Case No. 19-56004

In the United States Court of Appeals
for the Ninth Circuit

STEVEN RUPP, et al.,
Plaintiffs-Appellants,

v.

XAVIER BECERRA,
in his official capacity as Attorney General of the State of California,
Defendant-Appellee.

On Appeal from the United States District Court
for the Central District of California
Case No. 8:17-cv-00746-JLS-JDE

APPELLANTS' EXCERPTS OF RECORD
VOLUME XIII OF XXII

C.D. Michel
Sean A. Brady
Anna M. Barvir
MICHEL & ASSOCIATES, P.C.
180 East Ocean Boulevard, Suite 200
Long Beach, CA 90802
(562) 216-4444
cmichel@michellawyers.com

Attorneys for Plaintiffs-Appellants

January 27, 2020

Under Federal Rules of Appellate Procedure for the Ninth Circuit, rule 30-1, Plaintiffs-Appellants Steven Rupp, Steven Dember, Cheryl Johnson, Michael Jones, Christopher Seifert, Alfonso Valencia, Troy Willis, Dennis Martin, and California Rifle & Pistol Association, Incorporated, by and through their attorney of record, confirm to the contents and form of Appellants' Excerpts of Record.

Date: January 27, 2020

MICHEL & ASSOCIATES, P.C.

s/ Sean A. Brady
Sean A. Brady
Attorneys for Plaintiffs/Appellants
Steven Rupp, et al.

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CERTIFICATE OF SERVICE

I hereby certify that on January 27, 2020, an electronic PDF of APPELLANTS' EXCERPTS OF RECORD, VOLUME XIII OF XXII was uploaded to the Court's CM/ECF system, which will automatically generate and send by electronic mail a Notice of Docket Activity to all registered attorneys participating in the case. Such notice constitutes service on those registered attorneys.

Date: January 27, 2020

MICHEL & ASSOCIATES, P.C.

s/ Sean A. Brady
Sean A. Brady
Attorneys for Plaintiffs-Appellants
Steven Rupp, et al.

C. D. Michel – SBN 144258
cmichel@michellawyers.com
Sean A. Brady – SBN 262007
sbrady@michellawyers.com
Matthew D. Cubeiro – SBN 291519
mcubeiro@michellawyers.com
MICHEL & ASSOCIATES, P.C.
180 East Ocean Boulevard, Suite 200
Long Beach, CA 90802
Telephone: 562-216-4444
Facsimile: 562-216-4445

Attorneys for Plaintiffs

UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

SOUTHERN DIVISION

STEVEN RUPP, et al.,

Plaintiffs,

vs.

XAVIER BECERRA, in his official capacity as Attorney General of the State of California,

Defendant.

Case No.: 8:17-cv-00746-JLS-JDE

EXHIBIT 24 Part 2 of 3 TO DECLARATION OF SEAN A. BRADY IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

Hearing Date: May 31, 2019
Hearing Time: 10:30 a.m.
Courtroom: 10A
Judge: Josephine L. Staton

[Filed concurrently with Notice of Motion for Summary Judgment, Memorandum of Points and Authorities, Statement of Uncontroverted Facts and Conclusions of Law, Request for Judicial Notice, Declarations of Steven Rupp, Steven Dember, Cheryl Johnson, Christopher Seifert, Alfonso Valencia, Troy Willis, Michael Jones, Dennis Martin, and Richard Travis]

24 Part 2 of 3

FIREARMS & AMMUNITION IMPORTS & EXPORTS

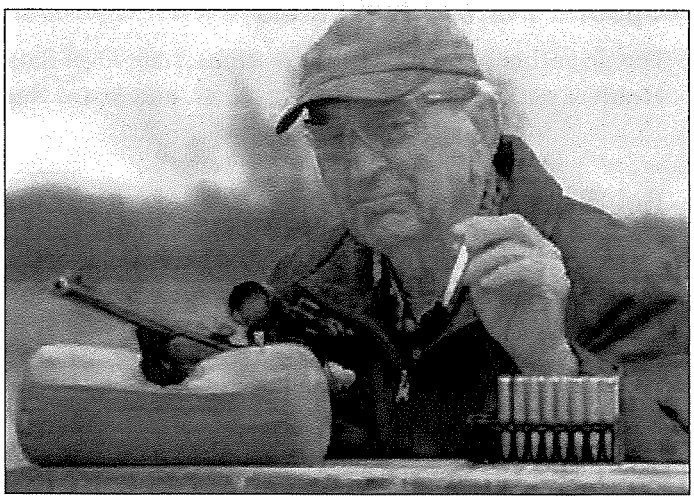
HISTORICAL FIREARM EXPORTS BY COUNTRY

(U.S. TOTAL EXPORTS IN ACTUAL UNITS OF QUANTITY)

Rifles: HTS=930330 [SPORTING, HUNTING OR TARGET-SHOOTING RIFLES, EXCEPT MUZZLELOADING FIREARMS AND COMBINATION SHOTGUN-RIFLES]

COUNTRY	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 YTD	TOTAL
Afghanistan	0	0	0	0	0	0	0	0	176	0	176
Argentina	1,927	1,925	1,896	5,142	6,355	8,795	8,039	4,417	8,088	5,229	51,813
Armenia	0	0	0	0	0	0	0	0	6	22	28
Australia	13,581	18,574	30,846	24,469	28,166	34,720	32,974	36,337	44,126	29,775	293,568
Austria	550	1,140	1,119	704	1,436	3,761	1,632	980	914	1,448	13,684
Azerbaijan	0	0	0	0	0	0	0	137	1	6	144
Bahamas	209	88	23	33	175	74	276	277	182	0	1,336
Belgium	3,347	3,934	2,371	1,317	970	2,976	1,848	2,171	2,511	3,281	24,726
Botswana	0	0	0	0	0	0	30	0	0	241	271
Brazil	2,161	35	270	9	718	1,728	229	352	81	477	6,060
Bulgaria	221	674	1,041	383	230	463	440	267	1,045	362	5,126
Cameroon	0	0	0	0	0	148	0	176	100	282	706
Canada	63,409	76,279	103,895	88,872	87,600	119,212	148,725	178,184	215,406	123,174	1,204,756
Chile	307	497	329	397	256	685	860	680	494	604	5,109
Colombia	8	22,723	7,379	1,968	547	1,393	852	0	1,777	254	36,901
Congo (DROC)	0	0	0	0	0	0	0	0	0	20	20
Costa Rica	414	736	732	927	674	968	318	554	496	155	5,974
Czech Republic	40	51	693	1,357	983	1,523	769	879	530	339	7,164
Denmark	1,648	1,653	3,365	2,052	3,424	983	1,690	2,166	2,689	756	20,426
El Salvador	210	173	30	152	58	308	650	178	362	388	2,509
Estonia	195	0	118	68	65	51	174	302	947	106	2,026
Ethiopia	0	0	0	0	0	0	0	0	0	70	70
Finland	3,476	2,575	3,470	1,040	1,516	1,356	1,032	1,097	884	594	17,040
France	4,214	7,945	5,942	6,655	9,127	5,647	9,431	11,876	12,212	9,536	82,585
Georgia	0	0	0	860	456	64	315	219	1,373	104	3,391
Germany	4,998	10,013	9,393	8,395	6,684	8,511	10,449	11,369	12,549	6,067	88,428
Greece	0	0	0	0	21	0	42	14	16	10	103
Greenland	343	210	335	513	847	400	905	724	141	283	4,701
Guatemala	2,636	1,822	2,625	2,993	589	925	2,061	1,197	1,790	1,040	17,678
Honduras	2	0	0	0	620	4	0	283	0	100	1,009
Hong Kong	0	0	1,236	178	92	11	376	85	0	43	2,021
Hungary	332	573	368	199	310	163	358	451	919	395	4,068
Iceland	266	294	307	302	324	152	361	313	241	151	2,711
Indonesia	0	0	0	2	28	25	691	0	0	101	847
Ireland	662	1,472	1,102	538	338	284	589	959	728	323	6,995
Israel	30	0	189	155	12	3,276	436	5	237	259	4,599
Italy	7,087	7,470	10,297	7,086	5,965	4,146	9,946	8,409	13,015	4,663	78,084
Japan	920	1,119	2,184	841	683	355	204	163	671	426	7,566
Jordan	4	3,655	1,842	74	392	394	572	72	102	234	7,341
Kazakhstan	0	0	0	0	325	285	228	1	980	19	1,838
Kosovo	0	0	0	0	0	0	0	0	0	26	26
Kyrgyzstan	0	0	0	0	0	0	16	60	275	104	455
Latvia	154	259	169	121	1,530	3,474	1,432	1,174	1,300	0	9,613
Lithuania	94	506	341	194	342	158	0	56	213	0	1,904
Luxembourg	0	0	1	18	20	71	127	180	256	10	683
Mexico	106	633	489	1,258	1,381	3,251	2,001	1,510	1,366	1,466	13,461
Moldova	0	0	0	0	0	0	0	0	0	20	20
Mongolia	0	0	0	0	0	0	206	25	85	179	495
Mozambique	0	0	0	0	0	0	0	0	0	247	247
Namibia	41	159	284	452	852	1,310	644	723	853	2,083	7,401
Netherlands	25	876	421	81	939	723	400	114	46	62	3,687
New Caledonia	829	621	861	1,051	848	3,085	4,196	3,013	2,300	409	17,213
New Zealand	8,218	8,803	12,332	8,275	9,041	9,561	8,957	8,885	15,341	25,286	114,699
Nicaragua	1,033	220	1,003	1,829	676	1,327	1,431	444	1,730	935	10,628
Nigeria	0	0	0	0	0	0	0	0	0	25	25
Norway	2,106	3,486	5,133	3,165	2,500	2,268	7,729	5,864	8,531	3,259	44,041
Oman	0	0	0	0	0	0	591	0	107	30	728
Pakistan	0	0	0	62	20	0	1,255	0	65	52	1,454
Panama	279	137	214	26	383	43	3,722	238	406	125	5,573
Papua New Guin	0	0	0	0	0	0	0	0	105	0	105
Paraguay	500	876	730	230	2,065	2,270	2,765	2,081	3,993	2,937	18,447
Peru	405	245	293	578	564	661	661	752	52	310	4,521
Philippines	190	648	481	1,502	795	873	1,233	893	874	4,062	11,551
Poland	354	704	491	312	331	408	435	832	2,064	2,842	8,773
Portugal	22	53	116	24	47	50	365	137	570	68	1,452
Romania	0	110	0	0	0	51	214	69	125	2	571
Russia	836	629	679	360	2,696	2,322	1,249	2,473	692	4	11,940
Saudi Arabia	0	50	67	706	38	0	0	17,856	217	1	18,935
Serbia	0	0	0	200	33	27	96	535	0	42	933
Slovak Republic	38	99	65	191	57	138	259	202	114	133	1,296
Slovenia	0	20	0	0	10	19	37	113	135	0	334
South Africa	241	1,015	1,134	1,527	1,973	2,736	4,401	5,728	12,930	8,855	40,540
Spain	3,605	3,214	2,983	2,378	2,046	2,012	1,688	837	2,817	1,501	23,081
Sweden	984	1,138	1,249	869	1,341	1,995	2,682	4,951	4,010	1,257	20,476
Switzerland	464	141	421	509	544	2,558	1,754	3,073	8,502	1,527	19,493
Taiwan	250	716	157	5	0	0	3,030	139	0	151	4,448
Tanzania	0	0	0	0	5	1	1	2	0	385	394
Thailand	1,124	4,220	3,887	2,432	2,801	4,763	3,327	4,467	10,272	3,316	40,609
Turkey	0	449	285	30	37	3,691	193	5,018	1,448	14	11,165
Uganda	0	0	0	0	0	0	0	0	0	125	125
Ukraine	499	1,399	2,213	1,831	1,268	1,882	2,205	1,915	4,975	10,402	28,589
United Arab Em	278	651	590	253	1,181	374	1,756	14,519	915	429	20,946
United Kingdom	11,884	10,919	23,404	7,182	5,603	5,514	9,231	7,010	15,771	6,409	102,927
Uruguay	56	328	314	787	853	429	822	1,417	1,845	981	7,832
Zambia	0	17	18	20	41	35	9	129	361	56	686
Zimbabwe	0	0	0	0	0	0	0	0	0	787	787
Total	150,493	220,593	264,114	199,417	205,950	263,223	315,763	383,950	491,947	272,526	2,687,996

Sources: Data on this site have been compiled from tariff and trade data from the U.S. Department of Commerce and the U.S. International Trade Commission.



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Manufacturing

The Annual Survey of Manufacturers (ASM) provides some measurable information related to manufacturing activity, products and location, as well as a current degree of measure for outputs, inputs and operating status for the U.S. manufacturing industry. This survey is conducted by the Census Bureau every year, except for years ending in 2 and 7 during which times the data are included in the Economic Census (manufacturing sector).

For this publication, as well as for the NSSF Industry Intelligence Report on Firearms Production in the United States, manufacturing trends for ammunition are sourced from the Annual Survey of Manufacturers (ASM). Since the revisions to the NAICS codes in 2012 included the addition of a variety of military equipment and applications that were not formerly reported under the category of "small arms", manufacturing trends for firearms will no longer be compiled from the ASM.

Safety Facts & Figures

The following data sources are monitored annually for updates to firearms-related unintentional injury and fatality statistics:

- The Centers for Disease Control and Prevention (CDC) web-based Injury Statistics Query and Reporting System (WISQARS) www.cdc.gov/injury/wisqars/
  cdc.gov/injury/wisqars/
- National Safety Council's "Injury Facts" nsc.org
- Consumer Products Safety Commission (CPSC) National Electronic Injury Surveillance System (NEISS)
  cpsc.gov/en/research–statistics/neiss-injury-data/
- International Hunter Education Association (IHEA) Hunter Incident Clearinghouse
  ihea-usa.org/news-and-events/news/incident-reports

Special Permits and Forms

Due to industry interest in these items, state-level data are tracked and reported for **Concealed Carry Permit Holders and Approved Form 2s, 3s, 4s, and 5s for Suppressors.**

Boy Scouts of America (BSA) — Merit Badges Awarded in Shooting Sports

With the annual assistance of BSA Council Operations, take a fresh look at which merit badges are most attractive to and attained by today's youth. Rifle shooting, shotgun shooting and archery continue to make the list of favorites.

NSSF Infographics

NSSF has published a variety of infographics. These visual representations of information summarize a variety of data in easy-to-understand formats.

ANNUAL SURVEY OF MANUFACTURERS
INDUSTRY STATISTICS

The data listed on this page are sourced from the most current Annual Survey of Manufacturers (ASM). The report is produced by the U.S. Department of Commerce. 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).

INDUSTRY STATISTIC	(332) Fabricated Metal Product Manufacturing (2013)	(332992) Ammunition Manufacturing (2013)	Ammunition Percent of Total Fabricated Metal Product Manufacturing
Employment & Labor Costs			
Total number of employees	1,379,859	10,496	0.8%
Number of production workers	1,016,981	8,660	0.9%
Production workers hours worked	2,087,259,000	17,917,000	0.9%
Production workers wages	$43,141,663,000	$470,217,000	1.1%
Total annual payroll	$69,157,348,000	$645,059,000	0.9%
Total fringe benefits	$18,454,972,000	$196,925,000	1.1%
Total annual compensation	$87,612,320,000	$841,984,000	1.0%
Purchased Fuels and Electric Energy Used for Heat and Power			
Electric energy purchased (kWh)	42,666,241,000	377,502,000	0.9%
Cost of electric energy	$3,376,824,000	D*	not available
Cost of purchased fuels	$1,242,512,000	$12,026,000	1.0%
Total cost of fuels and electric energy	$4,619,336,000	D*	not available
Capital Expenditures for Plant and Equipment			
Buildings and other structures	$3,609,158,000	$6,461,000	0.2%
Rental or lease payments for machinery and equipment	$1,109,789,000	$8,462,000	0.8%
Expensed computer hardware and other equipment and purchases of software	$571,799,000	$1,314,000	0.2%
All other operating expenses	$30,775,901,000	$569,555,000	1.9%
Total capital expenditures for plant and equipment	$36,066,647,000	$585,792,000	1.6%
Value of Manufacturers' Inventories by Stage of Fabrication			
Beginning of Year			
Finished products	$15,426,371,000	$190,096,000	1.2%
Work-in-process	$11,901,710,000	$112,799,000	0.9%
Materials, supplies, fuels, etc.	$17,048,303,000	$175,227,000	1.0%
Total	$44,376,384,000	$478,122,000	1.1%
End of Year			
Finished products	$15,954,790,000	$201,848,000	1.3%
Work-in-process	$12,345,455,000	$123,381,000	0.9%
Materials, supplies, fuels, etc.	$17,319,008,000	$214,292,000	1.0%
Total	$45,619,253,000	$539,521,000	1.2%
Manufacturing Activity			
Total value of shipments	$345,089,256,000	$4,207,336,000	1.2%
Total cost of materials	$162,288,478,000	$1,651,458,000	1.0%
Value added	$183,908,899,000	$2,578,492,000	1.4%

* D: Withheld to avoid disclosing data for individual companies
Source: 2013 Annual Survey of Manufacturers (ASM)

Note: The last implimented update to NAICS codes went into effect in 2012. NAICS code 332994 was revised at that time. It was formerly reported in this table as Small Arms/Firearms Manufacturing, but now includes a list of military applications/products in addition to those manufactured for sporting use. As such, code 332994 has been excluded from this report.

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ANNUAL SURVEY OF MANUFACTURERS
10 YEAR MANUFACTURING TRENDS

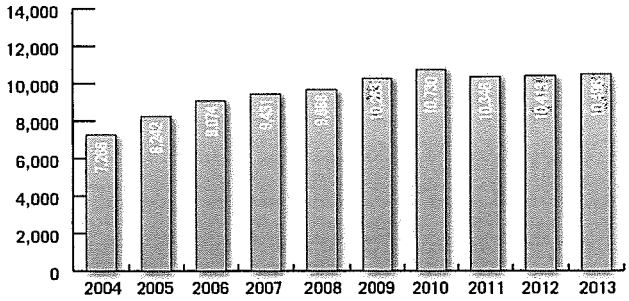
Small Arms Ammunition (NAICS 332992)

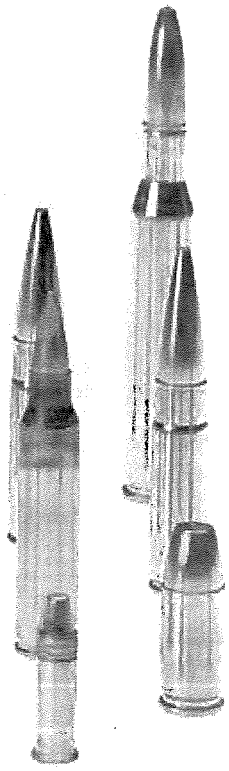
ALL EMPLOYEES (NUMBER)

10-Year Average

Small Arms Ammunition:

9,593

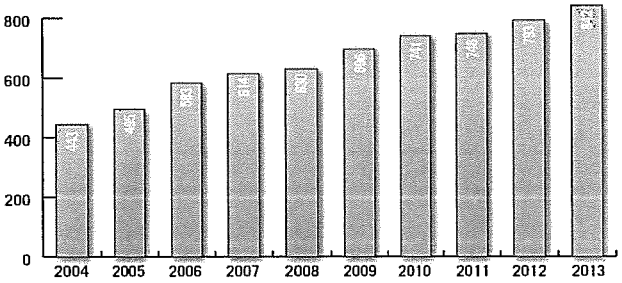


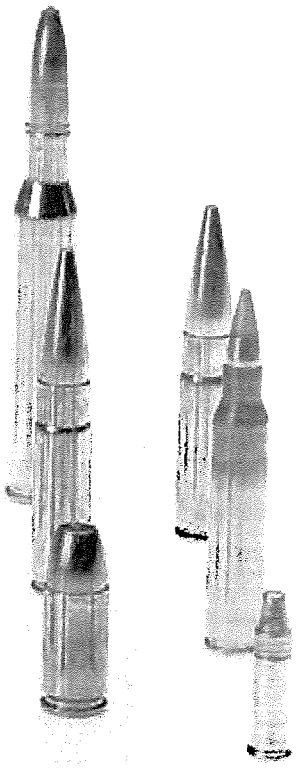


TOTAL COMPENSATION ($ IN MILLIONS)

10-Year Average

Small Arms Ammunition:
$659M

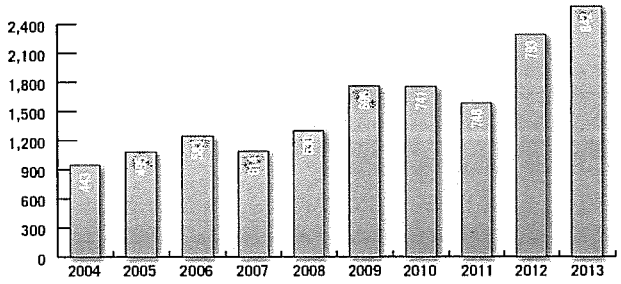




VALUE ADDED ($ IN MILLIONS)

10-Year Average

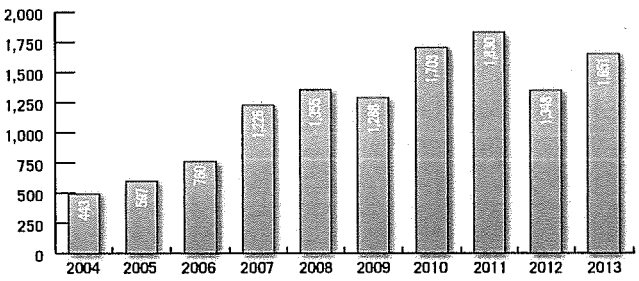
Small Arms Ammunition:
$1,562M



COST OF MATERIALS ($ IN MILLIONS)

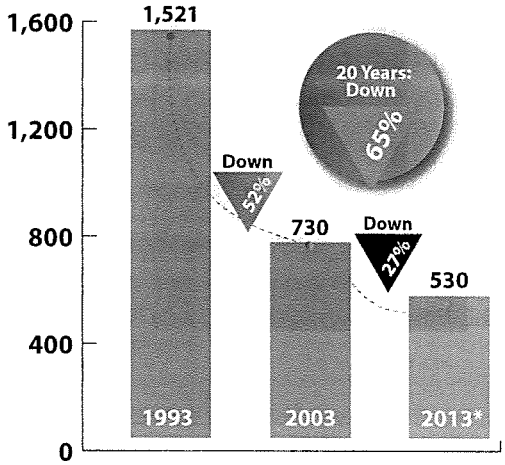
10-Year Average

Small Arms Ammunition:
$1,225M



Source: 2013 Annual Survey of Manufacturers (ASM)

Unintentional Firearms Fatalities Down 65%



Over the last two decades, the number of unintentional fatalities involving firearms (excludes homicide and suicide) has **dropped by 65 percent.**

This decline is attributed to a number of factors, including educational efforts by groups such as the National Shooting Sports Foundation and National Rifle Association, and state-affiliated hunter education programs. Industry-related initiatives include safety education programs such as NSSF's Project ChildSafe®, free firearm locking devices voluntarily supplied by firearms manufacturers with new firearms, and technological advances in firearm design and manufacturing.

* Preliminary
Source: National Safety Council Injury Facts 2015 Edition

Unintentional Firearm Fatalities See Highest Rate of Decline

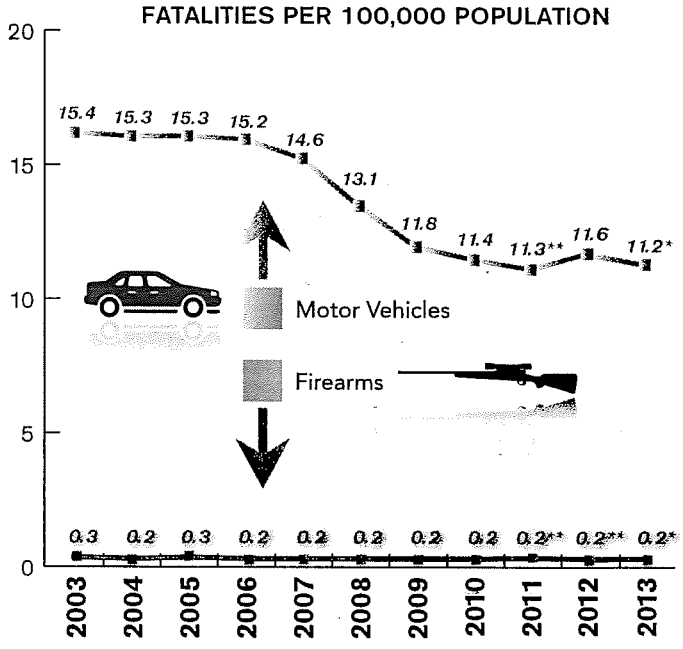
Compared to other principle types of unintentional fatalities in the United States, **firearms continue to show the largest percentage decrease in the past two decades.**

*Preliminary data, subject to change
**Note: Total includes types of injury not listed in the grid. Other injury type comparisons are not available because of changes in year-to-year classifications.
Source: National Safety Council Injury Facts 2015 Edition

TYPE	1993	2003	2013 *	% change (10 yrs)	% change (20 yrs)
Firearms	1,521	730	530	**down 27%**	**down 65%**
Fires, Flames, Smoke	3,900	3,369	2,400	down 29%	down 38%
Motor Vehicles	41,893	44,757	35,500	down 21%	down 15%
Choking	3,160	4,272	4,800	up 12%	up 52%
ALL TYPES**	**90,523**	**109,277**	**130,800**	**up 20%**	**up 44%**

Unintentional Fatality Rates: Firearms vs Motor Vehicles

- Unintentional fatality rates involving firearms **remain at their lowest levels in history** — 0.2 per 100,000 population.
- Over the past 10 years, the unintentional firearm fatality rate per 100,000 population has declined by 33 percent; since the beginning of record-keeping in 1903, **this rate has declined by 94 percent!**
- The rate of unintentional firearm fatalities is substantially lower than the rate of motor vehicle fatalities.
- A person is **56 times more likely** to be involved in an unintentional fatality with a motor vehicle than with a firearm.



* Preliminary
** Revised
Source: National Safety Council Injury Facts 2015 Edition (with 2013 data)

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FIREARMS SAFETY FACTS & FIGURES

Firearms are Involved in 0.4-Percent of All Unintentional Fatalities (For All Ages)

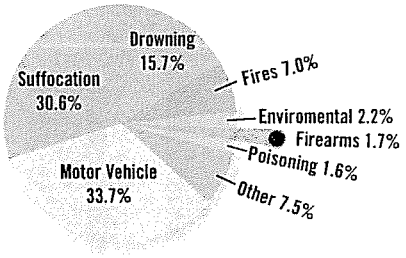
TOTAL U.S. POPULATION (2013): 316,128,839		
Total Unintentional Fatalities	**130,557**	**100%**
Poisoning	38,851	29.8%
Motor Vehicle	33,804	25.9%
Falls	30,208	23.1%
Suffocation	6,601	5.1%
Drowning	3,391	2.6%
Fires, Flames & Smoke	2,818	2.2%
Natural / Environmental	1,535	1.2%
Struck By/Against Object	823	0.6%
Transportation (other than land)	815	0.6%
Machinery	588	0.5%
Firearms	**505**	**0.4%**
All Other Accidents	10,618	8.1%

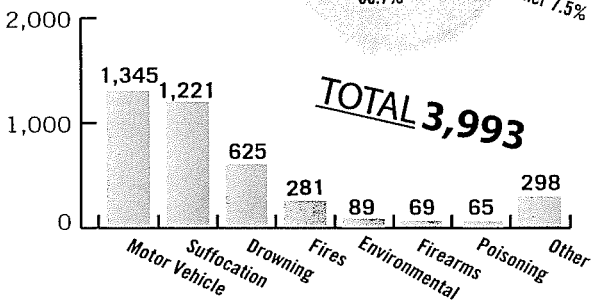
Source: CDC WISQARS 2013 data (data pulled May 2015)

Firearms are Involved in 1.7 Percent of Unintentional Fatalities Among Children

For children 14 years of age and under, unintentional injuries are the leading cause of fatality. **Firearms are one of the lowest causes of injury among children.**

Unintentional Fatalities:
(14 years of age and under)





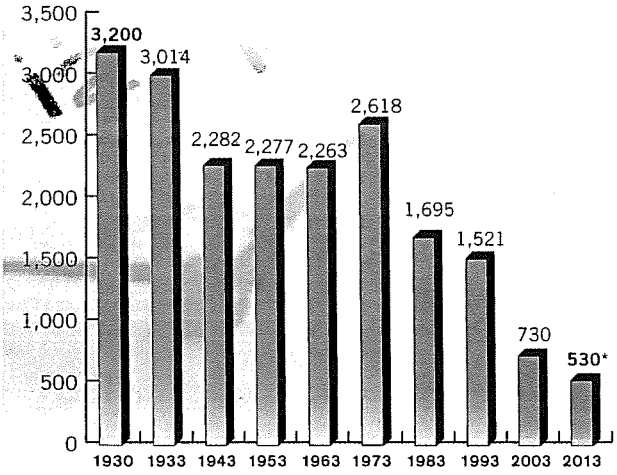
Source: CDC WISQARS 2013 data (data pulled May 2015)

projectchildsafe.org

HELP SPREAD THE WORD

Historical Flashback

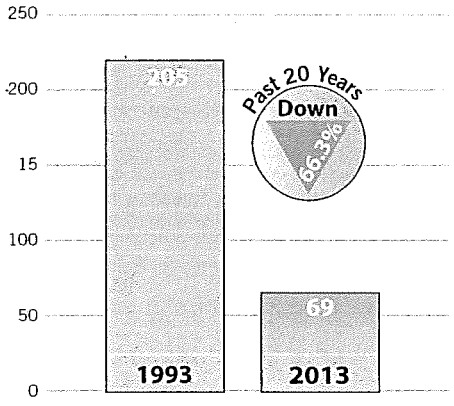
Today, the annual number of unintentional firearms-related fatalities **is down 83.4 percent** from a high of 3,200 in 1930.



* Preliminary
Source: National Safety Council Injury Facts 2014 Edition

Firearms-Related Fatalities Among Children Down 66 Percent

Over the last two decades the number of unintentional firearm-related fatalities among youth 14 years of age and under **decreased 66%** while the population for this age group increased **7 percent.**



Source: CDC WISQARS Injury Mortality Reports through 2013 (pulled December 2015)

HUNTING

One of the Safest Activities in America

ACTIVITY (alphabetically)	NUMBER OF PARTICIPANTS(a) 2014	TOTAL INJURIES(b) 2014	INJURIES per 100,000 PARTICIPANTS	ONE (1) INJURY FOR EVERY X PARTICIPANTS
Archery (target)	8,300,000	3,948	48	2,102
Baseball	11,300,000	130,376	1,154	87
Basketball	23,700,000	522,817	2,206	45
Bicycle Riding	35,600,000	502,104	1,410	71
Billiards / Pool	20,800,000	3,500	17	5,943
Bowling	34,400,000	16,613	48	2,071
Camping (Vacation/ Overnight)	39,500,000	4,476	11	8,825
Cheerleading	3,600,000	35,894	997	100
Exercising with Equipment	55,100,000	306,239	556	180
Fishing	33,900,000	66,290	196	511
Football (tackle)	7,500,000	396,457	5,286	19
Golf	18,400,000	30,047	163	612
Gymnastics	5,400,000	34,550	640	156
Hockey (ice)	3,400,000	17,627	518	193
Hunting w/ Firearms *	17,500,000	5,696	33	3,030
In-line rollerskating	4,700,000	54,796	1,166	86
Lacrosse	2,800,000	15,312	547	183
Mountain Biking (off road)	5,400,000	8,822	163	612
Running / Jogging	43,000,000	29,484	69	1,458
Skateboarding	5,400,000	119,760	2,218	45
Snowboarding	4,200,000	31,847	758	132
Soccer	13,400,000	239,943	1,791	56
Softball	9,500,000	95,465	1,005	100
Swimming	45,900,000	78,488	171	585
Tennis	12,400,000	19,800	160	626
Volleyball	10,200,000	52,548	515	194
Water Skiing	3,400,000	4,807	141	707
Weight Lifting	34,000,000	100,904	297	337
Wrestling	2,900,000	39,700	1,369	73

HUNTING VERSUS OTHER ACTIVITIES:

A person is **16 times** more likely to be injured playing volleyball than hunting.
A person is **30 times** more likely to be injured cheerleading than hunting.
A person is **30/35 times** more likely to be injured playing softball/baseball than hunting.
A person is **43 times** more likely to be injured bicycle riding than hunting.
A person is **54 times** more likely to be injured playing soccer than hunting.
A person is **67 times** more likely to be injured playing basketball/skateboarding than hunting.
A person is **160 times** more likely to be injured playing tackle football than hunting.

	SAFEST ACTIVITIES	PERCENTAGE OF INJURIES PER 100 PARTICIPANTS
1	Camping (vacation/overnight)	0.01%
2	Billiards / Pool	0.02%
3	Hunting with Firearms	0.03%
4	Archery (target)	0.05%
5	Bowling	0.05%
6	Running / Jogging	0.07%
7	Water Skiing	0.14%
8	Golf	0.16%
9	Mountain Biking (off road)	0.16%
10	Tennis	0.16%

FACT: Excise tax collections on items such as firearms and ammunition totaled more than $3.0 billion from 2010-2014. Approximately $489 million of these monies were apportioned to states specifically for the purpose of hunter education and safety training. This, along with a strong network of 55,000 dedicated hunter education instructors, helps make hunting one of the safest activities in America.

Sources: USFW & IHEA

	LESS SAFE ACTIVITIES	PERCENTAGE OF INJURIES PER 100 PARTICIPANTS
1	Football (tackle)	5.29%
2	Skateboarding	2.22%
3	Basketball	2.21%
4	Soccer	1.79%
5	Bicycle Riding	1.41%
6	Wrestling	1.37%
7	In-line Rollerskating	1.17%
8	Baseball	1.15%
9	Softball	1.00%
10	Snowboarding	0.76%

Sources: (a)) Number of Participants: National Sporting Goods Association (NSGA) Sports Participation 2014 estimates.
(b) Total Injuries: Consumer Products Safety Commission (CPSC) National Electronic Injury Surveillance System (NEISS)
* Hunting with firearms total injuries/incidents include CPSC NEISS injury data for Tree Stands (hunting) as well as estimated injuries from IHEA Hunter Incident Clearinghouse.

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PROJECT CHILDSAFE®

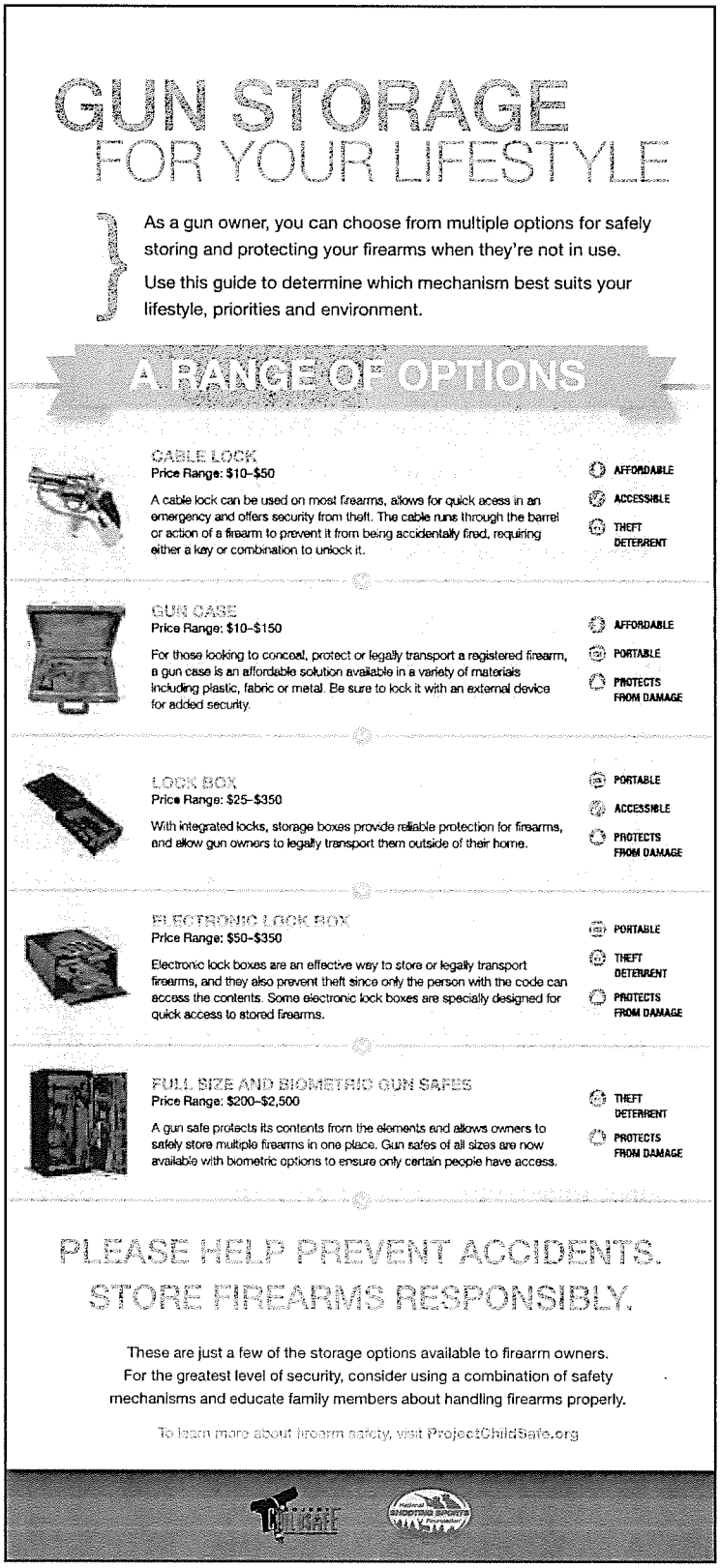
About NSSF's Project ChildSafe

Project ChildSafe is a nationwide program that promotes safe firearms handling and storage practices among all firearm owners through the distribution of safety education messages and free firearm safety kits.

The kits include a cable-style gun-locking device and a brochure (also available in Spanish) that discusses safe firearms handling and storage. Since 2003, Project ChildSafe has partnered with local law enforcement agencies to distribute more than 36 million safety kits to gun owners in all 50 states and five U.S. territories.

Project ChildSafe's success is attributable to law enforcement, elected officials, community leaders, state agencies, businesses, the firearms industry as a whole and individuals who have worked to help raise awareness about the importance of securely storing firearms in the home.

Join Project ChildSafe in promoting safe firearm handling and storage education — become a partner today!



ESTIMATED NUMBER OF ACTIVE CONCEALED CARRY PERMIT HOLDERS BY STATE

STATE	ESTIMATED ACTIVE CONCEALED CARRY PERMIT HOLDERS (a)	ESTIMATE STATE POPULATION (AGE 18+) (c)	PERCENT OF STATE POPULATION THAT POSSESS CCW (AGE 18+) (b)
**AK	25,000	547,000	4.6%
AL	350,000	3,722,000	9.4%
AR	165,000	2,250,000	7.3%
**AZ	223,000	5,010,000	4.5%
*CA	56,000	29,158,000	0.2%
CO	171,000	4,030,000	4.2%
CT	204,000	2,811,000	7.3%
*DE	5,000	722,000	0.7%
FL	1,290,000	15,526,000	8.3%
GA	600,000	7,502,000	8.0%
*HI	200	1,097,000	0.0%
IA	202,000	2,366,000	8.5%
ID	77,000	1,184,000	6.5%
IL	33,000	9,859,000	0.3%
IN	538,000	4,985,000	10.8%
KS	75,000	2,170,000	3.5%
KY	203,000	3,381,000	6.0%
LA	137,000	3,513,000	3.9%
*MA	251,000	5,299,000	4.7%
*MD	50,000	4,584,000	1.1%
ME	33,000	1,067,000	3.1%
MI	444,000	7,650,000	5.8%
MN	175,000	4,141,000	4.2%
MO	171,000	4,646,000	3.7%
MS	64,000	2,254,000	2.8%
MT	39,000	791,000	4.9%
NC	570,000	7,562,000	7.5%
ND	31,000	561,000	5.5%
NE	31,000	1,404,000	2.2%
NH	45,000	1,052,000	4.3%
*NJ	32,000	6,877,000	0.5%
NM	38,000	1,578,000	2.4%
NV	81,000	2,129,000	3.8%
*NY	404,000	15,411,000	2.6%
OH	408,000	8,921,000	4.6%
OK	191,000	2,904,000	6.6%
OR	185,000	3,072,000	6.0%
PA	872,000	10,058,000	8.7%
*RI	3,400	838,000	0.4%
SC	229,000	3,695,000	6.2%
SD	77,000	637,000	12.1%
TN	472,000	5,004,000	9.4%
TX	708,000	19,406,000	3.6%
UT	551,000	2,004,000	27.5%
VA	363,000	6,396,000	5.7%
**VT	49,000	504,000	9.7%
WA	456,000	5,376,000	8.5%
WI	213,000	4,435,000	4.8%
WV	127,000	1,473,000	8.6%
**WY	25,000	445,000	5.6%
TOTAL	11,742,600	242,007,000	4.9%

D.C. - not included in the table or the totals. Population: 535,000

Estimated Economic Impact of Concealed Carry Licenses			
State	Estimated Total Cost	Number of Permits Issued	Economic Impact
AR	$346.50	165,248	$57,258,432.00
CA	$482.00	35,000	$16,870,000.00
CT	$361.50	203,989	$73,742,023.50
FL	$232.00	1,278,246	$296,553,072.00
IL	$388.83	33,631	$13,076,741.73
KS	$262.50	75,099	$19,713,487.50
LA	$300.00	136,505	$40,951,500.00
MS	$277.00	63,900	$17,700,300.00
TX	$285.00	708,048	$201,793,680.00
WI	$220.00	212,848	$46,826,560.00
10-State Average	$315.53	291,251	**$78,448,579.67**
National	$315.53	11,742,600	**$3,705,142,578.00**

Concealed carry license costs vary per state. The ten states above show an average of $316 in fees, training and processing costs required to receive a concealed carry license. The 11.7 million concealed carry licenses nationwide provided an estimated economic impact of more than $3.7 billion.

(a) Each state figure is an **estimate** based on data provided from a variety of sources including, but not limited to: State police and State Attorney General office records as well as US Government Accountability Office report entitled GUN CONTROL - States' Laws and Requirements for Concealed Carry Permits Vary across the Nation.

(b) Several states such as UT and FL have a higher than average number of non-resident CCW holders due to that state honoring many other states CCW's.

(c) Source: US Census Bureau population estimate for 2013

* "May Issue" states are: CA, DE, HI, MA, MD, NJ, NY, RI
** "Unrestricted" states are: AK, AZ, VT & WY
Data provided as of August 2014 by NSSF.

Fact:
The total number of concealed carry permits in the U.S. increased approximately 70 percent from an estimated 6.9 million in 2010 to an estimated 11.7 million CCW permits in 2014.

ATF FORM 2 DATA

PER FISCAL YEAR* BY STATE

State	Fiscal Year 2010	Fiscal Year 2011	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014
AK	-	1	-	1	12
AL	194	167	187	107	241
AR	74	353	965	620	625
AZ	1,918	1,643	2,078	1,579	1,543
CA	3,358	4,102	7,450	9,869	12,068
CO	9	17	42	123	688
CT	17	2	13	9	199
DE	-	-	-	-	-
FL	1,647	2,384	2,060	3,571	3,164
GA	10,140	15,993	20,993	42,673	37,507
HI	-	-	-	-	-
IA	-	1	-	40	21
ID	7,842	9,101	11,448	17,216	10,089
IL	1	-	5	37	9
IN	338	3,989	6,395	7,505	5,535
KS	-	7	1	4	2
KY	-	2	11	25	8
LA	102	94	175	371	414
MA	5,792	3,610	9,524	12,804	9,914
MD	32	20	73	7	105
ME	16	1	40	8	13
MI	47	383	100	127	20
MN	7	2	3	10	8
MO	98	126	197	288	1,357
MS	39	161	325	232	147
MT	344	372	522	670	459
NC	24	143	363	397	187
ND	-	-	-	-	-
NE	38	3	5	2	1
NH	-	5	30	271	2,169
NJ	-	-	-	-	-
NM	241	34	203	312	257
NV	6	18	170	675	487
NY	17	-	1	8	4
OH	63	74	208	391	145
OK	174	58	133	65	61
OR	264	452	481	1,453	586
PA	29	95	905	192	725
SC	1,287	2,596	2,757	3,739	1,099
SD	-	16	387	983	1,165
TN	43	335	371	544	828
TX	541	817	2,165	2,528	2,666
UT	2,099	5,777	18,120	34,147	51,504
VA	176	323	457	723	404
WA	7	11	154	154	71
WI	225	294	287	701	1,106
WV	9	5	3	-	2
WY	190	511	1,427	3,252	3,630
TOTAL	37,448	54,098	91,234	148,433	151,245

Source: FOIA request from NSSF to US DOJ. Data received 7/15/15
*Fiscal year is defined as October 1-September 30.

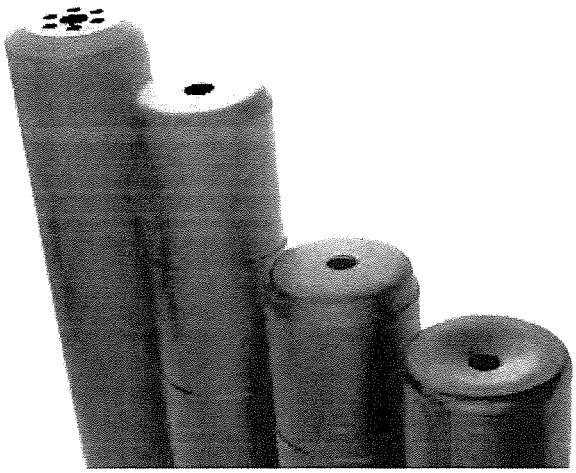
This chart represents the Bureau of Alcohol,Tobacco, Firearms and Explosives statistical records that exist on the total number of National Firearms Act Form 2's filed per state per fiscal year on manufactured or imported mufflers / suppressors ("Silencers").The quantity of silencers processed for each Form 2 is not available.

States omitted from this report may not allow the sale of silencers.

For additional information on ATF Form 2, please refer to: atf.gov/files/forms/download/atf-f-5320-2.pdf

Fact:
From 2010 to 2014, the number of approved Form 2's for silencers have increased 303.9 percent.

Report provided by NSSF. For additional NSSF research materials, please visit nssf.org/research.



ATF FORM 3 DATA

PER FISCAL YEAR* BY STATE

State	Fiscal Year 2010	Fiscal Year 2011	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014
AK	256	279	374	593	530
AL	529	972	1,201	1,820	1,567
AR	775	850	1,122	1,692	1,770
AZ	1,351	1,802	2,474	4,242	4,115
CA	46	202	163	211	603
CO	754	1,431	1,970	3,484	3,953
CT	470	565	607	736	1,326
DE	-	4	-	-	-
FL	2,387	3,080	5,588	6,496	8,673
GA	3,582	2,814	4,852	6,390	5,661
HI	15	-	-	-	-
IA	50	44	77	35	319
ID	581	659	906	1,476	1,458
IL	61	92	66	307	403
IN	813	1,993	3,110	3,476	2,689
KS	364	760	1,092	1,518	1,365
KY	587	1,240	1,392	2,240	1,446
LA	529	789	930	3,679	11,512
MA	67	40	110	135	274
MD	537	792	952	1,346	1,954
ME	270	130	174	297	337
MI	71	167	2,195	1,637	1,843
MN	5	-	15	75	48
MO	716	1,110	1,977	2,657	2,441
MS	499	682	953	1,508	1,566
MT	353	407	981	2,070	1,645
NC	1,410	1,431	2,003	3,049	4,524
ND	127	239	355	638	360
NE	338	461	604	988	1,211
NH	231	613	708	1,225	971
NJ	1	-	-	8	1
NM	238	392	562	741	772
NV	920	937	1,144	1,714	1,837
NY	200	428	1,457	3,366	2,632
OH	935	3,841	13,241	27,198	11,291
OK	2,074	6,047	14,623	27,065	24,691
OR	708	1,054	1,325	1,775	1,889
PA	1,533	2,670	6,035	7,886	5,227
RI	-	-	-	1	-
SC	3,646	2,452	2,592	6,320	10,403
SD	372	485	714	1,242	2,201
TN	1,001	1,219	1,664	2,406	2,385
TX	5,043	7,920	14,296	29,999	50,627
UT	643	1,213	1,043	1,599	1,940
VA	1,458	1,642	2,150	3,643	4,550
WA	1,016	2,293	3,339	3,815	3,742
WI	424	366	640	1,071	1,474
WV	347	352	557	678	690
WY	114	150	251	512	533
TOTAL	38,447	57,109	102,584	175,059	191,449

Source: FOIA request from NSSF to US DOJ. Data received 7/15/15.
*Fiscal year is defined as October 1-September 30.

This chart represents the Bureau of Alcohol, Tobacco, Firearms and Explosives statistical records that exist on the total number of National Firearms Act Form 3's filed per state per fiscal year for tax exempt transfer and registration from one Special Occupational taxpaying FFL of mufflers / suppressors ("Silencers") to another Special Occupational taxpaying FFL. The quantity of silencers processed for each Form 3 is not available.

For additional information on ATF Form 3, please refer to: atf.gov/files/forms/download/atf-f-5320-3.pdf

Fact:
There has been a 398.0 percent increase in the number of approved Form 3's for silencers from 2010 to 2014.

Report provided by NSSF. For additional NSSF research materials, please visit nssf.org/research.

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ATF FORM 4 DATA
PER FISCAL YEAR* BY STATE

State	Fiscal Year 2008	Fiscal Year 2009	Fiscal Year 2010	Fiscal Year 2011	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014
AK	112	150	154	160	211	257	472
AL	253	378	422	575	678	807	1,351
AR	396	494	515	538	623	727	1,325
AZ	1,003	1,093	1,021	1,047	1,263	1,679	3,071
CA	0	0	0	0	3	1	4
CO	402	502	532	715	869	1,105	2,400
CT	256	323	273	299	347	426	835
FL	1,592	2,005	2,085	2,059	2,583	3,323	6,119
GA	832	1,163	1,195	1,297	1,633	1,921	3,350
IA	0	0	0	0	1	0	2
ID	295	377	544	450	578	615	1,058
IL	0	0	2	5	1	2	12
IN	480	593	687	764	1,051	1,115	1,710
KS	15	237	292	304	464	545	1,185
KY	238	336	322	470	586	683	1,117
LA	160	236	364	462	513	620	1,679
MA	1	2	2	4	1	2	1
MD	384	371	467	446	606	563	1,314
ME	79	77	122	127	152	138	231
MI	1	5	8	3	671	956	1,328
MN	0	2	0	0	1	1	6
MO	7	404	452	431	746	1,184	1,781
MS	188	258	370	418	502	752	1,398
MT	162	187	237	284	317	332	613
NC	402	574	665	919	1,052	1,263	3,060
ND	47	62	79	148	267	348	721
NE	149	226	261	262	284	410	804
NH	137	145	190	154	247	349	527
NJ	0	0	0	0	0	0	1
NM	90	100	136	233	263	341	524
NV	382	512	529	584	609	752	1,082
NY	0	0	0	1	8	3	5
OH	437	556	603	637	1,039	1,345	2,666
OK	569	819	710	670	933	1,226	2,353
OR	548	616	673	689	759	908	1,460
PA	574	770	906	1,006	1,389	1,507	2,796
SC	285	425	478	646	886	710	1,315
SD	139	172	257	285	355	429	1,175
TN	533	645	750	790	968	1,086	1,905
TX	1,927	2,949	3,749	4,566	7,071	9,768	24,419
UT	477	467	431	433	433	675	1,278
VA	684	787	987	1,008	1,372	1,653	3,594
WA	496	862	797	946	1,837	1,914	3,380
WI	166	220	314	293	370	504	1,104
WV	139	161	227	248	263	320	516
WY	52	106	108	96	148	174	410
TOTAL	15,089	20,367	22,916	25,472	34,953	43,439	87,457

Source: FOIA request from NSSF to US DOJ. Data received 7/15/15
*Fiscal year is defined as October 1-September 30.

This chart represents the Bureau of Alcohol, Tobacco, Firearms and Explosives statistical records that exist on the total number of National Firearms Act transfer tax stamps issued by state/ approved Form 4's for silencers per fiscal year by state. The number of silencers processed for each Form 4 is not available.

States omitted from this report may not allow the sale of silencers.

For additional information on ATF Form 4, please refer to: atf.gov/files/forms/download/atf-f-5320-4.pdf

Fact:
The number of approved Form 4's for silencers have increased 479.6% from 2008 to 2014.

Report provided by NSSF. For additional NSSF research materials, please visit nssf.org/research.

