just wanted to be absolutely
4 sure about that.

5 A Yeah.

6 Q What do you mean by ethical and reliable
7 harvesting of predators and varmints?

8 A When you're hunting it is the -- you
9 know, my personal belief this is, it is only
10 ethical to shoot and kill something in the most
11 humane fashion that you can. For instance, if
12 you're hunting coyotes or something like that that
13 when you shoot they die instantly or very, very
14 quickly after the shot takes place versus having
15 them wounded and dying at some later time from
16 their wounds or being injured and, you know, having
17 to live with those wounds for the rest of their
18 life.

19 So that boils down to the ethical and
20 reliability part of it.

21 Q So you said that's your personal opinion,
22 but is this a generally accepted understanding of
23 what ethical hunting is?

24 A Yes, it is.

1 Q Okay.

2 A And the fact that I share it personally,
3 I believe that is the ethos of hunters in the
4 United States. Not to say it's an absolute perfect
5 world and that everybody adheres to that, but I
6 would say that by far and away the majority of
7 hunters subscribe to that ethos.

8 Q Okay. And if you said ethical hunting,
9 this cartridge allows more ethical hunting, a
10 hunter would understand what you mean by that even
11 if they don't agree?

12 A Yes. And, you know, for somebody that's
13 against hunting they would potentially argue with
14 me about whether or not it's even ethical to hunt
15 animals, but in lines of my beliefs and, you know,
16 that, I believe what's stated there.

17 Q Okay. So what is it about flat shooting
18 that enhances the ability to ethically and reliably
19 harvest predators and varmints?

20 A Well, as I described, when you have a
21 bullet's trajectory that's very arced,
22 rainbow-like, being able to consistently impact the
23 bullet where you want to to shoot accurately at
24 distance is more difficult with a bullet that's

1 flying slower and has a greater arc to it, there's
2 more uncertainty as to exactly where it's going to
3 hit the target or the game that you're shooting at,
4 and when you use a flatter shooting bullet the
5 bullet gets there faster, there's less climb,
6 there's better -- typically better accuracy at
7 distance for conducting the activity that you're
8 looking for, in this case predator hunting.

9 Q So when you developed this cartridge, and
10 let me clarify, this was developed during your
11 tenure as director of product development for MSRs?

12 A This actually was in the product line
13 prior to my assuming responsibility, but it's a
14 cartridge that's been available since, I believe,
15 mid 2000s, somewhere in that time frame. I would
16 have to actually go back and look at literature to
17 see when Ruger introduced it.

18 Q Okay. So this cartridge, when it was
19 invented you have to also create or someone has to
20 also create MSRs chambered in this cartridge,
21 right, this isn't a cartridge you just stick into
22 the existing ARs?

23 A As I said, yes, this -- the diameter of
24 the bullets for this particular cartridge are

1 different and, you know, actually smaller than the
2 .223 Remington. So you have to have the smaller
3 diameter and rifling to spin the bullet. You have
4 to have the chamber machined into the barrel that
5 corresponds with the dimensions of the .204 Ruger
6 rather than the .223. So there's a bunch of steps
7 that need to take place.

8 This cartridge is used across, you
9 know, bolt-action rifles as well as, you know,
10 modern sporting rifles and other platforms for
11 varmint and predator hunting, so the dimensions are
12 all known. It's the internal ballistic
13 characteristics that are specific to the .204 Ruger
14 that require the adaptation of the gas system to
15 make the gun function reliably.

16 Q So if someone wanted to use a .204 Ruger
17 with an AR platform they'd have to buy a rifle?

18 A They would have to buy a rifle. You
19 know, that's one way of doing it. Given the AR's
20 modularity you could buy an upper receiver assembly
21 for a .204 Ruger that would work there. The bolt,
22 I believe, matches up with .223, but in the event
23 that it didn't you'd have to buy a bolt carrier
24 assembly or a bolt carrier group for that

1 particular caliber.

2 But the rest of the gun, you know, the
3 magazine would have to perhaps be specific for it,
4 there may be adaptations of it, but it would fit
5 within the lower receiver. But, yeah, you can do
6 it and you could also buy just a barrel assembly
7 yourself and modify your upper receiver by taking
8 off an existing barrel and putting this one on in
9 its place to make the gun shoot.

10 So there's several different avenues
11 for adapting a modern sporting rifle to do this.
12 The easiest way is to go ahead and purchase the gun
13 outright, but there are other options for modifying
14 existing guns or buying just an upper receiver
15 assembly for -- you know, for it, too, so that you
16 could shoot this caliber.

17 Q Did Remington or Bushmaster, DPMS, any of
18 your companies, produce MSRs chambered in .204
19 Ruger?

20 A Yes, Remington did, I believe Bushmaster
21 did, and I believe DPMS may have as well. I'd have
22 to review their catalog to be certain.

23 But, as I said, this all predated my
24 involvement with the commercial or the civilian MSR

1 side of the business. I know very early on when
2 the R-15 was offered by Remington .204 Ruger was an
3 optional caliber for that.

4 Q And so help me understand the market and
5 the dynamics and the demand. Are you aiming
6 this -- aiming to sell this to people who already
7 use AR-15s for something else and might want to
8 also use it for hunting or are you aiming it at
9 hunters who have been using bolt-action rifles and
10 want to move to AR-15s or both or what? How did
11 that -- what was the aim?

12 A The aim was both. You know, if there was
13 somebody that was already hunting with an MSR it
14 was to give them the ability to shoot the .204
15 Ruger in a platform they were familiar with. If
16 there were people that were shooting bolt-action
17 rifles and were interested in, you know, trying out
18 an MSR platform for varmint shooting, I had offered
19 them the opportunity to do that as well.

20 So it was really -- you know, both
21 aspects were avenues to getting the cartridge out
22 there and addressing the interest based on what the
23 customers wanted.

24 Q And do you know how many of those your

1 company sold?

2 A I don't have specific information on
3 that. It was a fairly -- fairly well-liked product
4 and was in the product line for quite a few years.
5 It may have been there till the very end. I'd
6 actually, again, have to go back and confirm
7 through the catalog, you know, when it was
8 introduced and perhaps when it was finally -- you
9 know, if it ever ceased production when that was.

10 Q All right. You also say on page 2
11 beginning here: The .30 Rem AR cartridge was
12 developed to ethically and reliably harvest
13 deer-sized big game using AR-15 type platform MSRs.

14 Did I read that correctly?

15 A Yes.

16 Q Okay. So when -- was this developed --
17 this is developed at Remington?

18 A This was developed at Remington in
19 conjunction with DPMS. At that time, you know, the
20 product development work that DPMS was doing was
21 actually conducted within Remington's R&D
22 organization, and so the development of this
23 product took place at the R&D Center in
24 Elizabethtown, Kentucky.

1 Q So what makes the .30 Rem AR cartridge
2 suitable for ethical and reliable harvesting of
3 deer-sized big game?

4 A The cartridge itself utilizes a .30
5 caliber bullet but does so with a cartridge that
6 fits within the confines of the AR-15 platform.
7 The length and the diameter of the cartridge are,
8 you know, such that they fit within that versus the
9 .308 which utilizes the same diameter bullet is a
10 larger cartridge. The case for it is larger in
11 diameter, the overall length of the cartridge,
12 cartridges, is longer, and so it does not fit
13 within the AR-15 type platform and the -- the .30
14 Rem AR was developed specifically to fit inside
15 that platform for use on deer hunting.

16 Q And so when you developed this cartridge
17 did you also have to develop a rifle chamber to
18 this cartridge or not?

19 A Yes. Yes. This was something that
20 really the authorship of this whole concept came
21 from Remington and DPMS. You can -- people hunt
22 deer with .223 Remington, and you can shoot deer
23 with that and do it ethically and, you know, with
24 minimal risk of wounding an animal and not being

1 able to recover it.

2 The larger bullets that the .30 Rem AR
3 offered were better at that than .223 and better to
4 a greater distance. So that was the primary reason
5 for doing it.

6 So when the cartridge was developed
7 the firearm had to be tested, so the gas system had
8 to be developed and optimized to work with that
9 because, as we spoke about previously, the
10 pressure -- time and pressure displacement
11 characteristics of the cartridge as the bullet is
12 moving down the barrel vary from cartridge to
13 cartridge. So a .308 is different than a .223, is
14 different than a .204 Ruger, and is different than
15 a .30 Rem AR.

16 So you have to size the gas ports that
17 you have there and their distance down the barrel
18 so that you can reliably function the firearm. In
19 this case the magazine was also different. Most
20 magazines that are used for .223/5.56 alternate
21 feeding from side to side. They're a
22 double-stacked magazine and they feed rounds from
23 both sides into the chamber.

24 For this particular cartridge it was a

1 little bit larger in diameter and so did not stack
2 as the .223 had inside the magazine, so the
3 magazine design was modified at the upper portion
4 where it presents the rounds for feeding such that
5 it always fed from one side and supported that
6 shell so that it would always go into the chamber.
7 If you tried to do it with a double stack, as I
8 understand it, the shells didn't want to stay in
9 the magazine and it caused a lot of malfunctions
10 with the firearm.

11 Q Okay. Do you know, how many MSRs
12 chambered in .30 Rem did you sell? And I should
13 correct myself and say .30 Rem AR.

14 A Yeah, I don't have that specific
15 information.

16 Q Again on page 2 of your report you say:
17 The .450 Bushmaster was created as a
18 straight-walled cartridge to meet the requirements
19 of states that do not permit the use of
20 bottlenecked cartridges for taking big game with
21 centerfire rifles.

22 Did I read that correctly?

23 A Yes, you read that correctly.

24 Q Bottlenecked cartridges, would that

1 include .223 Rem and 5.56?

2 A Yes. You know what? As I was describing
3 previously, there's a shoulder that's present on
4 most cartridges, especially those used in the
5 modern sporting rifle platform. The state laws as
6 they're written for hunting cartridges in specific
7 states, and I think Illinois is one of these, is
8 that you're not allowed to use a cartridge for
9 hunting deer that is a bottlenecked cartridge. It
10 has to be a straight-walled; that is, the sides
11 from the base all the way up to where the bullet
12 are held are tapered but there's no shoulder
13 present on the case itself.

14 And so the .450 Bushmaster was what we
15 would call a straight-walled case. It was tapered
16 from the base of the shell up to where the bullet
17 was held without any bottleneck present in it
18 allowing its use in states that did not permit the
19 use of bottlenecked cartridges for taking big game.

20 Q What is your understanding of why states
21 prohibit bottlenecked cartridges in taking big
22 game?

23 A My understanding is that based on -- most
24 bottlenecked cartridges tend to be higher velocity,

1 higher energy, and a longer range cartridge,
2 whereas most straight-walled cartridges tend to be
3 slightly lower velocity and more limited range, so
4 states that require straight-walled cartridges are
5 doing so because the ballistics of that
6 straight-walled cartridge are more in line with
7 what shotgun slugs and other means of hunting that
8 are typically employed and not putting other
9 hunters at risk for bullets that travel well beyond
10 where they were intended to to impact an animal.

11 Q I'm not sure I follow you, so let me ask
12 a few more questions.

13 A Sure.

14 Q When you say the bottlenecked cartridges,
15 I think you said this, the bottlenecked cartridges
16 have ballistics that were more like a shotgun; did
17 you say that?

18 A No, it's exactly the opposite. The
19 straight-walled cartridges have ballistics that are
20 more like a shotgun slug whereas the range of the
21 projectile is more limited than it would be with a
22 bottlenecked cartridge.

23 And some of that, you know, boils down
24 to the velocity that the projectile has when it

1 leaves the muzzle of the barrel, it's on a
2 straight-walled cartridge typically lower or less
3 than it would be if it was fired from a
4 bottlenecked cartridge. And bottlenecked case is
5 probably the better way because I think cartridges
6 and cases may be part of what's confusing you. I
7 apologize for that. I try to be succinct --

8 Q No, that's not what's confusing me at
9 all. Don't worry about that.

10 So is the .450 Bushmaster higher or
11 lower velocity relative to a .223 or a 5.56?

12 A It is lower velocity and the bullets are
13 450-thousandths in diameter, so nearly twice as
14 large in diameter. Actually, almost exactly twice
15 as large in diameter as the .223.

16 Q And slower?

17 A And slower.

18 Q And, again, did you have to develop MSRs
19 that could utilize -- actual rifles that could
20 utilize this cartridge, that were chambered for
21 this cartridge?

22 A Yes, for the exact reasons we talked
23 about before. The internal ballistics of that
24 cartridge, the pressure that follows the bullet,

1 and the pressure at different points forward from
2 the breech face, the pressure time and pressure
3 displacement characteristics of the cartridge are
4 different than .223, are different than .30 Rem AR,
5 are different than .204 Ruger, so you have to
6 optimize that.

7 Sometimes -- we typically will utilize
8 existing tap locations, so a distance from the end
9 of the barrel out to where the gas is actually
10 tapped so that it can come back to the action.
11 There are several different standard lengths that
12 are out there, carbine gas length -- carbine-length
13 gas systems, mid-length gas systems, rifle-length
14 gas systems, pistol-length gas systems, so we would
15 pick one of those lengths that was best for that
16 particular cartridge and also would help with
17 reliability and functioning and then develop what
18 the diameter of the gas port is that's drilled into
19 the barrel to tap that gas to operate the action so
20 you could have it function -- have the gun function
21 reliably.

22 Q Okay. Near the bottom of page 2 you say:
23 Innovations were not limited to only the adaptation
24 of existing MSR platforms for new cartridges, but

1 also included the creation of new MSR platforms
2 that offered functional and performance advantages
3 over prior designs.

4 Did I read that correctly?

5 A That's correct.

6 Q Okay. When you say performance
7 advantages over prior designs, are you talking
8 about prior commercial designs, prior military
9 designs, or both?

10 A It would be both. For example, in the
11 example I cite here it's the DPMS Gen II, the DPMS
12 Gen II utilized the .308 family of cartridges, so
13 that would be .308 Winchester, 7mm-08 Remington,
14 6.5mm Creedmoor, and .243 Winchester, in a package
15 that was very nearly the same size as the AR-15.
16 So the overall length of the receiver and the other
17 componentry there were changed to make the gun a
18 little bit smaller, little bit lighter, little bit
19 more easy to handle, yet provide the ballistics
20 that those cartridges provided in a smaller package
21 than the AR-10.

22 Q And the DPMS Gen II, that's a military
23 rifle?

24 A No, that is a commercial rifle that was

1 developed specifically for the commercial market.

2 Q Okay. I'm sorry. I thought you were
3 saying it was a military rifle. That's fine.

4 Did the military ever express interest
5 in this design change?

6 A Not that I'm aware of. It didn't happen
7 on my watch. The particular calibers that this was
8 offered in, the Gen II was offered in, were not
9 ones that were in the military's inventory so if --
10 they really didn't have interest in them, and there
11 was a program subsequent to my time with the
12 company that whereas we'd had the individual
13 carbine program, which we'd spoken about a little
14 bit previously, there was basically a new infantry
15 rifle where the firearm itself and the cartridge
16 that it utilized could be different than what the
17 Army currently had.

18 For the individual carbine you could
19 vary from the 5.56 NATO or 7.62x51 NATO, but it was
20 with the assumption of a lot of risk because you
21 had to produce the ammunition for it and develop
22 the whole proposal of how you would produce that at
23 scale for the Army. So there were some fairly
24 significant technical hurdles to overcome in order

1 to implement a new cartridge.

2 But when the -- you know, they had a
3 follow-on solicitation several years later, the
4 ultimate winner of that was SIG and they offer it's
5 a 6.8 SIG, I believe, is the designation for the
6 round, so it uses a bullet that's about
7 270-thousandths in diameter rather than .223 or 6.8
8 millimeters in diameter versus 5.56 and utilizes
9 some new technology for the case and has distinct
10 performance advantages over conventional
11 brass-cased ammo.

12 So the DPMS Gen II, you know, at some
13 point after I was there may have -- they may have
14 thought about providing it for solicitation. I'm
15 not aware of it, though.

16 THE REPORTER: Excuse me. May I
17 interrupt for just a moment?

18 (Whereupon a discussion was
19 held outside the record.)

20 MS. HELFRICH: Okay. We'll go back on
21 the record.

22 BY MS. HELFRICH:

23 Q Mr. Ronkainen, continuing on page 3 you
24 say that these design innovations included

1 important subsystems within the original AR-based
2 platforms. Could you explain what you mean by a
3 subsystem?

4 A Subsystems in the context of what I've
5 used here are different parts of the firearm
6 assembly itself. That's one thing about the modern
7 sporting rifle platform is it's modular, so trigger
8 groups can be exchanged from whatever was supplied
9 with the gun, albeit ones that are -- select-fire
10 is not an option there. It's higher performance,
11 lower trigger pull force, things of that nature,
12 but not the ability to have the gun go to full
13 automatic fire.

14 Hand guards are also a big area of
15 customization. A lot of hand guards are used for
16 mounting lights, optics, bipods, things of similar
17 nature that can be used or are useful when using
18 the gun. And, you know, you can even get into
19 altering the -- like, say, the selector to have --
20 be ambidextrous so that a right-handed or
21 left-handed shooter can use it equally well versus
22 the standard AR or modern sporting rifle, it's set
23 up and used typically for the right-handed shooter.
24 So those are modifications that can take place.

1 Grips, if you find that the particular
2 grip on the gun is at an angle that's uncomfortable
3 for your wrist you can actually buy grips that are
4 tilted at a different degree that may be of more
5 comfort. You can buy grips that have a rubber
6 overlay that may feel better than the hard plastic.

7 It's -- basically when it's subsystems
8 it's all different componentry that can be attached
9 to the gun that may not necessarily affect the
10 caliber or something like that, so it's addition of
11 parts.

12 Q But these subsystems and the changes you
13 can make as a result of the modularity, these are
14 all things you can do with commercial MSRs,
15 correct, and with military rifles you have to do
16 what the military tells you to do?

17 A That's correct. And the military in a
18 lot of cases likes or will prefer characteristics
19 of a commercially available hand guard or something
20 like that and they will write their specifications
21 around typically the hand guard that they prefer,
22 and so, you know, the people that are participating
23 in the solicitation have the option at that point
24 of sourcing the preferred hand guard from the

1 company making it or coming up with their own
2 design that is the equivalent of it provided it
3 doesn't infringe upon any intellectual property.

4 Q Is that common that the military looks at
5 some innovation on the commercial side and says we
6 like that, we'd like to have that on our rifles?

7 A There has been some of that. You know,
8 the desires and the flow go both ways. I think
9 back to when we were doing the individual carbine
10 solicitation, the ACR, which was our submission
11 platform, the hand guard on that was for the
12 commercial gun molded plastic and there was an
13 enhanced version that was, I believe, machined
14 aluminum. Well, we opted for a machined aluminum
15 hand guard that had features that were different
16 than what the commercial hand guard had.

17 For instance, with the use of night
18 vision, electro-optics and stuff like that, there's
19 a lot of cords and wiring that is associated with
20 the use of those type of objects on the gun. So
21 having a wire management means available built into
22 the hand guard was viewed as very favorable by the
23 customer. It allowed us to sell something and they
24 could put whatever they felt they needed to have on

1 that and have the cabling and the switches neatly
2 packaged so that they weren't hanging off in all
3 kinds of different directions and potentially there
4 to snag -- snag on things that would impede your
5 use of the gun.

6 And so there were times that the
7 government looked and said, hey, you know, I really
8 like quad rails, which means there's a Picatinny
9 rail on all four quadrants of the firearm, so
10 there's one at 12 o'clock, 3 o'clock, 6 o'clock,
11 and 9 o'clock, all on the full length. There are
12 other times where they'll specify, you know, we
13 only want one at the 12 o'clock point or we want
14 Picatinny rails up at the front as in a quad rail
15 but then slick sides going back.

16 So, you know, a lot of what the
17 government chose to include in their solicitations
18 was tied to, you know, stuff that they found useful
19 that was available out in the commercial market
20 space.

21 Q Okay. You say -- I want to ask a
22 question about ambidextrous controls because I will
23 be honest and say I was left confused by this.
24 Were ambidextrous controls something that was

1 developed for military rifles?

2 A I believe that they were actually
3 developed on a commercial basis. Their
4 incorporation into military-specific platforms came
5 about after they were in existence on the
6 commercial side of the business, but I'd have to go
7 back and do some literature review to confirm that
8 that was actually the order that things happened
9 in.

10 But, you know, if you were to look at
11 the specifications for the M4 and some of the
12 variants there and the M16 they were typically
13 intended for right-handed shooters, so the selector
14 there was such that the operating part that the
15 user interacted with was set up for use by a
16 right-handed person and not a left-handed.

17 Q The reason I'm asking is I had
18 understood, possibly erroneously, that the military
19 generally doesn't have ambidextrous controls on its
20 firearms and if you're a left-handed person, like
21 me, you're out of luck.

22 A That was their MO for a long time, that
23 it was you learned to shoot right-handed, you were
24 going to be right-handed. Subsequently with the

1 different solicitations the requirement for
2 ambidextrous safety and controls were, you know,
3 put in there, and sometimes it wasn't as --
4 necessarily as a baseline requirement but it could
5 be as an optional requirement which would give you
6 essentially, you know, a little bit higher ranking
7 when they go to score everything that, hey, look,
8 they've got ambidextrous controls.

9 That wasn't a baseline requirement, it
10 was an enhanced requirement or an optional
11 requirement, so you get a few extra points in the
12 grading process for offering that provided that it
13 works and that it -- that it doesn't compromise
14 reliability in any way.

15 Q So sounds like the military is not too
16 concerned about lefties. Meaning left-handed
17 people; let me be clear.

18 A Probably not as much as the general
19 public.

20 Q Are ambidextrous controls a common
21 feature of commercial MSRs?

22 A I believe they are on the higher end
23 guns, but as an entry-level gun I believe most of
24 them are still standard, you know,

1 non-ambidextrous. They're available as aftermarket
2 parts so that if you were to desire that you could
3 replace the selector on your gun with one that is
4 set up to be ambidextrous.

5 Some of the designs even have the
6 option of switching out the configuration of the
7 switch that your thumb would push on or that you'd
8 use to operate the selector. So you have
9 customizability in that sense in that you have
10 several different interchangeable knobs, if you
11 will, that you can push on and you get one that
12 when you're shooting doesn't interfere with your
13 hand, doesn't dig in or anything like that.

14 Q Okay. Just for my understanding you have
15 this sentence on page 3: Stag Arms introduced
16 AR-type platforms designed and made available for
17 left-handed shooters, allowing fired shells to not
18 eject across and toward the left-handed user's face
19 and eyes.

20 Did I read that correctly?

21 A That is correct.

22 Q What is Stag Arms?

23 A Stag Arms is a firearms manufacturer that
24 produced left hand-specific modern sporting rifles.

1 DPMS also had what they called their lefty. I've
2 never seen the DPMS lefty version, but that was
3 also a modern sporting rifle AR style that was
4 patterned for use by left-handers so that the
5 shells ejected to the left rather than to the
6 right.

7 Q Okay. And Stag Arms was never part of
8 the Remington family?

9 A No, it is not. It was another competitor
10 in the field.

11 Q Okay; good. I understand. I understand.

12 On page 5 of your report you have
13 these two bullet points that are both preceded by
14 this phrase, "rifles intended for military use
15 are," and then the first bullet point is: Almost
16 always select-fire, capable of firing
17 semiautomatically, one trigger pull equals one shot
18 fired, as well as fully automatically, one trigger
19 pull equals gun fires repeatedly until the trigger
20 is released or the magazine is empty.

21 Correct?

22 A Yes.

23 Q So tell me what you mean by almost. What
24 are the exceptions?

1 A The exceptions would have been for sales
2 to some federal agencies that don't permit the use
3 of select-fire where they want semiauto
4 capabilities only for the weapons that they would
5 purchase for military rifles, and up above I did
6 say military use. I should have said
7 military/government use to be a little bit more
8 succinct or accurate there.

9 Q Okay.

10 A But the military in all the
11 specifications I've ever seen for individual
12 carbine and other weapon systems has been for
13 select-fire capability. They would just be for the
14 specific agencies that did not want that capability
15 in the hands of their agents.

16 Q Can you specify which agencies those are?

17 A I would have to go back and look. I
18 honestly -- I don't recall right now.

19 Q Okay. But these are law enforcement
20 agencies?

21 A No, these were actually federal
22 government agencies. So it could be potentially
23 Secret Service, although I would believe that they
24 would probably have select-fire. It could be FBI.

1 It could be ATF. It would depend. And it would
2 state in the solicitation if it was something other
3 than select-fire what it had to be.

4 Q Let me clarify. So you would not
5 consider those law enforcement agencies?

6 A Well, I made the distinction law
7 enforcement agencies in my mind by my definition
8 are local law enforcement agencies, whether it be
9 state police, sheriffs, police departments, things
10 of that nature, versus government agencies such as
11 the FBI and other entities in the Department of
12 Justice, Secret Service, ATF, IRS, all of those
13 groups are -- you know, fall more under the -- by
14 my definition the governmental agencies. They do
15 have law enforcement functions, but my definition
16 of them is more as a government agency instead.

17 Q So when we were talking before about
18 sales to law enforcement were you excluding --
19 okay. Strike that.

20 Before we were talking about AFMER
21 data and you said you thought AFMER data included
22 sales to law enforcement. Did you mean only local
23 law enforcement?

24 A Yes, that's what I believe. Again, I'd

1 have to do some more looking at what the reporting
2 requirements are.

3 Q Okay.

4 A I know that the military deliveries are
5 explicitly excluded from those, but I didn't dig
6 deeper into the reporting requirements to see for
7 law enforcement agencies, whether they be a local
8 type of law enforcement agency as we just discussed
9 or a U.S. governmental agency, you know, how their
10 things were kind of -- I believe that the U.S.
11 governmental agencies probably permitted
12 select-fire and may not have had their stuff
13 counted as part of that, but the -- the local law
14 enforcement agencies were purchasing through law
15 enforcement channels, law enforcement sales
16 channels, specific distributors and stuff of that
17 nature, so they were dealing with a sales force
18 that was dealing exclusively with them.

19 There may have been occasion where a
20 department might have gone out and bought a gun off
21 the rack at some gun shop, but by far and away my
22 experience with the company their purchases were
23 coming through law enforcement-specific
24 distributors. So we would have to go back and

1 check the reporting requirements to see how local
2 law enforcement sales were with respect to counting
3 in AFMER.

4 Q Okay. Let me ask another clarifying
5 question because I just want to have our terms
6 clear. When you were talking about law enforcement
7 sales you're talking about sales to law enforcement
8 agencies?

9 A Yeah, local law enforcement agencies.

10 Q So the reason I'm asking that is because
11 in Chicago individual police officers purchase
12 their own duty weapons sometimes.

13 A Okay.

14 Q And they just go to a gun store, buy the
15 weapon. I mean, they do the paperwork, whatever,
16 but that wouldn't be regarded as a sale to law
17 enforcement the way you're using the term?

18 A It probably would not, but they may be
19 going to a law enforcement sales only store, a
20 supplier or distributor with that. I'm not
21 familiar with how they conduct their business in
22 Chicago with respect to the specifications for
23 purchase. I'm sure the department outlines -- if
24 they have a restriction on where it can be

1 purchased, I'm sure they make the officers aware of
2 that.

3 Q Okay. But generally when you're talking
4 about law enforcement sales you're talking about
5 sales to law enforcement agencies?

6 A Yes.

7 Q Okay. Thank you.

8 Okay. Your second bullet point here,
9 "rifles intended for military use are," I think you
10 mean have: An extensive list of specifications and
11 standards from the customer that the firearms must
12 meet related to the strength, ability to operate
13 reliably under extreme conditions, accuracy,
14 expected useful life that MSRs for the civilian
15 market are not required to meet.

16 Did I read that correctly?

17 A Yes, you read that correctly.

18 Q We talked before about those solicitation
19 packets that might be 20 or 30 pages. Is that what
20 you're talking about here?

21 A Yes, the explicit statement of what the
22 performance requirements are down to mean rounds
23 between failure, barrel life, and, you know,
24 acceptable accuracy, you know, how long that has to

1 be, environmental capabilities.

2 A lot of these are specific military
3 requirements and they sit on top of, you know, a
4 list of requirements that SAAMI, the Sporting Arms
5 and Ammunition Manufacturers' Institute, have for
6 safety of the gun. So there's drop testing that's
7 conducted with these firearms to ensure that they
8 don't discharge when testing is conducted, jar-off
9 testing, rotation testing, environmental testing
10 that SAAMI specifies that they meet as well.
11 That's kind of like ground zero. All of the guns,
12 whether they're for commercial sales or for
13 military and LE sales, have to meet that
14 requirement.

15 On top of that then the government
16 has, like I mentioned here, extensive list of
17 specifications, and there have been occasions where
18 we've read the product description that they
19 provided and we have to point out to the
20 contracting officer that some of what they're
21 asking for is actually in conflict with each other,
22 it's not possible to have both A and B because
23 they're mutually exclusive capabilities. So...

24 Q And is it true that the standards that

1 the military requires for its firearms are not
2 always higher than the standards that a firearms
3 manufacturer might impose on its own civilian MSRs?

4 A As I said, the baseline requirements for
5 all the guns is, you know, meeting the SAAMI
6 requirements for safety. And that includes, as I
7 mentioned, drop, jar-off, rotation, firing of a
8 proof round in the gun, which is an intentional
9 overpressure cartridge to test the integrity of the
10 locking system to ensure that it won't fail when
11 using standard pressure rounds, and all that stuff.

12 So, yeah, there are times that the
13 government will default to some industry standard,
14 but they really like to write their specs and they
15 typically explicitly state something even if it is
16 just mirroring or parroting what the baseline
17 applications are, your baseline requirements.

18 Q Okay. I was actually thinking of
19 something different. So you say -- I think I'm
20 thinking of something different. You say there are
21 standards related to accuracy, that the government
22 will have standards related to accuracy, correct?

23 A Yes.

24 Q You -- Remington or another manufacturer,

1 there are -- Strike that. Let me get this question
2 right.

3 There are commercial MSR's that are
4 more accurate than comparable military rifles; is
5 that not true?

6 A That is a truthful statement. You know,
7 with the government's requirements they will say
8 accuracy at round level. So as you use a gun and
9 as you shoot it the hot gases that propel the
10 bullet down the barrel start to degrade the
11 interior of the barrel, and ultimately if you were
12 to take and measure accuracy when the gun is brand
13 new and at, you know, typical intervals, let's say
14 1,000 round intervals or pick a number, you would
15 see over time as the barrel starts to exhibit wear
16 on the interior sometimes a slight opening up or
17 the accuracy decreases slightly.

18 The government will specify that at
19 some given round level the accuracy must meet this
20 requirement. So they're allowing for the
21 degradation in accuracy that takes place.

22 Typically those same requirements are
23 not specified for a commercial gun. So, yes,
24 commercial guns out of the box may exhibit and have

1 better accuracy and may have, you know, more
2 stringent accuracy requirements. Some of that is
3 related to their intended end use.

4 Q Meaning what?

5 A For instance, we'd spoken previously
6 about varmint rifles. Varmint rifles you're
7 shooting at very small targets, very small animals
8 or what have you at long distances. Those it helps
9 very much at that point that the gun be accurate so
10 that you're able to actually hit what you're
11 shooting at. It's a small target, it's at a great
12 distance.

13 For the military the typical target is
14 a man-sized target and, you know, the allowed
15 deviation from one hole out to that is measured
16 typically in minutes of angle, which is a common
17 terminology that's used across the firearms
18 industry both for commercial and for military work,
19 and what the government cares about is that my gun
20 lasts a long time and still shoots acceptably
21 versus the varmint hunter, they're not going to
22 shoot at the same rate that the military
23 application does. You can imagine being involved
24 in a firefight where you go through a battle pack

1 or more of ammunition in a very short period of
2 time, the gun will get very hot and it would be
3 subject to more wear than it would be if somebody
4 is out varmint hunting or taking a shot every 15
5 minutes or, you know, something like that.

6 So the accuracy requirements are
7 different, and it's -- they're interpreted
8 differently and they're more related to what the
9 end use of the firearm is.

10 Q Okay. So you're talking about two
11 dimensions, I think, two dimensions of accuracy.
12 There's the -- you know, what the accuracy actually
13 is in terms of MOA and then there's how long it's
14 that accurate and whether it stays that accurate
15 for a long period of time, right, or for over
16 numerous rounds?

17 A Exactly. It's measurement of accuracy
18 over the number of rounds expended and accuracy is
19 not to degrade to the point that it exceeds the MOA
20 requirement in the product specification at that
21 given round level, and that's across multiple
22 samples that you'd have and test.

23 Q It's my understanding that another area
24 where civilian MSR's would differ from military MSR's

1 has to do with trigger pull weight; is that
2 correct?

3 A There are different specifications for
4 the trigger pull weight depending upon the
5 particular product. Military specifications
6 generally, if memory serves me, are in the five and
7 a half to seven-pound range, and for some trigger
8 systems in commercial modern sporting rifles it
9 would be less than that.

10 And, again, it ties into the end use.
11 On a battle rifle you would want to ensure that
12 when the trigger pulled it was deliberate versus
13 when you're using an MSR in your varmint hunting
14 you don't want to have to exert a high amount of
15 force because it tends to make the gun move when
16 you're trying to make your shot.

17 So trigger pull is one factor that
18 changes, and the specification is really dependent
19 upon the customer.

20 Q So --

21 A Go ahead.

22 Q I'm sorry. Go ahead.

23 A I was going to say that the varmint
24 product or the target type products that are sold

1 tend to be trigger pulls that are more in line with
2 trending towards SAAMI minimums, down in the
3 three-pound range, versus the military
4 specifications that are, you know, five and a half
5 or five to seven or eight pounds, whatever they
6 happen to be.

7 Those are typically called out -- you
8 know, the military trigger pull force specs are
9 called out in the product specification. They
10 leave nothing to chance.

11 Q So a heavier trigger pull, all other
12 things being equal, is going to be less likely to
13 be accidentally -- you're less likely to
14 accidentally discharge that firearm?

15 A I believe that's the -- you know, the
16 thought process or the logic involved there, yes.

17 Q Why does SAAMI have a minimum trigger
18 pull weight?

19 A SAAMI has a minimum because some firearms
20 with the trigger mechanisms that they actually have
21 could not be safely tested in jar-off below that
22 threshold, and so SAAMI as an organization that has
23 voluntary standards that are adhered to by all the
24 members basically said, listen, three pounds

1 appears to be where we're at, for target triggers
2 and that we'll make an exception of two and a half
3 pounds, but they still require that you go through
4 the SAAMI abuse test, as we call them, where you
5 conduct the jar-off test and that is 12 inches from
6 the lowest point on the firearm to a rubber mat
7 that's backed by concrete. The rubber mat is --
8 has a specified durometer. I want to say Shore B
9 75. I'd have to go back and read the specs to give
10 you the exact number.

11 Q I promise you, I'm not going to correct
12 you.

13 A Good. Good.

14 And you drop it in all six attitudes.
15 So you imagine that the gun is assumed to be a
16 prismatic object, it's got six sides on the box, so
17 you drop it from 12 inches measured from the mat to
18 the butt of the stock. Same from the muzzle, same
19 from the top, same from the bottom, same from the
20 right side, same from the left side. And that test
21 is conducted with the safety, or in this case, the
22 MSR, the selector, in the fire position.

23 So the gun is ready to go, and it's
24 testing that you don't have a trigger mechanism

1 there that's subject to accidental release when
2 it's dropped from a 12-inch height onto that rubber
3 mat.

4 The same rubber mat is used for what's
5 called the drop test, which, you know, it sounds
6 like I just described a drop test but, in fact, the
7 drop test is conducted from a four-foot level from
8 the center of gravity of the firearm down to the
9 mat in the same six attitudes I described
10 previously, so butt, muzzle, right/left side, top,
11 and bottom. And on that when the test is conducted
12 there's actually a prime cartridge in place in the
13 firearm itself so that you'll know when the hammer,
14 in the case of an MSR, was released to cause the
15 gun to fire.

16 And then the final test is a rotation
17 test where, you know, I've been told by a lot of
18 the old-timers at Remington that was to simulate a
19 gun leaning against a fence that then rotated over
20 onto its right side or onto its left side, and we
21 test it with both, again, with the safety in the
22 fire position or selector in the fire position and
23 a prime cartridge in place there to confirm that,
24 you know, it doesn't discharge. And that's done

1 across multiple samples.

2 Q Okay. Another standard or another area
3 of standards that you would get from the military
4 has to do with ability to operate reliably under
5 extreme conditions. Do you see that here?

6 A Yes.

7 Q Okay. I had a question about the gas
8 piston operating system in the Remington ACR. It's
9 my understanding that that operating system was
10 actually designed in part to make the gun more
11 reliable in certain kinds of conditions and more
12 durable in certain kinds of conditions; is that
13 right?

14 A The gas piston system that's utilized on
15 the ACR and on the RGP and on other firearms that
16 utilize that same technology enhances reliability
17 in some situations, and I would say that, you know,
18 it's been my experience that that's pretty much
19 across the board.

20 The primary reason for that is in the
21 direct impingement system that was originally
22 designed by Eugene Stoner the gas itself is tapped
23 from the barrel, sent back through a gas tube, and
24 then blown through the gas key or the carrier key

1 on top of the bolt carrier assembly or the bolt
2 carrier group into the interior of the bolt and
3 then that causes the bolt carrier to move
4 backwards, there's a cam path that rotates the bolt
5 head, disengages it from the locking lugs, and
6 everything proceeds on with, you know, ejecting the
7 spent shell and reloading a new cartridge, cocking
8 the hammer and everything else.

9 The introduction of the gas and
10 anything that's entrained in it to the inside of
11 the bolt is something that gives you an item that
12 needs to be maintained. You have to clean that
13 more frequently to ensure reliable operation.

14 Now, there have been many different
15 technologies applied that enhance the reliability
16 of a direct impingement system, but the gas piston
17 system more or less divorced the introduction of
18 gas inside the bolt carrier group and kept it far
19 away from the interior of the upper receiver so
20 that you didn't introduce those fouling agents
21 inside of the bolt carrier group or the upper
22 receiver assembly.

23 Q Okay. Another example -- Strike that.

24 After these two bullet points you

1 start the next paragraph by saying: When and where
2 appropriate, the knowledge and technologies gained
3 designing and testing military/law enforcement
4 rifles can find its way back into commercial/
5 consumer/civilian MSRs.

6 Did I read that right?

7 A Yes, you did.

8 Q Where would it not be appropriate for
9 that transmission of technology to happen?

10 A Well, where it's prohibited by law. I
11 mean, obviously trigger technologies for full auto
12 firing would never find their way back into
13 commercial/consumer/civilian MSRs. It's more the
14 application of process technologies, like the
15 example I cited with ferritic nitrocarburization
16 that would be there, and it's also dependent to a
17 certain degree upon what is the target market for
18 that particular MSR that you're selling, just like
19 with automobiles there are entry-level cars and
20 then there are, you know, the very desirable ones,
21 the high end, the Mercedes, the Cadillacs, the
22 Ferraris and all those.

23 The cost for adding some of these
24 processes to those -- to the components in those

1 guns makes them -- you know, basically can move
2 them out of the cost range where people could
3 afford them. And so, for instance, the standard
4 chrome plating works very well, but in our
5 experience the ferritic nitrocarburization worked
6 better. It gave us extended barrel life beyond
7 what we were able to get with standard chrome
8 plating. It was a little more expensive to effect
9 that on the guns, but, you know, it was something
10 that for high-end guns people weren't -- you know,
11 cost really wasn't much of a consideration for
12 that. You know, they were more willing to accept
13 the added price increase that gave in terms of what
14 it gave them in terms of extended barrel life.

15 Q Where does the military use or which
16 military rifles use ferritic nitrocarburization?

17 A We use that on our submission rifles for
18 the individual carbine, so the ACR rifles we're
19 using that. There may be other competitors that
20 are offering that or did that. I'm not intimate
21 with what their offerings were for IC with regard
22 to all the points of technology that they use, but
23 it was something we found in our use that was very
24 useful.

1 And ultimately we didn't win the
2 individual carbine competition, nobody did, but we
3 found that technology useful and as a result we
4 ported it over into our commercial MSRs.

5 Q So sometimes you have technology that's
6 too expensive for there to be a lot of demand on
7 the civilian side, the commercial side, right,
8 technology that you've used in a military rifle
9 that's too expensive for the consumer market,
10 right?

11 A There are occasions where, you know, that
12 happens. Ferritic nitrocarburization is an example
13 of that.

14 Q And so that's limited you, say, to
15 high-end commercial MSRs but not your
16 run-of-the-mill MSR?

17 A Yeah, and I think that, you know, as that
18 becomes more common, there are more suppliers
19 providing the service, it's essentially a heat
20 treatment process of the surface of the steel in
21 the barrel that introduces nitrogen and carbon into
22 it to make it very hard and wear resistant, as
23 there are more people out there doing that I think
24 you're starting to see that technology find its way

1 further and further down in the MSR, you know,
2 product offering lineup so that it's becoming more
3 common in guns that are, say, just above entry
4 level.

5 Q So assuming it's legal to transfer some
6 technology from the military sphere to the
7 commercial sphere we'll say.

8 A Uh-huh.

9 Q That process is driven by demand on the
10 commercial side, cost on the commercial side, you
11 know, whether you can sell it on a commercial MSR;
12 is that right?

13 A Yeah. I mean, obviously you have to sell
14 the consumer that there's a benefit to the use of
15 this technology. It makes whatever -- you know, it
16 makes your barrel last longer or in the case of the
17 nickel boron treatment it makes your bolt carrier
18 assembly or bolt carrier group easier to clean.
19 You can remove the residue that's present that
20 comes in there from a direct impingement gun more
21 easily versus having to scrub very deliberately and
22 diligently to get everything cleaned up so that
23 your firearm continues to operate reliably.

24 And, you know --

1 Q Okay. I'm sorry.

2 A -- the nickel boron is -- you know, it's
3 an added expense. It's probably on par or even
4 more so than what the ferritic nitrocarburization
5 is. So, you know, all the technologies probably
6 have their price point with, you know, at what
7 point the consumer will say, yeah, it's nice, but I
8 can't afford that.

9 So also there's a lot of -- you can
10 buy an entry-level AR MSR-style gun and you can buy
11 the bolt group, bolt carrier assembly, bolt carrier
12 group, as a separate part later on that has the
13 nickel boron treatment so you can upgrade that
14 component on a -- you know, strictly a part swap
15 basis.

16 Q Mr. Ronkainen, I'm going to stop for a
17 second, we're going to stay on the record, but I'm
18 going to ask you to pop back up a little higher
19 because we're losing your mouth down below the
20 screen and I know that the court reporter likes to
21 be able to see people. It's easier for her to
22 transcribe.

23 A Yep.

24 Q Okay; thanks.

1 You say in your report, page 6:
2 Notably, at Remington, we had an entirely separate
3 division devoted to military firearms development
4 and production (Remington Defense) to meet the
5 distinct needs of the separate military market.

6 Did I read that right?

7 A Yes, that's correct.

8 Q Okay. So Remington Defense was not a
9 separate company, correct?

10 A No, it was a separate group. Remington
11 Defense was a subset of the organization that
12 concentrated on military, law enforcement, and DoD
13 product solicitations.

14 So we had a group of engineers that
15 were dedicated specifically to working on those
16 products. Modern sporting rifles were part of it,
17 the other MSR, the modular sniper rifle that we
18 talked about previously, was part of that, the
19 precision sniper rifle was part of that, the
20 compact sniper rifle were all part of that. So my
21 team on that side, those engineers, worked
22 exclusively on military/government agency
23 solicitations for those products and --

24 Q Is Remington --

1 A Go ahead.

2 Q Is Remington Defense also a brand?

3 A It didn't start out to be that but
4 eventually it was just to kind of help
5 differentiate it in the minds of the purchasing
6 folks within DoD and that they were aware that
7 Remington was a firearm provider and, in fact, we
8 had done military sales long before we had ever
9 stood up the Remington Defense organization, but it
10 was to kind of drive home that, hey, listen, you're
11 not dealing with folks that are going to be
12 distracted with commercial product lines. They're
13 here, they're dedicated to meeting your needs, and
14 so as a result we created the separate engineering
15 teams, separate production group within the factory
16 up in Ilion, and separate marketing organization
17 within the company.

18 Q Okay. That is helpful. I was a little
19 confused by, again, the organization.

20 So I want to ask you about this next
21 statement or another statement in your report on
22 page 6. You say: All Remington Defense production
23 took place in a secured area of the manufacturing
24 facility in Ilion, New York, separated from

1 commercial production, even after all private
2 commercial MSR production was moved to Huntsville,
3 Alabama.

4 Did I read that correctly?

5 A Yes, you did.

6 Q Okay. So you have this separate area in
7 the Ilion facility for defense production, right?

8 A That is correct.

9 Q How is it separated from the other
10 manufacturing that goes on there?

11 A The area is physically separated from the
12 rest of the production facility. It was in a
13 building on a floor, it was a -- I'll give you just
14 a real quick rundown of what the Ilion facility was
15 like.

16 It was a World War I vintage
17 production facility, so it's multi-story buildings
18 with elevators, freight elevators, for moving
19 products between floors. In some cases there were
20 conveyor systems that allowed you to move product
21 between floors.

22 The Remington Defense manufacturing
23 group was in an area that was physically separated
24 from the rest of the plant. Entry was -- you know,

1 you had to have -- it had CASS badge entry, so
2 basically you had to scan in. If you were not
3 approved to be in there, you weren't allowed to be
4 in there, you had to be -- you know, had to have
5 somebody let you in. The assembly of the firearms
6 took place in that area. The production of the
7 parts would happen elsewhere in the plant, but the
8 assembly took place there.

9 And then the firearms from there were
10 taken down to the gallery, which was in close
11 proximity to where the assembly area was, it was, I
12 think, one floor away and just, you know, a hundred
13 feet or so down a hallway, to be tested. So all of
14 the firearms were function tested and tested for
15 accuracy per whatever the specification, the
16 requirement, was for that particular program, if it
17 was weapons or if it was sampling, what have you,
18 and then the firearms were then taken back up to
19 the production area.

20 One of the reasons for this was, you
21 know, these were all select-fire guns, which are
22 considered to be NFAs, kind of, you know, in a
23 special subset, and the NFA is the National
24 Firearms Act firearm. Short-barreled rifles,

1 short-barreled shotguns, things of that nature,
2 silencers, are NFA items that are still currently
3 allowed to be purchased and owned by individuals.

4 Select-fire firearms produced after
5 1986, March or May of '86, as we talked about
6 previously, are not available for sale, and because
7 these were select-fire guns there was certain
8 additional security that was placed on top of that
9 besides what was security for the factory. They
10 were in a secured area inside the secured factory.

11 So they would come out for the
12 testing, that was a shared facility with the rest
13 of production, but then they would go back up for
14 subsequent packaging and shipment from that
15 dedicated area.

16 Q Now, this security -- let me ask you to
17 be specific about what the security was for. First
18 of all, was the security required by law?

19 A I don't believe it was, we could go back
20 and check, but it was an internal control that
21 Remington wanted to have so that you had control of
22 these essential, you know, items, these machine
23 guns, these select-fire weapons, that they wouldn't
24 find their way out of the plant.

1 And we utilized a similar method at
2 the Elizabethtown facility that for our select-fire
3 guns that were in the process of being developed
4 and tested every night they went into a locked cage
5 that only select people had the keys to, and the
6 locked cage was inside of a locked room which,
7 again, was a second means of -- security cameras on
8 the doors so you could tell if anybody entered. It
9 was just to prevent any loss or potential theft of
10 an item that should not get out.

11 Q Did the Department of Defense require you
12 to have any particular security measures?

13 A I believe they may have, I'm not familiar
14 with what those exactly were, but they would have
15 been specified. And as part of the inspection
16 process for production the government did send out
17 inspectors that not only inspected the product
18 being made but inspected the facility to ensure
19 that we complied with all the requirements that
20 they had in their -- whether it was part of the PD
21 or if it was something referenced within the
22 product description with regard to securing the
23 product while it was being made.

24 Q And by securing the product you mean --

1 or is it what you mean keeping anybody unauthorized
2 from getting their hands on it?

3 A Yes, whether it be, you know, another
4 employee of the company or, you know, somebody from
5 the outside.

6 Q And is this because these are dangerous
7 firearms or because this is secret?

8 A Primarily it was because these are
9 firearms that are covered by the NFA Act, and up
10 and above what short-barreled rifles,
11 short-barreled shotguns were, these were
12 select-fire guns that the public was not allowed to
13 own.

14 People are able to possess machine
15 guns or, you know, fully automatic weapons that
16 were produced prior to March of -- or May of 1986
17 and they can sell those, they can possess them
18 legally provided they pass the background checks
19 and pay for the tax stamp. These were ones that
20 didn't qualify for that. They were obviously
21 produced post that date, and so they were secured
22 in that fashion just to prevent any accidental, you
23 know, loss of any of those.

24 Q Okay.

1 A And there was also security at the front
2 gate of the factory and metal detectors. So, you
3 know, it wasn't like the rest of the production was
4 unmonitored. It was monitored. This was just an
5 added level of security that was utilized within
6 the factory.

7 Q You said, or I think you said, that the
8 rifles were assembled in this secured area?

9 A Yes.

10 Q Does that mean nothing was actually
11 manufactured in that area?

12 A Manufactured in terms of the assembly,
13 yes. Componentry for these would have been made
14 elsewhere within the factory or been provided --
15 you know, if it was an outside supplied item, it
16 would have been shipped to this area for inventory
17 until it was needed for production.

18 Q Okay. But like, for example, a barrel
19 would have been produced somewhere else, it
20 wouldn't have been produced or manufactured in that
21 secured area?

22 A That is correct. The barrels, the
23 machinery required to that, whether it's for the
24 rotary forging operation or the machining and that

1 that happens after the barrel is made, you know,
2 after the riffling inside is formed, it was done on
3 shared equipment with the plant, and if it required
4 special specifications that were different than
5 what -- what normal production would be those would
6 be adhered to as they were being made.

7 Q And what about the receivers, where were
8 they manufactured?

9 A Receivers were, I believe, for a period
10 of time manufactured in Ilion. At the end of my
11 tenure I don't know if the machining of the
12 receivers moved to Huntsville. I suspect it did,
13 but I can't confirm that.

14 Q Machining of the receivers for military
15 rifles? That's what I'm asking about.

16 A Yes. I would have to check on that and
17 see. I don't know if that moved or if they
18 retained that capability in-house in Ilion.

19 Q When the receivers were being
20 manufactured at Ilion they were not being
21 manufactured in that secured area, correct?

22 A They were not manufactured in the secure
23 area, but they were controlled because obviously
24 once the features are in place for a select-fire

1 gun they can be turned into that short of
2 anodization or anything like that.

3 So it wasn't like you could walk down
4 the aisle and, you know, there was a whole tubful
5 of select-fire lower receivers. They would have
6 been secured as they were being produced to
7 prevent, you know, theft or pilferage.

8 Q And what kind of machine is a receiver
9 made on?

10 A The receivers that we utilized started
11 off life as a 7075 aluminum forging, so you would
12 take a block of material, it would be heated up and
13 placed into some forging dies, and then basically
14 the dies would compress and put the outer shape on
15 the receiver for the lower receiver and for the
16 upper receiver.

17 Subsequent to that then you would take
18 that forging and you would mount it in a machine,
19 in our case it would have been a CNC machine, a
20 computer numerically controlled machining center,
21 and the actual machining is done to the features
22 that are required on the gun.

23 In some cases the -- well, I think in
24 all cases the machining was done but the magazine

1 well where the magazine fits in the lower part of
2 the lower receiver needed to go through a broaching
3 operation, which that's a special machining
4 operation that helps to form the complex shape
5 that's there. It's difficult to make that shape
6 with just conventional machining. The radii in the
7 corners are fairly small, and there's a lot of
8 cutter deflection as you try to reach in and
9 machine it. So the best way and the most accurate
10 way was to broach it.

11 And then after that was done, after
12 all the machining was complete, they would go
13 through an anodization process which dips the
14 aluminum part into a bath that's controlled, it has
15 nitric acid and several other chemicals in it, and
16 electricity is applied to it and it essentially
17 turns the exterior surface of the aluminum into
18 aluminum oxide, which is a very hard ceramic
19 material and gives the good wear characteristics
20 that are noted for, you know, modern sporting
21 rifles for their upper and lower receivers for
22 those modern sporting rifles that utilize aluminum
23 upper and lower receivers.

24 Finally then it would go back up to

1 the assembly area, all the other parts would end up
2 getting added to it, and at that point, you know,
3 that's where it would become the finished gun.

4 Q Okay. And I'm sorry if you said this
5 already and I didn't hear it. You said that the
6 receivers once they're manufactured are controlled.
7 How are they controlled?

8 MR. LOTHSON: Objection; asked and
9 answered.

10 THE WITNESS: Yeah, we did talk about
11 this. The serial numbers are applied when the
12 receivers are made, and those specific serial
13 numbers are registered as NFAs, in this case full
14 auto receivers, and then paperwork is submitted to
15 the ATF.

16 The receivers themselves while they
17 were in process were under some controls. Exactly
18 what those were I had not witnessed that, but there
19 was special control above and beyond what was
20 normally utilized for nonselect-fire lower
21 receivers.

22 BY MS. HELFRICH:

23 Q Okay. I have a few questions about the
24 solicitation process that you've talked about with

1 regard to military rifles. When a solicitation was
2 issued you said there's a period where you give
3 feedback on the proposal, where you tell them like
4 that's not going to work or that's a bad idea or
5 something like that, but before you're actually
6 making any firearms you're commenting on the
7 proposal; is that right?

8 A Some proposals offered that opportunity.
9 Others you straight-up took what they gave you.
10 With regard to being able to help or improve what
11 they had there, that opportunity didn't exist.

12 For our major proposals for the -- in
13 this case, you know, the individual carbine and for
14 the sniper rifle programs they would offer a
15 pre-solicitation specification to industry to
16 review. So we got to see it. Any of our
17 competitors were welcome to look at it and provide
18 comment.