ATF FORM 5 DATA
PER FISCAL YEAR* BY STATE

State	Fiscal Year 2010	Fiscal Year 2011	Fiscal Year 2012	Fiscal Year 2013	Fiscal Year 2014
AK	23	11	2	95	19
AL	64	85	37	1,091	1,397
AR	27	25	16	17	18
AZ	61	116	77	197	104
CA	115	93	295	641	411
CO	44	31	33	85	100
CT	4	28	55	19	12
DC	7	4	47	5	66
DE	-	41	-	-	-
FL	120	57	104	129	180
GA	85	136	430	106	289
GU	4	-	-	-	-
HI	3	1	8	3	21
IA	20	5	37	24	77
ID	35	60	44	40	77
IL	9	11	67	88	85
IN	1,397	947	194	1,385	597
KS	21	77	17	15	51
KY	1,579	1,659	3,254	1,991	439
LA	130	6	99	27	45
MA	9	29	16	39	50
MD	116	30	108	60	210
ME	10	6	2	-	4
MI	24	37	51	31	143
MN	14	9	33	12	76
MO	26	21	33	29	98
MS	14	16	15	13	59
MT	6	1	6	12	18
NC	22	77	180	49	78
ND	3	5	1	6	5
NE	1	7	8	12	11
NH	2	20	7	1	2
NJ	29	108	46	29	63
NM	34	16	36	64	55
NV	18	33	17	14	24
NY	79	11	139	52	659
OH	23	72	85	160	108
OK	48	138	50	124	33
OR	19	42	22	29	75
PA	261	105	164	101	80
PR	-	5	-	-	-
RI	1	1	-	3	1
SC	51	18	15	24	188
SD	3	8	21	8	18
TN	44	21	88	58	320
TX	147	275	353	460	516
UT	15	6	16	69	37
VA	260	303	506	342	287
VT	1	-	4	-	-
WA	64	46	23	86	120
WI	23	34	21	38	48
WV	7	87	3	56	33
WY	3	5	2	1	3
TOTAL	5,125	4,986	6,887	7,940	7,410

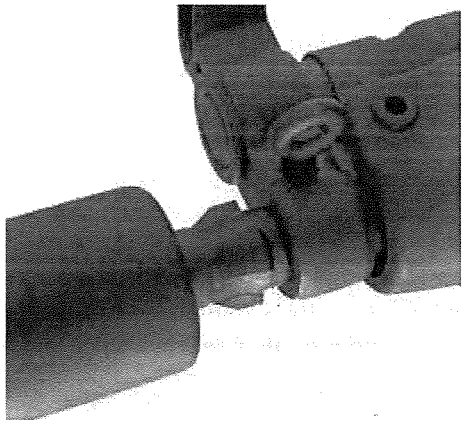
Source: FOIA request from NSSF to US DOJ. Data received 7/15/15
*Fiscal year is defined as October 1-September 30.

This chart represents the Bureau of Alcohol, Tobacco, Firearms and Explosives statistical records that exist on the total number of National Firearms Act Form 5's filed per state per fiscal year for tax exempt transfer and registration of mufflers / suppressors ("Silencers").The quantity of silencers processed for each Form 5 is not available.

For additional information on ATF Form 5, please refer to: atf.gov/files/forms/download/atf-f-5520-5.pdf

Fact:
There has been an increase of 44.6% in the number of approved Form 5's for silencers from 2010 to 2014.

Report provided by NSSF. For additional NSSF research materials, please visit nssf.org/research.



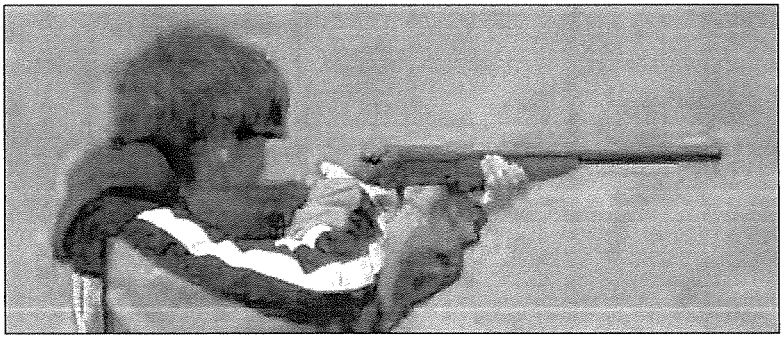
2447

BOY SCOUTS OF AMERICA
MERIT BADGE PROGRAM

Background and Purposes

As chartered by the Congress of the United States, the Boy Scouts of America is a movement dedicated to supplementing and enlarging the education of youth. The merit badge program, which provides opportunities for youth to explore more than 100 fields of skill and knowledge, plays a key role in the fulfillment of this educational commitment.

A vital part of the BSA's advancement plan, its merit badge program, is one of Scouting's basic character-building tools. Through participation in the program, (which may begin immediately upon registration in a troop or team), a Scout acquires the kind of self-confidence that comes only from overcoming obstacles to achieve a goal. Instruction is offered in everything from animal science and public speaking to swimming and communications, providing a young man with invaluable career, physical and interpersonal skills.



Merit Badge Pamphlets

Each merit badge subject is outlined and explained in a pamphlet that contains short introductory information written for Boy Scouts/Varsity Scouts by recognized authorities. More than a million pamphlets are sold yearly, and many are used as approved reference texts in libraries and school curricula.

Counselors

People who are knowledgeable about the various merit badge subjects are selected, approved and trained by council and district advancement committees to serve as merit badge counselors. For example, a dentist might be asked to serve as a counselor for the Dentistry merit badge. A counselor must not only possess the necessary technical knowledge, but also have a solid understanding of the needs, interests and abilities of Scouts. A counselor must also be a registered adult with the BSA.

Procedure

When a Scout has an interest in earning a particular merit badge, he obtains his Scoutmaster's/Varsity Scout Coach's approval and identifies another Scout with similar interests to become his partner. They are then directed to the appropriate merit badge counselor. The counselor reviews the badge requirements with the young men and decides with them what projects should be undertaken and when they should be completed. After the counselor has certified that the Scouts have qualified for the merit badge, it is presented to them at a troop/team meeting and can be applied toward rank advancement.

Badges for Eagle

To qualify for the Eagle Scout Award, Scouting's highest advancement rank, a Scout must—along with meeting five other requirements—earn a total of 21 merit badges, including First Aid, Citizenship in the Community, Citizenship in the Nation, Citizenship in the World, Communication, Cooking, Personal Fitness, Emergency Preparedness OR Lifesaving, Environmental Science OR Sustainability, Personal Management, Swimming OR Hiking OR Cycling, Camping and Family Life.

New Badges

To meet the changing interests of boys, new merit badges are added from time to time. In addition, all merit badges are reviewed and revised periodically. As of 2014, the most recently added badges are Digital Technology, Mining in Society, and Moviemaking.

All current information is available through scouting.org.

Source: scouting.org

BOY SCOUTS OF AMERICA

MERIT BADGE PROGRAM TRENDS (2010-2014)

Over the last 5 years, the total number of Merit Badges awarded has remained fairly consistent –increasing by 1.0 percent (slightly more than 20,600 total badges) from 2009 to 2013.

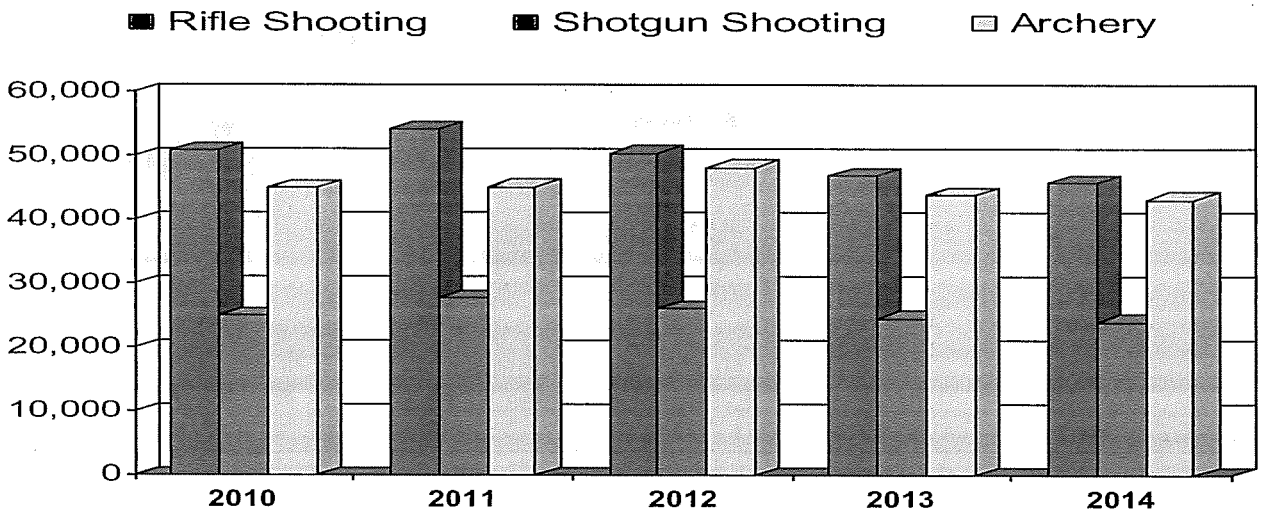
More than 136 different types of merit badges were awarded in 2014 by the Boy Scouts of America. Rifle Shooting ranked 14th in popularity and Shotgun Shooting posted as number 27. Both of these activities have dropped one place since 2013.

Rifle Shooting and Shotgun Shooting badges are not required to achieve Eagle Scout rank, yet both activities continue to make the top 30 merit badge categories.

* Activity required for Eagle Rank plus
one ** activity, one *** activity, and one **** activity

These figures are provided courtesy of the BSA from Local Council data.

MERIT BADGE	2010	2014	% Change 2010 - 2014	1911 - 2014 TOTAL
TOTAL	**2,056,867**	**2,077,550**	**1.0%**	**119,366,085**
Cooking*	23,548	99,908	324.3%	4,338,361
First Aid*	89,694	80,917	-9.8%	6,981,900
Swimming**	78,825	72,503	-8.0%	6,314,767
Environmental Science****	74,836	67,218	-10.2%	2,712,587
Citizenship in the World*	67,483	61,303	-9.2%	2,268,759
Citizenship in the Nation*	64,683	56,490	-12.7%	3,204,737
Camping*	62,174	54,265	-12.7%	4,662,712
Communication*	59,462	54,081	-9.0%	2,056,128
Citizenship in the Community*	58,891	51,728	-12.2%	3,461,756
Personal Fitness*	58,988	50,693	-14.1%	2,499,227
Family Life*	58,767	49,516	-15.7%	1,160,345
Personal Management*	56,793	48,299	-15.0%	1,811,986
Emergency Preparedness***	49,945	46,069	-7.8%	1,837,329
Rifle Shooting	**50,801**	**45,839**	**-9.8%**	**1,327,979**
Fingerprinting	46,395	43,820	-5.6%	1,674,398
Archery	**45,039**	**43,238**	**-4.0%**	**1,603,844**
Leatherwork	50,028	42,565	-14.9%	2,447,079
Wilderness Survival	41,627	40,395	-3.0%	1,635,328
Wood Carving	45,121	38,749	-14.1%	2,287,658
Kayaking	0	35,533	N/A	93,515
Canoeing	40,160	31,833	-20.7%	3,023,634
Fishing	29,806	28,119	-5.7%	1,988,949
Art	28,707	25,438	-11.4%	1,308,810
Chess	0	25,266	N/A	87,881
Lifesaving***	27,739	24,474	-11.8%	3,037,408
Mammal Study	28,728	24,060	-16.2%	1,195,348
Shotgun Shooting	**24,978**	**23,970**	**-4.0%**	**520,280**
Climbing	23,698	23,200	-2.1%	416,510
Indian Lore	28,530	22,997	-19.4%	1,197,868
Space Exploration	22,914	22,625	-1.3%	559,871



Source: Boy Scouts of America

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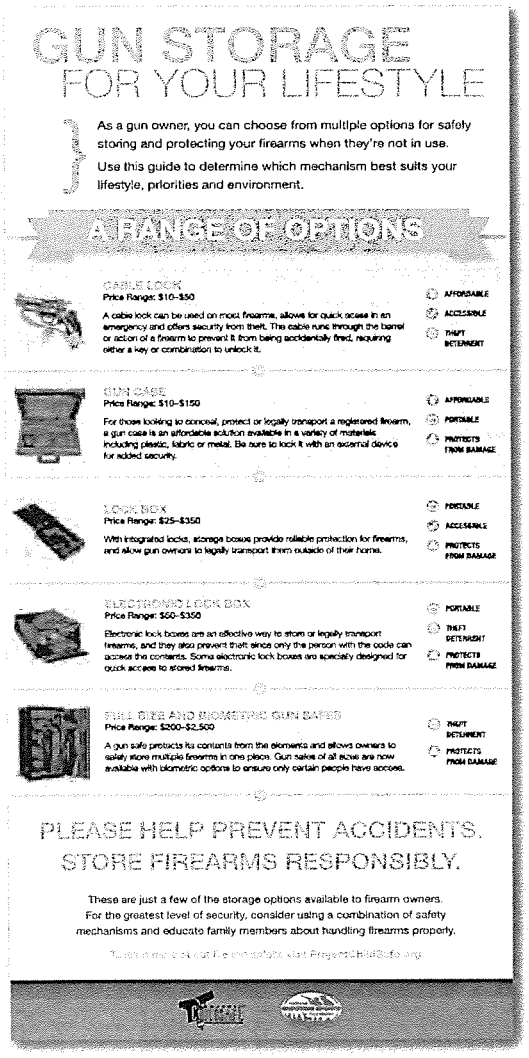
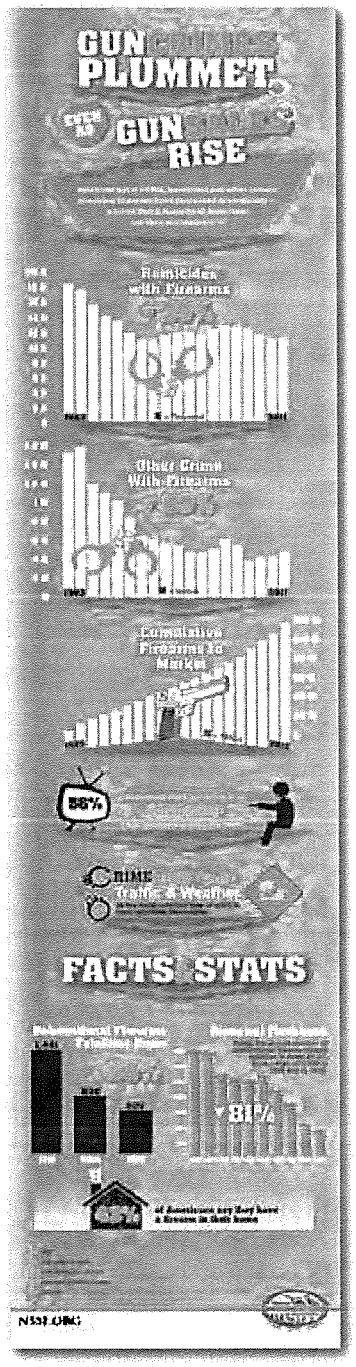
INFOGRAPHICS

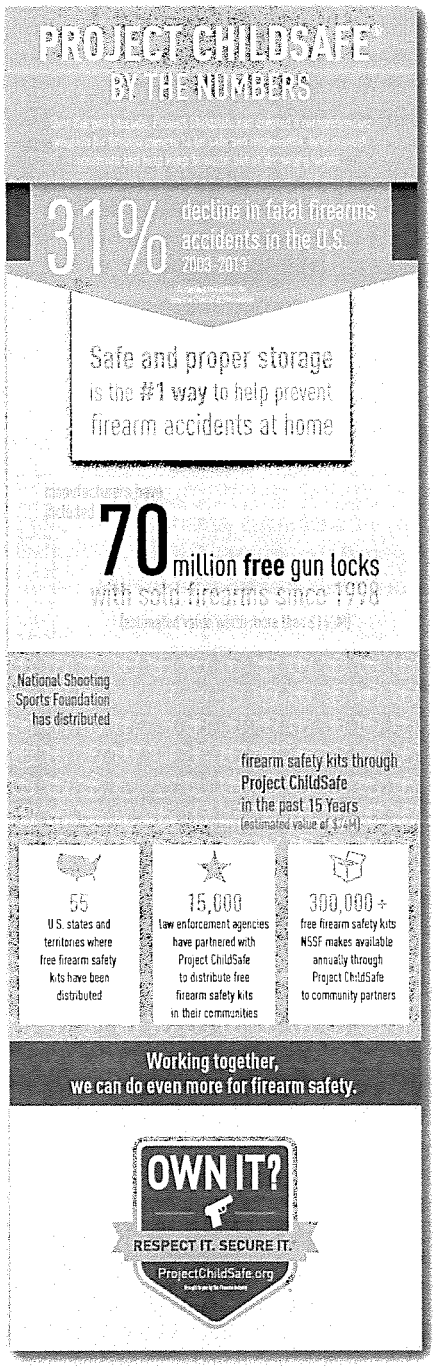
Infographics are visual representations of information that summarize a variety of data in easy-to-understand formats. NSSF started releasing Infographics in 2013 to better inform the industry as well as the general population on the importance of hunting and target shooting as well as to provide statistics and sources to correct anti-gun media myths.



Gun Storage
for Your Lifestyle



Gun Crimes Plummet,
Even as Gun Sales Rise

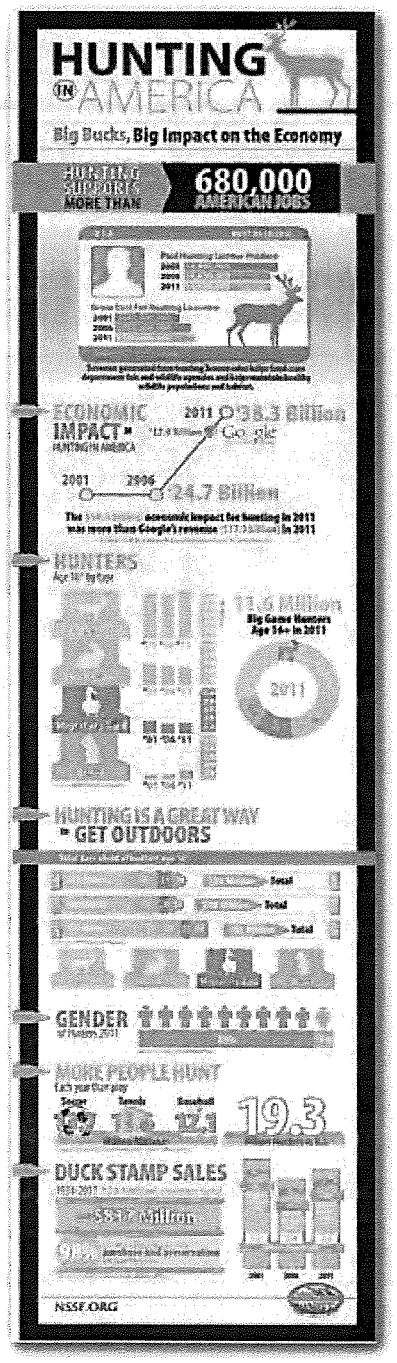


Project ChildSafe®
By The Numbers

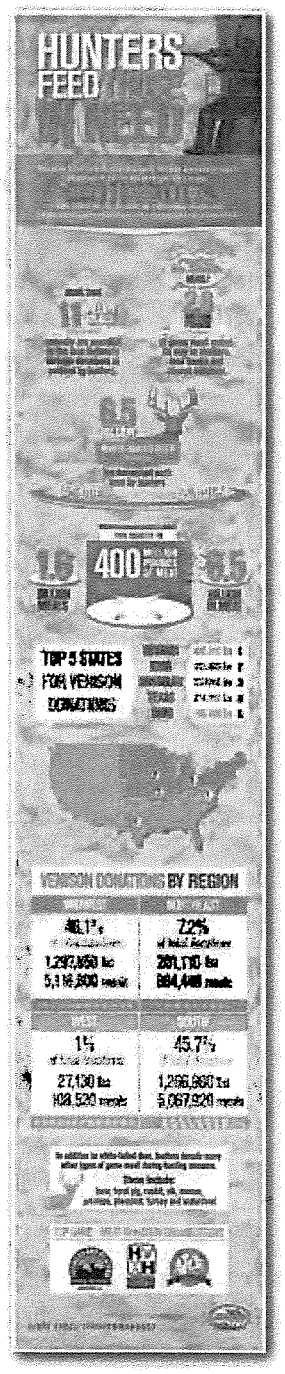
Visit nssf.org/infographics to view all infographics.

INFOGRAPHICS

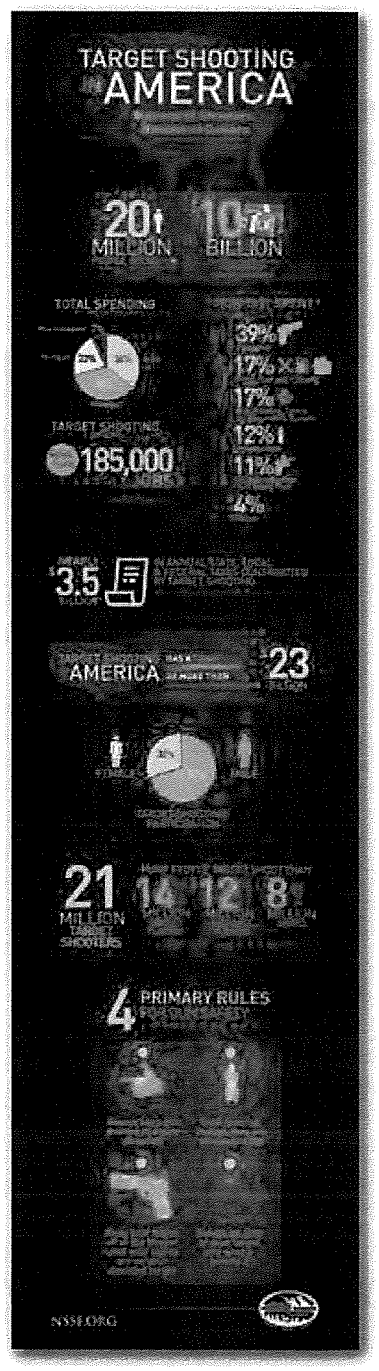
Infographics are visual representations of information that summarize a variety of data in easy-to-understand formats. NSSF started releasing Infographics in 2013 to better inform the industry as well as the general population on the importance of hunting and target shooting as well as to provide statistics and sources to correct anti-gun media myths.



Hunting In America



Hunters Feed Those in Need



Target Shooting In America

Visit nssf.org/infographics to view all infographics.

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LOOKING FOR DISTRIBUTORS?

The National Association of Sporting Goods Wholesalers (NASGW) provides a contact list for wholesalers and distributors.

Visit NASGW.org for additional information.

NASGW National Association of Sporting Goods Wholesalers

LOGIN

NASGW GUN FRIENDLY PAYMENT PROCESSING NASGW ENDORSED GUARANTEED LOWEST RATES

MEMBERS ONLY

IN THIS SECTION

Directory

Wholesalers

Results 1-68 of 84 matching records

Next 14 records →

Acusport Corporation
William Fraim
Chairman and CEO
One Hunter Place
Bellefontaine, OH 43311-3001
P: (937) 593-7010
bfraim@acusport.com
www.acusport.com

NASGW - Wholesalers

Anchor Wholesale, Inc.
Tony DiChello
President & CEO
100 Airpark Dr.
Rochester, NY 14624
P: (585) 328-3951
sales@anchor.com
www.anchor.com

NASGW - Wholesalers

Bangers L.P.
Richard Beshwick
President & CEO
10 South 14th St.
Birmingham, AL 35233
P: (205) 324-8915
rich@bangersusa.com
www.bangersusa.com

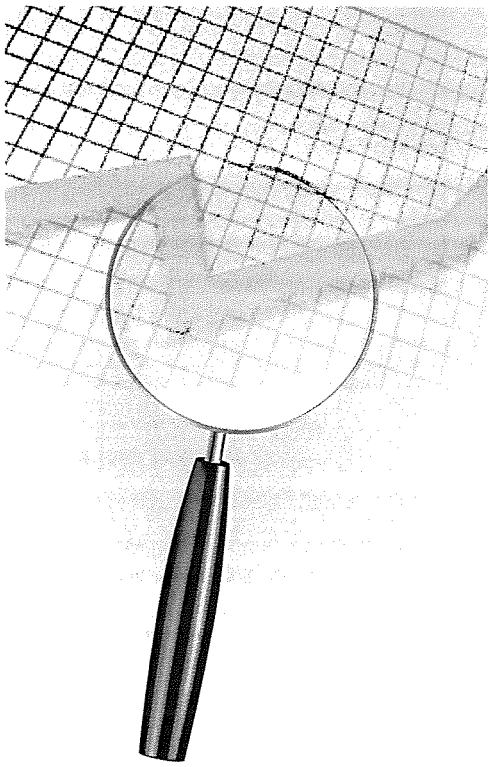
NASGW - Wholesalers

Section B:

Shooting Sports Participation

THE IMPORTANCE OF SYNDICATED RESEARCH STUDIES:

There are two ways to measure industry variables.



Section A presented quantitative measurements that are primarily tracked throughout the year. These include license sales, excise taxes, production figures, background checks, imports and exports, etc. In most cases there is an agency or an organization responsible for gathering, tabulating and verifying the data. These variables tell us a lot about how the firearms industry is performing, however, they also leave gaps in identifying who is actually behind the numbers.

Sections B and **C** present another way of measuring the industry, this time through research studies and national surveys that provide both quantitative and qualitative measurements. Just as there are agencies measuring quantity, there are a number of reliable research firms serving our industry that help us determine who is participating in the shooting sports in terms of demographics, how frequently they are participating and how much they are spending in pursuit of their sport. This information, when used together with the data presented in Section A will give you a complete picture of the industry.

The participation and demographic statistics presented in sections B and C are based on annual, random sample surveys.

Because the population is often too large for researchers to survey all of its members (in this case, everyone who participates in the shooting sports), a small but carefully chosen sample is used to represent the population. The sample reflects the characteristics of the population from which it is drawn. Sampling error is the degree to which a sample might differ from the actual target population.

A word of caution when using survey data.

Year-to-year changes in the number of participants may be due more to survey fluctuation than actual trends. It is best to use the participation and demographic studies for long-term comparisons, such as every five years, or as a general barometer.

10-YEAR HISTORY OF SHOOTING SPORTS PARTICIPATION

DATA PRESENTED IN HUNDRED THOUSANDS

SHOOTING SPORT	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	10-Year Average	2014 vs. 10-Year Average	5-Year Average	2014 vs. 5-Year Average	2014 Compared to 2013
Archery (target)	6.8	N/A	6.6	N/A	7.1	6.5	6.3	6.9	8.3	8.3	7.1	17.1%	7.3	14.5%	0.7%
Hunting (Net)	21.0	21.0	20.2	19.5	19.4	17.2	17.6	20.1	17.3	18.0	19.1	-5.9%	18.0	-0.2%	4.0%
Hunting (w/ Bow & Arrow)	6.6	5.9	5.7	6.2	6.2	5.2	5.1	5.1	5.7	5.9	5.8	1.8%	5.4	8.7%	3.3%
Hunting (w/ Firearms)	19.6	19.9	19.5	18.8	18.8	16.3	16.4	19.4	16.3	17.5	18.2	-4.1%	17.2	2.0%	7.3%
Muzzleloading	4.1	3.7	3.6	3.4	3.8	3.1	3.1	3.2	3.2	2.7	3.4	-20.5%	3.0	-11.5%	-15.3%
Paintball Games	8.0	8.0	7.4	6.7	6.3	6.1	5.3	5.0	4.8	4.8	6.2	-22.6%	5.2	-7.2%	0.6%
Target Shooting (Clay)	21.9	17.1	20.5	20.3	19.8	19.8	19.6	21.7	19.0	20.4	20.0	1.7%	20.1	1.2%	6.9%
Target Shooting (Airgun)	6.7	5.6	6.6	5.0	5.2	5.3	5.3	4.9	4.8	5.1	5.5	-5.7%	5.1	1.1%	7.2%
Target Shooting (Rifle)	13.8	11.5	14.1	13.5	13.5	11.9	12.1	13.3	11.8	11.8	12.7	-7.4%	12.2	-3.2%	-0.4%
Target Shooting (Shotgun)	9.0	9.2	9.8	9.8	9.1	9.3	9.5	10.9	9.1	10.1	9.6	5.4%	9.8	3.2%	10.8%
Target Shooting (Handgun)	12.7	10.0	14.0	14.0	13.5	12.0	12.1	14.6	12.9	13.7	12.9	5.9%	13.1	5.0%	5.9%

2014 Methodology: For the study, an online panel maintained by TNS was used. The panel was created based on a number of characteristics determined to be key indicators of general purchase behavior, including household size and composition, household income, age of household head, region and market size. The study results are based on approximately 35,000 individuals in these households who are age seven and older.

2010 marks the first year that an online survey methodology was used for collecting data on sports participation.

Methodology prior to 2010: NSGA sampling included a mail panel resource of more than 300,000 pre-recruited households. The panel was created based on a number of characteristics including household size and composition, household income, age, socio-economic status and region and market size. A self-administered questionnaire was mailed to 10,000 households.
Source: National Sporting Goods Association, Sports Participation - Shooting Sports (annual reports)

Prepared for NSSF by the National Sporting Goods Association (NSGA), the report provides members of the firearms and ammunition industry with a current look at participation in nine different shooting sports, as well as the two net categories of hunting and target shooting.

Purchasers of the 2015 Edition NSGA report will also receive a complimentary copy of the updated Industry Intelligence Report, Hunting and Target Shooting Participation. This bonus report is a compilation of shooting sports-related data from the NSGA Annual Sports Participation Reports spanning the years 2001 through 2014. Historical trend data by gender is included.

The reports are offered in PDF file format. NSSF business members may log in and purchase the download of the PDF file report through the member shopping cart for $150. Voting members have free access. Individuals and non-members may purchase the report for $1,500 via www.nssf.org/research, after which orders will be fulfilled via email attachment within three business days.

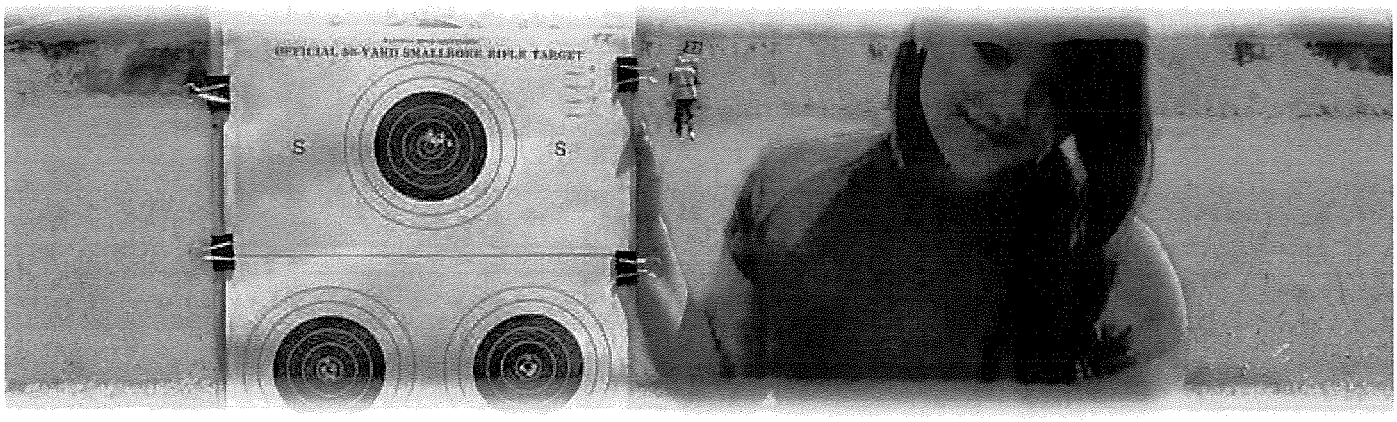
DAYS OF SHOOTING SPORTS PARTICIPATION IN 2013

DATA PRESENTED IN THOUSANDS

Days of participation per year	Hunting (Net)	Hunting (Bow/Arrow)	Hunting (Firearms)	Target Shooting (Net)	Target Shooting (Airgun)	Target Shooting (Handgun)	Target Shooting (Shotgun)	Target Shooting (Rifle)	Muzzleloading *	Paintball Games **	Archery (Target) ***
Frequent (20+ days)	3,645	1,313	3,106	3,455	1,325	2,355	1,252	2,332	812	633	1,201
Occasional (5-19 days)	8,647	2,685	8,408	8,165	2,042	5,728	3,895	5,177	1,256	2,007	4,274
Infrequent (2-4 days)	4,968	1,672	4,798	7,422	1,433	4,861	3,970	4,337	1,096	2,163	2,776
Total Participants	17,261	5,671	16,312	19,041	4,801	12,944	9,117	11,846	3,164	4,803	8,251
Mean Number of Days	11.82	11.94	11.69	10.78	13.46	11.11	9.64	11.59	7.59	8.25	13.21
Total Days of Participation	258,472	67,712	190,760	371,202	64,619	143,780	87,885	137,282	24,028	39,630	108,959

* Frequent (10+ days), Occasional (4-9 days), Infrequent (2-3 days)
** Frequent (20+ days), Occasional (4-19 days), Infrequent (2-3 days)
*** Frequent (30+ days), Occasional (5-9 days), Infrequent (2-4 days)

Source: National Sporting Goods Association, Sports Participation in 2013 - Shooting Sports



DAYS OF SHOOTING SPORTS PARTICIPATION IN 2014

DATA PRESENTED IN THOUSANDS

Days of participation per year	Hunting (Net)	Hunting (Bow/Arrow)	Hunting (Firearms)	Target Shooting (Net)	Target Shooting (Airgun)	Target Shooting (Handgun)	Target Shooting (Shotgun)	Target Shooting (Rifle)	Muzzleloading *	Paintball Games **	Archery (Target) ***
Frequent (20+ days)	3,994	1,452	3,529	3,903	1,218	2,759	2,034	2,078	532	447	1,714
Occasional (5-19 days)	9,336	3,041	9,201	8,554	2,527	5,672	4,381	5,196	1,173	2,173	4,368
Infrequent (2-4 days)	4,633	1,365	4,765	7,900	1,404	5,274	3,683	4,521	976	2,210	2,225
Total Participants	17,963	5,858	17,495	20,357	5,149	13,706	10,098	11,795	2,681	4,830	8,306
Mean Number of Days	12.18	12.32	12.03	11.81	12.18	12.04	12.26	11.20	6.44	7.03	15.55
Total Days of Participation	282,891	72,167	210,507	418,379	62,738	165,012	123,811	131,139	17,278	33,946	129,184

* Frequent (10+ days), Occasional (4-9 days), Infrequent (2-3 days)
** Frequent (20+ days), Occasional (4-19 days), Infrequent (2-3 days)
*** Frequent (30+ days), Occasional (5-9 days), Infrequent (2-4 days)

Source: National Sporting Goods Association, Sports Participation in 2014, Shooting Sports

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Female Participation in Shooting Sports in 2005

DATA PRESENTED IN THOUSANDS

2005 Profile	Hunting (Net)	Hunting (Bow/Arrow)	Hunting (Firearms)	Target Shooting (Net)	Target Shooting (Airgun)	Target Shooting (Handgun)	Target Shooting (Shotgun)	Target Shooting (Rifle)	Muzzleloading	Paintball Games	Archery Target
Number of Female Participants	3,378	786	3,053	5,036	866	3,308	1,403	2,716	326	985	N/A
Females - % of Total Participation	16.1%	11.9%	15.5%	23.0%	13.0%	26.1%	15.5%	19.7%	7.9%	12.3%	N/A
By Age Group											
17 & under	679	93	592	655	288	293	166	436	24	286	N/A
18 to 24	825	309	723	1,206	189	643	290	676	99	148	N/A
25 to 34	456	64	456	878	78	502	309	359	N/A	127	N/A
35 to 44	441	39	441	1,034	148	723	363	644	45	202	N/A
45 to 54	371	123	352	718	83	473	126	378	95	160	N/A
55 to 64	294	16	294	412	57	294	88	156	23	61	N/A
65 to 74	182	37	146	76	23	54	38	43	N/A	N/A	N/A
75 plus	129	105	49	57	N/A	57	24	24	39	N/A	N/A
Mean Age	34.29	37.89	33.45	33.85	28.28	36.17	33.90	32.56	41.72	30.85	N/A

Source: National Sporting Goods Association, Sports Participation in 2005 -- Shooting Sports

Female Participation in Shooting Sports in 2014

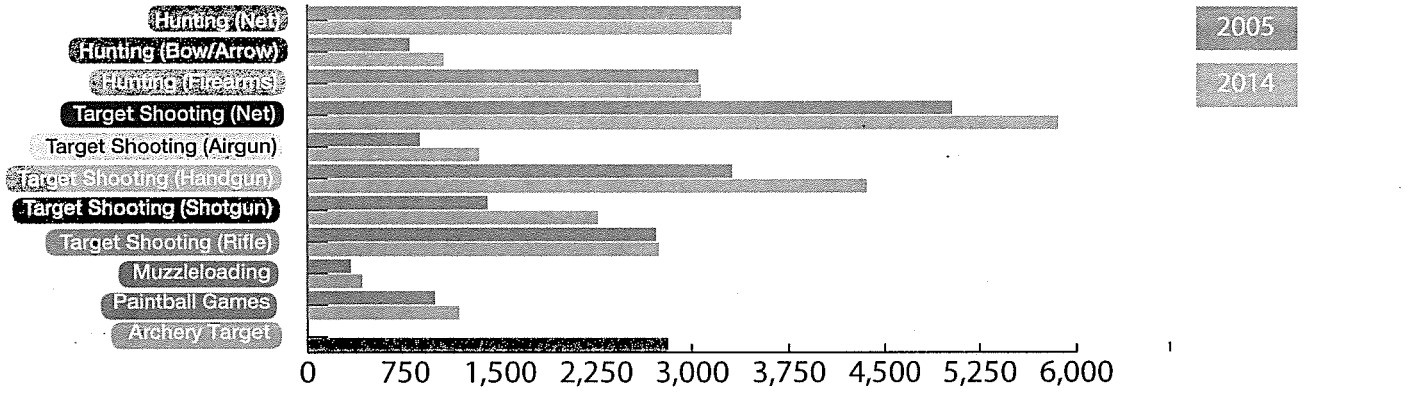
DATA PRESENTED IN THOUSANDS

2014 Profile	Hunting (Net)	Hunting (Bow/Arrow)	Hunting (Firearms)	Target Shooting (Net)	Target Shooting (Airgun)	Target Shooting (Handgun)	Target Shooting (Shotgun)	Target Shooting (Rifle)	Muzzleloading	Paintball Games	Archery Target
Number of Female Participants	3,308	1,056	3,076	5,859	1,337	4,356	2,264	2,740	417	1,176	2,814
Females - % of Total Participation	18.4%	18.0%	17.6%	27.4%	22.1%	31.8%	22.4%	23.2%	15.6%	24.3%	33.9%
By Age Group											
17 & under	616	95	575	825	327	433	463	472	N/A	228	1,140
18 to 24	520	190	413	765	196	590	322	421	37	201	201
25 to 34	804	376	766	1,587	273	1,183	714	852	133	426	426
35 to 44	450	92	440	796	124	600	255	316	57	119	119
45 to 54	525	155	512	887	190	685	321	418	160	165	165
55 to 64	282	119	288	659	197	591	152	164	30	35	35
65 to 74	76	28	46	286	21	223	21	84	N/A	N/A	N/A
75 plus	35	N/A	36	54	10	51	15	14	N/A	N/A	N/A
Mean Age	33.91	34.72	34.40	36.32	33.55	37.4	31.75	33.11	40.49	28.97	29.97
Change from 2005 to 2014	-2.1%	34.4%	0.8%	16.3%	54.4%	31.7%	61.4%	0.9%	27.9%	19.4%	N/A

Source: National Sporting Goods Association, Sports Participation in 2014 -- Shooting Sports

10-Year Comparison of Female Participation in Shooting Sports

DATA PRESENTED IN '000



YOUTH PARTICIPATION
(AGE 7 THROUGH 17)

Male and Female (Age 7 - 17)

	Total Shooting (Net)	Archery	Hunting (Net)	Target Shooting (Net)	Hunting w/ Firearms	Paintball	Target Shooting Rifle	Airgun	Target Shooting Handgun	Target Shooting Shotgun	Hunting Bow & Arrow	Muzzleloading
2001	N/A	N/A	2,682,000	3,139,000	2,432,000	2,586,000	1,462,000	1,350,000	1,059,000	1,097,000	612,000	269,000
2002	N/A	N/A	2,557,000	2,785,000	2,404,000	2,714,000	2,062,000	1,509,000	808,000	1,143,000	442,000	208,000
2003	N/A	N/A	2,690,000	2,598,000	2,443,000	3,053,000	1,828,000	1,778,000	1,043,000	1,061,000	756,000	173,000
2004	N/A	N/A	3,602,000	3,739,000	3,490,000	4,712,000	2,186,000	2,621,000	1,544,000	1,872,000	527,000	342,000
2005	N/A	N/A	3,239,000	3,639,000	2,920,000	3,893,000	2,432,000	3,444,000	1,789,000	1,636,000	795,000	234,000
2006	4,123,000	N/A	3,170,000	2,348,000	2,878,000	3,753,000	1,589,000	1,615,000	809,000	1,275,000	617,000	187,000
2007	4,543,000	N/A	2,884,000	3,068,000	2,786,000	2,921,000	2,568,000	3,175,000	1,416,000	1,517,000	589,000	108,000
2008	4,125,000	N/A	2,883,000	2,415,000	2,710,000	2,352,000	2,021,000	1,810,000	1,077,000	880,000	787,000	225,000
2009	4,446,000	N/A	2,338,000	3,072,000	2,177,000	2,265,000	2,462,000	2,008,000	1,189,000	1,463,000	638,000	290,000
2010	4,796,000	N/A	2,171,000	3,427,000	2,027,000	2,211,000	2,746,000	1,567,000	881,000	1,500,000	789,000	481,000
2011	4,705,000	N/A	1,761,000	2,487,000	1,703,000	2,203,000	2,026,000	2,064,000	1,297,000	1,226,000	663,000	572,000
2012	4,173,000	N/A	2,484,000	1,899,000	2,420,000	1,073,000	1,502,000	1,383,000	1,146,000	1,031,000	579,000	211,000
2013	4,136,000	2,506,000	2,161,000	2,154,000	2,081,000	1,747,000	1,681,000	1,409,000	1,046,000	835,000	669,000	454,000
2014	5,018,000	3,054,000	2,536,000	2,632,000	2,425,000	1,428,000	1,607,000	1,655,000	1,257,000	1,329,000	791,000	229,000
Average	4,451,667	2,780,000	2,654,143	2,828,714	2,492,571	2,636,500	2,012,286	1,956,286	1,168,643	1,276,071	661,000	284,500

Male (Age 7 - 17)

	Total Shooting (Net)	Archery	Hunting (Net)	Target Shooting (Net)	Hunting w/ Firearms	Paintball	Target Shooting Rifle	Airgun	Target Shooting Handgun	Target Shooting Shotgun	Hunting Bow & Arrow	Muzzleloading
2001	N/A	N/A	2,503,000	2,739,000	2,292,000	2,308,000	1,300,000	1,221,000	807,000	1,019,000	558,000	224,000
2002	N/A	N/A	2,206,000	2,370,000	2,069,000	2,254,000	1,748,000	1,295,000	678,000	931,000	425,000	191,000
2003	N/A	N/A	2,349,000	2,178,000	2,154,000	2,602,000	1,507,000	1,523,000	814,000	922,000	704,000	173,000
2004	N/A	N/A	3,082,000	2,851,000	2,261,000	3,868,000	1,601,000	1,973,000	1,154,000	1,615,000	489,000	284,000
2005	N/A	N/A	2,561,000	3,184,000	2,329,000	3,607,000	1,996,000	3,156,000	1,496,000	1,470,000	702,000	209,000
2006	3,209,000	N/A	1,649,000	1,803,000	2,235,000	2,947,000	1,170,000	2,156,000	541,000	1,172,000	439,000	155,000
2007	3,758,000	N/A	2,457,000	2,471,000	2,378,000	2,686,000	2,110,000	2,797,000	1,138,000	1,212,000	549,000	57,000
2008	3,066,000	N/A	2,193,000	1,927,000	2,067,000	1,982,000	1,599,000	1,566,000	847,000	787,000	641,000	164,000
2009	3,478,000	N/A	1,837,000	2,440,000	1,731,000	1,946,000	2,046,000	1,659,000	935,000	1,152,000	505,000	281,000
2010	3,575,000	N/A	1,712,000	2,552,000	1,621,000	1,845,000	2,065,000	1,166,000	573,000	1,136,000	653,000	390,000
2011	3,630,000	N/A	1,275,000	1,741,000	1,254,000	1,792,000	1,410,000	1,716,000	881,000	920,000	404,000	383,000
2012	2,909,000	N/A	1,927,000	1,245,000	1,862,000	828,000	1,051,000	1,047,000	695,000	807,000	463,000	135,000
2013	2,982,000	1,443,000	1,418,000	1,182,000	1,374,000	1,191,000	1,182,000	1,088,000	804,000	638,000	433,000	288,000
2014	3,734,000	1,913,000	1,921,000	1,807,000	1,851,000	1,199,000	1,135,000	1,330,000	825,000	865,000	697,000	229,000
Average	3,371,222	1,678,000	2,077,857	2,177,857	1,962,714	2,218,214	1,585,714	1,692,357	870,571	1,046,143	547,286	225,929

Female (Age 7 - 17)

	Total Shooting (Net)	Archery	Hunting (Net)	Target Shooting (Net)	Hunting w/ Firearms	Paintball	Target Shooting Rifle	Airgun	Target Shooting Handgun	Target Shooting Shotgun	Hunting Bow & Arrow	Muzzleloading
2001	N/A	N/A	179,000	399,000	140,000	277,000	162,000	129,000	252,000	79,000	54,000	44,000
2002	N/A	N/A	352,000	415,000	281,000	459,000	315,000	215,000	130,000	212,000	17,000	17,000
2003	N/A	N/A	341,000	438,000	289,000	450,000	321,000	254,000	231,000	138,000	52,000	N/A
2004	N/A	N/A	520,000	888,000	520,000	845,000	586,000	648,000	391,000	257,000	38,000	57,000
2005	N/A	N/A	679,000	655,000	592,000	286,000	436,000	288,000	293,000	166,000	93,000	24,000
2006	915,000	N/A	721,000	546,000	643,000	805,000	419,000	460,000	268,000	102,000	178,000	32,000
2007	785,000	N/A	428,000	597,000	408,000	235,000	458,000	379,000	277,000	306,000	40,000	52,000
2008	1,061,000	N/A	689,000	489,000	642,000	370,000	422,000	239,000	230,000	93,000	147,000	61,000
2009	968,000	N/A	501,000	632,000	447,000	319,000	417,000	348,000	253,000	311,000	133,000	9,000
2010	1,219,000	N/A	459,000	873,000	407,000	366,000	683,000	229,000	307,000	364,000	136,000	90,000
2011	1,076,000	N/A	486,000	745,000	449,000	410,000	615,000	348,000	416,000	306,000	259,000	189,000
2012	1,264,000	N/A	558,000	654,000	558,000	244,000	451,000	337,000	450,000	224,000	116,000	77,000
2013	1,154,000	1,064,000	743,000	614,000	706,000	556,000	499,000	322,000	242,000	196,000	236,000	166,000
2014	1,284,000	1,140,000	616,000	825,000	575,000	228,000	472,000	327,000	433,000	463,000	95,000	N/A
Average	1,080,667	1,102,000	519,429	626,429	475,500	417,857	446,857	323,071	298,071	229,786	113,857	68,167

National Sporting Goods Association(NSGA) Sports Participation in 2001-2014, Shooting Sports

2459

YOUTH PARTICIPATION
(AGE 7 THROUGH 17)

TOTALS: Male and Female (Age 7 - 17)

Male

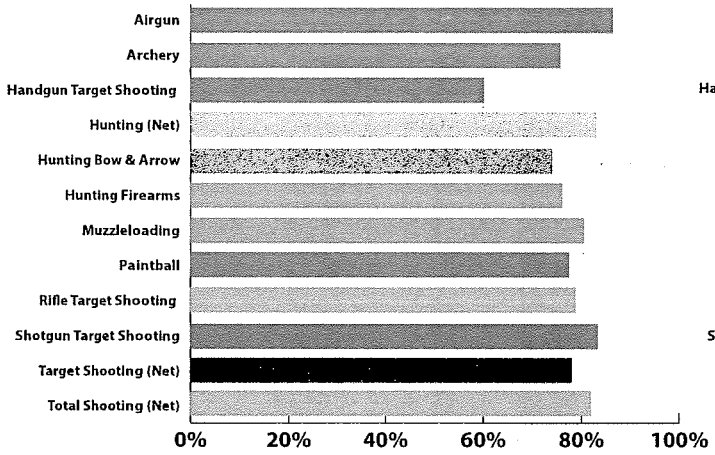
	Total Shooting (Net)	Hunting (Net)	Hunting Firearms	Hunting Bow & Arrow	Target Shooting (Net)	Handgun Target Shooting	Rifle Target Shooting	Shotgun Target Shooting	Airgun	Muzzleloading	Paintball	Archery
2001	N/A	93.3%	94.2%	91.2%	87.3%	76.2%	88.9%	92.9%	90.4%	83.3%	89.2%	N/A
2002	N/A	86.3%	86.1%	96.2%	85.1%	83.9%	84.8%	81.5%	85.8%	91.8%	83.1%	N/A
2003	N/A	87.3%	88.2%	93.1%	83.8%	78.0%	82.4%	86.9%	85.7%	100.0%	85.2%	N/A
2004	N/A	85.6%	64.8%	92.8%	76.3%	74.7%	73.2%	86.3%	75.3%	83.0%	82.1%	N/A
2005	N/A	79.1%	79.8%	88.3%	82.9%	83.6%	82.1%	89.9%	91.6%	89.3%	92.7%	N/A
2006	77.8%	52.0%	77.7%	71.2%	76.8%	66.9%	73.6%	91.9%	133.5%	82.9%	78.5%	N/A
2007	82.7%	85.2%	85.4%	93.2%	80.5%	80.4%	82.2%	79.9%	88.1%	52.8%	92.0%	N/A
2008	74.3%	76.1%	76.3%	81.4%	79.8%	78.6%	79.1%	89.4%	86.5%	72.9%	84.3%	N/A
2009	78.2%	78.6%	79.5%	79.2%	79.4%	78.6%	83.1%	78.7%	82.6%	96.9%	85.9%	N/A
2010	74.5%	78.9%	80.0%	82.8%	74.5%	65.0%	75.2%	75.7%	74.4%	81.1%	83.4%	N/A
2011	77.2%	72.4%	73.6%	60.9%	70.0%	67.9%	69.6%	75.0%	83.1%	67.0%	81.3%	N/A
2012	69.7%	77.6%	76.9%	80.0%	65.8%	60.6%	70.0%	78.3%	75.7%	64.0%	77.2%	N/A
2013	72.1%	65.6%	66.0%	64.7%	54.9%	76.9%	70.3%	76.4%	77.2%	63.4%	68.2%	57.6%
2014	74.4%	75.7%	76.3%	88.1%	68.7%	65.6%	70.6%	65.1%	80.4%	100.0%	84.0%	62.6%
Average	75.7%	78.1%	78.9%	83.1%	76.1%	74.1%	77.5%	82.0%	86.5%	80.6%	83.4%	60.1%