19 You gave that back to the program
20 management office, which in most cases was the
21 Picatinny Arsenal in New Jersey, and, as I said
22 before, they could take your feedback and say, hey,
23 that's a great idea or they could take your
24 feedback and say, yeah, thanks but no thanks, we're

1 going to stick with what we have.

2 So it was the opportunity to comment.
3 At most you might have gotten one or two cracks at
4 it. They would offer revisions out there and we
5 could look at it and say, well, no, you didn't
6 quite capture what I was saying, you didn't catch
7 the intent of what I meant, so let's -- you'd have
8 a second go-around. You would explain maybe a
9 little more explicitly what you were doing.
10 Hopefully at that point then they got the gist of
11 exactly what you were saying and why and would
12 modify the -- the solicitation appropriately.

13 And I think in a lot of cases when
14 they heard that -- when they got that same feedback
15 from multiple members of industry that are
16 competitors it was like, hey, wait a minute, maybe
17 these guys know a little bit more about this than
18 we do so maybe we ought to take what they're saying
19 into consideration or maybe we need to be more
20 explicit about exactly what we're asking and why
21 we're asking for it.

22 Q Did you -- typically would you get
23 solicitations from federal government agencies
24 other than the military? In other words, was that

1 solicitation process also something that those
2 other agencies went through?

3 A Yes. I recall we did a program with the
4 Secret Service. We also did a few others that, you
5 know, the process was very similar, perhaps just,
6 you know, one notch less formal than what the DoD
7 was but very much in that vein with reference to
8 appropriate military specifications for anodization
9 type and thickness and properties and, you know,
10 different things like that where they felt it was
11 important to be explicit about that or for them to
12 adopt the DoD standards for that so that they know
13 it works well for the military, we ought to have
14 the same thing for us, but they're very, very
15 similar.

16 Arguably sometimes a tad shorter, so
17 instead of 20 to 30 pages sometimes 15 to 25. So
18 we're not talking, you know, a very brief one or
19 two-page thing versus something that's 20 to 30
20 pages. It's just a slightly lighter version of the
21 military product description.

22 Q And were there ever solicitations from
23 law enforcement agencies, like state and local law
24 enforcement agencies?

1 A I recall one that was with the Los
2 Angeles Sheriff's Department. The particulars of
3 it, oh, gosh, I don't remember exactly what they
4 were. I believe it was for MSRs.

5 Occasionally for very large law
6 enforcement agencies, the what I would consider to
7 be local law enforcement agencies per our past
8 discussion or previous discussion, occasionally the
9 larger agencies there might do something that was
10 more in line with what the military did but in a
11 lot of cases, I would say by far the majority that
12 I recall, they just purchased their products
13 through law enforcement distribution channels,
14 which, you know, there's typically a couple of
15 distributors per state or per region that do that,
16 that actually make those sales, and they've got an
17 ongoing relationship with those particular
18 companies to -- you know, when they need something
19 they're able to specify I want this particular
20 thing, they would send them a purchase order, and
21 then that distributor would fulfill their order.

22 Q When you say this particular thing, are
23 they asking for some firearm that you're already
24 manufacturing or are they saying can you

1 manufacture this in this way for us?

2 A It was sometimes both. I would say the
3 vast majority of what we sold through the local --
4 to local law enforcement was stock product, but,
5 you know, they may have a request for use of a
6 certain type of stock or a certain trigger group or
7 something like that where if the volume of product
8 was sufficient it would be economically worthwhile
9 for Remington to provide that to them and we would
10 go ahead and create a specific SKU for that and the
11 bill of material and everything else that went into
12 the manufacture of that product for them.

13 But, again, that was in cases where
14 that was more than the onsies, twosies. I think
15 you probably had to start talking in excess of a
16 dozen or more weapons, you know, probably maybe
17 even 50 or a hundred before we would even entertain
18 that.

19 Q Okay. That's actually a small number. I
20 thought you were going to say a much higher number.

21 A Again, it happened so infrequently I'd
22 have to go back and look and see what the
23 volumes -- the requested product quantity was to
24 give you a definitive answer on it, but it wasn't

1 for ones or twos. It was for something that was
2 probably approaching high double digits or
3 certainly triple digits.

4 Q Okay. And you mentioned that part of the
5 process of a military solicitation or something
6 that might be included in a military solicitation
7 was a requirement to test the firearms in the
8 gallery at Ilion, correct?

9 A Yes. And that --

10 Q And --

11 A Go ahead.

12 Q You said this testing was done by
13 Remington Defense personnel?

14 A Yes. When I was talking about the
15 production area being a separate area and then we
16 talked about the product being moved from there
17 down to the test area, the test area was the
18 gallery and it wasn't tested by non-Remington
19 Defense personnel. The employees that were doing
20 the testing were aware of the specific requirements
21 and the specific rigors of the tests that were
22 being conducted and they were different than what
23 the commercial testing might be.

24 So, for instance, we did a military

1 contract with the Philippine Army and there was a
2 requirement for accuracy testing that be done on,
3 you know, a sample of the rifle, sample of the
4 number produced at some given frequency. Well, all
5 the guns were function tested, all the guns were
6 proof tested prior to function test. Then the
7 select quantity of whatever they were, every
8 hundredth gun or whatever, whatever the criteria
9 was for that particular contract, were then taken
10 over to the accuracy range in the gallery and
11 tested to confirm that they met the requirement.

12 So the testing was conducted by the
13 Remington Defense personnel as opposed to the
14 personnel that were normally in the gallery
15 conducting testing on the commercial products,
16 whether they be MSRs, bolt-action rifles, shotguns,
17 what have you.

18 Q So testing is done for civilian MSRs as
19 well?

20 A Yes. Yes. The testing takes place in
21 the gallery for them. There is the same
22 high-pressure round, the proof round requirement,
23 and then there's also functional requirements to
24 ensure that the guns operate as they're supposed

1 to. The specifics of that are listed in the
2 process records for that particular gun, and that's
3 where they reference for what testing they needed
4 to be -- needed to be conducted on those.

5 Q And when you say requirements for testing
6 in regard to a civilian MSR, you're talking about
7 requirements imposed by Remington itself?

8 A Imposed by Remington or by industry
9 standards, by SAAMI. You know, SAAMI was the
10 one --

11 Q Okay.

12 A -- that, you know, since we adhered to
13 SAAMI we agreed that we were going to proof test
14 our guns, so we fired a proof round in all of our
15 barrels to ensure that they met the requirements,
16 that they were safe and that.

17 So there was some of that, but I would
18 say that most of the specifications that had to be
19 met were ones that were internally generated.

20 Q So not from requirements from customers?

21 A I would say that most customers don't
22 really -- wouldn't necessarily know how to specify
23 in exact or engineering terms the performance
24 requirements that they had or that they wanted. So

1 that typically came from, you know, our marketing
2 folks when they're developing the specifications
3 for a particular firearm, hey, the accuracy needs
4 to be this and trigger pull needs to be that and,
5 you know, as a result then the process records,
6 which is basically the recipe that's used for
7 building and then ultimately testing the gun,
8 lists, okay, you have to shoot five shots at a
9 hundred yards and accuracy of those five shots
10 cannot exceed 1.2 inches. You know, that's some
11 fictitious thing I just made up.

12 In the course of testing reliability
13 and function in the gallery you'd have to shoot
14 five rounds in order, bang, bang, bang, bang, bang,
15 and then on the last round don't fire it but use
16 the charging handle to extract the round, extract
17 the live round to ensure that that works.

18 So, again, the recipe or the
19 directions for what testing needed to be done and
20 how to do it were in the process records for making
21 those products.

22 Q So why would it be marketing that decided
23 what testing had to be done?

24 A Well, marketing would provide the

1 specifications for expectations on accuracy and
2 what they were providing to the customer. So, you
3 know, if they say that I want trigger pull to be
4 between 3.25 and 3.75 pounds, we needed to measure
5 that to ensure that we actually achieved that. And
6 likewise --

7 Q And that's because -- sorry.

8 A And likewise for the accuracy
9 requirements, if there was a special accuracy
10 requirement we would need to confirm that the
11 firearm as it is being made actually conform to
12 that.

13 Q And that's because when you're selling
14 the firearm you're going to say this is the trigger
15 pull of this firearm and this is the accuracy
16 rating of this firearm?

17 A In some cases that information is
18 explicitly given to the customers. In others it's
19 not.

20 An example of that might be for a
21 particular trigger group there are different
22 manufacturers that are out there that sell trigger
23 components for use in modern sporting rifles. One
24 company is Geissele. They're -- Geissele

1 Automatics, they're from Pennsylvania, and they
2 started off as a company that exclusively made
3 triggers and have since branched out into making
4 full guns.

5 Now, they have many different
6 iterations of their trigger groups that can provide
7 fairly large ranges or differences between the
8 particular models for what trigger pull they give.
9 They have some that are, you know, an M4 type of
10 specification that will give you five and a half to
11 eight pounds of trigger pull consistently. They
12 have some that are intended for more, you know,
13 better accuracy where the trigger pulls are
14 reduced. They might be three and a half pounds.

15 So by specifying what the trigger
16 group is there's a certain understanding, may not
17 be directly stated within Remington literature or
18 DPMS literature or Bushmaster literature or
19 anybody's, that, no, it uses this Geissele trigger
20 system. Well, it's understood that that is a four
21 and a half pound trigger.

22 Q Okay.

23 A So we test to make sure that, you know,
24 when we put it together it, in fact, you know,

1 adheres to what we said the specifications are for
2 the firearm.

3 MS. HELFRICH: Okay. Mr. Ronkainen, I
4 just have a little bit more and then I'm going to
5 let you go.

6 THE WITNESS: Would it be possible to
7 have a bio break right now for just a minute?

8 MS. HELFRICH: Absolutely. Absolutely.
9 Let's go five minutes.

10 THE WITNESS: All right. Thank you.

11 (Whereupon, a recess was taken
12 at 3:22 p.m. ET and resumed at
13 3:30 p.m. ET as follows:)

14 BY MS. HELFRICH:

15 Q I have just a few more questions and then
16 I will let you go. Mr. Lothson may have some
17 questions, and he'll have an opportunity to ask
18 those when I'm done.

19 I wanted to ask about hunting again
20 because I actually wanted to ask about varmint
21 hunting and make sure that I understood what you
22 said. It's always been my understanding that if
23 you're hunting game, an animal you're going to eat,
24 you want to kill that animal with one shot so that

1 you don't destroy the meat, correct?

2 A That's correct.

3 Q And in addition, you want to fire one
4 shot because that's the most ethical way to kill
5 the animal, correct?

6 A It's the most humane way to do it.

7 Q Okay. Is that also true for varmints?

8 A Some varmints actually if you're hunting
9 in the wintertime you can get the fur from them.
10 So it's a means of -- you know, some people trap
11 foxes, coyotes, or whatever for the fur. It's
12 another means of harvesting the animal to get the
13 fur from it and so again --

14 Q So you still want one clean shot? I'm
15 sorry. I'm sorry.

16 A You want one clean shot. It serves a
17 purpose there in that it doesn't damage the pelt to
18 the degree that a larger caliber would, and it's
19 also you want the same humane treatment of the
20 animal. You want to kill it with one shot quickly
21 so that there's no prolonged suffering available or
22 happening there.

23 Q Okay. So generally you want one shot,
24 kill the animal, that's the ethical way to do it

1 even if there are also other reasons?

2 A Yes.

3 Q Okay. Then I wanted to ask way back at
4 the beginning we talked a little bit about the SHOT
5 Show. Did you --

6 MR. LOTHSON: Objection. No, I don't
7 believe so.

8 BY MS. HELFRICH:

9 Q Okay. Well, then we're going to talk
10 about the SHOT Show. Are you familiar with the
11 SHOT Show?

12 A Yes, I am familiar with the SHOT Show.

13 Q Can you tell me what that is?

14 A The SHOT Show is a sporting and hunting
15 and outdoor trade show. It's an industry-wide show
16 sponsored by the NSSF where it's a trade show to
17 bring together companies in the firearms business,
18 in the ammunition business, and in related
19 businesses together in a single forum so that their
20 customers, their primary customers, the gun shops,
21 the distributors, and anybody that's involved with
22 the industry, can see all of the wares in one
23 place.

24 And so early on the SHOT Show rotated

1 locations. I recall attending in Dallas and in
2 Atlanta and in Orlando. Recently, as in probably
3 the last 10 or 15 years, it has been resident in
4 Las Vegas. It was determined that, you know, Las
5 Vegas was a very good venue because of the large
6 number of hotel rooms available, the venues for
7 holding a convention or a gathering of that size,
8 and so they have held it there for, gosh, like I
9 said, probably the last 15 years, 12 to 15 years.
10 And it's an --

11 Q And did you --

12 A Go ahead.

13 Q No, you go ahead.

14 A I was going to say, it's an opportunity
15 to walk around. For instance, for myself and my
16 business I've attended, and I meet with customers
17 there, potential customers. I get an opportunity
18 to kind of bring myself up to speed with what's
19 going on in the industry, see new developments,
20 and, you know, things of that nature.

21 There's -- you know, what we found --
22 what I found as an engineer within the industry is
23 that there's a lot of -- there's a lot of friends
24 that you meet, former co-workers, stuff like that

1 that used to work for, say, Marlin Firearms and are
2 now with Ruger or something like that, it's an
3 opportunity to get together, say hi, maybe go out
4 to dinner or whatever, as well as conduct real
5 business other than just catching up with friends,
6 look for potential customers, contracts, see how
7 products that you may have designed are actually
8 received by the public. So you can kind of get
9 some feedback on that in a way outside of what the
10 sales channel provides. You can be the little fly
11 on the wall by something you designed and talking
12 to some customer and they say, you know, this is
13 the dumbest thing I've ever seen, why on earth
14 would they do that, and it's like mental note,
15 okay, they don't like that. So...

16 Q Did that ever happen to you?

17 A Probably not at SHOT Show, but I've had
18 people offer unfiltered feedback on some of what
19 I've worked on and, you know, anonymously, and it's
20 like okay. Sometimes, you know, you just say,
21 well, you know, I did work on that, I developed
22 that, and it's like there's all kinds of stuttering
23 and fumbling over themselves to try to get out of
24 that awkward situation, but it is what it is. We

1 all have opinions on things, and theirs is as valid
2 as mine is on other objects, rather other subjects.
3 So...

4 Q Did you attend the SHOT Show regularly
5 throughout your career?

6 A When I was with Remington as an engineer
7 we typically attended only when we had a large
8 product introduction that took place at the SHOT
9 Show.

10 So, for example, when we did the Model
11 700 EtronX I had the opportunity to visit the SHOT
12 Show. Part of that is to provide some technical
13 expertise to the sales team to explain to them
14 really what this thing is and if, for instance, a
15 customer is interested in the product but just
16 doesn't understand it you have somebody there that
17 can give them a good technical explanation that a
18 layman can understand. It's not all engineering
19 speak. You can equate this to, you know, words and
20 items in language that's more relatable for them.

21 Q Did there come a point in your career at
22 Remington where you attended the SHOT Show every
23 year?

24 A When I was made the director of military

1 and LE product development, DoD/military/LOD, DoD,
2 you know the job, my first assignment there, that
3 was when we -- I started attending regularly, and I
4 believe I only missed one time in my tenure and
5 that's when we had a solicitation for it was a
6 government program that was due like a week after
7 the SHOT Show and I really felt that at that time
8 it was more important that I remain in
9 Elizabethtown with my team to support them rather
10 than, you know, go to the SHOT Show.

11 So that's the one time I recall that I
12 didn't attend after I was a director, but sans that
13 one time, you know, I believe I attended every
14 year.

15 Q Well, in your experience of the SHOT Show
16 did you see changes in the way that MSRs were
17 displayed or marketed there?

18 A I think I saw changes in the way firearms
19 and everything was displayed differently and
20 marketed there. It wasn't just MSRs.

21 Early on, you know, you could say back
22 in the '80s and possibly even early '90s, the SHOT
23 Show was a good ole boy show and there were not
24 very many women, females that were there that were

1 in attendance, and as a result sometimes the
2 culture would be, construed by modern standards, it
3 would be a little uncouth. You know, there was
4 just things that were said and done that you
5 wouldn't do today. That said --

6 Q Are you talking about the '90s?

7 A Talking about the '90s.

8 Q Okay.

9 A '80s and '90s. You know, we all I think
10 can understand that. If we didn't live through it
11 at least we have awareness of it.

12 I think the marketing has changed so
13 that it's a lot more inclusive. It's gender
14 inclusive. There have been different slants in
15 that, but, you know, quite honestly, that's the
16 primary difference I saw.

17 Q Any specific differences with regard to
18 MSRs?

19 A Nothing that comes to the forefront of my
20 mind right now. There may have been more pictures
21 of females with MSRs, there may have been more
22 female competitive shooters there for 3-gun than
23 there were, but part of that was back in the '90s
24 3-gun didn't really exist and, quite honestly,

1 women's involvement in that was very limited. It's
2 only later on that they became involved and they
3 actually created divisions within the organization
4 that sanctioned those events to allow them to
5 compete, and, you know, there's some female
6 shooters today that, you know, quite honestly, are
7 very competitive with the male shooters.

8 Lena Miculek is one I think of. She
9 is an outstanding shooter, and, you know, it stands
10 to reason, her father is one of the best that
11 there's ever been, especially with revolvers. So
12 she has the genetics to do it well and she's had
13 the training throughout her life to do it well, and
14 there are many others as well.

15 There are a lot of female shotgun
16 target shooters, skeet, trap, sporting clays, that
17 do well. A lot of 3-gun shooters. A lot of women
18 that compete now in, you know, they call it F-Class
19 shooting where it's shooting at a thousand yards at
20 targets and trying to shoot as small a group as you
21 can.

22 So that's been it. It's the
23 involvement of -- you know, more involvement of
24 women and to a certain degree children as well

1 within the industry, but for the most part it's
2 been adults and it's been women.

3 Q Now, the SHOT Show is sponsored or
4 organized by the National Shooting Sports
5 Foundation, right?

6 A That is correct.

7 Q Are you aware of any conditions that the
8 NSSF at any time placed on the display or sale of
9 MSRs at the SHOT Show?

10 A I am not aware of any specific
11 restrictions. There may have been some that
12 predated me. My awareness with the SHOT Show and
13 the display requirements are more the generic ones
14 with related to firearms.

15 There is a group of individuals within
16 the NSSF that go to every booth and inspect every
17 firearm that's at the show to ensure that it's been
18 disabled so that it's impossible for it to fire.
19 So somebody bringing ammunition in could grab a gun
20 off the shelf and it's not going to be potentially
21 able to fire and hurt anybody.

22 With regard to restrictions beyond
23 that, those are generic for all firearms, I'm not
24 aware of any. There may have been some at some

1 point, but I'm not privy or aware of those.

2 Q Okay. Last thing I want to ask you about
3 is Remington after you left and what happened to
4 the brands there. So you left in the middle of
5 2016, right?

6 A Yes.

7 Q And at that point Remington itself was
8 already tapering off production of MSRs, right?

9 A I don't agree with that. There was a
10 very substantial MSR production activity in
11 Huntsville, Alabama. So I don't believe that
12 that's necessarily a truthful statement.

13 What the quantities that were produced
14 from Huntsville for Remington I don't know, I don't
15 have that information, I don't have the sales
16 figures, but that kind of runs contrary to what I
17 understood. Again, I don't have catalogs from that
18 time period to be able to say, hey, look, they took
19 it out.

20 So when I left, I can speak up until
21 that point in time, but post that I really don't
22 have the information available to offer you any
23 opinion on it.

24 Q Okay. Does the Remington -- Strike that.

1 Does Remington Defense still exist?

2 A I don't know.

3 Q Does Remington Arms still exist?

4 A Remington Arms as a company that's called
5 RemArms exists. They were located in both Ilion,
6 New York, and LaGrange, Georgia. The Ilion
7 facility as of March 3rd or 4th of this year was
8 closed and production now solely takes place in
9 LaGrange, Georgia, to my knowledge.

10 Q Who owns RemArms?

11 A We'd have to go back and look through the
12 bankruptcy auction results. I believe it's a
13 company called Green Hill Capital or something to
14 that effect, but I'm doing that from memory and I
15 haven't looked at that information in several
16 years. So it's not something that's at the tip of
17 my tongue for recall.

18 Q And Remington went through bankruptcy
19 twice, right?

20 A Yes, it was twice. There was the first
21 time was I think in 2017, '18, again, I wasn't with
22 the company so, no, there's not an indelible mark
23 in my mind as to exactly when that was, and then
24 the second time was in 2020, I believe.

1 Q And what happened --

2 A 2020.

3 Q Sorry. What happened to Bushmaster?

4 A Bushmaster was sold to another company.

5 I think Bushmaster was sold to Franklin Armory.

6 Again, same issue with recall on that particular
7 asset and who acquired it. I'd have to look at the
8 bankruptcy court proceedings to see who it was, but
9 as I recall it was Franklin Armory. If it wasn't
10 Franklin Armory, it was Palmetto State Armory.

11 So and then DPMS was purchased by the
12 other entity. So which is which, again, I'd have
13 to reference the paperwork from the bankruptcy
14 court to give you a definitive answer.

15 Q Are there still firearms produced under
16 the Bushmaster brand?

17 A I believe there are. I've seen some
18 recently. It's nothing I've gone out and probed
19 very hard, but I do seem to recall that they've had
20 some advertisements in some of the trade
21 publications I get, but, again, it's -- I wasn't
22 looking for it so it wasn't necessarily something I
23 was, you know, out to acquire the information never
24 to forget. So...

1 Q What about DPMS, are there still firearms
2 sold under that brand?

3 A Yes, there are. I have seen those. As I
4 said, I believe Palmetto State bought DPMS or
5 Franklin Armory, one of the two. Those two were
6 there, and who Bushmaster belongs to and who DPMS
7 belongs to it's one of the two companies. I can
8 certainly find out if you'd like and let you know.

9 Q No, I just wanted to know if you knew.

10 A Yep. I don't.

11 Q Okay. What is your understanding, if you
12 have one, of why Remington went into bankruptcy in
13 2017?

14 MR. LOTHSON: Objection, form, or 2018
15 and this is a legal question anyway. So...

16 But, Jim, if you know, go ahead. This
17 is after you left the company.

18 THE WITNESS: Yeah. As I understand it
19 the company was carrying quite a bit of debt at
20 that point in time, in excess of I want to say
21 maybe \$500 million, it could have been more, and
22 they used the initial bankruptcy there to get
23 better terms from their creditors because a lot of
24 the profit that the company was making was going

1 towards debt service, Jim's opinion. So it was
2 that to kind of reorganize their debts and their
3 ability to pay those and with the hope of being --
4 with the transition and reorganization that they'd
5 be successful in being able to come out of that.

6 Ultimately with the second bankruptcy
7 that happened that proved not to be the case, that
8 they weren't able to recover, and I want to say for
9 the second bankruptcy the amount of debt was
10 approaching a billion dollars. The exact amount is
11 certainly available in court records. In ballpark
12 numbers it was a lot of money.

13 BY MS. HELFRICH:

14 Q Do you know where the debt came from?

15 A The debt came from acquisitions of a lot
16 of companies. There may have been some other
17 causes for it. Off the top of my head I don't
18 know.

19 You know, there were a ton of
20 acquisitions that took place and, you know, just,
21 unfortunately, when the companies were acquired and
22 brought in underneath the Remington umbrella the --
23 they were unable to integrate things well and be
24 able to turn the level of profit that they needed

1 to with those companies after acquisition to make
2 their -- the debt incurred worthwhile and be able
3 to pay it off.

4 MS. HELFRICH: All right. That's all I
5 have today.

6 Mr. Lothson, if you'd like to ask some
7 questions it's your turn.

8 MR. LOTHSON: I would.

9 EXAMINATION

10 BY MR. LOTHSON:

11 Q I'm going to share my screen.

12 All right. My screen is being shared.
13 Jim, this is your report which I believe was marked
14 as Exhibit 1. I've highlighted a sentence here.
15 There was some discussion before the lunch break
16 regarding this sentence. It reads during my time
17 in the firearms --

18 A We're not seeing it.

19 MS. HELFRICH: We're not seeing it.

20 THE WITNESS: We're not seeing your
21 screen yet.

22 BY MR. LOTHSON:

23 Q Oh, I've got to hit share.

24 A There you go.

1 Q I'm showing you your report.

2 A Yes.

3 Q I've gone to page 2. I've highlighted a
4 sentence that was the subject of discussion shortly
5 before the lunch break. In this sentence it reads
6 in full: During my time in the firearms industry,
7 demand and sales of commercial MSRs climbed
8 markedly and steadily.

9 Do you see that?

10 A Yes.

11 Q And then there was a scroll down and some
12 discussion several pages later to the report -- or
13 the AFMER production volumes and some references
14 specifically to DPMS, of which my cursor is now
15 highlighting. Do you see that?

16 A Yes.

17 Q And specifically you were questioned on
18 some of the DPMS numbers specifically at the years
19 2014 and 2015. Do you see that?

20 A I do.

21 Q Okay. Is DPMS production alone in any
22 particular year indicative of the Remington family
23 of companies on the whole's MSR production for
24 civilian sales?

1 A It may track to a certain degree with
2 Bushmaster and with Remington, but they're all
3 three independent brands that when they're on the
4 shelf at the gun store the gun consumer has the
5 ability to take and make any one -- you know,
6 choose which one to purchase. So a decrease in
7 sales for DPMS doesn't necessarily correlate with a
8 complete reduction in quantity of MSRs produced by
9 Remington/BFI Bushmaster/DPMS.

10 And, you know, as I mentioned before
11 several times, the data for Bushmaster got
12 incorporated into Remington's data and you can't
13 disambiguate that. So when you add those three
14 together, unfortunately, I don't have available
15 information for R-15s and R-25s to add, say, a
16 third column over there, but if we were able to do
17 that and then look at the total I think we'd
18 probably find that overall they were -- you know,
19 the trend was steady to growing, but, you know,
20 right now the DPMS data by itself would indicate
21 that, you know, it's dropping off but let's say
22 that's not the whole picture.

23 Q And with respect to DPMS specifically,
24 were there changes in the way DPMS's firearms were

1 constructed and the type of MSR's that DPMS
2 ultimately produced?

3 A During that time frame the DPMS Gen II
4 was being implemented into production, and the
5 resources required to generate that new model at
6 DPMS supplemented with my engineers from the
7 development team, it took time away from what they
8 were able to produce.

9 There may have been other things going
10 on at the facility at that time that I wasn't aware
11 of because I was only working on new products.
12 There may have been availability issues, and there
13 could have very well been just an overall downturn
14 in the market that hit DPMS particularly hard, but
15 it's such a -- a picture of a small spot of the
16 marketplace it's difficult to say that it is
17 reflective of really what the whole total MSR --
18 commercial MSR market was.

19 Q And do you have personal knowledge of
20 Remington, the Remington brand MSR's, the R-15 and
21 the R-25?

22 A Yes, I do.

23 Q And during your time at the company were
24 tens of thousands of Remington MSR's sold to the

1 civilian market?

2 A They were. They were, in fact, sold.
3 There were model line extensions. Sometimes that's
4 as simple as a new camouflage pattern, in other
5 cases new hand guards. Sometimes it was the
6 addition of new calibers.

7 So there was a lot of work that took
8 place there, and there were a lot of sales which,
9 unfortunately, underneath the AFMER production
10 volumes are masked, hidden, commingled with the
11 other Remington products that were being made at
12 that time.

13 Q Is it fair to say there were hundreds of
14 thousands of Remington brand MSRs sold during your
15 time at the company?

16 A During my time with the company, yeah,
17 I'd say that hundreds of thousands is a fair
18 estimate. What each specific year was, again, it's
19 difficult to say, but that production area was
20 always very busy and, you know, they were knocking
21 out the product.

22 Q Let's talk about Bushmaster in the years
23 2012 and onwards, for example. During your time at
24 the company did Bushmaster sell hundreds of

1 thousands of Bushmaster brand rifles that were MSRs
2 to the civilian marketplace?

3 A Yes. Bushmaster was a very popular brand
4 for modern sporting rifles, one of the most -- one
5 of the largest producers, and, again,
6 unfortunately, the data for their specific
7 production numbers isn't readily available or
8 evident from, you know, the AFMER data.

9 Q Let's take, for example, the year 2013
10 when DPMS sales were up to over 200,000 units.
11 Where would Bushmaster fall relative to DPMS?

12 A You know, based on kind of above, you
13 look at there was very close tracking between DPMS
14 and Bushmaster in terms of their product volumes.
15 It would have been very nearly in that
16 neighborhood, if not possibly even exceeding it.
17 Again, acquisition of that exact number isn't
18 possible given the way the data was tabulated.

19 Q Impossible by you, right?

20 A Impossible by me. It certainly via FFL
21 A&D records or something like that would be
22 possible. I don't have access to that. I'm not
23 sure who does or where those records exist today,
24 but, yeah, it's beyond the scope of what I'm able

1 to complete with the data I have available to me.

2 Q So by the year, let's say, 2014, for
3 example, there were Bushmaster MSRs, there were
4 DPMS MSRs, and there were Remington brand MSRs all
5 being sold to the commercial marketplace, correct?

6 A Yes.

7 Q Okay. And in terms of a steadily growing
8 market, were those three brands a part of that
9 marketplace?

10 A Yes. I would say that our production
11 number trends and our production volumes were
12 similar to what the other manufacturers in the
13 industry experienced.

14 So when there was an uptrend we saw an
15 increase in volume. When there was a downtrend,
16 which, you know, there have been a few through the
17 course of that looking at the overall AFMER data,
18 we tracked with that, too.

19 Q Let's talk about --

20 A Go ahead.

21 Q On this point, DPMS and the Gen II, you
22 talked earlier about the Gen II itself being
23 modified -- or, excuse me, an expansion of the
24 product line such it was focused on, for example,

1 hunting was one of the goals of a Gen II rifle?

2 A Yes. And the primary reason for it, it
3 was -- you know, the end use was hunting, but it
4 was a .308 capable AR modern sporting rifle design
5 that was in a smaller package than the existing
6 AR-10s which fired the equivalent cartridge, fired
7 the same cartridge. So it gave the user a more
8 compact package to work with. That function then
9 operated as reliably as those did.

10 Q To some extent did the Remington brand of
11 MSRs compete with the Gen II DPMSs for marketplace
12 share?

13 A They did. They did, along with the .308
14 offerings that Bushmaster had.

15 Bushmaster didn't have a super
16 extensive .308 lineup but they had some guns that
17 were offered there, and there was let's put it --
18 cannibalization is not necessarily the right term,
19 but there was competition between all the brands
20 that were resident or owned under one umbrella.
21 It's the nature of the beast. Some people like
22 Ford, some people like Chevys, and some people like
23 Dodges. You buy what you like.

24 Sometimes something new comes out, you

1 have a new Dodge Ram pickup truck, and all of a
2 sudden sales kind of swing in that fashion. The
3 overall truck market probably doesn't change a ton,
4 but, you know, the brand that's in favor benefits
5 from, you know, the added sales that they get by
6 whatever feature set it is that they offer, whether
7 it's better fuel economy, higher load capacity,
8 better aesthetics, whatever, you know, for the
9 truck analogy.

10 Q In terms of suitability of uses for the
11 products that you were involved in the manufacture
12 and sale of, the DPMS line, the Remington line, and
13 the Bushmaster lines, all of them were suitable for
14 various uses; is that right?

15 A Yes.

16 Q And that would include hunting and
17 sporting uses, correct?

18 A Hunting and sporting uses, sporting uses
19 specifically target shooting, as well as
20 self-defense uses.

21 Q And that would be self and home defense
22 uses; is that what you're saying?

23 A Yes.

24 Q In terms of the numbers that you

1 discussed, and I'm still sharing my screen on
2 Exhibit 2, page 4, the AFMER production volumes,
3 when you had a chance to go back and look at the
4 AFMER data, for example, in the Bushmaster totals
5 for the year of 2011 did you uncover any
6 typographical error there?

7 A Yeah, and looking at that I fat-fingered
8 that. It should be 38,075 rather than 57. So,
9 again, the difference is, what, 12, 13, whatever
10 the math is. I'm an engineer, I should be able to
11 do this, but it's been a long day.

12 I'll just say that it's there. It's
13 listed as 57 here, but by my recollection looking
14 at the AFMER data last night it was actually
15 38,075.

16 MR. LOTHSON: I believe that's all the
17 questions I have at this time.

18 MS. HELFRICH: I just have two
19 follow-ups.

20 FURTHER EXAMINATION

21 BY MS. HELFRICH:

22 Q You said that during the time you were in
23 charge of product development for MSRs at
24 Remington, Remington sold hundreds of thousands of

1 MSRs in the commercial market, is that correct, am
2 I restating your statement correctly?

3 A Yes. We sold between a hundred and
4 200,000. Again, I don't have a way of coming up
5 with the exact number, but it was a substantial
6 quantity.

7 Q What share of the MSR market was that; do
8 you know?

9 A I've done some preliminary analysis. It
10 was -- you know, historically when Remington
11 acquired DPMS and Bushmaster they held the lion's
12 share of the commercial MSR market, maybe in the
13 neighborhood of 40 percent, maybe even higher.
14 It's difficult to really say.

15 With time and with the addition of
16 competitors and different competitor offerings I
17 think that the market share, even though the total
18 quantity increased, our market share percentage
19 decreased from, say, 40 or so percent to begin with
20 down into the 20 percent neighborhood, maybe even
21 slightly lower than that.

22 Again, this is based on estimations
23 that are probably conservative because where guns
24 were produced, MSRs were produced by companies that

1 produced other rifles, that data was not utilized
2 in calculating market share percentage just because
3 you can't do the calculation. You can't figure it.
4 So...

5 Q And is any of that analysis of
6 Remington's market share in your report?

7 A It's work that took place subsequent to
8 the issuing of my report.

9 Q After the report, okay.

10 And, again, your assertion today that
11 Remington sold hundreds of thousands of MSRs, that
12 number is not in the report, correct?

13 A That number is not listed specifically in
14 the report, but based on my knowledge of being
15 there at that time I believe that to be a true
16 statement.

17 MS. HELFRICH: Okay. That's all I have.

18 Do you want to reserve?

19 MR. LOTHSON: Yes.

20 MS. HELFRICH: Okay. So that means,
21 Mr. Ronkainen, that Andy, your attorney, will get a
22 copy of the transcript and you'll have a chance to
23 review the transcript and make sure that what you
24 said was transcribed accurately. You can't change

1 your answer, but if what you said wasn't taken down
2 correctly you can let the reporter know and she can
3 make the change.

4 THE WITNESS: Yeah. I'm familiar with
5 that process, and I'll do that.

6 MS. HELFRICH: Okay. Well, I want to
7 thank you for your time.

8 THE WITNESS: Thank you. Have yourself a
9 good weekend.

10 MS. HELFRICH: Thank you, and you, too.
11 And, June, thanks to you as well.

12 THE REPORTER: Sure.

13 May I have transcript orders, please?

14 MS. HELFRICH: Let's just say we're off
15 the record.

16 (Whereupon the deposition was
17 concluded at 4:05 p.m. ET.)

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1 STATE OF ILLINOIS)
) SS.

2 COUNTY OF K A N E)

3 The within and foregoing videoconference
4 deposition of the aforementioned witness was
5 reported remotely by JUNE M. STEARNS, CSR, RMR, and
6 Notary Public, at the date and time aforementioned.

7 There were present via videoconference
8 during the taking of the deposition the previously
9 named counsel.

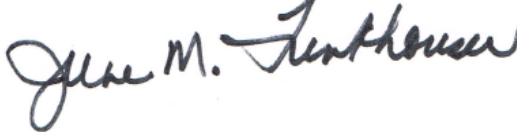
10 The said witness was first duly sworn via
11 videoconference and was then examined upon oral
12 interrogatories; the questions and answers were
13 taken down in shorthand by the undersigned, acting
14 as stenographer and Notary Public; and the within
15 and foregoing is a true, accurate and complete
16 record of all of the questions asked of and answers
17 made by the aforementioned witness, at the time and
18 place hereinabove referred to.

19 The signature of the witness was not
20 waived, and the deposition was submitted, pursuant
21 to Rule 30(e) of the Rules of Civil Procedure for
22 the United States District Courts, to the deponent
23 per copy of the attached letter.

24 The undersigned is not interested in the

1 within case, nor of kin or counsel to any of the
2 parties.

3 Witness my official signature and seal as
4 Notary Public in and for Kane County, Illinois, on
5 the 20th day of August, A.D. 2024.

6 

7 JUNE M. STEARNS, CSR, RMR

8 Notary Public

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Chicago, Illinois 60606

10 Phone: (312) 442-9087

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August 20, 2024

To: Mr. Lothson

Case Name: Barnett, Caleb, Et Al. v. Raoul, Kwame, Et Al.

Veritext Reference Number: 6831501

Witness: James Ronkainen Deposition Date: 8/2/2024

Dear Sir:

Enclosed please find a deposition transcript. Please have the witness review the transcript and note any changes or corrections on the included errata sheet, indicating the page, line number, change, and the reason for the change. Have the witness' signature notarized and forward the completed page(s) back to us at the Production address shown above, or email to production-midwest@veritext.com.

If the errata is not returned within thirty days of your receipt of this letter, the reading and signing will be deemed waived.

Sincerely,
Production Department

NO NOTARY REQUIRED IN CA

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DEPOSITION REVIEW
CERTIFICATION OF WITNESS

ASSIGNMENT REFERENCE NO: 6831501
CASE NAME: Barnett, Caleb, Et Al. v. Raoul, Kwame, Et Al.
DATE OF DEPOSITION: 8/2/2024
WITNESS' NAME: James Ronkainen

In accordance with the Rules of Civil Procedure, I have read the entire transcript of my testimony or it has been read to me.

I have listed my changes on the attached Errata Sheet, listing page and line numbers as well as the reason(s) for the change(s).

I request that these changes be entered as part of the record of my testimony.

I have executed the Errata Sheet, as well as this Certificate, and request and authorize that both be appended to the transcript of my testimony and be incorporated therein.

8/30/2024
Date

James Ronkainen
James Ronkainen

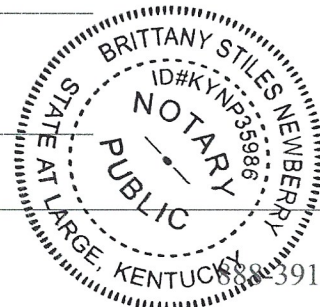
Sworn to and subscribed before me, a Notary Public in and for the State and County, the referenced witness did personally appear and acknowledge that:

- They have read the transcript;
- They have listed all of their corrections in the appended Errata Sheet;
- They signed the foregoing Sworn Statement; and
- Their execution of this Statement is of their free act and deed.

I have affixed my name and official seal this 30 day of August, 2024.

Brittany S. Newberry
Notary Public

09/13/25
Commission Expiration Date



VERITEXT LEGAL SOLUTIONS MIDWEST

ASSIGNMENT NO: 6831501

ERRATA SHEET

Page	Line	Changes	Reason
71	10, 13	"FedBizOpps" should be "FedBizOpps"	Transcription error
76	1	"...they may not have always been..." should be "...there may not have always been..."	Transcription error
76	23	"...all the mill standards..." should be "...all the MIL standards..."	Transcription error
85	18	"...Remingtons..." should be "...Remington..."	Transcription error
93	21	"Had the opportunity..." should be "I had the opportunity..."	Transcription error
93	23-24	"...and I get a hunting license..." should be "...and get a hunting license..."	Transcription error
95	19	"...Clayton, Dubilier & Rice they had..." should be "...Clayton, Dubilier & Rice, they had..."	Transcription error
97	4	"...moved Bushmaster and Remington..." should be "...they moved Bushmaster and Remington..."	Transcription error
98	17	"...side, we're the ones that were..." should be "...side, were the ones that were..."	Transcription error
118	11	"...correction of the math there..." should be "...correction of the math error..."	Transcription error
134	5	"Arrow Precision" should be "Aero Precision"	Transcription error
136	15	"An exact number you would be..." should be "An exact number - you would be..."	Transcription error
138	1	"...were in the marketplace l..." should be "...were in the marketplace, l..."	Transcription error
146	7-8	"...if a bullet is in the 243-thousandths diameter..." should be "...if a bullet is 243-thousandths in diameter, ..."	Transcription error
146	9	"...which the actual dimensions..." should be "...which is the actual diameter..."	Transcription error
146	12	"...where it's neck down..." should be "...where it's necked down..."	Transcription error
146	23	"...of handling .308s but..." should be "...of handling .308s, but..."	Transcription error
148	12	"...AR-15, for instance, as..." should be "...AR-15. For instance, as..."	Transcription error
148	17	"...shooting .204 Rugers." should be "...shooting .204 Ruger."	Transcription error
149	2	"...inside of the bullet..." should be "...inside of the bolt..."	Transcription error
151	2	"...what .223 Remingtons are." should be "...what .223 Remington's are."	Transcription error
151	18	"...gives it a launch-up,..." should be "...gives it a launch upward,..."	Transcription error
152	9	"...what that is if a..." should be "...what that is. If a..."	Transcription error
159	9	"...ceased production when that was." should be "...ceased production, when that was."	Transcription error

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163	11	"...where the bullet are held..." should be "...where the bullets are held..."	Transcription error
166	10	"...come back to the action." should be "...come back into the action."	Transcription error
177	1	"...they called their lefty." should be "...they called their Lefty."	Transcription error
177	2	"...seen the DPMS lefty version,..." should be "...seen the DPMS Lefty version,..."	Transcription error
186	8	"Those it helps..." should be "For those it helps..."	Transcription error
186	16	"...in minutes of angle,..." should be "...in minute of angle,..."	Transcription error
190	4	"...the SAAMI abuse test,..." should be "...the SAAMI abuse tests,..."	Transcription error
191	12	"...actually a prime cartridge..." should be "...actually a primed cartridge..."	Transcription error
191	23	"...a prime cartridge..." should be "...a primed cartridge..."	Transcription error
194	18	"...MSR that you're selling, just..." should be "...MSR that you're selling. Just..."	Transcription error
195	17	"We use that on..." should be "We used that on..."	Transcription error
195	18	"...so the ACR rifles we're..." should be "...so the ACR rifles were..."	Transcription error
195	22	"...technology that they use,..." should be "...technology that they used,..."	Transcription error
206	23	"...machinery required to that,..." should be "...machinery required to do that,..."	Transcription error
207	2	"riffling" should be "rifling"	Transcription error
217	3	"...a sample of the rifle,..." should be "...a sample of the rifles,..."	Transcription error
220	11	"...actually conform to..." should be "...actually conformed to..."	Transcription error
221	16	"...understanding, may not..." should be "...understanding that may not..."	Transcription error
223	21-22	"...suffering available or happening there." should be "...suffering happening there."	Transcription error
224	14-15	"The SHOT Show is a sporting and hunting and outdoor trade show." should be "The SHOT Show is a Sporting and Hunting and Outdoor Trade show."	Transcription error
228	5-6	"...a solicitation for it was a government program that was..." should be "...a solicitation - it was a government program - that was..."	Transcription error
244	7-10	"So it gave the user a more compact package to work with. That function then operated as reliably as those did." should be "So it gave the user a more compact package to work with that functioned and operated as reliably as those did."	Transcription error

#12562

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ASSIGNMENT NO: 6831501

ERRATA SHEET

8/30/2024

Date

James Ronkainen

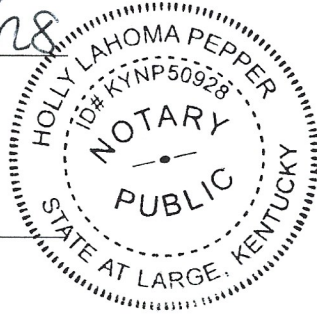
James Ronkainen

SUBSCRIBED AND SWORN TO BEFORE ME THIS 30 DAY OF August,

20 24.

Holly Pepper KYNP 50928

Notary Public



5.18.24

Commission Expiration Date

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate.

The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

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THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

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Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

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Exhibit 1

to Deposition of James Ronkainen

Rebuttal Report of James Ronkainen

Barnett et al. v. Raoul et al., Case No. 3:23-cv-209-SPM (S.D. of Illinois)

Professional Qualifications and Experience in the Firearms Industry:

I am a mechanical engineer by education and training (BME with honors, University of Minnesota, 1985) with over 39 years of experience in the firearms industry. I am the owner of Boundary Oak Enterprises, LLC, a business I established in 2017 to provide contract firearms design/engineering services with the firearms industry as well as litigation support. Litigation support activities are for firearms and ammunition related court cases, including corporate representative and expert witness services in both state and federal court. My CV is attached to this report.

Prior to establishing Boundary Oak Enterprises, LLC, I was responsible for overseeing AR-type platforms / semiautomatic Modern Sporting Rifle (MSR) new product development at Remington Arms Company, LLC (and its parent company, Remington Outdoor Company, Inc., formerly known as Freedom Group, Inc.) from 2013 to 2016, as the Director of Military/Law Enforcement/Modern Sporting Rifles New Product Development. At that time, Remington owned and I oversaw new product development for the commercial MSR brands Bushmaster, Defense Procurement Manufacturing Services (DPMS), and Advanced Armament Corporation (AAC), in addition to Remington. My teams developed many new and innovative MSR platforms and subsystems such as the DPMS G2 MSR platform, a new 2-stage trigger system, carbon fiber handguards and specialized MSRs for target and competitive shooting sports—all civilian commercial applications.

Before assuming responsibility for commercial MSR New Product Development, I was the Director of Military and Law Enforcement Product Development for Remington from 2008 until 2013. My team was responsible for developing small arms systems to compete for various U.S. governmental agency solicitations and US and foreign military solicitations, including U.S. Special Forces and Army programs.

Before moving into the Director position, I was a firearms design engineer for Remington from 1990 through 2008 with 9 issued U.S. and numerous foreign utility patents. From 1985 to 1990, I was a Field Engineer with DuPont, working at three different locations within the company to gain exposure and experience to different facets of the company. My first Field Engineering assignment, from 1985 through 1986, was with Remington, a wholly owned subsidiary of DuPont at that time.

In the past four years, I have provided testimony in the following matters as either a corporate witness or as a firearms expert:

- *Olinick v. Remington*, federal district court in Pennsylvania
- *Scott v. Remington*, federal district court in Alabama



- *Clay v. Remington*, state court in Alabama
- *Teague v. Remington*, federal district court in Montana

My compensation rate for the present matter is \$275 /hour for my work on this report, \$375/hour for testimony, and \$150/hour for travel.

Opinions and Bases:

As discussed above, I spent most of my career employed by one of the largest firearms manufacturers in the United States, Remington, working for it and its family of companies/brands. During my time in the firearms industry, demand and sales of commercial MSR platforms climbed markedly and steadily. Federally licensed firearms manufacturers (FFLs), Remington included, followed this trend and, specifically, the civilian/consumer demand for these lawful products. I was involved in the innovation of the MSR designs that took place at Remington, and at its brands / affiliate companies, Bushmaster and DPMS (and to a lesser extent ACC), entities that focused solely on the manufacture and sale of MSR platform rifles. The MSR platform is a natural fit with the rifle portions of 3-gun competition, target shooting, and for hunting, especially varmints, predators, and, depending on caliber, also big game. Along with suitability for home and self-defense, these shooting activities in turn drove innovation in the MSR marketplace on the manufacturer side, to include developing new features and calibers that offered performance advantages to users of all types and to be customizable to meet personal needs.

Some of the many innovations in MSR design include modifying the gas system design to work reliably with cartridges besides .223 Rem/5.56x45 NATO and .308 Win/7.62x51 NATO. New cartridges such as the high velocity, flat shooting .204 Ruger were adapted to permit the ethical and reliable harvesting of predators and varmints using AR15-type platform MSRs. The .30 Rem AR cartridge was developed to ethically and reliably harvest deer sized big game using AR15-type platform MSRs and the .450 Bushmaster was created as a straight-walled cartridge to meet the requirements of states that do not permit the use of bottlenecked cartridges for taking big game with centerfire rifles. Many of these caliber additions and innovations had the added purpose to serve the demand for use of AR15 and AR10 platform MSRs for self and home defense purposes per the choice of the individual buying the rifle to meet their individual needs. I oversaw firsthand such developments and innovations at Remington and its multiple affiliates/brands that manufactured MSRs (Bushmaster, DPMS, AAC). This innovation occurred to serve the demand that existed in the growing consumer marketplace that relied on MSRs to suit individual persons' needs. We invested millions of dollars and countless hours because of the high demand from the private commercial sector.

Innovations were not limited to only the adaptation of existing MSR platforms for new cartridges, but also included the creation of new MSR platforms that offered functional and performance advantages over prior designs. For instance, the DPMS Gen II reduced the size of

the platform needed for .308 Win/7.62x51 NATO size cartridges from the larger AR10 platform size to something nearer to the AR15 in overall size and weight while not compromising on reliability. The modularity and adaptability of the AR platform was an ideal starting point for manufacturers, like Remington, Bushmaster and DPMS. Our capabilities to design and build such rifles to reliably perform and meet users' expectations was an important factor in the growth of these product lines.

Design innovation was not limited to the creation of new MSR-style platforms, but also included important subsystems within the original AR-based platforms. New trigger groups, handguards, and controls were designed to address perceived performance issues with the existing subsystem designs. Such features can be beneficial to multiple different lawful uses of such rifles, including home and self-defense, competition shooting, and hunting. For example, new 2-stage triggers with better tactile feel and more consistent trigger pull forces enhanced the inherent accuracy of the AR platforms for target and hunting uses. New grip, stock, and handguard designs improved the ergonomics of MSRs, allowing them to be customized to suit the user's specific ergonomic needs, which has performance and reliability advantages for all uses of such firearms, including hunting, sport shooting, and for self or home defense. Stag Arms introduced AR-type platforms designed and made available for left-handed shooters, allowing fired shells to not eject across and toward the left-handed user's face and eyes. The AR-type platform was particularly well suited to innovate and add ambidextrous features, including for the safety mechanism. Gas piston operating systems such as the Remington RGP, Bushmaster ACR, and Adams Arms piston system improved the reliability of MSRs by keeping gunpowder combustion gases out of the upper receiver and bolt group, greatly reducing fouling from combustion gas residue inside these critical components of the operating system. Such innovations enhanced the reliability and safety for the user.

I have reviewed the report of the State's expert, Ms. Allen, who attempts to minimize that rifles are suitably used for defense purposes. *E.g.*, Allen Report ¶¶ 31-36. The innovations and designs discussed above refute that MSRs (including, for example, of my company's brands, Remington/Bushmaster/DPMS), are not suitable or are otherwise not widely chosen for self and home defense use. I was directly involved in analyzing, designing and manufacturing rifles that were well suited for such a personal choice.

I have also reviewed the report submitted by the State's expert, Mr. Klarevas. Mr. Klarevas's suggestion that MSR production volumes did not result in significant quantities of MSRs being produced for the civilian marketplace is wrong. See Klarevas Report pp. 7-21. During my tenure as the Director of MSR New Product Development for Remington, DPMS and Bushmaster, MSR production volumes for lawful sales to civilians stayed robust year over year. ATF AFMER data for DPMS and Bushmaster confirms this point. Overall, the market has been consistent or expanding, not contracting on the whole. It should be noted that manufacturing facility

consolidations affected the continuity of the AFMER data during 2011 for Bushmaster and during 2015 for DPMS as their independent FFLs transitioned to Remington FFLs at the new production facilities.

As a family of companies, with Remington as the head, we reviewed the marketplace and our competitors. Other manufacturers experienced similar growth during this timeframe, which confirmed that this was a market-wide sales expansion and not a phenomenon experienced only by Remington/Bushmaster/DPMS. The AFMER data alone confirms that my companies, e.g., Bushmaster and DPMS, respectively, produced 302,530 and 848,311 for a total of 1,150,841 MSRs during the period for which such data directly attributable to each company was available. Further, after Bushmaster’s production facility in Windham, Maine, was closed, production was consolidated with Remington (sometime in or around 2011), hundreds of thousands of “Bushmaster” brand MSRs were manufactured thereafter at Remington’s manufacturing facilities in Ilion, New York, during my tenure with the company. These MSRs were produced for sales to law abiding citizens of the United States, not a military entity. DPMS continued to manufacture and sell rifles under its own FFL until approximately 2011 when it was merged with Remington, at which point its FFL was changed to Remington Arms but it conducted business at the same physical address in St. Cloud, Minnesota, hence why DPMS’s production was still separately tracked. In approximately 2015, Remington consolidated commercial MSR production for all of their brands/affiliates at a new facility in Huntsville, Alabama, where hundreds of thousands of Remington, Bushmaster, and DPMS brand MSRs were manufactured during and after my tenure with the company. For added perspective, see the chart below regarding a limited segment of Bushmaster and DPMS production for certain years.

	AMFER Production Volumes									
	Bushmaster					DPMS				
	Pistols	Rifles	Exported Pistols	Exported Rifles	Total	Pistols	Rifles	Exported Pistols	Exported Rifles	Total
2007	518	57744	518	471	57273	0	58674	0	405	58269
2008	0	83036	0	449	83036	0	94553	0	0	94553
2009	0	83382	0	4973	83382	0	83129	0	0	83129
2010	103	40679	1	310	40782	0	46891	0	0	46891
2011	0	38057	0	0	38057	0	79557	0	779	78778
2012	NA	NA	NA	NA	NA	0	144220	0	9	144211
2013	NA	NA	NA	NA	NA	0	212920	0	0	212920
2014	NA	NA	NA	NA	NA	0	79118	0	13	79105
2015	NA	NA	NA	NA	NA	0	50475	0	20	50455

While not directly available in the AMFER, Bushmaster brand MSR production continued and increased significantly in 2012 onward, as demand and production increased similar to DPMS’s production for these years. As demonstrated in yearly product catalogs, Remington also introduced its own brand’s line of MSRs, the R15 and R25, during my tenure. Indeed, scores of other companies besides mine were significantly involved in this consumer MSR marketplace,

including two publicly traded companies, Smith & Wesson and Sturm Ruger, which we viewed as competitors. Numerous other smaller companies are also part of this marketplace.