Female

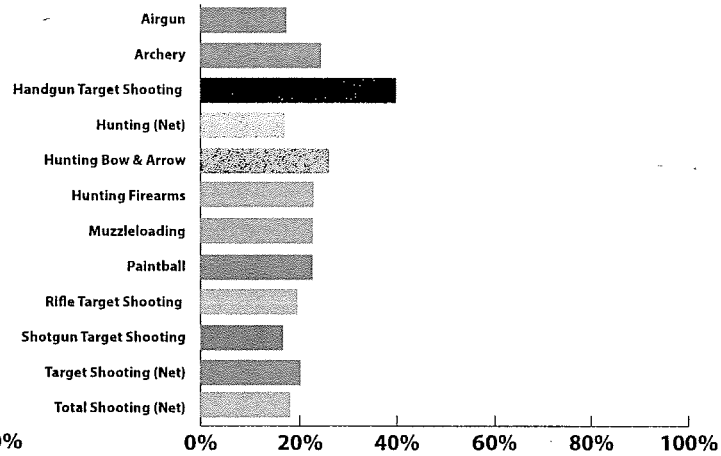
	Total Shooting (Net)	Hunting (Net)	Hunting Firearms	Hunting Bow & Arrow	Target Shooting (Net)	Handgun Target Shooting	Rifle Target Shooting	Shotgun Target Shooting	Airgun	Muzzleloading	Paintball	Archery
2001	N/A	6.7%	5.8%	8.8%	12.7%	23.8%	11.1%	7.2%	9.6%	16.4%	10.7%	N/A
2002	N/A	13.8%	11.7%	3.8%	14.9%	16.1%	15.3%	18.5%	14.2%	8.2%	16.9%	N/A
2003	N/A	12.7%	11.8%	6.9%	16.9%	22.1%	17.6%	13.0%	14.3%	N/A	14.7%	N/A
2004	N/A	14.4%	14.9%	7.2%	23.7%	25.3%	26.8%	13.7%	24.7%	16.7%	17.9%	N/A
2005	N/A	21.0%	20.3%	11.7%	17.1%	16.4%	17.9%	10.1%	8.4%	10.3%	7.3%	N/A
2006	22.2%	22.7%	22.3%	28.8%	23.3%	33.1%	26.4%	8.0%	28.5%	17.1%	21.4%	N/A
2007	17.3%	14.8%	14.6%	6.8%	19.5%	19.6%	17.8%	20.2%	11.9%	48.1%	8.0%	N/A
2008	25.7%	23.9%	23.7%	18.7%	20.2%	21.4%	20.9%	10.6%	13.2%	27.1%	15.7%	N/A
2009	21.8%	21.4%	20.5%	20.8%	20.6%	21.3%	16.9%	21.3%	17.3%	3.1%	14.1%	N/A
2010	25.4%	21.1%	20.1%	17.2%	25.5%	34.8%	24.9%	24.3%	14.6%	18.7%	16.6%	N/A
2011	22.9%	27.6%	26.4%	39.1%	30.0%	32.1%	30.4%	25.0%	16.9%	33.0%	18.6%	N/A
2012	30.3%	22.5%	23.1%	20.0%	34.4%	39.3%	30.0%	21.7%	24.4%	36.5%	22.7%	N/A
2013	27.9%	34.4%	33.9%	35.3%	28.5%	23.1%	29.7%	23.5%	22.9%	36.6%	31.8%	42.5%
2014	25.6%	24.3%	23.7%	12.0%	31.3%	34.4%	29.4%	34.8%	19.8%	N/A	16.0%	37.3%
Average	24.3%	20.1%	19.5%	16.9%	22.8%	25.9%	22.5%	18.0%	17.2%	22.6%	16.6%	39.9%



Percentage of Male Youth Participants
(Based on Average Total from 2001-2014)



Percentage of Female Youth Participants
(Based on Average Total from 2001-2014)



National Sporting Goods Association(NSGA) Sports Participation in 2001-2014, Shooting Sports

2010-2014 GEOGRAPHIC SUPPLEMENT (NSGA)

Region	State	Shooting Sport	Total U.S. Participants (000)	State Participants (5-yr Average)	2014 State Adult Population (18+)	State as a % of U.S. Participation
East North-Central	Illinois	Hunting w/ Bow & Arrow	5,858	206,182	9,892,106	3.1%
		Hunting w/ Firearms	17,495	417,630		2.2%
		Target Shooting (Airgun)	5,149	229,174		1.4%
		Target Shooting (Handgun)	13,706	430,054		3.5%
		Target Shooting (Rifle)	11,795	393,141		3.1%
		Target Shooting (Shotgun)	10,098	401,277		4.5%
		Muzzleloading	2,681	167,684		4.7%
		Paintball	4,830	364,251		5.4%
		Archery (Target)	8,306	265,500		2.7%
East North-Central	Indiana	Hunting w/ Bow & Arrow	5,858	83,402	5,014,928	1.5%
		Hunting w/ Firearms	17,495	306,736		1.5%
		Target Shooting (Airgun)	5,149	170,411		6.4%
		Target Shooting (Handgun)	13,706	364,029		2.0%
		Target Shooting (Rifle)	11,795	300,653		1.6%
		Target Shooting (Shotgun)	10,098	283,438		2.8%
		Muzzleloading	2,681	55,301		0.5%
		Paintball	4,830	89,983		0.4%
		Archery (Target)	8,306	109,500		2.1%
East North-Central	Michigan	Hunting w/ Bow & Arrow	5,858	367,511	7,686,087	5.8%
		Hunting w/ Firearms	17,495	852,281		4.6%
		Target Shooting (Airgun)	5,149	157,857		2.2%
		Target Shooting (Handgun)	13,706	450,896		3.5%
		Target Shooting (Rifle)	11,795	462,482		3.4%
		Target Shooting (Shotgun)	10,098	403,168		2.9%
		Muzzleloading	2,681	228,185		8.6%
		Paintball	4,830	184,063		3.2%
		Archery (Target)	8,306	280,500		4.2%
East North-Central	Ohio	Hunting w/ Bow & Arrow	5,858	244,559	8,955,859	7.3%
		Hunting w/ Firearms	17,495	443,297		3.7%
		Target Shooting (Airgun)	5,149	235,446		4.0%
		Target Shooting (Handgun)	13,706	495,735		3.6%
		Target Shooting (Rifle)	11,795	454,010		3.6%
		Target Shooting (Shotgun)	10,098	314,576		2.8%
		Muzzleloading	2,681	154,418		4.2%
		Paintball	4,830	239,930		5.1%
		Archery (Target)	8,306	373,000		4.7%
East North-Central	Wisconsin	Hunting w/ Bow & Arrow	5,858	235,604	4,457,375	5.5%
		Hunting w/ Firearms	17,495	742,802		4.6%
		Target Shooting (Airgun)	5,149	72,315		1.3%
		Target Shooting (Handgun)	13,706	182,292		1.7%
		Target Shooting (Rifle)	11,795	247,533		2.5%
		Target Shooting (Shotgun)	10,098	167,646		2.0%
		Muzzleloading	2,681	49,895		2.3%
		Paintball	4,830	95,233		1.5%
		Archery (Target)	8,306	213,500		3.2%
East North-Central	TOTAL REGION	Hunting w/ Bow & Arrow	5,858	1,187,257	36,006,355	23.1%
		Hunting w/ Firearms	17,495	2,762,745		16.6%
		Target Shooting (Airgun)	5,149	865,205		15.2%
		Target Shooting (Handgun)	13,706	1,923,006		14.2%
		Target Shooting (Rifle)	11,795	1,857,819		14.1%
		Target Shooting (Shotgun)	10,098	1,570,105		15.0%
		Muzzleloading	2,681	655,483		20.3%
		Paintball	4,830	824,894		15.6%
		Archery (Target)	8,306	1,242,000		16.9%
East South-Central	Alabama	Hunting w/ Bow & Arrow	5,858	88,517	3,741,806	2.1%
		Hunting w/ Firearms	17,495	575,057		3.3%
		Target Shooting (Airgun)	5,149	73,523		0.5%
		Target Shooting (Handgun)	13,706	247,431		1.3%
		Target Shooting (Rifle)	11,795	233,440		1.8%
		Target Shooting (Shotgun)	10,098	154,632		1.5%
		Muzzleloading	2,681	35,261		n/a
		Paintball	4,830	66,000		1.5%
		Archery (Target)	8,306	166,500		4.5%

Sources: National Sporting Goods Association, Sports Participation in 2010-2014 - Shooting Sports, U.S. Census Bureau, U.S. Fish and Wildlife Service

2010-2014 GEOGRAPHIC SUPPLEMENT (NSGA)

Region	State	Shooting Sport	Total U.S. Participants (000)	State Participants (5-yr Average)	2014 State Adult Population (18+)	State as a % of U.S. Participation
East South-Central	Kentucky	Hunting w/ Bow & Arrow	5,858	109,538	3,400,843	2.8%
		Hunting w/ Firearms	17,495	388,396		2.5%
		Target Shooting (Airgun)	5,149	57,150		1.8%
		Target Shooting (Handgun)	13,706	211,361		2.2%
		Target Shooting (Rifle)	11,795	214,436		2.1%
		Target Shooting (Shotgun)	10,098	149,507		1.9%
		Muzzleloading	2,681	89,054		4.4%
		Paintball	4,830	91,689		2.7%
		Archery (Target)	8,306	164,000		2.5%
East South-Central	Mississippi	Hunting w/ Bow & Arrow	5,858	53,272	2,262,810	1.2%
		Hunting w/ Firearms	17,495	247,072		1.6%
		Target Shooting (Airgun)	5,149	51,915		0.4%
		Target Shooting (Handgun)	13,706	161,730		1.4%
		Target Shooting (Rifle)	11,795	157,104		1.3%
		Target Shooting (Shotgun)	10,098	93,124		1.1%
		Muzzleloading	2,681	31,333		1.1%
		Paintball	4,830	51,750		0.5%
		Archery (Target)	8,306	45,500		0.6%
East South-Central	Tennessee	Hunting w/ Bow & Arrow	5,858	149,311	5,054,826	2.1%
		Hunting w/ Firearms	17,495	596,716		2.9%
		Target Shooting (Airgun)	5,149	117,882		1.6%
		Target Shooting (Handgun)	13,706	317,959		1.9%
		Target Shooting (Rifle)	11,795	253,520		1.4%
		Target Shooting (Shotgun)	10,098	266,039		2.7%
		Muzzleloading	2,681	112,017		n/a
		Paintball	4,830	94,442		0.3%
		Archery (Target)	8,306	44,500		0.5%
East South-Central	TOTAL REGION	Hunting w/ Bow & Arrow	5,858	400,638	14,460,285	8.2%
		Hunting w/ Firearms	17,495	1,807,241		10.3%
		Target Shooting (Airgun)	5,149	290,088		4.4%
		Target Shooting (Handgun)	13,706	938,480		6.7%
		Target Shooting (Rifle)	11,795	858,500		6.6%
		Target Shooting (Shotgun)	10,098	644,676		7.2%
		Muzzleloading	2,681	225,677		5.5%
		Paintball	4,830	280,331		5.1%
		Archery (Target)	8,306	420,500		6.1%
Mid-Atlantic	New Jersey	Hunting w/ Bow & Arrow	5,858	80,787	6,926,094	1.2%
		Hunting w/ Firearms	17,495	133,996		1.0%
		Target Shooting (Airgun)	5,149	92,500		0.8%
		Target Shooting (Handgun)	13,706	238,115		1.7%
		Target Shooting (Rifle)	11,795	222,501		1.3%
		Target Shooting (Shotgun)	10,098	187,807		1.4%
		Muzzleloading	2,681	92,829		n/a
		Paintball	4,830	219,260		3.1%
		Archery (Target)	8,306	251,000		2.4%
Mid-Atlantic	New York	Hunting w/ Bow & Arrow	5,858	253,703	15,517,321	5.4%
		Hunting w/ Firearms	17,495	719,487		4.9%
		Target Shooting (Airgun)	5,149	258,346		3.8%
		Target Shooting (Handgun)	13,706	390,675		2.4%
		Target Shooting (Rifle)	11,795	517,467		5.1%
		Target Shooting (Shotgun)	10,098	566,352		7.2%
		Muzzleloading	2,681	229,310		10.9%
		Paintball	4,830	378,832		8.3%
		Archery (Target)	8,306	611,500		6.2%

Sources: National Sporting Goods Association, Sports Participation in 2010-2014 - Shooting Sports, U.S. Census Bureau, U.S. Fish and Wildlife

2010-2014 GEOGRAPHIC SUPPLEMENT (NSGA)

Region	State	Shooting Sport	Total U.S. Participants (000)	State Participants (5-yr Average)	2014 State Adult Population (18+)	State as a % of U.S. Participation
Mid-Atlantic	Pennsylvania	Hunting w/ Bow & Arrow	5,858	350,541	10,086,316	5.7%
		Hunting w/ Firearms	17,495	1,003,162		4.8%
		Target Shooting (Airgun)	5,149	216,261		4.1%
		Target Shooting (Handgun)	13,706	523,819		3.3%
		Target Shooting (Rifle)	11,795	644,339		4.1%
		Target Shooting (Shotgun)	10,098	424,943		3.8%
		Muzzleloading	2,681	137,037		3.2%
		Paintball	4,830	215,647		3.8%
		Archery (Target)	8,306	373,000		5.8%
Mid-Atlantic	TOTAL REGION	Hunting w/ Bow & Arrow	5,858	685,031	32,529,731	12.4%
		Hunting w/ Firearms	17,495	1,856,645		10.8%
		Target Shooting (Airgun)	5,149	548,607		8.7%
		Target Shooting (Handgun)	13,706	1,152,609		7.5%
		Target Shooting (Rifle)	11,795	1,384,308		10.4%
		Target Shooting (Shotgun)	10,098	1,179,102		12.5%
		Muzzleloading	2,681	440,610		14.1%
		Paintball	4,830	813,739		15.3%
		Archery (Target)	8,306	1,235,500		14.4%
Mountain	Arizona	Hunting w/ Bow & Arrow	5,858	73,303	5,109,792	3.2%
		Hunting w/ Firearms	17,495	275,790		1.8%
		Target Shooting (Airgun)	5,149	121,827		2.3%
		Target Shooting (Handgun)	13,706	370,088		2.8%
		Target Shooting (Rifle)	11,795	276,550		2.9%
		Target Shooting (Shotgun)	10,098	172,400		1.1%
		Muzzleloading	2,681	50,927		1.8%
		Paintball	4,830	111,915		1.9%
		Archery (Target)	8,306	230,000		2.0%
Mountain	Colorado	Hunting w/ Bow & Arrow	5,858	57,996	4,109,494	1.1%
		Hunting w/ Firearms	17,495	289,638		1.3%
		Target Shooting (Airgun)	5,149	69,989		3.0%
		Target Shooting (Handgun)	13,706	352,567		3.9%
		Target Shooting (Rifle)	11,795	310,917		2.1%
		Target Shooting (Shotgun)	10,098	212,596		3.2%
		Muzzleloading	2,681	44,666		2.8%
		Paintball	4,830	38,054		1.4%
		Archery (Target)	8,306	218,500		2.6%
Mountain	Idaho	Hunting w/ Bow & Arrow	5,858	24,180	1,203,384	0.4%
		Hunting w/ Firearms	17,495	247,700		1.3%
		Target Shooting (Airgun)	5,149	47,805		1.1%
		Target Shooting (Handgun)	13,706	146,566		1.1%
		Target Shooting (Rifle)	11,795	168,054		1.5%
		Target Shooting (Shotgun)	10,098	117,358		1.4%
		Muzzleloading	2,681	42,794		0.9%
		Paintball	4,830	19,971		0.1%
		Archery (Target)	8,306	67,500		0.9%
Mountain	Montana	Hunting w/ Bow & Arrow	5,858	35,896	798,555	0.4%
		Hunting w/ Firearms	17,495	234,145		0.6%
		Target Shooting (Airgun)	5,149	19,282		0.2%
		Target Shooting (Handgun)	13,706	81,489		0.6%
		Target Shooting (Rifle)	11,795	121,489		0.9%
		Target Shooting (Shotgun)	10,098	51,061		0.6%
		Muzzleloading	2,681	27,624		n/a
		Paintball	4,830	n/a		n/a
		Archery (Target)	8,306	21,500		0.3%
Mountain	Nevada	Hunting w/ Bow & Arrow	5,858	8,967	2,175,874	0.2%
		Hunting w/ Firearms	17,495	81,491		0.4%
		Target Shooting (Airgun)	5,149	14,918		0.3%
		Target Shooting (Handgun)	13,706	172,233		1.6%
		Target Shooting (Rifle)	11,795	165,937		1.4%
		Target Shooting (Shotgun)	10,098	122,222		1.6%
		Muzzleloading	2,681	11,500		n/a
		Paintball	4,830	62,000		n/a
		Archery (Target)	8,306	37,000		n/a

Sources: National Sporting Goods Association, Sports Participation in 2010-2014 - Shooting Sports, U.S. Census Bureau, U.S. Fish and Wildlife Service

2010-2014 GEOGRAPHIC SUPPLEMENT (NSGA)

Region	State	Shooting Sport	Total U.S. Participants (000)	State Participants (5-yr Average)	2014 State Adult Population (18+)	State as a % of U.S. Participation
Mountain	New Mexico	Hunting w/ Bow & Arrow	5,858	15,549	1,583,623	0.3%
		Hunting w/ Firearms	17,495	80,634		0.3%
		Target Shooting (Airgun)	5,149	72,397		1.9%
		Target Shooting (Handgun)	13,706	151,494		1.4%
		Target Shooting (Rifle)	11,795	115,944		1.2%
		Target Shooting (Shotgun)	10,098	84,944		1.1%
		Muzzleloading	2,681	50,000		0.7%
		Paintball	4,830	22,667		0.3%
		Archery (Target)	8,306	45,000		0.3%
Mountain	Utah	Hunting w/ Bow & Arrow	5,858	36,714	2,038,787	0.2%
		Hunting w/ Firearms	17,495	170,503		0.8%
		Target Shooting (Airgun)	5,149	96,326		1.4%
		Target Shooting (Handgun)	13,706	203,275		1.4%
		Target Shooting (Rifle)	11,795	218,582		1.5%
		Target Shooting (Shotgun)	10,098	187,593		1.3%
		Muzzleloading	2,681	27,405		n/a
		Paintball	4,830	59,606		1.0%
		Archery (Target)	8,306	84,000		0.4%
Mountain	Wyoming	Hunting w/ Bow & Arrow	5,858	17,996	445,830	0.2%
		Hunting w/ Firearms	17,495	91,232		0.3%
		Target Shooting (Airgun)	5,149	24,448		0.7%
		Target Shooting (Handgun)	13,706	70,333		0.6%
		Target Shooting (Rifle)	11,795	56,000		0.4%
		Target Shooting (Shotgun)	10,098	42,333		0.4%
		Muzzleloading	2,681	4,000		0.1%
		Paintball	4,830	14,000		n/a
		Archery (Target)	8,306	36,500		0.3%
Mountain	TOTAL REGION	Hunting w/ Bow & Arrow	5,858	263,103	17,465,339	6.0%
		Hunting w/ Firearms	17,495	1,466,244		6.8%
		Target Shooting (Airgun)	5,149	453,357		10.9%
		Target Shooting (Handgun)	13,706	1,519,911		13.5%
		Target Shooting (Rifle)	11,795	1,411,073		12.0%
		Target Shooting (Shotgun)	10,098	973,575		10.7%
		Muzzleloading	2,681	192,560		6.3%
		Paintball	4,830	265,935		4.7%
		Archery (Target)	8,306	721,500		6.9%
New England	Connecticut	Hunting w/ Bow & Arrow	5,858	44,449	2,821,247	n/a
		Hunting w/ Firearms	17,495	81,721		n/a
		Target Shooting (Airgun)	5,149	53,186		1.0%
		Target Shooting (Handgun)	13,706	83,193		0.4%
		Target Shooting (Rifle)	11,795	89,852		0.3%
		Target Shooting (Shotgun)	10,098	65,815		n/a
		Muzzleloading	2,681	51,281		n/a
		Paintball	4,830	62,734		0.4%
		Archery (Target)	8,306	117,000		n/a
New England	Maine	Hunting w/ Bow & Arrow	5,858	11,523	1,071,112	0.1%
		Hunting w/ Firearms	17,495	142,522		0.5%
		Target Shooting (Airgun)	5,149	23,609		0.1%
		Target Shooting (Handgun)	13,706	42,139		0.3%
		Target Shooting (Rifle)	11,795	43,275		0.3%
		Target Shooting (Shotgun)	10,098	32,157		0.1%
		Muzzleloading	2,681	12,250		0.3%
		Paintball	4,830	27,750		0.1%
		Archery (Target)	8,306	28,000		0.2%

Sources: National Sporting Goods Association, Sports Participation in 2010-2014 - Shooting Sports, U.S. Census Bureau, U.S. Fish and Wildlife Service

2010-2014 GEOGRAPHIC SUPPLEMENT (NSGA)

Region	State	Shooting Sport	Total U.S. Participants (000)	State Participants (5-yr Average)	2014 State Adult Population (18+)	State as a % of U.S. Participation
New England	Massachusetts	Hunting w/ Bow & Arrow	5,858	63,865	5,354,940	0.7%
		Hunting w/ Firearms	17,495	95,107		0.6%
		Target Shooting (Airgun)	5,149	57,192		1.3%
		Target Shooting (Handgun)	13,706	204,838		2.1%
		Target Shooting (Rifle)	11,795	160,780		0.6%
		Target Shooting (Shotgun)	10,098	88,526		0.1%
		Muzzleloading	2,681	52,369		1.3%
		Paintball	4,830	100,003		1.7%
		Archery (Target)	8,306	131,000		0.7%
New England	New Hampshire	Hunting w/ Bow & Arrow	5,858	17,425	1,059,672	0.2%
		Hunting w/ Firearms	17,495	46,010		0.4%
		Target Shooting (Airgun)	5,149	32,229		0.6%
		Target Shooting (Handgun)	13,706	63,811		0.4%
		Target Shooting (Rifle)	11,795	77,374		0.3%
		Target Shooting (Shotgun)	10,098	52,080		0.3%
		Muzzleloading	2,681	14,192		1.0%
		Paintball	4,830	20,725		0.6%
		Archery (Target)	8,306	37,500		0.5%
New England	Rhode Island	Hunting w/ Bow & Arrow	5,858	7,807	842,321	0.2%
		Hunting w/ Firearms	17,495	11,006		0.1%
		Target Shooting (Airgun)	5,149	2,000		n/a
		Target Shooting (Handgun)	13,706	21,679		0.3%
		Target Shooting (Rifle)	11,795	135,000		0.2%
		Target Shooting (Shotgun)	10,098	13,572		0.2%
		Muzzleloading	2,681	12,333		0.5%
		Paintball	4,830	30,414		n/a
		Archery (Target)	8,306	15,500		0.1%
New England	Vermont	Hunting w/ Bow & Arrow	5,858	29,321	504,976	0.5%
		Hunting w/ Firearms	17,495	98,722		0.4%
		Target Shooting (Airgun)	5,149	25,375		0.3%
		Target Shooting (Handgun)	13,706	25,917		0.2%
		Target Shooting (Rifle)	11,795	32,465		0.3%
		Target Shooting (Shotgun)	10,098	40,418		0.1%
		Muzzleloading	2,681	61,286		1.2%
		Paintball	4,830	6,500		0.2%
		Archery (Target)	8,306	16,500		0.3%
New England	TOTAL REGION	Hunting w/ Bow & Arrow	5,858	156,165	11,654,268	1.6%
		Hunting w/ Firearms	17,495	462,998		1.9%
		Target Shooting (Airgun)	5,149	186,916		3.2%
		Target Shooting (Handgun)	13,706	426,874		3.5%
		Target Shooting (Rifle)	11,795	478,253		2.0%
		Target Shooting (Shotgun)	10,098	259,461		1.0%
		Muzzleloading	2,681	172,978		4.3%
		Paintball	4,830	216,283		3.1%
		Archery (Target)	8,306	287,000		1.9%
Pacific	California	Hunting w/ Bow & Arrow	5,858	122,308	29,649,348	5.6%
		Hunting w/ Firearms	17,495	439,454		5.4%
		Target Shooting (Airgun)	5,149	608,582		13.1%
		Target Shooting (Handgun)	13,706	1,116,047		8.2%
		Target Shooting (Rifle)	11,795	970,053		8.9%
		Target Shooting (Shotgun)	10,098	838,026		10.5%
		Muzzleloading	2,681	176,866		5.7%
		Paintball	4,830	715,001		15.8%
		Archery (Target)	8,306	597,000		7.4%
Pacific	Oregon	Hunting w/ Bow & Arrow	5,858	55,936	3,112,217	2.9%
		Hunting w/ Firearms	17,495	241,430		1.5%
		Target Shooting (Airgun)	5,149	75,997		0.3%
		Target Shooting (Handgun)	13,706	154,704		1.1%
		Target Shooting (Rifle)	11,795	174,602		1.4%
		Target Shooting (Shotgun)	10,098	100,052		0.4%
		Muzzleloading	2,681	20,000		n/a
		Paintball	4,830	87,472		1.1%
		Archery (Target)	8,306	144,000		2.4%

Sources: National Sporting Goods Association, Sports Participation in 2010-2014 - Shooting Sports, U.S. Census Bureau, U.S. Fish and Wildlife Service

2010-2014 GEOGRAPHIC SUPPLEMENT (NSGA)

Region	State	Shooting Sport	Total U.S. Participants (000)	State Participants (5-yr Average)	2014 State Adult Population (18+)	State as a % of U.S. Participation
Pacific	Washington	Hunting w/ Bow & Arrow	5,858	63,019	5,458,809	0.9%
		Hunting w/ Firearms	17,495	207,456		1.6%
		Target Shooting (Airgun)	5,149	153,350		1.2%
		Target Shooting (Handgun)	13,706	321,869		2.5%
		Target Shooting (Rifle)	11,795	321,488		1.8%
		Target Shooting (Shotgun)	10,098	220,204		1.6%
		Muzzleloading	2,681	72,384		n/a
		Paintball	4,830	108,542		0.9%
		Archery (Target)	8,306	172,000		1.9%
Pacific	TOTAL REGION	Hunting w/ Bow & Arrow	5,858	241,263	38,220,374	9.4%
		Hunting w/ Firearms	17,495	888,340		8.5%
		Target Shooting (Airgun)	5,149	837,929		14.5%
		Target Shooting (Handgun)	13,706	1,592,620		11.8%
		Target Shooting (Rifle)	11,795	1,466,143		12.1%
		Target Shooting (Shotgun)	10,098	1,158,281		12.5%
		Muzzleloading	2,681	246,773		5.7%
		Paintball	4,830	911,015		17.8%
		Archery (Target)	8,306	913,000		11.7%
South Atlantic	Delaware	Hunting w/ Bow & Arrow	5,858	15,000	731,367	0.1%
		Hunting w/ Firearms	17,495	25,527		0.1%
		Target Shooting (Airgun)	5,149	25,333		0.2%
		Target Shooting (Handgun)	13,706	30,459		0.2%
		Target Shooting (Rifle)	11,795	35,774		0.2%
		Target Shooting (Shotgun)	10,098	28,667		0.1%
		Muzzleloading	2,681	19,000		0.4%
		Paintball	4,830	29,896		0.8%
		Archery (Target)	8,306	34,000		0.7%
South Atlantic	Florida	Hunting w/ Bow & Arrow	5,858	94,864	15,839,713	3.3%
		Hunting w/ Firearms	17,495	264,951		3.7%
		Target Shooting (Airgun)	5,149	223,724		5.3%
		Target Shooting (Handgun)	13,706	755,307		5.8%
		Target Shooting (Rifle)	11,795	422,795		4.1%
		Target Shooting (Shotgun)	10,098	372,823		5.1%
		Muzzleloading	2,681	54,804		3.0%
		Paintball	4,830	236,063		2.7%
		Archery (Target)	8,306	445,000		5.7%
South Atlantic	Georgia	Hunting w/ Bow & Arrow	5,858	181,273	7,604,061	4.9%
		Hunting w/ Firearms	17,495	525,312		3.2%
		Target Shooting (Airgun)	5,149	242,971		4.3%
		Target Shooting (Handgun)	13,706	528,861		3.3%
		Target Shooting (Rifle)	11,795	430,954		2.7%
		Target Shooting (Shotgun)	10,098	376,741		3.1%
		Muzzleloading	2,681	152,454		3.9%
		Paintball	4,830	220,050		3.5%
		Archery (Target)	8,306	411,500		5.7%
South Atlantic	Maryland	Hunting w/ Bow & Arrow	5,858	74,123	4,625,863	1.8%
		Hunting w/ Firearms	17,495	139,294		1.0%
		Target Shooting (Airgun)	5,149	61,102		1.9%
		Target Shooting (Handgun)	13,706	140,951		0.8%
		Target Shooting (Rifle)	11,795	122,954		1.2%
		Target Shooting (Shotgun)	10,098	151,625		1.6%
		Muzzleloading	2,681	62,000		2.8%
		Paintball	4,830	77,810		1.0%
		Archery (Target)	8,306	132,500		1.1%
South Atlantic	North Carolina	Hunting w/ Bow & Arrow	5,858	143,186	7,656,415	3.8%
		Hunting w/ Firearms	17,495	552,352		4.3%
		Target Shooting (Airgun)	5,149	228,849		2.6%
		Target Shooting (Handgun)	13,706	430,486		2.9%
		Target Shooting (Rifle)	11,795	363,269		3.7%
		Target Shooting (Shotgun)	10,098	292,552		3.1%
		Muzzleloading	2,681	94,740		2.6%
		Paintball	4,830	134,686		3.4%
		Archery (Target)	8,306	317,000		4.7%

Sources: National Sporting Goods Association, Sports Participation in 2010-2014 - Shooting Sports, U.S. Census Bureau, U.S. Fish and Wildlife Service

2010-2014 GEOGRAPHIC SUPPLEMENT (NSGA)

Region	State	Shooting Sport	Total U.S. Participants (000)	State Participants (5-yr Average)	2014 State Adult Population (18+)	State as a % of U.S. Participation
South Atlantic	South Carolina	Hunting w/ Bow & Arrow	5,858	49,919	3,747,734	1.5%
		Hunting w/ Firearms	17,495	201,269		1.7%
		Target Shooting (Airgun)	5,149	94,262		1.7%
		Target Shooting (Handgun)	13,706	290,301		2.3%
		Target Shooting (Rifle)	11,795	202,582		1.7%
		Target Shooting (Shotgun)	10,098	230,363		1.5%
		Muzzleloading	2,681	28,333		1.4%
		Paintball	4,830	49,420		0.6%
		Archery (Target)	8,306	125,000		1.7%
South Atlantic	Virginia	Hunting w/ Bow & Arrow	5,858	86,671	6,457,174	2.6%
		Hunting w/ Firearms	17,495	324,307		1.6%
		Target Shooting (Airgun)	5,149	71,631		0.5%
		Target Shooting (Handgun)	13,706	272,930		2.4%
		Target Shooting (Rifle)	11,795	244,445		2.4%
		Target Shooting (Shotgun)	10,098	148,565		2.0%
		Muzzleloading	2,681	95,800		8.1%
		Paintball	4,830	95,605		3.3%
		Archery (Target)	8,306	193,000		1.4%
South Atlantic	West Virginia	Hunting w/ Bow & Arrow	5,858	119,282	1,470,179	3.3%
		Hunting w/ Firearms	17,495	289,382		2.3%
		Target Shooting (Airgun)	5,149	22,495		0.3%
		Target Shooting (Handgun)	13,706	92,426		1.3%
		Target Shooting (Rifle)	11,795	130,322		1.9%
		Target Shooting (Shotgun)	10,098	82,342		1.7%
		Muzzleloading	2,681	54,841		1.8%
		Paintball	4,830	46,206		1.3%
		Archery (Target)	8,306	118,500		1.7%
South Atlantic	TOTAL REGION	Hunting w/ Bow & Arrow	5,858	759,917	48,132,506	21.3%
		Hunting w/ Firearms	17,495	2,322,393		17.8%
		Target Shooting (Airgun)	5,149	960,234		16.7%
		Target Shooting (Handgun)	13,706	2,541,722		18.9%
		Target Shooting (Rifle)	11,795	1,953,095		17.8%
		Target Shooting (Shotgun)	10,098	1,672,210		18.3%
		Muzzleloading	2,681	518,239		24.0%
		Paintball	4,830	858,952		16.6%
		Archery (Target)	8,306	1,776,500		22.6%
West North-Central	Iowa	Hunting w/ Bow & Arrow	5,858	77,494	2,381,172	1.3%
		Hunting w/ Firearms	17,495	236,446		1.2%
		Target Shooting (Airgun)	5,149	34,323		0.2%
		Target Shooting (Handgun)	13,706	147,199		1.1%
		Target Shooting (Rifle)	11,795	157,549		1.6%
		Target Shooting (Shotgun)	10,098	140,001		1.6%
		Muzzleloading	2,681	42,127		1.6%
		Paintball	4,830	75,042		n/a
		Archery (Target)	8,306	118,000		1.4%
West North-Central	Kansas	Hunting w/ Bow & Arrow	5,858	58,940	2,181,355	1.1%
		Hunting w/ Firearms	17,495	222,702		1.1%
		Target Shooting (Airgun)	5,149	76,790		1.2%
		Target Shooting (Handgun)	13,706	131,131		0.6%
		Target Shooting (Rifle)	11,795	141,301		0.5%
		Target Shooting (Shotgun)	10,098	124,394		0.8%
		Muzzleloading	2,681	36,561		n/a
		Paintball	4,830	38,245		0.9%
		Archery (Target)	8,306	39,000		0.3%

Sources: National Sporting Goods Association, Sports Participation in 2010-2014 - Shooting Sports, U.S. Census Bureau, U.S. Fish and Wildlife Service

2010-2014 GEOGRAPHIC SUPPLEMENT (NSGA)

Region	State	Shooting Sport	Total U.S. Participants (000)	State Participants (5-yr Average)	2014 State Adult Population (18+)	State as a % of U.S. Participation
West North-Central	Minnesota	Hunting w/ Bow & Arrow	5,858	98,212	4,175,347	1.5%
		Hunting w/ Firearms	17,495	551,312		2.4%
		Target Shooting (Airgun)	5,149	79,970		2.2%
		Target Shooting (Handgun)	13,706	199,924		1.4%
		Target Shooting (Rifle)	11,795	190,492		1.1%
		Target Shooting (Shotgun)	10,098	432,247		1.7%
		Muzzleloading	2,681	57,635		1.6%
		Paintball	4,830	48,337		0.9%
		Archery (Target)	8,306	121,500		1.8%
West North-Central	Missouri	Hunting w/ Bow & Arrow	5,858	186,051	4,670,966	3.2%
		Hunting w/ Firearms	17,495	557,249		3.5%
		Target Shooting (Airgun)	5,149	97,538		3.9%
		Target Shooting (Handgun)	13,706	342,774		2.6%
		Target Shooting (Rifle)	11,795	359,168		3.3%
		Target Shooting (Shotgun)	10,098	233,175		2.8%
		Muzzleloading	2,681	55,015		1.8%
		Paintball	4,830	90,566		2.5%
		Archery (Target)	8,306	330,500		3.6%
West North-Central	Nebraska	Hunting w/ Bow & Arrow	5,858	40,270	1,414,894	n/a
		Hunting w/ Firearms	17,495	200,352		0.3%
		Target Shooting (Airgun)	5,149	48,577		1.7%
		Target Shooting (Handgun)	13,706	113,438		0.8%
		Target Shooting (Rifle)	11,795	82,163		0.7%
		Target Shooting (Shotgun)	10,098	95,377		0.9%
		Muzzleloading	2,681	34,173		n/a
		Paintball	4,830	27,820		0.3%
		Archery (Target)	8,306	44,500		0.3%
West North-Central	North Dakota	Hunting w/ Bow & Arrow	5,858	21,334	570,955	n/a
		Hunting w/ Firearms	17,495	139,818		0.7%
		Target Shooting (Airgun)	5,149	33,000		n/a
		Target Shooting (Handgun)	13,706	39,069		0.3%
		Target Shooting (Rifle)	11,795	66,807		0.4%
		Target Shooting (Shotgun)	10,098	44,044		0.4%
		Muzzleloading	2,681	16,500		0.9%
		Paintball	4,830	10,333		0.0%
		Archery (Target)	8,306	35,000		n/a
West North-Central	South Dakota	Hunting w/ Bow & Arrow	5,858	32,349	642,768	0.4%
		Hunting w/ Firearms	17,495	192,758		0.8%
		Target Shooting (Airgun)	5,149	32,000		0.2%
		Target Shooting (Handgun)	13,706	93,950		0.5%
		Target Shooting (Rifle)	11,795	87,589		0.6%
		Target Shooting (Shotgun)	10,098	54,648		0.4%
		Muzzleloading	2,681	49,333		n/a
		Paintball	4,830	19,500		n/a
		Archery (Target)	8,306	38,500		0.3%
West North-Central	TOTAL REGION	Hunting w/ Bow & Arrow	5,858	492,230	16,037,457	7.6%
		Hunting w/ Firearms	17,495	2,100,637		10.0%
		Target Shooting (Airgun)	5,149	359,683		9.3%
		Target Shooting (Handgun)	13,706	1,067,486		7.4%
		Target Shooting (Rifle)	11,795	1,085,070		8.2%
		Target Shooting (Shotgun)	10,098	1,115,076		8.6%
		Muzzleloading	2,681	240,252		6.0%
		Paintball	4,830	258,429		4.6%
		Archery (Target)	8,306	709,500		7.6%
West South-Central	Arkansas	Hunting w/ Bow & Arrow	5,858	71,759	2,259,350	4.2%
		Hunting w/ Firearms	17,495	388,911		3.0%
		Target Shooting (Airgun)	5,149	118,044		3.9%
		Target Shooting (Handgun)	13,706	170,433		2.2%
		Target Shooting (Rifle)	11,795	243,026		3.6%
		Target Shooting (Shotgun)	10,098	146,134		2.1%
		Muzzleloading	2,681	143,074		6.1%
		Paintball	4,830	129,946		3.1%
		Archery (Target)	8,306	117,000		1.9%

Sources: National Sporting Goods Association, Sports Participation in 2010-2014 - Shooting Sports, U.S. Census Bureau, U.S. Fish and Wildlife Service

2010-2014 GEOGRAPHIC SUPPLEMENT (NSGA)

Region	State	Shooting Sport	Total U.S. Participants (000)	State Participants (5-yr Average)	2014 State Adult Population (18+)	State as a % of U.S. Participation
West South-Central	Louisiana	Hunting w/ Bow & Arrow	5,858	70,056	3,536,183	2.5%
		Hunting w/ Firearms	17,495	372,038		3.2%
		Target Shooting (Airgun)	5,149	51,953		2.4%
		Target Shooting (Handgun)	13,706	173,895		2.0%
		Target Shooting (Rifle)	11,795	190,968		2.3%
		Target Shooting (Shotgun)	10,098	117,767		3.0%
		Muzzleloading	2,681	24,713		1.1%
		Paintball	4,830	106,776		3.2%
		Archery (Target)	8,306	150,000		2.5%
West South-Central	Oklahoma	Hunting w/ Bow & Arrow	5,858	58,373	2,925,352	0.3%
		Hunting w/ Firearms	17,495	338,704		1.2%
		Target Shooting (Airgun)	5,149	83,106		2.9%
		Target Shooting (Handgun)	13,706	242,506		1.9%
		Target Shooting (Rifle)	11,795	220,862		2.0%
		Target Shooting (Shotgun)	10,098	172,222		2.0%
		Muzzleloading	2,681	75,584		1.4%
		Paintball	4,830	53,547		0.4%
		Archery (Target)	8,306	177,500		2.5%
West South-Central	Texas	Hunting w/ Bow & Arrow	5,858	155,955	19,841,344	3.1%
		Hunting w/ Firearms	17,495	1,160,820		9.4%
		Target Shooting (Airgun)	5,149	336,563		7.1%
		Target Shooting (Handgun)	13,706	1,179,895		9.7%
		Target Shooting (Rifle)	11,795	969,162		8.2%
		Target Shooting (Shotgun)	10,098	669,861		6.4%
		Muzzleloading	2,681	82,461		4.7%
		Paintball	4,830	346,809		9.8%
		Archery (Target)	8,306	440,500		4.1%
West South-Central	TOTAL REGION	Hunting w/ Bow & Arrow	5,858	356,143	28,562,229	10.2%
		Hunting w/ Firearms	17,495	2,260,473		16.8%
		Target Shooting (Airgun)	5,149	579,276		16.2%
		Target Shooting (Handgun)	13,706	1,766,728		15.8%
		Target Shooting (Rifle)	11,795	1,624,018		16.1%
		Target Shooting (Shotgun)	10,098	1,105,985		13.5%
		Muzzleloading	2,681	325,832		13.4%
		Paintball	4,830	605,014		16.5%
		Archery (Target)	8,306	885,000		11.0%

Sources: National Sporting Goods Association, Sports Participation in 2010-2014 - Shooting Sports, U.S. Census Bureau, U.S. Fish and Wildlife Service

2010-2014 GEOGRAPHIC SUPPLEMENT (NSGA)

Not included in regional totals reported in previous pages. Included in 'All Regions', below.

Region	State	Shooting Sport	Total U.S. Participants (000)	State Participants (5-yr Average)	2014 State Adult Population (18+)	State as a % of U.S. Participation
Pacific	Alaska	Hunting w/ Bow & Arrow	5,858	12,000	550,189	0.1%
		Hunting w/ Firearms	17,495	126,636		0.5%
		Target Shooting (Airgun)	5,149	20,500		0.5%
		Target Shooting (Handgun)	13,706	99,747		0.6%
		Target Shooting (Rifle)	11,795	105,414		0.7%
		Target Shooting (Shotgun)	10,098	52,774		0.7%
		Muzzleloading	2,681	11,078		n/a
		Paintball	4,830	14,000		n/a
		Archery (Target)	8,306	37,500		0.2%
Pacific	Hawaii	Hunting w/ Bow & Arrow	5,858	5,500	1,111,117	n/a
		Hunting w/ Firearms	17,495	32,515		0.2%
		Target Shooting (Airgun)	5,149	19,500		0.2%
		Target Shooting (Handgun)	13,706	65,665		0.1%
		Target Shooting (Rifle)	11,795	51,250		0.0%
		Target Shooting (Shotgun)	10,098	6,500		0.1%
		Muzzleloading	2,681	6,000		0.3%
		Paintball	4,830	16,000		0.5%
		Archery (Target)	8,306	47,500		0.7%
South Atlantic	D.C.	Hunting w/ Bow & Arrow	5,858	11,000	543,588	n/a
		Hunting w/ Firearms	17,495	9,000		n/a
		Target Shooting (Airgun)	5,149	11,000		0.1%
		Target Shooting (Handgun)	13,706	36,431		n/a
		Target Shooting (Rifle)	11,795	29,500		n/a
		Target Shooting (Shotgun)	10,098	31,592		n/a
		Muzzleloading	2,681	14,000		n/a
		Paintball	4,830	17,667		0.2%
		Archery (Target)	8,306	3,000		n/a
ALL REGIONS	TOTAL ALL REGIONS	Hunting w/ Bow & Arrow	5,858	4,442,639	245,273,438	100%
		Hunting w/ Firearms	17,495	16,002,590		100%
		Target Shooting (Airgun)	5,149	5,089,869		100%
		Target Shooting (Handgun)	13,706	12,910,154		100%
		Target Shooting (Rifle)	11,795	12,342,658		100%
		Target Shooting (Shotgun)	10,098	9,653,308		100%
		Muzzleloading	2,681	3,115,294		100%
		Paintball	4,830	5,109,990		100%
		Archery (Target)	8,306	8,250,000		100%

Sources: National Sporting Goods Association, Sports Participation in 2010-2014 - Shooting Sports, U.S. Census Bureau, U.S. Fish and Wildlife Service

Executive Summary

Introduction and Methodology

This study was conducted for the National Shooting Sports Foundation (NSSF), following on similar studies in 2010 (2009 participation) and 2013 (2012 participation), to determine the regional and national participation rates in target shooting and sport shooting. The study entailed a telephone survey of U.S. residents ages 18 years old and older. Calculations based on 234,564,071 figure for U.S. residents ages 18 years old and older.

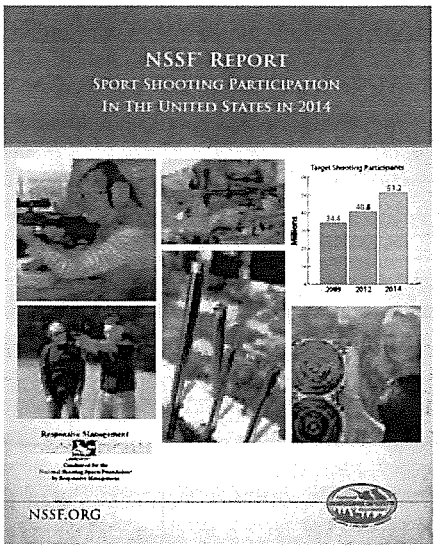
For the survey, telephones were selected as the sampling medium because of the almost universal ownership of telephones, particularly with the coverage provided by dual-frame samples that include both cell phones and landlines. Telephone surveys tend to have fewer negative effects on the environment than do mail surveys because of reduced paper use and reduced energy consumption for delivering and returning the questionnaires.

The telephone survey questionnaire was developed cooperatively by both Responsive Management and the NSSF and was based on previous similar surveys conducted for the NSSF. Responsive Management conducted questionnaire pre-testing to ensure proper wording, flow and logic in the survey.

The methodology used a dual-frame sample, which consisted of a random sample of landline telephones and a random sample of cell phone numbers, called in their proper proportions, which ensures that all people in the pool of telephone users have an approximately equal chance of being called. The scientific sampling plan entailed obtaining a target number of interviews in each state, from both landlines and cell phones in their proper proportions, so that the number of respondents in each state in the sample would be exactly proportional to the state's population and, by extension, within the U.S. population as a whole. The sample was obtained from Survey Sampling International and DatabaseUSA, companies specializing in providing scientifically valid telephone survey samples. The overall sample with landlines and cell phones was representative of all Americans aged 18 years and older. Responsive Management obtained 5,103 completed interviews overall.

Participation in Target and Sport Shooting

The survey found that 21.9 percent of the U.S. adult population, or an estimated 51 million adults, participated in any type of target or sport shooting in 2014. As shown in the table on the following page, the most popular types are target shooting with a handgun (14.6 percent participated), target shooting with a rifle (13.5 percent), and target shooting at an outdoor range (12.0 percent). Note that respondents could have participated in more than one shooting activity.



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RESPONSIVE MANAGEMENT

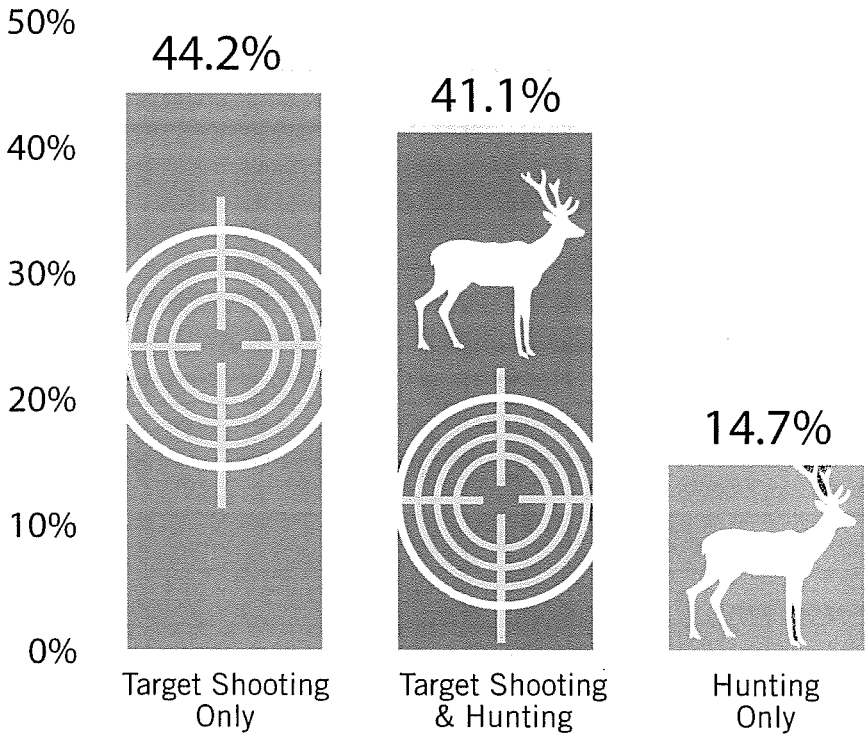
The survey asked about the days of participation in each type of target or sport shooting. The tabulation below, compiled from multiple tables included in the Responsive Management report, shows estimates of numbers of participants nationally and by region, in addition to the mean days spent in the various shooting activities among those who participated in each activity. Nationally, shooting with a modern sporting rifle is the activity with the highest mean days of participation, followed by target shooting with a handgun. In each region the top-ranked activity in mean days is of those two target shooting activities (modern sporting rifle or handgun). Comparisons to the 2009 participation report figures have also been included.

Activity	2009		2012		2014			2009	2012	2014	
	Percent of Overall U.S. Population (18 & older) in 2009	Estimated Total Participants in U.S. (18 & older) in 2009	Percent of Overall U.S. Population (18 & older) in 2012	Estimated Total Participants in U.S. (18 & older) in 2012	Percent of Overall U.S. Population (18 & older) in 2014	Estimated Total Participants in U.S. (18 & older) in 2014	% Change in Estimated Total Number of Participants 2009 to 2014	Mean Days Spent on Activity in 2009	Mean Days Spent on Activity in 2012	Mean Days Spent on Activity in 2014	% Change in Estimated Mean Days of Participation 2009 to 2014
NATIONAL											
Any target shooting or sport shooting	15.1	34,382,566	17.0%	40,779,651	21.8%	51,226,765	49.0%	N/A	N/A	N/A	N/A
Any type of clay target shooting (sporting clays, skeet, or trap)	N/A	N/A	N/A	N/A	7.8%	18,396,758	N/A	N/A	N/A	N/A	N/A
Target shooting at an indoor range	N/A	N/A	4.1%	9,756,514	6.0%	14,007,982	N/A	N/A	N/A	N/A	N/A
Target shooting at an outdoor range	N/A	N/A	N/A	N/A	12.0%	28,075,842	N/A	N/A	N/A	N/A	N/A
3-gun shooting	N/A	N/A	1.7%	4,127,049	1.6%	3,837,132	N/A	N/A	14.48	17.43	N/A
Long-range shooting	N/A	N/A	4.2%	9,972,991	4.4%	10,434,630	N/A	N/A	12.04	15.62	N/A
Skeet shooting	3.1	6,979,680	5.0%	12,090,346	5.4%	12,596,361	80.5%	15.5	9.74	13.88	-10.5%
Sporting clays	3.7	8,399,989	3.7%	8,789,340	5.6%	13,033,633	55.2%	13.7	9.51	13.1	-4.4%
Target shooting with a handgun	9.7	22,169,700	11.7%	28,209,283	14.6%	34,221,107	54.4%	16.7	14.93	16.32	-2.3%
Target shooting with a modern sporting rifle	3.9	8,868,085	5.0%	11,976,702	6.9%	16,267,924	83.4%	22.9	17.09	17.84	-22.1%
Target shooting with a rifle	10.6	24,045,795	11.2%	26,822,425	13.5%	31,764,116	32.1%	17.3	13.34	14.42	-16.6%
Trap shooting	3.3	7,582,479	4.2%	10,116,684	4.8%	11,227,278	48.1%	14.8	11.42	14.23	-3.9%
NORTHEAST REGION											
Any target shooting or sport shooting	2.0%	4,652,930	3.3%	7,948,743	3.1%	7,310,715	57.1%	N/A	N/A	N/A	N/A
Any type of clay target shooting (sporting clays, skeet, or trap)	N/A	N/A	N/A	N/A	1.1%	2,490,617	N/A	N/A	N/A	N/A	N/A
Target shooting at an indoor range	N/A	N/A	0.5%	1,178,223	0.9%	2,035,759	N/A	N/A	N/A	N/A	N/A
Target shooting at an outdoor range	N/A	N/A	N/A	N/A	1.8%	4,331,227	N/A	N/A	N/A	N/A	N/A
3-gun shooting	N/A	N/A	0.3%	691,419	0.2%	502,853	N/A	N/A	4.09	4.04	N/A
Long-range shooting	N/A	N/A	0.9%	2,223,301	0.6%	1,410,819	N/A	N/A	6.99	10.53	N/A
Skeet shooting	0.3%	683,042	1.0%	2,446,363	0.7%	1,561,698	128.6%	16	11.33	22.56	41.0%
Sporting clays	0.4%	890,847	0.7%	1,586,548	0.8%	1,949,118	118.8%	18.4	7.52	17.96	-2.4%
Target shooting with a handgun	1.2%	2,783,692	2.2%	5,189,981	1.7%	4,017,408	44.3%	14.6	12.61	22.38	53.3%
Target shooting with a modern sporting rifle	0.4%	937,113	1.0%	2,439,211	1.0%	2,369,462	152.8%	20	12.06	19.63	-1.9%
Target shooting with a rifle	1.7%	3,803,092	2.4%	5,696,524	2.2%	5,251,338	38.1%	13.2	9.32	9.71	-26.4%
Trap shooting	0.4%	895,346	0.6%	1,398,837	0.7%	1,531,689	71.1%	13.2	8.77	22.32	69.1%
SOUTH REGION											
Any target shooting or sport shooting	5.8%	13,150,116	6.6%	15,790,669	8.1%	19,087,871	45.2%	N/A	N/A	N/A	N/A
Any type of clay target shooting (sporting clays, skeet, or trap)	N/A	N/A	N/A	N/A	3.1%	7,265,016	N/A	N/A	N/A	N/A	N/A
Target shooting at an indoor range	N/A	N/A	1.8%	4,237,350	2.5%	5,863,399	N/A	N/A	N/A	N/A	N/A
Target shooting at an outdoor range	N/A	N/A	N/A	N/A	4.3%	10,165,577	N/A	N/A		N/A	N/A
3-gun shooting	N/A	N/A	1.0%	2,281,807	0.8%	1,813,747	N/A	N/A	16.51	14.85	N/A
Long-range shooting	N/A	N/A	2.1%	4,990,687	1.8%	4,107,269	N/A	N/A	14.66	17.98	N/A
Skeet shooting	1.3%	2,995,315	2.0%	4,857,153	2.4%	5,728,268	91.2%	21.6	11.21	12.62	-41.6%
Sporting clays	1.4%	3,242,454	1.2%	2,951,035	2.3%	5,332,187	64.4%	19.1	11.21	12.53	-34.4%
Target shooting with a handgun	3.8%	8,535,671	4.3%	10,283,178	5.7%	13,421,864	57.2%	19.7	16.92	18.6	-5.6%
Target shooting with a modern sporting rifle	1.5%	3,486,156	1.9%	4,473,292	2.8%	6,581,539	88.8%	29.6	17.94	22.84	-22.8%
Target shooting with a rifle	3.9%	8,847,901	4.2%	10,055,001	4.8%	11,152,632	26.0%	19.9	14.97	21.06	5.8%
Trap shooting	1.0%	2,302,359	1.6%	3,846,805	1.8%	4,222,828	83.4%	25.9	14.05	11.29	-56.4%
MIDWEST REGION											
Any target shooting or sport shooting	4.1%	9,219,559	3.7%	8,946,271	5.4%	12,605,352	36.7%	N/A	N/A	N/A	N/A
Any type of clay target shooting	N/A	N/A	N/A	N/A	2.1%	4,915,836	N/A	N/A	N/A	N/A	N/A
Target shooting at an indoor range	N/A	N/A	0.6%	1,503,428	1.3%	2,952,173	N/A	N/A	N/A	N/A	N/A
Target shooting at an outdoor range	N/A	N/A	N/A	N/A	2.9%	6,868,386	N/A	N/A	N/A	N/A	N/A
3-gun shooting	N/A	N/A	0.1%	332,449	0.4%	932,724	N/A	N/A	21.96	12.18	N/A
Long-range shooting	N/A	N/A	0.5%	1,119,501	1.1%	2,543,890	N/A	N/A	16.74	7.7	N/A
Skeet shooting	0.8%	1,831,631	1.1%	2,738,575	1.1%	2,613,679	42.7%	9.7	8.61	10.11	4.2%
Sporting clays	1.0%	2,244,763	1.0%	2,355,651	1.4%	3,344,681	49.0%	8.5	7.53	11.1	30.6%
Target shooting with a handgun	2.6%	5,887,462	2.7%	6,493,002	3.5%	8,242,288	40.0%	13.6	15.07	15.18	11.6%
Target shooting with a modern sporting rifle	0.9%	2,041,366	0.8%	1,952,168	1.7%	3,870,597	89.6%	15.5	22.18	10.33	-33.4%
Target shooting with a rifle	2.8%	6,356,633	2.3%	5,461,389	3.3%	7,819,018	23.0%	14	16.13	12.88	-8.0%
Trap shooting	1.2%	2,759,134	1.3%	3,011,591	1.4%	3,196,573	15.9%	9.9	13.63	12.71	28.4%
WEST REGION											
Any target shooting or sport shooting	3.3%	7,515,837	3.4%	8,093,968	5.2%	12,288,624	63.5%	N/A	N/A	N/A	N/A
Any type of clay target shooting (sporting clays, skeet, or trap)	N/A	N/A	N/A	N/A	1.6%	3,725,290	N/A	N/A	N/A	N/A	N/A
Target shooting at an indoor range	N/A	N/A	1.2%	2,837,513	1.4%	3,181,617	N/A	N/A	N/A	N/A	N/A
Target shooting at an outdoor range	N/A	N/A	N/A	N/A	2.9%	6,732,981	N/A	N/A	N/A	N/A	N/A
3-gun shooting	N/A	N/A	0.3%	821,374	0.3%	598,976	N/A	N/A	8.07	7.23	N/A
Long-range shooting	N/A	N/A	0.7%	1,639,502	1.0%	2,391,239	N/A	N/A	6.68	13.22	N/A
Skeet shooting	0.7%	1,521,980	0.9%	2,048,254	1.2%	2,729,206	79.3%	11.1	6.4	14.86	33.9%
Sporting clays	0.9%	2,047,716	0.8%	1,896,106	1.0%	2,427,687	18.6%	9.6	10.11	13.02	35.6%
Target shooting with a handgun	2.2%	5,050,685	2.6%	6,243,122	3.7%	8,618,627	70.6%	16.8	13.25	11.08	-34.0%
Target shooting with a modern sporting rifle	1.1%	2,401,225	1.3%	3,112,031	1.5%	3,472,320	44.6%	21.1	14.31	15.85	-24.9%
Target shooting with a rifle	2.3%	5,126,538	2.3%	5,609,510	3.2%	7,551,182	47.3%	20	11.03	10.08	-49.6%
Trap shooting	0.7%	1,658,404	0.8%	1,859,451	1.0%	2,293,324	38.3%	9.2	6.2	16.23	76.4%

U.S. Census Bureau population estimate age 18 and older.
Note: NSSF members have free access to the full report via the member login section of the NSSF website. Login then proceed to the members-only literature shopping cart. Select "RESEARCH" in the gray bar at the top of the shopping cart entry screen.

2472

Breakdown of Target Shooters and Hunters in 2014



Source: NSSF Report Sport Shooting Participation in the United States in 2014

2473

"OTHER" INDUSTRY PARTICIPATION TRENDS

Organization or Program	2008	2009	2010	2011	2012	Percentage increase during available time frames
Dallas Safari Club - Outdoor adventures & Youth hunts	4,300	6,200	8,700	11,500	14,100	207%
Pheasants Forever - membership	9,800	13,700	16,200	22,200	28,700	193%
4-H Shooting Sports - participants	N/A	N/A	114,500	308,700	320,400	180%
National Rifle Association - membership	1,999,700	1,954,200	1,911,800	2,452,900	3,996,100	100%
National Wild Turkey Federation - programs	N/A	6,300	5,700	6,800	10,800	71%
Families Afield - apprentice hunting license sales	118,800	138,300	165,300	192,100	199,400	68%
International Defense Pistol Association - membership	13,700	15,300	17,000	19,100	21,600	58%
Scholastic Clay Target Program - participants	N/A	N/A	5,200	6,200	7,900	52%
Rocky Mountain Elk Foundation - membership	150,870	158,770	178,010	184,130	196,100	30%
Trailblazer Adventure Program - participants	179,600	187,900	202,600	190,000	226,200	26%
U.S. Practical Shooting Association - membership	N/A	N/A	16,700	18,800	21,100	26%
Responsive Management - Target Shooting Participation Studies	N/A	34,400,000	N/A	N/A	40,780,000	19%
International Hunter Education Association USA - hunter education graduates	N/A	N/A	588,600	596,900	634,300	8%
NSSF & Responsive Management - General population survey on approval of hunting	N/A	N/A	N/A	74% approval	79% approval	7%
National Sporting Clays Association - membership	21,900	22,200	22,700	23,500	23,300	6%
Amateur Trapshooting Association - membership	N/A	N/A	51,600	51,200	52,500	2%

SECTION C:

DEMOGRAPHICS OF SHOOTING SPORTS PARTICIPANTS

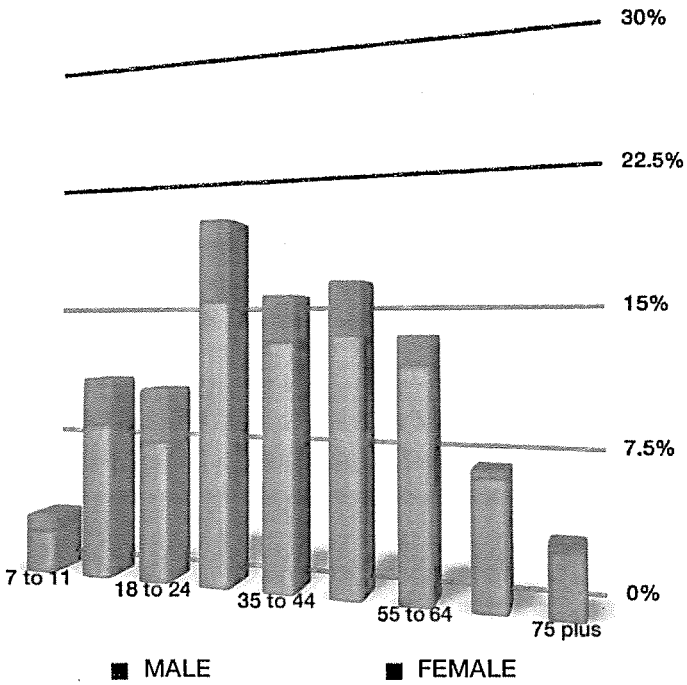
NSSF.ORG

HUNTING (NET) - 2014 DEMOGRAPHIC PROFILE

TOTAL (Thousands)	MALE	FEMALE
17,963	14,655	3,308
Percent	81.6%	18.4%

TOTAL BY AGE		MALE	FEMALE
AGE	Percent		
7 to 11	3.2%	2.3%	0.9%
12 to 17	11.0%	8.4%	2.6%
18 to 24	10.5%	7.6%	2.9%
25 to 34	19.7%	15.2%	4.5%
35 to 44	15.6%	13.1%	2.5%
45 to 54	16.3%	13.4%	2.9%
55 to 64	13.4%	11.9%	1.6%
65 to 74	6.9%	6.5%	0.4%
75 plus	3.4%	3.2%	0.2%
	100.0%	81.6%	18.4%

Avg. Male Age	40.9	Avg. Female Age	33.9



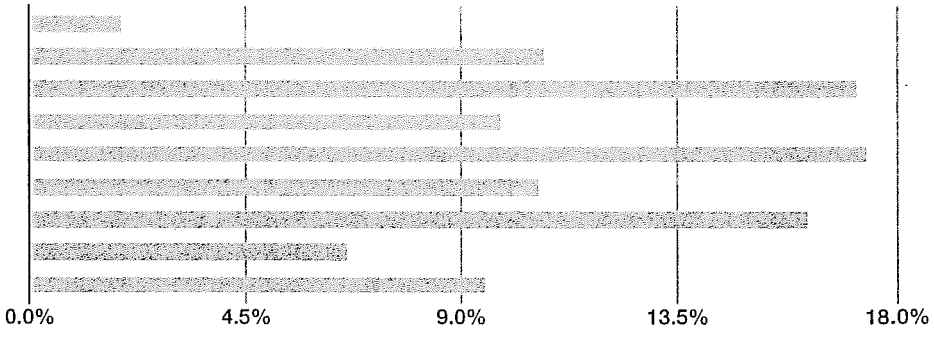
Totals may be slightly less than or greater than 100% due to rounding.

HOUSEHOLD INCOME (%)	
Dollars	Percent
Under $25K	18.2%
$25-$34,999	10.2%
$35-$49,999	13.6%
$50-$74,999	19.5%
$75-$99,999	12.8%
$100K-$149,999	14.6%
$150K plus	11.2%
	100.0%

MARKET SIZE % (Population)	
	Percent
Less than 100K	33.4%
100K - 499K	24.5%
500K - 1.9M	16.2%
2M plus	26.0%
	100.0%

ETHNICITY % (Non Caucasian)	
	Percent
% African American	1.9%
% Hispanic	5.3%

REGION (%)	
New England	1.9%
Mid-Atlantic	10.7%
East North Central	17.2%
West North Central	9.8%
South Atlantic	17.4%
East South Central	10.6%
West South Central	16.2%
Mountain	6.6%
Pacific	9.5%
	100.0%



Totals may be slightly less than or greater than 100% due to rounding.

Source: National Sporting Goods Association - Sports Participation in 2014 - Shooting Sports (prepared for NSSF)

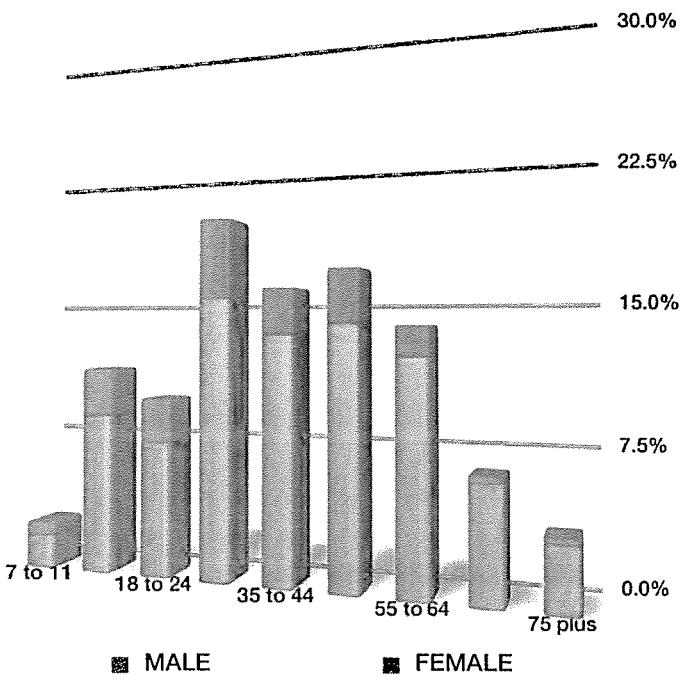
2477

HUNTING (WITH FIREARMS) - 2014 DEMOGRAPHIC PROFILE

TOTAL (Thousands)	MALE	FEMALE
17,495	14,419	3,076
Percent	82.4%	17.6%

TOTAL BY AGE		MALE	FEMALE
AGE	Percent		
7 to 11	2.5%	1.8%	0.7%
12 to 17	11.4%	8.8%	2.6%
18 to 24	9.7%	7.4%	2.4%
25 to 34	19.6%	15.3%	4.4%
35 to 44	15.9%	13.4%	2.5%
45 to 54	17.0%	14.0%	2.9%
55 to 64	13.9%	12.3%	1.6%
65 to 74	6.4%	6.1%	0.3%
75 plus	3.6%	3.4%	0.2%
	100.0%	82.4%	17.6%

Avg. Male Age	41.1	Avg. Female Age	34.4



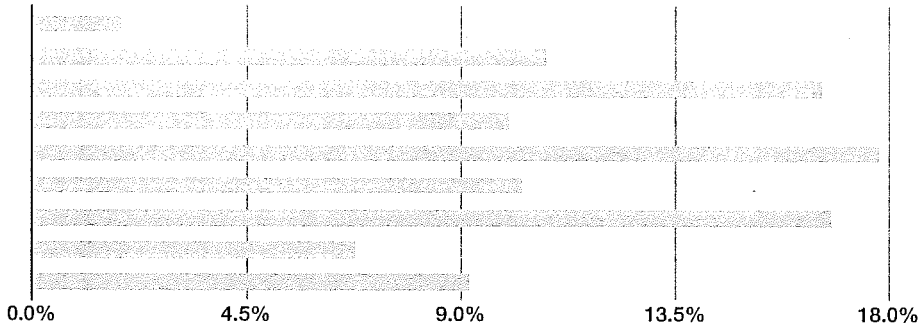
Totals may be slightly less than or greater than 100% due to rounding.

HOUSEHOLD INCOME (%)	
Dollars	Percent
Under $25K	18.0%
$25-$34,999	9.8%
$35-$49,999	13.2%
$50-$74,999	19.6%
$75-$99,999	12.5%
$100K-$149,999	14.9%
$150K plus	12.0%
	100.0%

MARKET SIZE % (Population)	
	Percent
Less than 100K	34.4%
100K - 499K	25.1%
500K - 1.9M	16.1%
2M plus	24.5%
	100.0%

ETHNICITY % (Non Caucasian)	
	Percent
% African American	1.6%
% Hispanic	4.9%

REGION (%)	
New England	1.9%
Mid-Atlantic	10.8%
East North Central	16.6%
West North Central	10.0%
South Atlantic	17.8%
East South Central	10.3%
West South Central	16.8%
Mountain	6.8%
Pacific	9.2%
	100.0%



Totals may be slightly less than or greater than 100% due to rounding.

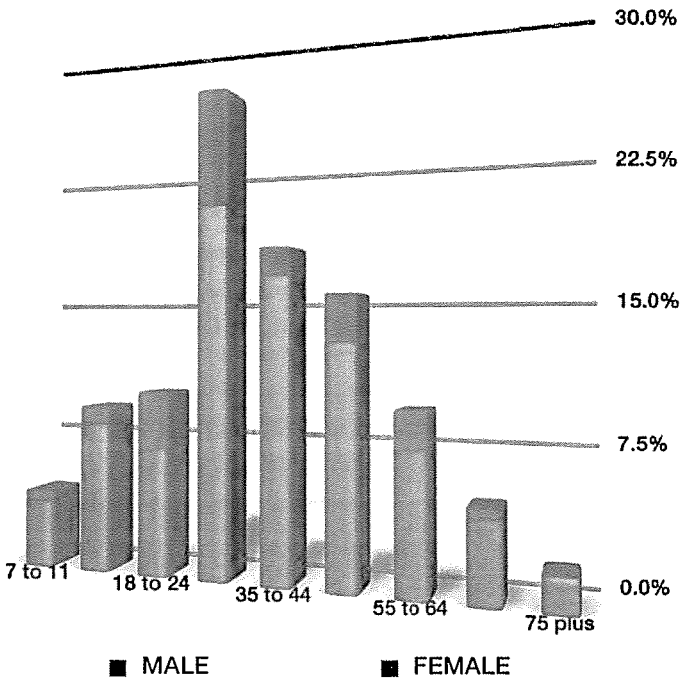
Source: National Sporting Goods Association - Sports Participation in 2014 - Shooting Sports (prepared for NSSF)

HUNTING (WITH BOW & ARROW) - 2014 DEMOGRAPHIC PROFILE

TOTAL (Thousands)	MALE	FEMALE
5,858	4,802	1,056
Percent	82.0%	18.0%

TOTAL BY AGE		MALE	FEMALE
AGE	Percent		
7 to 11	4.3%	3.7%	0.6%
12 to 17	9.3%	8.2%	1.0%
18 to 24	10.2%	6.9%	3.2%
25 to 34	26.7%	20.3%	6.4%
35 to 44	17.9%	16.4%	1.6%
45 to 54	15.5%	12.9%	2.6%
55 to 64	9.5%	7.5%	2.0%
65 to 74	4.8%	4.3%	0.5%
75 plus	1.8%	1.8%	n/a
	100.0%	82.0%	18.0%

Avg. Male Age	37.5	Avg. Female Age	34.7



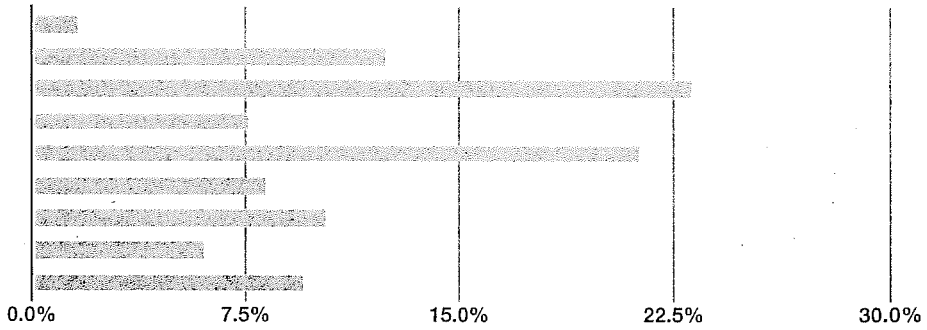
Totals may be slightly less than or greater than 100% due to rounding.

HOUSEHOLD INCOME (%)	
Dollars	Percent
Under $25K	21.2%
$25-$34,999	9.5%
$35-$49,999	14.2%
$50-$74,999	19.4%
$75-$99,999	15.9%
$100K-$149,999	12.3%
$150K plus	7.5%
	100.0%

MARKET SIZE % (Population)	
	Percent
Less than 100K	27.7%
100K - 499K	23.8%
500K - 1.9M	16.4%
2M plus	32.1%
	100.0%

ETHNICITY % (Non Caucasian)	
	Percent
% African American	1.3%
% Hispanic	4.5%

REGION (%)	
New England	1.6%
Mid-Atlantic	12.4%
East North-Central	23.1%
West North-Central	7.6%
South Atlantic	21.3%
East South-Central	8.2%
West South-Central	10.3%
Mountain	6.0%
Pacific	9.5%
	100.0%



Totals may be slightly less than or greater than 100% due to rounding.

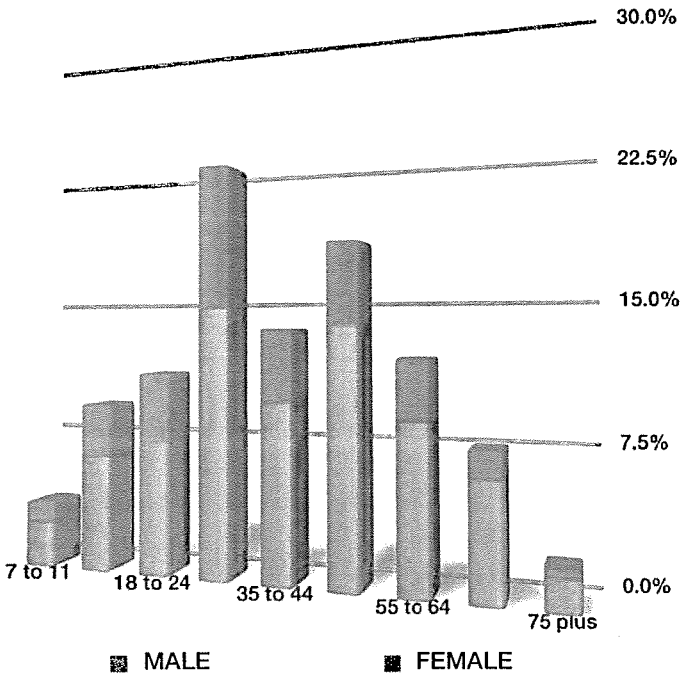
Source: National Sporting Goods Association - Sports Participation in 2014 - Shooting Sports (prepared for NSSF)

TARGET SHOOTING (NET) - 2014 DEMOGRAPHIC PROFILE

TOTAL (Thousands)	MALE	FEMALE
20,357	14,498	5,859
Percent	71.2%	28.8%

TOTAL BY AGE		MALE	FEMALE
AGE	Percent		
7 to 11	3.6%	2.5%	1.1%
12 to 17	9.3%	6.4%	2.9%
18 to 24	11.1%	7.3%	3.8%
25 to 34	22.5%	14.7%	7.8%
35 to 44	13.6%	9.7%	3.9%
45 to 54	18.1%	13.8%	4.4%
55 to 64	12.1%	8.9%	3.2%
65 to 74	7.6%	6.2%	1.4%
75 plus	2.0%	1.7%	0.3%
	100.0%	71.2%	28.8%

Avg. Male Age	40.1	Avg. Female Age	36.3



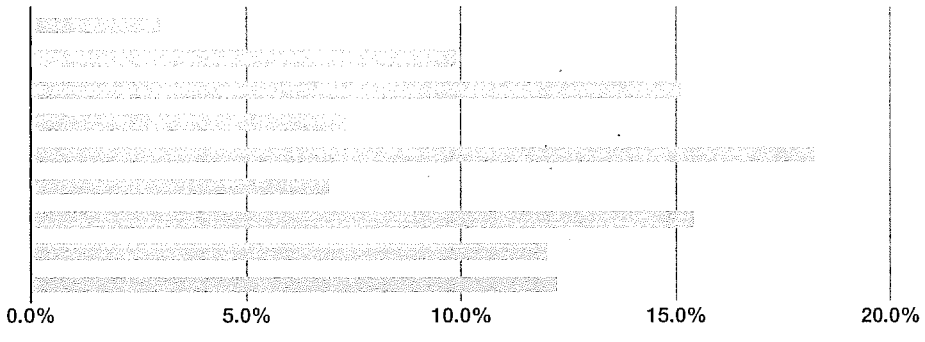
Totals may be slightly less than or greater than 100% due to rounding.

HOUSEHOLD INCOME (%)	
Dollars	Percent
Under $25K	15.9%
$25-$34,999	9.2%
$35-$49,999	13.5%
$50-$74,999	18.5%
$75-$99,999	14.7%
$100K-$149,999	16.1%
$150K plus	12.1%
	100.0%

MARKET SIZE % (Population)	
	Percent
Less than 100K	20.0%
100K - 499K	21.7%
500K - 1.9M	21.2%
2M plus	37.1%
	100.0%

ETHNICITY % (Non Caucasian)	
	Percent
% African American	1.6%
% Hispanic	6.0%

REGION (%)	
New England	3.0%
Mid-Atlantic	9.9%
East North Central	15.1%
West North Central	7.3%
South Atlantic	18.2%
East South Central	6.9%
West South Central	15.4%
Mountain	12.0%
Pacific	12.2%
	100.0%



Totals may be slightly less than or greater than 100% due to rounding.

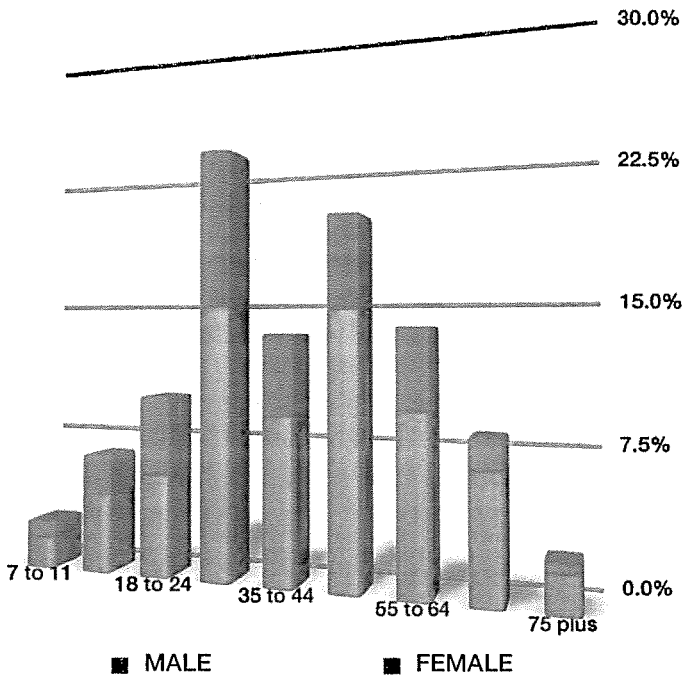
Source: National Sporting Goods Association - Sports Participation in 2014 - Shooting Sports (prepared for NSSF)

TARGET SHOOTING (HANDGUN) - 2014 DEMOGRAPHIC PROFILE

TOTAL (Thousands)	MALE	FEMALE
13,706	9,350	4,356
Percent	68.2%	31.8%

TOTAL BY AGE		MALE	FEMALE
AGE	Percent		
7 to 11	2.6%	1.7%	0.9%
12 to 17	6.5%	4.3%	2.2%
18 to 24	9.9%	5.6%	4.3%
25 to 34	23.4%	14.8%	8.6%
35 to 44	13.4%	9.0%	4.4%
45 to 54	19.6%	14.7%	5.0%
55 to 64	13.8%	9.5%	4.3%
65 to 74	8.3%	6.7%	1.6%
75 plus	2.3%	2.0%	0.4%
	100.0%	68.2%	31.8%

Avg. Male Age	42.4	Avg. Female Age	37.9



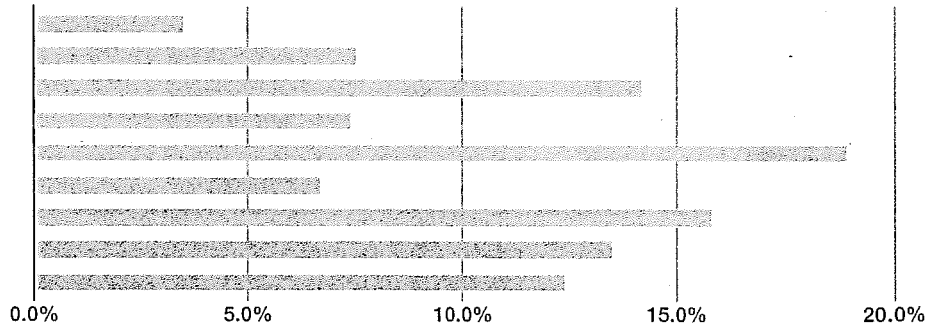
Totals may be slightly less than or greater than 100% due to rounding.

HOUSEHOLD INCOME (%)	
Dollars	Percent
Under $25K	14.7%
$25-$34,999	8.8%
$35-$49,999	13.0%
$50-$74,999	19.0%
$75-$99,999	13.9%
$100K-$149,999	17.1%
$150K plus	13.6%
	100.0%

MARKET SIZE % (Population)	
	Percent
Less than 100K	18.0%
100K - 499K	21.1%
500K - 1.9M	20.5%
2M plus	40.4%
	100.0%

ETHNICITY % (Non Caucasian)	
	Percent
% African American	2.0%
% Hispanic	6.0%

REGION (%)	
New England	3.5%
Mid-Atlantic	7.5%
East North Central	14.2%
West North Central	7.4%
South Atlantic	18.9%
East South Central	6.7%
West South Central	15.8%
Mountain	13.5%
Pacific	12.4%
	100.0%



Totals may be slightly less than or greater than 100% due to rounding.

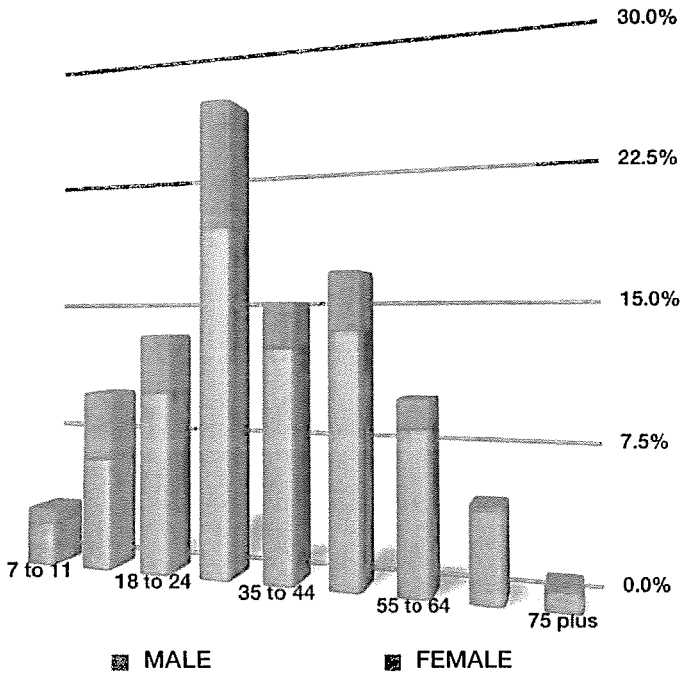
Source: National Sporting Goods Association - Sports Participation in 2014 - Shooting Sports (prepared for NSSF)

TARGET SHOOTING (SHOTGUN) - 2014 DEMOGRAPHIC PROFILE

TOTAL (Thousands)	MALE	FEMALE
10,098	7,834	2,264
Percent	77.6%	22.4%

TOTAL BY AGE		MALE	FEMALE
AGE	Percent		
7 to 11	3.3%	2.3%	0.9%
12 to 17	9.9%	6.2%	3.7%
18 to 24	13.2%	10.0%	3.2%
25 to 34	26.0%	19.0%	7.1%
35 to 44	15.1%	12.5%	2.5%
45 to 54	16.6%	13.4%	3.2%
55 to 64	10.0%	8.5%	1.5%
65 to 74	4.8%	4.6%	0.2%
75 plus	1.1%	1.0%	0.1%
	100.0%	77.6%	22.4%

Avg. Male Age	37.9	Avg. Female Age	31.8



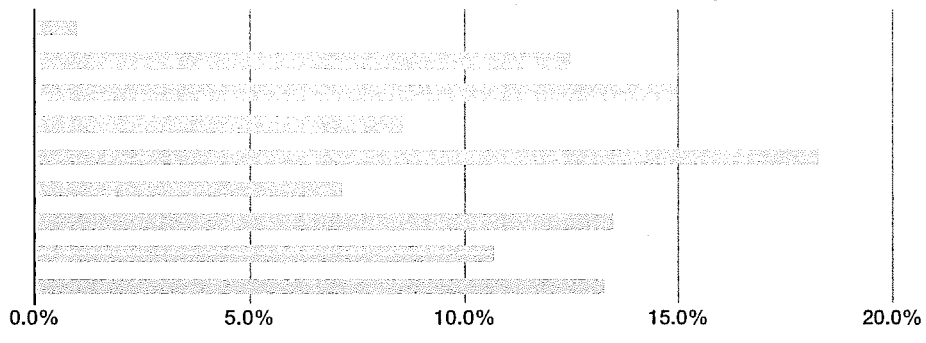
Totals may be slightly less than or greater than 100% due to rounding.

HOUSEHOLD INCOME (%)	
Dollars	Percent
Under $25K	16.1%
$25-$34,999	9.3%
$35-$49,999	14.0%
$50-$74,999	18.3%
$75-$99,999	14.9%
$100K-$149,999	13.9%
$150K plus	13.5%
	100.0%

MARKET SIZE % (Population)	
	Percent
Less than 100K	19.8%
100K - 499K	20.8%
500K - 1.9M	22.7%
2M plus	36.7%
	100.0%

ETHNICITY % (Non Caucasian)	
	Percent
% African American	1.8%
% Hispanic	4.2%

REGION (%)	
New England	1.0%
Mid-Atlantic	12.5%
East North Central	15.0%
West North Central	8.6%
South Atlantic	18.3%
East South Central	7.2%
West South Central	13.5%
Mountain	10.7%
Pacific	13.3%
	100.0%



Totals may be slightly less than or greater than 100% due to rounding.

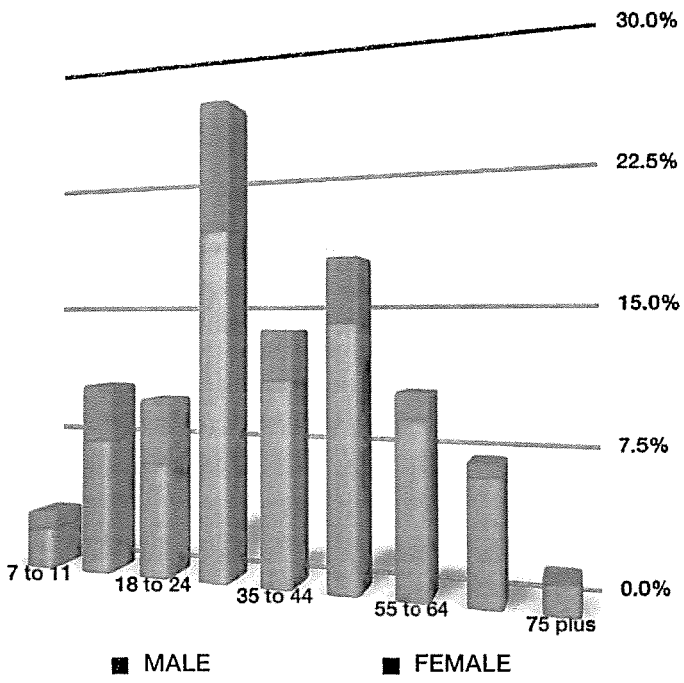
Source: National Sporting Goods Association - Sports Participation in 2014 - Shooting Sports (prepared for NSSF)

TARGET SHOOTING (RIFLE) - 2014 DEMOGRAPHIC PROFILE

TOTAL (Thousands)	MALE	FEMALE
11,795	9,055	2,740
Percent	76.8%	23.2%

TOTAL BY AGE		MALE	FEMALE
AGE	Percent		
7 to 11	3.1%	2.2%	0.9%
12 to 17	10.5%	7.4%	3.1%
18 to 24	9.8%	6.2%	3.6%
25 to 34	26.2%	19.0%	7.2%
35 to 44	13.6%	11.0%	2.7%
45 to 54	17.5%	14.0%	3.5%
55 to 64	10.5%	9.1%	1.4%
65 to 74	7.1%	6.4%	0.7%
75 plus	1.6%	1.5%	0.1%
	100.0%	76.8%	23.2%

Avg. Male Age	39.6	Avg. Female Age	33.1



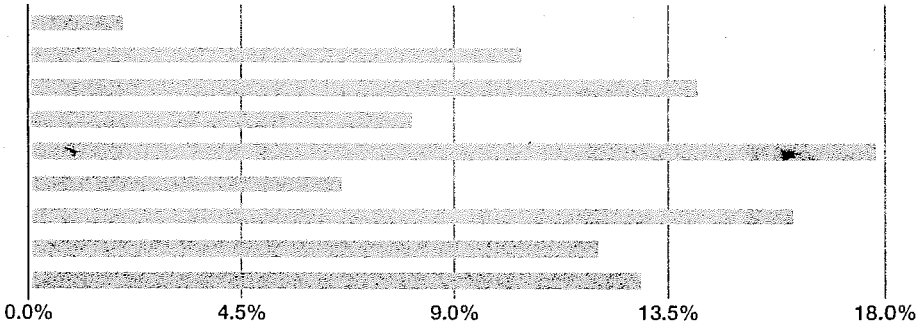
Totals may be slightly less than or greater than 100% due to rounding.

HOUSEHOLD INCOME (%)	
Dollars	Percent
Under $25K	17.4%
$25-$34,999	8.9%
$35-$49,999	14.8%
$50-$74,999	17.7%
$75-$99,999	15.3%
$100K-$149,999	15.2%
$150K plus	10.8%
	100.0%

MARKET SIZE % (Population)	
	Percent
Less than 100K	23.9%
100K - 499K	23.9%
500K - 1.9M	17.7%
2M plus	34.5%
	100.0%

ETHNICITY % (Non Caucasian)	
	Percent
% African American	1.8%
% Hispanic	6.2%

REGION (%)	
New England	2.0%
Mid-Atlantic	10.4%
East North Central	14.1%
West North Central	8.1%
South Atlantic	17.8%
East South Central	6.6%
West South Central	16.1%
Mountain	12.0%
Pacific	12.9%
	100.0%



Totals may be slightly less than or greater than 100% due to rounding.

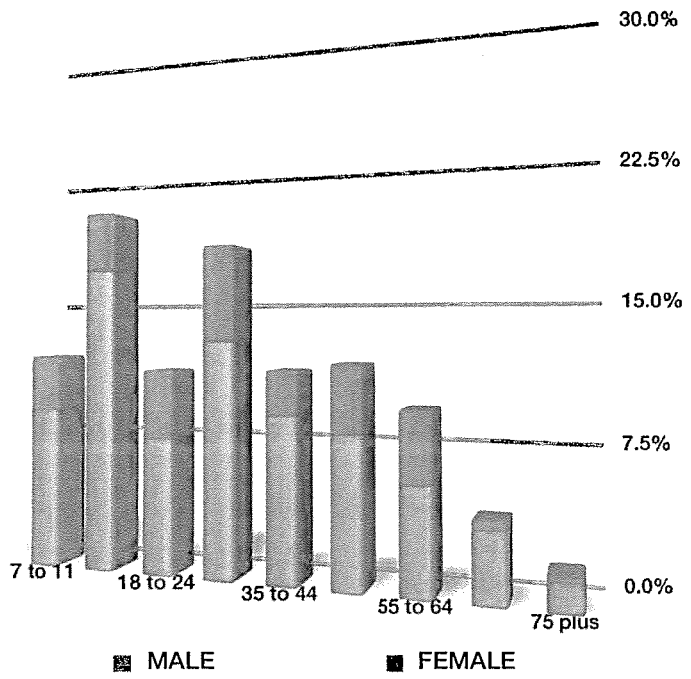
Source: National Sporting Goods Association - Sports Participation in 2014 - Shooting Sports (prepared for NSSF)

TARGET SHOOTING (AIRGUN) - 2014 DEMOGRAPHIC PROFILE

TOTAL (Thousands)	MALE	FEMALE
5,149	3,812	1,337
Percent	74.0%	26.0%

TOTAL BY AGE		MALE	FEMALE
AGE	Percent		
7 to 11	12.0%	8.9%	3.1%
12 to 17	20.1%	16.9%	3.3%
18 to 24	11.3%	7.5%	3.8%
25 to 34	18.2%	12.9%	5.3%
35 to 44	11.4%	9.0%	2.4%
45 to 54	11.7%	8.1%	3.7%
55 to 64	9.5%	5.7%	3.8%
65 to 74	4.1%	3.7%	0.4%
75 plus	1.7%	1.5%	0.2%
	100.0%	74.0%	26.0%

Avg. Male Age	31.6	Avg. Female Age	33.6



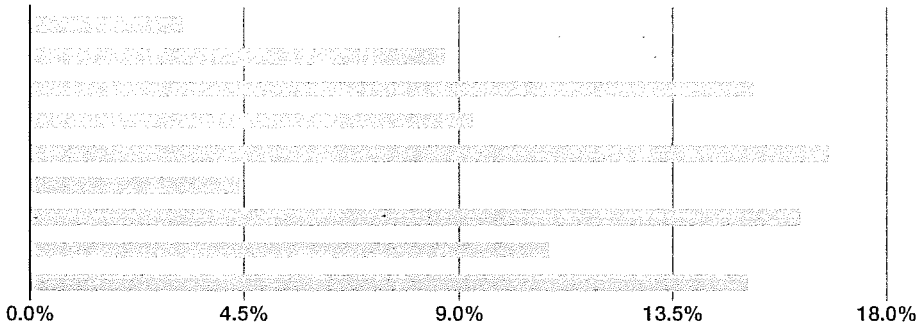
Totals may be slightly less than or greater than 100% due to rounding.

HOUSEHOLD INCOME (%)	
Dollars	Percent
Under $25K	16.8%
$25-$34,999	12.0%
$35-$49,999	15.2%
$50-$74,999	19.9%
$75-$99,999	12.9%
$100K-$149,999	14.3%
$150K plus	8.9%
	100.0%

MARKET SIZE % (Population)	
	Percent
Less than 100K	18.6%
100K - 499K	21.1%
500K - 1.9M	22.5%
2M plus	37.8%
	100.0%

ETHNICITY % (Non Caucasian)	
	Percent
% African American	2.4%
% Hispanic	5.2%

REGION (%)	
New England	3.2%
Mid-Atlantic	8.7%
East North Central	15.2%
West North Central	9.3%
South Atlantic	16.8%
East South Central	4.4%
West South Central	16.2%
Mountain	10.9%
Pacific	15.1%
	100.0%



Totals may be slightly less than or greater than 100% due to rounding.

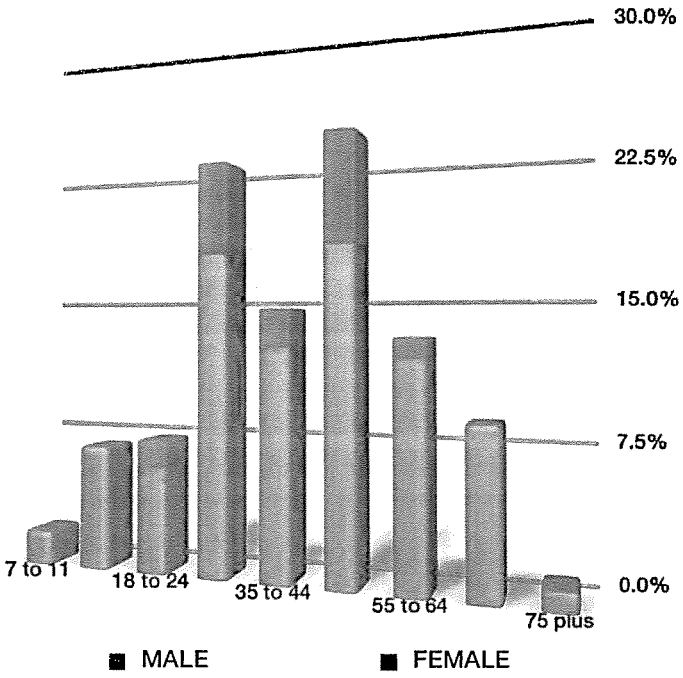
Source: National Sporting Goods Association - Sports Participation in 2014 - Shooting Sports (prepared for NSSF)

MUZZLELOADING - 2014 DEMOGRAPHIC PROFILE

TOTAL (Thousands)	MALE	FEMALE
2,681	2,264	417
Percent	84.4%	15.6%

TOTAL BY AGE		MALE	FEMALE
AGE	Percent		
7 to 11	1.8%	1.8%	n/a
12 to 17	6.8%	6.8%	n/a
18 to 24	7.3%	5.9%	1.4%
25 to 34	22.6%	17.6%	5.0%
35 to 44	14.6%	12.5%	2.1%
45 to 54	24.0%	18.0%	6.0%
55 to 64	13.2%	12.0%	1.1%
65 to 74	8.8%	8.8%	n/a
75 plus	1.0%	1.0%	n/a
	100.0%	84.4%	15.6%

Avg. Male Age	42.1	Avg. Female Age	40.5



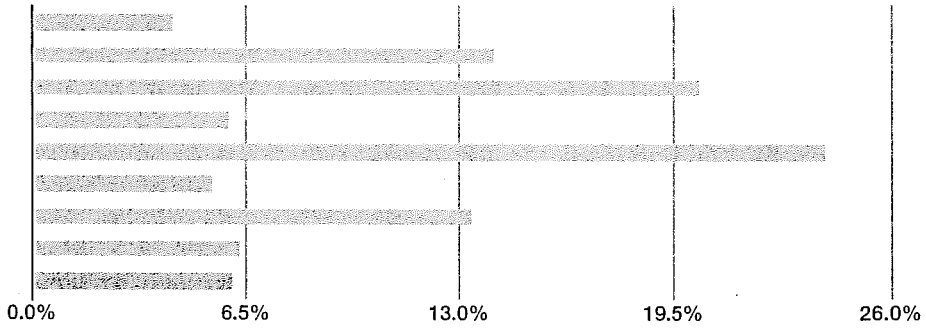
Totals may be slightly less than or greater than 100% due to rounding.

HOUSEHOLD INCOME (%)	
Dollars	Percent
Under $25K	20.4%
$25-$34,999	6.2%
$35-$49,999	17.4%
$50-$74,999	18.8%
$75-$99,999	15.8%
$100K-$149,999	14.3%
$150K plus	7.1%
	100.0%

MARKET SIZE % (Population)	
	Percent
Less than 100K	25.8%
100K - 499K	27.0%
500K - 1.9M	15.8%
2M plus	31.5%
	100.0%

ETHNICITY % (Non Caucasian)	
	Percent
% African American	2.5%
% Hispanic	4.1%

REGION (%)	
New England	4.3%
Mid-Atlantic	14.1%
East North Central	20.3%
West North Central	6.0%
South Atlantic	24.1%
East South Central	5.5%
West South Central	13.4%
Mountain	6.3%
Pacific	6.1%
	100.0%



Totals may be slightly less than or greater than 100% due to rounding.

Source: National Sporting Goods Association - Sports Participation in 2014 - Shooting Sports (prepared for NSSF)

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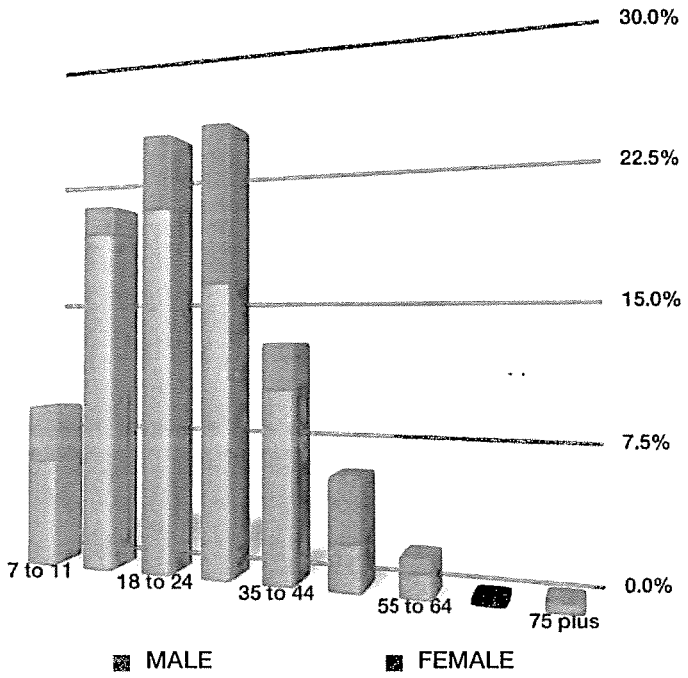
PAINTBALL - 2014 DEMOGRAPHIC PROFILE

TOTAL (Thousands)	MALE	FEMALE
4,830	3,655	1,176
Percent	75.7%	24.3%

TOTAL BY AGE		MALE	FEMALE
AGE	Percent		
7 to 11	9.1%	5.9%	3.1%
12 to 17	20.5%	18.9%	1.6%
18 to 24	24.3%	20.2%	4.2%
25 to 34	24.8%	16.0%	8.8%
35 to 44	12.8%	10.3%	2.5%
45 to 54	6.0%	2.5%	3.4%
55 to 64	2.0%	1.3%	0.7%
65 to 74	0.2%	0.2%	n/a
75 plus	0.4%	0.4%	n/a
	100.0%	75.7%	24.3%

Avg. Male Age	24.8	Avg. Female Age	29.0



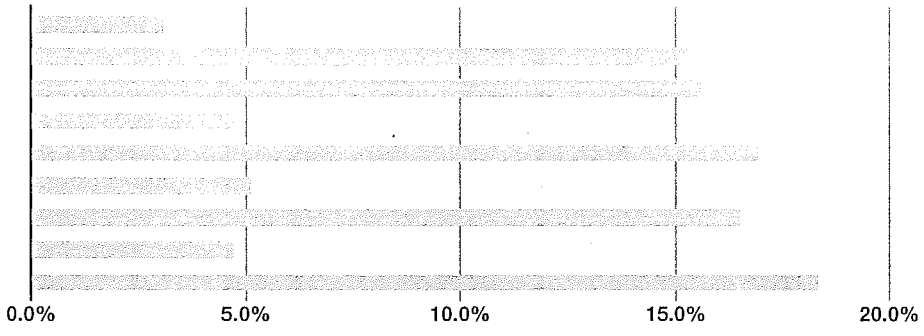
Totals may be slightly less than or greater than 100% due to rounding.

HOUSEHOLD INCOME (%)	
Dollars	Percent
Under $25K	20.7%
$25-$34,999	12.1%
$35-$49,999	11.3%
$50-$74,999	18.7%
$75-$99,999	12.2%
$100K-$149,999	16.0%
$150K plus	8.9%
	100.0%

MARKET SIZE % (Population)	
	Percent
Less than 100K	12.7%
100K - 499K	17.7%
500K - 1.9M	19.3%
2M plus	50.3%
	100.0%

ETHNICITY % (Non Caucasian)	
	Percent
% African American	6.1%
% Hispanic	12.2%

REGION (%)	
New England	3.1%
Mid-Atlantic	15.3%
East North Central	15.6%
West North Central	4.7%
South Atlantic	16.9%
East South Central	5.1%
West South Central	16.5%
Mountain	4.7%
Pacific	18.3%
	100.0%



Totals may be slightly less than or greater than 100% due to rounding.

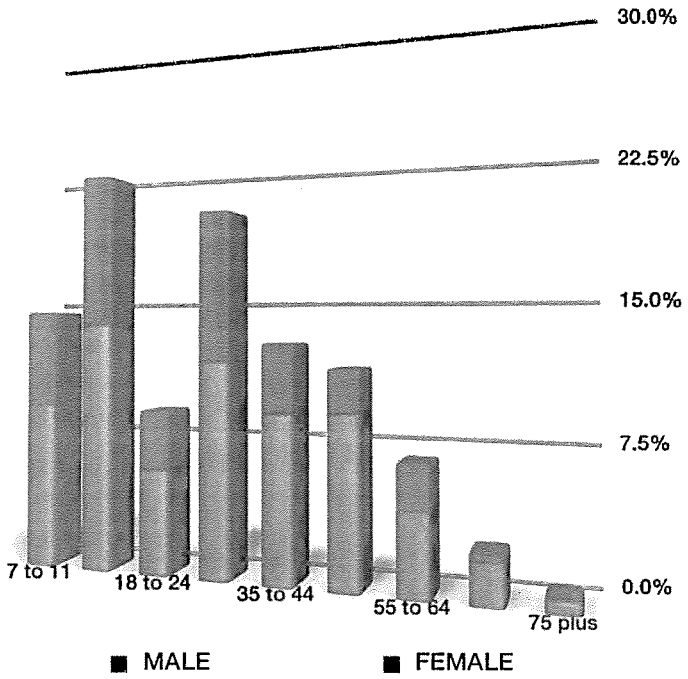
Source: National Sporting Goods Association - Sports Participation in 2014 - Shooting Sports (prepared for NSSF)

ARCHERY (TARGET) - 2014 DEMOGRAPHIC PROFILE

TOTAL (Thousands)	MALE	FEMALE
8,306	5,493	2,814
Percent	66.1%	33.9%

TOTAL BY AGE		MALE	FEMALE
AGE	Percent		
7 to 11	14.6%	9.2%	5.3%
12 to 17	22.2%	13.8%	8.4%
18 to 24	9.0%	5.8%	3.2%
25 to 34	20.0%	11.8%	8.2%
35 to 44	12.8%	9.1%	3.7%
45 to 54	11.5%	9.2%	2.3%
55 to 64	6.8%	4.4%	2.4%
65 to 74	2.5%	2.2%	0.3%
75 plus	0.6%	0.6%	n/a
	100.0%	66.1%	33.9%

Avg. Male Age	30.4	Avg. Female Age	26.5



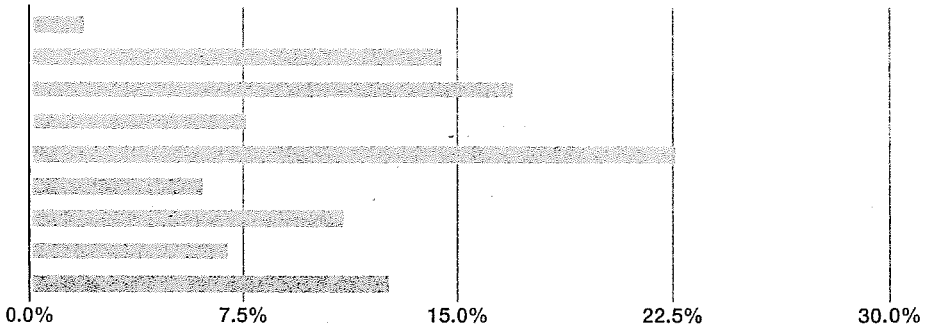
Totals may be slightly less than or greater than 100% due to rounding.