I too have reviewed the report of the State's expert, Mr. Andrew. Mr. Andrew's suggests that MSR's are a "small fraction of firearms in private possession in the United States[.]" See Andrew Report ¶ 37. This conclusion is contrary to my own personal experience in the manufacture and sale of MSR's in the United States over last two decades. For instance, the product offerings from company's family of brands (Remington, Bushmaster and DPMS) underscore that we had a firm understanding that MSR's were a significant portion of our sales to consumers/civilians. And we knew that we had but a share of the overall firearms market. (See Gun Digests.)

Finally, I have reviewed the report of the State's expert, Mr. Yurgealitis. Yurgealitis and Andrew offer conclusions such as:

- AR and AK type rifles are basically identical copies of military firearms, especially considering the after-market devices that are readily available to firearms owners to enable increased rates of fire. See Yurgealitis Report ¶¶ 115-116, 124.
- AR-15s are military-grade weapons designed to be used in war zones. See Andrew Report ¶¶ 26-41.
- The AR-15s semi-automatic capabilities, not the automatic capabilities, make it a valuable weapon for deadly war-zone combat. See Andrew Report ¶ 34.

All three conclusions are wrong. While civilian MSR's and military rifles may cosmetically appear similar, there are significant mechanical differences between the platforms due to the end user requirements in each market. Rifles intended for military use are:

- Almost always select-fire (capable of firing semi-automatically (1 trigger pull = 1 shot fired) as well as fully automatically (1 trigger pull = gun fires repeatedly until the trigger is released or the magazine is empty).
- Have an extensive list of specifications and standards from the customer that the firearms must meet related to strength, ability to operate reliably under extreme conditions, accuracy, expected useful life that MSR's for the civilian market are not required to meet.

When and where appropriate, the knowledge and technologies gained designing and testing military/law enforcement rifles can find its way back into commercial/consumer/civilian MSR's. For example, ferritic nitrocarburization—a kind of barrel surface treatment technology—is used to extend the useful life of the gun barrel and improve corrosion protection beyond that offered by standard chrome plating, on military-grade rifles. This surface treatment technology is now used on some high-end commercial MSR's to provide the same benefits to the consumer as those experienced by the soldier. Nickel boron treatment of the bolt carrier group to increase

the time between cleanings without sacrificing reliability is another technology that has found use in certain civilian MSRs. Ambidextrous controls (selector, charging handle, magazine release and bolt release) were all requirements and performance enhancing features from some military grade rifles that are now available for use on civilian MSRs configured for 3-gun competition and also enhance the useability for users who may require different ergonomics. These same benefits enhance the reliability to use such MSRs in defensive circumstances. But these types of enhancements do not make civilian MSRs acceptable for military use. We recognized this at Remington.

Notably, at Remington, we had an entirely separate division devoted to military firearms development and production (Remington Defense) to meet the distinct needs of the separate military market. We did not consider military grade rifles to be MSRs. My design engineers developed firearm designs that were tailored to meet the requirements of solicitations from the U.S. military (Special Forces as well as the larger individual services) and U.S. governmental agencies (e.g., FBI, Secret Service, etc.). The entity developing the solicitation normally provided some advanced notice of its content so that potential respondents could develop products tailored to meet the solicitation's requirements. Using the prerelease information for the solicitation, my teams designed, built, and tested product designs responsive to the solicitation requirements to ensure they met all of the baseline requirements. Once the solicitation was officially released (with a firm due date for delivery), my teams would fine tune the firearm designs to comply with any unanticipated/unannounced changes from the prerelease information. All deliverables for the solicitations had to physically be in the solicitor's possession prior by the stated firm delivery date and time in order to even be considered; late deliveries, regardless of the reason, were not accepted. Deliverables for the solicitation normally included the requested quantity of firearms, a lengthy written proposal, and ammunition, when required.

All Remington Defense production took place in a secured area of the manufacturing facility in Ilion, New York, separated from commercial production, even after all private commercial MSR production was moved to Huntsville, Alabama. Testing of the assembled firearms was done in the Ilion Test Gallery by Remington Defense personnel to ensure testing was conducted to the contract specified standards and so that non-conforming firearms were properly identified for repair. Some larger military contracts required first article testing of the product be conducted in the presence of the government entity. In sum, military grade firearms, which were select fire, are not the same as commercial MSRs. Tellingly, the military did not solicit commercial MSRs, which are semiautomatic.

Materials Reviewed:

- Expert reports of Louis Klarevas, Lucy Allen, Phil Andrew, and James Yurgealitis
- Product catalogs of Remington, Bushmaster, DPMS, and AAC

- Bureau of Alcohol Tobacco and Firearms (BATF) ANNUAL FIREARMS MANUFACTURING AND EXPORT REPORTS (AFMER)
- Gun Digest Annual Editions, 2002 through 2023

Dated: June 10, 2024

/s/ James W. Ronkainen

James W. Ronkainen

JAMES W. RONKAINEN
HODGENVILLE, KY

EXPERIENCE:

- 1/17 - Present** **Owner, Chief Engineer**
Boundary Oak Enterprises, LLC, Hodgenville, KY
Started Boundary Oak Enterprises for the purpose of providing both consulting and contract product design engineering services, primarily for the firearms industry. Provide litigation support for firearms and ammunition related cases, including expert witness.
- 1/16 – 6/16** **Director, DoD/Military/LE and MSR Product Development**
Remington Arms – Research & Development Center, Huntsville, AL
Directed nine engineers in the development of firearms for Remington Defense, and Modern Sporting Rifles for Bushmaster, DPMS, Remington, and AAC brands for the Remington Outdoor Company, Inc. Mentored teams for technical and program management.
- Transitioned leadership responsibilities to new manager ahead of my retirement from Remington.
 - Oversaw the closure, move, cleanup and sale of the Elizabethtown facility for Remington.
- 12/13 – 12/15** **Director, DoD/Military/LE and MSR Product Development**
Remington Arms – Research & Development Technical Center, Elizabethtown, KY/Ilion, NY/Huntsville, AL
Directed eleven engineers at three locations in the development of firearms for the Remington Defense, and Modern Sporting Rifles for Bushmaster, DPMS, and Remington brands for Remington Outdoor Company, Inc. Mentored teams for technical and program management.
- Led commonization effort to allow use of common parts across all Remington Outdoor Company’s Modern Sporting Rifle product lines. Team reviewed 600+ drawings and brought up to current drawing standards.
 - Responsible party (RP) for Remington’s Elizabethtown site FFL. Responsibilities included filing paperwork with BATFE and accounting for all inventoried items.
 - Member of team responsible for quarterly safe gun handling training and certification of all Elizabethtown R&D Center personnel.
- 3/13- 12/13** **Director, DoD/Military/LE, Advanced Armament Corporation, and MSR Product Development**
Remington Arms – Research & Development Technical Center, Elizabethtown, KY/Lawrenceville, GA/ Ilion, NY
Directed fifteen engineers at three locations in the development of firearms for the Remington Defense, silencers, firearms, and muzzle devices for AAC, and Modern Sporting Rifles for Bushmaster, DPMS, and Remington brands for Remington Outdoor Company, Inc. Mentored teams for technical and program management.
- Assumed responsibility for all Modern Sporting Rifle new product development programs within Remington Outdoor Company.
 - Oversaw complex product acceptance testing in support of foreign military contracts won by Remington. Led team to investigate and address root cause of any issues identified in testing.
- 1/11- 3/13** **Director, DoD/Military/LE and Advanced Armament Corporation Product Development**
Remington Arms – Research & Development Technical Center, Elizabethtown, KY/Lawrenceville, GA
Directed 8 engineers at two locations in the development of firearms for the Remington Defense/Law Enforcement and silencers, firearms, and muzzle devices for AAC for Remington Outdoor Company, Inc. Mentored teams for technical and program management. Programs and accomplishments include:
- Precision Sniper Rifle (PSR), an improved version of the MSR; won USSOCOM’s sniper rifle competition.
 - Introduced RPDS’ discipline to AAC’s new product development process. Worked through backlog of late and delayed AAC new product development programs, organizing/culling as needed to support business goals.
 - Initiated development of the R10 to compete in the US Army’s CSASS program.
- 11/08 – 1/11** **Director, DoD/Military Products Development**
Remington Arms – Research & Development Technical Center, Elizabethtown, KY/Windham, ME
Built, directed and mentored team of four engineers in development and testing of firearms for DoD and Military Products Division of Remington Arms Company, Inc. and team at Bushmaster Firearms International, Inc. to meet the stringent DoD and Federal Agency performance and safety requirements. Products developed included:
- Modular Sniper Rifle (MSR), a novel multi-caliber sniper rifle platform; won classified SF sniper rifle competition.
 - Remington Gas Piston (RGP) carbine rifle, a novel gas piston operated carbine for the US Army’s Individual Carbine (IC) competition to replace the M4. *Co-inventor on three patents for this platform.*
 - Adaptive Combat Rifle (ACR), a licensed, novel, gas piston carbine design originally developed in conjunction with Bushmaster for the US Army’s Individual Carbine (IC) to replace the M4. BFI’s ACR design was extensively modified by Remington to reduce weight and improve reliability – ultimately submitted as Remington’s candidate for IC competition.
 - Wrote and supported creation the technical sections for program proposals submitted for all DoD competitions.
 - Co-developed and formalized Remington Product Development System (RPDS) with team to ensure smoother implementation of new product designs into production.
 - Received Remington’s Golden Trigger Award in recognition for lifetime contributions to Remington firearms product development.

3/98 – Staff Engineer

11/08 Remington Arms - Research & Development Technical Center, Elizabethtown, KY

- Designed 338 Lapua-capable titanium version of the Model 700 for DARPA program.
- Design engineer for VersaMax trigger plate assembly. Reverse engineered and modified competitor's design to avoid patent infringement while maintaining safety and performance. Design responsibility passed to another design teammate upon promotion to Director of DoD/LE Product Development.
- Design engineer and program manager for X-Mark Pro (XMP) and X-Mark Pro Externally Adjustable trigger assembly programs, new-from-scratch trigger assembly designs for Remington's Model 700 and Seven bolt action rifles. Oversaw extensive developmental testing to ensure the safety and performance of this critical rifle component. Worked closely with implementation team to put new design into production.
- Manufacturing engineering consultant in support of KRISS Super V SMG JSSAP program with Gamma Defense and Transformational Defense Industries.
- Program manager and lead mechanical engineer for the Model 700 EtronX™, a novel electronically initiated firing means for the Model 700 platform. Oversaw extensive developmental testing of the new firearm and ammunition technology to ensure safety, reliability, and performance. *Inventor/co-inventor on four patents for EtronX™ related firearms technology.*
- Develop and track project schedules and budgets for all assigned programs.
- Provided engineering support for litigation related matters.
- Responsible for capital equipment justification, purchase, implementation and training.
- Trained in Six Sigma/Design of Experiments

1/95 - Senior Research Engineer

2/98 Remington Arms - Research and Development Technical Center, Elizabethtown, KY

- Developed and tracked project schedules and budgets for assigned programs.
- Co-developed R&D project status reporting and budget tracking system.
- Led team to develop and implement formal engineering change system for Elizabethtown Technical Center.
- Assistant system administrator for CAD system at Elizabethtown Technical Center.
- Program manager for Model 870 SuperMag. Assisted with developmental testing to ensure safety and performance of new design.

8/90 - Senior Research Engineer

12/94 Remington Arms - Firearms R&D, Ilion, NY

Responsible for design and development of firearms projects, especially bolt action centerfire rifle programs. Specific products designed and developed during this time period include:

- Model 700 DM Family – Designed detachable magazine (DM) variant of the Model 700. Design included detachable magazine, bottom metal, stock, and receiver to ensure reliable feeding. Oversaw developmental testing to ensure safety and reliability of the new design. Oversaw implementation of product into production. *Received patent for novel magazine spring design.*
- Model 700 SS – Created corrosion resistant version of the Model 700 through material and surface treatment changes to original carbon steel design. Oversaw extensive developmental testing to ensure safety, integrity and reliability of new design. Assisted with implementation of design into production.
- Model 700 VS – Implemented lightweight composite stock co-developed with outside vendor for Model 700 Varmint Synthetic (VS) rifle to improve accuracy and reducing weight. Oversaw developmental testing to ensure safety and performance of new design.
- Model Seven Youth – Designed new youth stock for Model Seven for a true youth scaled product offering. Oversaw developmental testing of new design to ensure safety and performance.

3/89 - Field Services Engineer

7/90 E.I. DuPont - Engineering Development Laboratory, Wilmington, DE

Responsible for design, development, and project management of various engineering projects related to advanced composite materials and processing systems for patented LDF™ stretch-formed composites. Developed and executed novel engineering equipment designs, schedules, and budgets for assigned programs.

1/87 - Field Services Engineer

2/89 E.I. DuPont - Imaging Systems Department, Newark, DE

Team member and co-lead design engineer for Cromalin™ CAT toning cassette. Responsible for design and implementation of new product design in manufacturing. Team took new product concept from inception to full production in 11 months. Lead Field Engineer for site.

5/85 - Field Services Engineer

12/86 E.I. DuPont - Remington Arms - Firearms R&D, Ilion, NY

Member of Model 11-87 development team. Responsible for test oversight and drafting. Also was a member of the Model 870 and 7400 Product Improvement Teams.

EDUCATION:

Bachelor of Mechanical Engineering (BME) with Distinction, University of Minnesota, March 1985.

PROFESSIONAL AFFILIATIONS:

American Society of Mechanical Engineers (ASME) – 1984 – present

Tau Beta Pi, MNα – 1984 – present

National Shooting Sports Foundation (NSSF) – 2019 – present

Association of United States Army (AUSA) – 2009 - present

PATENTS:

Co-inventor US patent 5,551,180 “Firearm Bolt Lock Mechanism”

Inventor US patent 5,664,355 “Detachable Ammunition Magazine”

Co-inventor US patent 5,755,056 “Electronic Firearm and Process for Controlling an Electronic Firearm”

Co-inventor US patent 5,806,226 “Bolt Assembly for Electronic Firearm”

Inventor US patent 5,987,798 “Bolt Assembly for Electronic Firearm”

Co-inventor US patent RE38794 “Electronic Firearm and Process for Controlling an Electronic Firearm”

Co-inventor US patent 8,061,260 “Gas Plug Retention and Removal Device”

Co-inventor US patent D661,364 “Gas Block”

Co-inventor US patent 8,539,708 “Barrel Mounting and Retention Mechanism”

Various foreign patents

PUBLICATIONS:

None.

Exhibit 2

to Deposition of James Ronkainen

**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF ILLINOIS**

CALEB BARNETT, <i>et al.</i> , Plaintiffs, vs. KWAME RAOUL, <i>et al.</i> , Defendants.	Case No. 3:23-cv-209-SPM ** designated Lead Case
DANE HARREL, <i>et al.</i> , Plaintiffs, vs. KWAME RAOUL, <i>et al.</i> , Defendants.	Case No. 3:23-cv-141-SPM
JEREMY W. LANGLEY, <i>et al.</i> , Plaintiffs, vs. BRENDAN KELLY, <i>et al.</i> , Defendants.	Case No. 3:23-cv-192-SPM
FEDERAL FIREARMS LICENSEES OF ILLINOIS, <i>et al.</i> , Plaintiffs, vs. JAY ROBERT "JB" PRITZKER, <i>et al.</i> , Defendants.	Case No. 3:23-cv-215-SPM

DECLARATION OF LOUIS KLAREVAS

I, Louis Klarevas, declare as follows:

1. I am a least 18 years old and have personal knowledge of the statements contained in this declaration;
2. The statements contained in the expert report I authored in this case, dated May 10, 2024 and attached hereto as Exhibit 1, are true and accurate;
3. If called to testify in this case, I would testify to the matters set forth in my expert report. My testimony would be consistent with all of the statements in the report, which includes a description of my qualifications as an expert witness, a complete statement of all opinions I would express, and the basis and reasons for those opinions.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Date: May 10, 2024

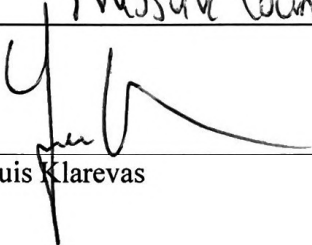
at Nassau County, NY

Louis Klarevas

EXHIBIT 1

**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF ILLINOIS**

CALEB BARNETT, <i>et al.</i> , Plaintiffs, vs. KWAME RAOUL, <i>et al.</i> , Defendants.	Case No. 3:23-cv-209-SPM ** designated Lead Case
DANE HARREL, <i>et al.</i> , Plaintiffs, vs. KWAME RAOUL, <i>et al.</i> , Defendants.	Case No. 3:23-cv-141-SPM
JEREMY W. LANGLEY, <i>et al.</i> , Plaintiffs, vs. BRENDAN KELLY, <i>et al.</i> , Defendants.	Case No. 3:23-cv-192-SPM
FEDERAL FIREARMS LICENSEES OF ILLINOIS, <i>et al.</i> , Plaintiffs, vs. JAY ROBERT "JB" PRITZKER, <i>et al.</i> , Defendants.	Case No. 3:23-cv-215-SPM

REPORT OF LOUIS KLAREVAS

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I. PROFESSIONAL QUALIFICATIONS

I am a security policy analyst and, currently, Research Professor at Teachers College, Columbia University, in New York. I am also the author of the book *Rampage Nation*, one of the most comprehensive studies on gun massacres in the United States.¹ I am a political scientist by training, with a B.A. from the University of Pennsylvania and a Ph.D. from American University. While my early career focused on the intersection of public opinion surveys and national security, my current research examines the nexus between American public safety and gun violence, including serving as an investigator in a study funded by the National Institutes of Health that is focused on reducing intentional shootings at elementary and secondary schools.

During the course of my nearly 25-year career as an academic, I have served on the faculties of George Washington University, the City University of New York, New York University, and the University of Massachusetts. I have also served as Defense Analysis Research Fellow at the London School of Economics and Political Science and as United States Senior Fulbright Scholar in Security Studies at the University of Macedonia.

In addition to having made well over 100 media and public-speaking appearances, I am the author or co-author of more than 25 scholarly publications and over 70 commentary pieces. In 2019, my peer-reviewed article on the effectiveness of restrictions on large-capacity magazines (LCMs) in reducing high-fatality mass shootings resulting in six or more victims killed was published in the *American Journal of Public Health*.² This study found that jurisdictions with LCM bans experienced substantially lower gun massacre incidence and fatality rates when compared to jurisdictions not subject to similar bans. Despite being five years old, this study continues to be one of the highest-impact studies in all of academia. It was recently referred to as “the perfect gun policy study,” in part due to the study’s “robustness and quality.”³

¹ Louis Klarevas, *Rampage Nation: Securing America from Mass Shootings* (2016).

² Louis Klarevas et al., “The Effect of Large-Capacity Magazine Bans on High-Fatality Mass Shootings,” 109 *American Journal of Public Health* 1754 (2019).

³ Lori Ann Post and Maryann Mason, “The Perfect Gun Policy Study in a Not So Perfect Storm,” 112 *American Journal of Public Health* 1707 (2022). According to Post and Mason, “Klarevas et al. employed a sophisticated modeling and research design that was more rigorous than designs used in observational studies. Also, they illustrated the analytic steps they took to rule out alternative interpretations and triangulate their findings, for

In the past five years (since January 1, 2019), I have been deposed, testified in court, or testified by declaration in the following cases (all in federal court), listed alphabetically by state:

California – Central District

Rupp v. Bonta 8:17-cv-00746-JLS-JDE

California – Eastern District

Wiese v. Bonta 2:17-cv-00903-WBS-KJN

California – Southern District

Duncan v. Bonta 17-cv-1017-BEN-JLB

Jones v. Bonta 19-cv-01226-L-AHG

Miller v. Bonta 3:19-cv-1537-BEN-JBS

Nguyen v. Bonta 3:20-cv-02470-WQH-MDD

Colorado

Gates v. Polis 1:22-cv-01866-GPG-SKC

Rocky Mountain Gun Owners v. Town of Superior 1:22-cv-02680-NYW-SKC

Connecticut

National Association for Gun Rights v. Lamont 3:22-cv-01118-JBA

Grant v. Lamont 3:22-cv-01223-JBA

Hawaii

National Association for Gun Rights v. Lopez 1:22-cv-404-DKW-RT

Illinois – Northern District

Viramontes v. Cook County 1:21-cv-04595

National Association for Gun Rights v. Highland Park 22-cv-04774

Herrera v. Raoul 1:23-cv-00532

Kenneally v. Raoul 3:23-cv-50039

Illinois – Southern District

*Harrel v. Raoul** 23-cv-141-SPM

*Langley v. Kelly** 23-cv-192-SPM

*Barnett v. Raoul** 23-cv-209-SPM

*Federal Firearms Licensees of Illinois v. Pritzker** 23-cv-215-SPM

example examining both state bans and federal bans. They helped build the foundation for future studies while overcoming the limitations of previous research.” *Id.*

Massachusetts

National Association for Gun Rights v. Campbell 1:22-cv-11431-FDS

Oregon

Oregon Firearms Federation v. Kotek[†] 2:22-cv-01815-IM

Fitz v. Rosenblum[†] 3:22-cv-01859-IM

Eyre v. Rosenblum[†] 3:22-cv-01862-IM

Azzopardi v. Rosenblum[†] 3:22-cv-01869-IM

Washington – Eastern District

Brumback v. Ferguson 1:22-cv-03093-MKD

Banta v. Ferguson 2:23-cv-00112-MKD

Washington – Western District

Sullivan v. Ferguson 3:22-cv-5403-DGE

Hartford v. Ferguson 3:23-cv-05364-RJB

*Non-Consolidated Cases on the Same Briefing Schedule / [†]Consolidated Cases

In 2021, I was retained by the Government of Canada in the following cases which involved challenges to Canada’s regulation of certain categories of firearms: *Parker and K.K.S. Tactical Supplies Ltd. v. Attorney General of Canada*, Federal Court, Court File No.: T-569-20; *Canadian Coalition for Firearm Rights, et al. v. Attorney General of Canada*, Federal Court, Court File No.: T-577-20; *Hipwell v. Attorney General of Canada*, Federal Court, Court File No.: T-581-20; *Doherty, et al. v. Attorney General of Canada*, Federal Court, Court File No.: T-677-20; *Generoux, et al. v. Attorney General of Canada*, Federal Court, Court File No.: T-735-20; and *Eichenberg, et al. v. Attorney General of Canada*, Federal Court, Court File No.: T-905-20. I testified under oath in a consolidated court proceeding involving all six cases in the Federal Court of Canada.

I have also submitted declarations in the following state court cases: *People of Colorado v. Sgaggio*, District Court, El Paso County, Colorado, 2022M005894 (Criminal); *Guardian Arms v. State of Washington*, Superior Court, Thurston County, Washington, 23-2-01761-34 (Civil); and *State of Washington v. Gator’s Custom Guns*, Superior Court, Cowlitz County, Washington, 23-2-00897-08 (Civil).

A true and correct copy of my current curriculum vitae is attached as **Exhibit A** to this report.

I have been retained by the State Defendants to render expert opinions in this case. I am being compensated at a rate of \$480/hour for my work on this report, \$600/hour for any testimony (including deposition testimony) in connection with this matter, and \$120/hour for travel required to provide testimony.

II. OPINIONS

Based upon my extensive review and analysis of the material cited in this report, I have come to the following professional conclusions on the ownership and use of assault weapons and LCMs:

- *Data Sources on the Circulation and Ownership of Assault Weapons and LCMs Are Problematic.* Most sources that have attempted to gauge circulation and ownership of modern sporting rifles and LCMs are methodologically flawed and, therefore, unreliable. The bottom line is that the number of assault weapons and LCMs in circulation or that are personally owned by American gun owners is unknown. As such, the circulation and ownership rates for assault weapons and LCMs are indeterminable. One aspect of firearm circulation and ownership that is known with reasonable certainty is that handguns are the most common type of firearm in circulation and personally owned—not rifles, and most certainly not rifles that qualify as assault weapons.
- *Unlike Circulation and Ownership Data Sources, There Are Multiple Reliable and Valuable Data Sources on the Use of Assault Weapons and LCMs.* While assault weapons as well as firearms with LCMs are used to perpetrate violent crime, particularly the murder of police officers, their most prominent criminal use appears to be to perpetrate multiple-victim shootings. Mass shootings resulting in double-digit fatalities are relatively modern phenomena in American history, related to the use of assault weapons and LCMs. In the present era, high-fatality mass shootings, resulting in six or more victims killed, pose a significant—and growing—threat to American public safety. In particular, high-fatality mass shootings involving assault weapons and/or LCMs, on average, have resulted in a substantially larger loss of life than similar incidents that did not involve assault weapons and/or LCMs. Most high-fatality mass shootings now involve assault weapons and LCMs, which serve as force multipliers associated with higher average death tolls when used. Comparing offensive to defensive uses shows that assault weapons are used by civilians with a far greater frequency to perpetrate mass shootings than to stop them. Indeed, in terms of defensive gun uses, in general, the quintessential firearm used by the majority of gun owners appears to be the handgun. This may even be the case for owners of AR-15-style rifles, who appear to use handguns, not rifles, in the majority of their defensive gun uses.

III. CIRCULATION AND OWNERSHIP OF ASSAULT WEAPONS AND LCMs

Based on national survey data, we can approximate that roughly three-in-ten adults (aged 18 or over) in the United States personally own at least one firearm. Two recent surveys, in particular, collected data that help us approximate how many firearms are privately owned by American adults. According to a Harvard University survey, 28.8% of individuals aged 18 or over personally own at least one firearm.⁴ Given the 2023 U.S. Census estimate that the adult population is approximately 262.1 million people, this suggests that about 75.5 million American adults are presently gun owners. The Harvard survey also found that the (mean) average number of guns personally owned by respondents who identified as gun owners is 4.6 firearms.⁵ This suggests that, currently, there are approximately 347.3 million firearms that are privately owned by American adults. Similarly, a recent Gallup poll found that 30.0% of American adults personally own a (mean) average of 4.9 firearms.⁶ This suggests that there are approximately 78.6 million adults who privately own approximately 385.1 million firearms. As these two bounds are not far apart, a reasonable working mean average can be calculated: *approximately 366.2 million personally-owned firearms in the possession of approximately 77.1 million adults in the United States.*⁷

According to the National Shooting Sports Foundation (NSSF), the trade association for the firearms industry and one of the plaintiffs in this litigation, in terms of the share of firearms by category (handguns, rifles, and shotguns) between 1990 and 2021, the distribution of the domestic stock is dominated by handguns, which make up 54% of all firearms produced for the U.S. market (see Figure 1). However, the distribution of personally-owned firearms held by American adults

⁴ Matthew Miller, Wilson Zhang, and Deborah Azrael, “Firearm Purchasing During the COVID-19 Pandemic: Results from the 2021 National Firearms Survey,” 175 *Annals of Internal Medicine* 219 (2022).

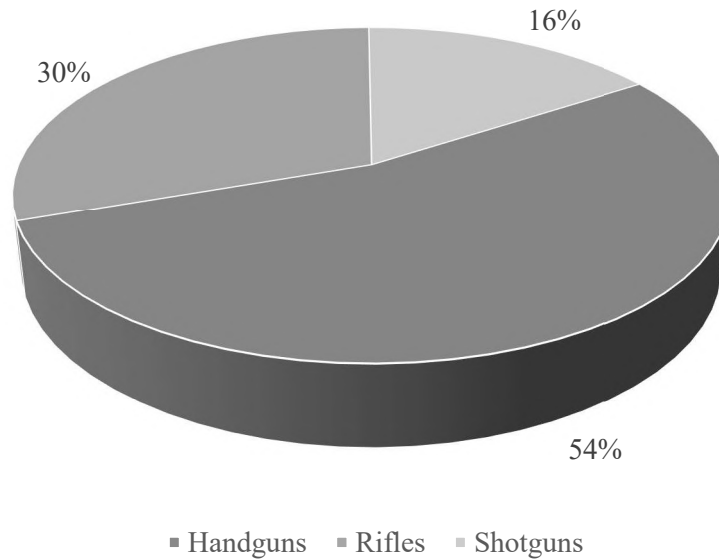
⁵ *Id.*

⁶ Jeffrey M. Jones, “Majority in U.S. Continues To Favor Stricter Gun Laws,” Gallup, October 31, 2023, available at <https://news.gallup.com/poll/513623/majority-continues-favor-stricter-gun-laws.aspx>.

⁷ A survey of gun owners conducted by Georgetown University professor William English in 2021 found that 81.4 million American adults personally own firearms. A review of the survey data indicates that these 81.4 million firearm owners possess an average of 5.9 guns. William English, “2021 National Firearms Survey: Updated Analysis Including Types of Firearms Owned,” Unpublished Paper (May 13, 2022; Revised September 22, 2022), at 7, Bates Numbers FFL SHARED 001030-001075, also available at https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=4283305. As discussed below in greater detail, there are ethical and methodological concerns about this survey and Professor English’s analysis of the survey data that render these estimates questionable and, therefore, unreliable.

is different. According to the recent Harvard University survey, while, again, handguns are the predominant firearm, private individuals own more shotguns than rifles (see Figure 2).⁸ The data indicate that while private individuals might have a stronger preference for shotguns over rifles, this pattern would not necessarily reflect the preferences of other groups that possess firearms which are not personally owned but nevertheless contribute to the domestic stock: law enforcement and security agencies, firearm wholesalers and retailers, firearm instruction centers, shooting ranges, and gun clubs. That said, regardless of which metric is used—domestic stock or personal firearms privately owned—handguns are the most common firearms.

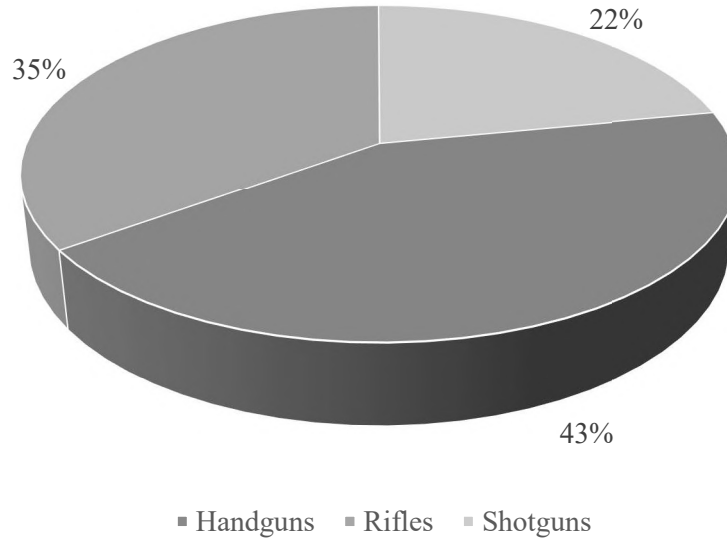
Figure 1
Breakdown of All Firearms in the Domestic Stock of Firearms (by Category)



Source: NSSF, *Firearm Production in the United States with Firearm Import and Export Data, 2023 Edition* (2024), at 16, Bates Number NSSF 000050.

⁸ The survey of gun owners conducted by Georgetown University professor William English in 2021 also found that handguns make up the predominant share of personally-owned firearms. *Id.*, at 20-21, Bates Numbers FFL SHARED 001049-001050. However, the underlying survey data show the distribution to be 41% handguns, 35% rifles, and 24% shotguns. Again, as discussed below in greater detail, there are ethical and methodological concerns about this survey and Professor English’s analysis of the survey data that render these estimates questionable and, therefore, unreliable.

Figure 2
Breakdown of Personally-Owned Firearms in the United States (by Category)



Source: Matthew Miller, Wilson Zhang, and Deborah Azrael, “Firearm Purchasing During the COVID-19 Pandemic: Results from the 2021 National Firearms Survey,” *175 Annals of Internal Medicine* 219 (2022).

IIIA. Assault Weapons

Like firearms in general, assault weapons also fall into three categories: handguns, rifles, and shotguns.⁹ Occasionally, people advance arguments about the possession and use of assault weapons using proxy variables. The use of such proxies involves significant limitations. For instance, those who pursue this line of reasoning rely on circulation as part of the domestic stock of firearms (akin to manufacturing and importation data) or personal ownership of firearms by private civilians as proxies for how exactly firearms are used. However, gun use, in the active sense, generally involves discharging or brandishing firearms—activities that are not reflected in circulation and ownership statistics.

⁹ In the State of Illinois, assault weapons are statutorily defined at 720 ILCS 5/24-1.9(a)(1)-(2). Unless stated otherwise, in this section, the term assault weapons will be used in a manner consistent with Illinois statutes.

Another type of proxy analysis involves the employment of what the firearms industry refers to as “modern sporting rifles” (MSRs)—which is a term used inconsistently to mean different things, but often as a reference to AR-platform and AK-platform semiautomatic rifles—as a proxy for assault weapons. There are two significant limitations with using MSRs, defined this way, as a proxy for assault weapons. First, rifles are not the only assault weapons. Focusing on rifles overlooks pistols and shotguns that are assault weapons. Second, when MSRs are used to refer to firearms that are not AR- and AK-platform rifles, it could result in some MSRs not qualifying as assault weapons under different relevant laws. Indeed, as will be discussed below, if NSSF estimates are accurate, it would mean that all 2,034,000 MSRs estimated by the NSSF to have entered into the domestic stock between 1995 and 2004, when the federal Assault Weapons Ban prohibited the manufacture and importation of assault weapons, would not have been assault weapons under the federal law.¹⁰ Therefore, relying on MSRs as a proxy for assault weapons necessarily results in a misestimation of the number of assault weapons in circulation.

Keeping the above cautionary guidance in mind, it can be stated with a reasonable degree of certainty that the number of assault weapons in circulation in the United States is unknown. The number of personally-owned assault weapons in the possession of private civilians is also unknown. As such, the circulation and ownership rates for assault weapons are indeterminable.

IIIAi. The English Survey. In 2021, Georgetown University professor William English conducted a survey of gun owners (“the English survey” hereinafter).¹¹ One of the survey’s objectives was to collect data on the ownership of what the questionnaire described as “AR-15 style rifles and

¹⁰ For NSSF estimates of the number of MSRs to enter the domestic stock during the decade that the federal Assault Weapons Ban was in effect, see, NSSF, *Firearm Production in the United States with Firearm Import and Export Data, 2023 Edition* (2024), at 7, Bates Number NSSF 000041.

¹¹ The underlying data of the 2021 survey conducted by Professor English have been made available to the general public. The data is archived in spreadsheet format in the following source: William English, “2021 National Firearms Survey,” version 1, Harvard Dataverse, 2023, available at <https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/58TXW6>. Unless stated otherwise, all analyses that I have performed on the English survey data have drawn on the publicly-released data set available at the Harvard Dataverse.

other semi-automatic rifles, which are sometimes referred to as ‘assault weapons.’”¹² According to Professor English’s analysis of the underlying poll data, he concluded that 30.2% of gun owners have, at some point in their lives, owned an AR-15-style rifle.¹³ Using a slightly higher baseline than this report’s working average (81.4 million gun owners as opposed to 77.1 million gun owners), Professor English calculated that 30.2% of this group would amount to 24.6 million people.¹⁴ According to his analysis, “This suggests that up to 44 million AR-15 styled rifles have been owned by U.S. gun owners.”¹⁵ However, the English survey posed the ownership question in the past tense, making it impossible to probe the current ownership of AR-15-style rifles.

In addition to this limitation related to an odd choice in question wording, there are several ethical and methodological concerns with the English survey that raise suspicions about the underlying data and Professor English’s analysis of the data. Ethically, the survey runs afoul of the standards of practice of the American Association for Public Opinion Research (AAPOR).¹⁶ To begin with, Professor English has never disclosed all sources of funding used to conduct and analyze the survey, which is a clear violation of AAPOR canons.¹⁷ Disclosing survey sponsorship is vital to assuring that the survey was not designed or conducted to further the political or economic interests of particular entities. Moreover, while Professor English has released the raw, unweighted results of his survey, he has not released his weighted results, which might constitute a failure to properly disclose all survey results that were used for purposes of analysis.¹⁸ Finally, by misleadingly informing survey participants that this was a survey on outdoor recreational activities, the survey might have used a deceptive practice to lure gun owners into taking the survey, which might also be a violation of AAPOR ethical standards.¹⁹

¹² English, *supra* note 7, at 33, Bates Number FFL SHARED 001062.

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ The AAPOR Code of Professional Ethics and Practices is available at <https://aapor.org/standards-and-ethics/#aapor-code-of-professional-ethics-and-practices>.

¹⁷ *Id.*, Section IIIA2.

¹⁸ *Id.*, Section IIB.

¹⁹ *Id.*, Section IIIA4.

Besides ethical concerns, the survey also suffers from methodological issues. First, some of the survey questions are worded in a manner that suggests a negative framing of regulations on firearms and magazines. When conducting opinion polls, question wording matters. Subtly cueing respondents to perceive regulations in an unfavorable manner runs the risk of producing biased results, in turn, rendering survey results unreliable.²⁰ Second, as most surveys conducted by national polling organizations do, the English survey used a methodology known as weighting to estimate the number of overall gun owners. However, throughout the analysis of the poll data, Professor English often reported results using unweighted data. As the English survey, initially, was not demographically representative of gun owners (e.g., it was over-representative of female gun owners and gun owners under 26 years of age and under-representative of male gun owners and gun owners over 65 years of age), relying on unweighted results can produce skewed, unreliable findings.²¹

There are also concerns pertaining to the portions of the survey that probed AR-15-style rifle ownership. As already mentioned, ownership questions were asked in the past tense, making it impossible to gauge current ownership rates. Another problem with the analysis of AR-15-style rifle ownership statistics is that Professor English arbitrarily excluded any responses that indicated they had owned over 100 AR-15-style rifles. This was reportedly done for the following reason: “In order to provide a conservative estimate of ownership rates and to ensure that average estimates are not skewed by a small number of large outliers, we disregard the 0.3% that indicate owning over 100 in calculating average ownership numbers.”²² There is no reason to exclude these

²⁰ For a quick overview of public opinion polling, including how question wording and question order can affect the answers provided by respondents, see Roper Center for Public Opinion Research, “Polling Fundamentals,” Cornell University, 2024, available at <https://ropercenter.cornell.edu/polling-and-public-opinion/polling-fundamentals>. See, also, Norman M. Bradburn, Seymour Sudman, and Brian Wansink, *Asking Questions: The Definitive Guide to Questionnaire Design—For Market Research, Political Polls, and Social and Health Questionnaires*, Revised Edition (2004).

²¹ For an overview of weighting that is written in a manner accessible to lay people, see, Andrew Mercer, Arnold Lau, and Courtney Kennedy, “How Different Weighting Methods Work,” Pew Research Center, January , 2018, available at <https://www.pewresearch.org/methods/2018/01/26/how-different-weighting-methods-work>. It should be noted that surveying a sample of respondents that is not demographically representative of the population is not necessarily a serious defect in the survey, as corrective measures like weighting might be able to address this.

²² English, *supra* note 7, at 33, Bates Number FFL SHARED 001062.

respondents, nor does Professor English cite any source from the public opinion research literature to support such a seemingly arbitrary decision. As a result of excluding what he labels as “outliers,” Professor English buries one of the most striking findings in the survey: a tiny number of gun owners have owned the majority of AR-15-style rifles. After excluding two of the respondents for providing what were apparently false answers claiming to own, respectively, 1 million and 69,420 AR-15-style rifles, a review of the remaining data indicates that Professor English excluded only 12 data points (out of 2,234 AR-15-style-rifle data points).²³ This, too, may seem trivial at first glance.²⁴ However, those 0.5% of respondents account for ownership of 37.1% of all AR-15-style rifles.²⁵ When the respondents who owned more than 10 AR-15-style rifles are separated from those who have owned 10 or less, the data indicates that 59.0% of AR-15-style rifles have been owned by just 4.3% of AR-15-style rifle owners. If the English survey results are accurate, this would indicate that AR-15-style rifles are largely concentrated in the hands of a fraction of all AR-15-style rifle owners, let alone all gun owners.

²³ Excluding unrealistic responses is an acceptable practice in survey analysis. See, for example, Miller, Zhang, and Azrael, *supra* note 4.

²⁴ Based on my evaluation of the English survey data set, 2,193 respondents indicated that they owned a total of 9,049 AR-15-style rifles. I then added the figures provided in 39 narrative responses, which indicated those particular respondents owned at least one such rifle, into the numerical tallies: 35 identified one rifle, 1 identified 2 rifles, 1 identified 3 rifles, 1 identified “30+” rifles (which was coded as 31 rifles), and 1 identified “100+” rifles (which was coded as 101 rifles). I also accounted for 2 additional narrative responses that answered that they owned none. This increased the data set to 2,234 respondents who indicated that they owned a combined total of 9,221 AR-15-style rifles.

²⁵ Professor English claims that he only excluded 0.3% of responses. In his words, “Approximately 99.7 indicated owning under 100 and 98.4% under 10.... Among those who indicate having owned AR-15 and similarly styled rifles, they indicate having owned an average of 1.8, with the median owner having owned 1. This suggests that up to 44 million AR-15 styled rifles have been owned by U.S. gun owners.” English, *supra* note 7, at 33, Bates Number FFL SHARED 001062. The problem with the above assertions is that the English survey data do not allow for a reproduction of these figures. For instance, whether or not one includes the 41 narrative responses (totaling 172 rifles), after excluding the two extreme (and apparently false) responses, the data appear to show that the number of gun owners who indicated that they have owned over 100 AR-15-style rifles equals 0.5%, not 0.3%. Because Professor English does not explain his calculations in his analysis, it is unclear how he calculated this so-called “outlier” group to be 0.3%. These discrepancies further challenge the accuracy and reliability of the analysis performed by Professor English. In particular, reproducibility—taking the identical data provided by someone else, subjecting those data to the same computational steps or code, and coming up with identical results—is a hallmark of science. See, for example, National Academies of Science, Engineering, and Medicine, *Reproducibility and Replicability in Science* (2019). When studies cannot be reproduced, there is good reason to be suspicious of their purported findings and conclusions.

Given suspicions about the integrity and findings of the English survey, there is a good basis to consider the underlying survey data as well as the subsequent unpublished analysis performed by Professor English unreliable.

IIIAii. NSSF Publications. In 2024, the NSSF published a table that estimates the number of “modern sporting rifles” (MSRs) that came into circulation as part of the domestic stock in the United States on an annual basis (these estimates are reproduced in Table 1, second column). According to the NSSF, between 1990 and 2021, an estimated 28.1 million MSRs entered the domestic market.²⁶ Again, this is not the number believed to be personally owned by private civilians, which would be a subset of the overall domestic stock. The 28.1 million estimate necessarily includes MSRs in the possession of law enforcement and security agencies, firearm wholesalers and retailers, firearm instruction centers, shooting ranges and gun clubs, prohibited owners (such as criminals and domestic abusers), as well as MSRs that have been illegally trafficked to other countries and those that have been lost, decommissioned (including due to deterioration), or destroyed. As discussed earlier, it appears to also include MSRs that would not qualify as assault weapons in jurisdictions that currently restrict assault weapons.

The NSSF’s estimate cannot be verified because the underlying data and formula used to calculate the figure have not been made available by the NSSF. According to the NSSF, the source data for the number of MSRs entering the U.S. market annually since 1990 come from “ATF AFMER, US ITC, [and] Industry Reporting.” The problem with this claim is that neither the ATF nor the ITC track MSRs. The Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) does

²⁶ NSSF, *supra* note 10, at 7, Bates Number NSSF 000041. The NSSF does not estimate how many MSRs entered the domestic firearms market prior to 1990. However, one analysis of rifle serial numbers estimates that, from 1963 when the manufacture of AR-rifles commenced until 1994 when the federal Assault Weapons Ban took effect, there were at least 787,144 AR-platform firearms produced in the U.S. See General Staff, “Estimating AR-15 Production, 1964-2017,” November 9, 2019, available at https://www.generalstaff.org/Firearms/Count/AR15_Production.htm. Per NSSF’s estimate, 287,000 MSRs were produced in the U.S. from 1990-1994. Subtracting the NSSF’s 287,000 estimate from the larger 787,000 estimate suggests that a total of approximately 500,000 MSRs were produced domestically prior to 1990. This calculation assumes that NSSF’s 287,000 estimate is accurate. However, given that the NSSF does not provide a detailed accounting of how it calculated its MSR estimates, the accuracy of the NSSF’s estimates is open to question.

produce a report known as the Annual Firearms Manufacturers and Export Report (AFMER). As the title of this report indicates, this is an annual report of how many guns are manufactured in the U.S. and how many guns are exported to other countries. ATF AFMER data are broken down by category, particularly handguns, rifles, and shotguns. The International Trade Commission maintains separate data on firearms imported in the U.S. Neither the ATF nor the ITC maintain data specific to MSRs. As such, there is no way to discern the number of MSRs in circulation from either of these U.S. government sources. Using the process of elimination, any determinations as to the number of MSRs in circulation made by the NSSF would necessarily be the result of consulting industry sources that have not been shared by the NSSF. As a result, the NSSF's estimate is unverifiable.²⁷

While the accuracy of the NSSF's chart on MSR production cannot be confirmed, if we assume it is accurate, a clear pattern emerges. The number of MSRs in circulation prior to the expiration of the Federal Assault Weapons Ban in 2004 accounted for no more than 10% of the estimated 28.1 million cumulative stock (Table 1, last column). Indeed, over half of the estimated cumulative stock did not come into circulation until 2016—a mere six years prior to the estimated culmination of 28.1 million MSRs (Table 1, last column). Furthermore, the NSSF estimates that 13% of all MSRs since 1990 entered the domestic market in one single year: 2021 (Table 1, last column). In other words, if the NSSF estimates are correct, then over half of the stock of MSRs entered the domestic market in just a six-year period. In which case, the prior 26 years accounted for less than 50% of the overall number of MSRs that entered the domestic market (Figure 3).

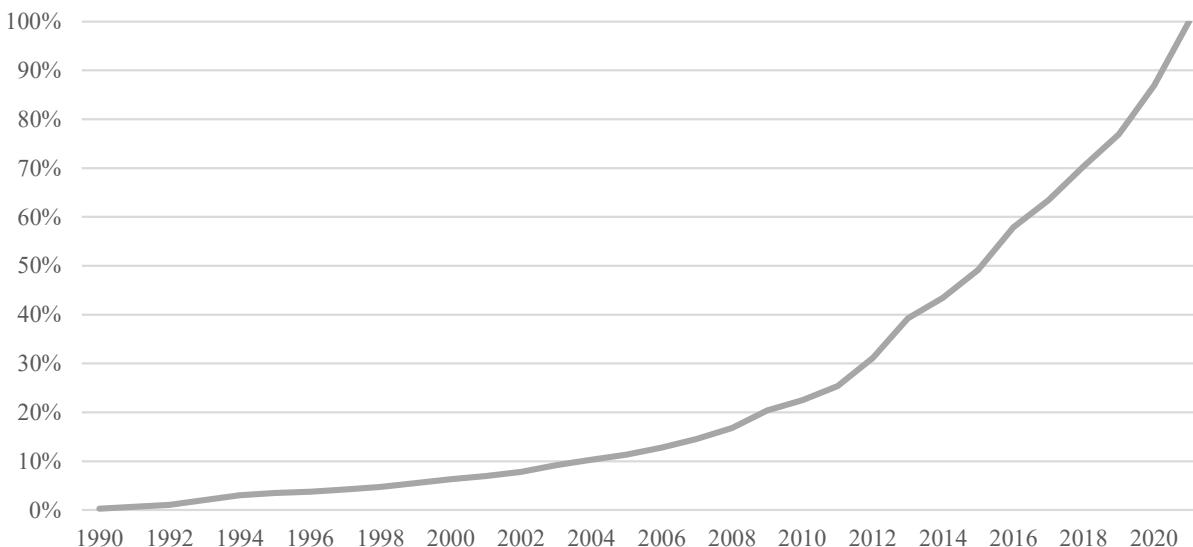
²⁷ In addition to reproducibility, another hallmark of science is replicability—finding fairly consistent outcomes across different studies using their own unique data. National Academies of Science, Engineering, and Medicine, *supra* note 25. The NSSF's claims regarding the number of MSRs cannot be either reproduced or replicated. This calls into question the NSSF's estimates, in turn, rendering the NSSF chart on "Modern Sporting Rifle Production in the United States, 1990-2021," unreliable. The chart is published in NSSF, *supra* note 10, at 7, Bates Number NSSF 000041.

Table 1
NSSF Estimate of MSR's Entering the Domestic Stock of Firearms Compared to All Firearms Entering the Domestic Stock of Firearms, Annually and Cumulatively, 1990-2021

Year	MSR's (Annual NSSF Estimate)	All Firearms (Annual)	% MSR's (Annual)	Cumulative MSR's (Annual NSSF Estimate)	Cumulative Firearms (Annual)	% Cumulative MSR's (Annual)	Cumulative MSR's (Annual) as Share of Cumulative MSR's (Total)
1990	74,000	4,468,112	2%	74,000	4,468,112	2%	<1%
1991	115,000	4,145,349	3%	189,000	8,613,461	2%	1%
1992	105,000	5,248,760	2%	294,000	13,862,221	2%	1%
1993	288,000	6,557,710	4%	582,000	20,419,931	3%	2%
1994	274,000	6,932,329	4%	856,000	27,352,260	3%	3%
1995	131,000	5,138,387	3%	987,000	32,490,647	3%	4%
1996	70,000	4,469,764	2%	1,057,000	36,960,411	3%	4%
1997	125,000	4,940,193	3%	1,182,000	41,900,604	3%	4%
1998	145,000	4,303,847	3%	1,327,000	46,204,451	3%	5%
1999	232,000	5,067,234	5%	1,559,000	51,271,685	3%	6%
2000	216,000	4,886,807	4%	1,775,000	56,158,492	3%	6%
2001	179,000	4,079,671	4%	1,954,000	60,238,163	3%	7%
2002	242,000	4,955,064	5%	2,196,000	65,193,227	3%	8%
2003	380,000	4,785,311	8%	2,576,000	69,978,538	4%	9%
2004	314,000	4,516,660	7%	2,890,000	74,495,198	4%	10%
2005	311,000	4,753,393	7%	3,201,000	79,248,591	4%	11%
2006	398,000	5,531,699	7%	3,599,000	84,780,290	4%	13%
2007	498,000	6,081,149	8%	4,097,000	90,861,439	5%	15%
2008	633,000	6,151,414	10%	4,730,000	97,012,853	5%	17%
2009	1,006,000	8,376,936	12%	5,736,000	105,389,789	5%	20%
2010	584,000	7,386,527	8%	6,320,000	112,776,316	6%	22%
2011	816,000	8,415,769	10%	7,136,000	121,192,085	6%	25%
2012	1,630,000	11,655,709	14%	8,766,000	132,847,794	7%	31%
2013	2,275,000	14,767,938	15%	11,041,000	147,615,732	7%	39%
2014	1,187,000	11,342,899	10%	12,228,000	158,958,631	8%	43%
2015	1,605,000	12,060,780	13%	13,833,000	171,019,411	8%	49%
2016	2,447,000	15,048,092	16%	16,280,000	186,067,503	9%	58%
2017	1,564,000	11,542,343	14%	17,844,000	197,609,846	9%	63%
2018	1,956,000	11,377,191	17%	19,800,000	208,987,037	9%	70%
2019	1,848,000	9,478,521	19%	21,648,000	218,465,558	10%	77%
2020	2,798,000	15,250,004	18%	24,446,000	233,715,562	10%	87%
2021	3,698,000	21,037,810	18%	28,144,000	254,753,372	11%	100%

Source: NSSF, *Firearm Production in the United States with Firearm Import and Export Data, 2023 Edition* (2024), at 7, 16, Bates Numbers NSSF 000041, NSSF 000050.

Figure 3
NSSF Estimate of Cumulative Number of MSR in Any Given Year as a Share of All Cumulative MSR, 1990-2021

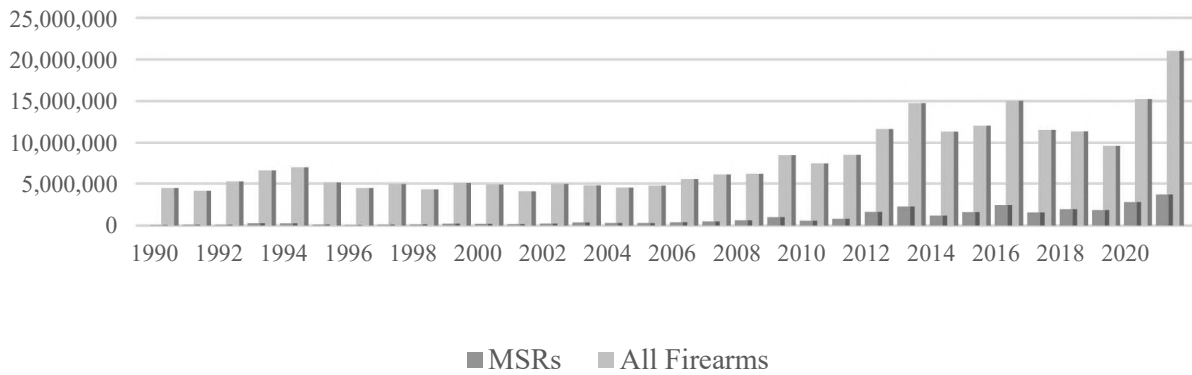


Source: NSSF, *Firearm Production in the United States with Firearm Import and Export Data, 2023 Edition* (2024), at 7, Bates Number NSSF 000041.