HOUSEHOLD INCOME (%)	
Dollars	Percent
Under $25K	22.5%
$25-$34,999	7.2%
$35-$49,999	15.8%
$50-$74,999	21.4%
$75-$99,999	13.1%
$100K-$149,999	11.4%
$150K plus	8.7%
	100.0%

MARKET SIZE % (Population)	
	Percent
Less than 100K	23.2%
100K - 499K	23.1%
500K - 1.9M	22.7%
2M plus	31.0%
	100.0%

ETHNICITY % (Non Caucasian)	
	Percent
% African American	1.4%
% Hispanic	5.4%

REGION (%)	
New England	1.9%
Mid-Atlantic	14.4%
East North Central	16.9%
West North Central	7.6%
South Atlantic	22.6%
East South Central	6.1%
West South Central	11.0%
Mountain	6.9%
Pacific	12.6%
	100.0%



Totals may be slightly less than or greater than 100% due to rounding.

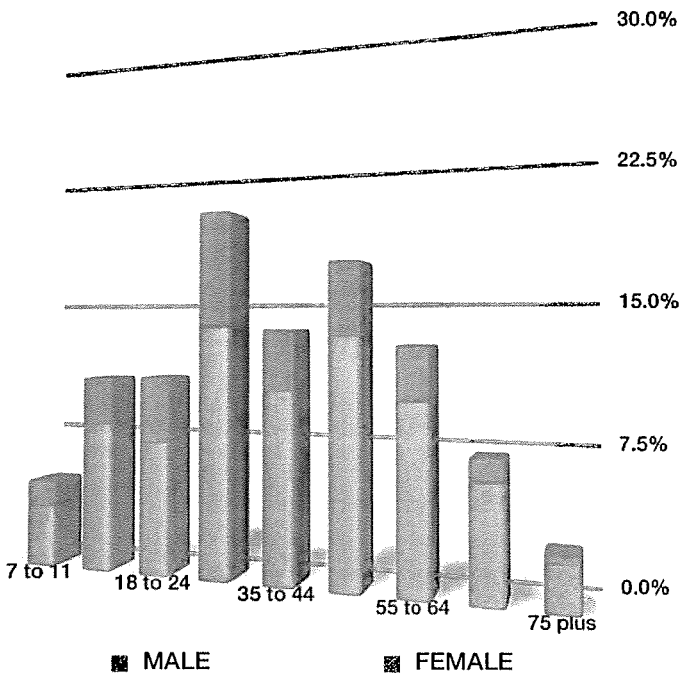
Source: National Sporting Goods Association - Sports Participation in 2014 - Shooting Sports (prepared for NSSF)

TOTAL SHOOTING - NET (ALL TYPES) - 2014 DEMOGRAPHIC PROFILE

TOTAL (Thousands)	MALE	FEMALE
32,164	24,029	8,134
Percent	74.7%	25.3%

TOTAL BY AGE		MALE	FEMALE
AGE	Percent		
7 to 11	4.8%	3.4%	1.4%
12 to 17	10.8%	8.2%	2.6%
18 to 24	10.9%	7.3%	3.6%
25 to 34	20.0%	13.7%	6.3%
35 to 44	13.7%	10.3%	3.3%
45 to 54	17.2%	13.2%	4.0%
55 to 64	12.8%	10.0%	2.8%
65 to 74	7.2%	6.1%	1.1%
75 plus	2.6%	2.4%	0.3%
	100.0%	74.7%	25.3%

Avg. Male Age	39.8	Avg. Female Age	35.8



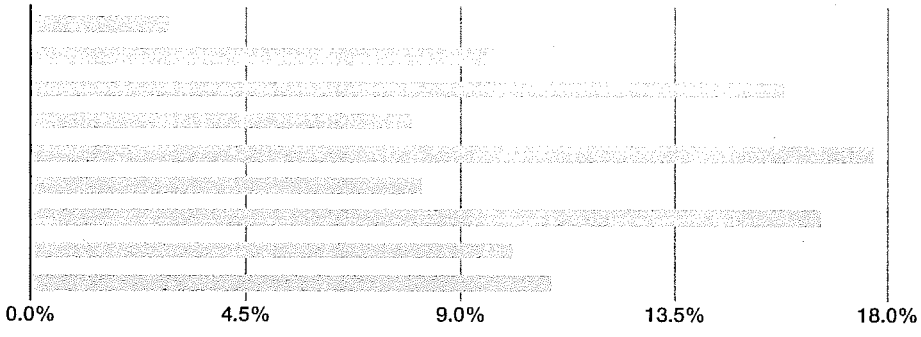
Totals may be slightly less than or greater than 100% due to rounding.

HOUSEHOLD INCOME (%)	
Dollars	Percent
Under $25K	16.4%
$25-$34,999	9.6%
$35-$49,999	13.9%
$50-$74,999	19.0%
$75-$99,999	13.7%
$100K-$149,999	15.5%
$150K plus	11.8%
	100.0%

MARKET SIZE % (Population)	
	Percent
Less than 100K	24.1%
100K - 499K	22.1%
500K - 1.9M	20.4%
2M plus	33.4%
	100.0%

ETHNICITY % (Non Caucasian)	
	Percent
% African American	1.8%
% Hispanic	5.9%

REGION (%)	
New England	2.9%
Mid-Atlantic	9.7%
East North Central	15.8%
West North Central	8.0%
South Atlantic	17.7%
East South Central	8.2%
West South Central	16.6%
Mountain	10.1%
Pacific	10.9%
	100.0%



Totals may be slightly less than or greater than 100% due to rounding.

Source: National Sporting Goods Association - Sports Participation in 2014 - Shooting Sports (prepared for NSSF)

AVERAGE AGE OF SHOOTING SPORTS PARTICIPANTS

Male

Year	Hunting (Net)	Hunting (w/ Firearms)	Hunting (w/ Bow & Arrow)	Target Shooting (Net)	Target Shooting (Handgun)	Target Shooting (Rifle)	Target Shooting (Shotgun)	Target Shooting (Airgun)	Muzzleloading	Paintball Games	*Archery (Target)
2005	37.4	37.6	35.5	35.0	36.4	34.9	33.6	24.8	41.1	21.5	N/A
2006	38.0	38.2	38.2	36.3	38.5	35.6	35.2	36.7	41.0	22.3	N/A
2007	37.5	37.4	38.6	35.7	37.0	35.0	34.2	26.0	41.2	21.7	N/A
2008	38.1	38.3	37.1	36.7	37.7	36.2	36.0	29.3	40.5	23.4	N/A
2009	39.3	39.4	36.7	36.6	39.1	35.6	36.2	28.1	40.9	23.5	N/A
2010	42.5	42.8	36.9	38.4	42.4	35.6	38.1	32.3	38.6	22.6	N/A
2011	43.4	44.0	37.2	39.4	40.9	38.6	37.1	28.6	42.6	24.2	N/A
2012	43.8	44.0	26.4	40.7	42.2	40.4	43.3	34.3	43.3	26.4	N/A
2013	42.8	43.1	38.6	39.9	40.9	38.6	39.1	32.8	40.0	24.7	31.1
2014	40.9	41.1	37.5	40.1	42.4	39.6	37.9	31.6	42.1	24.8	30.4
10-Year Average Age	40.4	40.6	36.3	37.9	39.7	37.0	37.1	30.4	41.1	23.5	30.7
2014 vs. 10-Year Avg. Age	1%	1%	3%	6%	7%	7%	2%	4%	2%	5%	-1%

Female

Year	Hunting (Net)	Hunting (w/ Firearms)	Hunting (w/ Bow & Arrow)	Target Shooting (Net)	Target Shooting (Handgun)	Target Shooting (Rifle)	Target Shooting (Shotgun)	Target Shooting (Airgun)	Muzzleloading	Paintball Games	*Archery (Target)
2005	34.3	33.5	37.9	33.9	36.2	32.6	33.9	28.3	41.7	30.9	N/A
2006	32.9	33.6	32.4	35.4	36.8	32.6	35.6	28.4	29.9	22.2	N/A
2007	34.4	34.1	41.7	34.3	35.4	31.5	31.4	28.1	38.4	27.9	N/A
2008	34.8	34.5	42.6	36.3	38.4	35.2	37.7	34.6	47.0	28.0	N/A
2009	35.7	35.5	33.4	36.1	37.2	36.8	34.7	36.3	32.0	26.8	N/A
2010	36.5	37.2	32.5	35.3	38.0	32.8	34.6	32.0	30.5	26.9	N/A
2011	31.9	32.2	27.5	37.7	37.8	32.0	39.1	31.2	27.3	27.3	N/A
2012	34.9	34.6	36.4	40.3	41.0	37.2	38.4	34.5	34.3	28.2	N/A
2013	34.4	34.6	32.0	35.9	37.7	33.4	34.5	29.5	33.6	25.5	27.5
2014	33.9	34.4	34.7	36.3	37.9	33.1	31.8	33.6	40.5	29.0	26.5
10-Year Average Age	34.3	34.4	35.1	36.1	37.6	33.7	35.2	31.6	35.5	27.3	27.0
2014 vs. 10-Year Avg. Age	-1%	0%	-1%	1%	1%	-2%	-10%	6%	14%	6%	-2%

* 2-year history available

Source: National Sporting Goods Association, Sports Participation - Shooting Sports (annual reports)

HUNTER & AVID HUNTER DEMOGRAPHICS (BY REGION)/UNITED STATES

(Avid hunters are defined as the most active hunters in terms of days hunted annually–the top 10 percent of participants in terms of days hunted per year.)

Average Age

	All Hunters	Big Game	Small Game	Migratory Birds	Other Game	Avid Hunters	Big Game	Small Game	Migratory Birds	Other Game
West	47.3	47.0	47.1	47.4	52.7	47.8	46.2	49.4*	**	48.2*
South Central	45.8	45.8	41.6	44.4	42.3	44.3	40.4*	52.6*	33.5*	39.0*
Great Lakes	43.6	45.8	44.2	38.9	36.4	43.2	41.8	43.4*	**	**
Southeast	43.6	43.6	46.7	40.6	42.2	44.0	43.1	55.3*	**	**
Northeast	47.7	43.5	48.8	43.3	52.7	43.7	44.7	47.4	44.9*	46.4*
Northern Plains	45.0	47.6	45.1	41.4	41.1	43.5	42.6	53.3*	**	**
U.S. Hunter Avg.	45.3	45.2	45.4	42.7	43.5	43.7	42.7	49.5	41.3	39.8

Gender (% male)

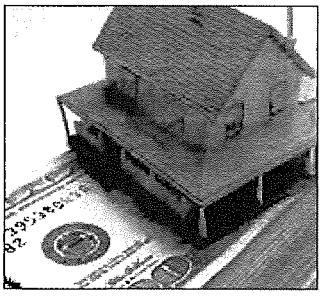
	All Hunters	Big Game	Small Game	Migratory Birds	Other Game	Avid Hunters	Big Game	Small Game	Migratory Birds	Other Game
West	90.9%	91.2%	90.0%	92.7%	93.5%	92.1%	98.1%	99.0%*	**	79.6%*
South Central	88.7%	86.2%	9.1%	99.6%	90.0%	97.1%	96.3%	100.0%*	100.0%*	86.7%*
Great Lakes	88.5%	86.9%	94.4%	82.6%	97.0%	95.2%	96.0%	100.0%*	**	**
Southeast	86.5%	85.5%	96.0%	85.0%	95.3%	99.5%	94.8%	100.0%*	**	**
Northeast	91.0%	91.0%	97.8%	86.4%	95.0%	91.0%	89.9%	93.1%	100.0%*	64.4%*
Northern Plains	92.3%	91.4%	93.9%	95.6%	89.7%	97.7%	93.5%	99.3%*	**	**
U.S. Hunter Avg.	89.3%	88.3%	94.3%	91.1%	93.2%	95.0%	95.0%	98.7%	97.2%	87.6%

Higher Education (% with four or more years of college)

	All Hunters	Big Game	Small Game	Migratory Birds	Other Game	Avid Hunters	Big Game	Small Game	Migratory Birds	Other Game
West	33.7%	29.3%	40.4%	38.3%	23.5%	40.2%	22.4%	45.6%*	**	**
South Central	36.5%	29.6%	32.3%	47.7%	36.3%	23.9%	7.3%*	54.3%*	11.5%*	15.1%*
Great Lakes	27.0%	25.5%	30.1%	22.7%	9.4%	12.0%	13.7%	58.2%*	**	**
Southeast	21.8%	20.5%	23.8%	41.9%	23.1%	9.2%	11.9%	**	**	**
Northeast	20.8%	19.3%	20.4%	23.4%	11.9%	44.0%	49.8%	15.0%	30.3%*	**
Northern Plains	33.6%	32.4%	37.6%	34.5%	30.1%	34.3%	40.1%	25.0%*	**	**
U.S. Hunter Avg.	27.1%	24.5%	28.6%	36.9%	23.3%	23.9%	22.3%	22.5%	15.9%	6.0%

Race (% Non-Caucasian)

	All Hunters	Big Game	Small Game	Migratory Birds	Other Game	Avid Hunters	Big Game	Small Game	Migratory Birds	Other Game
West	7.9%	7.7%	11.5%	10.4%	7.6%	9.2%	11.8%	8.4%*	**	**
South Central	8.1%	9.9%	6.1%	2.8%	2.7%	8.0%	5.3%*	13.2%*	**	**
Great Lakes	0.8%	0.9%	1.2%	2.5%	0.0%	0.0%	2.1%	0.0%*	**	**
Southeast	8.3%	7.9%	10.4%	1.6%	8.9%	4.4%	6.5%	12.5%*	**	**
Northeast	2.4%	2.0%	5.6%	0.1%	6.8%	1.3%	0.8%	1.7%	**	4.8%*
Northern Plains	1.5%	1.4%	2.0%	3.1%	3.1%	0.0%	1.7%	0.0%*	**	**
U.S. Hunter Avg.	4.9%	4.9%	5.5%	3.4%	4.4%	3.6%	2.9%	5.2%	**	1.5%



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Average Household Income

	All Hunters	Big Game	Small Game	Migratory Birds	Other Game	Avid Hunters	Big Game	Small Game	Migratory Birds	Other Game
West	$69,481	$70,014	$73,131	$64,006	$87,025	$69,066	$73,665	$54,984	**	$64,973*
South Central	$66,147	$62,280	$69,177	$75,488	$59,772	$61,728	$56,312*	$79,680*	$59,380*	$81,367*
Great Lakes	$61,420	$60,107	$62,407	$65,175	$61,334	$61,550	$65,558	$69,848*	**	**
Southeast	$53,248	$53,000	$48,086	$59,972	$53,771	$56,382	$65,811	$36,195*	**	**
Northeast	$64,188	$64,043	$66,329	$76,952	$71,120	$83,046	$85,677	$55,486	$62,556*	$54,022*
Northern Plains	$69,560	$69,692	$70,989	$65,409	$70,639	$74,227	$75,895	$68,380*	**	**
U.S. Hunter Avg.	$62,536	$61,402	$64,217	$67,564	$64,887	$67,832	$65,856	$58,578	$66,091	$67,111

Sources: NSSF® Report, America's Hunters – A Detailed Look at Demographics and Expenditures 2013 Edition and USFWS 2011 National Survey.
* Sample size is small. Use data with caution.
** Sample size too small to report results.

HUNTER DEMOGRAPHICS (BY SPECIES)/UNITED STATES

BIG GAME

	All Big Game	Deer	Elk	Bear	Turkey	Moose	Mountain Goat **	Wild Pig *	Other Big Game
# of Observations (n value)	2,245	2,044	265	129	532	50	6	22	85
Total # of Hunters	11,569,563	10,851,220	866,770	526,237	3,115,361	105,509	**	19,207	285,886
Total Days	213,117,386	167,657,720	7,714,792	4,823,813	33,341,035	1,139,120	**	589,402	4,270,917
Average Days	18.4	15.5	8.9	9.2	10.7	10.8	**	30.7	14.9
Average age	45.2	45.2	47	47.6	43.6	49.3	**	36.9	45.7
Average household income	$61,402	$61,556	$67,575	$70,075	$60,983	$70,060	**	$48,863	$67,151
Gender (% male)	88.3%	88.1%	92.0%	96.7%	89.3%	96.0%	**	97.7%	98.2%
Marital Status (% married)	71.7%	71.5%	77.8%	74.7%	69.5%	75.8%	**	43.2%	77.6%
Race (% non-white)	4.9%	4.6%	5.5%	4.2%	3.0%	5.9%	**	89.9%	5.5%
Education (%)									
8 years or less	2.0%	1.8%	0.1%	0.9%	1.7%	0.0%	**	0.0%	0.0%
9-11 years	10.2%	9.9%	7.3%	5.7%	11.4%	8.0%	**	12.5%	11.2%
12 years	38.5%	38.4%	46.1%	65.1%	38.9%	37.8%	**	48.2%	46.5%
1-3 years college	24.8%	25.2%	21.9%	10.9%	29.2%	28.2%	**	12.5%	12.8%
4 years college or more	24.5%	24.6%	24.6%	17.5%	18.9%	26.0%	**	26.9%	29.5%

SMALL GAME

	All Small Game	Rabbit	Quail	Grouse	Squirrel	Pheasant	Ptarmigan *	Other Small Game
# of Observations (n value)	938	327	163	143	337	351	12	78
Total # of Hunters	4,506,221	1,544,509	841,372	812,167	1,691,008	1,474,251	31,896	298,903
Total Days	51,089,313	16,892,762	9,419,139	7,540,789	20,542,122	9,670,327	232,575	3,493,289
Average Days	11.3	10.9	11.2	9.3	12.1	6.6	7.3	11.7
Average age	45.4	43.8	43.1	50	43.7	44.1	49.4	48.8
Average household income	$64,217	$53,929	$70,915	$72,617	$54,941	$73,250	$64,258	$65,495
Gender (% male)	94.3%	95.6%	93.7%	93.0%	94.4%	95.5%	67.3%	94.8%
Marital Status (% married)	69.4%	65.2%	66.5%	74.4%	63.5%	71.5%	86.6%	78.4%
Race (% non-white)	5.5%	9.5%	11.1%	2.0%	7.8%	4.8%	0.0%	3.0%
Education (%)								
8 years or less	0.8%	1.3%	0.5%	0.6%	2.0%	0.6%	0.0%	0.0%
9-11 years	7.9%	11.9%	8.6%	1.8%	11.6%	3.1%	9.2%	9.4%
12 years	35.0%	48.0%	21.1%	33.2%	45.2%	26.3%	27.9%	32.0%
1-3 years college	27.7%	24.3%	32.9%	37.3%	20.7%	26.7%	31.3%	16.3%
4 years college or more	28.6%	14.4%	36.9%	27.1%	20.5%	43.3%	31.7%	42.3%

MIGRATORY BIRDS

	All Migratory Bird	Geese	Ducks	Dove	Other Migratory Bird
# of Observations (n value)	485	184	272	207	53
Total # of Hunters	2,583,279	781,448	1,370,874	1,270,712	227,196
Total Days	23,336,111	8,684,439	15,295,169	7,040,904	1,576,235
Average Days	9	11.1	11.2	5.5	6.9
Average age	42.7	40.9	41.3	43.7	41.5
Average household income	$67,564	$65,283	$67,155	$68,332	$60,962
Gender (% male)	91.1%	93.4%	91.0%	97.9%	76.3%
Marital Status (% married)	66.3%	61.7%	62.5%	63.7%	64.6%
Race (% non-white)	3.4%	1.4%	2.5%	5.0%	0.4%
Education (%)					
8 years or less	0.4%	0.0%	0.0%	0.7%	0.0%
9-11 years	7.0%	2.8%	5.5%	9.5%	1.2%
12 years	25.4%	28.3%	27.2%	21.6%	22.7%
1-3 years college	30.4%	40.6%	34.0%	26.8%	38.8%
4 years college or more	36.9%	28.3%	33.3%	41.4%	37.3%

OTHER ANIMALS

	All Other Animals	Woodchuck	Raccoon	Fox	Coyote	Wolf **	Mongoose **	Other Animals
# of Observations (n value)	376	46	64	31	197	9	1	140
Total # of Hunters	2,168,065	195,216	325,497	174,110	1,048,674	**	**	878,466
Total Days	34,525,211	-	-	-	-	-	-	-
Average Days	15.9	-	-	-	-	-	-	-
Average age	43.5	41.4	43.3	45.6	42.7	**	**	44.5
Average household income	$64,887	$60,505	$57,241	$72,873	$67,224	**	**	$63,858
Gender (% male)	93.2%	79.2%	98.1%	98.3%	97.4%	**	**	90.4%
Marital Status (% married)	71.8%	71.8%	69.6%	77.3%	73.5%	**	**	69.6%
Race (% non-white)	4.4%	0.0%	20.5%	8.4%	0.9%	**	**	3.9%
Education (%)								
8 years or less	1.0%	2.3%	6.7%	2.6%	0.4%	**	**	0.5%
9-11 years	9.8%	10.0%	5.9%	1.8%	2.1%	**	**	17.4%
12 years	33.6%	55.3%	45.1%	62.6%	35.0%	**	**	28.6%
1-3 years college	32.3%	28.3%	34.2%	28.9%	44.4%	**	**	20.1%
4 years college or more	23.3%	4.2%	8.1%	4.2%	18.0%	**	**	33.4%

Source: NSSF® Report, America's Hunters -A Detailed Look at Demographics and Expenditures 2013 Edition
*Sample size is small. Use with caution.
**Sample size is too small to report results

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SECTION D:

ECONOMIC IMPACT

U.S. HUNTING-RELATED EXPENDITURES IN 2011*

	Hunting, All Types	Deer Hunting	Migratory Bird Hunting	Upland Gamebird Hunting
Food, drink & refreshments	$3,217,859,259	$1,770,688,630	$266,518,141	$287,583,000
Lodging (motels, cabins, lodges, campgrounds, etc.)	$663,444,365	$307,099,658	$49,921,665	$157,234,141
Commercial air transportation	$218,137,147	$45,123,883	$4,382,052	$14,177,334
Other commercial transportation (bus, taxi, train, etc.)	$86,067,317	$7,547,372	$11,171	$68,809,186
Transportation by private vehicle (fuel, etc.)	$4,463,710,581	$2,310,460,404	$381,394,639	$354,493,598
Boat fuel	$170,950,162	$55,783,603	$55,401,842	$417,995
Guide fees, pack trip or package fees	$493,913,274	$175,917,251	$38,138,970	$90,629,680
Public land use or access fees	$40,446,957	$23,946,866	$5,168,099	$3,954,692
Private land use or access fees (except land leasing)	$755,087,336	$339,183,348	$86,531,954	$73,539,936
Boat launching fees	$7,818,245	$1,778,883	$2,296,050	$249,703
Boat mooring, storage, maintenance, insurance, etc.	$35,048,358	$9,613,966	$19,529,580	$240,082
Equipment rental such as boats, camping equipment, etc.	$62,746,502	$34,212,297	$3,818,477	$1,379,882
Heating & cooking fuel	$205,959,227	$113,700,196	$24,503,142	$12,341,894
Rifles	$1,429,096,923	$720,794,216	$73,751,279	$21,020,259
Shotguns	$914,619,338	$141,898,726	$308,820,960	$136,656,187
Muzzleloaders & other primitive firearms	$122,035,039	$83,530,814	$718,220	$442,141
Handguns	$584,570,206	$116,679,317	$103,319,200	$32,226,371
Bows, arrows & archery equipment	$934,847,001	$583,170,720	$8,718,883	$6,729,189
Telescopic sights	$530,655,356	$290,185,446	$15,001,746	$6,379,964
Decoys & game calls	$301,994,782	$39,528,054	$160,842,455	$3,947,941
Ammunition	$1,298,455,782	$534,306,737	$280,178,352	$62,314,400
Handloading equipment & components	$199,019,357	$61,068,798	$33,622,836	$6,566,868
Hunting dogs & associated costs	$951,109,925	$163,476,444	$387,613,629	$121,273,376
Other hunting equipment (cases, knives, etc.)	$471,919,976	$176,348,637	$69,538,786	$23,944,223
Camping equipment	$220,567,811	$119,060,290	$3,884,809	$2,189,350
Binoculars, field glasses, telescopes, etc.	$303,920,920	$157,203,900	$10,219,066	$4,400,747
Special hunting clothes, foul weather gear, boots, waders, etc.	$653,212,642	$331,234,240	$57,017,209	$15,857,612
Processing & taxidermy costs	$685,691,583	$493,249,311	$20,209,769	$7,795,879
Books and magazines devoted to hunting	$146,255,446	$38,368,025	$20,637,012	$4,365,489
Dues or contributions	$440,095,138	$197,884,884	$112,383,067	$8,743,071
Other support items (snow equipment, equipment repair, etc.)	$168,491,490	$60,241,894	$6,939,325	$11,041,223
Bass boat	$67,562,867	$--	$--	$--
Other motor boat	$95,702,609	$--	$419,049	$--
Canoe or other non-motor boat	$11,477,619	$--	$--	$--
Boat motor, trailer, hitch or accessories	$40,101,798	$3,763,787	$15,905,143	$--
Pick-up, camper, van, travel tent trailer & RV	$6,048,718,514	$1,804,516,477	$12,379,995	$45,879,614
Cabin	$283,203,806	$75,388,494	$--	$--
Off-road vehicle: motorcycles, ATVs, 4x4 vehicles, snowmobiles, etc.	$1,967,084,561	$1,158,887,281	$55,988,533	$--
Other special equipment (ice chests, airplanes, etc.)	$110,614,896	$31,579,356	$2,460,377	$1,170,869
Licenses, tags, permits and other similar fees	$807,495,880	$498,770,578	$61,100,343	$82,676,388
Land owned primarily for hunting, 2011 expenses and payments	$6,011,621,847	$3,723,858,567	$536,417,050	$882,357,811
Land leased primarily for hunting, 2011 expenses and payments	$1,378,293,286	$865,558,382	$72,919,986	$256,292,942
Plantings related to hunting	$702,600,625	$442,424,497	$60,542,925	$73,858,101
TOTAL	$38,302,225,753	$18,108,034,232	$3,429,165,789	$2,883,181,138

* The total may not be the same as that reported by the U.S. Fish and Wildlife Service. Some expenditures reported in the 2011 National surveys were attributed by sportsmen to hunting and fishing. Rather than exclude those expenditures, they were pro-rated based on the respondents days of hunting and fishing. In addition, there are some minor variances on the treatment of outlier observations.

Sources: 2011 National Survey of Fishing, Hunting and Wildlife Viewing Recreation and Hunting in America.

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ECONOMIC CONTRIBUTIONS FROM ALL HUNTING ACTIVITIES IN 2011

State	Retail Sales	Total Multiplier Effect	Salaries & Wages	Jobs	State & Local Taxes	Federal Taxes
Alaska	$439,326,408	$599,394,621	$195,786,614	5,950	$53,998,861	$40,221,116
Alabama	$1,189,125,204	$1,809,967,081	$613,175,542	27,257	$104,412,563	$128,554,235
Arkansas	$1,034,162,738	$1,507,898,618	$500,305,183	17,592	$112,772,887	$115,790,116
Arizona	$341,668,296	$592,269,728	$208,088,736	5,715	$42,474,173	$46,806,825
California	$1,141,737,383	$2,169,417,247	$758,501,918	20,640	$153,291,677	$174,421,916
Colorado	$465,114,406	$762,750,827	$291,973,454	8,355	$51,352,632	$68,371,147
Connecticut	$305,666,045	$468,982,069	$142,099,320	4,128	$36,035,072	$41,178,619
Delaware	$40,943,866	$61,704,617	$23,136,398	549	$4,819,625	$5,100,564
Florida	$965,096,389	$1,604,506,506	$482,598,709	14,673	$94,639,788	$125,126,365
Georgia	$977,169,692	$1,665,955,113	$600,193,419	23,996	$106,552,804	$145,048,655
Hawaii	$52,713,340	$73,001,767	$23,514,889	774	$6,025,027	$5,099,046
Iowa	$448,853,497	$673,938,299	$227,965,683	6,975	$47,852,640	$52,111,319
Idaho	$471,243,529	$670,687,016	$212,603,577	8,009	$47,711,230	$51,252,055
Illinois	$1,324,341,410	$2,200,453,978	$698,887,510	18,049	$158,380,239	$180,372,476
Indiana	$229,913,491	$352,295,622	$110,612,210	3,765	$26,498,117	$27,484,462
Kansas	$404,795,400	$616,391,516	$236,222,287	6,200	$47,135,477	$50,986,788
Kentucky	$1,038,943,809	$1,531,808,339	$486,794,744	22,944	$97,857,604	$114,520,681
Louisiana	$710,426,665	$1,057,110,645	$329,613,923	10,080	$72,130,602	$70,940,810
Massachusetts	$150,982,784	$247,659,781	$78,102,194	1,888	$15,227,411	$18,979,332
Maryland	$265,625,600	$400,837,085	$127,954,484	4,498	$32,387,060	$34,780,701
Maine	$213,219,154	$362,870,579	$119,871,379	3,664	$28,074,112	$28,006,447
Michigan	$2,361,806,575	$3,950,671,177	$1,202,811,230	34,473	$289,120,831	$307,741,126
Minnesota	$733,229,489	$1,259,270,783	$417,868,357	12,439	$93,744,726	$106,029,695
Missouri	$985,002,441	$1,598,321,167	$540,932,011	18,053	$107,620,783	$126,352,931
Mississippi	$1,293,954,215	$1,775,390,945	$497,748,606	22,511	$111,962,004	$112,297,307
Montana	$633,572,345	$911,459,795	$281,270,023	11,140	$64,819,239	$71,158,716
North Carolina	$649,548,175	$1,009,772,925	$317,739,003	9,376	$71,549,105	$76,527,560
North Dakota	$147,595,292	$199,452,218	$69,554,245	2,254	$18,809,128	$15,177,285
Nebraska	$562,145,198	$847,935,693	$262,356,966	8,856	$59,518,903	$63,090,525
New Hampshire	$60,440,355	$97,264,571	$34,494,405	923	$7,551,752	$8,402,869
New Jersey	$116,095,966	$200,960,974	$70,326,693	1,519	$13,492,573	$17,300,219
New Mexico	$145,772,931	$211,985,432	$72,201,507	2,208	$16,069,090	$15,693,172
Nevada	$219,512,540	$335,728,458	$112,681,197	3,058	$21,690,940	$26,941,653
New York	$2,252,489,306	$3,644,690,291	$1,178,786,626	23,697	$289,887,302	$287,485,940
Ohio	$853,801,721	$1,404,942,870	$490,289,685	20,471	$97,437,823	$111,472,383
Oklahoma	$680,712,580	$941,062,966	$254,285,204	12,090	$65,987,436	$72,982,908
Oregon	$248,240,140	$420,760,134	$132,197,830	3,726	$27,084,273	$32,065,677
Pennsylvania	$985,541,569	$1,624,075,030	$529,067,694	15,211	$121,054,741	$136,668,469
Rhode Island	$18,503,090	$30,766,082	$11,458,525	290	$2,241,343	$2,607,804
South Carolina	$658,420,897	$988,688,714	$301,861,172	20,011	$49,939,385	$73,630,962
South Dakota	$723,236,029	$972,014,097	$302,183,278	11,034	$62,113,252	$72,731,738
Tennessee	$505,208,456	$835,585,578	$281,406,658	8,847	$54,841,175	$64,885,376
Texas	$2,118,800,404	$3,650,779,399	$1,140,972,709	36,170	$218,876,666	$279,321,294
Utah	$549,531,262	$924,661,164	$309,947,917	12,471	$62,483,367	$70,199,557
Virginia	$976,807,941	$1,506,211,310	$525,896,157	20,492	$102,601,082	$132,134,525
Vermont	$294,712,917	$433,502,242	$140,855,725	4,394	$33,909,231	$34,040,462
Washington	$369,565,921	$613,583,221	$211,083,317	5,612	$39,653,073	$50,647,408
Wisconsin	$2,565,720,458	$3,952,110,380	$1,026,590,029	34,180	$228,393,941	$262,835,667
West Virginia	$421,819,113	$552,085,233	$153,805,141	5,377	$35,544,522	$35,579,954
Wyoming	$301,218,745	$404,063,167	$151,501,066	4,934	$24,254,951	$35,476,413
United States*	$38,302,225,753	$86,940,074,957	$26,424,987,133	680,937	$5,354,133,154	$6,397,701,088

* The U.S. impacts are greater than the sum of the state-level results due to the effects of commerce between states. North Dakota has expressed concerns regarding its estimates from the 2011 National Survey. Use with caution. Definitions: Retail Sales - the dollars spent by hunters; Total Multiplier Effect - the total amount of spending that occurs in the economy as a result of hunters' spending; Salaries and Wages - total amounts paid to employers and small business owners in companies that serve hunters or support business that directly serve hunters; Jobs - the number of positions supported in business directly and indirectly serving hunters; Tax Revenues - government receipts received from businesses that and individuals who directly and indirectly serve hunters.

Sources: 2011 National Survey of Fishing, Hunting and Wildlife Viewing Recreation and Hunting in America.

NUMBER OF TARGET SHOOTERS AND DAYS SHOOTING IN 2011, BY STATE

	Number of Shooters				Days of Shooting			
State	Handgun	Rifle	Shotgun	Muzzleloader	Handgun	Rifle	Shotgun	Muzzleloader
AL	312,800	289,600	187,000	44,800	3,462,173	3,244,326	1,790,595	331,564
AZ	373,400	245,400	194,600	49,500	7,036,850	4,942,813	3,592,339	117,372
AR	228,400	266,800	164,600	201,000	2,546,562	2,533,415	1,874,743	1,771,501
CA	1,396,800	1,084,400	800,400	136,600	16,726,157	12,294,468	8,507,878	1,231,598
CO	242,000	245,600	213,000	31,500	2,446,192	3,064,162	1,694,101	57,400
CT	94,600	72,200	28,400	15,600	2,705,214	544,495	308,669	137,400
DE	60,000	58,750	46,250	29,000	1,060,324	666,360	611,600	51,600
FL	635,600	396,200	308,600	44,250	8,534,946	5,404,528	5,007,213	351,257
GA	538,000	418,600	325,400	105,400	5,098,930	4,197,640	3,019,883	546,537
ID	101,200	163,600	74,400	20,500	838,005	880,272	483,903	70,800
IL	398,600	424,000	367,400	128,800	4,533,192	4,927,598	3,684,181	1,575,729
IN	366,600	373,000	299,000	124,800	5,004,205	3,632,980	3,007,411	991,355
IA	77,400	99,000	94,400	28,800	1,020,341	908,772	726,090	193,989
KS	88,400	160,400	113,200	15,000	958,927	2,162,893	1,031,267	35,052
KY	134,200	307,200	158,000	97,400	2,760,569	3,481,398	1,539,185	614,424
LA	150,200	207,600	159,400	43,000	1,846,370	1,613,541	1,139,593	322,421
ME	89,600	107,800	36,600	25,200	473,646	786,798	532,000	138,130
MD	136,600	131,600	95,800	70,750	1,358,449	1,461,138	1,208,502	595,400
MA	128,400	148,000	61,000	41,750	2,102,233	1,961,148	823,405	248,302
MI	448,800	495,400	427,600	231,600	6,129,812	6,541,158	6,327,416	1,934,087
MN	158,800	225,800	384,200	62,000	1,130,375	1,579,015	1,745,612	370,925
MS	221,600	241,800	145,500	135,750	2,956,205	2,768,365	1,540,800	1,673,400
MO	343,600	357,600	240,400	92,600	3,490,006	3,336,225	2,457,516	559,594
MT	70,800	143,400	52,000	34,250	815,687	1,359,613	343,822	248,873
NE	107,200	102,400	105,400	55,750	2,268,943	1,508,468	1,758,701	391,359
NV	125,800	159,600	134,250	11,500	1,631,067	2,523,224	990,906	20,046
NH	48,000	63,000	41,667	25,000	728,628	773,871	413,875	94,600
NJ	345,600	213,000	175,400	57,000	3,767,423	2,436,347	2,161,429	567,469
NM	160,400	173,000	61,000	63,000	1,922,706	1,638,491	329,260	249,554
NY	481,200	585,600	520,600	300,800	7,414,240	8,193,016	13,406,797	3,522,767
NC	403,000	362,600	305,000	117,600	5,119,347	5,623,348	5,070,732	772,442
ND	27,000	39,000	21,000	28,500	208,279	128,227	335,564	103,249
OH	452,600	410,200	282,800	173,200	4,463,894	3,837,472	2,855,801	955,742
OK	230,400	211,600	155,600	158,000	1,977,344	2,429,135	1,586,880	1,094,072
OR	260,200	298,200	182,000	27,250	5,065,922	5,937,028	3,500,223	338,329
PA	555,200	687,000	433,200	171,600	5,684,929	6,778,323	4,528,192	1,334,615
RI	17,000	136,667	34,000	9,000	23,727	212,000	75,200	27,600
SC	232,800	193,000	154,400	23,000	2,466,213	1,712,482	2,221,510	53,400
SD	86,200	85,000	48,200	39,000	1,123,285	972,293	837,872	441,135
TN	398,200	425,800	323,200	173,000	4,286,604	5,705,015	4,807,470	1,420,748
TX	1,233,200	1,044,600	774,200	44,200	12,981,729	10,395,404	7,364,085	365,954
UT	183,400	198,800	177,800	40,000	1,512,889	1,290,667	1,451,575	213,983
VT	32,500	83,500	59,000	77,000	240,800	335,800	266,800	389,329
VA	215,200	250,000	191,000	141,600	2,439,212	2,694,744	1,929,316	1,302,055
WA	287,200	262,800	159,500	32,250	3,367,434	2,752,601	1,157,213	295,345
WV	92,600	113,800	79,600	81,400	911,403	1,121,896	680,987	401,103
WI	207,000	322,000	225,400	58,400	1,838,778	2,905,845	2,829,573	430,632
WY	70,750	85,500	91,667	12,667	310,247	453,578	308,978	88,000
US	**13,049,050**	**13,170,417**	**9,713,033**	**3,730,567**	**156,790,412**	**146,652,398**	**113,866,661**	**29,042,237**

*Definitions: Retail Sales – the dollars spent by target shooters; Total Multiplier Effect – the total amount of spending that occurs in the economy as a result of target shooters' spending; Salaries and Wages - total amounts paid to employers and small business owners in companies that serve target shooters or support businesses that directly serve target shooters; Jobs – the number of positions supported in businesses directly and indirectly serving target shooters; Tax Revenues – the receipts received from businesses that and individuals who directly and indirectly serve target shooters.

Source: Target Shooting in America

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ECONOMIC CONTRIBUTIONS FROM ALL TARGET SHOOTING ACTIVITIES IN 2011

State	Retail Sales	Total Multiplier Effect	Jobs	Salaries & Wages	GDP Contributions	State & Local Taxes	Federal Taxes
AL	$226,976,223	$358,176,007	3,802	$127,018,230	$211,206,477	$27,391,275	$28,340,653
AZ	$213,112,803	$366,329,097	3,422	$127,372,769	$226,285,398	$29,658,560	$29,460,654
AR	$179,476,626	$262,707,033	2,942	$85,861,020	$157,025,395	$21,947,641	$20,546,634
CA	$843,916,308	$1,598,946,538	12,046	$548,589,228	$978,372,555	$131,862,398	$131,699,107
CO	$178,390,773	$286,941,648	2,574	$96,476,344	$177,794,116	$22,678,549	$24,494,173
CT	$62,514,120	$104,558,241	853	$37,514,460	$67,314,433	$8,903,871	$9,779,433
DE	$39,268,460	$62,547,675	564	$22,811,655	$35,756,328	$4,819,098	$4,902,017
FL	$416,433,817	$740,767,062	6,900	$249,983,949	$453,612,933	$51,879,364	$63,267,300
GA	$326,375,879	$559,105,066	5,461	$191,316,563	$346,284,795	$39,900,562	$48,553,251
ID	$99,908,336	$141,758,947	1,582	$46,616,168	$86,740,067	$12,050,380	$11,503,719
IL	$317,428,293	$571,137,553	4,946	$196,937,026	$354,915,609	$45,026,394	$48,121,418
IN	$290,433,477	$454,876,585	4,883	$150,879,284	$272,232,975	$37,189,095	$36,574,414
IA	$76,357,435	$114,881,781	1,265	$38,151,268	$69,205,404	$9,334,097	$9,199,231
KS	$111,809,489	$170,432,214	1,760	$56,132,475	$99,182,232	$13,627,154	$13,287,183
KY	$195,584,123	$295,884,392	3,041	$98,475,364	$177,486,420	$23,509,301	$23,727,356
LA	$143,179,914	$233,869,241	2,331	$88,773,550	$138,001,667	$17,506,605	$17,666,016
ME	$61,391,414	$94,144,698	1,022	$31,751,405	$56,683,045	$8,242,839	$7,360,382
MD	$103,105,827	$168,132,421	1,505	$59,791,598	$103,502,616	$14,430,206	$14,695,175
MA	$89,788,335	$153,746,811	1,252	$54,661,877	$97,658,456	$12,762,460	$13,949,605
MI	$405,059,549	$726,643,476	7,153	$257,548,585	$445,255,060	$57,415,058	$60,362,860
MN	$270,900,039	$466,267,245	4,513	$156,703,675	$284,768,431	$37,472,257	$40,056,585
MS	$154,446,610	$220,624,291	2,536	$72,124,296	$131,341,461	$18,820,292	$16,342,991
MO	$253,550,862	$416,036,560	4,174	$138,796,673	$252,522,024	$31,423,126	$34,118,029
MT	$81,377,530	$115,365,970	1,341	$37,154,448	$69,851,679	$10,068,973	$9,771,377
NE	$78,729,923	$123,817,959	1,357	$41,439,468	$73,553,800	$9,591,501	$9,688,166
NV	$94,810,623	$144,039,048	1,394	$48,755,457	$89,628,566	$11,519,616	$11,950,231
NH	$32,602,110	$51,465,917	493	$17,976,482	$32,154,026	$4,311,413	$4,544,366
NJ	$199,530,131	$361,975,621	2,778	$129,998,485	$219,269,299	$28,469,312	$32,385,701
NM	$116,382,778	$168,331,191	1,820	$54,859,688	$102,315,120	$14,520,625	$12,737,521
NY	$480,005,211	$817,050,105	6,333	$299,077,670	$523,706,340	$77,936,704	$72,571,576
NC	$284,878,141	$459,373,038	4,460	$155,338,992	$279,317,952	$36,995,266	$37,597,943
ND	$24,552,253	$28,987,891	349	$10,414,396	$16,659,289	$3,126,594	$2,250,175
OH	$333,039,372	$553,973,738	5,685	$186,441,506	$335,119,949	$45,532,736	$43,567,396
OK	$169,008,832	$256,091,734	2,772	$86,209,681	$153,083,860	$19,838,383	$20,553,278
OR	$209,053,571	$354,348,428	3,574	$118,278,458	$213,376,322	$28,586,396	$30,510,005
PA	$483,745,634	$824,589,274	7,871	$283,391,331	$506,069,655	$66,745,247	$70,582,269
RI	$45,369,482	$77,588,173	709	$27,686,754	$43,690,945	$5,786,869	$6,324,586
SC	$179,833,197	$274,920,952	2,974	$91,283,421	$167,686,376	$19,519,056	$24,138,255
SD	$61,514,405	$83,102,358	912	$27,217,332	$50,573,570	$6,744,698	$6,717,919
TN	$324,360,143	$542,982,962	5,105	$183,343,460	$332,110,088	$39,264,201	$43,236,954
TX	$812,754,286	$1,452,958,852	12,735	$483,493,930	$889,441,068	$102,071,957	$115,396,207
UT	$145,334,601	$243,595,612	2,565	$82,821,185	$145,396,292	$19,238,457	$19,373,906
VT	$36,001,167	$54,040,467	546	$18,389,538	$32,709,858	$4,670,327	$4,402,517
VA	$179,930,780	$289,951,098	2,871	$98,857,938	$177,876,427	$23,166,350	$24,669,316
WA	$181,597,960	$304,481,008	2,848	$104,519,404	$182,937,146	$22,004,945	$25,478,264
WV	$80,012,245	$112,625,380	1,345	$38,571,863	$65,804,282	$9,499,776	$9,012,876
WI	$199,049,913	$328,128,470	3,439	$109,401,192	$197,369,085	$26,842,278	$26,791,835
WY	$55,063,865	$71,029,520	840	$22,585,296	$42,290,898	$6,067,166	$5,783,371
US	**$9,947,946,868**	**$23,248,281,218**	**185,402**	**$7,615,953,201**	**$13,650,430,639**	**$1,649,698,331**	**$1,814,644,370**

*Definitions: Retail Sales – the dollars spent by target shooters; Total Multiplier Effect – the total amount of spending that occurs in the economy as a result of target shooters' spending; Salaries and Wages - total amounts paid to employers and small business owners in companies that serve target shooters or support businesses that directly serve target shooters; Jobs – the number of positions supported in businesses directly and indirectly serving target shooters; Tax Revenues – the receipts received from businesses that and individuals who directly and indirectly serve target shooters.