A similar pattern appears when examining the total number of MSR compared to the total number of all firearms that annually enter the domestic stock (Figure 4) as well as the entry of MSR as a percentage of all firearms entering the domestic stock in a given year (Figure 5). The same holds when examining the cumulative number of MSR in the domestic stock compared to the cumulative number of all firearms that entered the domestic stock on an annual basis (Figure 6) as well as the cumulative entry of MSR as a percentage of all firearms that had cumulatively entered the domestic stock on an annual basis (Figure 7). If NSSF estimates are accurate, then MSR only account for 11% of the domestic stock of firearms in the United States, as of the end of 2021 (Figure 8).²⁸ All of the data pertaining to MSR published by the NSSF point to the same conclusion: production and importation of MSR is a very recent phenomenon.

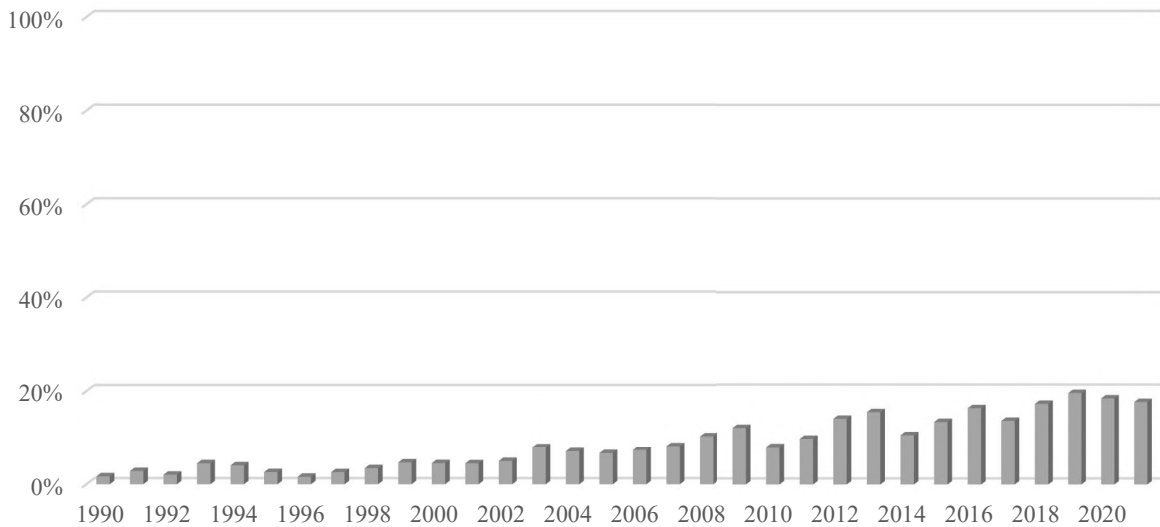
²⁸ The 11% figure is clearly an over-estimate because the NSSF measures the domestic stock beginning in 1990. But with estimates of over 200 million firearms that entered the domestic stock between 1899 and 1990, coupled with the fact that MSR would only have accounted for a tiny fraction of the pre-1990 domestic stock of firearms (see General Staff, *supra* note 26), the true share of MSR relative to the entire domestic stock, going back in time by 125 years, is necessarily less than 11%. For more on the estimated domestic stock between 1899 and 1990, see Marianne

Figure 4
NSSF Estimate of Annual Number of MSRs Entering the Domestic Stock Compared to Annual Number of All Firearms Entering the Domestic Stock, 1990-2021



Source: NSSF, *Firearm Production in the United States with Firearm Import and Export Data, 2023 Edition* (2024), at 7, 16, Bates Numbers NSSF 000041, NSSF 000050.

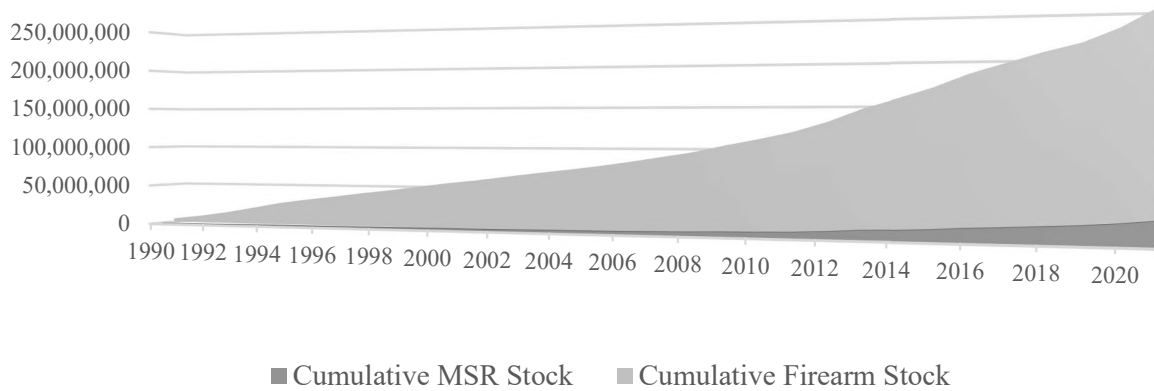
Figure 5
Annual Percentage of NSSF Estimate of MSRs Entering the Domestic Stock as a Share of All Firearms Entering the Domestic Year, 1990-2021



Source: NSSF, *Firearm Production in the United States with Firearm Import and Export Data, 2023 Edition* (2024), at 7, 16, Bates Numbers NSSF 000041, NSSF 000050.

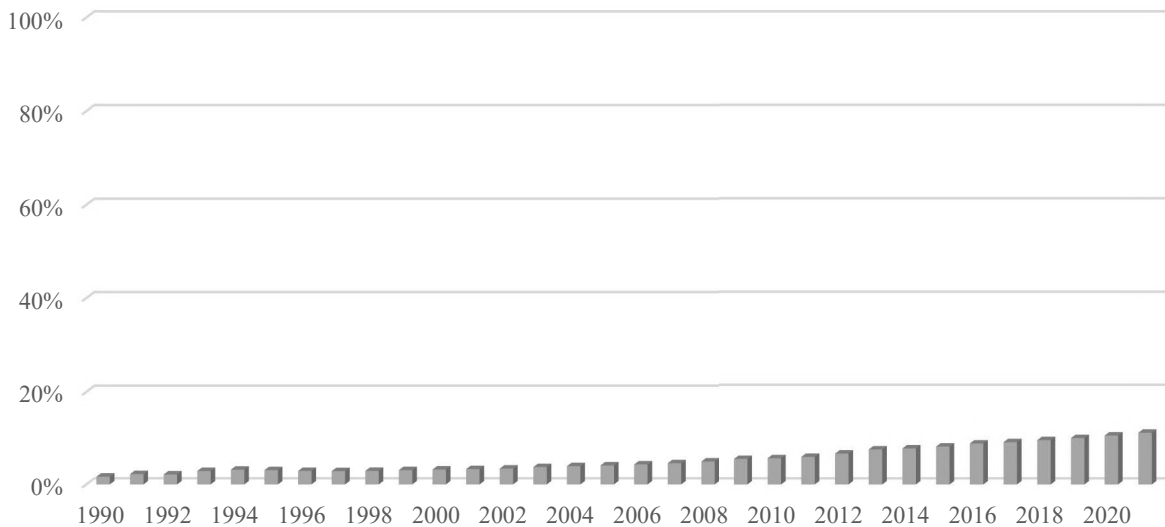
W. Zawitz, *Guns Used in Crime*, Bureau of Justice Statistics Selected Findings, July 1995, at 2, available at <https://bjs.ojp.gov/content/pub/pdf/GUIC.PDF>.

Figure 6
NSSF Estimate of Cumulative Number of MSRs in the Domestic Stock Compared to Cumulative Number of All Firearms in the Domestic Stock, 1990-2021



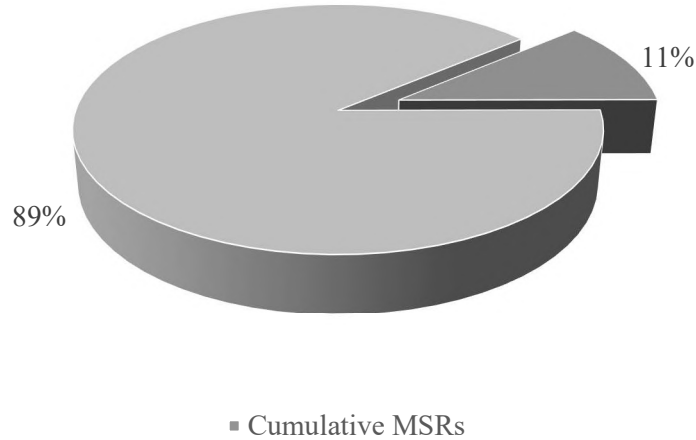
Source: NSSF, *Firearm Production in the United States with Firearm Import and Export Data, 2023 Edition* (2024), at 7, 16, Bates Numbers NSSF 000041, NSSF 000050.

Figure 7
Annual Percentage of NSSF Estimate of Cumulative MSRs in the Domestic Stock as a Share of All Firearms in the Domestic Year, 1990-2021



Source: NSSF, *Firearm Production in the United States with Firearm Import and Export Data, 2023 Edition* (2024), at 7, 16, Bates Numbers NSSF 000041, NSSF 000050.

Figure 8
NSSF Estimate of Cumulative Number of MSRs as a Share of Cumulative Number of All Firearms in Domestic Stock, 1990-2021



Source: NSSF, *Firearm Production in the United States with Firearm Import and Export Data, 2023 Edition* (2024), at 7, 16, Bates Numbers NSSF 000041, NSSF 000050.

The NSSF has also conducted three surveys of MSR owners, with the most recent one conducted between December 2021 and January 2022.²⁹ By the survey organization’s own disclaimer, this survey also appears to be unreliable: “Sports Marketing Surveys cannot guarantee the accuracy of the information contained and does not accept any liability for any loss or damage caused as a result of using information or recommendations contained within this document.”³⁰ Keeping this in mind, one of the most interesting findings is that the average number of MSRs owned has increased from 2.6 per person in 2010, to 3.1 per person in 2013, to 3.8 per person in 2022. Only 24% of respondents in 2022 indicated that they owned only 1 MSR.³¹ Akin to the pattern detected in the English survey data, this pattern suggests that ownership of MSRs is likely concentrated. It should be noted, however, that this survey does not appear to meet scientific

²⁹ NSSF, *Modern Sporting Rifle Comprehensive Consumer Report: Ownership, Usage, and Attitudes Toward AR- and AK-Platform Modern Sporting Rifles* (2022), at 10, Bates Number NSSF 000109.

³⁰ *Id.*, at 2, Bates Number NSSF 000101.

³¹ *Id.*, at 12, Bates Number NSSF 000111.

standards. For example, 96% of respondents were males, which means either that other surveys of MSR owners are erroneous or the NSSF survey is way off the mark in terms of survey sample.³²

However, given the lack of transparency regarding its estimates and the inability to reproduce and replicate its statistical claims, NSSF trade data cannot be deemed reliable.

IIIAiii. The Washington Post / Ipsos Survey. In the Fall of 2022, the *Washington Post*, in partnership with Ipsos, conducted a survey of adult gun owners. It found that 20% of respondents indicated that they own “AR-15-style rifles, including any semi-automatic weapon built on a common AR-15 platform.” Applying this percentage to a finding from a previous *Washington Post* / Ipsos poll that suggested that there might be 80.8 million gun owners in the United States, the *Washington Post* and Ipsos concluded that “about 16 million Americans own an AR-15.”³³

Among other results from this poll, the *Washington Post* and Ipsos found that 95% of AR-15-platform firearm owners also own handguns, 79% own other long guns (hunting rifles and shotguns), and 33% own antique firearms. In comparison, the breakdown of ownership rates for non-AR-15-platform firearms for all survey respondents was as follows: 80% owned handguns, 62% owned other long guns (hunting rifles and shotguns), and 16% owned antique firearms. The survey results suggest that owners of AR-15-platform firearms are more likely, as a group, to own more firearms of other categories than gun owners who do not own AR-15-platform firearms.³⁴

While in general the *Washington Post* and Ipsos are considered to be organizations that conduct credible public opinion polls, there are two limitations with this particular survey that warrant providing additional context to the results. One caveat is that, as responses are often sensitive to question wording, the fact that the survey queried ownership of “any semi-automatic weapon built on a common AR-15 platform,” it likely captured respondents who own AR-15-

³² *Id.*, at 75, Bates Number NSSF 000174.

³³ Emily Guskin, Aadit Tambe, and Jon Gerberg, “What Do Americans Own an AR-15?” *Washington Post*, March 27, 2024, Bates Numbers FFL SHARED 000315-000325, available in full at <https://www.washingtonpost.com/nation/interactive/2023/american-ar-15-gun-owners>.

³⁴ *Id.*

platform handguns as well as those who own AR-15-platform rifles.³⁵ The other caveat is that the poll only surveyed a small sample of AR-15-platform firearm owners (399 respondents in total). This resulted in a margin of sampling error of plus-or-minus 5.5%. As to the broader panel of 2,104 gun owners, the margin of sampling error was plus-or-minus 2.5%. Given a 20% ownership result, this creates a range that runs from 17.5% to 22.5%.³⁶ To put ownership statistics in absolute numbers, if the *Washington Post* / Ipsos survey is accurate, the number of Americans who own AR-15-platform firearms can be as low as 14.1 million adults and as high as 18.2 million adults.³⁷

IIIAiv. Inconsistencies Across the Different Sources on AR-15-Style Firearm Circulation and Ownership. When comparing the English survey, the NSSF publications, and the *Washington Post*/Ipsos survey, one takeaway stands out: the results from each source appear to contradict the other sources. This means one of two things: (1) one of these three sources is likely correct and the other two are likely incorrect or (2) all three sources are likely incorrect. Table 2 provides a breakdown of the key estimates from each source.

Table 2
Comparison of English, NSSF, and *Washington Post*/Ipsos Estimates

Source	Estimated Percentage of MSR/AR-15-Style Rifle Owners	Estimated Number of MSRs/AR-15-Style Rifles	Mean Average Number of MSRs/AR-15-Style Rifles Personally Owned	Estimated Number of Americans That Personally Own MSRs/AR-15-Style Rifles
English Survey	30.2	44 million	1.8	24.6 million
NSSF	6.1	28.1 million	3.8	7.4 million
WP/Ipsos Survey	20	16+ million	1.0+	16 million

³⁵ I am unaware of how many AR-15-platform firearms are handguns as opposed to rifles.

³⁶ Guskin, Tambe, and Gerberg, *supra* note 33, Bates Numbers FFL SHARED 000315-000325.

³⁷ Using this report’s working mean average of 77.1 million gun owners produces a range of 13.5 to 17.3 million AR-15-platform firearm owners.

To put these competing estimates in perspective, the percentage of AR-15-style rifle owners reflected in the English survey marks a 50% increase from the percentage of AR-15-style rifle owners reflected in the *Washington Post* / Ipsos survey, and a 395% increase in comparison to NSSF MSR figures. Moreover, the NSSF suggests that the number of MSRs that are personally owned could be as low as 7.4 million. In contrast, Professor English found that the number of AR-15 style rifles that have been owned could be as high as 44 million—roughly a six-fold increase.³⁸

Similarly, comparing the English and NSSF estimates produces substantial differences. For instance, Professor English's 44 million figure is 57% higher than the 28.1 million MSRs that the NSSF estimates entered into the domestic firearms market between 1990 and 2021—and the NSSF estimate reflects the entire domestic stock, not the necessarily smaller subset of MSRs personally owned by private civilians. Professor English also claims to have found that owners of AR-15-style rifles have owned a mean average of 1.8 such rifles. In its survey of MSR owners, the NSSF claims to have found that the mean average number of MSRs owned was 3.8 such rifles per person. This is a drastically different number than the 1.8 average reported by Professor English. Using the data collected in the English and NSSF surveys generates a range of total MSR/AR-15-style rifle owners that runs from 7.4 million people to 24.6 million people—which reflects more than a three-fold difference.

The bottom line is that the various sources pertaining to circulation and ownership of AR-15-style rifles offer competing estimates that are significantly different. Furthermore, and perhaps most important of all, none of these statistics—which only address rifles that may or may not qualify as assault weapons—indicate how many assault weapons are actually in circulation and personally owned by adults in the United States.

³⁸ The NSSF does not actually offer an estimate of MSR owners. However, for heuristic purposes, the maximum number of possible MSR owners, according to NSSF figures, is 7.4 million people. This is calculated by taking the total number of MSRs claimed to be in circulation (28.1 million) and, assuming those MSRs as all personally owned by private civilians (which of course they are not), dividing the 28.1 million figure by the mean average number of MSRs owned (3.8), to generate a maximum number of MSR owners (7.4 million). The NSSF estimated percentage of gun owners who own an MSR is calculated by taking the number of estimated MSR owners (7.4 million) and dividing it by the number of gun owners the NSSF estimates that there are currently in the U.S. (121.2 million). This comes out as 0.061, or 6.1%. The estimate of 121.2 million gun owners is based on the NSSF claim that 36.3% of the U.S. population (currently 334 million people), owns firearms. See *infra* notes 68-73 and accompanying text.

IIIB. Large-Capacity Magazines

Large-capacity magazines (LCMs) are generally defined as ammunition-feeding devices with a capacity greater than 10 rounds.³⁹ Almost all analyses of ammunition magazines by capacity, including those reviewed below, distinguish magazines using a cutoff threshold of 10 rounds. The number of LCMs in circulation in the United States is unknown. The number of personally-owned LCMs in the possession of private civilians is also unknown. As such, the circulation and ownership rates for LCMs are indeterminable.

IIIBi. The English Survey. The English survey also attempted to collect data on ownership of ammunition magazines. According to an analysis of the underlying poll data, Professor English claims to have found that 48% of gun owners have, at some point in their lives, owned an LCM. As with questions pertaining to the ownership of AR-15-style rifles, the English survey posed the magazine ownership question in the past tense, making it impossible to probe the current ownership of magazines. In his initial analysis of the survey data, Professor English estimated that American gun owners have owned upwards of 269 million handgun LCMs and 273 million rifle LCMs, for a total of 542 million LCMs overall.⁴⁰ In a subsequent analysis of the same data, Professor English altered his estimates to 268 million handgun LCMs and 283 rifle LCMs, for a combined total of 551 million LCMs overall.⁴¹

In addition to the general ethical and methodological problems discussed above, there are also concerns pertaining to the portions of the survey that probed LCM ownership. For instance, as already mentioned, ownership questions were asked in the past tense, making it impossible to gauge current ownership rates. Furthermore, while the English survey provided an opportunity for those who had owned LCMs to indicate how many magazines they owned with (a) a capacity of

³⁹ Under Illinois statute (720 ILCS 5/24-1.10), LCM capacity thresholds are set at greater than 10 rounds for long guns and greater than 15 rounds for handguns.

⁴⁰ English, 2022, *supra* note 7, at 24-25 Bates Numbers FFL SHARED 001053-001054.

⁴¹ William English, “2021 National Firearms Survey: Analysis of Magazine Ownership and Use,” Unpublished Paper (May 4, 2023), at 20, available at https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=4283305.

ten rounds or less and (b) a capacity greater than 10 rounds, those who answered that they never owned an LCM were not provided an opportunity to indicate how many magazines with a capacity of 10 rounds or less they owned. Thus, when Professor English subsequently analyzed the number of magazines with a capacity of 10 rounds or less, he was unable to provide a full picture of how many such magazines might exist. This, in turn, prevents an assessment of what share of all magazines are LCMs.

Another problem with the analysis of LCM ownership is that Professor English arbitrarily excluded any responses that indicated they had owned over 100 magazines of a particular capacity category. As with Professor English's analysis of AR-15-style rifle ownership statistics, this was reportedly done for the following reason: "In order to provide a conservative estimate of ownership rates and to ensure that average estimates are not skewed by a small number of large outliers, we exclude the 0.2% of responses that indicated owning over 100 magazines in a category."⁴² As a reminder, there is no reason to exclude these respondents, nor does Professor English provide any support from the public opinion research literature to support such a seemingly arbitrary decision. The implication of this decision is that Professor English, again, buries one of the most striking findings in the survey: a tiny number of gun owners have owned the vast majority of LCMs. After excluding one of the respondents for providing what were indisputably false answers, claiming to own over 1 trillion magazines, a review of the remaining data indicates that Professor English excluded only 91 data points (out of 57,000 LCM-related data points).⁴³ This, too, may seem trivial at first glance. However, those 0.2% of responses account for 72.7% of all LCMs.⁴⁴ When the different categories of LCMs owned by respondents are all totaled and the respondents who owned more than 100 LCMs are separated from those who owned 100 or fewer LCMs, the data indicate that 82.5% of LCMs have been owned by just 3.2% of LCM owners. If the English survey results

⁴² English, 2022, *supra* note 7, at 23-24, Bates Numbers FFL SHARED 001052-001054.

⁴³ Excluding unrealistic responses is an acceptable practice in survey analysis. See, for example, Miller, Zhang, and Azrael, 2022, *supra* note 4.

⁴⁴ Based on my evaluation of the English survey data set, 7,125 respondents indicated that they owned a total of 382,042.2 LCMs. I then treated the one response that indicated owning 0.2 LCMs as a typo. Recoding that entry as 2 LCMs, the total number of LCMs listed totaled 382,044. The 91 responses that Professor English excluded accounted for 277,926 LCMs, which is 72.7% of the overall 382,044 LCMs tallied.

are accurate, this would indicate that LCMs are largely concentrated in the hands of a fraction of all LCM owners, let alone all gun owners.

Professor English also interpreted some of his findings related to LCMs in a manner that appears to be a speculative attempt to make sense of those findings, which calls into the question the reliability of his survey and subsequent analyses. In one example, respondents were asked if they ever found themselves in a situation “in which it would have been useful for defensive purposes to have a firearm with a magazine capacity in excess of 10 rounds.”⁴⁵ Approximately 550 respondents answered this question in the affirmative.⁴⁶ Over 10% of Professor English’s unpublished paper is allocated to reproducing, verbatim, 31 select answers to this question. Presumably, the 31 reproduced answers are the ones that Professor English felt were the most instructive as to the utility of LCMs in self-defense situations.⁴⁷ Out of these 31 scenarios, *only two* involved an armed citizen actually firing their firearm, and in *only one* of these two scenarios did the respondent confirm that they fired more than 10 rounds. Neither scenario involved self-defense against a criminal. Instead, both involved the use of gunfire to ward off animals: in one instance a bear and in another a pack of coyotes.⁴⁸ Taking situations that involved driving away from the potential threat or having their dog chase away the criminals and interpreting them as examples that reflect *the usefulness of LCMs* for purposes of self-defense, is unfounded.⁴⁹ Relatedly, while Professor English reported that there were approximately 550 respondents who provided answers in the affirmative, he failed to report that 4,257 survey participants provided a response to this question, and the majority of the answers were in the negative.

In another example, Professor English reports the percentage of gun owners who have owned LCMs in each state. The state with the highest rate of LCM ownership is the District of Columbia, with 69.2% of D.C. respondents reporting that they have owned LCMs.⁵⁰ This is a

⁴⁵ English, 2022, *supra* note 7, at 26-28, Bates Numbers FFL SHARED 001055-001057.

⁴⁶ *Id.*, at 28, Bates Number FFL SHARED 001057.

⁴⁷ *Id.*, at 28-33, Bates Numbers FFL SHARED 001057-001062.

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ *Id.*, at 27, Bates Number FFL SHARED 001056.

surprising finding because the District of Columbia has strictly prohibited LCMs since 2009.⁵¹ Intuitively, the District of Columbia should be one of the states with the lowest LCM ownership rates. To make sense of this finding, Professor English provided some possible explanations: (1) LCM owners were including magazines that they keep in another state or that are legal to possess because they are “grandfathered” and (2) states with low gun ownership rates “such as DC and Hawaii” are more likely to have a higher concentration of “gun enthusiasts.”⁵² However, Professor English offered no basis for reasoning that LCM owners in the District of Columbia store their LCMs in other states (not to mention that neighboring Maryland also restricts LCM possession). Nor did Professor English offer any evidence that there is a higher concentration of gun enthusiasts in Washington, D.C.⁵³ And, the “grandfathering” theory can be ruled out because the District of Columbia does not grandfather LCMs.

IIIBii. NSSF Publications. In 2024, the NSSF released a report that estimated that between 1990 and 2021, an estimated 963,772,000 handgun and rifle magazines entered into circulation in American society (**Exhibit B**, at 3, Bates Number NSSF 001996). The NSSF has created at least three earlier iterations of this magazine chart (“NSSF magazine chart” hereinafter). The first version was put together in 2013 (**Exhibit C**, at 6). The next version was made in either 2016 or 2017 (**Exhibit D**, at 6). A subsequent version appeared in a 2020 NSSF industry analysis (**Exhibit E**, at 7, Bates Number NSSF 000023).

In the first three versions of the NSSF magazine chart, the only information that the NSSF provided as to how the estimates were calculated appeared at the bottom of each chart. For the chart covering the time periods 1990-2012 and 1990-2015, the NSSF identified the sources as “ATF AFMER, US International Trade Commission figures combined with NSSF and firearms industry estimates.” For the chart covering the time period 1990-2018, the NSSF similarly

⁵¹ See Giffords Law Center to Prevent Gun Violence, “Large-Capacity Magazines,” available at <https://giffords.org/lawcenter/gun-laws/policy-areas/hardware-ammunition/large-capacity-magazines>.

⁵² English, 2022, *supra* note 7, at 25-26, Bates Numbers FFL SHARED 001054-001055.

⁵³ *Id.* Professor English also fails to explain how the rate of gun ownership might be related to the percentage of gun enthusiasts.

identified the sources as “ATF AFMER, US ITC, Industry estimates.” Neither the ATF nor the ITC maintain data specific to ammunition magazines. As such, there is no way to discern the number of magazines in circulation from either of these U.S. government sources. Using the process of elimination, any determinations as to the number of magazines in circulation made by the NSSF would necessarily be the result of consulting “industry estimates.”

The NSSF magazine charts do not provide any information as to which specific industry sources were consulted. Nor do they provide any underlying data or detailed calculations as to how magazine estimates were determined. However, in a declaration as well as a deposition in *Wiese v. Bonta* (E.D. Cal.), both of which are docketed (making them public records), the creator of the initial NSSF magazine charts, James Curcuruto, detailed the methodology used to estimate the number of magazines in circulation. Of particular interest to the present case, Curcuruto, who used to be the director of research and market development at the NSSF, devoted a portion of his declaration in *Wiese* discussing how the initial charts were created. After noting the caveat that he was “not aware of any singular public source providing reliable figures identifying exactly how many ammunition magazines are manufactured or imported for sale within the United States each year,”⁵⁴ Curcuruto then outlined the steps taken to create the NSSF’s magazine chart covering the years 1990-2015:

Sources used to compile the NSSF® Magazine Chart include the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) Annual Firearms Manufacturers and Export Report (AFMER), . U.S. International Trade Commission, as well as opinions of firearms industry professionals....

The ATF AFMER and ITC data provided estimates of approximately 67.7 million pistols and 42.6 million rifles capable of holding a magazine were available to United States consumers between 1990 and 2015. Firearms industry professionals with knowledge of the pistol and rifle magazine market then allocated magazines to the totals to complete the data in the NSSF® Magazine Chart.⁵⁵

⁵⁴ Declaration of James Curcuruto, *Wiese v. Bonta*, 2:17-cv-00903-WBS-KJN (E.D. Cal.), June 14, 2017, ECF 28-3, para. 6.

⁵⁵ *Id.*, paras. 9, 11.

Based on this approach, in its magazine chart covering 1990-2015, the NSSF estimated that 230 million magazines were in circulation, with half (115 million) being LCMs.⁵⁶ Curcuruto, nevertheless, cautioned that “the figure of 115 million magazines with a capacity greater than 10 rounds in circulation is an estimation based on an extrapolation from indirect sources and cannot be confirmed as unequivocally accurate.”⁵⁷

The statements in Curcuruto’s declaration call into doubt the accuracy of NSSF ammunition magazine estimates. In addition, Curcuruto’s declaration confirms that neither the ATF nor the ITC provided the NSSF with specific data on the number of ammunition magazines in circulation. Instead, the declaration identifies the source of such data as “firearm industry professionals.”⁵⁸ In his deposition in *Wiese*, Curcuruto identified the “firearm industry professionals” that were consulted as himself and his boss, the former president of the NSSF Steve Sanetti.⁵⁹ Basically, Curcuruto and Sanetti took the number of semiautomatic handguns and rifles that they believed were in the domestic stock and used an allocation formula to estimate the number of ammunition magazines in circulation.⁶⁰ Curcuruto could not recall the precise formula that he and Sanetti used.⁶¹ In particular, Curcuruto could not explain why that particular formula was used—or how it was justified—beyond a blanket suggestion that Sanetti had a good sense about the number of magazines in circulation and, as a result, Curcuruto trusted Sanetti’s judgement on this matter.⁶² When pressed during his deposition, Curcuruto admitted that an outside analyst would not be able to reproduce the NSSF estimates.⁶³ As discussed above, reproduction and

⁵⁶ *Id.*, para. 8.

⁵⁷ *Id.*, para. 13.

⁵⁸ *Id.*, para. 11.

⁵⁹ Deposition of James Curcuruto, *Wiese v. Bonta*, 2:17-cv-00903-WBS-KJN (E.D. Cal.), August 3, 2023, at 19:5-19:21, 121:8-153:22, available via Declaration of Andrew Hughes, Ex. 1, *Sullivan v. Ferguson*, 3:22-cv-05403-DGE (W.D. Was.), ECF 119-1 (“Curcuruto *Wiese* Deposition” hereinafter).

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.*, at 158:13-18:16. In his deposition in *Kolbe v. O’Malley* (D. Md.), Curcuruto discussed the allocation formula that was used to create the first NSSF magazine chart, which covered the time-period of 1990-2012. Deposition of James Curcuruto, *Kolbe v. O’Malley*, 13-cv-02841-CCB (D. Mary.), January 24, 2014, available via Response to Motion to Supplement Joint Appendix, Exhibit 1, ECF 119, *Kolbe v. Hogan*, No. 14-1945 (4th Cir.), April 13, 2016, at 33:19-48:15. Curcuruto provided a one-page worksheet outlining how the calculations were made. This sheet was marked as “Exhibit 12” of Curcuruto’s *Kolbe* deposition (attached here as **Exhibit F**). With the exception

replication are hallmarks of scientific analysis.⁶⁴ The NSSF estimations pertaining to ammunition magazines in circulation fail to meet these well-established scientific standards. As such, the data contained in the NSSF magazine charts are not reliable.⁶⁵

There is another serious concern with NSSF ammunition magazine estimates. Reviewing the four NSSF magazine charts that, respectively, cover the time periods of 1990-2012, 1990-2015, 1990-2018, and 1990-2021, demonstrates a trend that is farfetched (see **Exhibit G** for a table comparing the estimates contained in the four NSSF magazine charts). According to the NSSF, in the three-year period between 2012 and 2015, the number of ammunition magazines increased 46% from approximately 158 million to approximately 230 million, with the proportion of those magazines with a capacity greater than 10 rounds increasing from 47% to 50%. In the three-year period between 2015 and 2018, the number of ammunition magazines increased 32% from approximately 230 million to approximately 304 million, with the proportion of those magazines with a capacity greater than 10 rounds increasing from 50% to 53%. The jump between 2012 and 2018 from 158 million to 304 million marks a 92% increase. A near doubling of the domestic stock of ammunition magazines in just six years appears, on its face, incredulous. Nevertheless, this pales in comparison to the increase in the three-year period between 2018 and 2021. In this most recent timeframe, the number of ammunition magazines more than tripled, increasing 217% from approximately 304 million to approximately 964 million, with the proportion of those magazines

of MSR magazines, Curcuruto and Sanetti took rough estimates of how many semiautomatic handguns and rifles were in circulation and simply doubled that number to get the number of estimated magazines. For MSRs, they instead quadrupled the estimated number rifles to get a number of estimated magazines, which they then rounded down to the nearest ten million mark. However, the worksheet does not explain how the baseline number of firearms subject to allocation was determined, let alone why such a calculation was made that particular way. Similarly, the worksheet provides no justification for the formula used to allocate LCMs as a share of all magazines (e.g., 3/2 split was used to allocate pistol magazines by LCM status without an explanation or justification for why such an allocation was employed). In essence, what Curcuruto and Sanetti did amounts to “back-of-the-napkin” calculations using unknown baselines figures that are subjected to allocation formulas that lack an empirical basis. For this reason, the NSSF’s estimates are not replicable and without foundation.

⁶⁴ National Academies of Science, Engineering, and Medicine, *supra* note 25.

⁶⁵ Curcuruto also acknowledged that the NSSF’s ammunition magazine estimates included magazines belonging to law enforcement and security agencies, firearms wholesalers and retailers, prohibited owners (such as criminals and domestic abusers), as well as magazines that have been illegally trafficked to other countries. Furthermore, Curcuruto confirmed that the NSSF fails to account for magazine attrition, which is the number of ammunition magazines that are lost, decommissioned (including due to deterioration), and destroyed. See Curcuruto *Wiese* Deposition, 2023, *supra* note 59, at 126:9–127:22, 128:6–129:9, 131:18–133:3, 152:2-6.

with a capacity greater than 10 rounds increasing from 53% to 74%. To put these numbers in a different perspective, according to the NSSF, *in less than a decade*, the number of ammunition magazines in circulation increased over six-fold and the number of ammunition magazines in circulation with a capacity greater than 10 rounds increased nearly ten-fold.⁶⁶ With regard to rifle magazines with a capacity of 30 or more rounds, the alleged proliferation in just 9 years has been 1,395%—which is basically an astronomical 15-fold increase.

The NSSF’s most recent estimations of ammunition magazines in circulation appear to employ a methodology similar to the one that Curcuruto detailed in the *Wiese* case. As such, they cannot be verified, nor can they be reproduced.⁶⁷ Like the earliest iteration, the most recent NSSF magazine charts are without empirical foundation and unreliable.

As part of its 2024 Detachable Magazine Report, which contains the most recent iteration of the magazine chart, the NSSF also briefly mentions a national survey of gun owners that it conducted for purposes of determining the percentage of ammunition magazines that are personally owned.⁶⁸ The survey, including the survey instruments and the results, have not been made available for review and analysis. But some of the reported findings call the entirety of the survey into question. To begin with, the NSSF claims that its survey found that 36.3% of the U.S. population currently owns a firearm.⁶⁹ To put this in raw terms, according to the NSSF, approximately 121.2 million Americans own at least one firearm, which, if correct, would render

⁶⁶ It should be noted that the NSSF has not disavowed or abrogated its previous magazine charts, although raw data provided in an underlying, partly redacted Excel spreadsheet appears to offer different estimates from those offered in earlier iterations of the NSSF magazine charts. As a result, current estimates cannot be reproduced using older estimates. *See* Bates Number NSSF 002323.

⁶⁷ It appears that, for its most recent iteration of its magazine chart, the NSSF has altered its allocation formula. However, a review of some of the underlying data makes it clear that, again, the NSSF is merely applying simple allocation formulas across the board, without any empirical basis for employing such formulas. For example, reviewing a sampling of rifle magazine estimates from the 1990s indicates that they all produce whole number baselines when the estimates are divided by 0.55, which means that these estimates are all the product of being multiplied by the same factor. *See* Bates Number NSSF 002323. The NSSF is also still not identifying the baseline number of firearms that are being subjected to its allocation formulas. In essence, the NSSF’s magazine estimates continue to amount to “back-of-the-napkin” calculations using unknown baselines figures that are subjected to allocation formulas that lack an empirical basis. As with earlier estimates, the NSSF’s most recent estimates are not replicable and without foundation.

⁶⁸ NSSF, *Detachable Magazine Report, 1990-2021, 2024*, at 4, Bates Number NSSF 001997.

⁶⁹ *Id.*

all other national surveys drastically amiss. The NSSF is also reporting that 35.9% of gun owners possesses at least one handgun magazine with a capacity greater than 10 rounds and 24.3% of gun owners possesses at least one rifle magazine with a capacity greater than 10 rounds.⁷⁰ In other words, the NSSF is reporting that far more Americans own handgun magazines with a capacity greater than 10 rounds than own rifle magazines with a capacity greater than 10 rounds, while at the same time the NSSF is reporting that the number of rifle magazines with a capacity greater than 10 rounds in circulation (approximately 509 million) far outnumber the number of handgun magazines with a capacity greater than 10 rounds in circulation (approximately 209 million).⁷¹ This too is another inconsistent pattern, on its face, that the NSSF has failed to explain.

Furthermore, the NSSF is reporting that when the responses are combined, 43.3% of gun owners have at least one magazine with a capacity greater than 10 rounds.⁷² If 36.3% of the population (121.2 million people out of a total 334 million people) owns a gun, this would mean that 52.5 million people (which is 43.3% of 121.2 million people) own at least one magazine with a capacity greater than 10 rounds. The NSSF drew on its numbers to conclude that “approximately 8.9 percent of the U.S. population owns a magazine holding 11 or more rounds.”⁷³ The problem with this assertion is that the underlying numbers do not match. If one were to calculate 8.9% of the current U.S. population of 334 million people, it would mean that 29.7 million people, not 52.5 million people, own a magazine with a capacity greater than 10 rounds. These estimates should be identical. Instead, there is a substantial discrepancy, which the NSSF does not explain. Moreover, because the NSSF has not made its underlying survey instruments and data available, there is no way to verify and reproduce any of these findings, let alone uncover any possible errors made by the NSSF. As a result, NSSF figures pertaining to magazine ownership are, like NSSF magazine circulation estimates, unreliable.

⁷⁰ *Id.*

⁷¹ *Id.*, at 3-4, Bates Number NSSF 001996-NSSF 001997. *Compare* p. 3, Bates Number NSSF 001996, and p. 4, Bates Number NSSF 001997.

⁷² *Id.*, at 4, Bates Number NSSF 001997.

⁷³ *Id.*

IIIBiii. Inconsistencies Across the Different Sources on LCM Circulation and Ownership. The sources on LCM circulation and ownership rates—the English survey and the NSSF—are unreliable for the reasons discussed above. Furthermore, as with the estimates pertaining to AR-15-style rifles, the estimates pertaining to LCMs contradict each other. Again, both sources cannot be correct. And, given the flaws with each source, it is highly probable that their respective set of estimates are both inaccurate. Table 3 provides a breakdown of the key estimates that have been reported by each source.

Table 3
Comparison of English and NSSF Estimates

Source	Estimated Percentage of LCM Owners	Estimated Number of LCMs	Estimated Number of Americans That Personally Own LCMs
English Survey	48	551 million	39 million
NSSF	43.3	964 million	52.5 million

IIIC. Summary

As shown above, most sources that have attempted to gauge circulation and ownership of modern sporting rifles and LCMs are methodologically flawed and, therefore, unreliable. The bottom line is that the number of assault weapons and LCMs in circulation or that are personally owned by American gun owners is unknown. As such, the circulation and ownership rates for assault weapons and LCMs are indeterminable. One aspect of firearm circulation and ownership that is known with reasonable certainty is that handguns are the most common type of firearm in circulation and personally owned—not rifles, and most certainly not rifles that qualify as assault weapons.

IV. USE OF ASSAULT WEAPONS AND LCMs

Firearms are instruments of violence that are used to perpetrate violent crime (offensive gun uses) as well as to protect people or property (defensive gun uses). The following section draws on available evidence to discuss how assault weapons and LCMs are used in the United States for offensive and defensive purposes.

IVA. Offensive Gun Uses

Data on the use of assault weapons or LCMs to commit violent crimes other than mass shootings are sparse. Indeed, the only recent source to have examined this relationship appears to be a 2018 peer-reviewed analysis of “crime guns”—guns involved in a crime that have been recovered and traced—tied to violent crimes in 10 cities across the United States plus those traced nationwide by the ATF, at various times between 2011 and 2014.⁷⁴ The percentage of crime guns across the 10 metropolitan areas that were assault weapons ranged from a low of 2.4% in Baltimore, Maryland, to a high of 8.5% in Syracuse, New York. The mean average of assault-weapon averages for crime guns recovered across the 10 cities was 4.3%.⁷⁵ Similarly, approximately 5% of the nearly 500,000 crime guns traced nationwide by the ATF between 2013 and 2014 were assault weapons.⁷⁶

In addition, the study examined the firearm categories (handguns, rifles, or shotguns) of the recovered assault weapons in the 10 cities: “Assault rifles (e.g., variations of the AR-15 or AK-47) accounted for the majority of AWs [assault weapons] in all sites and more than three-quarters in all but one (Richmond). The remaining AWs [assault weapons] consisted entirely (or nearly so) of assault pistols (e.g., the TEC-9 or TEC-22).”⁷⁷

⁷⁴ Christopher S. Koper et al., “Criminal Use of Assault Weapons and High-Capacity Semiautomatic Firearms: An Updated Examination of Local and National Sources,” 95 *Journal of Urban Health* 313 (2018). The 10 cities covered in the study were Baltimore, MD, Hartford, CT, Kansas City, MO, Milwaukee, WI, Minneapolis, MN, Richmond, VA, Rochester, NY, Sacramento, CA, Seattle, WA, and Syracuse, NY.

⁷⁵ *Id.*, at 317.

⁷⁶ *Id.*, at 318.

⁷⁷ *Id.*, at 316.

The same study was also able to assess semiautomatic crime guns with LCMs recovered by police in 8 of the 10 cities.⁷⁸ The range ran from a low of 14.6% of recovered guns with LCMs in Syracuse, New York, to a high of 36.2% in both Kansas City, Missouri, and Seattle, Washington. The mean average of LCM-crime-gun averages in the 8 cities was 26.0%.⁷⁹ Comparing LCM-related incidents in 3 cities from the study timeframe to earlier data collected while the federal Assault Weapons Ban was in effect, the authors found upward trends ranging from 48.6% in Baltimore, Maryland, to a high of 111.5%, in Richmond, Virginia, in the decade or so since the federal ban expired.⁸⁰ The study's lead authors, in a follow-up study published in 2019, examined the data from Minneapolis, Minnesota, in greater depth and concluded that shootings involving "high-volume gunfire" (more than 10 shots fired) were more likely to involve an LCM.⁸¹ Moreover, in comparison to incidents that involved 10 or less shots fired, high-volume gunfire incidents were three times more likely to result in multiple gunshot-wound victims.⁸²

The initial 2018 study also reviewed FBI data on the firearms used in the murder of law enforcement officials between 2009 and 2013. After excluding instances where a police officer's own firearm was used to kill the officer, the study found that assault weapons and semiautomatic firearms with LCMs, respectively, accounted for 13.2% and 40.6% of the firearms that were used to shoot and kill police officers.⁸³ Of these assault weapons that were used to murder law enforcement officers, 97% were assault rifles.⁸⁴ Performing a trend analysis comparing the time-period of 2003-2007 to the time-period of 2009-2013, the authors found a 33.6% increase in the use of firearms with LCMs to murder police officers.⁸⁵

⁷⁸ *Id.*, at 317. Of the 10 cities listed in *supra* note 74, estimates were unavailable for Rochester, NY, and Sacramento, CA.

⁷⁹ *Id.*

⁸⁰ *Id.*, at 319.

⁸¹ Christopher S. Koper et al., "Gunshot Victimisations Resulting from High-Volume Gunfire Incidents in Minneapolis: Findings and Policy Implications," 25 *Injury Prevention* i9 (2019), at i10.

⁸² *Id.*

⁸³ Koper et al., *supra* note 74, at 318.

⁸⁴ *Id.*, at 317.

⁸⁵ *Id.*, at 319.

Unlike data on how assault weapons and LCMs relate to violent crime in general, there is ample data on how assault weapons and LCMs relate to mass shootings. A review of this data points to three key takeaways: (1) mass shootings resulting in double-digit fatalities are relatively modern phenomena in American history, related to the use of assault weapons and LCMs; (2) mass shootings pose a significant—and growing—threat to American public safety; and (3) high-fatality mass shootings, resulting in six or more victims killed, that have involved assault weapons and/or LCMs, on average, have resulted in a substantially larger loss of life than similar incidents that did not involve assault weapons and/or LCMs.⁸⁶

IVAi. Double-Digit Fatality Mass Shootings in American History Are Post-World War II Phenomena and They Often Involve Assault Weapons and LCMs. I examined the historical occurrence and distribution of mass shootings resulting in 10 or more victims killed since 1776 (Table 4). A lengthy search uncovered several informative findings.⁸⁷ In terms of the origins of this form of extreme gun violence, there is no known occurrence of a mass shooting resulting in double-digit fatalities at any point in time during the 173-year period between the nation’s founding in 1776 and 1948. The first known incident resulting in 10 or more deaths occurred in 1949. In other words, for 70% of its 247-year existence as a nation, the U.S. did not experience a mass shooting resulting in double-digit fatalities, making them relatively modern phenomena.

After the first such incident in 1949, 17 years passed until a similar mass shooting occurred in 1966. The third such mass shooting then occurred 9 years later, in 1975. And the fourth such

⁸⁶ For purposes of this report, mass shootings are defined in a manner consistent with my book *Rampage Nation*, *supra* note 1 (see Excerpt Attached as **Exhibit H**). “Mass shootings” are shootings resulting in four or more victims being shot (fatally or non-fatally), regardless of location or underlying motive. As a subset of mass shootings, “high-fatality mass shootings” (also referred to as “gun massacres”) are defined as shootings resulting in 6 or more victims being shot to death, regardless of location or underlying motive. The data on high-fatality mass shootings is from a data set that I maintain and continuously update. This data set is reproduced in **Exhibit I**. Unless stated otherwise, all of the data used to perform original analyses and to construct tables and figures in Section IVA of this report, as well as coding definitions, are drawn from **Exhibit I**.

⁸⁷ I searched for firearm-related “murders,” using variations of the term, setting a minimum fatality threshold of 10 in the Newspaper Archive online newspaper repository, available at www.newspaperarchive.com. The Newspaper Archive contains local and major metropolitan newspapers dating back to 1607. Incidents of large-scale, inter-group violence such as mob violence, rioting, combat or battle skirmishes, and attacks initiated by authorities acting in their official capacity were excluded.

incident occurred 7 years after, in 1982. Basically, the first few mass shootings resulting in 10 or more deaths did not occur until the post-World War II era. Furthermore, these first few double-digit-fatality incidents occurred with relative infrequency, although the temporal gap between these first four incidents shrank with each event (Table 4 and Figure 9).

The distribution of double-digit-fatality mass shootings changes in the early 1980s, when five such events took place in a span of just five years (Table 4 and Figure 9). This timeframe also reflects the first time that assault weapons were used to perpetrate mass shootings resulting in 10 or more deaths: the 1982 Wilkes-Barre, PA, massacre (involving an AR-15 rifle and resulting in 13 deaths) and the 1984 San Ysidro, CA, massacre (involving an Uzi pistol and resulting in 21 deaths). But this cluster of incidents was followed by a 20-year period in which only 2 double-digit-fatality mass shootings occurred (Figure 9). This period of time from 1987-2007 correlates with three important federal firearms measures: the 1986 Firearm Owners Protection Act, the 1989 C.F.R. “sporting use” importation restrictions, and the 1994 Federal Assault Weapons Ban.

It is well-documented in the academic literature that, after the Federal Assault Weapons Ban expired in 2004, mass shooting violence increased substantially.⁸⁸ Mass shootings that resulted in 10 or more deaths were no exception, following the same pattern. In the 56 years from 1949 through 2004, there were a total of 10 mass shootings resulting in double-digit fatalities (a frequency rate of one incident every 5.6 years). In the 18 years since 2004, there have been 20 double-digit-fatality mass shootings (a frequency rate of one incident every 0.9 years). In other words, the frequency rate has increased over six-fold since the Federal Assault Weapons Ban expired (Table 4 and Figure 9).

Overall, over three-quarters of the mass shootings resulting in 10 or more deaths involved assault weapons and/or LCMs (Table 4).

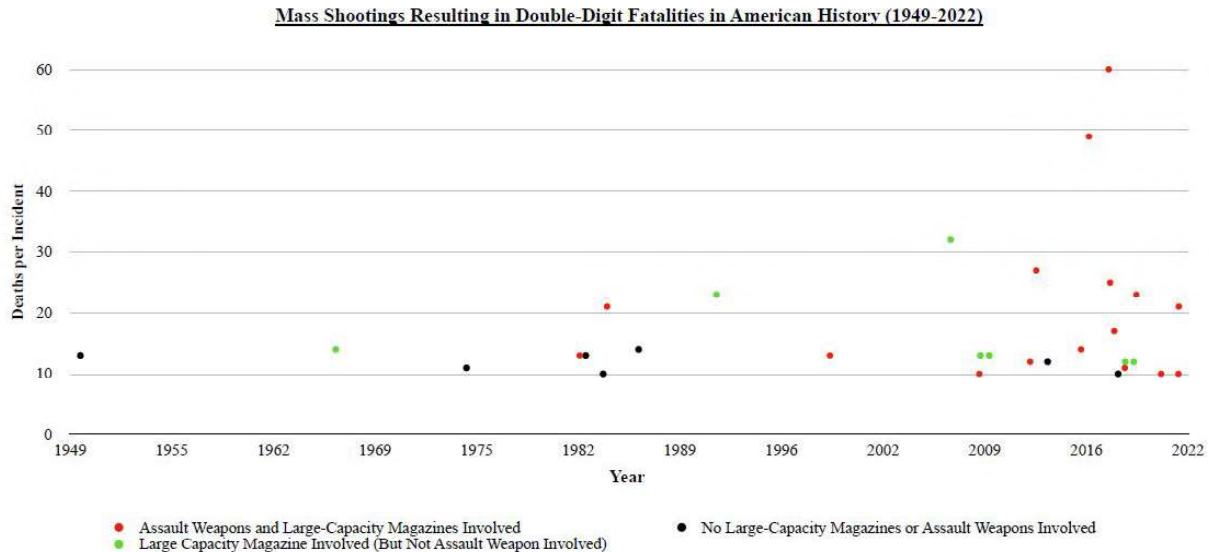
⁸⁸ See, for example, Louis Klarevas, *supra* note 1; Louis Klarevas et al., *supra* note 2; Charles DiMaggio et al., “Changes in US Mass Shooting Deaths Associated with the 1994-2004 Federal Assault Weapons Ban: Analysis of Open-Source Data,” 86 *Journal of Trauma and Acute Care Surgery* 11 (2019); Lori Post et al., “Impact of Firearm Surveillance on Gun Control Policy: Regression Discontinuity Analysis,” 7 *JMIR Public Health and Surveillance* (2021); and Philip J. Cook and John J. Donohue, “Regulating Assault Weapons and Large-Capacity Magazines for Ammunition,” 328 *JAMA*, September 27, 2022.

Table 4
Mass Shootings Resulting in Double-Digit Fatalities in U.S. History, 1776-2022

	Date	Location	Deaths	Involved Assault Weapon(s)	Involved LCM(s)
1	9/6/1949	Camden, NE	13	N	N
2	8/1/1966	Austin, TX	14	N	Y
3	3/30/1975	Hamilton, OH	11	N	N
4	9/25/1982	Wilkes-Barre, PA	13	Y	Y
5	2/18/1983	Seattle, WA	13	N	N
6	4/15/1984	Brooklyn, NY	10	N	N
7	7/18/1984	San Ysidro, CA	21	Y	Y
8	8/20/1986	Edmond, OK	14	N	N
9	10/16/1991	Killeen, TX	23	N	Y
10	4/20/1999	Littleton, CO	13	Y	Y
11	4/16/2007	Blacksburg, VA	32	N	Y
12	3/10/2009	Geneva County, AL	10	Y	Y
13	4/3/2009	Binghamton, NY	13	N	Y
14	11/5/2009	Fort Hood, TX	13	N	Y
15	7/20/2012	Aurora, CO	12	Y	Y
16	12/14/2012	Newtown, CT	27	Y	Y
17	9/16/2013	Washington, DC	12	N	N
18	12/2/2015	San Bernardino, CA	14	Y	Y
19	6/12/2016	Orlando, FL	49	Y	Y
20	10/1/2017	Las Vegas, NV	60	Y	Y
21	11/5/2017	Sutherland Springs, TX	25	Y	Y
22	2/14/2018	Parkland, FL	17	Y	Y
23	5/18/2018	Santa Fe, TX	10	N	N
24	10/27/2018	Pittsburgh, PA	11	Y	Y
25	11/7/2018	Thousand Oaks, CA	12	N	Y
26	5/31/2019	Virginia Beach, VA	12	N	Y
27	8/3/2019	El Paso, TX	23	Y	Y
28	3/22/2021	Boulder, CO	10	Y	Y
29	5/14/2022	Buffalo, NY	10	Y	Y
30	5/24/2022	Uvalde, TX	21	Y	Y

Note: Death tolls do not include perpetrators. An incident was coded as involving an assault weapon if at least one of the firearms discharged was defined as an assault weapon in (1) the 1994 Federal Assault Weapons Ban or (2) the statutes of the state where the gun massacre occurred. An incident was coded as involving an LCM if at least one of the firearms discharged had an ammunition-feeding device holding more than 10 rounds.

Figure 9
Mass Shootings Resulting in Double-Digit Fatalities in U.S. History, 1949-2022



IV.Aii. Mass Shootings Are a Growing Threat to Public Safety. Examining mass-casualty acts of violence in the United States since 1991 points to two disturbing patterns. First, as demonstrated in Table 5, the deadliest individual acts of intentional criminal violence in the United States since the terrorist attack of September 11, 2001, have all been mass shootings. Second, as displayed in Figures 10-11, the problem of high-fatality mass shooting violence is on the rise. To put the increase over the last three decades into perspective, between the 1990s and the 2010s, the average population of the United States increased approximately 20%. However, when the number of people killed in high-fatality mass shootings in the 1990s is compared to the number killed in such incidents in the 2010s, it reflects an increase of 260%. In other words, the rise in mass shooting violence has far outpaced the rise in national population—by a factor of 13. A key takeaway from these patterns and trends is that mass shootings pose a significant—and growing—threat to American public safety.

Table 5
The Deadliest Acts of Intentional Criminal Violence in the U.S. since 9/11

	Deaths	Date	Location	Type of Violence
1	60	October 1, 2017	Las Vegas, NV	Mass Shooting
2	49	June 12, 2016	Orlando, FL	Mass Shooting
3	32	April 16, 2007	Blacksburg, VA	Mass Shooting
4	27	December 14, 2012	Newtown, CT	Mass Shooting
5	25	November 5, 2017	Sutherland Springs, TX	Mass Shooting
6	23	August 3, 2019	El Paso, TX	Mass Shooting
7	21	May 24, 2022	Uvalde, TX	Mass Shooting

Figure 10
Annual Trends in High-Fatality Mass Shooting Incidents, 1991-2022

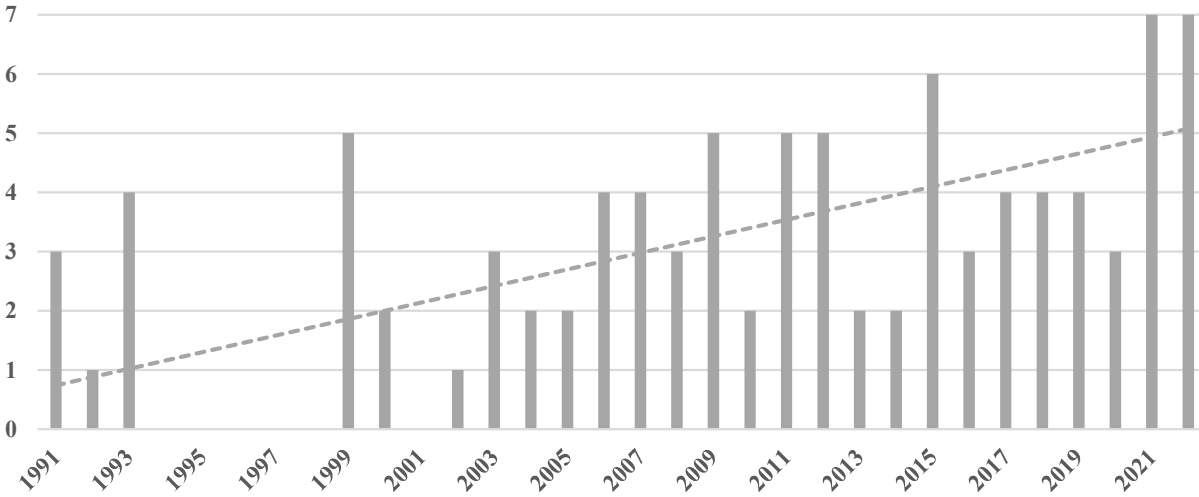
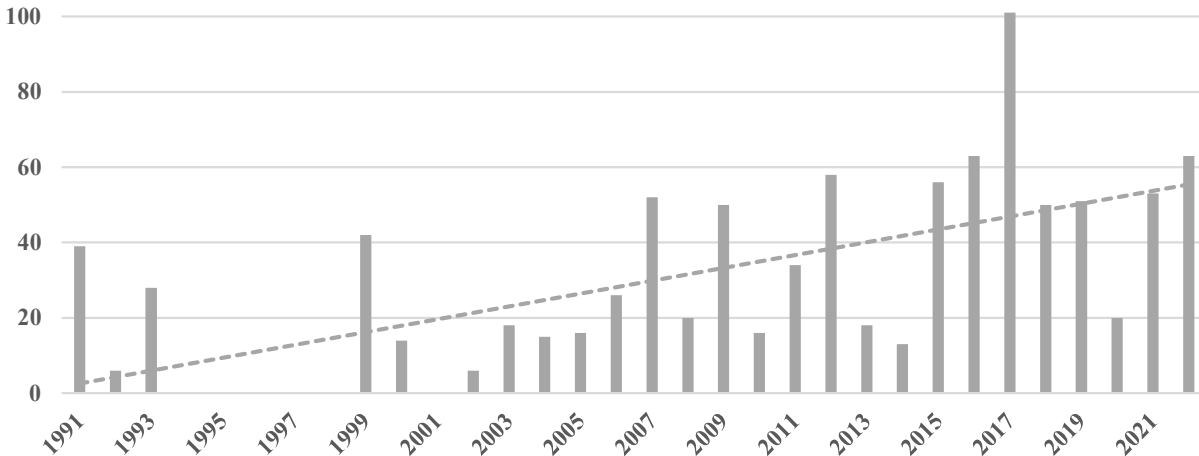


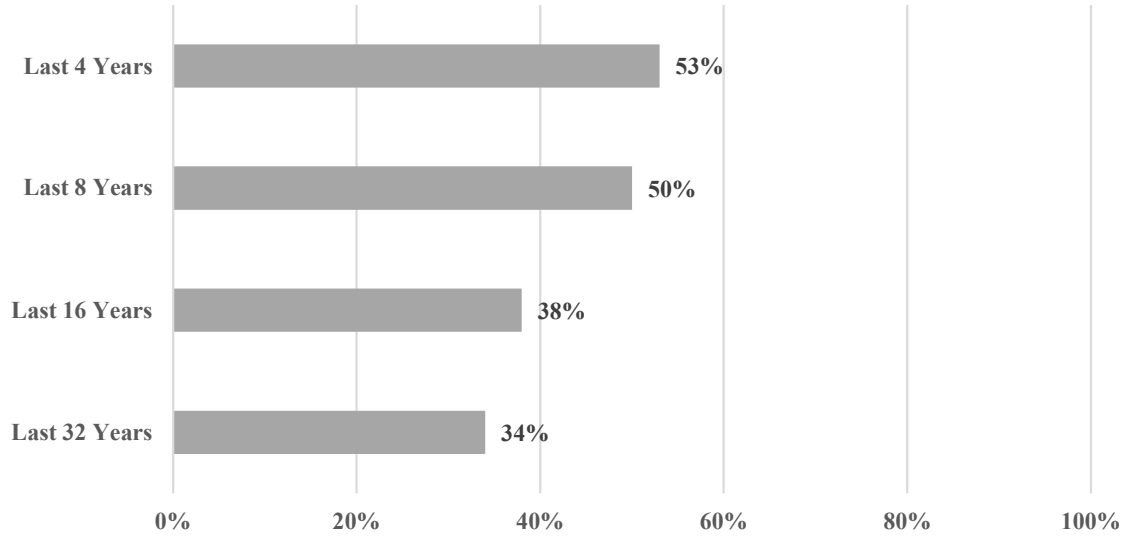
Figure 11
Annual Trends in High-Fatality Mass Shooting Fatalities, 1991-2022



IVAiii. The Use of Assault Weapons and LCMs Are Major Factors in the Rise of Mass Shooting Violence. In addition to showing that the frequency and lethality of high-fatality mass shootings are on the rise nationally, the data point to another striking pattern: both assault weapons and LCMs are being used with increased frequency to perpetrate gun massacres. As shown in Figures 12-14, based on high-fatality mass shootings where details allow a determination on the use of assault weapons and LCMs are available, the pattern is particularly marked of late, with over half of all incidents in the last four years involving assault weapons, all incidents in the last four years involving LCMs having a capacity greater than 10 rounds, regardless of the type of firearm (“federal definition” hereinafter), and four out of five incidents involving LCMs having a capacity greater than 10 rounds for long guns and greater than 15 rounds for handguns, as defined by Illinois statute (“Illinois definition” hereinafter). As shown in Figures 15-17, a similar pattern is found when examining deaths in high-fatality mass shootings in the last four years, with 62% of deaths resulting from incidents involving assault weapons, 100% of deaths resulting from incidents involving LCMs as defined by the 1994 federal statute, and 82% of deaths resulting from incidents involving LCMs as defined by Illinois statute. These trends clearly demonstrate that, among perpetrators of gun massacres, there is a growing preference for using assault weapons and LCMs to pull off their attacks.⁸⁹

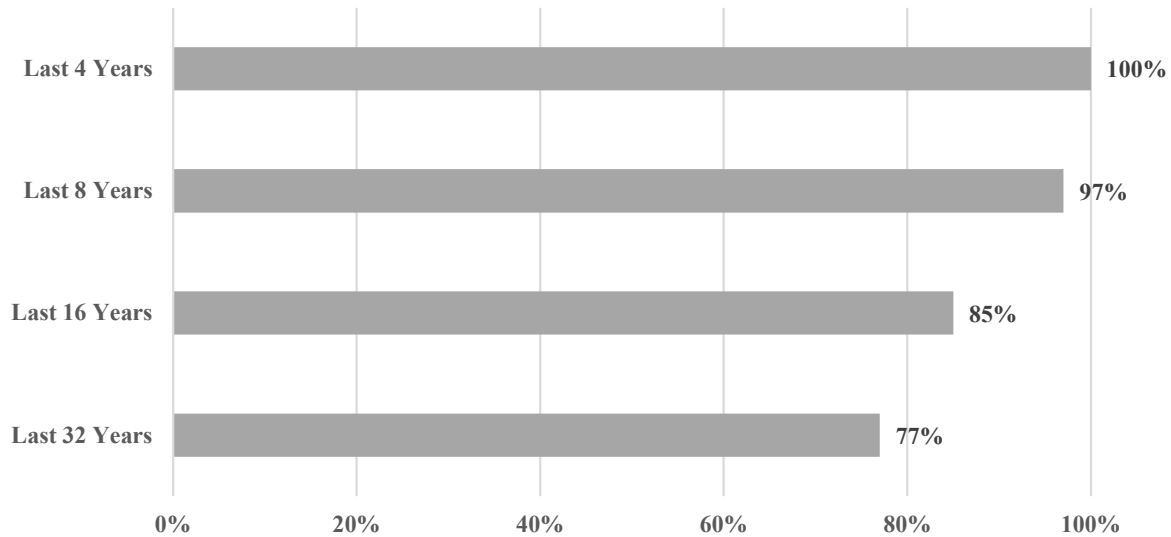
⁸⁹ Out of all 93 high-fatality mass shootings in the United States between 1991 and 2022, it cannot be determined whether LCMs were used in 14 of those incidents. Furthermore, for 2 of these 14 incidents, it is also not possible to determine whether they involved assault weapons. Therefore, the tables, figures, and percentages discussed in Sections IVAii and IVAiii of this report are based on calculations that only use data points from the incidents in which the involvement of assault weapons and/or LCMs could be determined.

Figure 12
Share of High-Fatality Mass Shooting Incidents Involving Assault Weapons, 1991-2022



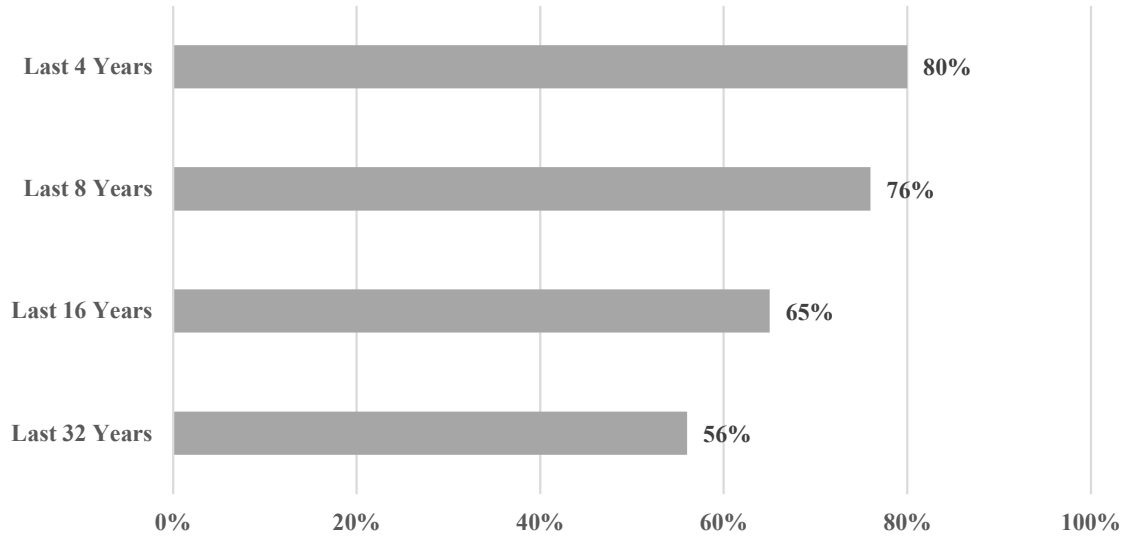
Note: The calculations in Figure 12 exclude incidents in which the firearms used are unknown.

Figure 13
Share of High-Fatality Mass Shooting Incidents Involving LCMs (Federal Definition of LCMs), 1991-2022



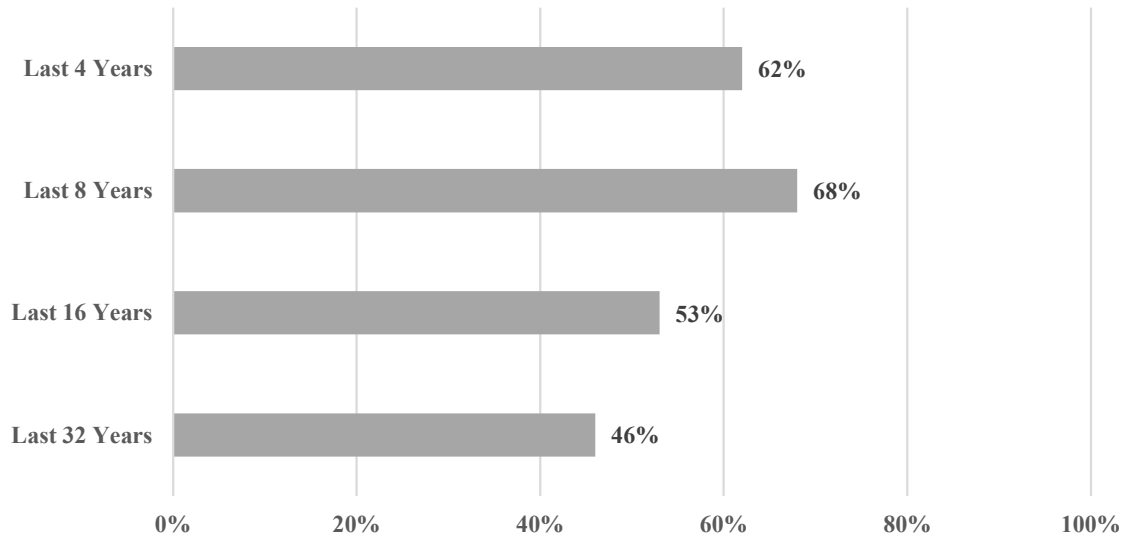
Note: The calculations in Figure 13 exclude incidents in which it is unknown if LCMs were used.

Figure 14
Share of High-Fatality Mass Shooting Incidents Involving LCMs (Illinois Definition of LCMs), 1991-2022



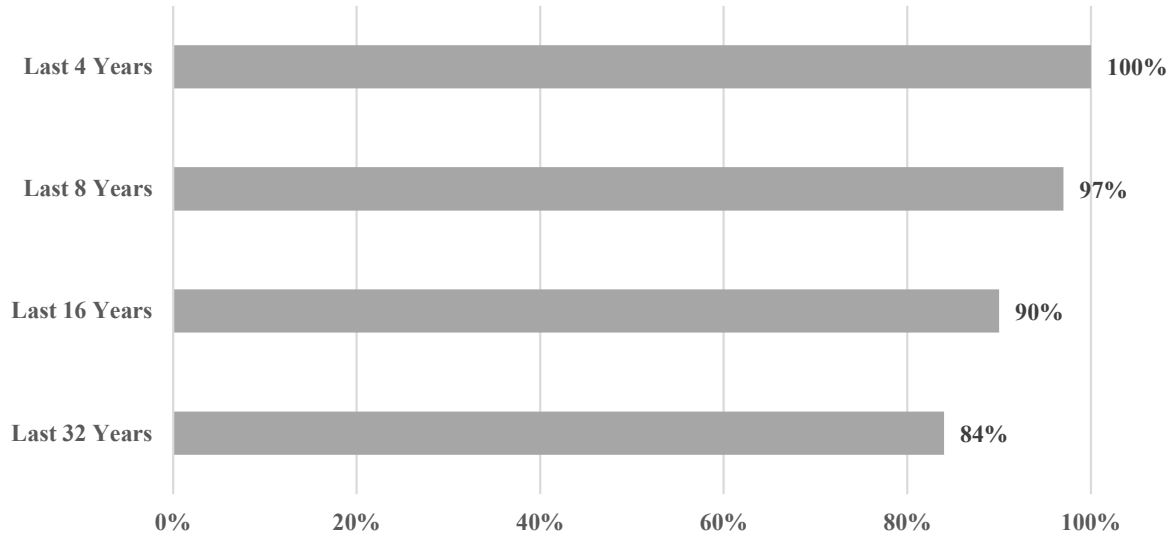
Note: The calculations in Figure 14 exclude incidents in which it is unknown if LCMs were used.

Figure 15
Share of High-Fatality Mass Shooting Deaths Resulting from Incidents Involving Assault Weapons, 1991-2022



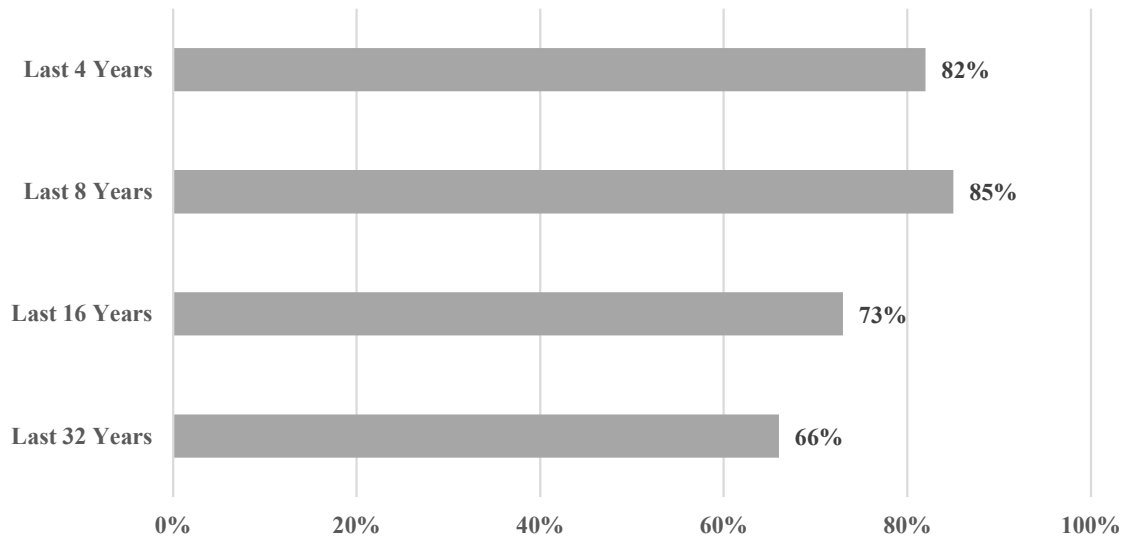
Note: The calculations in Figure 15 exclude incidents in which the firearms used are unknown.

Figure 16
Share of High-Fatality Mass Shooting Deaths Resulting from Incidents Involving LCMs (Federal Definition of LCMs), 1991-2022



Note: The calculations in Figure 16 exclude incidents in which it is unknown if LCMs were used.

Figure 17
Share of High-Fatality Mass Shooting Deaths Resulting from Incidents Involving LCMs (Illinois Definition of LCMs), 1991-2022



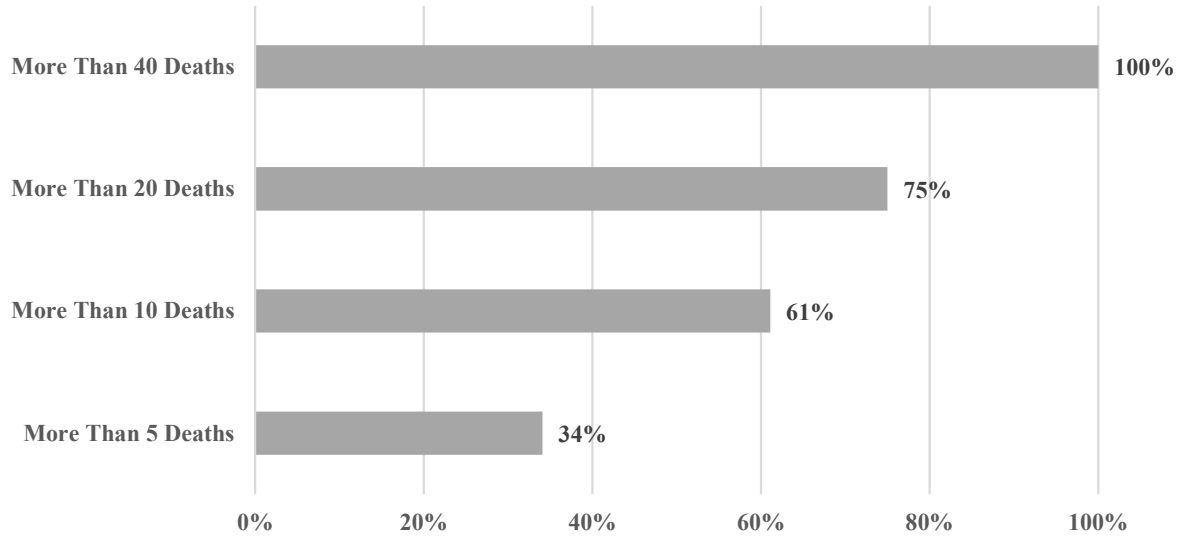
Note: The calculations in Figure 17 exclude incidents in which it is unknown if LCMs were used.

Another pattern that stands out when examining the relationship between assault weapons use and mass shooting violence reflects the disproportionately greater lethality associated with the use of assault weapons and LCMs. For instance, returning to the list of the 7 deadliest individual acts of intentional criminal violence in the United States since the coordinated terrorist attack of September 11, 2001, besides all seven of the incidents being mass shootings, 6 of the 7 incidents (86%) involved assault weapons and LCMs, as shown in Table 6. When examining all high-fatality mass shootings since 1991, the relationship between assault weapons use, LCM use, and higher death tolls is striking. In the past 32 years, assault weapons have been used in 34% of all high-fatality mass shootings, and LCMs as defined by the federal government and by Illinois have been used, respectively, in 77% and 56% of all high-fatality mass shootings. However, as the fatality thresholds of such incidents increase, so too do the shares of incidents involving assault weapons and LCMs. For instance, assault weapons were used in 75% of all mass shootings resulting in more than 20 deaths, and LCMs as defined by the federal government and by Illinois were used, respectively, in 100% and 88% of all mass shootings resulting in more than 20 deaths (Figures 18-20). As the data show, there is an association between mass shooting lethality and the use of assault weapons and LCMs.

Table 6
The Use of Assault Weapons and LCMs in the Deadliest Acts of Intentional Criminal Violence in the U.S. since 9/11

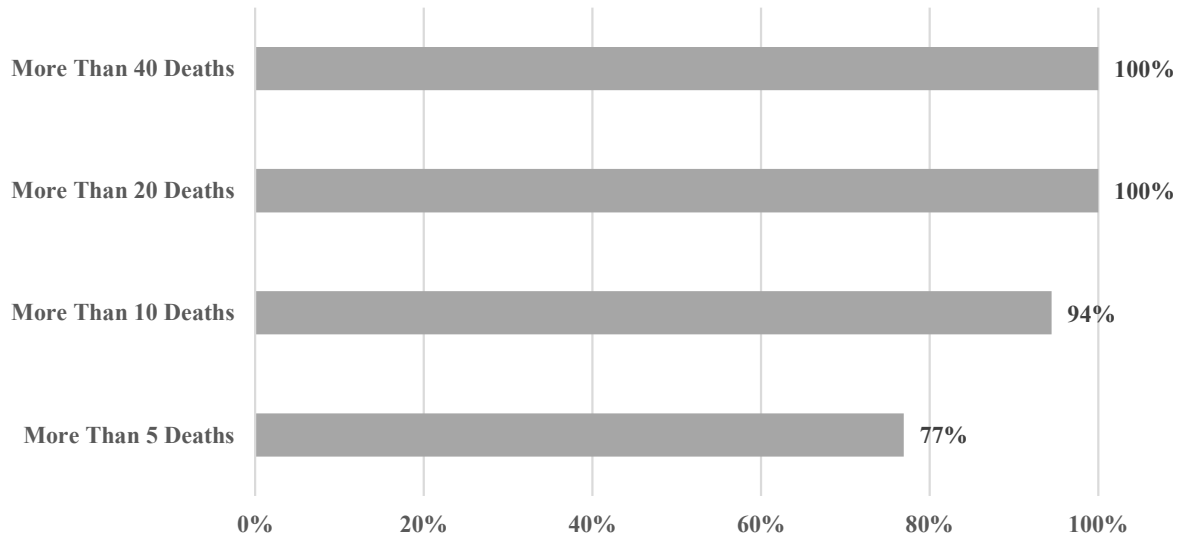
Deaths	Date	Location	Involved Assault Weapons	Involved LCMs (Federal Definition)	Involved LCMs (Illinois Definition)
60	10/1/2017	Las Vegas, NV	✓ (AR-15)	✓	✓
49	6/12/2016	Orlando, FL	✓ (AR-15)	✓	✓
32	4/16/2007	Blacksburg, VA		✓	
27	12/14/2012	Newtown, CT	✓ (AR-15)	✓	✓
25	11/5/2017	Sutherland Springs, TX	✓ (AR-15)	✓	✓
23	8/3/2019	El Paso, TX	✓ (AK-47)	✓	✓
21	5/24/2022	Uvalde, TX	✓ (AR-15)	✓	✓

Figure 18
Percentage of High-Fatality Mass Shootings Involving Assault Weapons by Fatality Threshold, 1991-2022



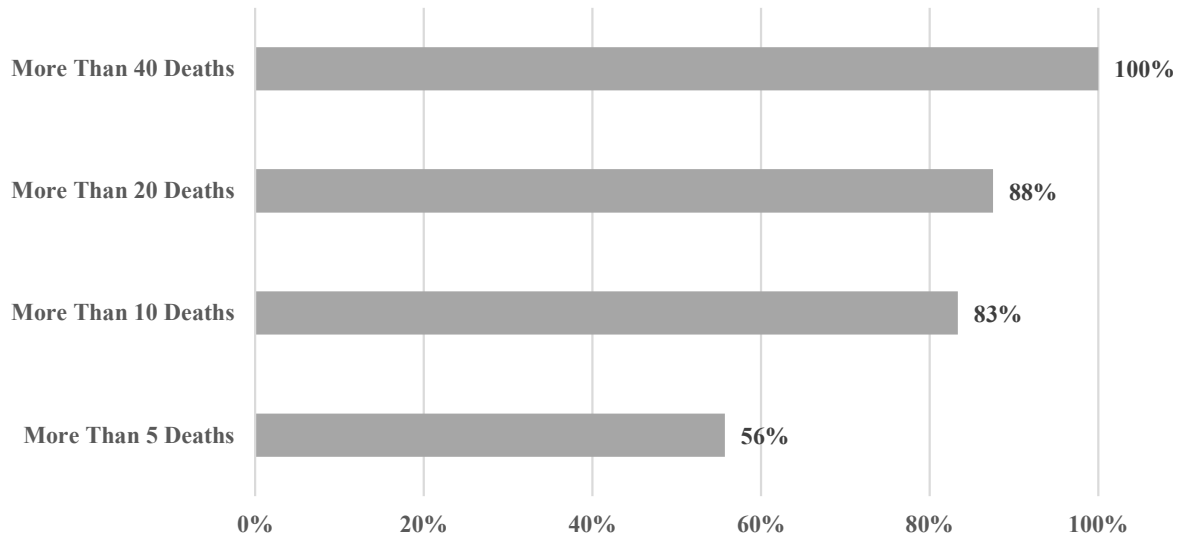
Note: The calculations in Figure 18 exclude incidents in which the firearms used are unknown.

Figure 19
Percentage of High-Fatality Mass Shootings Involving LCMs (Federal Definition of LCMs) by Fatality Threshold, 1991-2022



Note: The calculations in Figure 19 exclude incidents in which it is unknown if LCMs were used.

Figure 20
Percentage of High-Fatality Mass Shootings Involving LCMs (Illinois Definition of LCMs)
by Fatality Threshold, 1991-2022



Note: The calculations in Figure 20 exclude incidents in which it is unknown if LCMs were used.

Of the 91 high-fatality mass shootings since January 1, 1991, in which the type of firearm used is known, 31 involved assault weapons, resulting in 425 deaths. The average death toll for these 31 incidents is 13.7 fatalities per shooting. By contrast, the average death toll for the 60 incidents in which it is known assault weapons were not used (which resulted in 490 fatalities) is 8.2 fatalities per shooting (Table 7). Furthermore, defining LCMs using the capacity threshold of the 1994 federal ban, of the 79 high-fatality mass shootings since January 1, 1991, in which LCM use was determined, 61 involved LCMs, resulting in 704 deaths. The average death toll for these 61 incidents is 11.5 fatalities per shooting. The average death toll for the 18 incidents in which it is known LCMs were not used (which resulted in 132 fatalities) is 7.3 fatalities per shooting (Table 8). Reviewing the same 79 incidents for LCM involvement using the capacity threshold of the 2023 Illinois ban, 44 involved LCMs, resulting in 553 deaths. The average death toll for these 44 incidents is 12.6 fatalities per shooting. The average death toll for the 35 incidents in which it is known LCMs were not used (which resulted in 283 fatalities) is 8.1 fatalities per shooting (Table 8). In other words, in the last 32 years, the use of assault weapons and both types of LCMs (federal

and Illinois definitions) in gun massacres has, correspondingly, resulted in 67%, 58%, and 56% increases in average fatalities per incident (Tables 7-8).

Tables 9 and 10 show the average death tolls per high-fatality mass shooting incident that are attributable to assault weapons beyond deaths associated with the use of LCMs. In terms of the 1994 federal ban's magazine capacity threshold, when LCMs are not used, the average death toll is 7.3 fatalities. When LCMs are used, but not in conjunction with assault weapons, the average death toll is 9.2 fatalities. When LCMs are used with assault weapons, the average death toll is 14.0 fatalities. In terms of the 2023 Illinois ban's magazine capacity threshold, when LCMs are not used, the average death toll is 8.1 fatalities. When LCMs are used, but not in conjunction with assault weapons, the average death toll is 9.6 fatalities. When LCMs are used with assault weapons, the average death toll is 14.0 fatalities. The data show that using LCMs, as defined by the 1994 federal ban, without an assault weapon resulted in a 26% increase in the average death toll. However, using LCMs, as defined by the 1994 federal ban, with an assault weapon resulted in a 52% increase in the average death toll associated with incidents that involved LCMs without assault weapons and a 92% increase in the average death toll associated with incidents that involved neither LCMs nor assault weapons. The data also show that using LCMs, as defined by the 2023 Illinois ban, without an assault weapon results in a 19% increase in the average death toll. However, using LCMs, as defined by the 2023 Illinois ban, with an assault weapon results in a 46% increase in the average death toll associated with incidents that involved LCMs without assault weapons and a 73% increase in the average death toll associated with incidents that involve neither LCMs nor assault weapons. In other words, regardless of which magazine capacity threshold is used to code incidents, the increase in the death tolls for high-fatality mass shootings that involve LCMs and/or assault weapons is partly attributable to LCMs and partly attributable to assault weapons.

This review of the data suggests that assault weapons *and* LCMs are force multipliers when used in mass shootings.

Table 7
The Average Death Tolls Associated with the Use of Assault Weapons in High-Fatality Mass Shootings in the U.S., 1991-2022

	Average Death Toll for Incidents That Did Not Involve the Use of Assault Weapons	Average Death Toll for Incidents That Did Involve the Use of Assault Weapons	Percent Increase in Average Death Toll Associated with the Use of Assault Weapons
1991-2022	8.2 Deaths	13.7 Deaths	67%

Note: The calculations in Table 7 exclude incidents in which the firearms used are unknown.

Table 8
The Average Death Tolls Associated with the Use of LCMs in High-Fatality Mass Shootings in the U.S., 1991-2022

	Average Death Toll for Incidents That Did Not Involve the Use of LCMs	Average Death Toll for Incidents That Did Involve the Use of LCMs	Percent Increase in Average Death Toll Associated with the Use of LCMs
1991-2022 (Federal Definition of LCM)	7.3 Deaths	11.5 Deaths	58%
1991-2022 (Illinois Definition of LCM)	8.1 Deaths	12.6 Deaths	56%

Note: The calculations in Table 8 exclude incidents in which it is unknown if LCMs were used.

Table 9
The Average Death Tolls Associated with the Use of LCMs (Federal Definition of LCMs) and Assault Weapons in High-Fatality Mass Shootings in the U.S., 1991-2022

Average Death Toll for Incidents Not Involving LCMs or AWs	Average Death Toll for Incidents Involving LCMs but Not AWs	Percent Increase	Average Death Toll for Incidents Involving LCMs but Not AWs	Average Death Toll for Incidents Involving LCMs and AWs	Percent Increase	Average Death Toll for Incidents Not Involving LCMs or AWs	Average Death Toll for Incidents Involving LCMs and AWs	Percent Increase
7.3	9.2	26%	9.2	14.0	52%	7.3	14.0	92%

Note: The calculations in Table 9 exclude incidents in which it is unknown if assault weapons or LCMs were used.

Table 10
The Average Death Tolls Associated with the Use of LCMs (Illinois Definition of LCMs) and Assault Weapons in High-Fatality Mass Shootings in the U.S., 1991-2022

Average Death Toll for Incidents Not Involving LCMs or AWs	Average Death Toll for Incidents Involving LCMs but Not AWs	Percent Increase	Average Death Toll for Incidents Involving LCMs but Not AWs	Average Death Toll for Incidents Involving LCMs and AWs	Percent Increase	Average Death Toll for Incidents Not Involving LCMs or AWs	Average Death Toll for Incidents Involving LCMs and AWs	Percent Increase
8.1	9.6	19%	9.6	14.0	46%	8.1	14.0	73%

Note: The calculations in Table 10 exclude incidents in which it is unknown if assault weapons or LCMs were used.

IVB. Defensive Gun Uses

There is very little systematically-collected evidence pertaining to defensive gun uses (DGUs) involving LCMs or assault weapons. The two main sources are the English survey and FBI reports on active shooter events in the United States.

IVBi. The English Survey. The English survey asked respondents to indicate whether they have ever been involved in a DGU: “Have you ever defended yourself or your property with a firearm, even if it was not fired or displayed? Please do not include military service, police work, or work as a security guard.” Overall, the survey found that 4,654 respondents (out of 15,258 qualifying respondents) indicated that they had engaged in a combined 9,077 DGUs.⁹⁰ As a percentage, 31% of the qualifying survey pool had engaged in at least one DGU. In terms of the nature of the DGU, 51% involved brandishing a gun, 18% involved firing a gun, and 31% involved “neither” (which appears to be a category created to capture DGUs that implied that the defender possessed a gun

⁹⁰ To identify the 15,258 qualified number of respondents for inclusion in the analysis of reported DGUs, respondents were first screened to make sure that they had identified themselves as gun owners who completed the survey and answered the screening question toward the end of the survey with “none of the above” as prompted by the questionnaire. This resulted in 15,271 total respondents. From this group, 13 respondents, who did not answer the question of how many DGUs they had engaged in, were excluded, bring the final qualifying group to 15,258 respondents. All the survey data on DGUs came from the publicly available data set that Professor English uploaded to the Harvard Dataverse, *supra* note 11.

without a physical use of the gun).⁹¹ The English survey found that 66% of DGUs involved a handgun, 21% involved a rifle (this would include, but not be limited to, AR-15-style rifles), and 13% involved a shotgun. The vast majority of DGUs, 79%, occurred on the defender's property, with over two-thirds of DGUs on the defender's property occurring outside the home and just under one-third occurring inside the home. The remaining 21% of DGUs breakdown as follows: 9% in public, 5% on someone else's property (either outside or inside someone else's home), 3% at work, and 4% at a location broadly classified as some "other" location. In terms of a pattern, most gun owners appear to have never engaged in a DGU. However, for those who indicated that they had engaged in at least one DGU, it appears that most common type of DGU occurred on one's property and involved the brandishing of a handgun.⁹²

Because the survey asked participants to identify whether or not they had ever owned AR-15-style rifles or LCMs, it is possible to compare these respondents with respondents who never owned AR-15-style rifles or LCMs. Beginning with owners of AR-15-style rifles, a clear distinction emerges: respondents who indicated that they have owned AR-15-style rifles have engaged in far more DGUs than respondents who indicated that they have never owned such rifles. Those who have owned AR-15-style rifles made up 30% of the qualifying survey pool, yet they accounted for 50% of gun owners who had engaged in a DGU. Furthermore, while most DGUs for both categories of respondents (those who have and have not owned AR-15-style rifles) have

⁹¹ The "neither" option in the survey was worded as follows: "Neither (for example, you verbally told someone you had a gun and that was sufficient)." If "neither" responses are excluded on grounds that they did not physically involve the use of firearm, the overall number of DGUs is reduced by 31%.

⁹² There are numerous studies that call into question the veracity and/or accuracy of self-reported DGUs. See, for example, David Hemenway, "Survey Research and Self-Defense Gun Use: An Explanation of Extreme Overestimates," 87 *Journal of Criminal Law and Criminology* 1430 (1997); David Hemenway, "The Myth of Millions of Annual Self-Defense Gun Uses: A Case Study of Survey Overestimates of Rare Events," 10 *Chance* 6 (1997); Philip J. Cook, Jens Ludwig, and David Hemenway, "The Gun Debate's New Mythical Number: How Many Defensive Uses Per Year? 16 *Journal of Policy Analysis and Management* 463 (1997); John P. May et al., "Medical Care Solicitation by Criminals with Gunshot Wound Injuries: A Survey of Washington D.C. Jail Detainees," 48 *Journal of Trauma* 130 (2000); and John P. May and David Hemenway, "Do Criminals Go to the Hospital When They are Shot?" 8 *Injury Prevention* 236 (2002). One study in particular had five criminal court judges assess the self-reported accounts provided by gun owners who felt that they were engaging in a legitimate DGU and a majority of the judges, after assuming that the armed defenders had a permit authorizing them to carry a concealed weapon, concluded that the majority of accounts were illegal uses of a firearm. David Hemenway, Matthew Miller, and Deborah Azrael, "Gun Use in the United States: Results from Two National Surveys, 6 *Injury Prevention* 263 (2000).

been instances where a firearm was brandished (51% for both groups), by a margin of nearly two-to-one, owners of AR-15-style rifles discharged their firearms in DGUs more often than respondents who never owned an AR-15-style rifle.

Two other patterns—both similarities—also emerge from a review of the survey data. Most DGUs occurred on the defender’s property and most DGUs involved a handgun. Only 16% of DGUs involving respondents who never owned an AR-15-style rifle involved a rifle (of any type). For respondents who have owned an AR-15-style rifle, 25% of DGUs involved a rifle (of any type). While the latter percentage is larger than the former percentage, the data still indicate that handguns are the preferred weapon for purposes of defense—for those who have never owned AR-15-style rifles (using handguns in 70% of their DGUs) as well as those who have owned AR-15-style rifles (using handguns in 63% of their DGUs).⁹³

The English survey also sheds light on how those who have owned and have never owned LCMs engage in DGUs. As with respondents who have owned AR-15-style rifles, respondents who indicated that they have owned LCMs have engaged in disproportionately more DGUs than those respondents who indicated that they have never owned LCMs. Even though LCM owners accounted for 47% of all gun owners who participated in the survey, they accounted for 68% of all respondents who indicated that they had used a gun for defensive purposes.⁹⁴ All things being

⁹³ Another fascinating distinction between those who owned AR-15-style rifles and those who have never owned AR-15-style rifles involves the likelihood of being engaged in five or more DGUs. Owners of AR-15-style rifles made up 30% of the survey pool, but they accounted for 62% of the respondents who had engaged in five or more DGUs in their lifetimes. The majority of these for both groups involved handguns, not rifles, although, again, those who indicated that they have owned AR-15-style rifles discharged their firearms in DGUs at a rate that was double that of those who indicated that they have never owned AR-15-style rifles. One unexpected finding relates to the age of owners of AR-15-style rifles who have engaged in five or more DGUs. Intuitively, one would expect that the most likely gun owners to have engaged in five or more DGUs in their lifetimes would be those in the older demographic half (over 50 years of age). However, for both those who have owned AR-15-style rifles as well as those who have never owned AR-15-style rifles, those adults 50 years of age and under account for over half of the respondents who indicated that they have engaged in five or more DGUs. But more striking, while those adults 50 and under who never owned an AR-15-style rifle accounted for 55% of non-AR-15 owners who had engaged in five or more DGUs, adult owners of AR-15-style rifles 50 and under accounted for 82% of all AR-15 owners who had engaged in five or more DGUs. This is a substantial difference that reflects a higher likelihood of younger AR-15 owners to become more frequently engaged in DGUs.

⁹⁴ These are raw survey results that have not been subjected to weighting. As such, the results should be treated with caution as they might not be accurate or reliable.

equal, it would be expected that LCM-owners would participate in DGUs at a rate that is similar to their population among all gun owners.

The English survey data that allow for analysis of the relationship between DGUs, on the one hand, and owners of LCMs or AR-15-style rifles, on the other hand, are raw, unweighted data. It is unclear if the patterns just discussed would persist if the data were properly weighted. However, *on the assumption that these patterns would persist*, the English survey makes it clear that there is no evidence that rifles are the preferred firearm for defense of self, others, or property, not even for owners of AR-15-style rifles.⁹⁵ Indeed, there is no evidence whatsoever in the English survey that AR-15-style rifles are even used in DGUs.⁹⁶ A key takeaway from the survey, in terms of DGUs, is that handguns are the most commonly used firearms for defensive purposes.

IVBii. FBI Active Shooter Reports. An important question that, until now, has gone unanswered is: Are assault weapons used as frequently to stop mass shootings as they are to perpetrate them?⁹⁷ As shown above, assault weapons have been used in over one-third of high-fatality mass shootings since 1991 (Figure 12). And in the past eight years, the share of high-fatality mass shootings that have involved assault weapons has risen to at least half (Figure 12).

The Federal Bureau of Investigation (FBI) has been documenting active shooter incidents since 2000.⁹⁸ According to the FBI, active shootings are violent attacks that involve “one or more

⁹⁵ While not directly related to DGUs, Professor English does claim that, when assessing ownership of AR-15-style rifles, “Using survey weights based on in-survey demographics of firearms ownership has no effect on this estimate.” English, *supra* note 7, at 33, Bates Number FFL SHARED 001062. Because Professor English does not report specific weighted results, this claim cannot be properly verified.

⁹⁶ In all fairness, this is because the English survey did not probe what specific types of rifles were used in DGUs. However, the *Washington Post*, in its survey, found that owners of AR-15-style rifle owners also owned rifles that would not be considered AR-15-style rifles. Guskin, Tambe, and Gerberg, *supra* note 33, Bates Numbers FFL SHARED 000315-000325.

⁹⁷ Given the limitations of the active shooter incident data reported by the FBI, it is not possible to discern whether any of the civilian DGUs involved an armed civilian using a firearm with an LCM at the time of the intervention. As such, it is not possible to perform a similar comparison between mass shootings perpetrated with LCM-equipped firearms and mass shootings thwarted with LCM-equipped firearms.

⁹⁸ All of the information in this sub-section, including definitions and data, are publicly available from the FBI. See FBI, *Active Shooter Safety Resources*, available at <https://www.fbi.gov/how-we-can-help-you/safety-resources/active-shooter-safety-resources>.

individuals actively engaged in killing or attempting to kill people in a populated area.”⁹⁹ A simple way to conceptualize active shooter incidents is to think of them as attempted mass shootings. As part of its analysis of attempted mass shootings, the FBI identifies incidents that involved armed civilians using their personal firearms to intervene, regardless of whether the interventions were successful in stopping the attacks and/or neutralizing the perpetrator(s).

In the 23 years between January 1, 2000, and December 31, 2022, the FBI has identified 456 active shootings occurring in the United States. Out of these 456 active shooter incidents, 18 incidents (3.9%) involved defensive gun uses (DGUs) by civilians, excluding law enforcement or armed security.¹⁰⁰ Of these 18 DGUs, the firearm used by an armed private citizen intervening was identifiable in 17 incidents; 14 involved handguns and the remaining three involved long guns (one shotgun, one bolt-action rifle, and one rifle that would qualify as an assault weapon).¹⁰¹ In other words, out of the 17 incidents where an armed civilian intervened and it was possible to identify the DGU firearm, only one incident (5.9%) involved an assault weapon.¹⁰² Within the broader context of all active shooter incidents, only one incident out of 456 in the past 23 years (0.2%) is known to have involved an armed civilian intervening with an assault weapon.¹⁰³

⁹⁹ FBI, *Active Shooter Incidents in the United States in 2022*, April 2023, at 1, available at <https://www.fbi.gov/file-repository/active-shooter-incidents-in-the-us-2022-042623.pdf/view>. The FBI adds, “Implicit in this definition is the shooter’s use of one or more firearms. The *active* aspect of the definition inherently implies the ongoing nature of the incidents, and thus the potential for the response to affect the outcome.” *Id.* (emphasis in original). In addition to the report on incidents in 2022, the FBI has published seven other reports on active shooter incidents covering the following seven time-periods: 2000-2013, 2014-2015, 2016-2017, 2018, 2019, 2020, and 2021. All of these reports are available at the FBI’s Active Shooter Safety Resources website, *supra* note 98.

¹⁰⁰ In 17 of the 18 DGU-involved active shooter incidents, there was an exchange of gunfire. For the one incident that did not involve an exchange of gunfire, the gun (a handgun) was in the possession of a person who helped to detain the active shooter after the shooting had ceased. FBI, *supra* notes 98 and 99.

¹⁰¹ All 14 DGU incidents that involved handguns also involved armed civilians who held valid concealed-carry permits or were legally carrying their handguns. *Id.* In 12 of these 14 incidents, details about the types of handguns used in self-defense were available in news media accounts or in news media photographs from the crime scene. In two of the 14 incidents, the use of concealed handguns was inferred based on details about the shooting reported in news media accounts. There is no evidence that either of these two DGU incidents involved an assault pistol.

¹⁰² The FBI also identifies an incident in which an armed individual (a local firefighter) subdued and detained a school shooter, but there is no evidence that the armed firefighter drew his handgun during the incident. *Id.* Moreover, local authorities have refused to comment on whether the firefighter ever drew his handgun. See Carla Field, *Firefighter Was Armed During Takedown of Shooting Suspect, Sheriff Says*, WYFF, October 3, 2016, available at <https://www.wyff4.com/article/firefighter-was-armed-during-takedown-of-shooting-suspect-sheriff-says/7147424>. Adding this incident to the 17 DGU-involved incidents where the type of firearm was identifiable would mean that 5.6% (as opposed to 5.9%) of the active shooter incidents, where an armed civilian intervened, involved an assault weapon.


¹⁰³ FBI, *supra* notes 98 and 99. The one DGU that involved an assault weapon was the 2017 church massacre in Sutherland Springs, Texas. In that incident, an armed private citizen used an AR-15-style rifle to wound the perpetrator as he was attempting to flee the scene. While the perpetrator was still able to flee the scene despite being

IVC. Summary

As shown above, while assault weapons as well as firearms with LCMs are used to perpetrate violent crime, particularly the murder of police officers, their most prominent criminal use appears to be to perpetrate multiple-victim shootings. Mass shootings resulting in double-digit fatalities are relatively modern phenomena in American history, related to the use of assault weapons and LCMs. In the present era, high-fatality mass shootings, resulting in six or more victims killed, pose a significant—and growing—threat to American public safety. In particular, high-fatality mass shootings involving assault weapons and/or LCMs, on average, have resulted in a substantially larger loss of life than similar incidents that did not involve assault weapons and/or LCMs. Most high-fatality mass shootings now involve assault weapons and LCMs, which serve as force multipliers associated with higher average death tolls when used. Comparing offensive to defensive uses shows that assault weapons are used by civilians with a far greater frequency to perpetrate mass shootings than to stop them. Indeed, in terms of defensive gun uses, in general, the quintessential firearm used by the majority of gun owners appears to be the handgun. This may even be the case for owners of AR-15-style rifles, who appear to use handguns, not rifles, in the majority of their defensive gun uses.

shot, minutes later, he crashed his vehicle trying to escape and then took his life with his own firearm before law enforcement could apprehend him. See Adam Roberts, *Man Who Shot Texas Gunman Shares His Story*, KHBS/KHOG, November 7, 2017, available at <https://www.4029tv.com/article/man-who-shot-texas-church-gunman-shares-his-story/13437943>.

Executed on the 10th of May, 2024, at Nassau County, NY



A handwritten signature in black ink, appearing to be 'Louis Klarevas', written over a horizontal line. The signature is stylized with a large initial 'L' and 'K'.

Louis Klarevas

EXHIBIT A

Louis J. Klarevas
Email: lj2149@tc.columbia.edu

Education

Ph.D. International Relations, 1999
School of International Service
American University
Washington, DC

B.A. Political Science, *Cum Laude*, 1989
School of Arts and Sciences
University of Pennsylvania
Philadelphia, PA

Author

Rampage Nation: Securing America from Mass Shootings

Current Positions

Research Professor, Teachers College, Columbia University, New York, NY, 2018-Present

Faculty Affiliate, Media and Social Change Lab (MASCLab), Teachers College, Columbia University, New York, NY, 2019-Present

Professional Experience

Academic Experience (Presented in Academic Years)

Associate Lecturer, Department of Global Affairs, University of Massachusetts – Boston, Boston, MA, 2015-2020

Senior Fulbright Scholar (Security Studies), Department of European and International Studies, University of Macedonia, Thessaloniki, Greece, 2011-2012

Founder and Coordinator, Graduate Transnational Security Program, Center for Global Affairs, New York University, New York, NY, 2009-2011

Faculty Affiliate, A. S. Onassis Program in Hellenic Studies, New York University, New York, NY, 2007-2011

Clinical Faculty, Center for Global Affairs, New York University, New York, NY, 2006-2011

Adjunct Professor, Center for Global Affairs, New York University, New York, NY, 2004-2006

Assistant Professor of Political Science, City University of New York – College of Staten Island,
Staten Island, NY, 2003-2006

Associate Fellow, European Institute, London School of Economics and Political Science,
London, England, UK, 2003-2004

Defense Analysis Research Fellow, London School of Economics and Political Science, London,
England, UK, 2002-2004

Visiting Assistant Professor of Political Science and International Affairs, George Washington
University, Washington, DC, 1999-2002

Adjunct Professor of Political Science, George Washington University, Washington, DC, 1998-
1999

Adjunct Professor of International Relations, School of International Service, American
University, Washington, DC, 1994-1995

Dean's Scholar, School of International Service, American University, Washington, DC, 1989-
1992

Professional Experience (Presented in Calendar Years)

Consultant, National Joint Terrorism Task Force, Federal Bureau of Investigation, Washington,
DC, 2015

Writer, Prometheus Books, Amherst, NY, 2012-2015

Consultant, United States Institute of Peace, Washington, DC, 2005, 2008-2009

Research Associate, United States Institute of Peace, Washington, DC, 1992-1998

Faculty Advisor, National Youth Leadership Forum, Washington, DC, 1992

Courses Taught

Graduate

Counter-Terrorism and Homeland Security
International Political Economy
International Politics in a Post-Cold War Era
International Security
Machinery and Politics of American Foreign Policy
Role of the United States in World Affairs
Security Policy
Theories of International Politics
Transnational Security
Transnational Terrorism
United States Foreign Policy

Undergraduate

American Government and Politics
European-Atlantic Relations
International Political Economy
International Relations
Transnational Terrorism
United States Foreign Policy

Scholarship

“Protocol for a Nationwide Case-Control Study of Firearm Violence Prevention Tactics and Policies in K-12 Schools,” *PLOS ONE*, forthcoming 2024 (co-authored with Navjot Buttar, Sonali Rajan, et al.)

“State Firearm Laws, Gun Ownership, and K-12 School Shootings: Implications for School Safety,” *Journal of School Violence*, 2022 (co-authored with Paul M. Reeping, Sonali Rajan, et al.)

“The Effect of Large-Capacity Magazine Bans on High-Fatality Mass Shootings, 1990-2017,” *American Journal of Public Health*, November 2019 (co-authored with Andrew Conner and David Hemenway)

“Changes in U.S. Mass Shooting Deaths Associated with the 1994-2004 Federal Assault Weapons Ban,” *Journal of Trauma and Acute Care Surgery*, May 2019 (correspondence)

Firearms on College Campuses: Research Evidence and Policy Implications, report prepared by the Johns Hopkins University Center for Gun Policy and Research for the Association of American Universities, October 2016 (co-authored with Daniel W. Webster, John J. Donohue, et al.)