Source: Target Shooting in America

ECONOMIC CONTRIBUTIONS FROM COMBINED HUNTING AND TARGET SHOOTING ACTIVITIES

STATE	Retail Sales	Total Multiplier Effect	Jobs	Salaries & Wages	State & Local Taxes	Federal Taxes	Total State, Local & Federal Taxes
Alaska*	$553,551,274	$761,231,169	7,557	$252,564,732	$70,738,508	$51,483,028	$122,221,536
Alabama	$1,416,101,427	$2,168,143,088	31,059	$740,193,772	$131,803,838	$156,894,888	$288,698,726
Arkansas	$1,213,639,363	$1,770,605,651	20,533	$586,166,203	$134,720,528	$136,336,750	$271,057,278
Arizona	$554,781,099	$958,598,825	9,137	$335,461,505	$72,132,733	$76,267,479	$148,400,211
California	$1,985,653,691	$3,768,363,785	32,686	$1,307,091,146	$285,154,075	$306,121,023	$591,275,098
Colorado	$643,505,179	$1,049,692,475	10,929	$388,449,798	$74,031,181	$92,865,320	$166,896,501
Connecticut	$368,180,166	$573,540,310	4,981	$179,613,780	$44,938,943	$50,958,052	$95,896,995
Delaware	$80,212,326	$124,252,292	1,113	$45,948,053	$9,638,723	$10,002,581	$19,641,304
Florida	$1,381,530,207	$2,345,273,568	21,573	$732,582,658	$146,519,152	$188,393,665	$334,912,817
Georgia	$1,303,545,571	$2,225,060,179	29,457	$791,509,982	$146,453,366	$193,601,906	$340,055,273
Hawaii*	$66,418,808	$92,712,244	983	$30,334,207	$7,892,785	$6,526,779	$14,419,564
Iowa	$525,210,932	$788,820,080	8,240	$266,116,951	$57,186,737	$61,310,550	$118,497,287
Idaho	$571,151,865	$812,445,963	9,591	$259,219,745	$59,761,610	$62,755,774	$122,517,384
Illinois	$1,641,769,703	$2,771,591,531	22,995	$895,824,536	$203,406,633	$228,493,894	$431,900,527
Indiana	$520,346,968	$807,172,207	8,648	$261,491,494	$63,687,212	$64,058,876	$127,746,088
Kansas	$516,604,889	$786,823,730	7,960	$292,354,762	$60,762,631	$64,273,971	$125,036,602
Kentucky	$1,234,527,932	$1,827,692,731	25,985	$585,270,108	$121,366,905	$138,248,037	$259,614,942
Louisiana	$853,606,579	$1,290,979,886	12,411	$418,387,473	$89,637,207	$88,606,826	$178,244,033
Massachusetts	$240,771,119	$401,406,592	3,139	$132,764,071	$27,989,871	$32,928,937	$60,918,808
Maryland	$368,731,427	$568,969,506	6,002	$187,746,082	$46,817,266	$49,475,876	$96,293,142
Maine	$274,610,568	$457,015,277	4,687	$151,622,784	$36,316,951	$35,366,829	$71,683,780
Michigan	$2,766,866,125	$4,677,314,653	41,626	$1,460,359,815	$346,535,889	$368,103,986	$714,639,875
Minnesota	$1,004,129,528	$1,725,538,028	16,951	$574,572,032	$131,216,983	$146,086,280	$277,303,264
Missouri	$1,238,553,304	$2,014,357,727	22,227	$679,728,684	$139,043,909	$160,470,960	$299,514,869
Mississippi	$1,448,400,826	$1,996,015,236	25,047	$569,872,902	$130,782,296	$128,640,298	$259,422,593
Montana	$714,949,875	$1,026,825,765	12,482	$318,424,471	$74,888,212	$80,930,093	$155,818,305
North Carolina	$934,426,316	$1,469,145,963	13,836	$473,077,995	$108,544,371	$114,125,503	$222,669,874
North Dakota	$172,147,545	$228,440,109	2,603	$79,968,641	$21,935,722	$17,427,460	$39,363,182
Nebraska	$640,875,121	$971,753,652	10,212	$303,796,434	$69,110,404	$72,778,691	$141,889,095
New Hampshire	$93,042,465	$148,730,488	1,416	$52,470,887	$11,863,165	$12,947,235	$24,810,400
New Jersey	$315,626,097	$562,936,595	4,296	$200,325,178	$41,961,885	$49,685,920	$91,647,806
New Mexico	$262,155,710	$380,316,623	4,028	$127,061,195	$30,589,715	$28,430,693	$59,020,408
Nevada	$314,323,162	$479,767,506	4,452	$161,436,654	$33,210,556	$38,891,884	$72,102,441
New York	$2,732,494,516	$4,461,740,396	30,030	$1,477,864,296	$367,824,006	$360,057,516	$727,881,522
Ohio	$1,186,841,093	$1,958,916,608	26,157	$676,731,191	$142,970,559	$155,039,779	$298,010,338
Oklahoma	$849,721,412	$1,197,154,700	14,862	$340,494,885	$85,825,819	$93,536,186	$179,362,005
Oregon	$457,293,711	$775,108,562	7,299	$250,476,288	$55,670,669	$62,575,682	$118,246,351
Pennsylvania	$1,469,287,203	$2,448,664,304	23,082	$812,459,025	$187,799,988	$207,250,738	$395,050,726
Rhode Island	$63,872,572	$108,354,255	1,000	$39,145,279	$8,028,212	$8,932,390	$16,960,602
South Carolina	$838,254,095	$1,263,609,666	22,984	$393,144,593	$69,458,441	$97,769,217	$167,227,657
South Dakota	$784,750,433	$1,055,116,455	11,946	$329,400,610	$68,857,950	$79,449,657	$148,307,607
Tennessee	$829,568,598	$1,378,568,540	13,952	$464,750,118	$94,105,376	$108,122,330	$202,227,706
Texas	$2,931,554,690	$5,103,738,251	48,904	$1,624,466,639	$320,948,623	$394,717,501	$715,666,124
Utah	$694,865,863	$1,168,256,776	15,035	$392,769,102	$81,721,824	$89,573,463	$171,295,287
Virginia	$1,156,738,721	$1,796,162,408	23,363	$624,754,095	$125,767,432	$156,803,841	$282,571,273
Vermont	$330,714,085	$487,542,709	4,940	$159,245,263	$38,579,558	$38,442,979	$77,022,537
Washington	$551,163,881	$918,064,229	8,460	$315,602,721	$61,658,018	$76,125,672	$137,783,690
Wisconsin	$2,764,770,371	$4,280,238,850	37,619	$1,135,991,221	$255,236,219	$289,627,502	$544,863,722
West Virginia	$501,831,359	$664,710,613	6,722	$192,377,004	$45,044,298	$44,592,830	$89,637,128
Wyoming	$356,282,610	$475,092,687	5,774	$174,086,362	$30,322,117	$41,259,784	$71,581,901
United States	**$48,250,172,621**	**$110,188,356,175**	**866,339**	**$34,040,940,334**	**$7,003,831,485**	**$8,212,345,458**	**$15,216,176,943**

*Alaska & Hawaii incorporate estimated target shooting figures.
The U.S. totals are greater than the sum of the state-level results due to the effects of commerce between states.
Sources: NSSF's Economic Impact of Hunting and Target Shooting in America

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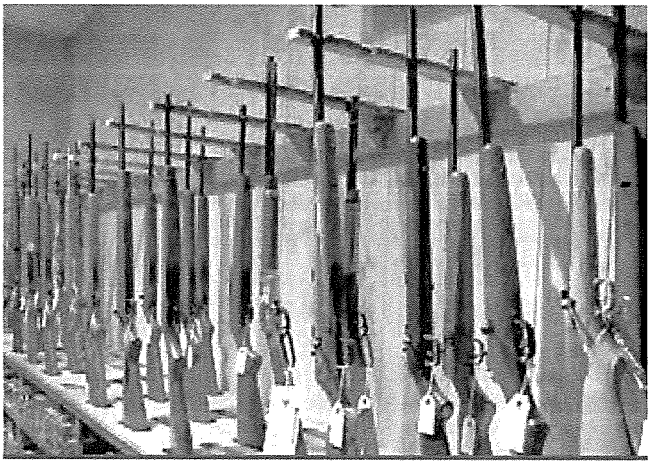
ECONOMIC CONTRIBUTIONS FROM COMBINED HUNTING AND TARGET SHOOTING ACTIVITIES

America's hunters and target shooters help fuel our economy each year. The economic impact of hunting and target shooting is over

$110 billion



Combined state, local and federal taxes total over **$15 billion.** That annual figure is enough to pay

336,269 Firefighters

$48 billion
in annual sales would rank among the top FORTUNE 100 companies

AHEAD OF

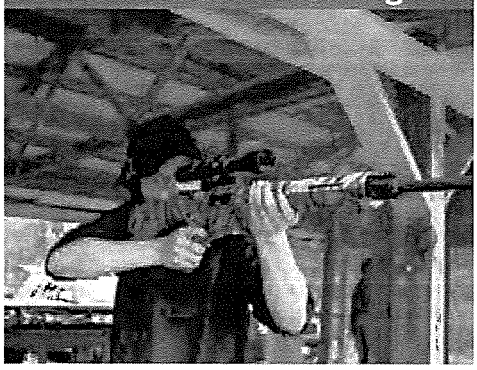
Coca-Cola Fed-Ex Disney

The more than **866,000 jobs** supported by hunting and target shooting would rank as the

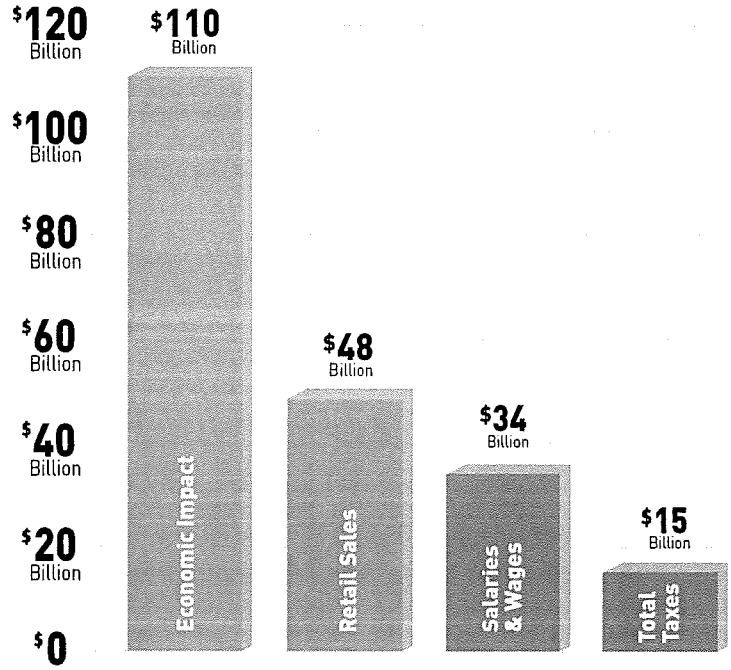
7th largest
employer in the world

AHEAD OF

IBM McDonald's Target



Economic Impact of Hunting and Target Shooting

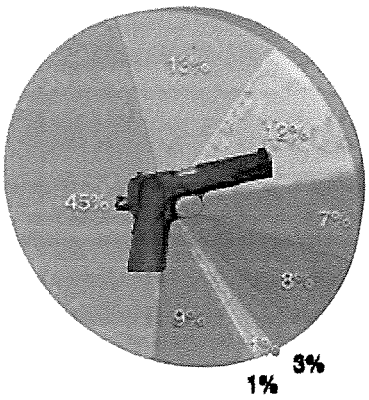


Source: NSSF's Economic Impact of Hunting, NSSF's Target Shooting in America, bls.gov, money.cnn.com

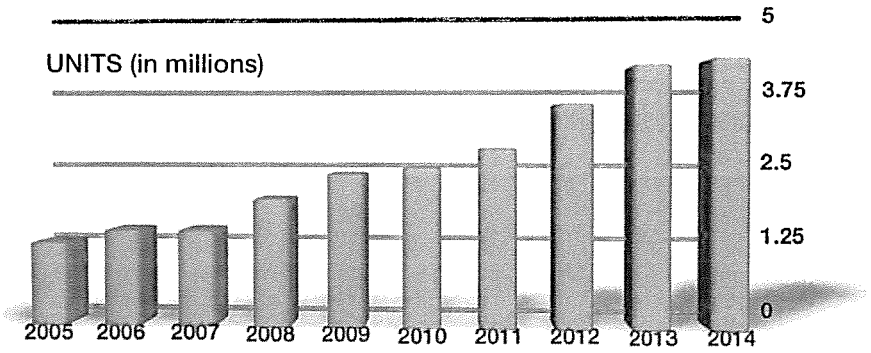
FIREARMS: 2014 CONSUMER PURCHASES

Handguns

Place of Purchase	% of UNITS	% of DOLLARS	AVERAGE PRICE
Speciality Sports Shop	44.6	43.7	$490.52
Gun Shows	13.3	13.3	$452.55
Sporting Goods Store	11.8	10.7	$449.58
On-line	7.2	9.9	$722.18
Pro Shops	7.8	8.4	$520.84
Discount Stores	3.3	2.6	*
Department Stores	1.4	1.3	*
Mail Order	0.4	0.3	*
Warehouse Clubs	0.3	0.2	*
Brand/Manufacturer	1.2	0.9	*
Other Outlets	8.7	8.7	$482.23
Total	100.0	100.0	$543.71

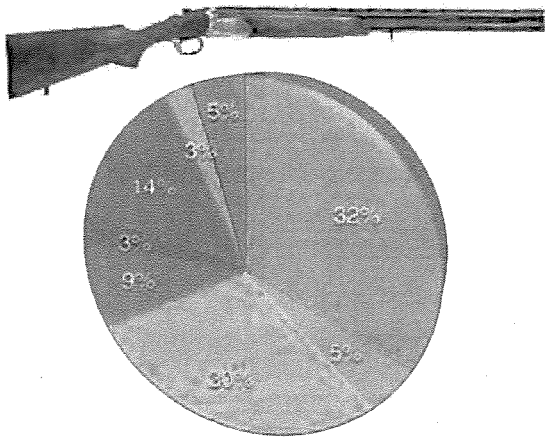


YEAR	UNITS (in millions)	Dollars (in millions)
2005	1.3	$630.70
2006	1.5	$729.50
2007	1.5	$742.60
2008	2.0	$974.90
2009	2.4	$1,127.00
2010	2.5	$1,182.20
2011	2.8	$1,300.50
2012	3.5	$1,643.60
2013	4.1	$1,948.30
2014	4.2	$2,031.70

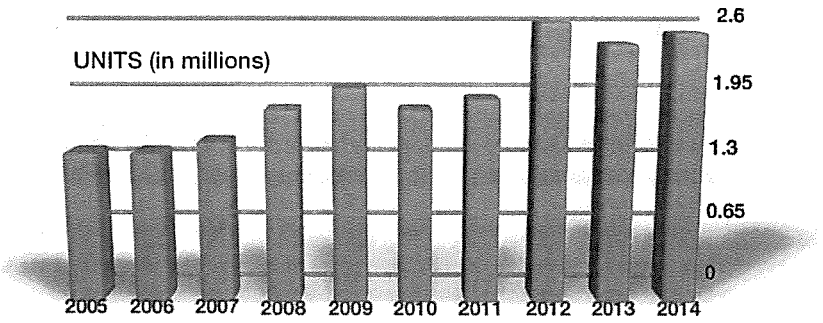


Shotguns

Place of Purchase	% of UNITS	% of DOLLARS	AVERAGE PRICE
Speciality Sports Shop	32.4	38.9	$503.87
Gun Shows	5.1	2.8	*
Sporting Goods Store	30.0	31.2	$441.86
On-line	8.6	8.6	*
Pro Shops	2.5	2.8	*
Discount Stores	14.2	11.2	*
Department Stores	2.6	1.4	*
Mail Order	0.0	*	
Warehouse Clubs	0.0	*	*
Other Outlets	4.6	3.1	*
	100.0	100.0	$472.87



YEAR	UNITS (in millions)	Dollars (in millions)
2005	1.4	$667.90
2006	1.4	$650.80
2007	1.5	$699.20
2008	1.8	$829.70
2009	2.0	$958.10
2010	1.8	$839.40
2011	1.9	$888.10
2012	2.6	$1,205.60
2013	2.4	$1,093.80
2014	2.5	$1,165.60



* Sample Size too small to report.

Source: NSGA, The Sporting Goods Market 2015 Edition

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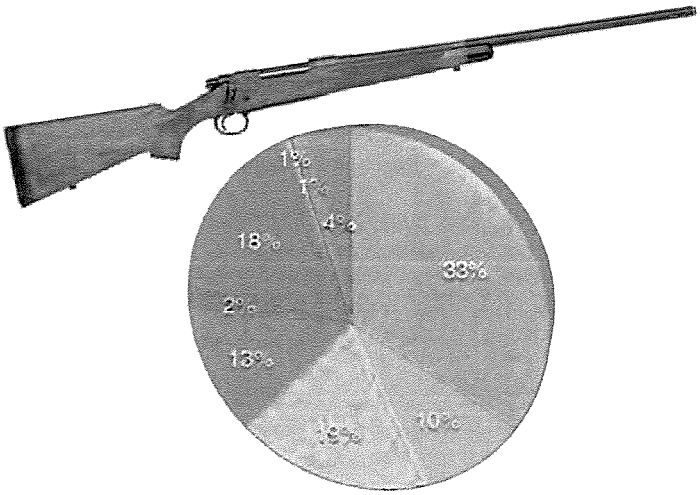
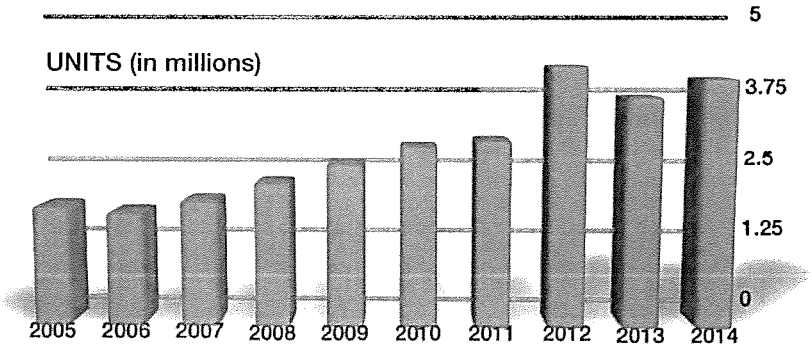
FIREARMS: 2014 CONSUMER PURCHASES

Rifles

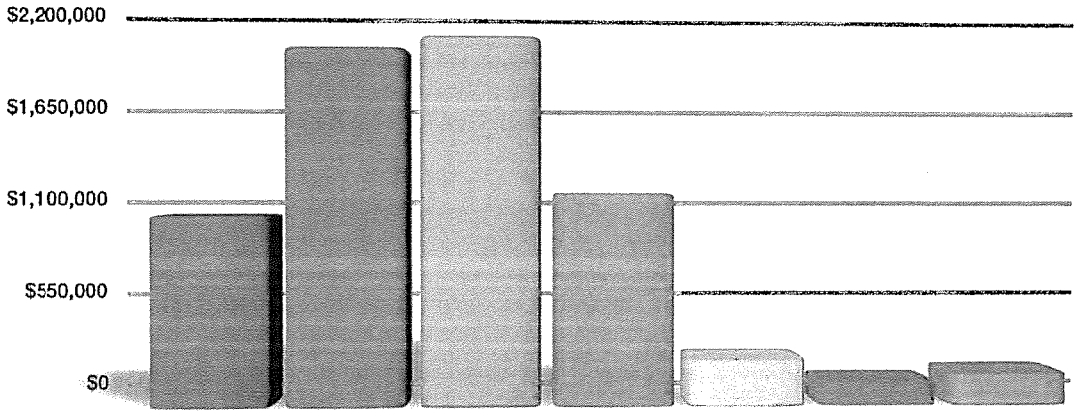
Place of Purchase	% of UNITS	% of DOLLARS	AVERAGE PRICE
Speciality Sports Shop	32.9	40.8	$552.58
Gun Shows	9.8	10.6	$464.21
Sporting Goods Store	19.2	17.5	$386.01
On-line	12.9	10.8	$493.35
Pro Shops	2.0	3.2	*
Discount Stores	17.5	13.2	$411.49
Department Stores	0.6	0.2	*
Mail Order	0.0	*	*
Warehouse Clubs	0.0	*	*
Brand/Manufacturer	1.3	0.3	*
Other Outlets	3.8	3.4	*
	100.0	100.0	$461.53



YEAR	UNITS (in millions)	Dollars (in millions)
2005	1.9	$849.20
2006	1.8	$802.50
2007	2.0	$879.80
2008	2.3	$1,022.60
2009	2.6	$1,224.30
2010	2.9	$1,448.60
2011	3.0	$1,498.60
2012	4.2	$2,061.50
2013	3.7	$1,835.90
2014	4.0	$1,967.00



2014 Consumer Purchases



Product Segment	Ammunition	Rifles	Handguns	Shotguns	Airguns Air/ CO_2, pistols/ rifles -	Paintball Guns / Packages	Reloading Equipment	TOTAL
Units (000)	N/A	4,007	4,194	2,513	3,377	909	N/A	N/A
Average Price	N/A	$490.90	$484.43	$463.84	$73.85	$135.73	N/A	N/A
Dollars ($000)	$1,041,469	$1,967,026	$2,031,687	$1,165,626	$249,375	$123,377	$167,680	$6,746,240

* Sample Size too small to report.

Source: NSGA, The Sporting Goods Market 2015 Edition

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DEMOGRAPHIC DISTRIBUTIONS OF 2014 CONSUMERS

Age of User	Handguns	Rifles	Shotguns
24 and Under	5.1%	8.8%	8.6%
25 to 34	21.3%	30.8%	25.5%
35 to 44	18.7%	11.6%	13.0%
45 to 64	43.7%	39.3%	44.6%
65 & Older	11.2%	9.5%	8.3%

Gender of User	Handguns	Rifles	Shotguns
Male	67.1%	90.2%	86.2%
Female	32.9%	9.8%	13.8%

Annual Household Income	Handguns	Rifles	Shotguns
Under $15,000	4.4%	5.3%	5.5%
$15,000 - $24,999	4.3%	8.2%	4.4%
$25,000 - $34,999	8.4%	8.7%	6.2%
$35,000 - $49,999	7.9%	8.6%	11.2%
$50,000 - $74,999	14.0%	12.7%	14.8%
$75,000 - $99,999	13.7%	22.2%	15.5%
$100,000 - $149,999	30.4%	18.5%	22.8%
$150,000 and Over	16.9%	15.8%	19.6%

Education of Household Head	Handguns	Rifles	Shotguns
Less than High School	3.1%	9.7%	3.8%
High School	14.1%	19.2%	16.7%
Some College	39.2%	30.8%	37.4%
College Graduate	43.6%	40.3%	42.1%

Geographic Region	Handguns	Rifles	Shotguns
New England	4.6%	5.6%	2.5%
Mid-Atlantic	7.0%	11.8%	5.0%
East North-Central	15.7%	9.0%	12.9%
West North-Central	7.5%	7.8%	14.0%
South Atlantic	14.3%	22.3%	17.7%
East South-Central	8.7%	6.2%	11.8%
West South-Central	15.3%	14.7%	22.3%
Mountain	17.5%	14.8%	7.8%
Pacific	9.4%	7.8%	6.0%

Source: NSGA, The Sporting Goods Market 2015 Edition

2013 ANNUAL TOP LINE SUMMARY

SOUTHWICK ASSOCIATES

FISH AND WILDLIFE ECONOMICS AND STATISTICS

Introduction and Background

This report presents top-level results of the monthly **HunterSurvey©** and **ShooterSurvey©** online consumer panel survey, conducted by Southwick Associates. This panel, with over 4,000 hunters and shooters responding monthly, provides companies with in-depth insights into hunters and shooters' activities, purchases, preferred brands and much more. **This report is an exclusive provided to NSSF members only and not meant for public distribution.** A significant amount of additional details are available from Southwick Associates.

The full 240-page 2013 year-end market report is available for $2,000 minus a 15% discount for NSSF members. A subscription to receive timely bi-monthly reports is available for $4,000, less the 15% NSSF member discount. Other reports are available, too. Please contact John DePalma at jdepalma@brandintelligent.com or 303-552-8454 for more information or to order a report.

The results reflect the general hunting and shooting population as accurately as possible. All surveys have some level of bias. To overcome biases common to surveys, this survey is weighted to reflect the true population of U.S. hunters and shooters. The weighting process is based on proprietary random-household surveys conducted by Southwick Associates along with other data sources. Southwick Associates, Inc. expects that a portion of the handgun market is not included in these results. Specifically, people who buy handguns primarily for personal protection and not for recreational purposes are less represented in the survey compared to recreational target shooters.

The surveys are conducted monthly to reduce "recall error". Recall error is when respondents have a difficult time remembering frequent purchases of low-cost items such as ammunition. A subscription service is provided to companies wanting the latest results delivered automatically every month. Contact Southwick Associates for more information. In 2013, the HunterSurvey and Shooter Survey received 36,680 complete survey responses.

The following tables are summaries of the responses to key questions throughout the year. Please note that, unless otherwise specified, all percentages reported for 'market share by brand' and 'sales by type of retail outlet' are based on the number of reported retail transactions, not the dollar value of these transactions.

2013 - PARTICIPATION BY MONTH

Of those respondents who hunted in a given month, the percent that pursued each quarry by bi-monthly period

	Report Period					
	Jan - Feb	Mar - Apr	May - Jun	Jul - Aug	Sep - Oct	Nov - Dec
Whitetail deer	49.9%	3.8%	1.7%	10.0%	66.9%	85.7%
Mule deer, Blacktail, Sitka	0.5%	0.1%	1.0%	4.9%	9.4%	4.5%
Axis deer	1.1%	0.2%	0.8%	0.6%	0.5%	0.6%
Antelope	0.2%	0.0%	0.5%	1.6%	2.9%	0.7%
Bison/Buffalo	0.1%	0.1%	0.0%	0.0%	0.2%	0.0%
Elk	1.6%	0.1%	0.2%	5.1%	9.4%	4.4%
Turkey	5.0%	73.1%	48.2%	4.2%	12.1%	9.6%
Waterfowl (ducks, geese)	20.3%	2.8%	1.6%	8.5%	12.9%	15.3%
Small Game (rabbit, squirrel)	35.5%	8.7%	11.3%	22.0%	17.1%	21.1%
Dove	2.7%	1.1%	1.6%	36.6%	16.0%	5.1%
Upland Game Birds (quail, pheasant, grouse,chukar, woodcock)	12.4%	3.8%	3.1%	4.5%	17.3%	14.0%
Predator/Predator Calling	26.2%	19.6%	24.5%	17.9%	9.4%	13.3%
Varmint/Furbearers (badger, beaver, muskrat, otter, raccoon, ringtail, weasel, nutria, skunk)	7.1%	10.0%	26.6%	20.1%	4.7%	5.4%
Coyote	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hog (including javelina)	16.6%	13.0%	16.8%	19.1%	8.8%	10.9%
Bear	0.6%	0.8%	2.7%	4.6%	5.6%	4.5%
Moose	0.0%	0.0%	0.1%	0.6%	0.8%	0.1%
Prairie Dog	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
African game	0.0%	0.3%	1.9%	0.8%	0.2%	0.1%
Sheep, goat	0.3%	0.2%	0.1%	0.1%	0.2%	0.2%
Alligator	0.0%	0.5%	0.3%	1.8%	0.2%	0.0%
Caribou	0.2%	0.1%	0.0%	0.2%	0.2%	0.0%
Crow	0.0%	3.1%	3.4%	5.7%	1.6%	1.9%
Groundhog	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other	2.7%	2.2%	5.3%	2.4%	0.9%	1.0%
I did not hunt	0.4%	0.2%	0.1%	0.3%	0.0%	0.1%
Total	N=1,583	N=1,177	N=788	N=1,108	N=2,237	N=2,517

Of those respondents who target shot in a given month, the percentage of each shooting type by month:

	Report Period					
	Jan - Feb	Mar - Apr	May - Jun	Jul - Aug	Sep - Oct	Nov - Dec
Rifle shooting *	63.5%	66.9%	62.5%	68.6%	70.6%	69.2%
Handgun shooting *	64.3%	68.7%	63.7%	69.1%	47.2%	51.5%
Bow/Archery	17.8%	13.8%	23.5%	25.3%	30.4%	20.6%
Air rifle	9.8%	18.2%	14.5%	12.1%	6.2%	9.1%
Shotgun	32.3%	33.9%	33.4%	39.7%	32.0%	31.3%
Muzzleloader	7.0%	4.7%	5.5%	7.0%	14.8%	13.1%
Crossbow	2.3%	2.7%	3.7%	5.8%	8.0%	5.0%
Other	1.4%	1.3%	1.0%	0.8%	1.6%	1.0%
Total	N=2,265	N=2,177	N=2,080	N=4,293	N=2,146	N=1,577

*Rifle shooting and handgun shooting both include plinking, benchrest, tactical, cowboy, etc.

SHOOTING ACTIVITIES

Types of shooting activities in 2013:

	Annual 2013
Rifle (plinking, benchrest, tactical, cowboy, etc)	67.0%
Handgun (plinking, benchrest, silhouette, tactical, cowboy, etc)	62.4%
Bow/Archery	22.3%
Air rifle	11.8%
Shotgun	34.7%
Muzzleloader	8.2%
Crossbow	4.7%
Other	1.2%
Total	N=14,538

Of those who went shooting, was any shooting competitively?

	Annual 2013
No	87.5%
Yes	12.5%
	100.0%
Total	N=14,493

PURCHASES OF HUNTING OR SHOOTING ITEMS

What survey respondents reported buying:

	Annual 2013
Firearms	27.7%
Ammunition	63.9%
Blackpowder	5.7%
Bowhunting	13.2%
Game calls	9.2%
Hand loading	18.9%
Optics	16.3%
Hunting apparel	20.2%
Hunting accessories	22.2%
Shooting accessories	30.7%
Other	3.4%
Total	N=14,984

Responses are multiple-selection and can total more than 100 percent.

The primary purpose of the purchase was:

	Annual 2013
Hunting	36.5%
Shooting	38.9%
Self defense	14.9%
Gift	2.6%
Survival or camping	5.3%
Other	1.8%
Total	N=14,990

FIREARMS

Of people who reported buying a FIREARM in 2013, they purchased:

	Annual 2013
Rifles	48.4%
Shotguns	19.7%
Muzzleloaders	3.6%
Handguns	48.0%
Interchangeable Guns (Rifle/Shotgun/Muzzleloader)	0.7%
Crossbows	3.3%
Air Rifles	2.6%
Other firearms	1.3%
Total	N=4,337

Responses are multiple-selection and can total more than 100 percent.

Average spent on RIFLES:

	Annual 2013
Avg. Amount Spent	$781.08
Total	N=2,101

Gauge of SHOTGUN purchased:

	Annual 2013
12 gauge	70.5%
16 gauge	2.9%
20 gauge	19.6%
28 gauge	1.8%
.410 gauge	4.6%
Other	0.5%
Not sure	0.1%
Total	N=834

Average spent on SHOTGUNS:

	Annual 2013
Avg. Amount Spent	$709.38
Total	N=833

Type of MUZZLELOADER purchased:

	Annual 2013
Inline	59.7%
Standard	24.1%
Flint lock	8.3%
Other	7.9%
Total	N=182

Average spent on MUZZLELOADERS:

	Annual 2013
Avg. Amount Spent	$379.03
Total	N=182

Type of HANDGUN purchased:

	Annual 2013
Semi-automatic	76.4%
Revolver	21.8%
Break action	1.4%
Other	0.4%
Total	N=2,133

Average spent on HANDGUN:

	Annual 2013
Avg. Amount Spent	$480.47
Total	N=2,128

AMMUNITION

Of people who reported buying AMMUNITION, they purchased:

	Annual 2013
Rifle ammunition	60.6%
Shotgun ammunition	41.4%
Handgun ammunition	52.1%
Air rifle pellets	4.6%
Other ammunition	1.8%
Total	N=9,402

Responses are multiple-selection and can total more than 100 percent.

Type of RIFLE AMMUNITION purchased:

	Annual 2013
Centerfire	73.0%
Rimfire	26.5%
Other	0.5%
Total	N=5,655

Average spent on RIFLE AMMUNITION:

	Annual 2013
Avg. Amount Spent	$19.17
Total	N=5,643

Type of SHOTGUN AMMUNITION purchased:

	Annual 2013
Lead shot	73.1%
Non-lead shot	24.4%
Other	2.5%
Total	N=3,653

Average spent on SHOTGUN AMMUNITION:

	Annual 2013
Avg. Amount Spent	$11.24
Total	N=3,653

Type of HANDGUN AMMUNITION purchased:

	Annual 2013
Rimfire	12.6%
Centerfire	86.8%
Other	0.6%
Total	N=4,975

Average spent on HANDGUN:

	Annual 2013
Avg. Amount Spent	$17.41
Total	N=4,724

HANDLOADING EQUIPMENT

Of people who reported buying HANDLOADING EQUIPMENT, they purchased:

	Annual 2013
Presses	7.8%
Dies	28.0%
Reloading tools	27.5%
Reloading components (brass shell cases, bullets, powder, shotshell hulls or wads,shot)	84.3%
Bullet mold	5.8%
Other hand loading tools	5.1%
Total	N=3,494

Responses are multiple-selection and can total more than 100 percent.

Average spent on PRESSES:

	Annual 2013
Avg. Amount Spent	$225.30
Total	N=250

Average spent on DIES:

	Annual 2013
Avg. Amount Spent	$50.22
Total	N=944

Average spent on RELOADING TOOLS and ACCESSORIES:

	Annual 2013
Avg. Amount Spent	$30.20
Total	N=913

RELOADING COMPONENTS

Of people who reported buying RELOADING COMPONENTS, they purchased:

	Annual 2013
Brass shell cases	30.3%
Bullets	70.2%
Primers	56.3%
Powder	58.3%
Shotshell hulls	2.2%
Shotshell wads	9.2%
Shot	8.5%
Other	0.8%
Total	N=2,960

Responses are multiple-selection and can total more than 100 percent.

Average spent on RELOADING BRASS SHELL CASES:

	Annual 2013
Avg. Amount Spent	$35.01
Total	N=926

Average spent on RELOADING BULLETS:

	Annual 2013
Avg. Amount Spent	$33.74
Total	N=2,057

BLACKPOWDER AND SUPPLIES

Of people who reported buying BLACKPOWDER and SUPPLIES in 2013, they purchased:

	Annual 2013
Propellant or powder	60.6%
Bullets, balls, shot	61.5%
Patches	19.4%
Cleaning supplies	30.9%
Solvent	13.3%
Powder measure	7.2%
Breech plug wrench	1.6%
Primers	36.0%
Flints	4.1%
Ball puller	2.0%
Speed loader	7.5%
Breech plug or nipple	4.9%
Other black powder supplies	5.2%
Total	N=905

Responses are multiple-selection and can total more than 100 percent.

Average spent on PROPELLANTS or POWDER:

	Annual 2013
Avg. Amount Spent	$23.66
Total	N=540

Average spent on BALLS, BULLETS, or SHOT:

	Annual 2013
Avg. Amount Spent	$18.45
Total	N=544

BOWHUNTING OR ARCHERY EQUIPMENT

Of people who reported buying BOWHUNTING or ARCHERY EQUIPMENT in 2013, they purchased:

	Annual 2013
Bows	16.0%
Arrows	50.4%
Crossbows	6.0%
Fletching & other arrow components	22.2%
Broadheads	44.5%
Releases	13.4%
Peepsites	9.6%
Silencers	7.0%
Stabilizers	8.1%
Arm guards	3.2%
Quivers	8.1%
Rests	9.7%
Targets	19.4%
Strings	13.4%
Bow cases	8.5%
Sights	12.2%
Bow Stand	1.5%
Other archery equipment	5.2%
Total	1,564

Responses are multiple-selection and can total more than 100 percent.

Average spent on BOWS:

	Annual 2013
Avg. Amount Spent	$344.34
Total	N=207

Average spent on ARROW:

	Annual 2013
Avg. Amount Spent	$52.42
Total	N=764

Average spent on FLETCHING:

	Annual 2013
Avg. Amount Spent	$15.08
Total	N=326

Average spent on BROADHEADS:

	Annual 2013
Avg. Amount Spent	$30.69
Total	N=629

SHOOTING ACCESSORIES

Of people who reported buying SHOOTING ACCESSORIES, they purchased:

	Annual 2013
Benches and rests	5.1%
Targets	30.1%
Safety equipment	16.1%
Clay pigeons	10.2%
Traps and target throwing devices	2.2%
Rifle slings	14.6%
Holster, ammo belts	23.7%
Gun cases or sleeves	15.4%
Gun cleaning supplies	38.3%
Lens cleaning kits	1.3%
Recoil pads	4.1%
Gun safes	5.1%
Choke tubes	6.7%
Magazines	29.1%
Other	5.5%
Total	N=4,243

Responses are multiple-selection and can total more than 100 percent.

DECOYS AND GAME CALLS

Of people who reported buying DECOYS or GAME CALLS in 2013, they purchased:

	Annual 2013
Game calls	81.9%
Decoy	34.9%
Total	N=990

Responses are multiple-selection and can total more than 100 percent.

Type of DECOYS purchased

	Annual 2013
Waterfowl	45.4%
Turkey	31.1%
Big game	3.7%
Other	0.5%
Small game	0.8%
Predator	13.2%
Upland game	5.4%
Accessories	0.0%
Total	N=312

Average spent on DECOYS:

	Annual 2013
Avg. Amount Spent	$35.83
Total	N=312

Type of GAME CALLS purchased

	Annual 2013
Waterfowl	22.6%
Turkey	33.5%
Big game	22.0%
Other	0.4%
Predator	16.5%
Upland game (including crow)	1.6%
Small game	2.1%
Accessories (lanyard, reeds, replacement parts)	1.2%
Total	N=803

Average spent on GAME CALLS:

	Annual 2013
Avg. Amount Spent	$33.71
Total	N=792

OPTICS

Of people who reported buying OPTICS, they purchased:

	Annual 2013
Scopes	57.6%
Scope accessories	27.4%
Binoculars	10.9%
Spotting scopes	5.0%
Range finders	7.8%
Sighting-in devices	6.0%
Optics accessories (except gun scopes)	4.7%
Sights (laser, dot, etc)	19.3%
Other	2.1%
Total	N=2,534

Responses are multiple-selection and can total more than 100 percent.

Percent of SCOPES that were purchased along with other firearms:

	Annual 2013
Scope w/ rifle	64.6%
Scope w/ shotgun	3.2%
Scope w/ muzzleloader	4.4%
Scope w/ handgun	3.4%
Scope w/ combination gun	0.5%
Scope w/ air rifle	9.4%
Scope w/ compound bow	0.0%
Scope w/ crossbow	14.5%
Total	N=596

Of people who reported buying SCOPE ACCESSORIES, they purchased:

	Annual 2013
Rifle scope accessories	91.0%
Shotgun scope accessories	4.1%
Handgun scope accessories	2.9%
Other scope accessories	1.9%
Crossbow scope accessory	0.6%
Total	N=663

Of people who reported buying SCOPES, they purchased:

	Annual 2013
Rifle scope	84.3%
Handgun scope	2.7%
Shotgun scope	3.7%
Other scope	2.1%
Crossbow scope	2.5%
Air Rifle scope	4.6%
Total	N=1,811

Average spent on SCOPES:

	Annual 2013
Avg. Amount Spent	$274.14
Total	N=1,810

Average spent on SCOPE ACCESSORIES:

	Annual 2013
Avg. Amount Spent	$58.81
Total	N=663

Average spent on BINOCULARS:

	Annual 2013
Avg. Amount Spent	$303.48
Total	N=263

Average spent on SPOTTING SCOPES:

	Annual 2013
Avg. Amount Spent	$224.47
Total	N=141

HUNTING APPAREL

Of people who reported buying HUNTING APPAREL, they purchased:

	Annual 2013
Blaze orange clothing	13.5%
Camouflage clothing	66.3%
Shooting vest or game vest (not blaze orange)	6.4%
Boots	21.5%
Head gear	21.7%
Undergarments or thermal underwear	13.8%
Gloves	23.6%
Coveralls	2.7%
Hunting socks	11.4%
Chest waders	3.3%
Hunting backpack, waist pack, duffle	9.0%
Chaps	0.6%
Other	3.1%
Total	N=2,573

Responses are multiple-selection and can total more than 100 percent.

Average spent on BLAZE ORANGE APPAREL:

	Annual 2013
Avg. Amount Spent	$28.97
Total	N=343

Type of CAMOUFLAGE CLOTHING purchased:

	Annual 2013
Raingear	8.0%
Pants	28.4%
Shirts	29.2%
Jackets	24.0%
Vests	3.2%
Headgear	7.2%
Total	N=1,610

HUNTING ACCESSORIES

Of people who reported buying HUNTING ACCESSORIES, they purchased:

	Annual 2013
Bipods and shooting sticks	13.6%
Electronic Devices (GPS, weather, compass)	3.2%
2-way radios	3.6%
Flashlights, lanterns, lighting devices	18.2%
Game-cleaning supplies	4.4%
Game feeder	3.6%
Game feed	14.8%
Food plot seed	9.4%
Knives	21.7%
Scents, scent coverings or eliminators	29.9%
Tree stands, ladders, towers, tripods	9.8%
Trail camera, game camera	14.2%
Blinds	8.4%
Miscellaneous (insect repellant, hand warmers, etc.)	16.4%
Other	2.1%
Total	N=2,597

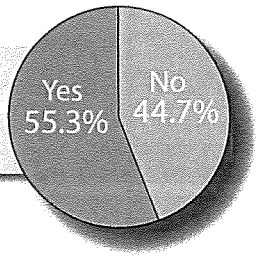
Responses are multiple-selection and can total more than 100 percent.

HUNTER SURVEY

HunterSurvey is an industry monitoring service using an online panel of active hunters and target shooters. The information is provided by Southwick Associates, Inc. Note: The information contained in this report does not represent total industry performance. Results are based on what is captured via HunterSurvey.com and ShooterSurvey.com.

Below is a summary of 2014 year-end data:

Q: Did you purchase any hunting/shooting items in the past year?
(2014/n=23,615)



In the past year, survey respondents reported purchasing:
(2014/n=13,560)

Ammunition	62.5%
Shooting accessories	33.5%
Firearms	28.7%
Hunting accessories	23.2%
Hunting apparel	22.8%
Handloading equipment	19.0%
Optics	18.7%
Bowhunting equipment	12.5%
Game calls	9.9%
Blackpowder	5.8%

Responses are multiple selection and can total more than 100 percent.

Hunting apparel purchases in 2014:
(2014/n=2,490)

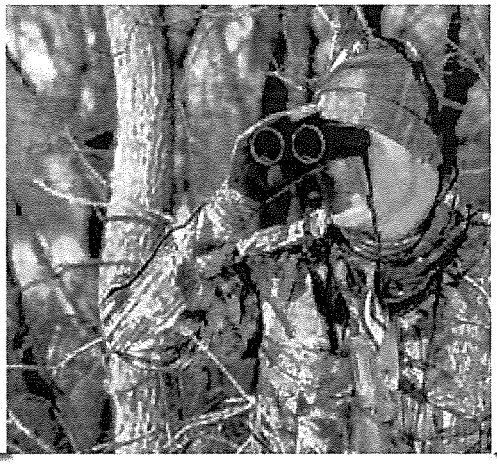
Camouflage clothing	66.4%
Gloves	24.9%
Boots	22.3%
Head gear	20.3%
Undergarments or thermal underwear	15.5%
Blaze orange clothing	13.7%
Hunting Socks	12.2%

Responses are multiple selection and can total more than 100 percent.

These were reported as the top seven species hunted in 2014 by survey respondents:
(2014/n=8,611)

Deer	52.3%
Small Game	23.9%
Turkey	19.7%
Predator	18.1%
Waterfowl	14.2%
Upland Game Birds	14.0%
Hog	13.1%

Responses are multiple selection and can total more than 100 percent.



Of people who reported buying hunting accessories in 2014, they purchased:
(2014/n=2,591)

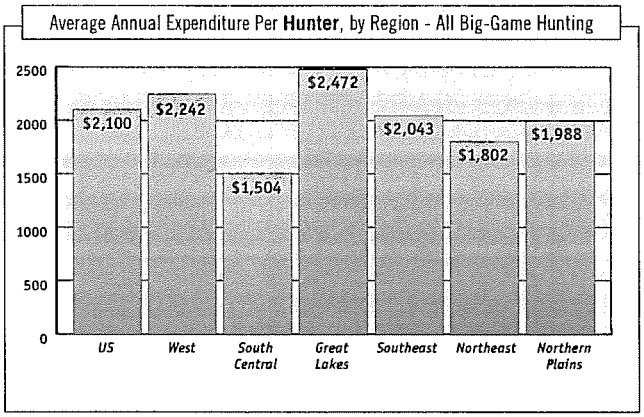
Scents, scent coverings, or eliminators	30.1%
Knives	23.1%
Flashlights, lanterns, lighting devices	20.1%
Trail camera, game camera	14.7%
Bipod and shooting sticks	12.7%
Tree stands, ladders, towers, tripods	8.6%
Blinds	8.6%

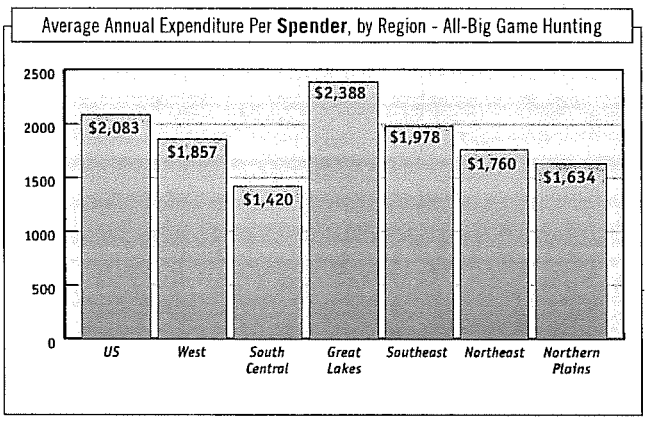
Source: ShooterSurvey.com and HunterSurvey.com.

2512

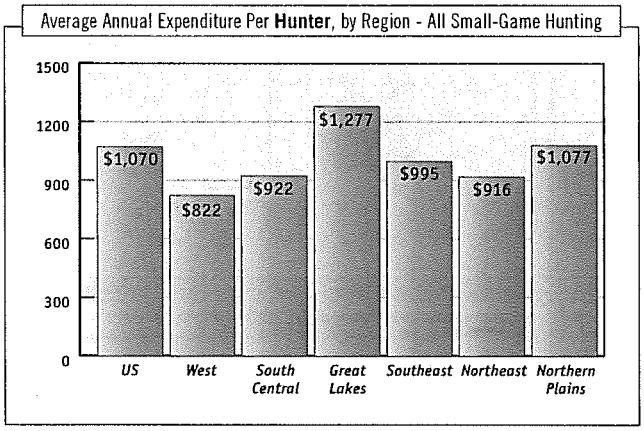
AVERAGE ANNUAL EXPENDITURES PER HUNTER
(BY GAME/REGION)

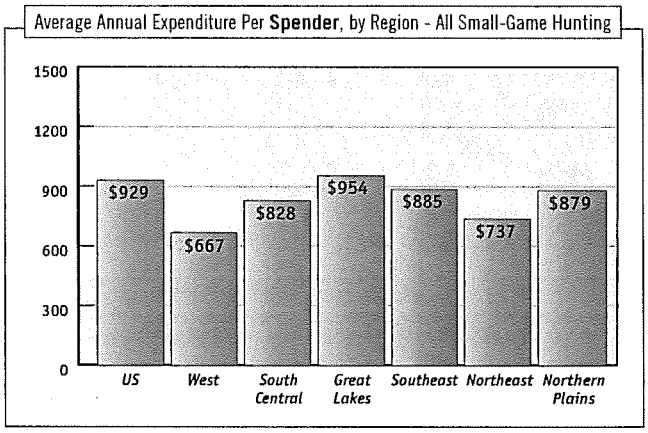
BIG-GAME HUNTING



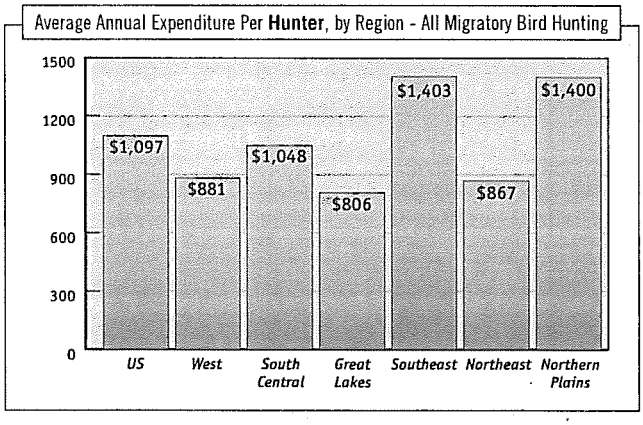


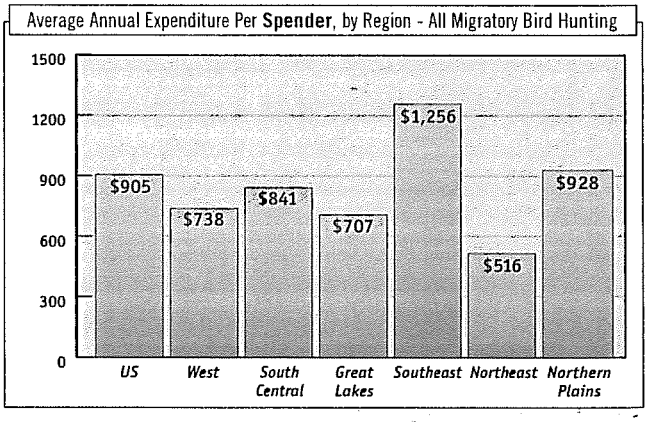
SMALL-GAME HUNTING





MIGRATORY BIRD HUNTING





Source:: NSSF Report, America's Hunters - A detailed look at demographics and expenditures 2013 Edition
* Sample size too small for reliable results.

2513

ITEMIZED EXPENDITURES: HUNTERS VS. AVID HUNTERS

(Avid hunters are defined as the most active hunters in terms of days hunted annually, the top 10 percent of participants in terms of days hunted per year.)

	All Hunters	All Avid Hunters
Total Hunters	13,674,385	1,431,561
Total Days Hunted	283,391,521	112,083,414
Avg. # Days Hunted	20.7	78.3
# Observations	2,691	269

SPENDING	Total Spending	All Hunters Average	Total Spending	All Avid Hunters Average
Food	$3,217,859,258	$235	$662,386,029	$463
Lodging	$663,444,365	$49	$143,251,071	$100
Ammo	$218,137,147	$16	$85,371,663	$60
Public Transportation	$86,067,317	$6	$10,434,929	$7
Private Transportation	$4,463,710,581	$326	$1,102,676,540	$770
Guide Fees	$493,913,274	$36	$140,960,899	$98
Public Land Use	$40,446,957	$3	$8,447,845	$6
Private Land Use	$755,087,337	$55	$210,135,935	$147
Heating & Cooking Fuel	$205,959,227	$15	$42,590,715	$30
Equipment Rental	$62,746,502	$5	$17,105,517	$12
Boat Fuel	$170,950,162	$13	$116,818,702	$82
Boat Launching	$7,818,245	$1	$3,929,028	$3
Boat Mooring	$35,048,358	$3	$7,634,834	$5
Rifles	$1,429,096,923	$105	$316,725,146	$221
Shotguns	$914,619,338	$67	$279,274,884	$195
Muzzleloader	$122,035,039	$9	$44,537,163	$31
Pistols	$584,570,206	$43	$79,679,255	$56
Bows	$934,847,001	$68	$177,045,295	$124
Telescopic Sights	$530,655,355	$39	$90,150,218	$63
Optics & Sight Pads	$301,994,782	$22	$118,920,873	$83
Ammunition	$1,298,455,782	$95	$292,048,836	$204
Handloading Supplies	$199,019,356	$15	$42,908,430	$30
Hunting Dogs	$951,109,925	$70	$383,899,608	$268
Other Equipment	$471,919,976	$35	$62,433,247	$44
Camping Equipment	$159,853,173	$12	$16,525,582	$12
Binoculars	$287,186,282	$21	$68,813,622	$48
Hunting Clothes	$570,307,929	$42	$117,974,680	$82
Processing & Taxidermy	$672,758,995	$49	$103,668,484	$72
Hunting Books/Magazines	$107,271,644	$8	$20,872,346	$15
Dues & Contributions	$382,816,789	$28	$99,627,212	$70
Equipment Repair	$154,774,016	$11	$60,122,495	$42
Days Rafts	$0	$0	$0	$0
Other Motorboats	$422,243	$0	$88,804	$0
Canoes	$0	$0	$0	$0
Boat Accessories	$20,526,965	$2	$7,112,042	$5
Trucks, Vans, RV's, Etc.	$2,356,584,918	$172	$140,382,395	$98
Trailers	$75,388,494	$6	$0	$0
Off Road Vehicles	$1,832,728,870	$134	$74,878,147	$52
Other Special Equipment	$103,634,188	$8	$2,972,531	$2
Licenses, Fees, Permits	$807,495,880	$59	$136,055,954	$95
Land Purchases	$6,011,621,849	$440	$749,415,179	$523
Land Leases	$1,117,643,179	$82	$245,525,614	$172
Plantings	$702,600,625	$51	$270,542,513	$189
Total	$33,523,128,454	$2,452	$6,553,944,257	$4,578

SPENDERS	Number of Spenders	Spender Average	Number of Spenders	Spender Average
Food	10,253,229	$314	1,227,774	$540
Lodging	1,881,161	$353	252,283	$568
Ammo	542,535	$402	74,931	$1,139
Public Transportation	457,770	$188	57,715	$181
Private Transportation	10,885,386	$410	1,295,580	$851
Guide Fees	1,024,359	$482	262,926	$536
Public Land Use	709,319	$57	130,121	$65
Private Land Use	1,193,238	$633	214,997	$977
Heating & Cooking Fuel	2,817,352	$73	271,294	$157
Equipment Rental	490,045	$128	65,254	$262
Boat Fuel	503,818	$339	82,366	$1,418
Boat Launching	145,574	$54	31,372	$125
Boat Mooring	112,361	$312	21,335	$358
Rifles	1,618,226	$883	256,919	$1,233
Shotguns	1,199,731	$762	229,367	$1,218
Muzzleloader	360,807	$338	143,676	$310
Pistols	896,263	$652	87,491	$911
Bows	2,827,472	$331	669,010	$265
Telescopic Sights	1,723,185	$308	281,830	$320
Optics & Sight Pads	2,657,872	$114	515,551	$231
Ammunition	8,799,341	$148	1,087,357	$269
Handloading Supplies	1,181,468	$168	284,953	$151
Hunting Dogs	970,979	$980	254,604	$1,508
Other Equipment	3,122,810	$151	386,933	$161
Camping Equipment	570,442	$280	38,604	$428
Binoculars	1,209,291	$237	177,686	$387
Hunting Clothes	3,079,235	$185	461,496	$256
Processing & Taxidermy	2,053,532	$328	306,688	$338
Hunting Books/Magazines	1,915,570	$56	293,454	$71
Dues & Contributions	1,864,512	$205	245,814	$405
Equipment Repair	618,531	$250	78,940	$762
Days Rafts	0	$0	0	$0
Other Motorboats	2,849	$148	592	$150
Canoes	0	$0	0	$0
Boat Accessories	33,522	$612	20,308	$350
Trucks, Vans, RV's, Etc.	208,981	$11,277	25,453	$5,515
Trailers	5,682	$13,267	0	$0
Off Road Vehicles	242,029	$7,572	10,988	$6,815
Other Special Equipment	147,068	$705	6,672	$446
Licenses, Fees, Permits	9,981,458	$81	1,213,771	$112
Land Purchases	1,055,264	$5,697	157,034	$4,772
Land Leases	1,136,064	$984	266,444	$921
Plantings	1,160,981	$605	306,065	$884
Total	13,349,280	$2,511	1,420,231	$4,615

Source: NSSF Report, America's Hunters - A detailed look at demographics and expenditures 2013 Edition and USFWS 2011 National Survey.

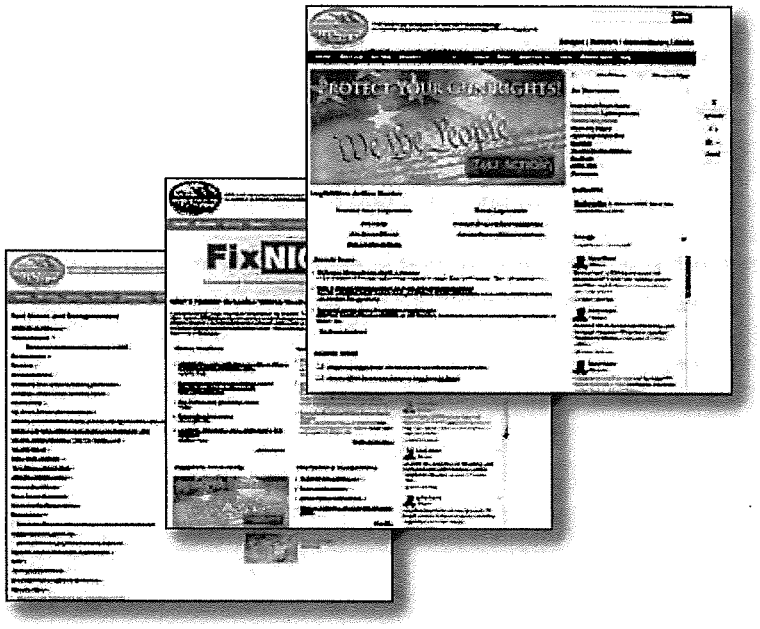
2514

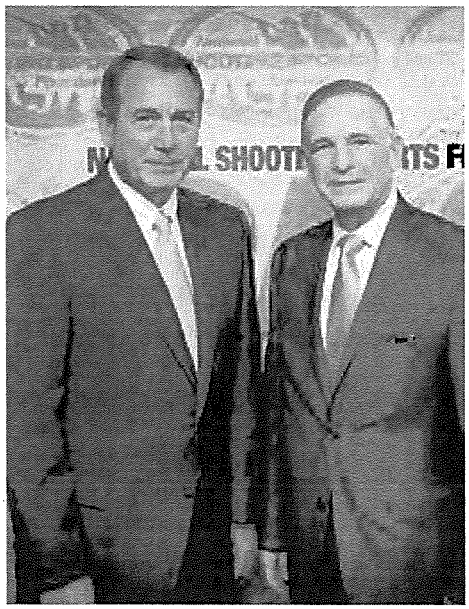
Section E:
Government Relations

GOVERNMENT RELATIONS
ONLINE RESOURCES

Website Resources

The Government Relations section of nssf.org/GovRel/ provides resources and actionable information members can use to follow and respond to government actions that affect their businesses. A news feed and tweets provide real-time access to the latest news and background papers summarize the industry's position on a host of issues. NSSF's Legislative Action Center is the industry's one-stop hub for finding contact information for federal and state legislators, learning about newly introduced firearms legislation and taking action–sending a letter or making a phone call to lawmakers. Visitors can use both the Research State and Federal Legislation and Industry-Relevant Federal Legislation tools for tracking alarming efforts to restrict ownership and use of semiautomatic rifles and ammunition among other issues NSSF tracks.





Congressional Fly-In

In April, executives from NSSF member companies travelled to Washington, D.C. to meet with senators, congressmen and staff for the 2015 NSSF Congressional Fly-In. We were also fortunate to hear directly from House Natural Resources Committee Chairman, Rob Bishop (R-UT) on his committee's priorities, which included passing the Bipartisan Sportsmen's Act. During the meetings, congressmen and senators learned about an onerous regulatory proposal at the ATF regarding tracking firearms while in transit, Export Control Reform (ECR), Operation Choke Point and the importance of protecting traditional ammunition by supporting the Bipartisan Sportsmen's Act.