Rampage Nation: Securing America from Mass Shootings, Prometheus Books, 2016

“No Relief in Sight: Barring *Bivens* Suits in Torture Cases,” *Presidential Studies Quarterly*, June 2013

Review of James Edward Miller’s *The United States and the Making of Modern Greece: History and Power, 1950-1974*, *Presidential Studies Quarterly*, June 2012 (book review)

“Trends in Terrorism Since 9/11,” *Georgetown Journal of International Affairs*, Winter/Spring 2011

“The Death Penalty Should Be Decided Only Under a Specific Guideline,” in Christine Watkins, ed., *The Ethics of Capital Punishment* (Cengage/Gale Publishers, 2011)

Saving Lives in the ‘Convoy of Joy’: Lessons for Peace-Keeping from UNPROFOR, United States Institute of Peace Case Study, 2009

“Casualties, Polls and the Iraq War,” *International Security*, Fall 2006 (correspondence)

“The CIA Leak Case Indicting Vice President Cheney’s Chief of Staff,” *Presidential Studies Quarterly*, June 2006

“Were the Eagle and the Phoenix Birds of a Feather? The United States and the 1967 Greek Coup,” *Diplomatic History*, June 2006

“Greeks Bearing Consensus: An Outline for Increasing Greece’s Soft Power in the West,” *Mediterranean Quarterly*, Summer 2005

“W Version 2.0: Foreign Policy in the Second Bush Term,” *The Fletcher Forum of World Affairs*, Summer 2005

“Can You Sue the White House? Opening the Door for Separation of Powers Immunity in *Cheney v. District Court*,” *Presidential Studies Quarterly*, December 2004

“Political Realism: A Culprit for the 9/11 Attacks,” *Harvard International Review*, Fall 2004

Greeks Bearing Consensus: An Outline for Increasing Greece’s Soft Power in the West, Hellenic Observatory Discussion Paper 18, London School of Economics, November 2004

Were the Eagle and the Phoenix Birds of a Feather? The United States and the 1967 Greek Coup, Hellenic Observatory Discussion Paper 15, London School of Economics, February 2004

“Not a Divorce,” *Survival*, Winter 2003-2004 (correspondence)

“Media Impact,” in Mark Rozell, ed., *The Media and American Politics: An Introduction* (Lanham, MD: Rowman & Littlefield, 2003)

“The Surrender of Alleged War Criminals to International Tribunals: Examining the Constitutionality of Extradition via Congressional-Executive Agreement,” *UCLA Journal of International Law and Foreign Affairs*, Fall/Winter 2003

“The Constitutionality of Congressional-Executive Agreements: Insights from Two Recent Cases,” *Presidential Studies Quarterly*, June 2003

“The ‘Essential Domino’ of Military Operations: American Public Opinion and the Use of Force,” *International Studies Perspectives*, November 2002

“The Polls—Trends: The United States Peace Operation in Somalia,” *Public Opinion Quarterly*, Winter 2001

American Public Opinion on Peace Operations: The Cases of Somalia, Rwanda, and Haiti, University of Michigan Dissertation Services, 1999

“Turkey’s Right v. Might Dilemma in Cyprus: Reviewing the Implications of *Loizidou v. Turkey*,” *Mediterranean Quarterly*, Spring 1999

“An Outline of a Plan Toward a Comprehensive Settlement of the Greek-Turkish Dispute,” in Vangelis Calotychos, ed., *Cyprus and Its People: Nation, Identity, and Experience in an Unimaginable Community, 1955-1997*, Boulder, CO: Westview Press, 1998 (co-authored with Theodore A. Couloumbis)

“Prospects for Greek-Turkish Reconciliation in a Changing International Setting,” in Tozun Bahcheli, Theodore A. Couloumbis, and Patricia Carley, eds., *Greek-Turkish Relations and U.S. Foreign Policy: Cyprus, the Aegean, and Regional Stability*, Washington, D.C.: U.S. Institute of Peace, 1997 (co-authored with Theodore A. Couloumbis) [Reproduced as “Prospects for Greek-Turkish Reconciliation in a Changing International Setting,” in Robert L. Pfaltzgraff and Dimitris Keridis, eds., *Security in Southeastern Europe and the U.S.-Greek-Relationship*, London: Brassey’s, 1997 (co-authored with Theodore A. Couloumbis)]

“Structuration Theory in International Relations,” *Swords & Ploughshares*, Spring 1992

Commentaries and Correspondence

“Why Our Response to School Shootings Is All Wrong,” *Los Angeles Times*, May 25, 2022 (co-authored with Sonali Rajan and Charles Branas)

“COVID-19 Is a Threat to National Security. Let’s Start Treating It as Such,” *Just Security*, August 6, 2020 (co-authored with Colin P. Clarke)

“If the Assault Weapons Ban ‘Didn’t Work,’ Then Why Does the Evidence Suggest It Saved Lives?” *Los Angeles Times*, March 11, 2018 (correspondence)

“London and the Mainstreaming of Vehicular Terrorism,” *The Atlantic*, June 4, 2017 (co-authored with Colin P. Clarke)

“Firearms Have Killed 82 of the 86 Victims of Post-9/11 Domestic Terrorism,” *The Trace*, June 30, 2015 [Reproduced as “Almost Every Fatal Terrorist Attack in America since 9/11 Has Involved Guns.” *Vice*, December 4, 2015]

“International Law and the 2012 Presidential Elections,” Vitoria Institute, March 24, 2012

“Al Qaeda Without Bin Laden,” CBS News *Opinion*, May 2, 2011

“Fuel, But Not the Spark,” *Zocalo Public Square*, February 16, 2011

“After Tucson, Emotions Run High,” *New York Times*, January 12, 2011 (correspondence)

“WikiLeaks, the Web, and the Need to Rethink the Espionage Act,” *The Atlantic*, November 9, 2010

“Deprogramming Jihadis,” *New York Times Magazine*, November 23, 2008 (correspondence)

“Food: An Issue of National Security,” *Forbes* (Forbes.com), October 25, 2008

“An Invaluable Opportunity for Greece To Increase Its Standing and Influence on the World Stage,” *Kathimerini* (Greece), January 13, 2005

“How Many War Deaths Can We Take?” *Newsday*, November 7, 2003

“Down But Not Out,” London School of Economics Iraq War Website, April 2003

“Four Half-Truths and a War,” *American Reporter*, April 6, 2003

“The Greek Bridge between Old and New Europe,” *National Herald*, February 15-16, 2003

“Debunking a Widely-Believed Greek Conspiracy Theory,” *National Herald*, September 21-22, 2002

“Debunking of Elaborate Media Conspiracies an Important Trend,” *Kathimerini* (Greece), September 21, 2002 [Not Related to September 21-22, 2002, *National Herald* Piece with Similar Title]

“Cold Turkey,” *Washington Times*, March 16, 1998

“If This Alliance Is to Survive . . .,” *Washington Post*, January 2, 1998 [Reproduced as “Make Greece and Turkey Behave,” *International Herald Tribune*, January 3, 1998]

“Defuse Standoff on Cyprus,” *Defense News*, January 27-February 2, 1997

“Ukraine Holds Nuclear Edge,” *Defense News*, August 2-8, 1993

Commentaries Written for *New York Daily News* – <https://www.nydailynews.com/authors/?author=Louis+Klarevas>

“Careful How You Talk about Suicide, Mr. President,” March 25, 2020 (co-authored with Sonali Rajan, Charles Branas, and Katherine Keyes)

“Only as Strong as Our Weakest Gun Laws: The Latest Mass Shooting Makes a Powerful Case for Federal Action,” November 8, 2018

“What to Worry, and not Worry, About: The Thwarted Pipe-Bomb Attacks Point to Homeland Security Successes and Vulnerabilities,” October 25, 2018

“After the Santa Fe Massacre, Bury the ‘Good Guy with a Gun’ Myth: Armed Staffers Won’t Deter Shooters or Keep Kids Safe,” May 22, 2018

“It’s the Guns (and Ammo), Stupid: Dissuading Killers and Hardening Targets Matter Too, But Access to Weapons Matters Most,” February 18, 2018

“The Texas Shooting Again Reveals Inadequate Mental-Health Help in the U.S. Military,” November 7, 2017

“Why Mass Shootings Are Getting Worse: After Vegas, We Urgently Must Fix Our Laws,” October 2, 2017

“N.Y. Can Lead the Nation in Fighting Child Sex Trafficking,” April 21, 2009 (co-authored with Ana Burdsall-Morse)

“Crack Down on Handguns – They’re a Tool of Terror, Too,” October 25, 2007

Commentaries Written for *The Huffington Post* – www.huffingtonpost.com/louis-klarevas

“Improving the Justice System Following the Deaths of Michael Brown and Eric Garner,” December 4, 2014

“American Greengemony: How the U.S. Can Help Ukraine and the E.U. Break Free from Russia’s Energy Stranglehold,” March 6, 2014

“Guns Don’t Kill People, Dogs Kill People,” October 17, 2013

“Romney the Liberal Internationalist?” October 23, 2012

“Romney’s Unrealistic Foreign Policy Vision: National Security Funded by Money Growing Trees,” October 10, 2012

“Do the Wrong Thing: Why Penn State Failed as an Institution,” November 14, 2011

“Holding Egypt’s Military to Its Pledge of Democratic Reform,” February 11, 2011

“The Coming Twivolutions? Social Media in the Recent Uprisings in Tunisia and Egypt,” January 31, 2011

“Scholarship Slavery: Does St. John’s ‘Dean of Mean’ Represent a New Face of Human Trafficking?” October 6, 2010

“Misunderstanding Terrorism, Misrepresenting Islam,” September 21, 2010

“Bombing on the Analysis of the Times Square Bomb Plot,” May 5, 2010

“Do the Hutaree Militia Members Pose a Terrorist Threat?” May 4, 2010

“Addressing Mexico’s Gun Violence One Extradition at a Time,” March 29, 2010

“Terrorism in Texas: Why the Austin Plane Crash Is an Act of Terror,” February 19, 2010

“Securing American Primacy by Tackling Climate Change: Toward a National Strategy of Greengemony,” December 15, 2009

“Traffickers Without Borders: A ‘Journey’ into the Life of a Child Victimized by Sex Trafficking,” November 17, 2009

“Beyond a Lingering Doubt: It’s Time for a New Standard on Capital Punishment,” November 9, 2009

“It’s the Guns Stupid: Why Handguns Remain One of the Biggest Threats to Homeland Security,” November 7, 2009

“Obama Wins the 2009 Nobel Promise Prize,” October 9, 2009

Commentaries for *Foreign Policy* – www.foreignpolicy.com

“The White House’s Benghazi Problem,” September 20, 2012

“Greeks Don’t Want a Grexit,” June 14, 2012

“The Earthquake in Greece,” May 7, 2012

“The Idiot Jihadist Next Door,” December 1, 2011

“Locked Up Abroad,” October 4, 2011

Commentaries for *The New Republic* – www.tnr.com/users/louis-klarevas

- “What the U.N. Can Do To Stop Getting Attacked by Terrorists,” September 2, 2011
- “Is It Completely Nuts That the British Police Don’t Carry Guns? Maybe Not,” August 13, 2011
- “How Obama Could Have Stayed the Execution of Humberto Leal Garcia,” July 13, 2011
- “After Osama bin Laden: Will His Death Hasten Al Qaeda’s Demise?” May 2, 2011
- “Libya’s Stranger Soldiers: How To Go After Qaddafi’s Mercenaries,” February 28, 2011
- “Closing the Gap: How To Reform U.S. Gun Laws To Prevent Another Tucson,” January 13, 2011
- “Easy Target,” June 13, 2010
- “Death Be Not Proud,” October 27, 2003 (correspondence)

Legal Analyses Written for *Writ* – writ.news.findlaw.com/contributors.html#klarevas

- “Human Trafficking and the Child Protection Compact Act of 2009,” *Writ* (FindLaw.com), July 15, 2009 (co-authored with Christine Buckley)
- “Can the Justice Department Prosecute Reporters Who Publish Leaked Classified Information? Interpreting the Espionage Act,” *Writ* (FindLaw.com), June 9, 2006
- “Will the Precedent Set by the Indictment in a Pentagon Leak Case Spell Trouble for Those Who Leaked Valerie Plame’s Identity to the Press?” *Writ* (FindLaw.com), August 15, 2005
- “Jailing Judith Miller: Why the Media Shouldn’t Be So Quick to Defend Her, and Why a Number of These Defenses Are Troubling,” *Writ* (FindLaw.com), July 8, 2005
- “The Supreme Court Dismisses the Controversial Consular Rights Case: A Blessing in Disguise for International Law Advocates?” *Writ* (FindLaw.com), June 6, 2005 (co-authored with Howard S. Schiffman)
- “The Decision Dismissing the Lawsuit against Vice President Dick Cheney,” *Writ* (FindLaw.com), May 17, 2005
- “The Supreme Court Considers the Rights of Foreign Citizens Arrested in the United States,” *Writ* (FindLaw.com), March 21, 2005 (co-authored with Howard S. Schiffman)

Presentations and Addresses

In addition to the presentations listed below, I have made close to one hundred media appearances, book events, and educational presentations (beyond lectures for my own classes)

“Mass Shootings: What We Know, What We Don’t Know, and Why It All Matters,” keynote presentation to be delivered at the Columbia University Center for Injury Science and Prevention Annual Symposium, virtual meeting, May 2020

“K-12 School Environmental Responses to Gun Violence: Gaps in the Evidence,” paper presented at Society for Advancement of Violence and Injury Research Annual Meeting, virtual meeting, April 2020 (co-authored with Sonali Rajan, Joseph Erardi, Justin Heinze, and Charles Branas)

“Active School Shootings,” Post-Performance Talkback following Presentation of *17 Minutes*, Barrow Theater, New York, January 29, 2020 (co-delivered with Sonali Rajan)

“Addressing Mass Shootings in Public Health: Lessons from Security Studies,” Teachers College, Columbia University, November 25, 2019

“Rampage Nation: Securing America from Mass Shootings,” Swarthmore College, October 24, 2019

“Rampage Nation: Securing America from Mass Shootings,” University of Pennsylvania, February 9, 2018

“Treating Mass Shootings for What They Really Are: Threats to American Security,” Framingham State University, October 26, 2017

“Book Talk: Rampage Nation,” Teachers College, Columbia University, October 17, 2017

Participant, Roundtable on Assault Weapons and Large-Capacity Magazines, Annual Conference on Second Amendment Litigation and Jurisprudence, Law Center to Prevent Gun Violence, October 16, 2017

“Protecting the Homeland: Tracking Patterns and Trends in Domestic Terrorism,” address delivered to the annual meeting of the National Joint Terrorism Task Force, June 2015

“Sovereign Accountability: Creating a Better World by Going after Bad Political Leaders,” address delivered to the Daniel H. Inouye Asia-Pacific Center for Security Studies, November 2013

“Game Theory and Political Theater,” address delivered at the School of Drama, State Theater of Northern Greece, May 2012

“Holding Heads of State Accountable for Gross Human Rights Abuses and Acts of Aggression,” presentation delivered at the Michael and Kitty Dukakis Center for Public and Humanitarian Service, American College of Thessaloniki, May 2012

Chairperson, Cultural Enrichment Seminar, Fulbright Foundation – Southern Europe, April 2012

Participant, Roundtable on “Did the Intertubes Topple Hosni?” Zócalo Public Square, February 2011

Chairperson, Panel on Democracy and Terrorism, annual meeting of the International Security Studies Section of the International Studies Association, October 2010

“Trends in Terrorism Within the American Homeland Since 9/11,” paper to be presented at the annual meeting of the International Security Studies Section of the International Studies Association, October 2010

Panelist, “In and Of the World,” Panel on Global Affairs in the 21st Century, Center for Global Affairs, New York University, March 2010

Moderator, “Primacy, Perils, and Players: What Does the Future Hold for American Security?” Panel of Faculty Symposium on Global Challenges Facing the Obama Administration, Center for Global Affairs, New York University, March 2009

“Europe’s Broken Border: The Problem of Illegal Immigration, Smuggling and Trafficking via Greece and the Implications for Western Security,” presentation delivered at the Center for Global Affairs, New York University, February 2009

“The Dangers of Democratization: Implications for Southeast Europe,” address delivered at the University of Athens, Athens, Greece, May 2008

Participant, “U.S. National Intelligence: The Iran National Intelligence Estimate,” Council on Foreign Relations, New York, April 2008

Moderator, First Friday Lunch Series, “Intelligence in the Post-9/11 World: An Off-the-Record Conversation with Dr. Joseph Helman (U.S. Senior National Intelligence Service),” Center for Global Affairs, New York University, March 2008

Participant, “U.S. National Intelligence: Progress and Challenges,” Council on Foreign Relations, New York, March 2008

Moderator, First Friday Lunch Series, “Public Diplomacy: The Steel Backbone of America’s Soft Power: An Off-the-Record Conversation with Dr. Judith Baroody (U.S. Department of State),” Center for Global Affairs, New York University, October 2007

“The Problems and Challenges of Democratization: Implications for Latin America,” presentation delivered at the Argentinean Center for the Study of Strategic and International

Relations Third Conference on the International Relations of South America (IBERAM III), Buenos Aires, Argentina, September 2007

“The Importance of Higher Education to the Hellenic-American Community,” keynote address to the annual Pan-Icarian Youth Convention, New York, May 2007

Moderator, First Friday Lunch Series, Panel Spotighting Graduate Theses and Capstone Projects, Center for Global Affairs, New York University, April 2007

Convener, U.S. Department of State Foreign Officials Delegation Working Group on the Kurds and Turkey, March 2007

“Soft Power and International Law in a Globalizing Latin America,” round-table presentation delivered at the Argentinean Center for the Study of Strategic and International Relations Twelfth Conference of Students and Graduates of International Relations in the Southern Cone (CONOSUR XII), Buenos Aires, Argentina, November 2006

Moderator, First Friday Lunch Series, “From Berkeley to Baghdad to the Beltway: An Off-the-Record Conversation with Dr. Catherine Dale (U.S. Department of Defense),” Center for Global Affairs, New York University, November 2006

Chairperson, Roundtable on Presidential Privilege and Power Reconsidered in a Post-9/11 Era, American Political Science Association Annual Meeting, September 2006

“Constitutional Controversies,” round-table presentation delivered at City University of New York-College of Staten Island, September 2005

“The Future of the Cyprus Conflict,” address to be delivered at City University of New York College of Staten Island, April 2005

“The 2004 Election and the Future of American Foreign Policy,” address delivered at City University of New York College of Staten Island, December 2004

“One Culprit for the 9/11 Attacks: Political Realism,” address delivered at City University of New York-College of Staten Island, September 2004

“Were the Eagle and the Phoenix Birds of a Feather? The United States and the 1967 Greek Coup,” address delivered at London School of Economics, November 2003

“Beware of Europeans Bearing Gifts? Cypriot Accession to the EU and the Prospects for Peace,” address delivered at Conference on Mediterranean Stability, Security, and Cooperation, Austrian Defense Ministry, Vienna, Austria, October 2003

Co-Chair, Panel on Ideational and Strategic Aspects of Greek International Relations, London School of Economics Symposium on Modern Greece, London, June 2003

“Greece between Old and New Europe,” address delivered at London School of Economics, June 2003

Co-Chair, Panel on International Regimes and Genocide, International Association of Genocide Scholars Annual Meeting, Galway, Ireland, June 2003

“American Cooperation with International Tribunals,” paper presented at the International Association of Genocide Scholars Annual Meeting, Galway, Ireland, June 2003

“Is the Unipolar Moment Fading?” address delivered at London School of Economics, May 2003

“Cyprus, Turkey, and the European Union,” address delivered at London School of Economics, February 2003

“Bridging the Greek-Turkish Divide,” address delivered at Northwestern University, May 1998

“The CNN Effect: Fact or Fiction?” address delivered at Catholic University, April 1998

“The Current Political Situation in Cyprus,” address delivered at AMIDEAST, July 1997

“Making the Peace Happen in Cyprus,” presentation delivered at the U.S. Institute of Peace in July 1997

“The CNN Effect: The Impact of the Media during Diplomatic Crises and Complex Emergencies,” a series of presentations delivered in Cyprus (including at Ledra Palace), May 1997

“Are Policy-Makers Misreading the Public? American Public Opinion on the United Nations,” paper presented at the International Studies Association Annual Meeting, Toronto, Canada, March 1997 (with Shoon Murray)

“The Political and Diplomatic Consequences of Greece’s Recent National Elections,” presentation delivered at the National Foreign Affairs Training Center, Arlington, VA, September 1996

“Prospects for Greek-Turkish Reconciliation,” presentation delivered at the U.S. Institute of Peace Conference on Greek-Turkish Relations, Washington, D.C., June, 1996 (with Theodore A. Couloumbis)

“Greek-Turkish Reconciliation,” paper presented at the Karamanlis Foundation and Fletcher School of Diplomacy Joint Conference on The Greek-U.S. Relationship and the Future of Southeastern Europe, Washington, D.C., May, 1996 (with Theodore A. Couloumbis)

“The Path toward Peace in the Eastern Mediterranean and the Balkans in the Post-Cold War Era,” paper presented at the International Studies Association Annual Meeting, San Diego, CA, March, 1996 (with Theodore A. Couloumbis)

“Peace Operations: The View from the Public,” paper presented at the International Studies Association Annual Meeting, San Diego, CA, March, 1996

Chairperson, Roundtable on Peace Operations, International Security Section of the International Studies Association Annual Meeting, Rosslyn, VA, October, 1995

“Chaos and Complexity in International Politics: Epistemological Implications,” paper presented at the International Studies Association Annual Meeting, Washington, D.C., March, 1994

“At What Cost? American Mass Public Opinion and the Use of Force Abroad,” paper presented at the International Studies Association Annual Meeting, Washington, D.C., March, 1994 (with Daniel B. O'Connor)

“American Mass Public Opinion and the Use of Force Abroad,” presentation delivered at the United States Institute of Peace, Washington, D.C., February, 1994 (with Daniel B. O'Connor)

“For a Good Cause: American Mass Public Opinion and the Use of Force Abroad,” paper presented at the Annual Meeting of the Foreign Policy Analysis/Midwest Section of the International Studies Association, Chicago, IL, October, 1993 (with Daniel B. O'Connor)

“American International Narcotics Control Policy: A Critical Evaluation,” presentation delivered at the American University Drug Policy Forum, Washington, D.C., November, 1991

“American National Security in the Post-Cold War Era: Social Defense, the War on Drugs, and the Department of Justice,” paper presented at the Association of Professional Schools of International Affairs Conference, Denver, CO, February, 1991

Referee for Grant Organizations, Peer-Reviewed Journals, and Book Publishers

National Science Foundation, Division of Social and Economic Sciences

American Journal of Preventive Medicine

American Journal of Public Health

American Political Science Review

British Medical Journal (BMJ)

Comparative Political Studies

Injury Epidemiology

Journal of Public and International Affairs

Millennium

Political Behavior

Presidential Studies Quarterly

Victims & Offenders

Violence and Victims

Brill Publishers

Johns Hopkins University Press

Routledge

Service to University, Profession, and Community

Participant, Annual Meeting of the Research Society for the Prevention of Firearm-Related Harms, 2023

Participant, Minnesota Chiefs of Police Association, Survey of Measures to Reduce Gun Violence, 2023

Member, Regional Gun Violence Research Consortium, Nelson A. Rockefeller Institute of Government, State University of New York, 2022-

Founding Member, Scientific Union for the Reduction of Gun Violence (SURGE), Columbia University, 2019-

Contributing Lecturer, Johns Hopkins University, Massive Open Online Course on Evidence-Based Gun Violence Research, Funded by David and Lucile Packard Foundation, 2019

Member, Group of Gun Violence Experts, *New York Times* Upshot Survey, 2017

Member, Guns on Campus Assessment Group, Johns Hopkins University and Association of American Universities, 2016

Member, Fulbright Selection Committee, Fulbright Foundation, Athens, Greece, 2012

Faculty Advisor, Global Affairs Graduate Society, New York University, 2009-2011

Founder and Coordinator, Graduate Transnational Security Studies, Center for Global Affairs, New York University, 2009-2011

Organizer, Annual Faculty Symposium, Center for Global Affairs, New York University, 2009

Member, Faculty Search Committees, Center for Global Affairs, New York University, 2007-2009

Member, Graduate Program Director Search Committee, Center for Global Affairs, New York University, 2008-2009

Developer, Transnational Security Studies, Center for Global Affairs, New York University, 2007-2009

Participant, Council on Foreign Relations Special Series on National Intelligence, New York, 2008

Member, Graduate Certificate Curriculum Committee, Center for Global Affairs, New York University, 2008

Member, Faculty Affairs Committee, New York University, 2006-2008

Member, Curriculum Review Committee, Center for Global Affairs, New York University, 2006-2008

Member, Overseas Study Committee, Center for Global Affairs, New York University, 2006-2007

Participant, New York Academic Delegation to Israel, Sponsored by American-Israel Friendship League, 2006

Member, Science, Letters, and Society Curriculum Committee, City University of New York-College of Staten Island, 2006

Member, Graduate Studies Committee, City University of New York-College of Staten Island, 2005-2006

Member, Summer Research Grant Selection Committee, City University of New York-College of Staten Island, 2005

Director, College of Staten Island Association, 2004-2005

Member of Investment Committee, College of Staten Island Association, 2004-2005

Member of Insurance Committee, College of Staten Island Association, 2004-2005

Member, International Studies Advisory Committee, City University of New York-College of Staten Island, 2004-2006

Faculty Advisor, Pi Sigma Alpha National Political Science Honor Society, City University of New York-College of Staten Island, 2004-2006

Participant, World on Wednesday Seminar Series, City University of New York-College of Staten Island, 2004-2005

Participant, American Democracy Project, City University of New York-College of Staten Island, 2004

Participant, Philosophy Forum, City University of New York-College of Staten Island, 2004

Commencement Liaison, City University of New York-College of Staten Island, 2004

Member of Scholarship Committee, Foundation of Pan-Icarian Brotherhood, 2003-2005, 2009

Scholarship Chairman, Foundation of Pan-Icarian Brotherhood, 2001-2003

Faculty Advisor to the Kosmos Hellenic Society, George Washington University, 2001-2002

Member of University of Pennsylvania's Alumni Application Screening Committee, 2000-2002

Participant in U.S. Department of State's International Speakers Program, 1997

Participant in Yale University's United Nations Project, 1996-1997

Member of Editorial Advisory Board, *Journal of Public and International Affairs*, Woodrow Wilson School of Public and International Affairs, Princeton University, 1991-1993

Voting Graduate Student Member, School of International Service Rank and Tenure Committee, American University, 1990-1992

Member of School of International Service Graduate Student Council, American University, 1990-1992

Teaching Assistant for the Several Courses (World Politics, Beyond Sovereignty, Between Peace and War, Soviet-American Security Relations, and Organizational Theory) at School of International Service Graduate Student Council, American University, 1989-1992

Representative for American University at the Annual Meeting of the Association of Professional Schools of International Affairs, Denver, Colorado, 1991

Expert Witness Service

State of New York, 2024-

Town of Superior, Colorado, 2023-

City of Boulder, Colorado, 2023-

City of Louisville, Colorado, 2023-

County of Boulder, Colorado, 2023-

State of Connecticut, 2023-

State of Hawaii, 2023-

State of Illinois, 2023-

State of Massachusetts, 2023-

State of New Jersey, 2023-

State of Oregon, 2023-

City of Highland Park, Illinois, 2022-

County of Cook, Illinois, 2022-

State of Washington, 2022-

Government of Canada, 2021-2022

Plaintiffs, *Ward et al. v. Academy Sports + Outdoor*, District Court Bexar County, Texas, 224th
Judicial District, Cause Number 2017CI23341, Bexar County, TX, 2019

State of California, 2017-

State of Colorado, 2016-2017, 2022-

Affiliations, Associations, and Organizations (Past and Present)

Academy of Political Science (APS)

American Political Science Association (APSA)

Anderson Society of American University

Carnegie Council Global Ethics Network

Columbia University Scientific Union for the Reduction of Gun Violence (SURGE)

Firearm Safety among Children and Teens (FACTS)

International Political Science Association (IPSA)

International Studies Association (ISA)

New York Screenwriters Collective

Pan-Icarian Brotherhood

Pi Sigma Alpha

Regional Gun Violence Research Consortium

Research Society for the Prevention of Firearm-Related Harms

Society for Advancement of Violence and Injury Research (SAVIR)

United States Department of State Alumni Network

United States Institute of Peace Alumni Association

University of Pennsylvania Alumni Association

Grants, Honors, and Awards

Co-Investigator, A Nationwide Case-Control Study of Firearm Violence Prevention Tactics and Policies in K-12 School, National Institutes of Health, 2021-2024 (Branas and Rajan MPIs)

Senior Fulbright Fellowship, 2012

Professional Staff Congress Research Grantee, City University of New York, 2004-2005

Research Assistance Award (Two Times), City University of New York-College of Staten Island, 2004

Summer Research Fellowship, City University of New York-College of Staten Island, 2004

European Institute Associate Fellowship, London School of Economics, 2003-2004

Hellenic Observatory Defense Analysis Research Fellowship, London School of Economics, 2002-2003

United States Institute of Peace Certificate of Meritorious Service, 1996

National Science Foundation Dissertation Research Grant, 1995 (declined)

Alexander George Award for Best Graduate Student Paper, Runner-Up, Foreign Policy Analysis Section, International Studies Association, 1994

Dean's Scholar Fellowship, School of International Service, American University, 1989-1992

Graduate Research and Teaching Assistantship, School of International Service, American University, 1989-1992

American Hellenic Educational Progressive Association (AHEPA) College Scholarship, 1986

Political Science Student of the Year, Wilkes-Barre Area School District, 1986

EXHIBIT B

DETACHABLE MAGAZINE REPORT

1990 - 2021

NSSF® DETACHABLE MAGAZINE REPORT (1990 – 2021)



PURPOSE

Estimate the number of detachable firearm magazines, segmented by capacity, that have been sold and made available using the latest information (2023 initial study period). Estimate the number of magazines provided “in the box” with firearms made available to consumers along with secondary market / direct consumer purchase of firearm magazines. This is done as part of NSSF’s ongoing industry research to provide insights into the firearm and ammunition industry.



METHODOLOGY

Utilize Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) Annual Firearms Manufacturers Export Reports (AFMER) to identify firearm manufacturers and corresponding firearm manufacturing activity of pistols and rifles. ATF AFMER reporting is segmented by Pistol, Revolver, Rifle, and Shotgun categories of manufacturing and export. Identify and remove firearm manufacturers that do not produce pistols and rifles that accept detachable magazines such as derringers, single shot pistols, and fixed magazine rifles. Master totals were created for the top 15 pistol manufacturers (~80 percent of pistols) and top 15 rifle manufacturers (~60 percent of rifles) produced in the 2021 ATF AFMER. Independent research and direct survey of firearm and magazine manufacturers yielded information on how many magazines, and their capacity, were provided with each firearm and made available to the U.S. consumer market from 1990 to 2021 through wholesalers, retailers, and sold directly to consumers. If historical information was not available, a value of one magazine per pistol and rifle was used for the list of top manufacturers. Organizing the data collected from top pistol and rifle manufacturers, industry averages of magazines and capacity were applied to all other pistol and rifle manufacturers reported by ATF AFMER for the study period (1990-2021). Consumer market totals were taken directly from participating magazine manufacturers with no adjustment. Totals of each segment were rounded to the closest thousand.

RESULTS

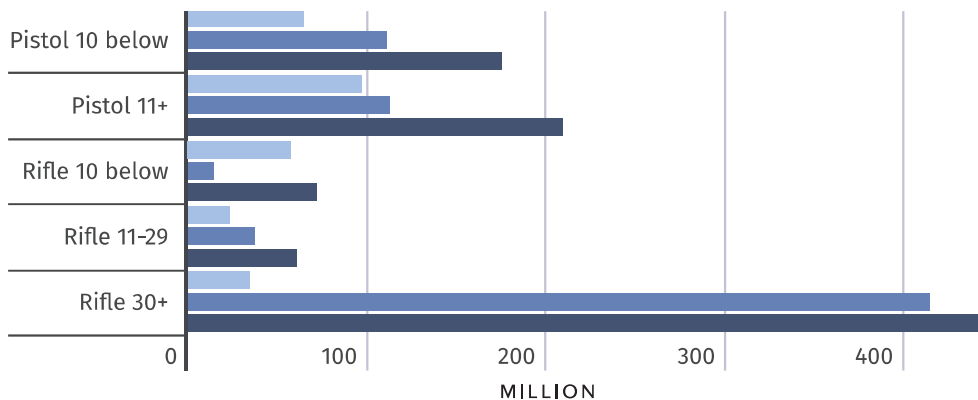
Independent research and direct survey of firearm and magazine manufacturers yielded industry averages for pistol and rifle magazines that come “in the box.” Pistol magazines had an industry average of 2.1 magazines per firearm from the manufacturer with 44 percent being 10 and below capacity. Rifle magazines had an industry average of 1.8 magazines per firearm from the manufacturer with half being 10 and below capacity, 20 percent being 11-29 round capacity, and 30 percent being 30+ round capacity.

Of the firearm magazines estimated in this study, 29 percent originate from detachable magazines provided “in the box” with each newly manufactured firearm and 71 percent of detachable magazines were distributed to the consumer market as an “aftermarket”



product. An estimated 963 million magazines were produced and entered the commercial market between 1990 and 2021. Of the estimated 963 million magazines, approximately 74 percent, or 717 million magazines, have a capacity of 11+ rounds. A majority of the 11+ round capacity magazines are rifle magazines. About 46 percent of the magazines estimated in this study are rifle magazines with 30+ round capacity. The percentage of detachable magazines at 11+ capacity is about 55 percent of total pistol magazines. The amount of 10 and below capacity rifle magazines supplied from the manufacturer is over one and a half times the amount of 30+ capacity rifle magazines. The consumer market totals of rifle magazines show 30+ capacity magazines, over 413 million, are over thirty times the amount available than 10 and below capacity rifle magazines, about 13 million.

Firearm Magazine Estimate 1990 – 2021					
	Pistol 10 below	Pistol 11+	Rifle 10 below	Rifle 11-29	Rifle 30+
Manufacturer Total	64,099,000	96,148,000	57,362,000	22,945,000	34,417,000
Consumer Market Total	110,694,000	112,997,000	13,717,000	37,441,000	413,952,000
Manufacturer and Consumer Totals	174,793,000	209,145,000	71,079,000	60,386,000	448,369,000
Grand Total: 963,772,000					



LIMITATIONS

Not all magazine manufacturers that support and supply firearm manufacturers and the consumer market responded to the survey/provided data; therefore, the results are a conservative estimate. Not all segments of detachable magazines could be counted due to lack of public information or availability of records. For example, detachable shotgun magazines are prevalent in certain shooting sports and tactical applications but were not counted. Military and law enforcement sales were not counted. This analysis did not account for breakage or magazines that were destroyed/discarded as no data exists. No reliable data exists prior to 1990 to estimate historic detachable magazines that may still be available for sale or in working condition. This is due to lack of ATF AFMER reporting prior to 1990. This study does not claim all the magazines estimated in this study are owned by Americans; these are both magazines estimated to be in circulation and made available for sale at some point from 1990 to 2021.

DISCUSSION

The popularity of small “conceal carry” pistols highly influenced the distribution of pistol magazines in most recent years, but following trends in manufacturing, many of these pistols are being updated with higher capacity magazines as designs are updated. Magazine-fed semiautomatic pistols and rifles are becoming increasingly popular. Based on magazines alone, 11+ round capacity, market share of these firearms in the United States should be expected hold pace with historic trends.¹²

A recent study of the general population within the United States identified that over 1,300 firearm owners provided more insight to magazine ownership. Results suggest that more than a third (36.3 percent) of the U.S. population are currently firearm owners.³ Those identified as firearm owners were asked to share details about their detachable magazine ownership. More than half (53.2 percent) of firearm owners reported owning a detachable magazine for a handgun, and nearly a third (32.7 percent) reported owning a detachable magazine for a rifle. Nearly a third (35.9 percent) of firearm owners reported owning a detachable handgun magazine with a capacity of 11 or more rounds, while nearly a quarter (24.3 percent) of firearm owners reported owning a

detachable rifle magazine with a capacity of 11 or more rounds. Overall, 43.3 percent of firearm owners reported owning a detachable magazine with a capacity of 11 or more rounds. These findings indicate that approximately 8.9 percent of the U.S. population owns a magazine holding 11 or more rounds.⁴

According to a recent NSSF study, Modern Sporting Rifle (MSR) Comprehensive Consumer Report 2022, magazines were one of the most common accessories purchased among the 2,185 usable responses. “Over half (52%) of MSR owners stated the detachable magazine capacity of their MSR is 30 rounds. When asked why they chose their respective capacity, most frequent responses were related to popularity / standard and being readily available.”⁵ The latest estimate of MSRs produced between 1990–2021 is over 28 million⁶, making aftermarket magazines for these firearms abundant in the United States, where such capacity magazines are not banned⁷. These rifle magazines, like all categories of magazines in this study, are those that are provided “in the box” from the manufacturer and made available for sale. The proportion of owned magazines versus magazines available for sale is currently unattainable.

CONCLUSION

The findings in this report give some insight to the volume and capacity of detachable firearm magazines in the United States for the study period. A more comprehensive estimate would be attainable if participation from firearm and magazine manufacturers increased in future updates. Consumer preferences of 11+ capacity magazines are reflected in the manufacturing activity of the firearm industry. Changes in legislation outlawing or granting access to these magazines may change overall market proportions but the preference to have more ammunition available is clear.

¹ Association, N. R. (n.d.). 33 new concealed-carry guns for 2018. An Official Journal Of The NRA. <https://www.shootingillustrated.com/content/33-new-concealed-carry-guns-for-2018/>

² Association, N. R. (n.d.-a). 10 popular concealed carry guns. An Official Journal Of The NRA. <https://www.shootingillustrated.com/content/10-popular-concealed-carry-guns/>

³ NSSF 2022 Magazine Capacity Study.

⁴ Id.

⁵ NSSF Modern Sporting Rifle Comprehensive Consumer Report 2022.

⁶ (2024, January 11). NSSF releases most recent firearm production figures. NSSF. <https://www.nssf.org/articles/nssf-releases-most-recent-firearm-production-figures-2024/#:~:text=Data%20indicates%20that%2028%2C144%2C000%20Modern,24.4%20million%20to%20>

[28.1%20million.](#)

⁷ Cal. Penal Code § 16350, 16740, 16890, 32310-32450., Colo. Rev. Stat. §§ 18-12-301, 302, 303., Conn. Gen. Stat. §§ 53-202w, 53-202q., Del. Code Ann. Tit. 11, § 1469(a), D.C. Code Ann. §§ 7-2506.01(b); 7-2507.06(a)(4), Haw. Rev. Stat. Ann. § 134-8(c), 720 ILCS 5/24-110 (enacted January 10, 2023 by 2021 IL HB 5471., Md. Code Ann., Crim. Law § 4-305., Mass. Gen. Laws ch. 140, §§ 121, 131M., N.J. Stat. Ann. §§ 2C:39-1(y), 2C:39-3(j), 2C:39-9(h), N.Y. Penal Law §§ 265.00(23), 265.02(8), 265.10, 265.11, 265.20(7-f), 265.36-265.37., See 2022 Oregon Ballot Measure 114, SEC. 11., R.I. Gen. Laws §§ 11-471-2, 11-471-3(a), Vt. Stat. Ann. tit. 13, § 4021 (enacted by 2017 VT S 55, Sec. 8), RCW 9.41.370.

EXHIBIT C

1 C. D. Michel - S.B.N. 144258
Clinton B. Monfort - S.B.N. 255609
2 Sean A. Brady - S.B.N. 262007
Anna M. Barvir - S.B.N. 268728
3 MICHEL & ASSOCIATES, P.C.
180 E. Ocean Boulevard, Suite 200
4 Long Beach, CA 90802
Telephone: 562-216-4444
5 Facsimile: 562-216-4445
Email: cmichel@michellawyers.com

6
7 Attorneys for Plaintiffs

8 **IN THE UNITED STATES DISTRICT COURT**
9 **FOR THE NORTHERN DISTRICT OF CALIFORNIA**
10 **SAN JOSE DIVISION**

11 LEONARD FYOCK, SCOTT
12 HOCHSTETLER WILLIAM
13 DOUGLAS, DAVID PEARSON,
BRAD SEIFERS, and ROD
14 SWANSON,

15 Plaintiffs

16 vs.

17 THE CITY OF SUNNYVALE, THE
18 MAYOR OF SUNNYVALE,
ANTHONY SPITALERI in his
19 official capacity, THE CHIEF OF
THE SUNNYVALE DEPARTMENT
20 OF PUBLIC SAFETY, FRANK
GRGURINA, in his official capacity,
21 and DOES 1-10,

22 Defendants.

CASE NO: CV13-05807 RMW

**DECLARATION OF JAMES
CURCURUTO IN SUPPORT OF
MOTION FOR PRELIMINARY
INJUNCTION**

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DECLARATION OF JAMES CURCURUTO

1. I, James Curcuruto, am not a party in the above-titled action. I am over the age of 18, have personal knowledge of the facts and events referred to in this Declaration, and am competent to testify to the matters stated below.

2. I am the Director, Industry Research and Analysis, at the National Shooting Sports Foundation (“NSSF”). The NSSF is the trade association for the firearms industry. Its mission is to promote, protect and preserve hunting and the shooting sports. Formed in 1961, NSSF has a membership of 10,000 manufacturers, distributors, firearms retailers, shooting ranges, sportsmen’s organizations and publishers.

3. In my position as Director, Industry Research and Analysis, I am responsible for most of the research activities at NSSF, and I direct the activities of an internal research coordinator and outside companies retained to conduct research and gather market and consumer information useful to NSSF members.

4. Many NSSF members manufacture, distribute and/or sell firearms and shooting and hunting-related goods and services, and as is usual and customary for trade associations, the NSSF collects and disseminates industry-specific, non-sensitive data reflecting consumer preferences, market trends and other information for use in their business decisions. Among the shooting and hunting-related goods and services manufactured, distributed and sold by NSSF members are ammunition magazines.¹ Research conducted by the NSSF and under my direction demonstrates that detachable ammunition magazines are very popular

¹ A “magazine” is a receptacle for a firearm that holds a plurality of cartridges or shells under spring pressure preparatory for feeding into the chamber. <http://saami.org/glossary/display.cfm?letter=M>, Glossary of Terms, Sporting Arms and Ammunition Manufacturers’ Institute (SAAMI). While magazines take many forms – box, drum, rotary, tubular, etc. and may be fixed or removable – from the materials I considered and firearms industry professionals I consulted, the figures discussed in this declaration generally (if not exclusively) concern detachable, box magazines.

1 and are commonly owned by millions of persons in the United States for a variety
2 of lawful purposes, including, but not limited to, recreational and competitive target
3 shooting, home defense, collecting and hunting.

4 5. In addition to ammunition magazines accompanying firearms that
5 utilize them at the time of sale, such magazines are also widely available for sale as
6 a stand-alone item to individuals who need a replacement, different-capacity, and/or
7 additional magazine.

8 6. I am not aware of any singular public source providing reliable figures
9 identifying exactly how many ammunition magazines are manufactured or imported
10 for sale within the United States each year. There are, however, data available to me
11 from which estimations of the amount of magazines that have been sold to the
12 general population, as well as how many of those have a capacity for ammunition
13 exceeding ten rounds, can be calculated within a reasonable degree of certainty.

14 7. Using such data, I have, in the normal scope of my duties on behalf of
15 the NSSF, calculated estimations of the total number of magazines possessed by
16 consumers in the United States, as well as how many of those have a standard
17 capacity for ammunition exceeding ten rounds. These estimations are published in
18 the NSSF Magazine Report attached as Exhibit "A."

19 8. The NSSF Magazine Report estimates that 158 million pistol and rifle
20 magazines were in the possession of United States consumers between 1990 and
21 2012. The data supporting the Report further shows magazines capable of holding
22 more than 10 rounds of ammunition accounted for approximately 75 million or
23 approximately 47 percent of all magazines owned.

24 9. Sources used to compile the NSSF Magazine Report include the
25 Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) Annual Firearms
26 Manufacturers and Exports Reports (AFMER), U.S. International Trade
27 Commission (ITC), as well as, opinions of firearms industry professionals. To
28 prepare the NSSF Magazine Report, only the number of pistols and rifles was used

1 while revolver and shotgun data was excluded as revolvers and the vast majority of
2 shotguns do not utilize magazines.

3 10. The ATF AFMER data provide historical figures for pistols by caliber
4 (i.e., the specific ammunition cartridge for which a firearm is chambered) and rifles
5 produced in the United States for consumer purchase. The ITC data provides
6 historical figures for pistol and rifles imported to and exported from the United
7 States for consumer purchase. The total number of firearms available for consumer
8 purchase 1990 through 2012 was calculated by adding the total U.S-production of
9 firearms with the total firearms imported and then subtracting total firearms
10 exported.

11 11. The ATF AFMER and ITC data provided estimates of approximately
12 50 million pistols and 33 million rifles available to United States consumers
13 between 1990 and 2012. Firearms industry professionals with knowledge of the
14 pistol and rifle magazine market then allocated magazines to the totals to complete
15 the data provided in the NSSF Magazine Report .

16 12. It can be assumed that many more such magazines were manufactured
17 in the United States or imported to the United States for sale in the commercial
18 marketplace both prior to 1990 as well as after 2012.

19 13. While the figure of 75 million standard capacity magazines holding
20 over 10 rounds in circulation is an estimation based on extrapolation from indirect
21 sources and cannot be confirmed as unequivocally accurate, it is safe to say that
22 whatever the actual number of such magazines in United States consumers' hands
23 is, it is in the tens-of-millions, even under the most conservative estimates.

24 I declare under penalty of perjury that the foregoing is true and correct.

25 Executed within the United States on December 19, 2013.

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27
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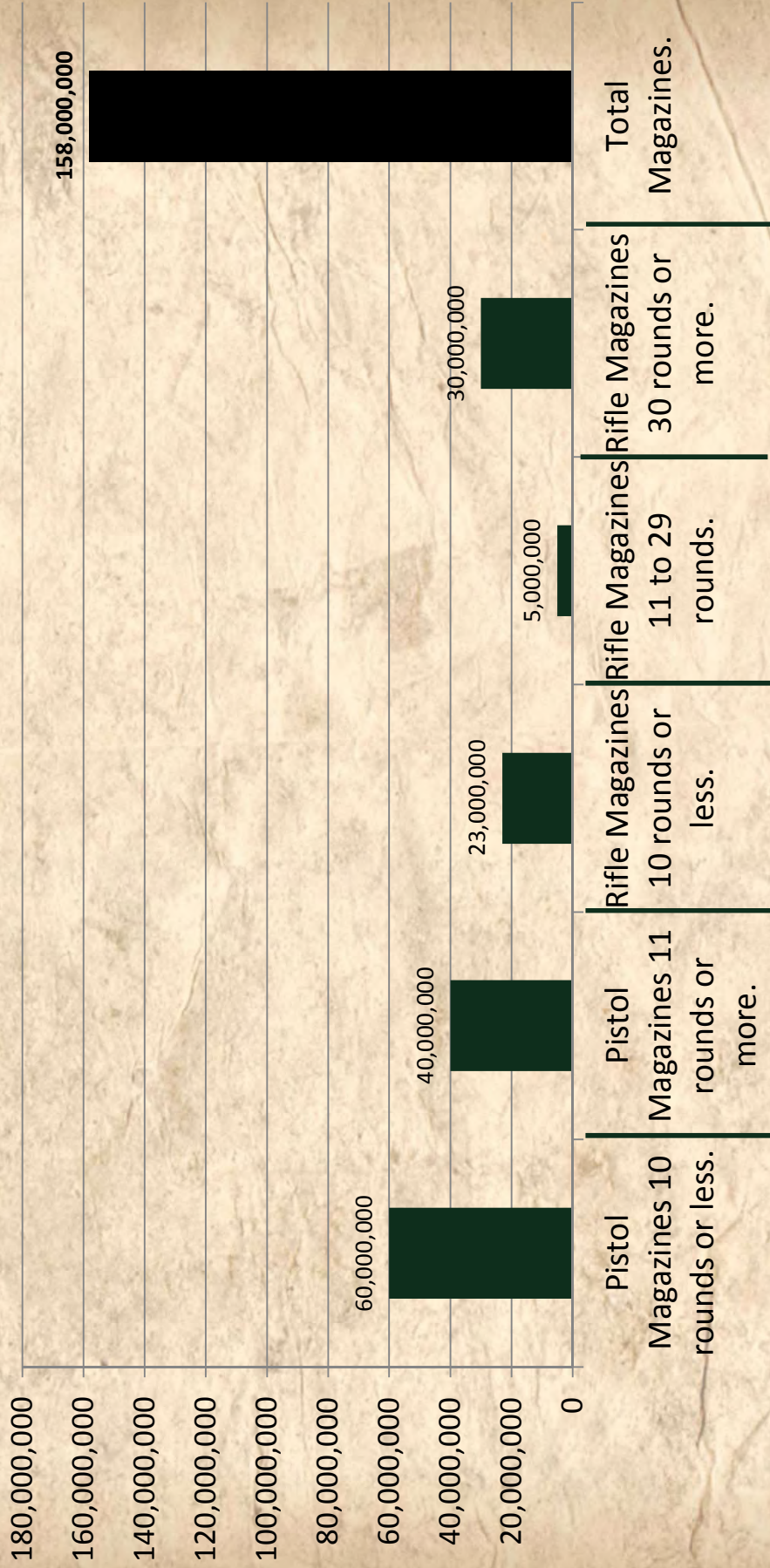

James Curcuruto

EXHIBIT A

Estimated 158 Million Pistol and Rifle Magazines in U.S. Consumer Possession 1990 – 2012.



Sources: ATF AFMER, US International Trade Commission figures combined with NSSF and Firearms Industry estimates.



PROMOTE PROTECT PRESERVE

EXHIBIT D

SEILER EPSTEIN ZIEGLER & APPEGATE LLP
Attorneys at Law

1 George M. Lee (SBN 172982)
Douglas A. Applegate (SBN 142000)
2 **SEILER EPSTEIN ZIEGLER & APPEGATE LLP**
601 Montgomery Street, Suite 2000
3 San Francisco, California 94111
Phone: (415) 979-0500
4 Fax: (415) 979-0511

5 Raymond M. DiGuseppe (SBN 228457)
LAW OFFICES OF RAYMOND MARK DIGUISEPPE, PLLC
6 4002 Executive Park Blvd., Suite 600
Southport, NC 28461
7 Phone: (910) 713-8804
Fax: (910) 672-7705

8 Attorneys for Plaintiffs
9 WILLIAM WIESE, JEREMIAH MORRIS,
LANCE COWLEY, SHERMAN MACASTON,
10 ADAM RICHARDS, CLIFFORD FLORES,
L.Q. DANG, FRANK FEDEREAU, ALAN NORMANDY,
11 TODD NIELSEN, THE CALGUNS FOUNDATION,
FIREARMS POLICY COALITION,
12 FIREARMS POLICY FOUNDATION,
and SECOND AMENDMENT FOUNDATION

13 UNITED STATES DISTRICT COURT

14 FOR THE EASTERN DISTRICT OF CALIFORNIA

15 WILLIAM WIESE, et al.,
16
17 Plaintiffs,
18
19 vs.

20
21 XAVIER BECERRA, in his official capacity as
Attorney General of California, et al.,
22
23 Defendants.

Case No. 2:17-cv-00903-WBS-KJN

**DECLARATION OF JAMES CURCURUTO IN
SUPPORT OF PLAINTIFFS' MOTION FOR
TEMPORARY RESTRAINING ORDER AND
ISSUANCE OF PRELIMINARY INJUNCTION**

[FRCP 65; E.D. L.R. 231]

Date: TBD
Time: TBD
Courtroom 5
Judge: Hon. William B. Shubb

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DECLARATION OF JAMES CURCURUTO

1
2 1. I, James Curcuruto, am not a party in the above-titled action. I am over the age
3 of 18, have personal knowledge of the facts and events referred to in this Declaration, and
4 am competent to testify to the matters stated below.

5 2. I am the Director, Industry Research and Analysis, at the National Shooting
6 Sports Foundation (“NSSF”). The NSSF is the trade association for the firearms industry. Its
7 mission is to promote, protect and preserve hunting and the shooting sports.
8 Formed in 1961, NSSF has a membership of 12,000 manufacturers, distributors, firearms
9 retailers, shooting ranges, sportsmen’s organizations and publishers.

10 3. In my position as Director, Industry Research and Analysis, I am responsible
11 for most of the industry research activities at NSSF, and I direct the activities of an internal
12 research coordinator as well as outside companies retained to conduct research and gather market
13 and consumer information useful to NSSF members.

14 4. Many NSSF members manufacture, distribute and/or sell firearms and shooting
15 and hunting-related goods and services, and as is usual and customary for trade associations, the
16 NSSF collects and disseminates industry-specific, non-sensitive data reflecting consumer
17 preferences, market trends and other information for use in their business decisions. Among the
18 shooting and hunting-related goods and services manufactured, distributed and sold by NSSF
19 members are ammunition magazines. Research conducted by the NSSF and under my direction
20 demonstrates that detachable ammunition magazines are very popular and are commonly owned
21 by millions of persons in the United States for a variety of lawful purposes, including, but
22 not limited to, recreational and competitive target shooting, home defense, collecting and
23 hunting.
24

25 5. In addition to ammunition magazines accompanying firearms that utilize
26 them at the time of sale, such magazines are also widely available for sale as a standalone
27 item to individuals who need a replacement, different-capacity, and/or additional magazines.

28 6. I am not aware of any singular public source providing reliable figures identifying

SEILER EPSTEIN ZIEGLER & APPELATE LLP
Attorneys at Law

1 exactly how many ammunition magazines are manufactured or imported for sale within the
2 United States each year. There are, however, data available to me from which estimations of the
3 amount of magazines that have been sold to the general population, as well as how many of those
4 have a capacity for ammunition exceeding ten rounds, can be calculated within a reasonable
5 degree of certainty.

6 7. Using such data, I have, in the normal scope of my duties on behalf of the NSSF,
7 calculated estimations of the total number of magazines possessed by consumers in the United
8 States, as well as how many of those have a standard capacity for ammunition exceeding ten
9 rounds. These estimations are published in the NSSF® Magazine Chart attached as Exhibit "A."

10 8. The NSSF® Magazine Chart estimates that 230 million pistol and rifle magazines
11 were in the possession of United States consumers between 1990 and 2015. The data supporting
12 the Chart further shows magazines capable of holding more than 10 rounds of ammunition
13 accounted for approximately 115 million or approximately half of all magazines owned.

14 9. Sources used to compile the NSSF® Magazine Chart include the Bureau of
15 Alcohol, Tobacco, Firearms and Explosives (ATF) Annual Firearms Manufacturers and Exports
16 Reports (AFMER), U.S. International Trade Commission (ITC), as well as, opinions of firearms
17 industry professionals. To prepare the NSSF® Magazine Chart, only the number of pistols and
18 rifles were used while revolver and shotgun data was excluded as revolvers and the vast majority
19 of shotguns do not utilize magazines.

20 10. The ATF AFMER data provide historical figures for pistols by caliber (i.e., the
21 specific ammunition cartridge for which a firearm is chambered) and rifles produced in the
22 United States for consumer purchase. The ITC data provides historical figures for pistol and
23 rifles imported to and exported from the United States for consumer purchase. The total number
24 of firearms available for consumer purchase from 1990 through 2015 was calculated by adding
25 the total U.S.- production of firearms with total firearms imported and then subtracting total
26 firearms exported.

27 11. The ATF AFMER and ITC data provided estimates of approximately 67.7 million
28

1 pistols and 42.6 million rifles capable of holding a magazine were available to United States
2 consumers between 1990 and 2015. Firearms industry professionals with knowledge of the pistol
3 and rifle magazine market then allocated magazines to the totals to complete the data provided in
4 the NSSF® Magazine Chart.

5 12. It can be assumed that many more such magazines were manufactured in the
6 United States or imported to the United States for sale in the commercial marketplace both prior
7 to 1990 as well as after 2015.

8 13. While the figure of 115 million magazines with a capacity greater than 10 rounds
9 in circulation is an estimation based on extrapolation from indirect sources and cannot be
10 confirmed as unequivocally accurate, it is safe to say that whatever the actual number of such
11 magazines in United States consumers' hands is, it is in the tens-of millions, even under the most
12 conservative estimates.

13 I declare under penalty of perjury that the foregoing is true and correct. Executed
14 within the United States on June 9, 2017.

15
16 
17 James Curcuruto

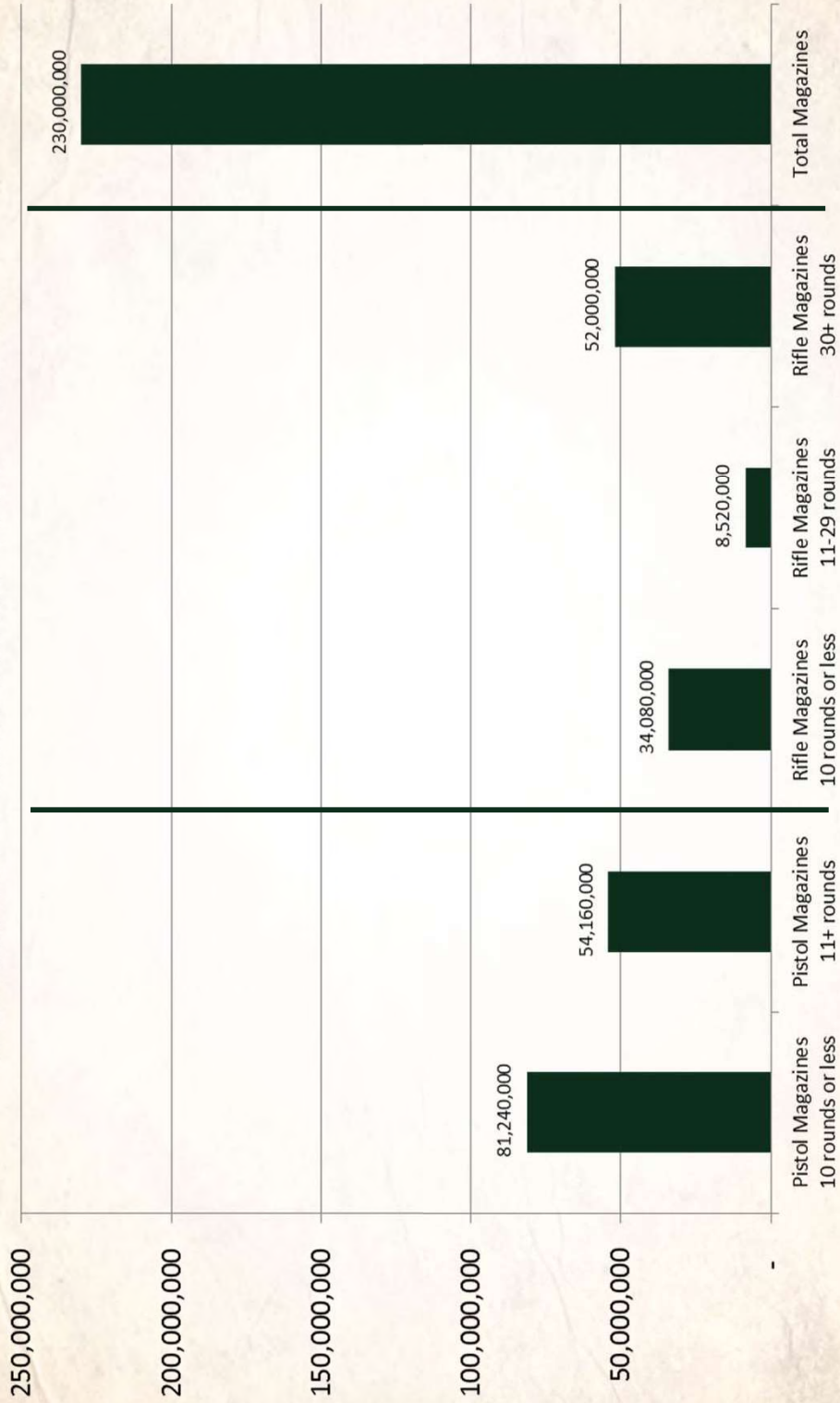
SEILER EPSTEIN ZIEGLER & APPEGATE LLP
Attorneys at Law

28

EXHIBIT A

NSSF® Magazine Chart

Estimated 230 Million Pistol and Rifle Magazines in U.S. Consumer Possession 1990 - 2015.



Sources: ATF AFMER, US International Trade Commission figures combined with NSSF and firearms industry estimates.

NSSF.ORG

EXHIBIT E

INDUSTRY INTELLIGENCE REPORTSSM

HELPING OUR MEMBERS MAKE INFORMED DECISIONS



FIREARM PRODUCTION IN THE UNITED STATES WITH FIREARM IMPORT AND EXPORT DATA

Providing a comprehensive overview of firearm production trends spanning a period of 28 years, this report is based primarily on the data sourced from the Bureau of Alcohol, Tobacco, Firearms and Explosives' (ATF's) Annual Firearms Manufacturing and Export Reports (AFMER). Every effort has been made to provide accurate and updated information so the reader may keep this edition as a reliable resource for trend information. Production data is a leading indicator of industry performance; this is especially true when combined with other valuable sources of information.

This edition includes manufacturing trends for ammunition as sourced from Census Bureau's Annual Survey of Manufacturers (ASM) used for all years that fall between the fifth-year economic census reports. Import and export statistics for firearms compiled from the U.S. International Trade Commission (USITC) are presented in conjunction with the AFMER numbers to provide a more accurate picture of the historical production that has been made available to the U.S. market. These data sources, when used collectively, help to provide an overview of the firearm and ammunition manufacturing industries.

Information on production, imports, exports and other manufacturing variables are only a piece of a more complex puzzle of the firearm industry. Other factors outside of the manufacturing sector, such as the retail sector, the economy and frequently the political climate, must all be taken into consideration. The limitation of the AFMER data is that it reflects historic trends; however, using the data in combination with other reports does provide a more complete picture of the industry. Firearm and ammunition production provide a very significant contribution to the national economy in terms of jobs, wages, and benefits. In addition, capital expenditures on materials (energy, equipment, fuels) help boost local economies.

KEY FINDINGS

- The average annual production of firearms in the U.S. was 5,400,893 for the last quarter century.
- Total firearm production reported in the 2018 AFMER was 7,948,473 – an increase of 0.6% over 2017 reported figures.
- Long guns totaled 3,441,297 and accounted for 43.3% of total 2018 U.S. firearm production. Of that, rifles totaled 2,905,178 (84.4% of long gun production) and shotguns totaled 536,119 (15.6%).

* See back for all Key Findings

U.S. Firearm Production (1991 – 2018)

Year	Pistols	Revolvers	Total Handguns	Rifles	Shotguns	Total Long Guns	Production Total (a)	% Change in Total Production Year over Year
1991	1,378,252	456,966	1,835,218	883,482	828,426	1,711,908	3,547,126	-7.8%
1992	1,669,537	469,413	2,138,950	1,001,708	1,018,204	2,019,912	4,158,862	17.2%
1993	2,093,362	562,292	2,655,654	1,173,694	1,148,939	2,322,633	4,978,287	19.7%
1994	2,004,298	586,450	2,590,748	1,316,607	1,254,924	2,571,531	5,162,279	3.7%
1995	1,195,284	527,664	1,722,948	1,441,120	1,176,958	2,618,078	4,341,026	-15.9%
1996	987,528	498,944	1,486,472	1,424,315	925,732	2,350,047	3,836,519	-11.6%
1997	1,036,077	370,428	1,406,505	1,251,341	915,978	2,167,319	3,573,824	-6.8%
1998	960,365	324,390	1,284,755	1,345,899	1,036,520	2,382,419	3,667,174	2.6%
1999	995,446	335,784	1,331,230	1,569,685	1,106,995	2,676,680	4,007,910	9.3%
2000	962,901	318,960	1,281,861	1,583,042	898,442	2,481,484	3,763,345	-6.1%
2001	626,836	320,143	946,979	1,284,554	679,813	1,964,367	2,911,346	-22.6%
2002	741,514	347,070	1,088,584	1,515,286	741,325	2,256,611	3,345,195	14.9%
2003	811,660	309,364	1,121,024	1,430,324	726,078	2,156,402	3,277,426	-2.0%
2004	728,511	294,099	1,022,610	1,325,138	731,769	2,056,907	3,079,517	-6.0%
2005	803,425	274,205	1,077,630	1,431,372	709,313	2,140,685	3,218,315	4.5%
2006	1,021,260	382,069	1,403,329	1,496,505	714,618	2,211,123	3,614,452	12.3%
2007	1,219,664	391,334	1,610,998	1,610,923	645,231	2,256,154	3,867,152	7.0%
2008	1,387,271	431,753	1,819,024	1,746,139	630,710	2,376,849	4,195,873	8.5%
2009	1,868,268	547,547	2,415,815	2,253,103	752,699	3,005,802	5,421,617	29.2%
2010	2,087,577	558,927	2,646,504	1,830,556	743,378	2,573,934	5,220,438	-3.7%
2011	2,464,255	572,857	3,037,112	2,305,854	862,401	3,168,255	6,205,367	18.9%
2012	3,311,081	667,357	3,978,438	3,109,940	949,010	4,058,950	8,037,388	29.5%
2013	4,314,550	725,282	5,039,832	3,996,673	1,203,072	5,199,745	10,239,577	27.4%
2014	3,602,577	744,047	4,346,624	3,379,009	935,411	4,314,420	8,661,044	-15.4%
2015	3,553,035	884,578	4,437,613	3,701,443	777,273	4,478,716	8,916,329	2.9%
2016	4,705,930	856,288	5,562,218	4,198,692	848,615	5,047,307	10,609,525	19.0%
2017	3,691,006	720,917	4,411,923	2,821,945	667,350	3,489,295	7,901,218	-25.5%
2018	3,842,344	664,832	4,507,176	2,905,178	536,119	3,441,297	7,948,473	0.6%
TOTALS	54,063,814	14,143,960	68,207,774	55,333,527	24,165,303	79,498,830	147,706,604	

Source: Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) Annual Firearms Manufacturing and Export Report (AFMER).
 NOTE: Data is in total units and represents the number of firearms "manufactured and disposed of in commerce during the calendar year."
 * Totals include firearms sold for export and law enforcement, but not military sales.
 (a): Does not include AFMER MISC firearms category which includes items such as: pen guns and starter guns. Also adjusted to exclude/include, as noted: From 2011 – 2018 several adjustments were made to the data in this chart due to omissions in the AFMER report (i.e.: figures for long guns manufactured by Savage Arms were omitted from the 2017 AFMER), duplication of production due to parts manufactured by machine shops (i.e.: parts reported by machine shop in addition to being reported by the firearm manufacturer resulting in double-counting) and adjustments to the miscellaneous category (i.e: Aero Precision).



U.S. Firearm Production (1994 – 2018)

ANNUAL AVERAGES

Years	Pistols	Revolvers	Total Handguns	Rifles	Shotguns	Total Long Guns	Production Total
25 YR (1994 to 2018)	1,956,907	506,212	2,463,118	2,090,986	846,789	2,937,775	5,400,893
20 YR (1999 to 2018)	2,136,956	517,371	2,654,326	2,274,768	792,981	3,067,749	5,722,075
15 YR (2004 to 2018)	2,573,384	581,073	3,154,456	2,540,831	780,465	3,321,296	6,475,752
10 YR (2009 to 2018)	3,344,062	694,263	4,038,326	3,050,239	827,533	3,877,772	7,916,098
5 YR (2014 to 2018)	3,878,978	774,132	4,653,111	3,401,253	752,954	4,154,207	8,807,318

Source: Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) Annual Firearms Manufacturing and Export Report (AFMER). Data is in total units and represents the number of firearms "manufactured and disposed of in commerce during the calendar year." Totals include firearms sold for export and law enforcement, but not military sales.

2019 Interim data prepared July 7, 2020. The interim report indicates preliminary data for which the following number of units were reported as manufactured by the manufacturer. This interim AFMER report represents firearms (including separate frames or receivers, actions or barreled actions) manufactured and disposed of in commerce during the calendar year.

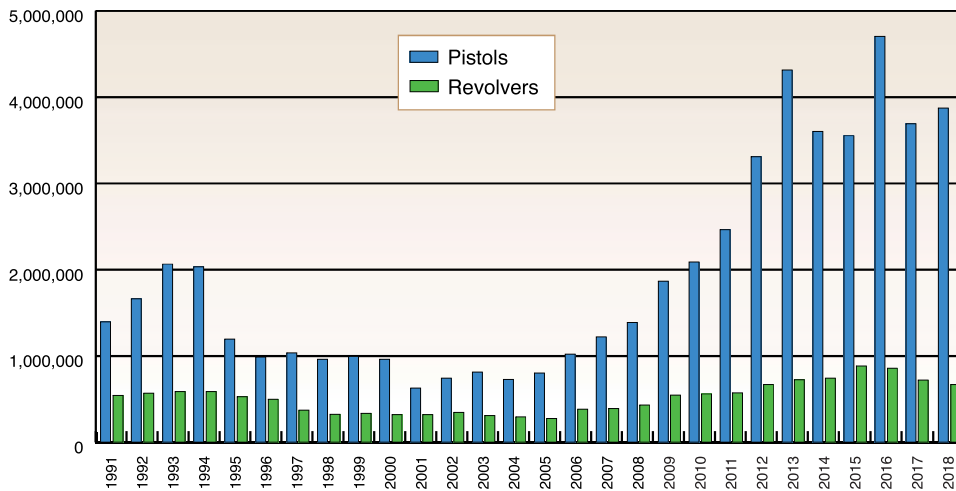
Year	Pistols	Revolvers	Total Handguns	Rifles	Shotguns	Total Long-Guns	Production Total
MANUFACTURED							
2019 Interim	3,035,719	579,263	3,614,982	1,951,898	480,444	2,432,342	6,047,324

The full 2019 report is expected to be available approximately February 2021. Look for it at www.atf.gov.

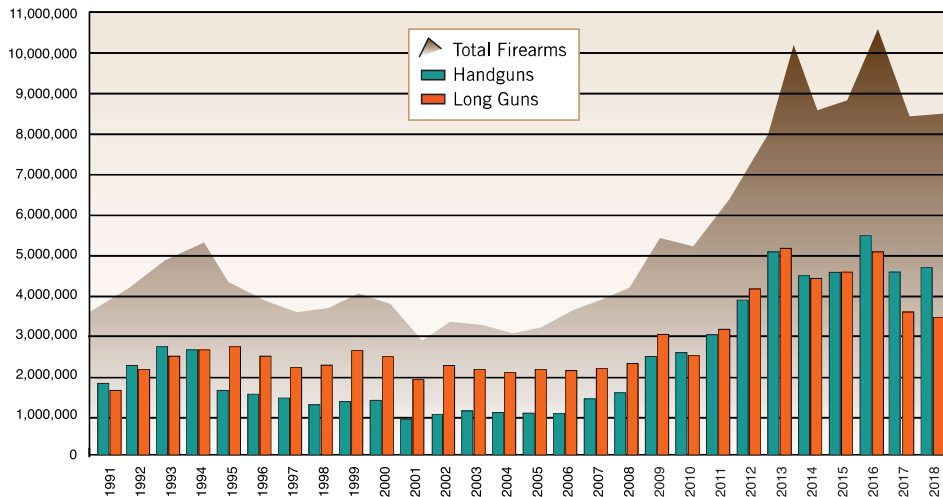


U.S. Firearm Production (1991 – 2018)

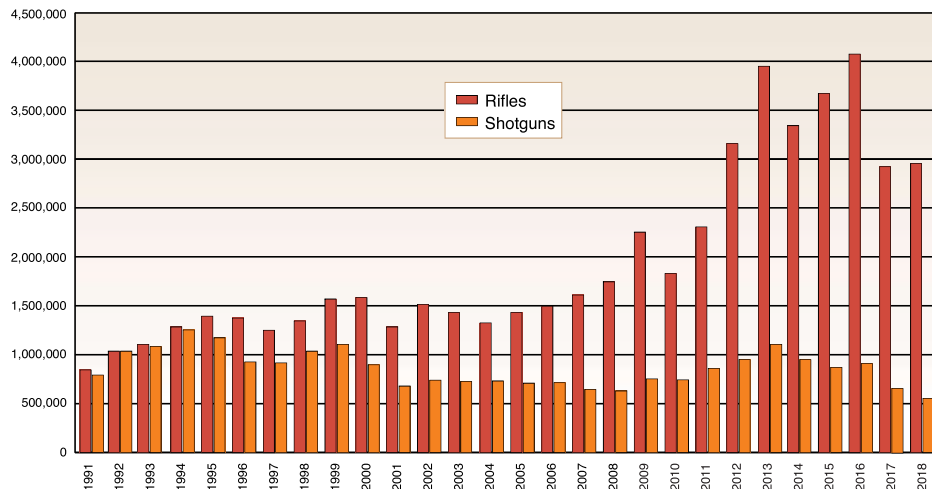
Handguns



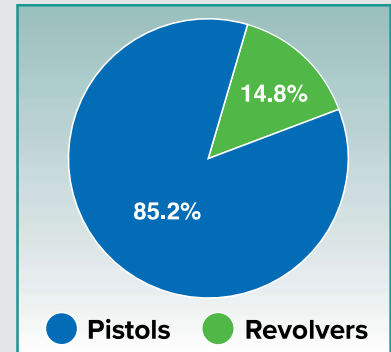
Total Production



Long Guns



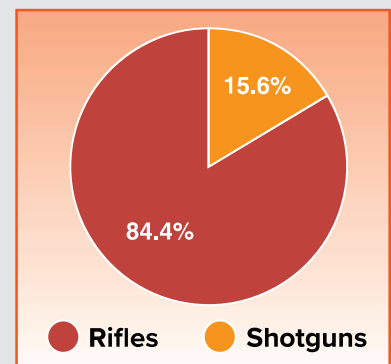
2018 Production At A Glance



Caliber	Production	Percentage
To .22	417,805	10.9%
To .25	25,370	0.7%
To .32	30,306	0.8%
To .380	760,044	19.8%
To 9mm	2,062,010	53.7%
To .50	546,809	14.2%
Total	3,842,344	100.0%

Caliber	Production	Percentage
To .22	271,553	40.8%
To .32	1,100	0.2%
To .357 M	113,394	17.1%
To .38 Sp	199,028	29.9%
To .44 M	42,434	6.4%
To .50	37,323	5.6%
Total	664,832	100.0%

NOTE: Caliber designations as reported in ATF reports are preceded by the word "to." This represents a range of calibers in a category. For example, the pistol ".50" category includes .40- and .45-caliber models among others that are larger than 9mm.

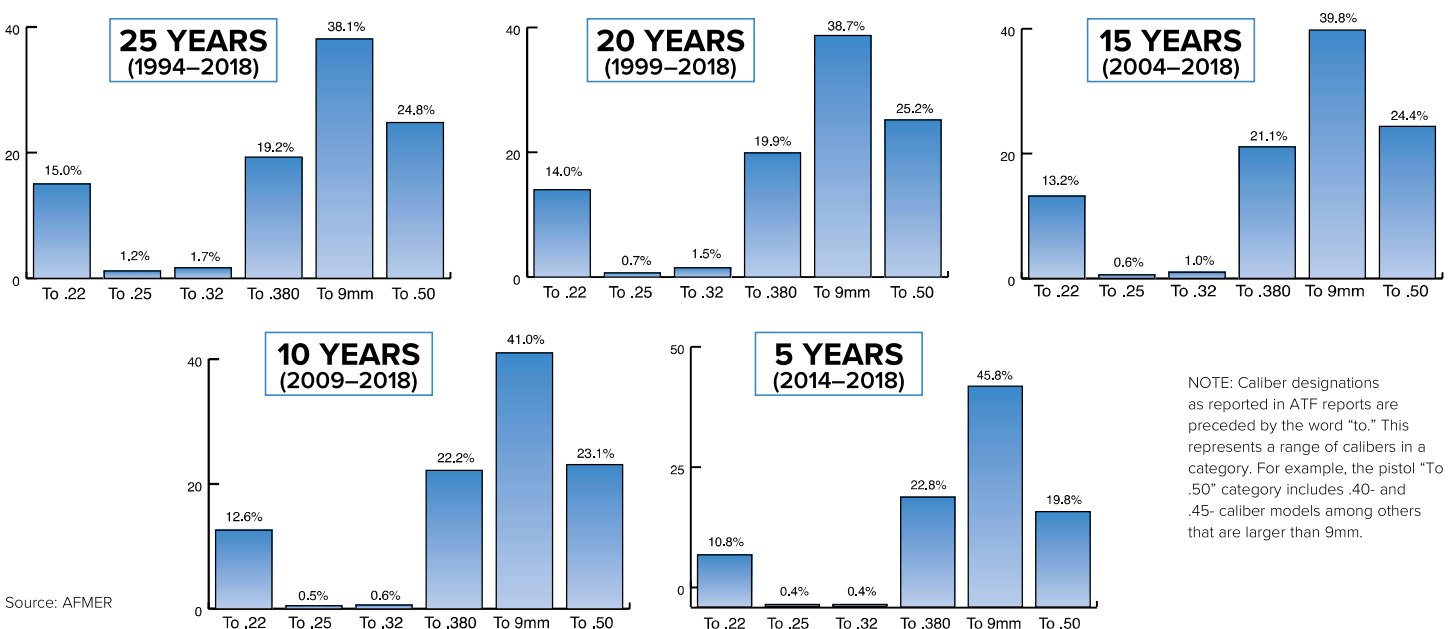


U.S. Pistol Production by Caliber (1991 – 2018)



Year	To .22	To .25	To .32	To .380	To 9mm	To .50	TOTALS
1991	306,088	252,370	55,007	215,595	358,228	190,964	1,378,252
1992	352,621	253,955	50,916	371,095	468,182	172,768	1,669,537
1993	452,509	277,306	52,268	508,469	586,039	216,771	2,093,362
1994	449,495	119,769	25,972	313,915	750,693	344,454	2,004,298
1995	260,059	51,025	19,220	182,801	398,472	283,707	1,195,284
1996	206,485	41,156	20,709	166,089	319,696	233,393	987,528
1997	250,983	43,103	43,623	154,046	303,212	241,110	1,036,077
1998	184,836	50,936	62,338	98,266	284,374	279,615	960,365
1999	229,852	24,393	52,632	81,881	270,298	336,390	995,446
2000	184,577	23,198	60,527	108,523	277,176	308,900	962,901
2001	123,374	5,697	57,823	41,634	213,378	184,930	626,836
2002	144,722	10,009	53,999	59,476	205,197	268,111	741,514
2003	189,785	10,987	43,471	79,788	219,668	267,961	811,660
2004	211,473	10,140	32,435	68,291	182,493	223,679	728,511
2005	139,178	10,455	29,024	107,386	299,681	217,701	803,425
2006	141,651	9,625	39,197	126,939	352,383	351,465	1,021,260
2007	180,419	11,361	43,914	138,484	391,312	454,174	1,219,664
2008	195,633	14,586	40,485	278,945	421,746	435,876	1,387,271
2009	320,697	15,053	47,396	390,897	586,364	507,861	1,868,268
2010	320,237	21,722	39,792	615,630	591,876	498,320	2,087,577
2011	357,884	19,182	13,890	537,063	838,957	697,279	2,464,255
2012	586,625	9,853	11,248	582,645	1,175,564	945,146	3,311,081
2013	554,431	18,578	6,591	852,663	1,653,900	1,228,387	4,314,550
2014	410,747	19,097	10,494	873,087	1,254,582	1,034,570	3,602,577
2015	410,041	11,567	14,763	819,103	1,531,033	766,528	3,553,035
2016	439,628	13,174	10,269	1,129,761	2,275,660	837,438	4,705,930
2017	408,705	11,135	8,152	848,425	1,756,618	657,971	3,691,006
2018	417,805	25,370	30,306	760,044	2,062,010	546,809	3,842,344
TOTALS	8,430,540	1,384,802	976,461	10,510,941	20,028,792	12,732,278	54,063,814

Percentage of Pistols produced in the U.S. by caliber



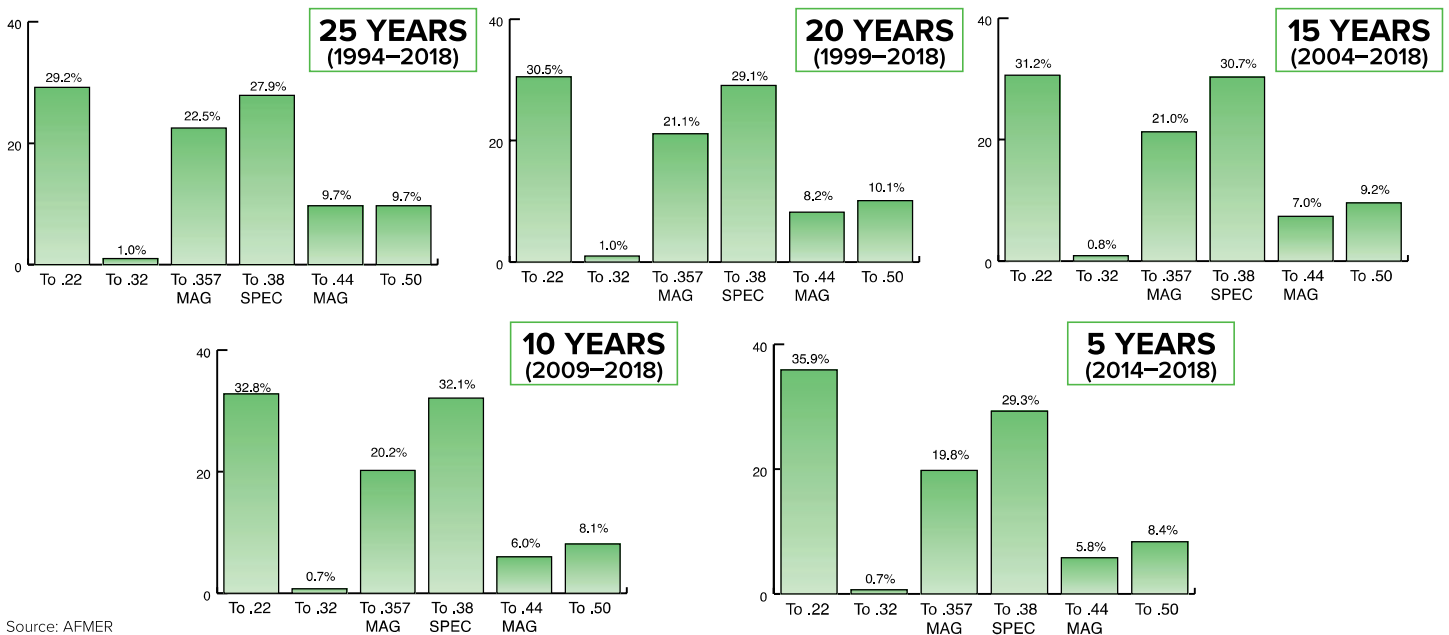
Source: AFMER

U.S. Revolver Production by Caliber (1991 – 2018)



Year	To .22	To .32	To .357 MAG	To .38 SPEC	To .44 MAG	To .50	TOTALS
1991	79,676	10,957	155,237	121,387	76,582	13,127	456,966
1992	74,408	10,243	168,720	120,721	80,705	14,616	469,413
1993	122,614	10,421	183,328	146,767	70,381	28,781	562,292
1994	133,990	9,160	170,856	146,630	89,713	36,101	586,450
1995	99,578	4,381	210,379	92,913	90,144	30,269	527,664
1996	127,119	3,083	134,910	115,432	80,456	37,944	498,944
1997	109,296	3,876	70,792	85,935	61,324	39,205	370,428
1998	68,108	2,602	73,905	77,289	64,236	38,250	324,390
1999	80,140	5,844	68,174	86,356	55,957	39,313	335,784
2000	79,472	1,598	81,017	59,339	46,931	50,603	318,960
2001	77,433	5,003	50,120	85,628	39,515	62,444	320,143
2002	86,806	17,599	95,570	51,472	46,080	49,543	347,070
2003	108,518	3,928	59,591	57,078	46,533	33,716	309,364
2004	88,570	3,446	62,640	54,842	35,097	49,504	294,099
2005	63,333	2,297	68,476	68,785	25,802	45,512	274,205
2006	84,452	2,242	99,562	85,321	54,308	56,184	382,069
2007	91,963	3,509	93,320	104,498	46,719	51,325	391,334
2008	115,511	6,681	105,944	133,621	31,135	38,861	431,753
2009	141,840	7,590	107,834	232,339	29,967	27,977	547,547
2010	131,543	8,605	126,525	210,762	45,361	36,131	558,927
2011	153,749	5,182	125,237	206,191	35,791	46,707	572,857
2012	234,164	1,717	126,594	203,005	36,116	65,761	667,357
2013	226,749	1,914	149,730	238,384	46,466	62,039	725,282
2014	200,739	5,260	151,635	283,990	41,640	60,783	744,047
2015	278,784	9,413	185,976	225,782	48,170	136,453	884,578
2016	320,773	7,851	182,564	248,143	51,451	45,506	856,288
2017	319,364	1,715	134,053	177,956	42,062	45,767	720,917
2018	271,553	1,100	113,394	199,028	42,434	37,323	664,832
TOTALS	3,693,547	125,596	2,848,798	3,530,719	1,233,408	1,223,221	12,655,289

Percentage of Revolvers produced in the U.S. by caliber



Source: AFMER

Modern Sporting Rifle Production Plus Imports Less Exports (1990 – 2018)

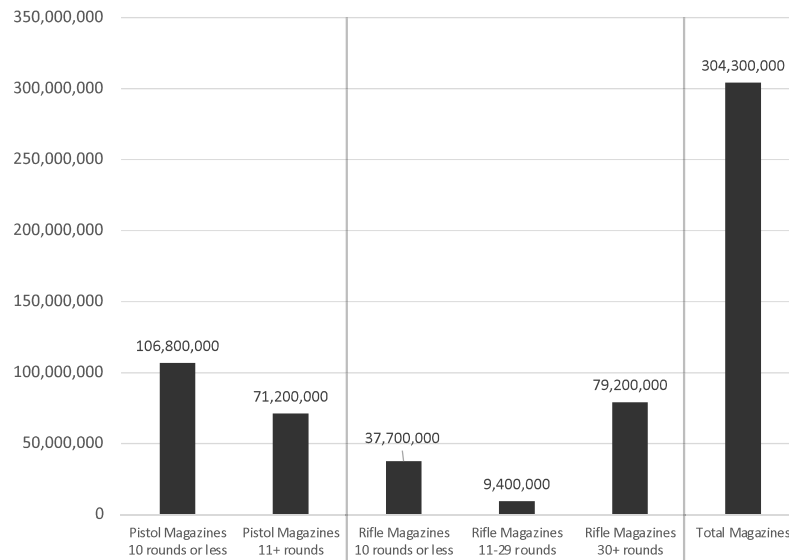
(estimated)

Year	US Production less exports of MSRs	US Imports less exports of MSRs	TOTALS
1990	43,000	31,000	74,000
1991	46,000	69,000	115,000
1992	33,000	72,000	105,000
1993	62,000	226,000	288,000
1994	103,000	171,000	274,000
1995	54,000	77,000	131,000
1996	27,000	43,000	70,000
1997	44,000	81,000	125,000
1998	70,000	75,000	145,000
1999	113,000	119,000	232,000
2000	86,000	130,000	216,000
2001	60,000	119,000	179,000
2002	97,000	145,000	242,000
2003	118,000	262,000	380,000
2004	107,000	207,000	314,000
2005	141,000	170,000	311,000
2006	196,000	202,000	398,000
2007	269,000	229,000	498,000
2008	444,000	189,000	633,000
2009	692,000	314,000	1,006,000
2010	444,000	140,000	584,000
2011	653,000	163,000	816,000
2012	1,308,000	322,000	1,630,000
2013	1,882,000	393,000	2,275,000
2014	950,000	237,000	1,187,000
2015	1,360,000	244,000	1,604,000
2016	2,217,000	230,000	2,447,000
2017	1,406,000	158,000	1,564,000
2018	1,729,000	225,000	1,954,000
TOTALS	14,754,000	5,043,000	19,797,000



NSSF® Magazine Chart

Estimated 304 Million Detachable Pistol and Rifle Magazines in U.S. Consumer Possession 1990 – 2018



Source: ATF AFMER, US ITC, Industry estimates

U.S. Production by Manufacturer (2018)

LICENSE NAME	HANDGUN	PISTOLS	REVOLVERS	TOTALS
SMITH & WESSON CORP		886,917	210,333	1,097,250
STURM, RUGER & COMPANY, INC		704,588	145,534	850,122
SIG SAUER INC		635,155	0	635,155
GLOCK INC		247,546	0	247,546
KIMBER MFG INC		201,138	9,609	210,747
HERITAGE MANUFACTURING INC		0	187,104	187,104
SCCY INDUSTRIES LLC		169,819	0	169,819
SPRINGFIELD INC		140,037	0	140,037
BROWNING ARMS COMPANY		125,486	0	125,486
TAURUS INTERNATIONAL MANUFACTURING INC		94,600	0	94,600
BERETTA USA CORP		79,432	0	79,432
KEL TEC CNC INDUSTRIES INC		67,151	0	67,151
COLT'S MANUFACTURING COMPANY LLC		40,973	16,697	57,670
FN AMERICA, LLC		51,843	0	51,843
NORTH AMERICAN ARMS INC		365	49,171	49,536
STRASSELLS MACHINE INC		36,900	0	36,900
DIAMONDBACK FIREARMS LLC		36,591	0	36,591
REMINGTON ARMS COMPANY LLC		33,821	0	33,821
COBRA ENTERPRISES OF UTAH, INC		30,330	6	30,336
CHARCO 2000 INC		0	21,761	21,761
VALLEY STEEL STAMP INC		0	21,438	21,438
PHOENIX ARMS		20,000	0	20,000
JIMENEZ ARMS INC		19,927	0	19,927
BOND ARMS, INC		15,854	0	15,854
AMERICAN TACTICAL INC		14,946	0	14,946
SAEIL, INC		13,449	0	13,449
HASKELL MANUFACTURING INC		12,800	0	12,800
PALMETTO STATE ARMORY, LLC		9,613	0	9,613
CZ USA INC (subsidi: Dan Wesson)		8,764	440	9,204
FMK FIREARMS INCORPORATED		8,359	0	8,359
DANIEL DEFENSE INC		7,565	0	7,565
IBERIA FIREARMS INC		7,400	0	7,400
CZ USA		6,444	0	6,444
FREEDOM ORDNANCE MANUFACTURING INC		6,229	0	6,229
WILSONS GUN SHOP INC		5,759	0	5,759
CMMG INC		5,730	0	5,730
TRAILBLAZER FIREARMS LLC		5,337	0	5,337
STI FIREARMS LLC		5,204	0	5,204
ALPHATECH INC		4,775	0	4,775
KRISS USA, INC		4,378	0	4,378
HENRY RAC HOLDING CORP		4,326	0	4,326
HECKLER & KOCH, INC		4,308	0	4,308
PAUWAY CORP		4,250	0	4,250
RADICAL FIREARMS LLC		3,907	0	3,907
FULL CONCEAL INC		3,675	0	3,675
CENTURY ARMS INC		3,299	0	3,299
MASTERPIECE ARMS HOLDING COMPANY		3,045	0	3,045
DEL-TON, INC		2,750	0	2,750
PTR INDUSTRIES INC		2,676	0	2,676
VLH INC		2,587	0	2,587
HONOR DEFENSE LLC		2,447	0	2,447
NIGHTHAWK CUSTOM LLC		2,429	0	2,429
POLYMER80 INC		2,203	0	2,203
EXTAR LLC		1,609	0	1,609
FRANK ROTH CO INC		0	1,490	1,490
WHALLEY PRECISION INC		1,479	0	1,479
FEDERAL ARMAMENT LLC		1,158	0	1,158
LES BAER CUSTOM INC		1,153	0	1,153
LWRC INTERNATIONAL		1,135	0	1,135
ARES DEFENSE SYSTEMS INC		1,126	0	1,126
TOTALS		3,842,344	664,832	4,507,176

NOTE: Manufacturers producing less than 1,000 handguns in 2018 are not displayed above, but all reported units are included in the total.

LICENSE NAME	LONG GUNS	RIFLES	SHOTGUNS	TOTALS
STURM, RUGER & COMPANY, INC		731,585	10	731,595
REMINGTON ARMS COMPANY LLC		273,246	155,488	428,734
SAVAGE ARMS, INC		370,443	15,265	385,708
MAVERICK ARMS, INC		77,747	249,183	326,930
SMITH & WESSON CORP		278,372	228	278,600
HENRY RAC HOLDING CORP		238,158	3,914	242,072
KEL TEC CNC INDUSTRIES INC		74,557	22,698	97,255
SPRINGFIELD INC		63,536	0	63,536
BP FIREARMS COMPANY LLC		58,243	0	58,243
HENRY WISCONSIN LLC		42,443	14,439	56,882
KEYSTONE SPORTING ARMS LLC		48,300	0	48,300
DIAMONDBACK FIREARMS LLC		46,593	0	46,593
AERO PRECISION LLC		43,000	0	43,000
STRASSELLS MACHINE INC		39,500	0	39,500
WEATHERBY INC		28,925	10,297	39,222
AMERICAN TACTICAL INC		31,747	3,116	34,863
DEL-TON, INC		33,416	0	33,416
OUTDOOR COLORS LLC		15,137	17,853	32,990
BERETTA USA CORP		2,496	25,669	28,165
SIG SAUER INC		26,799	0	26,799
CENTURY ARMS INC		24,249	0	24,249
DANIEL DEFENSE INC		23,884	47	23,931
COLT'S MANUFACTURING COMPANY LLC		21,613	0	21,613
PALMETTO STATE ARMORY, LLC		20,990	0	20,990
TDJ INC		17,191	0	17,191
RADICAL FIREARMS LLC		15,809	0	15,809
STAG ARMS LLC		13,735	0	13,735
KIMBER MFG INC		13,674	0	13,674
WM C ANDERSON INC		13,336	0	13,336
WINDHAM WEAPONRY INC		11,240	0	11,240
STRATEGIC ARMORY CORPS LLC		8,120	0	8,120
ROCK RIVER ARMS INC		7,679	0	7,679
LWRC INTERNATIONAL		7,414	0	7,414
I O INC		7,343	0	7,343
FEDERAL ARMAMENT LLC		2,205	5,115	7,320
CZ USA		7,152	137	7,289
BRAVO COMPANY MFG INC		7,001	0	7,001
PTR INDUSTRIES INC		6,924	0	6,924
BARRETT FIREARMS MFG INC		6,187	286	6,473
SAEIL, INC		6,166	0	6,166
O F MOSSBERG & SONS INC		5,601	0	5,601
PATRIOT ORDNANCE FACTORY INC		4,863	0	4,863
FN AMERICA, LLC		4,803	0	4,803
BEAR CREEK ARSENAL LLC		4,305	0	4,305
KRISS USA, INC		4,170	0	4,170
FORGE METAL FINISHING INC		0	3,958	3,958
BLACK RAIN ORDNANCE INC		3,933	0	3,933
CMMG INC		3,621	0	3,621
STANDARD MANUFACTURING CO LLC		197	3,119	3,316
JAMES RIVER ARMORY		3,187	0	3,187
TACTICAL SOLUTIONS INC		2,988	0	2,988
BROWNELLS INC		2,687	0	2,687
ALEX PRO FIREARMS LLC		2,587	0	2,587
PRIMARY WEAPONS SYSTEMS INC		2,374	0	2,374
TROY INDUSTRIES INC		2,271	0	2,271
WILSONS GUN SHOP INC		2,003	144	2,147
ADAMS ARMS LLC		2,095	0	2,095
FMK FIREARMS INCORPORATED		2,075	0	2,075
GOOD TIME OUTDOORS INC		2,021	0	2,021
DESERT TECH LLC		2,013	0	2,013
TOTALS		2,905,178	536,119	3,441,297

NOTE: Manufacturers producing less than 2,000 long guns in 2018 are not displayed above, but all reported units are included in the total.

Top 25 Manufacturers of Firearms Manufactured in the U.S.

(Based on Total U.S. Production in 2018)

LICENSE NAME	PISTOLS	REVOLVERS	TOTAL HANDGUNS	RIFLES	SHOTGUNS	TOTAL LONG GUNS	TOTAL FIREARMS MANUFACTURED	% OF TOTAL 2018 U.S. HANGUN & LONG GUN PRODUCTION
STURM, RUGER & COMPANY, INC	704,588	145,534	850,122	731,585	10	731,595	1,581,717	19.9%
SMITH & WESSON CORP	886,917	210,333	1,097,250	278,372	228	278,600	1,375,850	17.3%
SIG SAUER INC	635,155	0	635,155	26,799	0	26,799	661,954	8.3%
REMINGTON ARMS COMPANY LLC	33,821	0	33,821	273,246	155,488	428,734	462,555	5.8%
SAVAGE ARMS, INC	0	0	0	370,443	15,265	385,708	385,708	4.9%
MAVERICK ARMS, INC	0	0	0	77,747	249,183	326,930	326,930	4.1%
GLOCK INC	247,546	0	247,546	0	0	247,546	247,546	3.1%
HENRY RAC HOLDING CORP	4,326	0	4,326	238,158	3,914	242,072	246,398	3.1%
KIMBER MFG INC	201,138	9,609	210,747	13,674	0	13,674	224,421	2.8%
SPRINGFIELD INC	140,037	0	140,037	63,536	0	63,536	203,573	2.6%
HERITAGE MANUFACTURING INC	0	187,104	187,104	0	0	0	187,104	2.4%
SCCY INDUSTRIES LLC	169,819	0	169,819	0	0	0	169,819	2.1%
KEL TEC CNC INDUSTRIES INC	67,151	0	67,151	74,557	22,698	97,255	164,406	2.1%
BROWNING ARMS COMPANY	125,486	0	125,486	912	0	912	126,398	1.6%
BERETTA USA CORP	79,432	0	79,432	2,496	25,669	28,165	107,597	1.4%
TAURUS INTERNATIONAL MANUFACTURING INC	94,600	0	94,600	97	0	97	94,697	1.2%
DIAMONDBACK FIREARMS LLC	36,591	0	36,591	46,593	0	46,593	83,184	1.0%
COLT'S MANUFACTURING COMPANY LLC	40,973	16,697	57,670	21,613	0	21,613	79,283	1.0%
STRASSELLS MACHINE INC	36,900	0	36,900	39,500	0	39,500	76,400	1.0%
BP FIREARMS COMPANY LLC	0	0	0	58,243	0	58,243	58,243	0.7%
HENRY WISCONSIN LLC	11	0	11	42,443	14,439	56,882	56,893	0.7%
FN AMERICA, LLC	51,843	0	51,843	4,803	0	4,803	56,646	0.7%
AMERICAN TACTICAL INC	14,946	0	14,946	31,747	3,116	34,863	49,809	0.6%
NORTH AMERICAN ARMS INC	365	49,171	49,536	0	0	0	49,536	0.6%
KEYSTONE SPORTING ARMS LLC	823	0	823	48,300	0	48,300	49,123	0.6%
Total Produced in 2018 by Top 25 Manufacturers	3,572,468	618,448	4,190,916	2,444,864	490,010	2,934,874	7,125,790	89.6%
	93.0%	93.0%	93.0%	84.2%	91.4%	85.3%	89.6%	

Source:AFMER

U.S. Manufacturers Direct Exports at a Glance (2018)

PISTOL MANUFACTURER	EXPORTS
SIG SAUER INC	167,851
GLOCK INC	110,943
SMITH & WESSON CORP	25,406
STURM, RUGER & COMPANY, INC	10,196
BERETTA USA CORP	5,145
FN AMERICA, LLC	2,377
KIMBER MFG INC	2,225
COLT'S MANUFACTURING COMPANY LLC	1,812
STI FIREARMS LLC	1,048
REMINGTON ARMS COMPANY LLC	827
HENRY RAC HOLDING CORP	720
SPRINGFIELD INC	693
ANGSTADT ARMS LLC	469
TAURUS INTERNATIONAL MANUFACTURING INC	390
SCCY INDUSTRIES LLC	270
STRAYER VOIGT INC / STRAYER-VOIGT LLC	251
LES BAER CUSTOM INC	242
KEL TEC CNC INDUSTRIES INC	213
KRISS USA, INC	197
FMK FIREARMS INCORPORATED	165
SAEILO, INC	121
NIGHTHAWK CUSTOM LLC	110
WILSONS GUN SHOP INC	103
V CUSTOM INC	52
FEDERAL ARMAMENT LLC	51
CABOT GUN COMPANY LLC	51
PISTOL TOTAL	332,218

REVOLVER MANUFACTURER	EXPORTS
SMITH & WESSON CORP	17,009
STURM, RUGER & COMPANY, INC	3,736
KIMBER MFG INC	254
NORTH AMERICAN ARMS INC	232
COLT'S MANUFACTURING COMPANY LLC	223
REVOLVER TOTAL	21,498

SHOTGUN MANUFACTURER	EXPORTS
REMINGTON ARMS COMPANY LLC	13,503
MAVERICK ARMS, INC	9,610
KEL TEC CNC INDUSTRIES INC	1,378
SAVAGE ARMS, INC	1,059
WEATHERBY INC	801
HENRY RAC HOLDING CORP	718
GOOD, WILLIAM J	341
BERETTA USA CORP	308
SHOTGUN TOTAL	27,774

RIFLE MANUFACTURERS	EXPORTS
REMINGTON ARMS COMPANY LLC	44,239
STURM, RUGER & COMPANY, INC	39,731
SAVAGE ARMS, INC	26,335
HENRY RAC HOLDING CORP	10,885
SMITH & WESSON CORP	10,483
BEAR CREEK ARSENAL LLC	8,501
MAVERICK ARMS, INC	5,758
CREED MONARCH INC	2,510
SIG SAUER INC	2,254
WEATHERBY INC	1,790
KEL TEC CNC INDUSTRIES INC	1,412
DANIEL DEFENSE INC	897
BARRETT FIREARMS MFG INC	797
BP FIREARMS COMPANY LLC	782
TDJ INC	754
TNW FIREARMS INC	648
KRISS USA, INC	647
LEWIS MACHINE & TOOL CO	576
FREEDOM ORDNANCE MANUFACTURING INC	540
JUST RIGHT CARBINES LLC	530
DESERT TECH LLC	497
KIMBER MFG INC	478
COLT'S MANUFACTURING COMPANY LLC	461
M+M INC	446
STRATEGIC ARMORY CORPS LLC	316
FEDERAL ARMAMENT LLC	298
TROY INDUSTRIES INC	280
PNEU DART INC	244
TIPPMANN ARMS COMPANY LLC	236
PATRIOT ORDNANCE FACTORY INC	207
NORDIC COMPONENTS INC	172
STAG ARMS LLC	160
SPRINGFIELD INC	156
ZDF IMPORT/EXPORT, LLC	156
AMCHAR WHOLESALE, INC	130
JARD INC	126
V CUSTOM INC	118
WINDHAM WEAPONRY INC	70
AERO PRECISION LLC	69
GUNWERKS LLC	51
RIFLE TOTAL	165,573

Source: Annual Firearms Manufacturing and Export Report (AFMER)
 NOTE: A manufacturer that reported exporting less than 50 units does not appear in the tables above.



Source: AFMER

Industry Statistics (current Snapshot)

The data listed on this page is sourced from the most current Census Bureau report. At this time it is the 2018 Annual Survey of Manufacturers. NAICS (North American Industry classification System) code 332992 represents “Small-Arms Ammunition,” and NAICS code 332 represents “Fabricated-Metal-Product Manufacturing.”

DEFINITION OF TERMS

Employees: includes all full-time and part-time employees on the payroll of operating manufacturing establishments.

Production workers: includes workers (up through the line-supervisor level) actively engaged in the manufacturing process.

Payroll: includes the gross earnings of all employees paid in a calendar year.

Value added: measure of manufacturing activity derived by subtracting the cost of materials and supplies from the value of shipments (finished products and services rendered).

Capital expenditures: represents the total new and used expenditures reported by establishments in operation and any known plants under construction.

Inventories: includes products and materials held outside of the establishment, such as in warehouses (private or public).



****NOTE:** The fabricated metal product manufacturing (NAICS code 332) subsector consists of all of these industry groups. Forging and Stamping: NAICS 3321; Cutlery and Handtool Manufacturing: NAICS 3322; Architectural and Structural Metals Manufacturing: NAICS 3323; Boiler, Tank, and Shipping Container Manufacturing: NAICS 3324; Hardware Manufacturing: NAICS 3325; Spring and Wire Product Manufacturing: NAICS 3326; Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing: NAICS 3327; Coating, Engraving, Heat Treating, and Allied Activities: NAICS 3328; Other Fabricated Metal Product Manufacturing: NAICS 3329.

INDUSTRY STATISTIC	(332) Fabricated Metal Product Manufacturing (2018)	(332992) Firearms Ammunition Manufacturing (2018)	Ammunition Manufacturing as Percent of Total Fabricated Metal Product Manufacturing
Employment & Labor Costs			
Total number of employees	1,400,643	11,851	0.8%
Number of production workers	1,058,271	10,313	1.0%
Production workers hours worked	2,048,355,000	21,128,000	1.0%
Production workers wages	\$50,421,928,000	\$522,928,000	1.0%
Total annual payroll	\$77,612,291,000	\$655,992,000	0.8%
Total fringe benefits	**	**	not available
Total annual compensation	\$77,612,291,000	\$655,992,000	0.8%
Purchased Fuels and Electric Energy Used for Heat and Power			
Electric energy purchased (kWh)	42,369,630,000	400,619,000	0.9%
Cost of electric energy	\$3,617,620,000	\$31,563,000	0.9%
Cost of purchased fuels	\$1,263,081,000	D*	not available
Total cost of fuels and electric energy	\$4,880,701,000	\$31,563,000	0.6%
Capital Expenditures for Plant and Equipment			
Capital expenditures for buildings and other structures	**	**	not available
Rental or lease payments (buildings and equipment)	\$4,973,295,000	\$27,886,000	0.6%
Capital expenditures for machinery and equipment	**	**	not available
All other operating expenses	\$29,322,789,000	\$317,891,000	1.1%
Total capital expenditures for plant and equipment	\$34,296,084,000	\$345,777,000	1.0%
Value of Manufacturers' Inventories by Stage of Fabrication			
Beginning of Year			
Finished products	\$18,033,061,000	\$350,082,000	1.9%
Work-in-process	\$12,548,241,000	\$232,261,000	1.9%
Materials and supplies inventories	\$18,501,248,000	\$202,336,000	1.1%
Total	\$49,082,550,000	\$784,679,000	1.6%
End of Year			
Finished products	\$19,272,292,000	\$379,817,000	2.0%
Work-in-process	\$13,786,425,000	\$195,571,000	1.7%
Materials and supplies inventories	\$20,902,305,000	\$204,010,000	1.0%
Total	\$53,961,022,000	\$779,398,000	1.4%
Manufacturing Activity			
Total value of shipments	\$375,880,137,000	\$3,960,277,000	1.1%
Total cost of materials	\$171,539,777,000	\$1,659,962,000	1.0%
Value added	\$206,817,774,000	\$2,293,361,000	1.1%

Source: 2018 Annual Survey of Manufacturers (ASM)

NOTE: The D* indicates that information was withheld to avoid disclosing data for individual companies. Double asterisks, **, identify data fields that are expected to be available between November 2020 and January 2021.