The Fly-In was extremely effective as we were able to get more resources to the Commerce Department's Bureau of Industry and Security in the Commerce, Justice and Science Appropriations bill - a requirement for progress on ECR. The 2015 Fly-In was the largest and most productive we've had as we had a record number of attendees, a record number of teams and a record number of hill meetings. NSSF looks forward to building on its momentum in 2016.

FixNICS® Campaign

In 2013, NSSF launched a campaign called FixNICS to encourage states to report to NICS all records that establish someone is prohibited from owning a firearm under current law. FBI NICS databases are incomplete because many states have not provided all such records, especially including mental health adjudications and involuntary commitment orders. As a result of NSSF working with legislators, law enforcement officials, and other stakeholders in state capitals across the country, the FixNICS campaign has won victories in 16 states since 2013. The latest victory was seen in Vermont, where Gov. Shumlin signed a bill that incorporates NSSF's FixNICS language.

Since FixNICS was launched, the number of disqualifying mental health records submitted to NICS has increased by 60 percent to nearly 3.7 million, from about 2 million in March 2013. This significant increase is driven by states like New Jersey, which now has 434,469 records, compared to 17 in 2013. Nebraska, another FixNICS success story, has now submitted 26,955 records, ranking as the 9th best state on a per capita basis.

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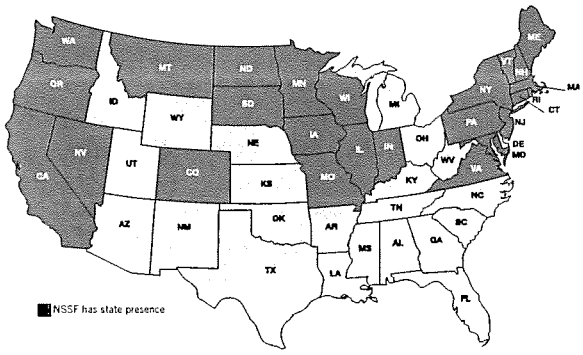
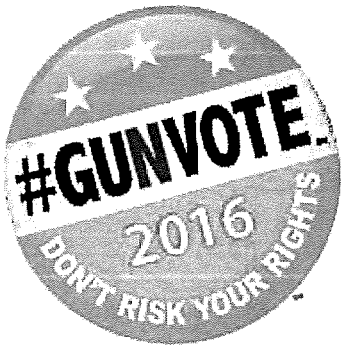
GOVERNMENT RELATIONS

Protecting the Industry at the State Level



Each year our industry remains under attack by very well-funded anti-gun groups across the country. Much of the efforts have shifted to the state-level where they feel they have better opportunities to take away our rights. In response, NSSF further expanded its presence in the states to ensure our members' interests were represented at legislative hearings and in the meetings where decisions were being made that affect our industry. Never before has NSSF had such an influence in so many state capitols around the country. NSSF's efforts led to the defeat of ill-conceived gun-control proposals in many states, including in New York where legislators continue to introduce anti-gun legislation even after the numerous demonstrated failings of the 2013 SAFE Act that put into place stringent restrictions.

NSSF did secure a major victory in Maryland where the ill-conceived ballistics imaging program was finally repealed. Thanks to years of our hard work, the legislature acted in near unanimity to end that state's decade-long dysfunctional experience with what was once billed as a crime scene investigative tool, but that was never used to solve a single crime.



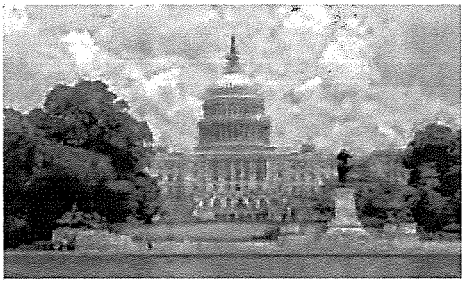
#GUNVOTE Gears Up for 2016 Election

The National Shooting Sports Foundation's #GUNVOTE initiative is the most comprehensive voter information and education initiative the firearms industry has ever undertaken. Building off the success in key races for the U.S. Senate, including those in Colorado, Kentucky, Iowa, and Georgia, #GUNVOTE has already produced videos featuring candidates in their own words during interviews and in debates, in addition to aggregating news stories on candidates for president, the U.S. Senate, U.S. House, governors' seats and state legislatures. Please stay tuned for more original material including videos, op-eds, important information on how to register to vote, links to voter resources and information on where the candidates stand on the issues that matter for your business.

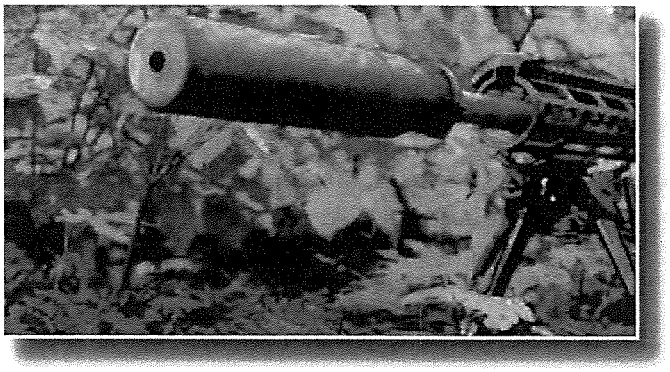
NSSF PAC on Track for 2016 Election

The NSSF's Political Action Committee - NSSF PAC - saw 2015 as an opportunity to expand its membership, participation, and educate its members about the challenges our industry will face during the 2016 election. As our industry's voice in Washington, NSSF PAC will continue to support our allies in the U.S. Senate and House of Representatives who stand with us and defend our firearms freedoms. The NSSF PAC is a non-partisan, multi-candidate Federal Election Commission-registered political action committee that supports pro-industry, pro-Second Amendment and pro-sportsmen candidates for Congress.

NATIONAL SHOOTING SPORTS FOUNDATION
PAC
POLITICAL ACTION COMMITTEE
www.nssfpac.org



Suppressor Reform Legislation Enacted



As suppressors continue to gain popularity throughout the country, states continue to repeal bans on ownership, possession and use for hunting. During 2015, NSSF supported legislation in a number of states to legalize suppressors. Several states this year enacted legislation to allow suppressors to be owned and possessed - Minnesota and Vermont - bringing the total number of states to allow law-abiding citizens to legally purchase and possess firearm suppressors to 41. Additionally, three states legalized the use of suppressors for all hunting: Montana, Minnesota and Maine.

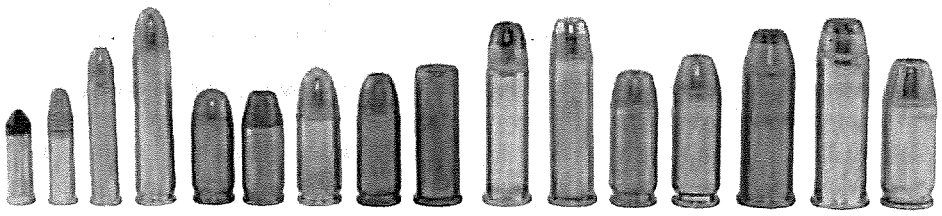
In addition to supporting state legislation to reform suppressor law, NSSF was instrumental in overturning UPS's ban on the shipment of suppressors. After much correspondence and educating UPS executive staff the benefits of suppressors and state and federal laws, UPS in turn revised their shipping policies allowing for manufacturers, distributors, and dealers to ship suppressors in accordance with state and federal law.

Targeting Operation Choke Point

NSSF's Government Relations team played a key role in pushing Congress to investigate the Department of Justice's "Operation Choke Point," an initiative that pressured banks to cut ties with certain companies and entire industries without showing that the targeted companies actually violated the law. NSSF staff met with members of the House Financial Services Committee and members of the House Oversight and Government Reform Committee concerning many of the most serious issues that arose from Operation Choke Point. The House Financial Services Subcommittee on Oversight and Investigations, led by Chairman Sean Duffy (R-WI) held a hearing in the spring at which the FDIC Chairman Martin Gruenberg reiterated that mistakes had been made by FDIC and they were working to rectify those problems. Furthermore, Congressman Blaine Luetkemeyer (R-MO), who was recognized as NSSF's 2014 Legislator of the Year at the Congressional Fly-In, made progress on his legislation to protect industry members from being unfairly targeted. The Financial Institution Customer Protection Act of 2015 was marked up and passed out of the House Financial Services Committee in July, and has advanced to the House floor. Additionally, Congressman Luetkemeyer was once again successful in adding an amendment to defund Operation Choke Point to the House Commerce, Justice, and Sciences Appropriations bill.

Protecting Traditional Ammunition

One of NSSF's continued priorities in 2015 was protecting the industry from unjustified attacks on the use of traditional ammunition made with lead components. Since California enacted the first state-wide ban on traditional lead ammunition for hunting in 2013, the state has been ground zero for our efforts to ensure the rights of the industry to manufacture, distribute and sell traditional ammunition to the end users – sportsmen, gun owners, and law enforcement professionals. This year, NSSF helped defeat similar bans in Vermont, Rhode Island and Oregon. Looking ahead, our fight to protect the ability of manufacturers to bring non-lead ammunition to market will continue in states such as Oregon and Minnesota. On the federal level, NSSF continues to put pressure on the Bureau of Alcohol, Tobacco, Firearms and Explosives to grant "sporting purposes" exemptions to the definition of armor-piercing ammunition for alternative rifle hunting rounds.



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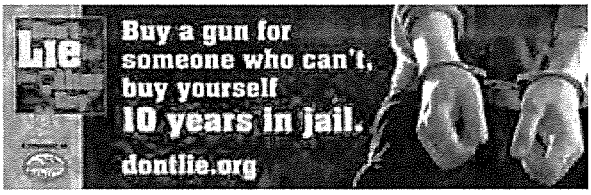
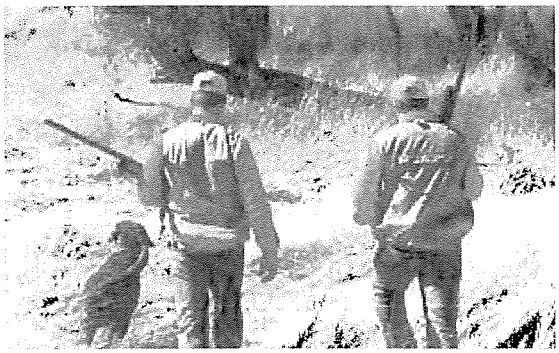
GOVERNMENT RELATIONS

Educating Against Straw Purchases



Don't Lie for the Other Guy™ is NSSF's longstanding cooperative program with ATF to help ATF to educate retailers to be better able to detect and deter straw purchases of firearms and to raise the public's awareness of the strict penalties for buying a firearm for someone who is legally ineligible to do so. Counter cards and posters distributed to retailers by NSSF have helped deliver the message that buying a gun for someone who can't buy one can get you a $250,000 fine and 10 years in jail. In 2015, NSSF ran Don't Lie educational campaigns in Oakland and the East Bay, CA, Newark, NJ, Wilmington, DE, Nashville, TN and Albuquerque, NM with billboards and radio advertising.



Sunday Hunting

Campaigning for the removal of legal restrictions that bar sportsmen in some states from hunting on Sunday, the NSSF-led Sunday Hunting Coalition, an alliance of sportsmen's groups, industry leaders and businesses, helped hunters in North Carolina witness a tremendous victory. The Outdoor Heritage Act (House Bill 640) to allow Sunday hunting on private land, was signed by Gov. Pat McCrory (R). The legislation will give sportsmen in North Carolina the opportunity to hunt with firearms on Sundays on private property. This follows major victories in Virginia and in seven counties in West Virginia in 2014.

Export Control Reform

This year NSSF and the FAIR Trade Group held the 14th Annual Firearms Import/Export Conference with a comprehensive agenda designed to ensure that members of the firearms and ammunition industry stayed informed of and in compliance with the extensive federal laws and regulations governing the import and export of their products. In addition to presentations by key officials at ATF, State Department, Census, and Immigration and Customs Enforcement, the conference featured a keynote speech by Kevin Wolf, Assistant Secretary of Commerce for Export Administration, Dept. of Commerce, Bureau of Industry and Security. In 2015, the conference once again offered round-table sessions that provided an opportunity for attendees to speak with experts and decision-makers in a small group setting. Following this year's record-attendance, NSSF and FAIR continue to plan improvements for 2016.

Defending the Industry in the Courts

NSSF stood vigilant and ready to defend the interests of its members in federal and state courthouses nationwide against unlawful infringements on their right to hunt, target shoot and engage in the lawful commerce of firearms – their business, their livelihood, their passion. Topping NSSF's list of legal challenges remains overturning California's microstamping mandate, which is now poised before a California appellate court for review. NSSF's lawsuits seeking to enjoin enforcement of state and municipal laws, including those banning commonly owned and used modern sporting rifles and standard capacity magazines, as well as imposing further burdensome restrictions on FFLs operating their businesses, wage on with our latest case challenging Seattle's firearms and ammunition tax.

ECONOMIC CONTRIBUTION OF ARMS AND AMMUNITION INDUSTRIES, 2014

STATE BY STATE ECONOMIC IMPACT REPORT

STATE	DIRECT			SUPPLIERS		
	Jobs	Wages	Output	Jobs	Wages	Output
Alabama	1,829	$63,154,200	$129,808,900	619	$37,611,900	$174,540,300
Alaska	334	$11,131,300	$12,692,400	58	$5,227,200	$20,689,000
Arizona	3,203	$148,887,200	$400,804,500	1,415	$87,016,100	$284,617,300
Arkansas	2,650	$145,258,800	$705,285,600	1,292	$71,538,600	$257,775,400
California	12,522	$546,753,100	$1,187,610,900	5,568	$442,671,900	$1,344,827,600
Colorado	3,012	$113,825,600	$295,276,600	1,087	$77,960,000	$218,141,800
Connecticut	3,130	$267,787,900	$1,030,038,900	1,308	$113,912,800	$306,923,100
Delaware	251	$6,836,600	$5,961,300	64	$5,785,300	$21,779,300
District of Columbia	63	$1,787,600	$1,345,600	80	$10,878,200	$18,770,500
Florida	7,616	$289,577,100	$764,612,900	3,011	$184,222,300	$541,915,600
Georgia	3,673	$140,741,100	$395,203,600	1,658	$113,176,600	$385,895,400
Hawaii	423	$11,711,500	$9,979,500	95	$6,382,900	$17,537,500
Idaho	2,244	$115,760,900	$511,148,600	1,079	$54,080,800	$175,828,300
Illinois	5,338	$274,149,300	$861,411,800	2,961	$234,285,200	$731,817,900
Indiana	2,349	$64,807,500	$124,382,500	899	$59,654,500	$326,554,600
Iowa	1,608	$58,423,200	$172,668,200	574	$31,498,200	$122,390,500
Kansas	1,702	$61,666,100	$216,027,700	748	$41,770,500	$144,465,700
Kentucky	1,611	$70,583,900	$179,803,200	690	$41,219,400	$184,670,300
Louisiana	1,460	$51,147,600	$98,800,600	523	$36,111,100	$269,480,000
Maine	645	$26,417,200	$91,876,500	257	$14,133,100	$44,543,100
Maryland	1,839	$83,601,500	$258,144,400	799	$59,597,500	$153,862,000
Massachusetts	4,086	$260,961,400	$1,235,106,000	2,243	$195,231,400	$486,711,900
Michigan	4,271	$159,063,100	$284,432,700	1,642	$110,430,000	$386,240,200
Minnesota	4,636	$298,742,600	$986,000,200	2,443	$172,712,600	$502,997,500
Mississippi	2,090	$119,036,700	$470,055,100	985	$49,240,200	$205,754,100
Missouri	3,129	$132,349,000	$325,573,700	1,161	$75,361,900	$245,127,300
Montana	1,152	$44,355,800	$163,510,700	460	$21,412,700	$70,788,900
Nebraska	1,309	$67,972,400	$244,901,100	576	$35,724,400	$109,934,700
Nevada	908	$32,098,500	$88,031,400	328	$21,688,700	$67,611,800
New Hampshire	1,720	$144,491,100	$598,504,600	1,062	$70,395,200	$190,519,200
New Jersey	2,397	$83,594,800	$130,086,700	860	$76,144,600	$240,686,400
New Mexico	638	$17,282,400	$22,311,900	149	$9,417,500	$40,892,900
New York	6,180	$293,818,000	$810,168,700	2,969	$292,566,100	$752,410,000
North Carolina	4,689	$204,995,100	$680,441,900	2,301	$138,173,000	$457,736,200
North Dakota	314	$9,611,900	$17,052,700	67	$4,451,400	$18,273,000
Ohio	3,987	$133,835,500	$264,732,100	1,874	$130,333,400	$534,637,800
Oklahoma	1,307	$37,087,900	$63,198,700	439	$25,630,100	$111,280,500
Oregon	2,581	$167,570,200	$689,231,800	1,820	$117,190,700	$410,081,500
Pennsylvania	4,830	$181,989,200	$445,488,100	2,126	$156,296,000	$581,175,000
Rhode Island	399	$23,974,700	$66,701,600	159	$11,099,400	$41,248,500
South Carolina	2,138	$105,706,900	$359,552,400	1,050	$58,782,100	$212,473,800
South Dakota	712	$31,516,500	$132,588,900	322	$16,063,400	$54,879,900
Tennessee	2,235	$90,349,900	$211,767,600	944	$60,283,400	$229,053,400
Texas	9,076	$327,105,300	$745,137,000	3,982	$288,511,300	$1,408,217,700
Utah	1,794	$71,544,000	$244,629,000	900	$49,269,000	$192,651,300
Vermont	428	$20,291,300	$55,916,000	160	$8,129,600	$29,770,900
Virginia	3,225	$123,533,300	$331,785,900	1,284	$98,894,900	$279,146,000
Washington	2,517	$87,185,100	$176,498,900	913	$66,975,100	$209,236,500
West Virginia	634	$19,008,800	$43,938,300	213	$14,841,800	$74,682,900
Wisconsin	3,202	$132,141,200	$417,117,500	1,663	$105,143,200	$353,663,300
Wyoming	343	$9,990,700	$32,775,100	102	$6,668,800	$29,388,400
Total	134,429	$5,985,212,500	$17,790,120,500	59,982	$4,215,796,000	$14,274,255,200

John Dunham and Associates: 2014

ECONOMIC CONTRIBUTION OF ARMS AND AMMUNITION INDUSTRIES, 2014

STATE BY STATE ECONOMIC IMPACT REPORT

INDUCED			TOTAL			Avg. Wages & Benefits	Excise Taxes Federal
Jobs	Wages	Output	Jobs	Wages	Output		
795	$33,809,000	$120,678,700	3,243	$134,575,100	$425,027,900	$41,497	$13,994,261
112	$5,639,900	$17,850,300	504	$21,998,400	$51,231,700	$43,648	$2,981,079
1,649	$80,188,000	$251,631,700	6,267	$316,091,300	$937,053,500	$50,437	$18,141,083
1,277	$50,504,400	$170,934,900	5,219	$267,301,800	$1,133,995,900	$51,217	$10,043,647
6,663	$410,298,200	$1,186,847,700	24,753	$1,399,723,200	$3,719,286,200	$56,548	$111,909,713
1,315	$69,136,900	$200,380,300	5,414	$260,922,500	$713,798,700	$48,194	$24,020,210
1,169	$73,179,700	$213,919,200	5,607	$454,880,400	$1,550,881,200	$81,127	$8,028,532
127	$6,681,600	$23,538,800	442	$19,303,500	$51,279,400	$43,673	$706,682
132	$11,645,200	$19,032,200	275	$24,311,000	$39,148,300	$88,404	$2,133,806
4,283	$206,606,300	$607,298,900	14,910	$680,405,700	$1,913,827,400	$45,634	$57,223,665
1,951	$96,322,000	$301,387,000	7,282	$350,239,700	$1,082,486,000	$48,097	$24,232,435
205	$9,284,300	$25,344,600	723	$27,378,700	$52,861,600	$37,868	$4,869,416
960	$35,912,500	$115,105,500	4,283	$205,754,200	$802,082,400	$48,040	$6,468,747
3,059	$176,325,300	$525,059,300	11,358	$684,759,800	$2,118,289,000	$60,289	$33,227,193
1,067	$50,094,300	$188,255,900	4,315	$174,556,300	$639,193,000	$40,453	$18,324,791
733	$31,359,700	$117,981,400	2,915	$121,281,100	$413,040,100	$41,606	$9,149,056
723	$32,006,800	$111,981,600	3,173	$135,443,400	$472,475,000	$42,686	$9,522,879
853	$36,012,300	$121,130,400	3,154	$147,815,600	$485,603,900	$46,866	$10,439,265
751	$34,626,600	$118,998,300	2,734	$121,885,300	$487,278,900	$44,581	$11,240,217
340	$13,850,200	$41,527,400	1,242	$54,400,500	$177,947,000	$43,801	$3,670,273
979	$54,948,700	$142,019,900	3,617	$198,147,700	$554,026,300	$54,782	$11,163,331
2,204	$132,813,500	$332,390,900	8,533	$589,006,300	$2,054,208,800	$69,027	$13,373,446
1,985	$95,409,600	$322,594,100	7,898	$364,902,700	$993,267,000	$46,202	$32,639,989
2,577	$128,953,000	$408,056,900	9,656	$600,408,200	$1,897,054,600	$62,180	$18,736,637
926	$34,936,500	$119,615,000	4,001	$203,213,400	$795,424,200	$50,791	$7,577,560
1,522	$70,782,100	$219,948,300	5,812	$278,493,000	$790,649,300	$47,917	$17,422,846
467	$17,128,900	$52,275,400	2,079	$82,897,400	$286,575,000	$39,874	$4,721,946
666	$28,910,500	$95,354,000	2,551	$132,607,300	$450,189,800	$51,982	$6,125,489
460	$21,678,000	$64,921,800	1,696	$75,465,200	$220,565,000	$44,496	$6,480,616
1,024	$48,934,200	$135,149,300	3,806	$263,820,500	$924,173,100	$69,317	$4,625,208
1,234	$81,067,100	$237,101,100	4,491	$240,806,500	$607,874,200	$53,620	$22,719,969
267	$11,297,400	$33,323,600	1,054	$37,997,300	$96,528,400	$36,051	$5,164,568
3,391	$231,014,100	$608,327,800	12,540	$817,398,200	$2,170,906,500	$65,183	$42,044,177
2,401	$110,374,900	$362,118,700	9,391	$453,543,000	$1,500,296,800	$48,295	$22,718,394
139	$6,694,800	$21,537,300	520	$20,758,100	$56,863,000	$39,919	$2,583,676
2,140	$104,428,100	$351,170,000	8,001	$368,597,000	$1,150,539,900	$46,069	$29,772,454
608	$27,019,200	$97,735,000	2,354	$89,737,200	$272,214,200	$38,121	$9,934,830
1,745	$78,289,300	$273,197,100	6,146	$363,050,200	$1,372,510,400	$59,071	$11,543,299
2,502	$134,754,300	$405,936,400	9,458	$473,039,500	$1,432,599,500	$50,015	$30,034,624
197	$9,761,600	$27,533,800	755	$44,835,700	$135,483,900	$59,385	$2,203,498
1,219	$48,214,000	$156,193,500	4,407	$212,703,000	$728,219,700	$48,265	$10,825,325
325	$12,617,500	$43,231,200	1,359	$60,197,400	$230,700,000	$44,295	$2,900,884
1,260	$61,530,400	$200,188,500	4,439	$212,163,700	$641,009,500	$47,795	$15,959,590
4,723	$250,917,100	$842,808,900	17,781	$866,533,700	$2,996,163,600	$48,734	$73,468,428
900	$38,552,000	$124,994,900	3,594	$159,365,000	$562,275,200	$44,342	$9,488,217
197	$7,877,400	$23,162,100	785	$36,298,300	$108,849,000	$46,240	$2,183,068
1,425	$77,192,500	$216,360,100	5,934	$299,620,700	$827,292,000	$50,492	$20,829,006
1,179	$64,861,900	$198,089,000	4,609	$219,022,100	$583,824,400	$47,521	$23,491,879
258	$10,340,500	$35,285,800	1,105	$44,191,100	$153,907,000	$39,992	$4,354,005
1,620	$74,980,900	$246,604,800	6,485	$312,265,300	$1,017,385,600	$48,152	$16,007,434
108	$4,704,800	$16,073,000	553	$21,364,300	$78,236,500	$38,633	$2,275,185
68,812	$3,544,468,000	$10,892,182,300	263,223	$13,745,476,500	$42,956,599,500	$52,220	$863,696,528

John Dunham and Associates: 2014

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CERTIFICATE OF SERVICE
IN THE UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
SOUTHERN DIVISION

Case Name: *Rupp, et al. v. Becerra*
Case No.: 8:17-cv-00746-JLS-JDE

IT IS HEREBY CERTIFIED THAT:

I, the undersigned, am a citizen of the United States and am at least eighteen years of age. My business address is 180 East Ocean Boulevard, Suite 200, Long Beach, California 90802.

I am not a party to the above-entitled action. I have caused service of:

EXHIBIT 24 Part 2 of 3 TO DECLARATION OF SEAN A. BRADY IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

on the following party by electronically filing the foregoing with the Clerk of the District Court using its ECF System, which electronically notifies them.

Xavier Becerra
Attorney General of California
Peter H. Chang
Deputy Attorney General
E-mail: peter.chang@doj.ca.gov
John D. Echeverria
Deputy Attorney General
E-mail: john.echeverria@doj.ca.gov
455 Golden Gate Ave., Suite 11000
San Francisco, CA 94102

I declare under penalty of perjury that the foregoing is true and correct.

Executed March 25, 2019.

/s/Laura Palmerin
Laura Palmerin

C. D. Michel – SBN 144258
cmichel@michellawyers.com
Sean A. Brady – SBN 262007
sbrady@michellawyers.com
Matthew D. Cubeiro – SBN 291519
mcubeiro@michellawyers.com
MICHEL & ASSOCIATES, P.C.
180 East Ocean Boulevard, Suite 200
Long Beach, CA 90802
Telephone: 562-216-4444
Facsimile: 562-216-4445

Attorneys for Plaintiffs

UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

SOUTHERN DIVISION

STEVEN RUPP, et al.,

Plaintiffs,

vs.

XAVIER BECERRA, in his official capacity as Attorney General of the State of California,

Defendant.

Case No.: 8:17-cv-00746-JLS-JDE

EXHIBITS 24 Part 3-26 TO DECLARATION OF SEAN A. BRADY IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

Hearing Date: May 31, 2019
Hearing Time: 10:30 a.m.
Courtroom: 10A
Judge: Josephine L. Staton

[Filed concurrently with Notice of Motion for Summary Judgment, Memorandum of Points and Authorities, Statement of Uncontroverted Facts and Conclusions of Law, Request for Judicial Notice, Declarations of Steven Rupp, Steven Dember, Cheryl Johnson, Christopher Seifert, Alfonso Valencia, Troy Willis, Michael Jones, Dennis Martin, and Richard Travis]

24 Part 3 of 3

SECTION F:

SOCIAL RESEARCH TRENDS

THE IMPORTANCE OF SOCIAL & ECONOMIC RESEARCH

Social research focuses on public policy, government and politics, economics, education and many other areas of life. Social scientists study diverse topics on both macro and micro levels.

This section addresses where to find the latest social research related to the firearms industry. This includes issues on gun ownership, rights, beliefs and attitudes as reported today, as well as over time. There are a variety of sources that provide general population responses to questions related to firearm ownership, laws, attitudes and rights.

It is important to examine the source of the information, as well as the methodologies used. Polling companies that neglect to provide access to standard metrics such as number of responses/sample size, date conducted and margin of error should be viewed carefully.

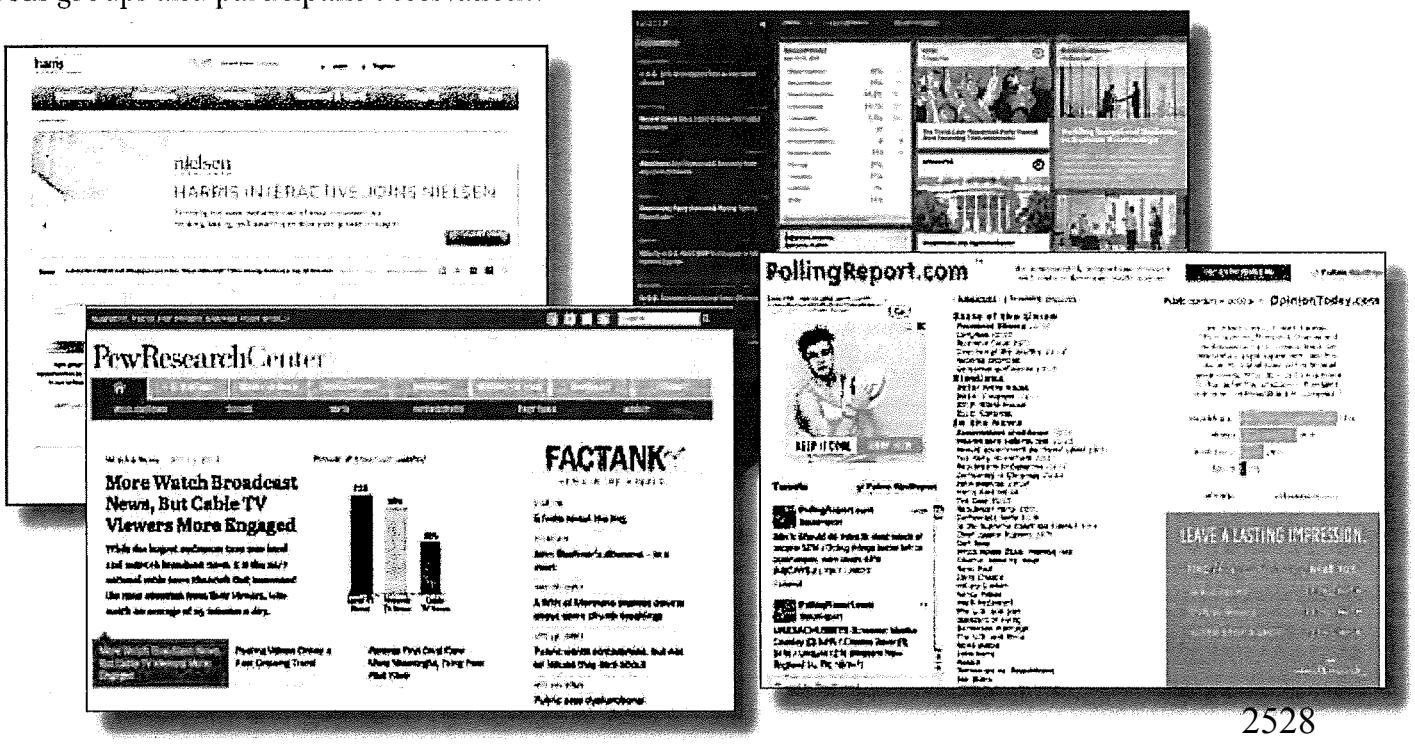
Examples of popular polling company websites are:

Gallup.com
WashingtonPost.com/Politics/Polling/
PollingReport.com
PewResearch.org
HarrisInteractive.com

Most websites offer a site search box. Popular keywords to search for industry related poll results are: "gun", "firearm", "ammunition", "second amendment", "concealed carry" and "hunting". Many of these sources also post poll results on other popular sites such as Facebook and Twitter.

Researchers use many different methods in order to describe, explore and understand social life. Quantitative methods such as surveys and questionnaires emphasize personal experiences, opinions and habits. Quantitative results provide a number or percentage response for each question in order to provide an understanding of the survey respondents' views as a group on each topic.

Qualitative methods, which tend to have smaller sample sizes and are usually conducted prior to quantitative methods, focus on listening to a small group of carefully selected individuals in order to obtain anecdotal or non-scientific data. Popular qualitative methods include in-person interviews, focus groups and participant observations.



SPORT SHOOTING PARTICIPATION IN THE U.S. IN 2012

Conducted for NSSF by Responsive Management

"Did you do any target shooting or sports shooting, including any informal target shooting on your own property, in the past 12 months?"

	Estimated Number Of Participants Nationally	
2009	Yes: 15%	34,382,566
2012	Yes: 17%	40,779,651
2014	Yes: 22%	51,226,765

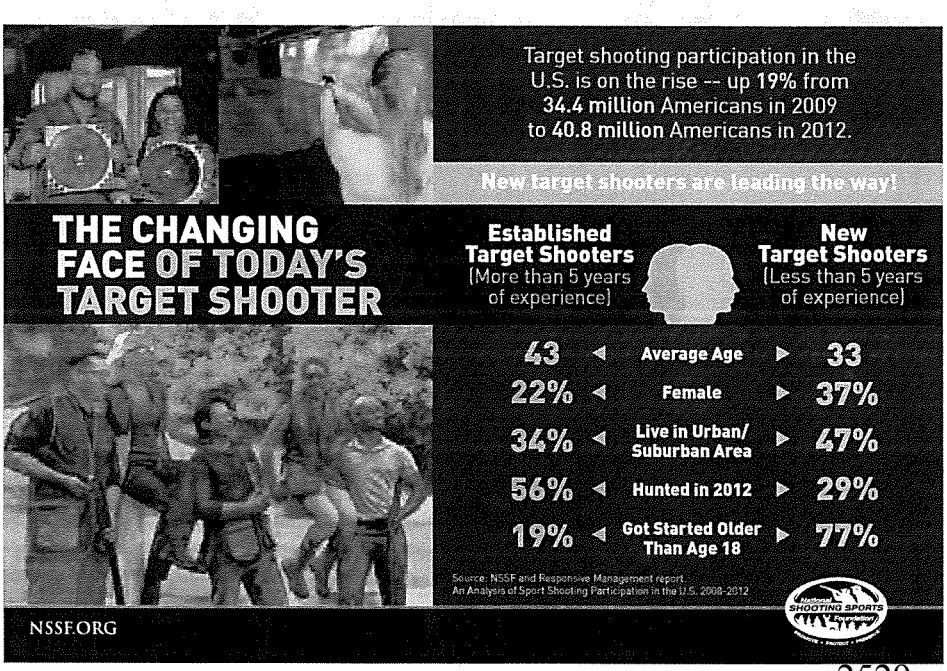
"Please tell me if you personally participated in each of the following specific shooting activities. Did you participate in...?"

	2009		2012		2014		
Shooting Activities	% of Overall U.S. Population (Age 18 and over)	Estimated Total Participants (Age 18 and over)	% of Overall U.S. Population (Age 18 and over)	Estimated Total Participants (Age 18 and over)	% of Overall U.S. Population (Age 18 and over)	Estimated Total Participants (Age 18 and over)	% Increase or Decrease in Number of Participants '09 to '12
Any target shooting or sport shooting	15%	34,382,566	17%	40,779,651	22%	51,226,765	49%
Target shooting with a rifle	11%	24,045,795	11%	26,822,425	14%	31,764,116	32%
Target shooting with a handgun	10%	22,169,700	12%	28,209,283	15%	34,221,107	54%
Shooting a modern sporting rifle	4%	8,868,085	5%	11,976,702	7%	16,267,924	83%
Shooting sporting clays	4%	8,399,989	4%	8,789,340	6%	13,033,633	55%
Trap shooting	3%	7,582,479	4%	10,116,684	5%	11,227,278	48%
Skeet shooting	3%	6,979,680	5%	12,090,346	5%	12,596,361	80%
Any clay target shooting (skeet, trap, sc)	5%	11,597,841	7%	17,758,371	8%	18,396,758	59%

For NSSF by Responsive Management

AN ANALYSIS OF SPORT SHOOTING PARTICIPATION TRENDS IN THE U.S. 2008 – 2012

This study was conducted to better understand the demographic differences between new (less than five years of experience) target shooters versus established (more than five years of experience) target shooters. The results show that new target shooters are younger, female and urban when compared to experienced target shooters. Additionally, the report shows that one-fifth of target shooters in America first started participating in the shooting sports between 2008 and 2012.



Click image to access infographic.

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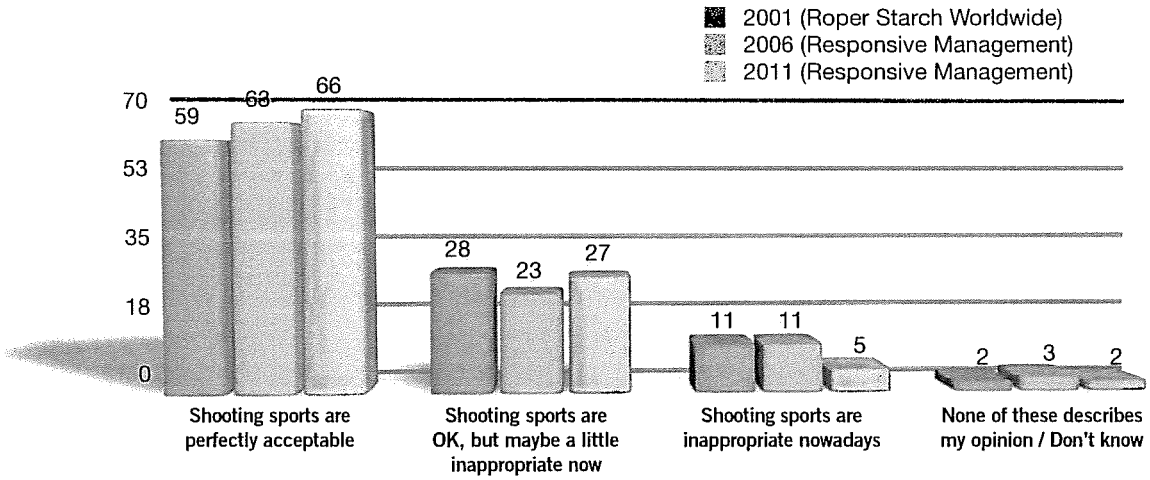
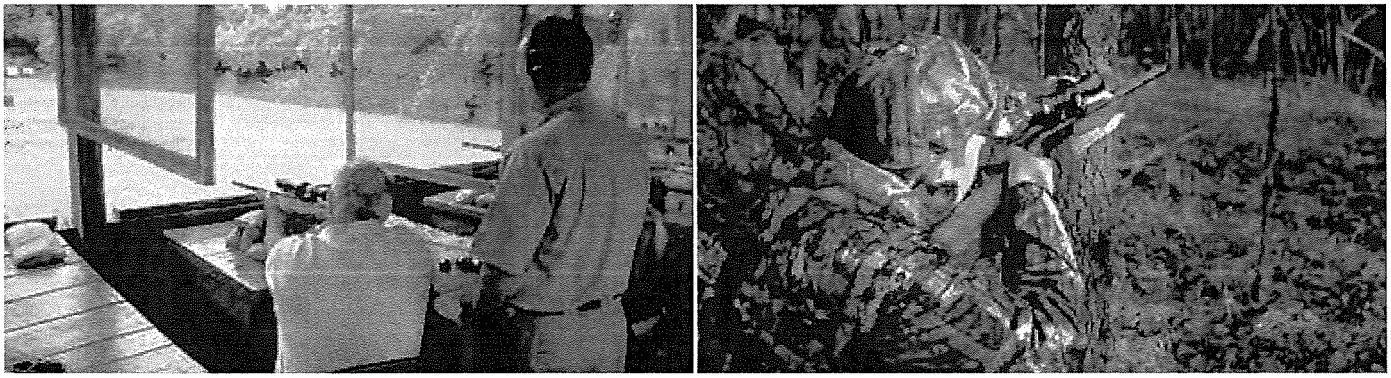
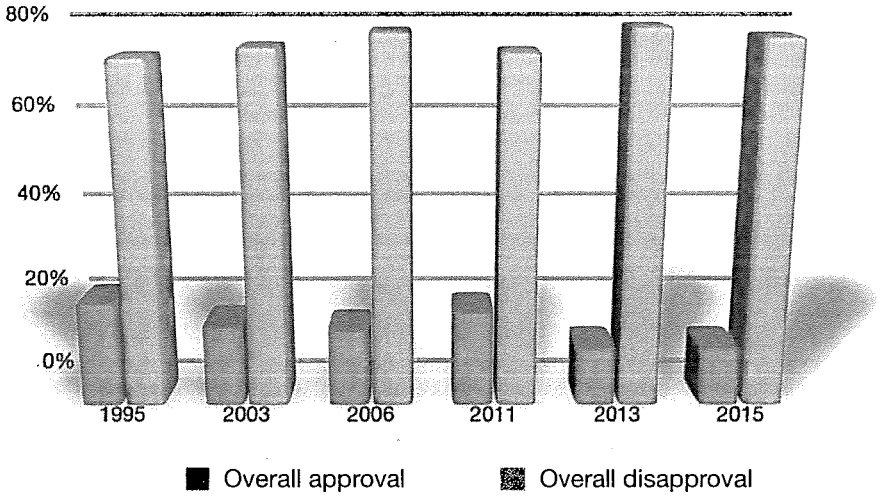
FROM AMERICANS' ATTITUDES TOWARD HUNTING, FISHING AND TARGET SHOOTING 2011, A STUDY CONDUCTED BY RESPONSIVE MANAGEMENT FOR THE NSSF.

"Which of the following statements best describes your opinion of recreational shooting sports?"





"In general, do you approve or disapprove of legal hunting?"
(adult Americans nationwide)



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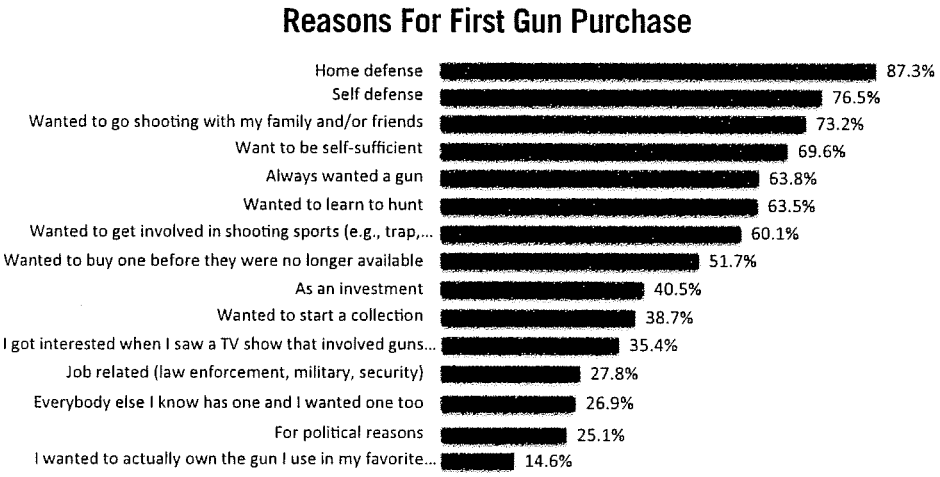
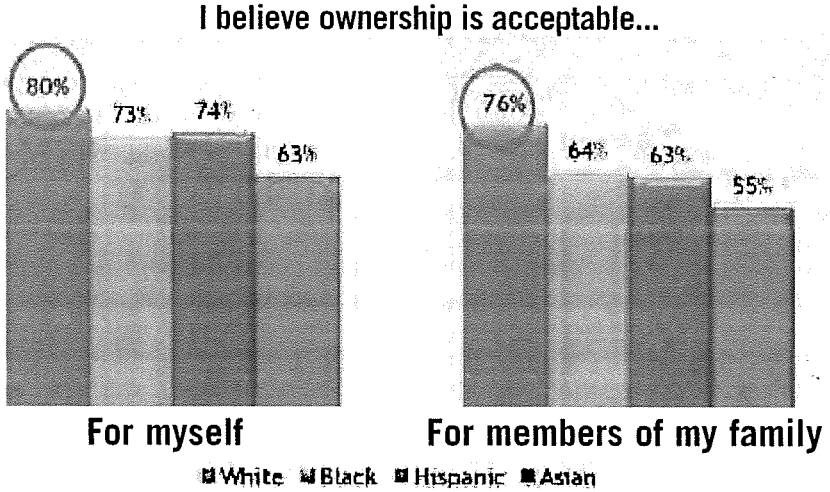
NSSF REPORT: FIRST-TIME GUN BUYERS

Firearms retailers have been reporting that nearly 25 percent of their customers in recent years were purchasing their first firearm. To learn more about these new customers, NSSF commissioned this study to better understand this important segment. The study reveals that first-time gun buyers are largely active in one or more shooting activities and that women are motivated to purchase their first firearm predominately for personal defense. Additional key findings within the report address: average spent by gun type, where first guns were purchased, accessory purchases, who provides product information to this segment as well as frequency of gun use and where gun is used. The study also incorporated MaxDiff tasks to measure the influence of various attributes such as reasons for first gun purchase and attitudes pertaining to gun ownership.



NSSF REPORT: UNDERSTANDING DIVERSITY IN HUNTING AND SHOOTING SPORTS

US Census Bureau statistics tell us that in 2011, Hispanics, blacks and Asians made up approximately 14 percent, 12 percent, and 5 percent, respectively, of the US population age 16 and older. Additionally, the US Fish & Wildlife Service's 2011 National Survey tells us that Hispanics, blacks and Asians made up approximately 2 percent, 3 percent, and ½ percent, respectively, of hunters age 16 and older. With these gaps being so substantial, NSSF commissioned a study to determine the differences between ethnic groups on the topics of hunting and target shooting. The findings of the report cover a wide range of topics such as; interest in firearms and shooting sports, beliefs on firearm ownership, influencers, sources of knowledge and much more.



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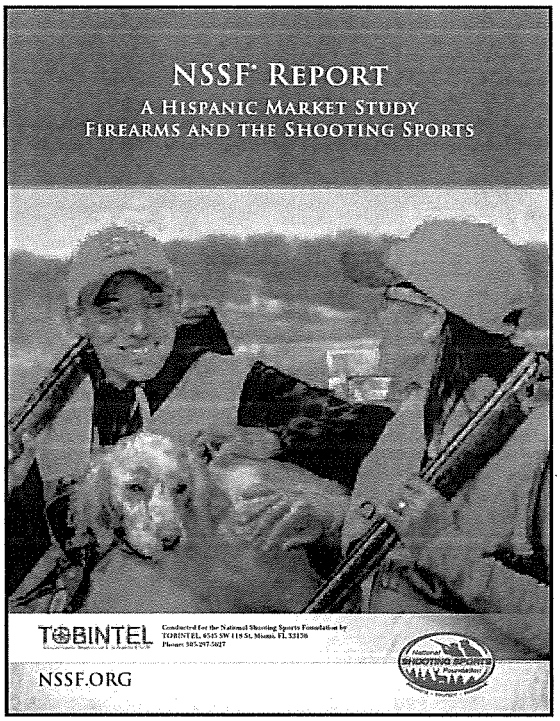
NSSF REPORT: A HISPANIC MARKET STUDY FIREARMS AND THE SHOOTING SPORTS

	Heard of:	Positive : Negative Image Score	Positive	Neutral	Negative
State Wildlife Agency	61%	36 :1	82%	16%	2%
U.S. Immigration & Naturalization Service	59%	4 :1	52%	33%	14%
National Rifle Association	48%	2 :1	50%	26%	24%
U.S. Fish and Wildlife Service	48%	29 :1	81%	16%	3%
Ducks Unlimited	14%	12 :1	72%	22%	6%
Recreational Boating and Fishing Foundation – Take Me Fishing / Vamos A Pescar	14%	21 :1	75%	22%	4%
Rocky Mountain Elk Foundation	12%	23 :1	77%	19%	3%
National Wild Turkey Federation	12%	8 :1	72%	19%	9%
Base: All Respondents 1,264					

61% of Hispanics surveyed recognized their State Wildlife Agency. State Wildlife Agencies score a high positive vs. negative relationship with a 37:1 positive to negative image, indicating an overall positive attitude towards outdoors activities.



- Many new insights learned from this report.
- High recognition and positive image of state wildlife agencies.
- Opportunity for retailers, ranges and manufacturers to partner with state agencies to reach.

The top comments from survey participants regarding their interactions with state agency officials were:

- "Friendly", "Professional", "Knowledgeable"
- "Polite", "Nice", "They care for the environment."

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NSSF SURVEY TRACKER

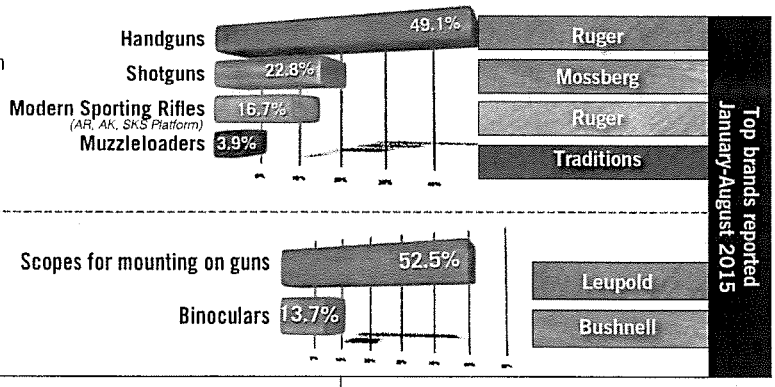
OCTOBER 2015

Market Snapshot

Of hunters and shooters who bought a firearm in July-August 2015, they purchased:

Multiple choices allowed, will not equal 100%.

n=798



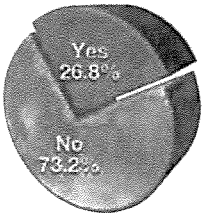
Of hunters and shooters who bought optics in July-August 2015, they purchased:

n=574

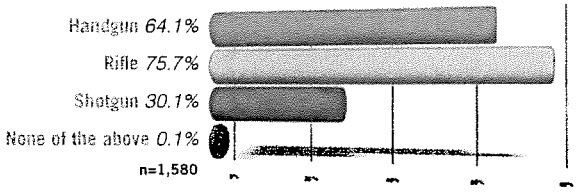
Questions for Hunters and Target Shooters

In that past twelve months, have you reloaded any ammunition (rifle, handgun or shotgun) for you or others use?

n=4,687

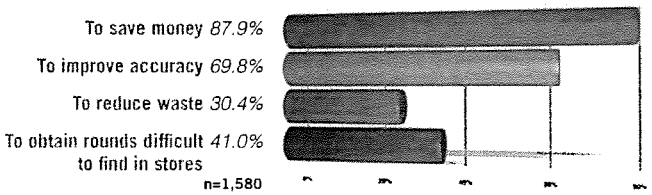


Please check which types of ammunition you have reloaded (select all that apply):



n=1,580

Please check the reasons why you reload (select all that apply):



n=1,580

Market Leaders

Annual 2014

Top 5 Brands of Rifle Ammunition purchased

Remington *17.2%*

Federal *15.2%*
(Incl. Fusion)

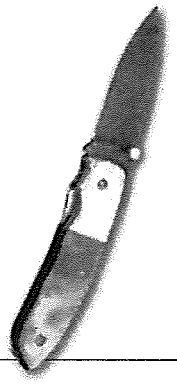
Winchester *14.1%*
(Incl. SuperX, Supreme, USA)

Hornady *12.6%*

CCI *9.3%*

n=5,109

Top 5 Brands of Knives purchased



Buck *13.4%*

Kershaw *9.4%*

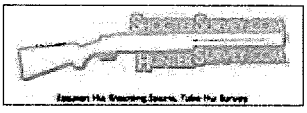
Gerber *7.8%*

Outdoor Edge *5.4%*

Havalon *4.9%*

n=613

About HunterSurvey:
HunterSurvey is a industry monitoring service using an online panel of active hunters and target shooters. The information is provided by Southwick Associates, Inc. Note: The information contained in this report does not represent total industry performance. Results are based on what is captured via HunterSurvey.com and ShooterSurvey.com.



Need more detail?
Detailed reports are available on a subscription basis and include extensive brand market share, percentage of purchases per retail outlet, sales by price point, target shooting activities, species hunted, full demographics of consumers and much more.
Over 200 pages in each report!

NSSF members also receive a *15% discount* off the subscription price!

Contact: NSSF at research@nssf.org or Southwick Associates at rob@southwickassociates.com for subscription information and a sample of a detailed report.

Report provided by NSSF. Please visit nssf.org/research for additional research. NSSF Members are able to access this and other research reports by logging in at nssf.org/members and selecting NSSF Industry Research.

National Shooting Sports Foundation, Inc., 11 Mile Hill Road, Newtown, CT 06470-2359
T: (203) 426-1320, F: (203) 426-1087

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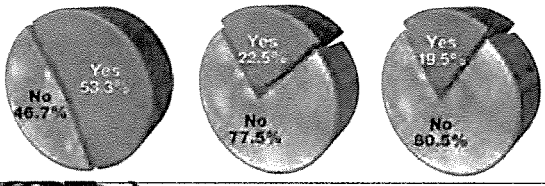
Hunters and shooters

were asked questions in March and April 2015 about ownership and purchases of bows. These are the results:

Do you own a compound bow, recurve bow, and/or crossbow?