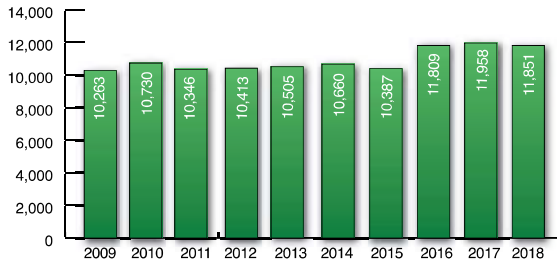
Manufacturing Trends

Small Arms Ammunition (NAICS 332992)

ALL EMPLOYEES (NUMBER)

10-Year Average

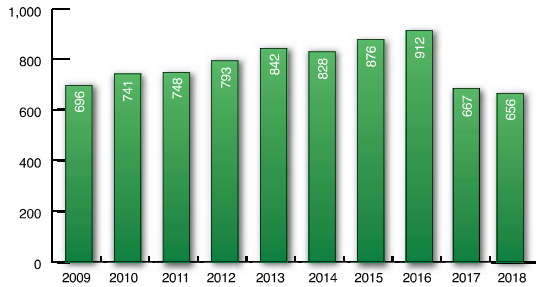
Small Arms Ammunition: **10,892**



PAYROLL (\$ IN MILLIONS)

10-Year Average

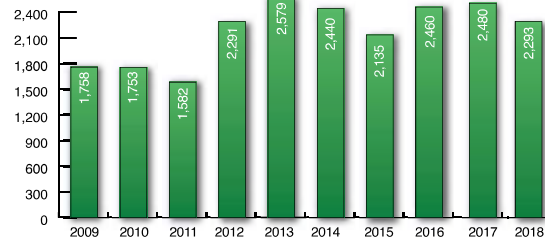
Small Arms Ammunition: **\$776M**



VALUE ADDED (\$ IN MILLIONS)

10-Year Average

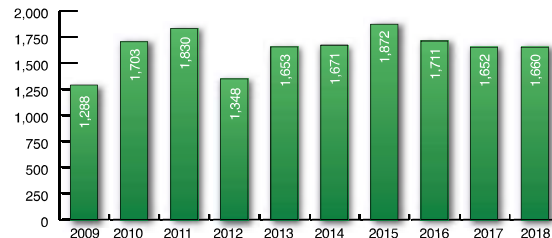
Small Arms Ammunition: **\$2,177M**



COST OF MATERIALS (\$ IN MILLIONS)

10-Year Average

Small Arms Ammunition: **\$1,639M**



Source: U.S. Census Bureau Annual Survey of Manufacturers (ASM) and Economic Census reports

U.S. Ammunition Consumer Market Unit Estimate

Category	2012	2015	2018
Shotshell	1.4 billion	1.4 billion	1.0 billion
Rimfire	4.5 billion	5.4 billion	4.1 billion
Centerfire	3.6 billion	3.7 billion	3.6 billion
TOTALS	9.5 billion	10.5 billion	8.7 billion

Source: USITC and NSSF Estimates

Firearm Imports By Country (2009 – 2018) (in actual units of quantity)

Pistols: HTS 9302000040 [PISTOLS, SEMIAUTOMATIC EXCEPT OF HEADING 9303 OR 9304] --or-- HTS 9302000090 [PISTOLS, EXCEPT OF HEADING 9303 OR 9304, NESOI (not elsewhere specified or included)]

COUNTRY	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	TOTALS
Argentina	63,872	74,245	71,838	75,984	82,635	43,710	42,304	75,834	33,676	39,969	604,067
Austria	602,146	431,118	515,396	821,522	932,117	794,540	923,986	1,318,204	1,198,740	927,511	8,465,280
Belgium	33,195	18,874	9,769	10,754	14,493	18,221	18,679	25,299	21,691	25,410	196,385
Brazil	285,075	206,207	161,597	215,470	215,895	113,976	273,792	455,368	465,652	501,995	2,895,027
Bulgaria	2,881	3,325	1,450	4,586	8,397	270	6,267	3,290	1,174	1,293	32,933
Canada	10,544	6	2	13	36	134	15	4	106	1	10,861
Colombia	0	0	0	0	0	0	0	0	0	10	10
Croatia	272,204	239,021	211,001	389,014	451,657	441,337	338,535	574,486	326,653	295,107	3,539,015
Czech Republic	49,408	19,531	18,588	38,540	37,467	47,104	71,889	107,600	140,653	184,926	715,706
Denmark	0	0	0	0	0	0	0	0	75	0	75
Finland	0	0	0	1	0	52	0	5	3	130	191
France	0	0	10	465	15	0	13	34	25	263	825
Germany	282,075	221,446	254,574	402,566	502,117	282,018	225,052	416,961	325,829	307,085	3,219,723
Hungary	7,950	349	311	695	777	898	1,521	852	488	883	14,724
Israel	10,238	2,645	9,995	20,017	23,979	13,189	15,618	22,342	15,174	11,979	145,176
Italy	81,811	86,867	63,540	154,999	171,221	106,462	48,909	129,456	124,490	97,909	1,065,664
Japan	0	0	0	0	0	40	0	0	0	0	40
Norway	14	21	14	0	1	10	28	23	0	24	135
Pakistan	0	0	0	0	161	250	575	175	400	0	1,561
Philippines	27,294	38,572	48,908	73,430	131,898	62,823	66,408	78,314	68,754	100,802	697,203
Poland	10,234	3,922	20,895	9,806	8,406	12,094	10,276	11	45	5,431	81,120
Romania	10,571	16,945	13,775	3,579	3,655	5,800	9,460	5,272	10,311	23,562	102,930
Russia	90	1,050	5,400	61	772	0	0	60	17	0	7,450
Serbia	3,038	12,455	720	29,204	48,786	10,180	18,066	12,823	16,470	5,575	157,317
Slovakia	0	0	0	801	1,204	417	1,075	1,223	2,196	1,996	8,912
Slovenia	0	0	0	0	0	0	1,058	7,083	6,014	3,232	17,387
South Africa	0	0	0	0	17	0	0	0	0	18	35
South Korea	20	29	0	1,021	3,879	62	0	47	0	70	5,128
Spain	410	989	322	376	262	10,485	83	622	22,793	21,022	57,364
Sweden	0	0	13	45	31	9	0	0	4	35	137
Switzerland	2,207	735	979	3,110	5,508	2,222	3,953	2,289	6,982	10,600	38,585
Turkey	17,984	15,825	15,408	25,798	92,321	17,446	61,948	87,999	81,330	70,923	486,982
United Arab Em	0	0	0	3,814	909	47	0	110	300	0	5,180
United Kingdom	0	1	4,355	1	63	149	59	66	2	155	4,851
TOTALS	1,774,261	1,394,178	1,448,435	2,286,720	2,738,747	1,983,945	2,139,744	3,326,334	2,871,027	2,637,916	22,601,307



More detail on import and export data is available through the USITC website at dataweb.usitc.gov/. To obtain the highest level of product definition, use the HTS (Harmonized Tariff Schedule) 10-digit codes whenever possible.

Refer to the most current 'Harmonized Tariff Schedule' for IMPORT codes and to 'Schedule B' for EXPORT codes. Note that import and export codes do not always match.

The import and export data on DataWeb for 2010 – 2018 have been updated as of June 21, 2020 based on the latest official revisions from the Census Bureau (the first official revisions for 2020 data will not be available until June 2021).

For posted corrections pertaining to years prior to 2010, go to: census.gov/foreign-trade/statistics/corrections/index.html



Revolvers: HTS 9302000020 [REVOLVERS, EXCEPT OF HEADING 9303 OR 9304]

COUNTRY	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	TOTALS
Argentina	303	0	0	200	0	100	0	0	0	0	603
Brazil	368,128	319,804	198,249	228,876	236,270	98,480	211,847	201,544	238,101	162,703	2,264,002
Czech Republic	6,287	9	83	38	0	0	0	115	42	58	6,632
France	0	0	0	2	350	163	8	420	497	233	1,673
Germany	9,367	8,431	9,423	11,416	11,747	11,906	12,010	15,383	15,724	16,224	121,631
Italy	16,929	18,536	27,847	40,238	53,152	48,617	45,843	50,665	49,889	56,311	408,027
Philippines	6,127	6,054	5,339	6,666	8,915	8,198	13,049	18,852	19,034	22,816	115,050
Poland	0	0	0	0	0	79	507	0	0	0	586
Russia	0	0	11,500	11,486	0	0	0	0	0	0	22,986
Serbia	0	0	0	0	1,872	0	0	0	0	0	1,872
Slovakia	1,503	260	640	480	0	0	0	0	0	0	2,883
Spain	0	0	0	0	0	0	156	586	0	0	742
Switzerland	23	3	12	0	268	0	18	5	28	63	420
Turkey	0	0	0	0	0	20	0	125	250	0	395
Ukraine	1,000	0	5,500	0	4,000	0	0	0	0	0	10,500
United Arab Em	0	0	285	4,995	0	0	0	0	0	0	5,280
United Kingdom	489	360	0	0	1	83	0	20	5	56	1,014
TOTALS	410,156	353,457	258,878	304,397	316,582	167,646	283,438	287,723	323,572	258,465	2,964,314

Note: Countries with limited activity over this 10-year period are not shown; however, the totals include the units from all countries. Source: Data from the U.S. Department of Commerce and the U.S. International Trade Commission.

Firearm Imports By Country (2009 – 2018) (in actual units of quantity)

Shotguns: HTS 930320 [SPORTING, HUNTING OR TARGET-SHOOTING SHOTGUNS, INCLUDING COMBINATION SHOTGUN-RIFLES, EXCEPT MUZZLELOADING FIREARMS]

Rifles: HTS 930330 [SPORTING, HUNTING OR TARGET-SHOOTING RIFLES, EXCEPT MUZZLELOADING FIREARMS AND COMBINATION SHOTGUN-RIFLES] (Adjusted to EXCLUDE HTS codes 9303304010 & 9303308005 - Telescopic Sights Imported with Rifles)

Country	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	TOTALS
Austria	245	497	1,507	783	618	34	716	65	19	1,264	5,748
Belgium	25	48	114	157	9	1,377	715	546	120	3,768	6,879
Brazil	172,369	169,136	105,676	125,891	119,090	58,729	38,225	39,225	36,947	61,082	926,370
Canada	13	0	13	26	5	0	192	148	0	0	397
China	53,336	61,956	90,952	154,446	234,486	112,095	164,818	149,091	140,171	111,696	1,273,047
Czech Republic	1,738	34	6	0	142	50	109	22	15	43	2,159
France	20	20	10	6,284	10	9	23	84	116	79	6,655
Germany	1,254	2,364	2,204	3,467	1,370	1,224	1,547	2,371	2,284	3,589	21,674
Hungary	0	0	0	34	0	0	0	50	0	0	84
Italy	140,500	139,182	137,767	170,460	212,557	206,773	199,231	182,368	138,323	168,368	1,695,529
Japan	1,148	344	1,834	2,875	1,525	652	907	766	733	931	11,715
Pakistan	5	4	0	0	19	0	335	0	250	0	613
Philippines	560	1,139	950	5,500	9,800	6,496	6,400	7,100	3,100	8,050	49,095
Portugal	5	704	2,115	2,384	6,415	3,465	4,175	78	10	33	19,384
Russia	60,937	3,708	50,837	47,360	34,904	21,830	5,150	12,420	7,410	14	244,570
Spain	4,628	1,722	1,328	1,692	1,620	1,746	839	2,637	4,191	1,554	21,957
Sweden	133	42	0	238	143	228	2	183	91	27	1,087
Turkey	113,618	122,721	122,682	174,212	306,312	233,371	220,310	335,190	295,362	342,184	2,265,962
United Kingdom	8,046	6,099	8,251	8,836	8,922	490	578	4,042	2,847	3,864	51,975
TOTALS	558,679	509,792	530,564	704,828	937,952	648,592	644,274	736,443	631,998	706,648	6,604,900

Country	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	TOTALS
Australia	2	5	23	1	1	0	0	61	0	820	913
Austria	2,593	2,756	6,192	6,319	8,966	2,988	1,109	3,387	3,113	4,778	42,201
Belgium	21,819	16,017	16,317	20,634	29,920	34,067	54,497	58,129	40,268	29,651	321,319
Brazil	94,858	46,243	156,847	316,577	404,234	56,411	78,585	31,204	19,317	138,931	1,343,207
Bulgaria	5,142	0	0	10,790	31,087	12,900	5,100	290	1,816	3,000	70,125
Canada	161,552	134,519	156,860	267,993	292,404	258,803	276,821	225,108	202,119	172,406	2,148,585
China	0	0	0	0	1,050	4,049	0	0	0	0	5,099
Czech Republic	16,774	15,072	20,236	23,264	25,507	25,412	28,125	31,385	27,080	27,877	240,732
Denmark	157	179	169	0	0	0	0	0	81	0	586
Finland	32,623	26,464	23,417	33,536	43,858	40,183	50,492	56,614	35,285	34,728	377,200
France	60	42	64	64	47	50	482	307	739	544	2,399
Germany	101,939	32,476	42,116	96,013	134,305	39,376	16,008	30,229	9,976	15,043	517,481
Hungary	18,050	0	354	0	0	0	0	0	0	350	18,754
Israel	0	0	0	1	18,502	27,771	4,302	24,965	6,615	3,678	85,834
Italy	21,829	16,393	12,222	20,705	53,115	27,943	26,981	18,873	14,526	18,276	230,863
Japan	83,329	49,946	59,471	71,538	76,399	89,657	87,012	98,324	76,676	67,825	760,177
Mexico	1,770	0	0	0	200	800	0	0	0	0	2,770
Netherlands	0	0	0	0	0	0	0	0	1	1	2
New Zealand	1	0	1	1	0	0	0	3	1	1	8
Philippines	4,092	2,050	1,430	2,437	5,909	7,435	5,603	4,847	3,725	7,430	44,958
Poland	1,313	0	1,081	2,170	510	1,454	527	5	778	2,576	10,414
Portugal	14,173	4,740	0	250	4	1,298	2,117	1,842	8,037	6,287	38,748
Romania	82,312	33,855	37,648	46,533	44,734	14,039	17,870	8,220	5,735	7,053	297,999
Russia	22,933	50,547	87,681	74,512	71,230	29,864	4,404	28,832	8,430	0	378,433
Serbia	1,224	13,468	7,562	20,320	44,672	12,720	17,357	18,139	8,394	154	144,010
South Africa	0	4	14	0	0	0	4	8	2	10	42
Spain	1,532	6,898	10,015	18,989	17,403	9,411	25,393	26,679	39,632	56,182	212,134
Sweden	55	0	138	114	375	758	113	552	298	75	2,478
Switzerland	2,275	1,260	441	163	3,607	3,889	510	526	674	1,917	15,262
Turkey	200	400	1,153	475	0	15	339	2,428	1,330	2,020	8,360
Ukraine	0	6,800	10,600	0	0	0	0	0	0	0	17,400
United Kingdom	5,183	6,665	3,979	3,575	4,243	5,028	4,683	6,019	4,748	5,680	49,803
TOTALS	697,800	466,799	656,256	1,039,716	1,313,678	706,362	708,436	676,987	519,400	607,293	7,392,727

Source: Data on this page have been compiled from the U.S. Department of Commerce and the U.S. International Trade Commission (USITC).
NOTE: The bottom-line total accounts for all imports under the HTS code listed, but countries with limited activity over the period shown are not displayed.



Source: Data on this page have been compiled from the U.S. Department of Commerce and the U.S. International Trade Commission (USITC).
NOTE: The bottom-line total accounts for all imports under the HTS code listed, but countries with limited activity over the period shown are not displayed. Units posted under Russia in 2009 were revised per posted corrections, Census Bureau.

Muzzleloaders: HTS=930310 [MUZZLELOADING]

Country	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	TOTALS
Brazil	480	0	0	0	0	0	0	0	0	0	480
China	56	0	1,500	0	0	0	0	0	0	150	1,706
France	0	0	0	0	2,300	0	2	0	0	2,355	4,657
Germany	30	5	4,183	0	0	0	401	0	0	60	4,679
India	27	87	21	90	135	26	28	0	0	0	414
Italy	37,595	26,171	32,613	40,559	44,007	51,730	42,077	37,499	38,472	31,060	381,783
Spain	103,468	129,472	128,778	124,509	133,189	122,861	111,834	112,951	107,112	104,701	1,178,875
Taiwan	0	0	0	0	0	0	0	65	0	87	152
United Kingdom	0	83	0	0	0	0	498	1	1	1,934	2,517
TOTALS	141,656	155,818	167,095	165,158	179,631	174,919	154,848	150,518	145,989	140,347	1,575,979

Source: Data on this page have been compiled from the U.S. Department of Commerce and the U.S. International Trade Commission (USITC).
NOTE: The bottom-line total accounts for all imports under the HTS code listed, but countries with limited activity over the period shown are not displayed.

U.S. Imports for Consumption (1991 – 2018)

IMPORTS	Year	Revolvers & Pistols (930200)	Rifles (930330)	Shotguns (930320)	Muzzleloaders (930310)	TOTAL FIREARMS
	1991	692,282	348,765	98,645	179,674	1,319,366
	1992	876,314	407,643	325,345	148,679	1,757,981
	1993	1,169,123	749,433	132,502	197,899	2,248,957
	1994	1,383,279	733,277	142,590	259,975	2,519,121
	1995	825,127	286,218	136,733	331,168	1,579,246
	1996	663,801	234,931	145,676	221,585	1,265,993
	1997	1,316,931	266,869	142,067	185,145	1,911,012
	1998	590,661	229,051	163,663	186,514	1,169,889
	1999	677,757	313,980	335,489	155,764	1,482,990
	2000	712,661	321,316	332,704	259,315	1,625,996
	2001	710,958	322,201	428,308	345,534	1,807,001
	2002	971,135	458,684	498,535	380,499	2,308,853
	2003	762,764	517,509	498,677	353,673	2,132,623
	2004	838,856	491,932	507,050	379,883	2,217,721
	2005	878,172	448,862	546,261	244,564	2,117,859
	2006	1,164,973	516,127	607,894	208,279	2,497,273
	2007	1,387,428	612,837	725,635	222,404	2,948,304
	2008	1,468,062	538,283	535,960	170,998	2,713,303
	2009	2,184,417	697,800	558,679	141,656	3,582,552
2010	1,747,635	466,799	509,792	155,818	2,880,044	
2011	1,707,313	656,256	530,564	167,095	3,061,228	
2012	2,591,117	1,039,716	704,828	165,158	4,500,819	
2013	3,055,329	1,313,678	937,952	179,631	5,486,590	
2014	2,151,591	706,362	648,592	174,919	3,681,464	
2015	2,423,182	708,436	644,274	154,848	3,930,740	
2016	3,614,057	676,987	736,443	150,518	5,178,005	
2017	3,194,599	519,400	631,998	145,989	4,491,986	
2018	2,896,381	607,293	706,648	140,347	4,350,669	
AVERAGE						
5-year (2014 – 2018)	2,855,962	643,696	673,591	153,324	4,326,573	
10-year (2009 – 2018)	2,556,562	739,273	660,977	157,598	4,114,410	
15-year (2004 – 2018)	2,086,874	666,718	635,505	186,807	3,575,904	
20-year (1999 – 2018)	1,756,919	596,723	581,314	214,845	3,149,801	
25-year (1994 – 2018)	1,596,727	547,392	494,280	219,251	2,857,651	

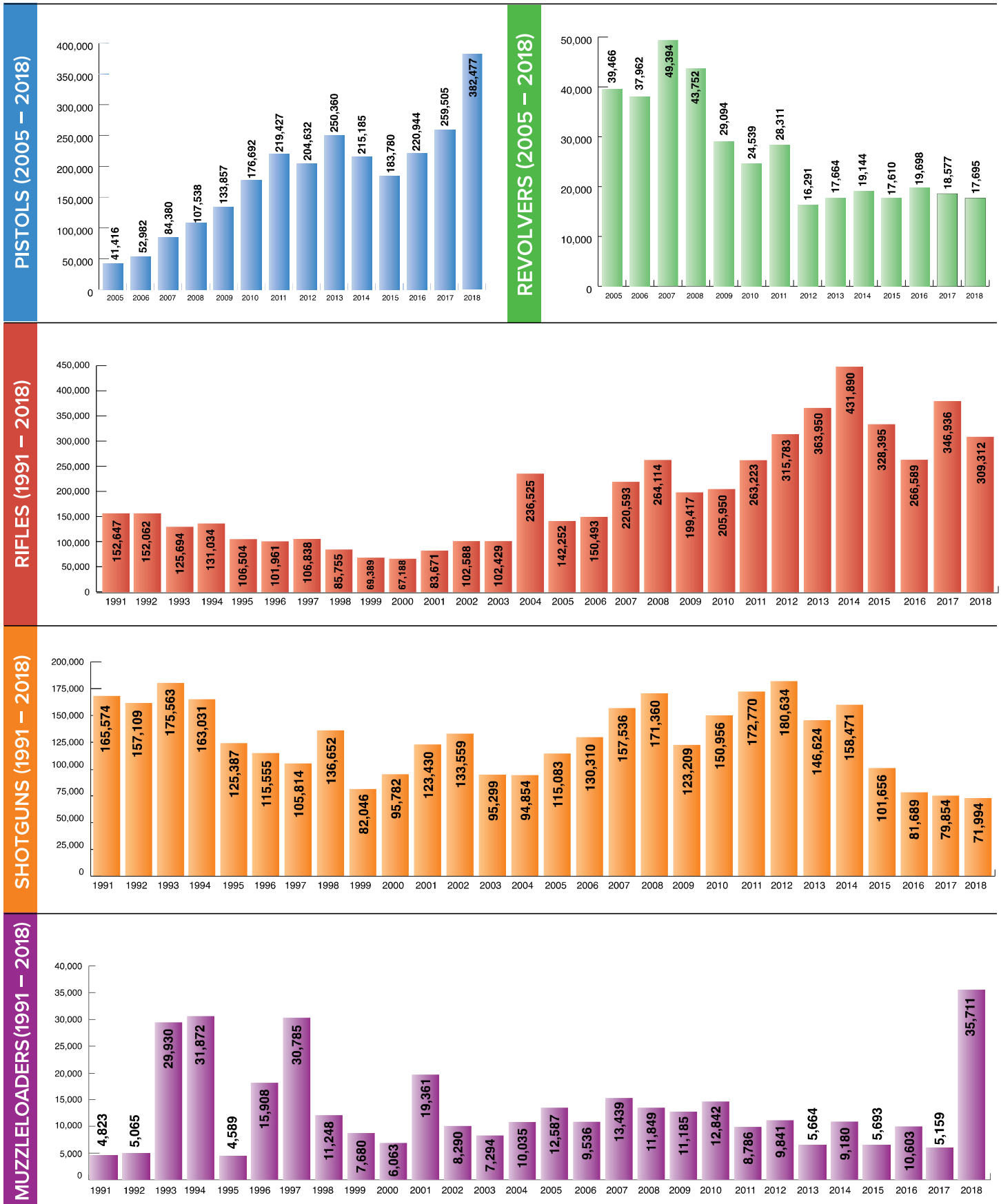
Total U.S. Exports (1991 – 2018)

EXPORTS	Year	Revolvers & Pistols (930200)	Rifles (930330)	Shotguns (930320)	Muzzleloaders (930310)	TOTAL FIREARMS
	1991	223,248	152,647	165,574	4,823	546,292
	1992	210,358	152,062	157,109	5,065	524,594
	1993	170,378	125,694	175,563	29,930	501,565
	1994	195,031	131,034	163,031	31,872	520,968
	1995	218,826	106,504	125,387	4,589	455,306
	1996	193,647	101,961	115,555	15,908	427,071
	1997	146,846	106,838	105,814	30,785	390,283
	1998	124,295	85,755	136,652	11,248	357,950
	1999	116,467	69,389	82,046	7,680	275,582
	2000	80,249	67,188	95,782	6,063	249,282
	2001	86,041	83,671	123,430	19,361	312,503
	2002	82,338	102,588	133,559	8,290	326,775
	2003	73,337	102,429	95,299	7,294	278,359
	2004	69,316	236,525	94,854	10,035	410,730
	2005	80,882	142,252	115,083	12,587	350,804
	2006	90,944	150,493	130,310	9,536	381,283
	2007	133,774	220,593	157,536	13,439	525,342
	2008	151,290	264,114	171,360	11,849	598,613
	2009	162,951	199,417	123,209	11,185	496,762
2010	201,231	205,950	150,956	12,842	570,979	
2011	247,738	263,223	172,770	8,786	692,517	
2012	220,923	315,783	180,634	9,841	727,181	
2013	268,024	363,950	146,624	5,664	784,262	
2014	234,329	431,890	158,471	9,180	833,870	
2015	201,390	328,395	101,656	5,693	637,134	
2016	240,642	266,589	81,689	10,603	599,523	
2017	278,082	346,936	79,854	5,159	710,031	
2018	400,172	309,312	71,994	35,711	817,189	
AVERAGE						
5-year (2014 – 2018)	270,923	336,624	98,733	13,269	719,549	
10-year (2009 – 2018)	245,548	303,145	126,786	11,466	686,945	
15-year (2004 – 2018)	198,779	269,695	129,133	11,474	609,081	
20-year (1999 – 2018)	171,006	223,534	123,356	11,040	528,936	
25-year (1994 – 2018)	171,951	200,111	124,542	12,608	509,212	

Source: U.S. International Trade Commission (USITC)

NOTE: Rifle imports adjusted to exclude HTS codes 9303304010 and 9303308005 (telescopic sights imported with rifles.)

U.S. Firearms Total Exports (1991 – 2018)



Source: U.S. International Trade Commission (USITC)

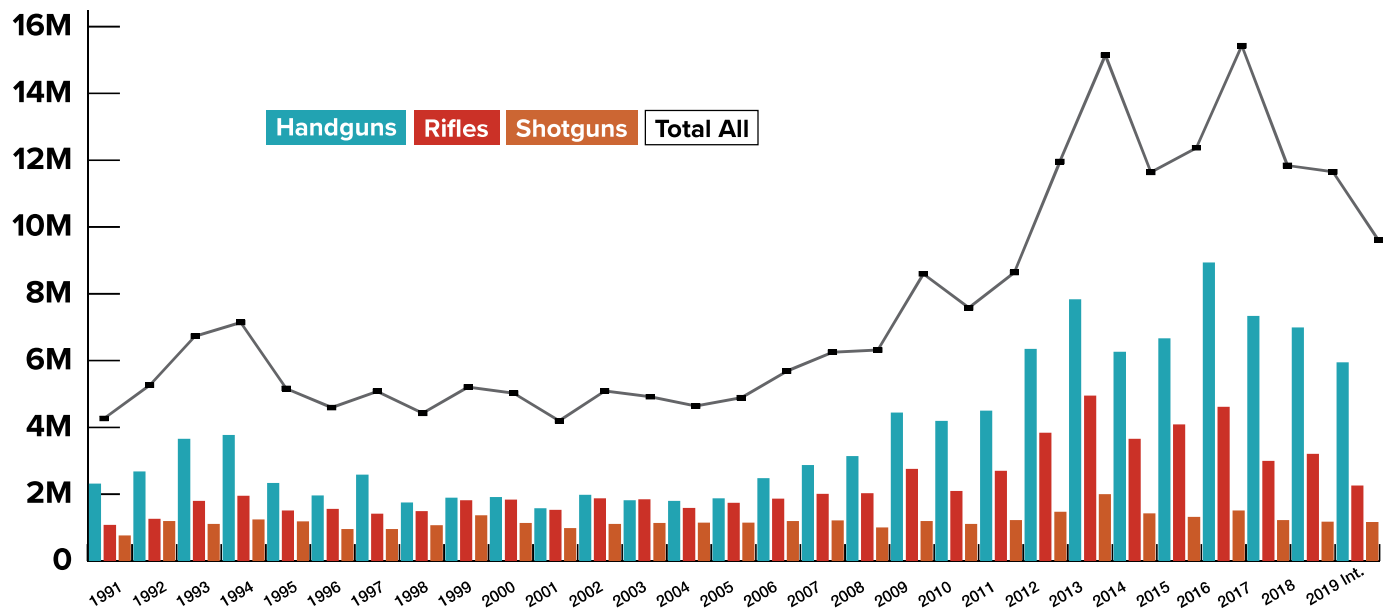
Total Firearm Units Produced for the United States Market Annually

YEAR	Handguns Produced in U.S.	Handguns Imported into U.S.	Handguns Exported out of U.S.	Total Handguns	Rifles Produced in U.S.	Rifles Imported into U.S.	Rifles Exported out of U.S.	Total Rifles	Shotguns Produced in U.S.	Shotguns Imported into U.S.	Shotguns Exported out of U.S.	Total Shotguns	TOTAL HANDGUNS, RIFLES & SHOTGUNS	% Change YoY	YEAR
1991	1,835,218	+ 692,282	- 223,248	= 2,304,252	883,482	+ 348,765	- 152,647	= 1,079,600	828,426	+ 98,645	- 165,574	= 761,497	4,145,349	-	1991
1992	2,138,950	+ 876,314	- 210,358	= 2,804,906	1,001,708	+ 407,643	- 152,062	= 1,257,289	1,018,204	+ 325,345	- 157,109	= 1,186,440	5,248,635	26.6%	1992
1993	2,655,654	+ 1,169,123	- 170,378	= 3,654,399	1,173,694	+ 749,433	- 125,694	= 1,797,433	1,148,939	+ 132,502	- 175,563	= 1,105,878	6,557,710	24.9%	1993
1994	2,590,748	+ 1,383,279	- 195,031	= 3,778,996	1,316,607	+ 733,277	- 131,034	= 1,918,850	1,254,924	+ 142,590	- 163,031	= 1,234,483	6,932,329	5.7%	1994
1995	1,722,948	+ 825,127	- 218,826	= 2,329,249	1,441,120	+ 286,218	- 106,504	= 1,620,834	1,176,958	+ 136,733	- 125,387	= 1,188,304	5,138,387	-25.9%	1995
1996	1,486,472	+ 663,801	- 193,647	= 1,956,626	1,424,315	+ 234,931	- 101,961	= 1,557,285	925,732	+ 145,676	- 115,555	= 955,853	4,469,764	-13.0%	1996
1997	1,406,505	+ 1,316,931	- 146,846	= 2,576,590	1,251,341	+ 266,869	- 106,838	= 1,411,372	915,978	+ 142,067	- 105,814	= 952,231	4,940,193	10.5%	1997
1998	1,284,755	+ 590,661	- 124,295	= 1,751,121	1,345,899	+ 229,051	- 85,755	= 1,489,195	1,036,520	+ 163,663	- 136,652	= 1,063,531	4,303,847	-12.9%	1998
1999	1,331,230	+ 677,757	- 116,467	= 1,892,520	1,569,685	+ 313,980	- 69,389	= 1,814,276	1,106,995	+ 335,489	- 82,046	= 1,360,438	5,067,234	17.7%	1999
2000	1,281,861	+ 712,661	- 80,249	= 1,914,273	1,583,042	+ 321,316	- 67,188	= 1,837,170	898,442	+ 332,704	- 95,782	= 1,135,364	4,886,807	-3.6%	2000
2001	946,979	+ 710,958	- 86,041	= 1,571,896	1,284,554	+ 322,201	- 83,671	= 1,523,084	679,813	+ 428,308	- 123,430	= 984,691	4,079,671	-16.5%	2001
2002	1,088,584	+ 971,135	- 82,338	= 1,977,381	1,515,286	+ 458,684	- 102,588	= 1,871,382	741,325	+ 498,535	- 133,559	= 1,106,301	4,955,064	21.5%	2002
2003	1,121,024	+ 762,764	- 73,337	= 1,810,451	1,430,324	+ 517,509	- 102,429	= 1,845,404	726,078	+ 498,677	- 95,299	= 1,129,456	4,785,311	-3.4%	2003
2004	1,022,610	+ 838,856	- 69,316	= 1,792,150	1,325,138	+ 491,932	- 236,525	= 1,580,545	731,769	+ 507,050	- 94,854	= 1,143,965	4,516,660	-5.6%	2004
2005	1,077,630	+ 878,172	- 80,882	= 1,874,920	1,431,372	+ 448,862	- 142,252	= 1,737,982	709,313	+ 546,261	- 115,083	= 1,140,491	4,753,393	5.2%	2005
2006	1,403,329	+ 1,164,973	- 90,944	= 2,477,358	1,496,505	+ 516,127	- 150,493	= 1,862,139	714,618	+ 607,894	- 130,310	= 1,192,202	5,531,699	16.4%	2006
2007	1,610,998	+ 1,387,428	- 133,774	= 2,864,652	1,610,923	+ 612,837	- 220,593	= 2,003,167	645,231	+ 725,635	- 157,536	= 1,213,330	6,081,149	9.9%	2007
2008	1,819,024	+ 1,468,062	- 151,290	= 3,135,796	1,746,139	+ 538,283	- 264,114	= 2,020,308	630,710	+ 535,960	- 171,360	= 995,310	6,151,414	1.2%	2008
2009	2,415,815	+ 2,184,417	- 162,951	= 4,437,281	2,253,103	+ 697,800	- 199,417	= 2,751,486	752,699	+ 558,679	- 123,209	= 1,188,169	8,376,936	36.2%	2009
2010	2,646,504	+ 1,747,635	- 201,231	= 4,192,908	1,830,556	+ 466,799	- 205,950	= 2,091,405	743,378	+ 509,792	- 150,956	= 1,102,214	7,386,527	-11.8%	2010
2011	3,037,112	+ 1,707,313	- 247,738	= 4,496,687	2,305,854	+ 656,256	- 263,223	= 2,698,887	862,401	+ 530,564	- 172,770	= 1,220,195	8,415,769	13.9%	2011
2012	3,978,438	+ 2,591,117	- 220,923	= 6,348,632	3,109,940	+ 1,039,716	- 315,783	= 3,833,873	949,010	+ 704,828	- 180,634	= 1,473,204	11,655,709	38.5%	2012
2013	5,039,832	+ 3,055,329	- 268,024	= 7,827,137	3,996,673	+ 1,313,678	- 363,950	= 4,946,401	1,203,072	+ 937,952	- 146,624	= 1,994,400	14,767,938	26.7%	2013
2014	4,346,624	+ 2,151,591	- 234,329	= 6,263,886	3,379,009	+ 706,362	- 431,890	= 3,653,481	935,411	+ 648,592	- 158,471	= 1,425,532	11,342,899	-23.2%	2014
2015	4,437,613	+ 2,423,182	- 201,390	= 6,659,405	3,701,443	+ 708,436	- 328,395	= 4,081,484	777,273	+ 644,274	- 101,656	= 1,319,891	12,060,780	6.3%	2015
2016	5,562,218	+ 3,614,057	- 240,642	= 8,935,633	4,198,692	+ 676,987	- 266,589	= 4,609,090	848,615	+ 736,443	- 81,689	= 1,503,369	15,048,092	24.8%	2016
2017	4,411,923	+ 3,194,599	- 278,082	= 7,328,440	2,821,945	+ 519,400	- 346,936	= 2,994,409	667,350	+ 631,998	- 79,854	= 1,219,494	11,542,343	-23.3%	2017
2018	4,507,176	+ 2,896,381	- 400,172	= 7,003,385	2,905,178	+ 607,293	- 309,312	= 3,203,159	536,119	+ 706,648	- 71,994	= 1,170,773	11,377,317	-1.4%	2018
2019 Interim	3,614,982	+ 2,561,076	- 230,930	= 5,945,128	1,951,898	+ 592,214	- 290,768	= 2,253,344	480,444	+ 743,503	- 65,580	= 1,158,367	9,356,839	-17.8%	2019 Int.
TOTALS	71,822,756	+ 45,216,981	- 5,133,679	= 111,906,058	57,285,425	+ 15,782,859	- 5,723,950	= 67,344,334	24,645,747	+ 13,657,007	- 3,677,381	= 34,625,373	213,875,765		

Sources: U.S. Firearm production figures from AFMER, Import and Export figures from USITC.

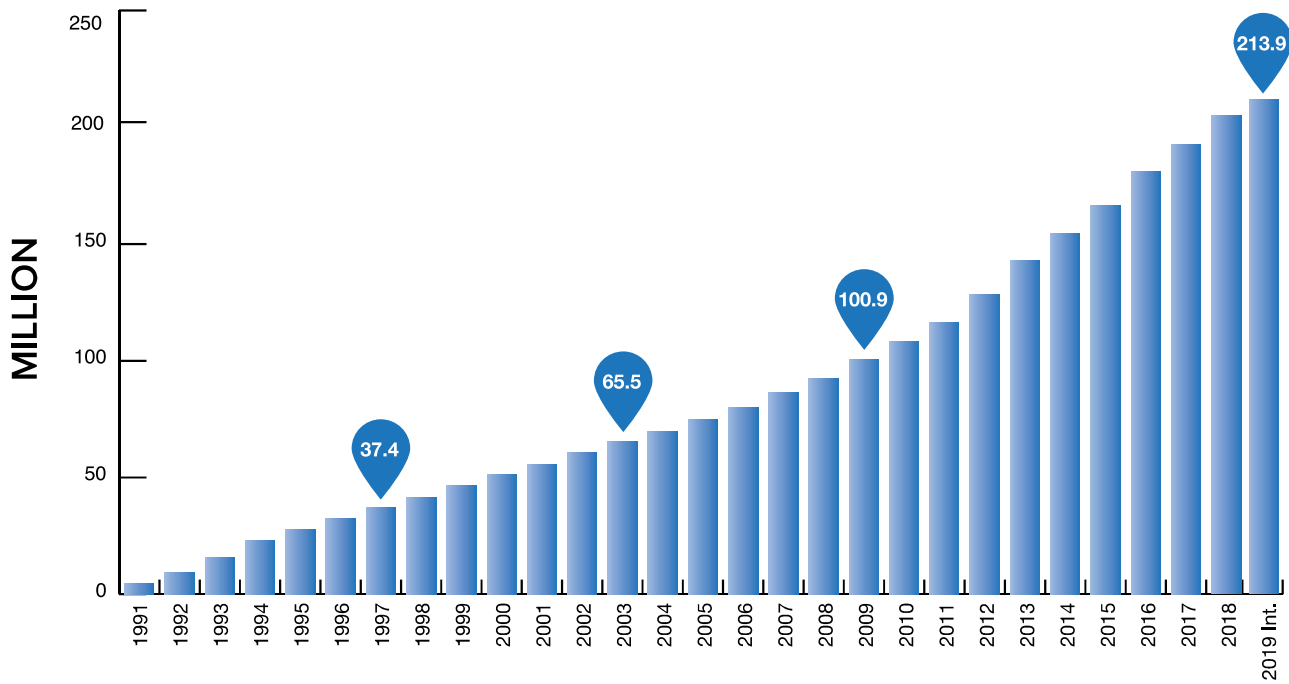
NOTE: In order to obtain an estimate for the number of total firearms available in the United States in a given year, NSSF combined U.S. firearm production with firearms imported less firearms exported.

Total Firearm Units Produced for the United States Market Annually



Source: AFMER and U.S. International Trade Commission (USITC)

Firearms to U.S. Market (1991 – 2019 Interim)



CUMULATIVE ANNUAL FIREARM PRODUCTION PLUS (+) IMPORTS LESS (-) EXPORTS

Source: AFMER and U.S. International Trade Commission (USITC)

FACT

From 1991 to 2019, more than 213.0 million firearms have been made available to the U.S. market.

Estimated Number of Semi-Automatic Firearms for U.S. Market 1990 - 2018	
Estimated Semi-Automatic Handguns	89,000,000
Estimated Semi-Automatic Shotguns	12,000,000
Estimated Semi-Automatic Rifles	43,400,000
ESTIMATED TOTAL SEMI-AUTOMATIC FIREARMS 1990 - 2018	144,400,000
Sources: USITC, ATF AFMER & NSSF estimates	

From 1991 – 2018 the

the violent crime rate has decreased by → 51.3 percent

and unintentional firearm-related fatalities have declined by → 68.2 percent

Sources: 2018 FBI Uniform Crime Reports and National Safety Council Injury Facts (online, for 2018 data)

KEY FINDINGS

- The latest figures show that 67.9% of U.S. pistol production fell into either the “up to” 9mm calibers (53.7%) or the “up to”.50 calibers (14.2%).
- The 2018 top-25 U.S. firearm manufacturers accounted for 89.6% of the U.S. production total for the year.
- Sturm, Ruger & Company, Inc. topped the list in 2018 accounting for 19.9% of total firearm production in the U.S. reported, followed by Smith & Wesson Corporation, 17.3%; Sig Sauer Inc, 8.3%; Remington Arms Company LLC, 5.8%; Savage Arms, Inc., 4.9%; and Maverick Arms, Inc, 4.1%.
- Firearm-ammunition manufacturing accounted for nearly 12,000 employees producing over \$3.9 billion in goods shipped in 2018.
- In 2018, the greatest number of imported pistols came from Austria (927,511) representing 35.2% of all imported pistols. Austria was followed by Brazil with 501,995 or 19.0%, Germany at 11.7% with 307,085 units, and 11.6% were imported from Croatia (307,085).
- Brazil was the source of the greatest number of revolvers imported in 2018 (162,703), followed by Italy with 56,311; Philippines 22,816; and 16,224 imported from Germany.
- The greatest number of shotguns imported in 2018 came from Turkey (342,184), Italy (168,368), and China (111,696); and for rifles, Canada (172,406), Brazil (138,931), and Japan (67,840). Spain (104,701) was the source of the highest of number of muzzleloaders imported, followed by Italy (31,060).
- According to USITC data, the U.S. exported 817,189 total firearms in 2018 as compared to 710,031 in 2017 - an increase of 15.1 percent.
- Approximately 48% of all rifles produced in 2018 were modern sporting rifles.
- According to data in reports such as ATF Firearms Commerce in the United States, ATF Annual Firearms Manufacturing and Exportation Reports and Congressional Research Service, the estimated total number of overall firearms in civilian possession is 433.9 million.

SOURCES

Total Production	Detail data source: The 2018 Annual Firearms Manufacturing and Export Report (AFMER). This annual report is prepared by the office of Firearms and Explosives Services Division (FESD), Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), Washington D.C. (Historical analysis conducted by NSSF.) For purposes of this report only, “Production” is defined as firearms, including separate frames, receivers, actions or barreled actions, manufactured and disposed of in commerce during each calendar year. The ATF’s latest full AFMER is for calendar year 2018, since the agency embargoes the data for a period of one year. Production totals data source: The AFMER 2018 as reported through February 28, 2020 -- reviewed/adjusted by NSSF (adjustments are noted on page 2). For more information visit atf.gov/content/about/statistics
Manufacturing Trends	U.S. Census Bureau: Economic Census, 2018 Annual Survey of Manufactures: Tables. The 2018 data is available through the U.S. Census Bureau web site: https://www.census.gov/programs-surveys/asm/data/tables.html Historical analysis conducted by NSSF.
Firearm Imports for Consumption / Total Exports	U.S. Department of Commerce and the U.S. International Trade Commission (USITC) - Interactive Tariff and Trade DataWeb: dataweb.usitc.gov U.S. Census Bureau for corrections to import/export data prior to year 2010 may be found at census.gov/foreign-trade/statistics/corrections/index.html
Manufacturers Export	The 2018 Annual Firearms Manufacturing and Export Report (AFMER) atf.gov/content/about/statistics



Report provided by NSSF. For additional research materials, please visit nssf.org/research

EXHIBIT F

TOTAL FIREARM MAGAZINES IN CONSUMER POSSESSION 1990 – 2012. Approx 158 million

Pistol magazines 10 rounds or less. approx. 60 million

Pistol magazines 11 rounds or more. approx. 40 million

Rifle magazines 10 rounds or less. approx. 23 million

Rifle magazines 11 to 29 rounds. approx. 5 million

Rifle magazines 30 rounds or more approx. 30 million

Total pistols = 50 million x 2 magazines = 100 million pistol magazines.

10 rounds or less = 60 million

11 rounds or more = 40 million

Total US produced rifles = 33 million less 4.8 million MSR = 28 million rifles

Allocation of the 28 million rifles?

Other Semi Automatic (not MSR) = 50% or 14 million rifles x 2 magazines = 28 million magazines
Ruger 10/22, Mossberg 22, Marlin 22

Bolt Action = 25%
Winchester Model 70, Remington 700, Marlin X7

Lever Action = 24%
Winchester 94, Marlin 336, Savage 99

Single Shot = 1%

Allocation of 28 million non MSR Semi Auto magazines between:

10 rounds or less = 23 million

11 to 29 = 5 million

30+ = (8.2 million AR/AK x 4 mags = approx 30 million)



EXHIBIT G

Comparison of NSSF Magazine Chart Estimates (in Millions)

	Pistol <11	Pistol 11+	Rifle <11	Rifle 11-29	Rifle 30+	Total	All LCMs	% LCMs
1990-2012	60	40	23	5	30	158	75	47%
1990-2015	81.24	54.16	34.08	8.52	52	230	114.68	50%
Difference 2012-2015	21.24	14.16	11.08	3.52	22	72	39.68	--
Percentage Increase 2012-2015	35%	35%	48%	70%	73%	46%	53%	--
1990-2018	106.8	71.2	37.7	9.4	79.2	304.3	159.8	53%
Difference 2015-2018	25.56	17.04	3.62	0.88	27.2	74.3	45.12	--
Percentage Increase 2015-2018	31%	31%	11%	10%	52%	32%	39%	--
Difference 2012-2018	46.8	31.2	14.7	4.4	49.2	146.3	84.8	--
Percentage Increase 2012-2018	78%	78%	64%	88%	164%	93%	113%	--
1990-2021	174.793	209.145	71.079	60.386	448.369	963.772	717.9	74%
Difference 2018-2021	67.993	137.945	33.379	50.986	369.169	659.472	558.1	--
Percentage Increase 2018-2021	64%	194%	89%	542%	466%	217%	349%	--
Difference 2015-2021	93.553	154.985	36.999	51.866	396.369	733.772	603.22	--
Percentage Increase 2015-2021	115%	286%	109%	609%	762%	319%	526%	--
Difference 2012-2021	114.793	169.145	48.079	55.386	418.369	805.772	642.9	--
Percentage Increase 2012-2021	191%	423%	209%	1108%	1395%	510%	857%	--

EXHIBIT H

LOUIS KLAREVAS
RAMPAGE NATION
SECURING AMERICA FROM MASS SHOOTINGS

 **Prometheus Books**
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Table 2.1. The Concept of a Mass Shooting.

Definition of a Mass Shooting:

Any violent attack that results in four or more individuals incurring gunshot wounds.

Categories of Mass Shooting:

1. *Nonfatal*
Mass shootings in which no one dies.
2. *Fatal*
Mass shootings in which at least one victim dies.
3. *High-Fatality / Gun Massacre*
Mass shootings in which six or more victims die.

★ ★ ★

It's easy to dismiss conceptual discussions and debates as exercises in Ivory Tower intellectualism. But how we identify and think about mass shootings impacts which attacks capture national attention and which are disregarded—something which has far-reaching policy consequences. Thus, coming up with the best possible definition and conceptualization is a vital first step toward explaining and preventing rampage violence. As the Socratic adage reminds us, “The beginning of wisdom is the definition of terms.”⁴³

EXHIBIT I

Exhibit I
High-Fatality Mass Shootings in the United States, 1991-2022

	Date	City	State	Deaths	Involved AWs (1994 U.S. Definition)	Involved LCMs (1994 U.S. Definition)	Involved LCMs (2023 Ill. Definition)
1	1/26/1991	Chimayo	NM	7	N	N	N
2	8/9/1991	Waddell	AZ	9	N	N	N
3	10/16/1991	Killeen	TX	23	N	Y	Y
4	11/7/1992	Morro Bay and Paso Robles	CA	6	N	N	N
5	1/8/1993	Palatine	IL	7	N	N	N
6	5/16/1993	Fresno	CA	7	Y	Y	Y
7	7/1/1993	San Francisco	CA	8	Y	Y	Y
8	12/7/1993	Garden City	NY	6	N	Y	N
9	4/20/1999	Littleton	CO	13	Y	Y	Y
10	7/12/1999	Atlanta	GA	6	N	U	U
11	7/29/1999	Atlanta	GA	9	N	Y	Y
12	9/15/1999	Fort Worth	TX	7	N	Y	N
13	11/2/1999	Honolulu	HI	7	N	Y	Y
14	12/26/2000	Wakefield	MA	7	Y	Y	Y
15	12/28/2000	Philadelphia	PA	7	N	Y	N
16	8/26/2002	Rutledge	AL	6	N	N	N
17	1/15/2003	Edinburg	TX	6	Y	U	U
18	7/8/2003	Meridian	MS	6	N	N	N
19	8/27/2003	Chicago	IL	6	N	N	N
20	3/12/2004	Fresno	CA	9	N	N	N
21	11/21/2004	Birchwood	WI	6	Y	Y	Y
22	3/12/2005	Brookfield	WI	7	N	Y	N
23	3/21/2005	Red Lake	MN	9	N	Y	N
24	1/30/2006	Goleta	CA	7	N	Y	N
25	3/25/2006	Seattle	WA	6	N	N	N
26	6/1/2006	Indianapolis	IN	7	Y	Y	Y
27	12/16/2006	Kansas City	KS	6	N	N	N
28	4/16/2007	Blacksburg	VA	32	N	Y	N
29	10/7/2007	Crandon	WI	6	Y	Y	Y
30	12/5/2007	Omaha	NE	8	Y	Y	Y
31	12/24/2007	Carnation	WA	6	N	U	U
32	2/7/2008	Kirkwood	MO	6	N	Y	N
33	9/2/2008	Alger	WA	6	N	U	U
34	12/24/2008	Covina	CA	8	N	Y	Y
35	1/27/2009	Los Angeles	CA	6	N	N	N

	Date	City	State	Deaths	Involved AWs (1994 U.S. Definition)	Involved LCMs (1994 U.S. Definition)	Involved LCMs (2023 Ill. Definition)
36	3/10/2009	Kinston, Samson, and Geneva	AL	10	Y	Y	Y
37	3/29/2009	Carthage	NC	8	N	N	N
38	4/3/2009	Binghamton	NY	13	N	Y	Y
39	11/5/2009	Fort Hood	TX	13	N	Y	Y
40	1/19/2010	Appomattox	VA	8	Y	Y	Y
41	8/3/2010	Manchester	CT	8	N	Y	Y
42	1/8/2011	Tucson	AZ	6	N	Y	Y
43	7/7/2011	Grand Rapids	MI	7	N	Y	N
44	8/7/2011	Copley Township	OH	7	N	N	N
45	10/12/2011	Seal Beach	CA	8	N	N	N
46	12/25/2011	Grapevine	TX	6	N	N	N
47	4/2/2012	Oakland	CA	7	N	N	N
48	7/20/2012	Aurora	CO	12	Y	Y	Y
49	8/5/2012	Oak Creek	WI	6	N	Y	Y
50	9/27/2012	Minneapolis	MN	6	N	Y	N
51	12/14/2012	Newtown	CT	27	Y	Y	Y
52	7/26/2013	Hialeah	FL	6	N	Y	Y
53	9/16/2013	Washington	DC	12	N	N	N
54	7/9/2014	Spring	TX	6	N	Y	N
55	9/18/2014	Bell	FL	7	N	U	U
56	2/26/2015	Tyrone	MO	7	N	U	U
57	5/17/2015	Waco	TX	9	N	Y	Y
58	6/17/2015	Charleston	SC	9	N	Y	N
59	8/8/2015	Houston	TX	8	N	U	U
60	10/1/2015	Roseburg	OR	9	N	Y	N
61	12/2/2015	San Bernardino	CA	14	Y	Y	Y
62	2/21/2016	Kalamazoo	MI	6	N	Y	N
63	4/22/2016	Piketon	OH	8	N	U	U
64	6/12/2016	Orlando	FL	49	Y	Y	Y
65	5/27/2017	Brookhaven	MS	8	Y	Y	Y
66	9/10/2017	Plano	TX	8	Y	Y	Y
67	10/1/2017	Las Vegas	NV	60	Y	Y	Y
68	11/5/2017	Sutherland Springs	TX	25	Y	Y	Y
69	2/14/2018	Parkland	FL	17	Y	Y	Y
70	5/18/2018	Santa Fe	TX	10	N	N	N
71	10/27/2018	Pittsburgh	PA	11	Y	Y	Y
72	11/7/2018	Thousand Oaks	CA	12	N	Y	Y
73	5/31/2019	Virginia Beach	VA	12	N	Y	N

	Date	City	State	Deaths	Involved AWs (1994 U.S. Definition)	Involved LCMs (1994 U.S. Definition)	Involved LCMs (2023 Ill. Definition)
74	8/3/2019	El Paso	TX	23	Y	Y	Y
75	8/4/2019	Dayton	OH	9	Y	Y	Y
76	8/31/2019	Midland and Odessa	TX	7	Y	Y	Y
77	3/15/2020	Moncure	NC	6	U	U	U
78	6/4/2020	Valhermoso Springs	AL	7	Y	Y	Y
79	9/7/2020	Aguanga	CA	7	U	U	U
80	2/2/2021	Muskogee	OK	6	N	U	U
81	3/16/2021	Acworth and Atlanta	GA	8	N	Y	Y
82	3/22/2021	Boulder	CO	10	Y	Y	Y
83	4/7/2021	Rock Hill	SC	6	Y	Y	Y
84	4/15/2021	Indianapolis	IN	8	Y	Y	Y
85	5/9/2021	Colorado Springs	CO	6	N	Y	N
86	5/26/2021	San Jose	CA	9	N	Y	N
87	1/23/2022	Milwaukee	WI	6	N	U	U
88	4/3/2022	Sacramento	CA	6	N	Y	Y
89	5/14/2022	Buffalo	NY	10	Y	Y	Y
90	5/24/2022	Uvalde	TX	21	Y	Y	Y
91	7/4/2022	Highland Park	IL	7	Y	Y	Y
92	10/27/2022	Broken Arrow	OK	7	N	U	U
93	11/22/2022	Chesapeake	VA	6	N	U	U

Note: High-fatality mass shootings are mass shootings resulting in 6 or more fatalities, not including the perpetrator(s), regardless of location or motive. For purposes of this Exhibit, a high-fatality mass shooting was coded as involving an assault weapon if at least one of the firearms discharged was defined as an assault weapon in (1) the 1994 federal Assault Weapons Ban or (2) the statutes of the state where the shooting occurred. For purposes of this Exhibit, a high-fatality mass shooting was coded as involving a large-capacity magazine in two different ways. Under the 1994 federal definition, an ammunition-feeding device was coded as an LCM if at least one of the firearms discharged had an ammunition-feeding device with a capacity of more than 10 bullets. Under the 2023 Illinois definition, an ammunition-feeding device was coded as an LCM if at least one of the long guns discharged had an ammunition-feeding device with a capacity of more than 10 bullets or if at least one of the handguns discharged had an ammunition-feeding device with a capacity of more than 15 bullets. Incidents in gray shade are those incidents that occurred at a time when and in a state where legal prohibitions on both assault weapons and large-capacity magazines were in effect statewide or nationwide.

Sources: Louis Klarevas, *Rampage Nation: Securing America from Mass Shootings* (2016); Louis Klarevas et al., “The Effect of Large-Capacity Magazine Bans on High-Fatality Mass Shootings,” 109 *American Journal of Public Health* 1754 (2019), available at <https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2019.305311>; and “Gun Violence Archive,” available at <https://www.gunviolencearchive.org>. The Gun Violence Archive was only consulted for identifying high-fatality mass shootings that occurred since January 1, 2018.