	Compound Bow	Recurve Bow	Crossbow
Yes	53.3%	22.5%	19.5%
No	46.7%	77.5%	80.5%
Total	n=6,515	n=6,505	n=6,535



How many compound bows/recurve bows/crossbows have you purchased in the last ten years?

	Compound Bow	Recurve Bow	Crossbow
0	12.3%	42.0%	8.0%
1	46.9%	41.0%	76.1%
2	26.2%	8.4%	11.5%
3	9.4%	4.8%	2.4%
4	2.3%	2.7%	0.7%
5	1.2%	0.6%	0.5%
More than 5	1.7%	0.5%	0.8%
Total	n=2,704	n=1,457	n=1,328

How many compound bows/recurve bows/crossbows do you own? (of those who own said bow)

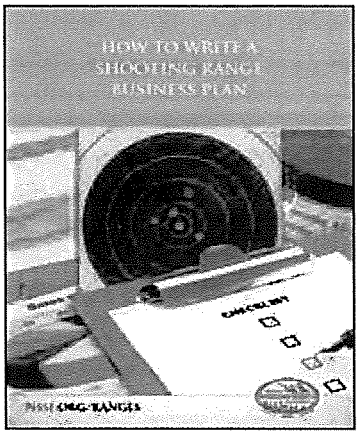
	Compound Bow	Recurve Bow	Crossbow
1	58.8%	66.1%	88.0%
2	25.5%	20.7%	9.0%
3	9.9%	6.5%	2.4%
4	3.0%	3.8%	0.4%
5	1.5%	1.0%	0.0%
More than 5	1.3%	2.0%	0.2%
Total	n=2,753	n=1,553	n=1,309

Please check the statements that best describe why you purchased your most recent compound bow:

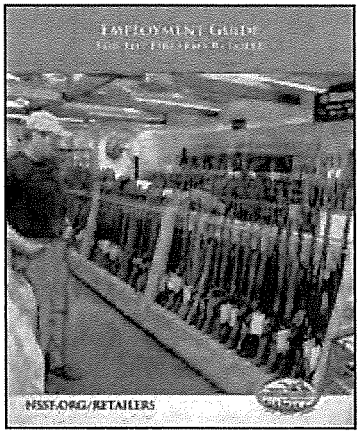
	Compound Bow	Recurve Bow	Crossbow
It was my first compound bow/recurve bow/crossbow and fit my needs	26.9%	37.3%	55.6%
I wanted the latest compound bow/recurve bow/crossbow technology	15.0%	2.9%	8.1%
My old compound bow/recurve bow/crossbow was worn out	19.3%	3.5%	3.0%
The new compound bow/recurve bow/crossbow is more accurate	15.7%	1.8%	5.4%
The new compound bow/recurve bow/crossbow is easier to shoot	17.9%	2.8%	5.0%
The new compound bow/recurve bow/crossbow looks cool	2.9%	0.9%	2.5%
It was on sale / special sales promotion	8.8%	5.0%	12.6%
Other reason(s) not listed here	26.1%	50.8%	27.6%
Total	n=2,757	n=1,549	n=1,346

NSSF MATERIALS

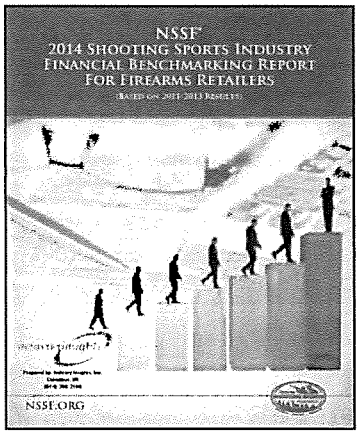
NSSF creates a wide variety of materials for firearms retailers, ranges, manufacturers and media in an effort to better inform these industry members. Many reports are free to NSSF members, others are offered at a deep discount to members. Please visit nssf.org/research to see the full list of available resources.



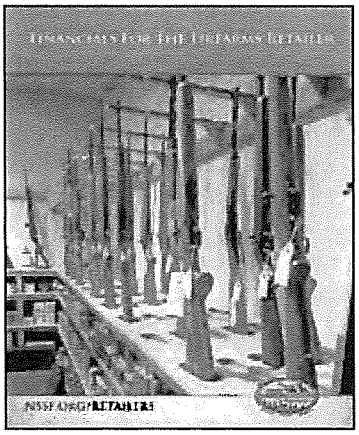
How to Write a Shooting Range Business Plan



Employment Guide

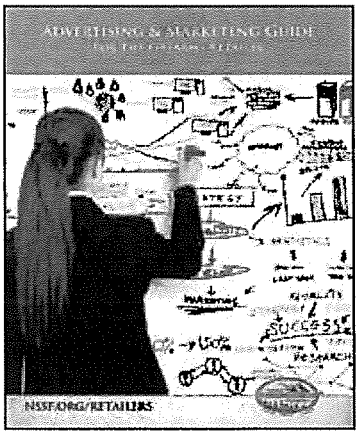


Financial Benchmarking Report

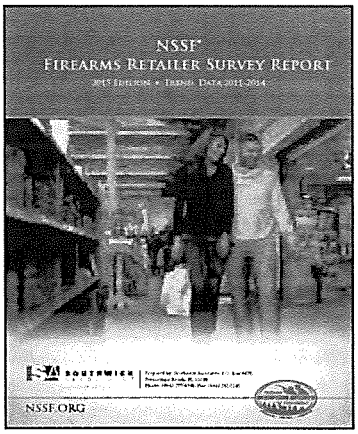


Financials for the Firearms Retailer

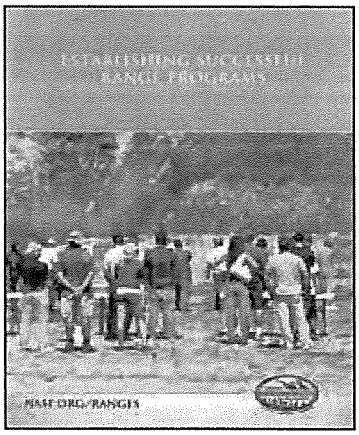
Indoor Range and Retail Seminar Workshop DVD



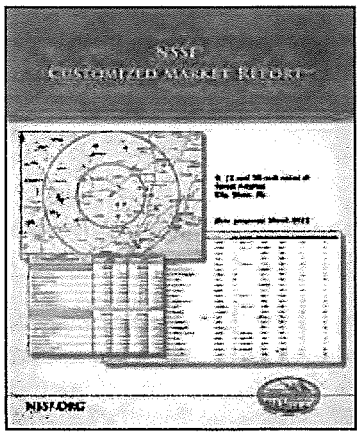
Advertising & Marketing Guide



Firearms Retailer Survey Report

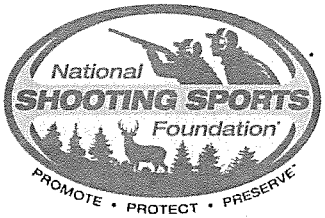


Establishing Successful Range Programs



Customized Market Report

2535



11 Mile Hill Road
Newtown, CT 06470-2359
T: 203.426.1320
F: 203.426.1087
nssf.org

12/15 Item #353

EXHIBIT 25

An Updated Assessment of the Federal Assault Weapons Ban: Impacts on Gun Markets and Gun Violence, 1994-2003

Report to the National Institute of Justice, United States Department of Justice

By

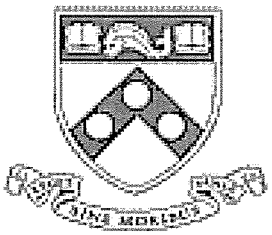
Christopher S. Koper
(Principal Investigator)

With

Daniel J. Woods and Jeffrey A. Roth

June 2004

Jerry Lee Center of Criminology
University of Pennsylvania
3814 Walnut Street
Philadelphia, PA 19104



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PREFACE

Gun violence continues to be one of America's most serious crime problems. In 2000, over 10,000 persons were murdered with firearms and almost 49,000 more were shot in the course of over 340,000 assaults and robberies with guns (see the Federal Bureau of Investigation's annual *Uniform Crime Reports* and Simon et al., 2002). The total costs of gun violence in the United States – including medical, criminal justice, and other government and private costs – are on the order of at least $6 to $12 billion per year and, by more controversial estimates, could be as high as $80 billion per year (Cook and Ludwig, 2000).

However, there has been good news in recent years. Police statistics and national victimization surveys show that since the early 1990s, gun crime has plummeted to some of the lowest levels in decades (see the *Uniform Crime Reports* and Rennison, 2001). Have gun controls contributed to this decline, and, if so, which ones?

During the last decade, the federal government has undertaken a number of initiatives to suppress gun crime. These include, among others, the establishment of a national background check system for gun buyers (through the Brady Act), reforms of the licensing system for firearms dealers, a ban on juvenile handgun possession, and Project Safe Neighborhoods, a collaborative effort between U.S. Attorneys and local authorities to attack local gun crime problems and enhance punishment for gun offenders.

Perhaps the most controversial of these federal initiatives was the ban on semiautomatic assault weapons and large capacity ammunition magazines enacted as Title XI, Subtitle A of the *Violent Crime Control and Law Enforcement Act of 1994.* This law prohibits a relatively small group of weapons considered by ban advocates to be particularly dangerous and attractive for criminal purposes. In this report, we investigate the ban's impacts on gun crime through the late 1990s and beyond. This study updates a prior report on the short-term effects of the ban (1994-1996) that members of this research team prepared for the U.S. Department of Justice and the U.S. Congress (Roth and Koper, 1997; 1999).

ACKNOWLEDGMENTS

This research was supported by National Institute of Justice (U.S. Department of Justice) grants 2003-IJ-CX-1029 to the University of Pennsylvania and 98-IJ-CX-0039 to the Urban Institute. The Jerry Lee Center of Criminology, University of Pennsylvania provided additional support. The views expressed are those of the author. They do not reflect official positions of the United States Department of Justice and should not be attributed to the trustees of the University of Pennsylvania, the Urban Institute, or any of the other persons or organizations listed below.

The author wishes to thank several people and organizations that assisted this effort in numerous ways. Daniel Woods assisted with data analysis. Jeffrey Roth, who directed our first study of the assault weapons ban, provided advice and editorial input. Additional research assistance was provided by the following former employees of the Urban Institute: Gretchen Moore, David Huffer, Erica Dinger, Darin Reedy, Kate Bunting, Katie Gorie, and Michele Waul. The following persons and organizations provided databases, information, or other resources utilized for this report: Glenn Pierce (Northeastern University), Pamela Shaw and Edward Koch (Baltimore Police Department), Robert Shem (Alaska State Police), Bill McGill and Mallory O'Brien (currently or formerly of the Firearm Injury Center, Medical College of Wisconsin), Rick Ruddell (California State University, Chico), Scott Doyle (Kentucky State Police), Terrence Austin and Joe Vince (currently or formerly of the Bureau of Alcohol, Tobacco, Firearms, and Explosives), Carlos Alvarez and Alan Lynn (Metro-Dade Police Department), Charles Branas (Firearm and Injury Center, University of Pennsylvania), Caroline Harlow (Bureau of Justice Statistics), and Rebecca Knox (Brady Center to Prevent Handgun Violence). Robert Burrows (Bureau of Alcohol, Tobacco, Firearms, and Explosives) and Wain Roberts (Wain Roberts Firearms) shared technical expertise on firearms. Anonymous reviewers for the National Institute of Justice provided thorough and helpful comments on earlier versions of this report, as did Terrence Austin and Robert Burrows of the Bureau of Alcohol, Tobacco, Firearms, and Explosives. Finally, I thank Lois Mock, our National Institute of Justice grant monitor, for her advice and encouragement throughout all of the research that my colleagues and I have conducted on the assault weapons ban.

1. IMPACTS OF THE FEDERAL ASSAULT WEAPONS BAN, 1994-2003: KEY FINDINGS AND CONCLUSIONS

This overview presents key findings and conclusions from a study sponsored by the National Institute of Justice to investigate the effects of the federal assault weapons ban. This study updates prior reports to the National Institute of Justice and the U.S. Congress on the assault weapons legislation.

The Ban Attempts to Limit the Use of Guns with Military Style Features and Large Ammunition Capacities

- Title XI, Subtitle A of the Violent Crime Control and Law Enforcement Act of 1994 imposed a 10-year ban on the "manufacture, transfer, and possession" of certain semiautomatic firearms designated as assault weapons (AWs). The ban is directed at semiautomatic firearms having features that appear useful in military and criminal applications but unnecessary in shooting sports or self-defense (examples include flash hiders, folding rifle stocks, and threaded barrels for attaching silencers). The law bans 18 models and variations by name, as well as revolving cylinder shotguns. It also has a "features test" provision banning other semiautomatics having two or more military-style features. In sum, the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) has identified 118 models and variations that are prohibited by the law. A number of the banned guns are foreign semiautomatic rifles that have been banned from importation into the U.S. since 1989.

- The ban also prohibits most ammunition feeding devices holding more than 10 rounds of ammunition (referred to as large capacity magazines, or LCMs). An LCM is arguably the most functionally important feature of most AWs, many of which have magazines holding 30 or more rounds. The LCM ban's reach is broader than that of the AW ban because many non-banned semiautomatics accept LCMs. Approximately 18% of civilian-owned firearms and 21% of civilian-owned handguns were equipped with LCMs as of 1994.

- The ban exempts AWs and LCMs manufactured before September 13, 1994. At that time, there were upwards of 1.5 million privately owned AWs in the U.S. and nearly 25 million guns equipped with LCMs. Gun industry sources estimated that there were 25 million pre-ban LCMs available in the U.S. as of 1995. An additional 4.7 million pre-ban LCMs were imported into the country from 1995 through 2000, with the largest number in 1999.

- Arguably, the AW-LCM ban is intended to reduce gunshot victimizations by limiting the national stock of semiautomatic firearms with large ammunition capacities – which enable shooters to discharge many shots rapidly – and other features conducive to criminal uses. The AW provision targets a relatively small number of weapons based on features that have little to do with the weapons'

operation, and removing those features is sufficient to make the weapons legal. The LCM provision limits the ammunition capacity of non-banned firearms.

The Banned Guns and Magazines Were Used in Up to A Quarter of Gun Crimes Prior to the Ban

- AWs were used in only a small fraction of gun crimes prior to the ban: about 2% according to most studies and no more than 8%. Most of the AWs used in crime are assault pistols rather than assault rifles.

- LCMs are used in crime much more often than AWs and accounted for 14% to 26% of guns used in crime prior to the ban.

- AWs and other guns equipped with LCMs tend to account for a higher share of guns used in murders of police and mass public shootings, though such incidents are very rare.

The Ban's Success in Reducing Criminal Use of the Banned Guns and Magazines Has Been Mixed

- Following implementation of the ban, the share of gun crimes involving AWs declined by 17% to 72% across the localities examined for this study (Baltimore, Miami, Milwaukee, Boston, St. Louis, and Anchorage), based on data covering all or portions of the 1995-2003 post-ban period. This is consistent with patterns found in national data on guns recovered by police and reported to ATF.

- The decline in the use of AWs has been due primarily to a reduction in the use of assault pistols (APs), which are used in crime more commonly than assault rifles (ARs). There has not been a clear decline in the use of ARs, though assessments are complicated by the rarity of crimes with these weapons and by substitution of post-ban rifles that are very similar to the banned AR models.

- However, the decline in AW use was offset throughout at least the late 1990s by steady or rising use of other guns equipped with LCMs in jurisdictions studied (Baltimore, Milwaukee, Louisville, and Anchorage). The failure to reduce LCM use has likely been due to the immense stock of exempted pre-ban magazines, which has been enhanced by recent imports.

It is Premature to Make Definitive Assessments of the Ban's Impact on Gun Crime

- Because the ban has not yet reduced the use of LCMs in crime, we cannot clearly credit the ban with any of the nation's recent drop in gun violence. However, the ban's exemption of millions of pre-ban AWs and LCMs ensured that the effects

of the law would occur only gradually. Those effects are still unfolding and may not be fully felt for several years into the future, particularly if foreign, pre-ban LCMs continue to be imported into the U.S. in large numbers.

The Ban's Reauthorization or Expiration Could Affect Gunshot Victimizations, But Predictions are Tenuous

- Should it be renewed, the ban's effects on gun violence are likely to be small at best and perhaps too small for reliable measurement. AWs were rarely used in gun crimes even before the ban. LCMs are involved in a more substantial share of gun crimes, but it is not clear how often the outcomes of gun attacks depend on the ability of offenders to fire more than ten shots (the current magazine capacity limit) without reloading.

- Nonetheless, reducing criminal use of AWs and especially LCMs could have non-trivial effects on gunshot victimizations. The few available studies suggest that attacks with semiautomatics – including AWs and other semiautomatics equipped with LCMs – result in more shots fired, more persons hit, and more wounds inflicted per victim than do attacks with other firearms. Further, a study of handgun attacks in one city found that 3% of the gunfire incidents resulted in more than 10 shots fired, and those attacks produced almost 5% of the gunshot victims.

- Restricting the flow of LCMs into the country from abroad may be necessary to achieve desired effects from the ban, particularly in the near future. Whether mandating further design changes in the outward features of semiautomatic weapons (such as removing all military-style features) will produce measurable benefits beyond those of restricting ammunition capacity is unknown. Past experience also suggests that Congressional discussion of broadening the AW ban to new models or features would raise prices and production of the weapons under discussion.

- If the ban is lifted, gun and magazine manufacturers may reintroduce AW models and LCMs, perhaps in substantial numbers. In addition, pre-ban AWs may lose value and novelty, prompting some of their owners to sell them in undocumented secondhand markets where they can more easily reach high-risk users, such as criminals, terrorists, and other potential mass murderers. Any resulting increase in crimes with AWs and LCMs might increase gunshot victimizations for the reasons noted above, though this effect could be difficult to measure.

2. PROVISIONS OF THE ASSAULT WEAPONS BAN

2.1. Assault Weapons

Enacted on September 13, 1994, Title XI, Subtitle A of the *Violent Crime Control and Law Enforcement Act of 1994* imposes a 10-year ban on the "manufacture, transfer, and possession" of certain semiautomatic firearms designated as assault weapons (AWs).[1] The AW ban is not a prohibition on all semiautomatics. Rather, it is directed at semiautomatics having features that appear useful in military and criminal applications but unnecessary in shooting sports or self-defense. Examples of such features include pistol grips on rifles, flash hiders, folding rifle stocks, threaded barrels for attaching silencers, and the ability to accept ammunition magazines holding large numbers of bullets.[2] Indeed, several of the banned guns (e.g., the AR-15 and Avtomat Kalashnikov models) are civilian copies of military weapons and accept ammunition magazines made for those military weapons.

As summarized in Table 2-1, the law specifically prohibits nine narrowly defined groups of pistols, rifles, and shotguns. A number of the weapons are foreign rifles that the federal government has banned from importation into the U.S. since 1989. Exact copies of the named AWs are also banned, regardless of their manufacturer. In addition, the ban contains a generic "features test" provision that generally prohibits other semiautomatic firearms having two or more military-style features, as described in Table 2-2. In sum, the federal Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) has identified 118 model and caliber variations that meet the AW criteria established by the ban.[3]

Figures 2-1 and 2-2 illustrate a few prominent AWs and their features. Figure 2-1 displays the Intratec TEC-9 assault pistol, the AW most frequently used in crime (e.g., see Roth and Koper 1997, Chapter 2). Figure 2-2 depicts the AK-47 assault rifle, a weapon of Soviet design. There are many variations of the AK-47 produced around the world, not all of which have the full complement of features illustrated in Figure 2-2.

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[1] A semiautomatic weapon fires one bullet for each squeeze of the trigger. After each shot, the gun automatically loads the next bullet and cocks itself for the next shot, thereby permitting a somewhat faster rate of fire relative to non-automatic firearms. Semiautomatics are not to be confused with fully automatic weapons (i.e., machine guns), which fire continuously as long as the trigger is held down. Fully automatic weapons have been illegal to own in the United States without a federal permit since 1934.

[2] Ban advocates stress the importance of pistol grips on rifles and heat shrouds or forward handgrips on pistols, which in combination with large ammunition magazines enable shooters to discharge high numbers of bullets rapidly (in a "spray fire" fashion) while maintaining control of the firearm (Violence Policy Center, 2003). Ban opponents, on the other hand, argue that AW features also serve legitimate purposes for lawful gun users (e.g., see Kopel, 1995).

[3] This is based on AWs identified by ATF's Firearms Technology Branch as of December 1997.

Table 2-1. Firearms Banned by the Federal Assault Weapons Ban

Firearm	Description	1993 Blue Book Price	Pre-Ban Federal Legal Status	Examples of Legal Substitutes
Avtomat Kalashnikov (AK) (by Norinco, Mitchell, Poly Technologies)	Chinese, Russian, other foreign and domestic: .223 or 7.62x39mm caliber, semiauto. rifle; 5, 10, or 30 shot magazine, may be supplied with bayonet	$550 (generic import); add 10-15% for folding stock models	Imports banned in 1989.	Norinco NHM 90/91 [1]
Uzi, Galil	Israeli: 9mm, .41, or .45 caliber semiauto. carbine, mini-carbine, or pistol. Magazine capacity of 16, 20, or 25, depending on model and type (10 or 20 on pistols).	$550-$1050 (Uzi) $875-$1150 (Galil)	Imports banned in 1989	Uzi Sporter [2]
Beretta AR-70	Italian: .222 or .223 caliber semiauto. paramilitary design rifle; 5, 8, or 30 shot magazine.	$1050	Imports banned in 1989.	
Colt AR-15	Domestic: primarily .223 caliber paramilitary rifle or carbine; 5 shot magazines, often comes with two 5-shot detachable magazines. Exact copies by DPMS, Eagle, Olympic, and others.	$825-$1325	Legal (civilian version of military M-16)	Colt Sporter, Match H-Bar, Target models
Fabrique National FN/FAL, FN/LAR, FNC	Belgian design: .308 caliber semiauto. rifle or .223 combat carbine with 30 shot magazine. Rifle comes with flash hider, 4 position fire selector on automatic models. Discontinued in 1988.	$1100-$2500	Imports banned in 1989.	L1A1 Sporter (FN, Century) [2]
Steyr AUG	Austrian: .223/5.56mm caliber semiauto. paramilitary design rifle.	$2500	Imports banned in 1989	
SWD M-10, 11, 11/9, 12	Domestic: 9mm, .380, or .45 caliber paramilitary design semiauto. pistol; 32 shot magazine. Also available in semiauto. carbine and fully automatic variations.	$215 (M-11/9)	Legal	Cobray PM11, 12
TEC-9, DC9, 22	Domestic: 9mm caliber semiauto. paramilitary design pistol, 10 or 32 shot magazine.; .22 caliber semiauto. paramilitary design pistol, 30 shot magazine.	$145-$295	Legal	TEC-AB
Revolving Cylinder Shotguns	Domestic: 12 gauge, 12 shot rotary magazine; paramilitary configuration	$525 (Street Sweeper)	Legal	

[1] Imports were halted in 1994 under the federal embargo on the importation of firearms from China.
[2] Imports banned by federal executive order, April 1998.

Table 2-2. Features Test of the Federal Assault Weapons Ban

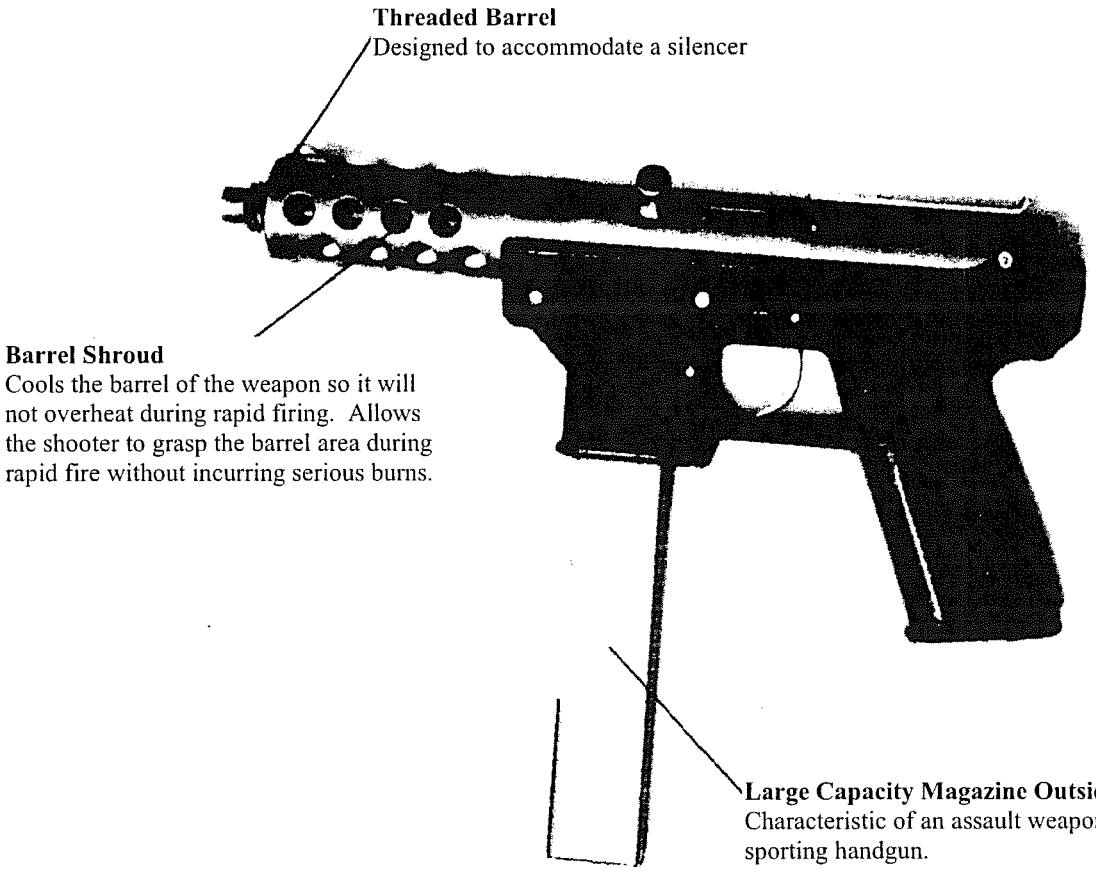
Weapon Category	Military-Style Features (Two or more qualify a firearm as an assault weapon)
Semiautomatic pistols accepting detachable magazines:	1) ammunition magazine that attaches outside the pistol grip 2) threaded barrel capable of accepting a barrel extender, flash hider, forward handgrip, or silencer 3) heat shroud attached to or encircling the barrel 4) weight of more than 50 ounces unloaded 5) semiautomatic version of a fully automatic weapon
Semiautomatic rifles accepting detachable magazines:	1) folding or telescoping stock 2) pistol grip that protrudes beneath the firing action 3) bayonet mount 4) flash hider or threaded barrel designed to accommodate one 5) grenade launcher
Semiautomatic shotguns:	1) folding or telescoping stock 2) pistol grip that protrudes beneath the firing action 3) fixed magazine capacity over 5 rounds 4) ability to accept a detachable ammunition magazine

2.2. Large Capacity Magazines

In addition, the ban prohibits most ammunition feeding devices holding more than 10 rounds of ammunition (referred to hereafter as large capacity magazines, or LCMs).[4] Most notably, this limits the capacity of detachable ammunition magazines for semiautomatic firearms. Though often overlooked in media coverage of the law, this provision impacted a larger share of the gun market than did the ban on AWs. Approximately 40 percent of the semiautomatic handgun models and a majority of the semiautomatic rifle models being manufactured and advertised prior to the ban were sold with LCMs or had a variation that was sold with an LCM (calculated from Murtz et al., 1994). Still others could accept LCMs made for other firearms and/or by other manufacturers. A national survey of gun owners found that 18% of all civilian-owned firearms and 21% of civilian-owned handguns were equipped with magazines having 10 or more rounds as of 1994 (Cook and Ludwig, 1996, p. 17). The AW provision did not affect most LCM-compatible guns, but the LCM provision limited the capacities of their magazines to 10 rounds.

[4] Technically, the ban prohibits any magazine, belt, drum, feed strip, or similar device that has the capacity to accept more than 10 rounds or ammunition, or which can be readily converted or restored to accept more than 10 rounds of ammunition. The ban exempts attached tubular devices capable of operating only with .22 caliber rimfire (i.e., low velocity) ammunition.

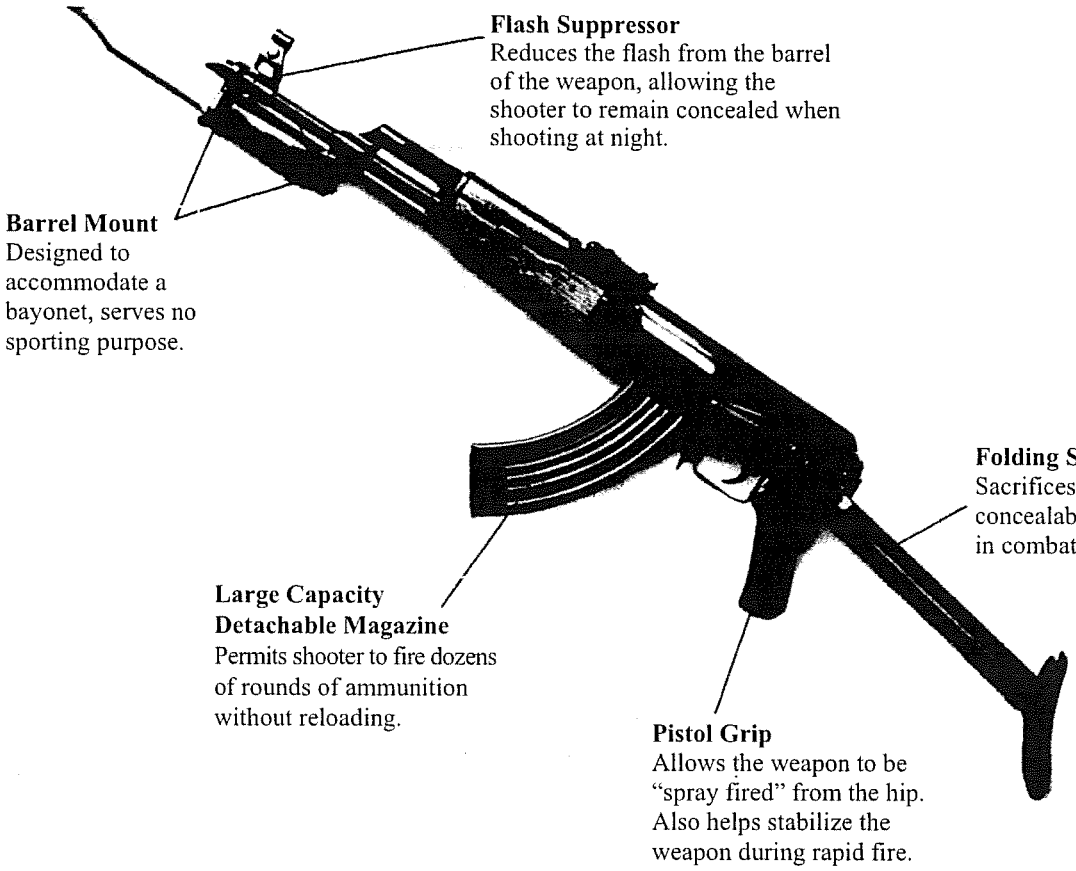
Figure 2-1. Features of Assault Weapons: The Intratec TEC-9 Assault Pistol



Adapted from exhibit of the Center to Prevent Handgun Violence.

As discussed in later chapters, an LCM is perhaps the most functionally important feature of many AWs. This point is underscored by the AW ban's exemptions for semiautomatic rifles that cannot accept a detachable magazine that holds more than five rounds of ammunition and semiautomatic shotguns that cannot hold more than five rounds in a fixed or detachable magazine. As noted by the U.S. House of Representatives, most prohibited AWs came equipped with magazines holding 30 rounds and could accept magazines holding as many as 50 or 100 rounds (U.S. Department of the Treasury, 1998, p. 14). Also, a 1998 federal executive order (discussed below) banned further importation of foreign semiautomatic rifles capable of accepting LCMs made for military rifles. Accordingly, the magazine ban plays an important role in the logic and interpretations of the analyses presented here.

Figure 2-2. Features of Assault Weapons: The AK-47 Assault Rifle



Adapted from exhibit of the Center to Prevent Handgun Violence.

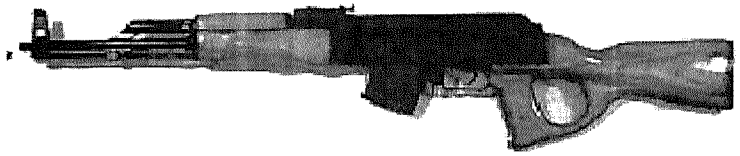
2.3. Foreign Rifles Accepting Large Capacity Military Magazines

In April of 1998, the Clinton administration broadened the range of the AW ban by prohibiting importation of an additional 58 foreign semiautomatic rifles that were still legal under the 1994 law but that can accept LCMs made for military assault rifles like the AK-47 (U.S. Department of the Treasury, 1998).[5] Figure 2-3 illustrates a few such rifles (hereafter, LCMM rifles) patterned after the banned AK-47 pictured in Figure 2-2. The LCMM rifles in Figure 2-3 do not possess the military-style features incorporated into the AK-47 (such as pistol grips, flash suppressors, and bayonet mounts), but they accept LCMs made for AK-47s.[6]

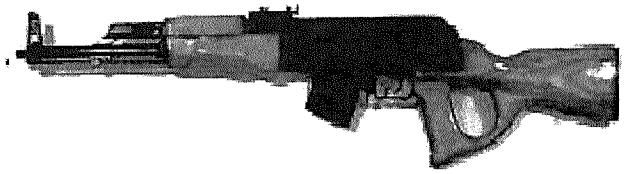
[5] In the civilian context, AWs are semiautomatic firearms. Many semiautomatic AWs are patterned after military firearms, but the military versions are capable of semiautomatic and fully automatic fire.

[6] Importation of some LCMM rifles, including a number of guns patterned after the AK-47, was halted in 1994 due to trade sanctions against China (U.S. Department of the Treasury, 1998).

Figure 2-3. Foreign Semiautomatic Rifles Capable of Accepting Large Capacity Military Magazines: AK47 Copies Banned by Executive Order in 1998

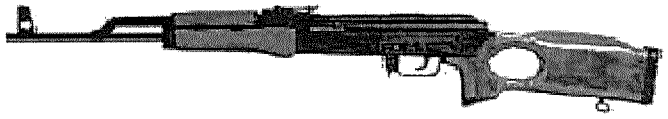


MISR



ARM

MAK90



WUM 1

Taken from U.S. Department of the Treasury (1998)

2.4. Ban Exemptions

2.4.1. Guns and Magazines Manufactured Prior to the Ban

The ban contains important exemptions. AWs and LCMs manufactured before the effective date of the ban are "grandfathered" and thus legal to own and transfer. Around 1990, there were an estimated 1 million privately owned AWs in the U.S. (about 0.5% of the estimated civilian gun stock) (Cox Newspapers, 1989, p. 1; American Medical Association Council on Scientific Affairs, 1992), though those counts probably did not correspond exactly to the weapons prohibited by the 1994 ban. The leading domestic AW producers manufactured approximately half a million AWs from 1989 through 1993, representing roughly 2.5% of all guns manufactured in the U.S. during that time (see Chapter 5).

We are not aware of any precise estimates of the pre-ban stock of LCMs, but gun owners in the U.S. possessed an estimated 25 million guns that were equipped with LCMs or 10-round magazines in 1994 (Cook and Ludwig, 1996, p. 17), and gun industry sources estimated that, including aftermarket items for repairing and extending magazines, there were at least 25 million LCMs available in the United States as of 1995 (Gun Tests, 1995, p. 30). As discussed in Chapter 7, moreover, an additional 4.8 million pre-ban LCMs were imported into the U.S. from 1994 through 2000 under the grandfathering exemption.

2.4.2. Semiautomatics With Fewer or No Military Features

Although the law bans "copies or duplicates" of the named gun makes and models, federal authorities have emphasized exact copies. Relatively cosmetic changes, such as removing a flash hider or bayonet mount, are sufficient to transform a banned weapon into a legal substitute, and a number of manufacturers now produce modified, legal versions of some of the banned guns (examples are listed in Table 2-1). In general, the AW ban does not apply to semiautomatics possessing no more than one military-style feature listed under the ban's features test provision.[7] For instance, prior to going out of business, Intratec, makers of the banned TEC-9 featured in Figure 2-1, manufactured an AB-10 ("after ban") model that does not have a threaded barrel or a barrel shroud but is identical to the TEC-9 in other respects, including the ability to accept an ammunition magazine outside the pistol grip (Figure 2-4). As shown in the illustration, the AB-10 accepts grandfathered, 32-round magazines made for the TEC-9, but post-ban magazines produced for the AB-10 must be limited to 10 rounds.

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[7] Note, however, that firearms imported into the country must still meet the "sporting purposes test" established under the federal Gun Control Act of 1968. In 1989, ATF determined that foreign semiautomatic rifles having any one of a number of named military features (including those listed in the features test of the 1994 AW ban) fail the sporting purposes test and cannot be imported into the country. In 1998, the ability to accept an LCM made for a military rifle was added to the list of disqualifying features. Consequently, it is possible for foreign rifles to pass the features test of the federal AW ban but not meet the sporting purposes test for imports (U.S. Department of the Treasury, 1998).

Another example is the Colt Match Target H-Bar rifle (Figure 2-5), which is a legalized version of the banned AR-15 (see Table 2-1). AR-15 type rifles are civilian weapons patterned after the U.S. military's M-16 rifle and were the assault rifles most commonly used in crime before the ban (Roth and Koper, 1997, Chapter 2). The post-ban version shown in Figure 2-5 (one of several legalized variations on the AR-15) is essentially identical to pre-ban versions of the AR-15 but does not have accessories like a flash hider, threaded barrel, or bayonet lug. The one remaining military feature on the post-ban gun is the pistol grip. This and other post-ban AR-15 type rifles can accept LCMs made for the banned AR15, as well as those made for the U.S. military's M-16. However, post-ban magazines manufactured for these guns must hold fewer than 11 rounds.

The LCMM rifles discussed above constituted another group of legalized AW-type weapons until 1998, when their importation was prohibited by executive order. Finally, the ban includes an appendix that exempts by name several hundred models of rifles and shotguns commonly used in hunting and recreation, 86 of which are semiautomatics. While the exempted semiautomatics generally lack the military-style features common to AWs, many take detachable magazines, and some have the ability to accept LCMs.[8]

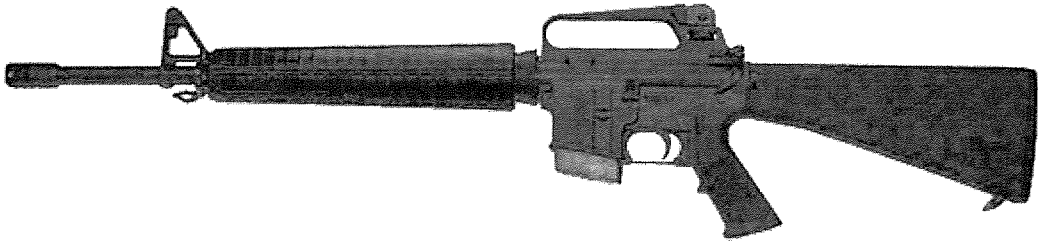
2.5. Summary

In the broadest sense, the AW-LCM ban is intended to limit crimes with semiautomatic firearms having large ammunition capacities – which enable shooters to discharge high numbers of shots rapidly – and other features conducive to criminal applications. The gun ban provision targets a relatively small number of weapons based on outward features or accessories that have little to do with the weapons' operation. Removing some or all of these features is sufficient to make the weapons legal. In other respects (e.g., type of firing mechanism, ammunition fired, and the ability to accept a detachable magazine), AWs do not differ from other legal semiautomatic weapons. The LCM provision of the law limits the ammunition capacity of non-banned firearms.

[8] Legislators inserted a number of amendments during the drafting process to broaden the consensus behind the bill (Lennett 1995). Among changes that occurred during drafting were: dropping a requirement to register post-ban sales of the grandfathered guns, dropping a ban on "substantial substitutes" as well as "exact copies" of the banned weapons, shortening the list of named makes and models covered by the ban, adding the appendix list of exempted weapons, and mandating the first impact study of the ban that is discussed below.

Figure 2-4. Post-Ban, Modified Versions of Assault Weapons: The Intratec AB ("After Ban") Model (See Featured Firearm)

Figure 2-5. Post-Ban, Modified Versions of Assault Weapons: The Colt Match Target HBAR Model



3. CRIMINAL USE OF ASSAULT WEAPONS AND LARGE CAPACITY MAGAZINES BEFORE THE BAN

During the 1980s and early 1990s, AWs and other semiautomatic firearms equipped with LCMs were involved in a number of highly publicized mass murder incidents that raised public concern about the accessibility of high powered, military-style weaponry and other guns capable of discharging high numbers of bullets in a short period of time (Cox Newspapers, 1989; Kleck, 1997, pp.124-126,144; Lenett, 1995). In one of the worst mass murders ever committed in the U.S., for example, James Huberty killed 21 persons and wounded 19 others in a San Ysidro, California MacDonald's restaurant on July 18, 1984 using an Uzi carbine, a shotgun, and another semiautomatic handgun. On September 14, 1989, Joseph Wesbecker, armed with an AK-47 rifle, two MAC-11 handguns, and a number of other firearms, killed 7 persons and wounded 15 others at his former workplace in Louisville, Kentucky before taking his own life. Another particularly notorious incident that precipitated much of the recent debate over AWs occurred on January 17, 1989 when Patrick Purdy used a civilian version of the AK-47 military rifle to open fire on a schoolyard in Stockton, California, killing 5 children and wounding 29 persons.

There were additional high profile incidents in which offenders using semiautomatic handguns with LCMs killed and wounded large numbers of persons. Armed with two handguns having LCMs (and reportedly a supply of extra LCMs), a rifle, and a shotgun, George Hennard killed 22 people and wounded another 23 in Killeen, Texas in October 1991. In a December 1993 incident, a gunman named Colin Ferguson, armed with a handgun and LCMs, opened fire on commuters on a Long Island train, killing 5 and wounding 17.

Indeed, AWs or other semiautomatics with LCMs were involved in 6, or 40%, of 15 mass shooting incidents occurring between 1984 and 1993 in which six or more persons were killed or a total of 12 or more were wounded (Kleck, 1997, pp.124-126, 144). Early studies of AWs, though sometimes based on limited and potentially unrepresentative data, also suggested that AWs recovered by police were often associated with drug trafficking and organized crime (Cox Newspapers, 1989; also see Roth and Koper, 1997, Chapter 5), fueling a perception that AWs were guns of choice among drug dealers and other particularly violent groups. All of this intensified concern over AWs and other semiautomatics with large ammunition capacities and helped spur the passage of AW bans in California, New Jersey, Connecticut, and Hawaii between 1989 and 1993, as well as the 1989 federal import ban on selected semiautomatic rifles. Maryland also passed AW legislation in 1994, just a few months prior to the passage of the 1994 federal AW ban.[9]

Looking at the nation's gun crime problem more broadly, however, AWs and LCMs were used in only a minority of gun crimes prior to the 1994 federal ban, and AWs were used in a particularly small percentage of gun crimes.

[9] A number of localities around the nation also passed AW bans during this period.

3.1. Criminal Use of Assault Weapons

Numerous studies have examined the use of AWs in crime prior to the federal ban. The definition of AWs varied across the studies and did not always correspond exactly to that of the 1994 law (in part because a number of the studies were done prior to 1994). In general, however, the studies appeared to focus on various semiautomatics with detachable magazines and military-style features. According to these accounts, AWs typically accounted for up to 8% of guns used in crime, depending on the specific AW definition and data source used (e.g., see Beck et al., 1993; Hargarten et al., 1996; Hutson et al., 1994; 1995; McGonigal et al., 1993; New York State Division of Criminal Justice Services, 1994; Roth and Koper, 1997, Chapters 2, 5, 6; Zawitz, 1995). A compilation of 38 sources indicated that AWs accounted for 2% of crime guns on average (Kleck, 1997, pp.112, 141-143).[10]

Similarly, the most common AWs prohibited by the 1994 federal ban accounted for between 1% and 6% of guns used in crime according to most of several national and local data sources examined for this and our prior study (see Chapter 6 and Roth and Koper, 1997, Chapters 5, 6):

- Baltimore (all guns recovered by police, 1992-1993): 2%
- Miami (all guns recovered by police, 1990-1993): 3%
- Milwaukee (guns recovered in murder investigations, 1991-1993): 6%
- Boston (all guns recovered by police, 1991-1993): 2%
- St. Louis (all guns recovered by police, 1991-1993): 1%
- Anchorage, Alaska (guns used in serious crimes, 1987-1993): 4%
- National (guns recovered by police and reported to ATF, 1992-1993): 5%[11]
- National (gun thefts reported to police, 1992-Aug. 1994): 2%
- National (guns used in murders of police, 1992-1994): 7-9%[12]
- National (guns used in mass murders of 4 or more persons, 1992-1994): 4-13%[13]

Although each of the sources cited above has limitations, the estimates consistently show that AWs are used in a small fraction of gun crimes. Even the highest

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[10] The source in question contains a total of 48 estimates, but our focus is on those that examined all AWs (including pistols, rifles, and shotguns) as opposed to just assault rifles.

[11] For reasons discussed in Chapter 6, the national ATF estimate likely overestimates the use of AWs in crime. Nonetheless, the ATF estimate lies within the range of other presented estimates.

[12] The minimum estimate is based on AW cases as a percentage of all gun murders of police. The maximum estimate is based on AW cases as a percentage of cases for which at least the gun manufacturer was known. Note that AWs accounted for as many as 16% of gun murders of police in 1994 (Roth and Koper, 1997, Chapter 6; also see Adler et al., 1995).

[13] These statistics are based on a sample of 28 cases found through newspaper reports (Roth and Koper, 1997, Appendix A). One case involved an AW, accounting for 3.6% of all cases and 12.5% of cases in which at least the type of gun (including whether the gun was a handgun, rifle, or shotgun and whether the gun was a semiautomatic) was known. Also see the earlier discussion of AWs and mass shootings at the beginning of this chapter.

estimates, which correspond to particularly rare events such mass murders and police murders, are no higher than 13%. Note also that the majority of AWs used in crime are assault pistols (APs) rather than assault rifles (ARs). Among AWs reported by police to ATF during 1992 and 1993, for example, APs outnumbered ARs by a ratio of 3 to 1 (see Chapter 6).

The relative rarity of AW use in crime can be attributed to a number of factors. Many AWs are long guns, which are used in crime much less often than handguns. Moreover, a number of the banned AWs are foreign weapons that were banned from importation into the U.S. in 1989. Also, AWs are more expensive (see Table 2-1) and more difficult to conceal than the types of handguns that are used most frequently in crime.

3.1.1. A Note on Survey Studies and Assault Weapons

The studies and statistics discussed above were based primarily on police information. Some survey studies have given a different impression, suggesting substantial levels of AW ownership among criminals and otherwise high-risk juvenile and adult populations, particularly urban gang members (Knox et al., 1994; Sheley and Wright, 1993a). A general problem with these studies, however, is that respondents themselves had to define terms like "military-style" and "assault rifle." Consequently, the figures from these studies may lack comparability with those from studies with police data. Further, the figures reported in some studies prompt concerns about exaggeration of AW ownership (perhaps linked to publicity over the AW issue during the early 1990s when a number of these studies were conducted), particularly among juvenile offenders, who have reported ownership levels as high as 35% just for ARs (Sheley and Wright, 1993a).[14]

Even so, most survey evidence on the actual use of AWs suggests that offenders rarely use AWs in crime. In a 1991 national survey of adult state prisoners, for example, 8% of the inmates reported possessing a "military-type" firearm at some point in the past (Beck et al., 1993, p. 19). Yet only 2% of offenders who used a firearm during their conviction offense reported using an AW for that offense (calculated from pp. 18, 33), a figure consistent with the police statistics cited above. Similarly, while 10% of adult inmates and 20% of juvenile inmates in a Virginia survey reported having owned an AR, none of the adult inmates and only 1% of the juvenile inmates reported having carried them at crime scenes (reported in Zawitz, 1995, p. 6). In contrast, 4% to 20% of inmates surveyed in eight jails across rural and urban areas of Illinois and Iowa reported having used an AR in committing crimes (Knox et al., 1994, p. 17). Nevertheless, even assuming the accuracy and honesty of the respondents' reports, it is not clear what

[14] As one example of possible exaggeration of AW ownership, a survey of incarcerated juveniles in New Mexico found that 6% reported having used a "military-style rifle" against others and 2.6% reported that someone else used such a rifle against them. However, less than 1% of guns recovered in a sample of juvenile firearms cases were "military" style guns (New Mexico Criminal Justice Statistical Analysis Center, 1998, pp. 17-19; also see Ruddell and Mays, 2003).

weapons they were counting as ARs, what percentage of their crimes were committed with ARs, or what share of all gun crimes in their respective jurisdictions were linked to their AR uses. Hence, while some surveys suggest that ownership and, to a lesser extent, use of AWs may be fairly common among certain subsets of offenders, the overwhelming weight of evidence from gun recovery and survey studies indicates that AWs are used in a small percentage of gun crimes overall.

3.1.2. Are Assault Weapons More Attractive to Criminal Users Than Other Gun Users?

Although AWs are used in a small percentage of gun crimes, some have argued that AWs are more likely to be used in crime than other guns, i.e., that AWs are more attractive to criminal than lawful gun users due to the weapons' military-style features and their particularly large ammunition magazines. Such arguments are based on data implying that AWs are more common among crime guns than among the general stock of civilian firearms. According to some estimates generated prior to the federal ban, AWs accounted for less than one percent of firearms owned by civilians but up to 11% of guns used in crime, based on firearms reported by police to ATF between 1986 and 1993 (e.g., see Cox Newspapers, 1989; Lennett, 1995). However, these estimates were problematic in a number of respects. As discussed in Chapter 6, ATF statistics are not necessarily representative of the types of guns most commonly recovered by police, and ATF statistics from the late 1980s and early 1990s in particular tended to overstate the prevalence of AWs among crime guns. Further, estimating the percentage of civilian weapons that are AWs is difficult because gun production data are not reported by model, and one must also make assumptions about the rate of attrition among the stock of civilian firearms.

Our own more recent assessment indicates that AWs accounted for about 2.5% of guns produced from 1989 through 1993 (see Chapter 5). Relative to previous estimates, this may signify that AWs accounted for a growing share of civilian firearms in the years just before the ban, though the previous estimates likely did not correspond to the exact list of weapons banned in 1994 and thus may not be entirely comparable to our estimate. At any rate, the 2.5% figure is comparable to most of the AW crime gun estimates listed above; hence, it is not clear that AWs are used disproportionately in most crimes, though AWs still seem to account for a somewhat disproportionate share of guns used in murders and other serious crimes.

Perhaps the best evidence of a criminal preference for AWs comes from a study of young adult handgun buyers in California that found buyers with minor criminal histories (i.e., arrests or misdemeanor convictions that did not disqualify them from purchasing firearms) were more than twice as likely to purchase APs than were buyers with no criminal history (4.6% to 2%, respectively) (Wintemute et al., 1998a). Those with more serious criminal histories were even more likely to purchase APs: 6.6% of those who had been charged with a gun offense bought APs, as did 10% of those who had been charged with two or more serious violent offenses. AP purchasers were also more likely to be arrested subsequent to their purchases than were other gun purchasers.

Among gun buyers with prior charges for violence, for instance, AP buyers were more than twice as likely as other handgun buyers to be charged with any new offense and three times as likely to be charged with a new violent or gun offense. To our knowledge, there have been no comparable studies contrasting AR buyers with other rifle buyers.

3.2. Criminal Use of Large Capacity Magazines

Relative to the AW issue, criminal use of LCMs has received relatively little attention. Yet the overall use of guns with LCMs, which is based on the combined use of AWs and non-banned guns with LCMs, is much greater than the use of AWs alone. Based on data examined for this and a few prior studies, guns with LCMs were used in roughly 14% to 26% of most gun crimes prior to the ban (see Chapter 8; Adler et al., 1995; Koper, 2001; New York Division of Criminal Justice Services, 1994).

- Baltimore (all guns recovered by police, 1993): 14%
- Milwaukee (guns recovered in murder investigations, 1991-1993): 21%
- Anchorage, Alaska (handguns used in serious crimes, 1992-1993): 26%
- New York City (guns recovered in murder investigations, 1993): 16-25%[15]
- Washington, DC (guns recovered from juveniles, 1991-1993): 16%[16]
- National (guns used in murders of police, 1994): 31%-41%[17]

Although based on a small number of studies, this range is generally consistent with national survey estimates indicating approximately 18% of all civilian-owned guns and 21% of civilian-owned handguns were equipped with LCMs as of 1994 (Cook and Ludwig, 1996, p. 17). The exception is that LCMs may have been used disproportionately in murders of police, though such incidents are very rare.

As with AWs and crime guns in general, most crime guns equipped with LCMs are handguns. Two handgun models manufactured with LCMs prior to the ban (the Glock 17 and Ruger P89) were among the 10 crime gun models most frequently recovered by law enforcement and reported to ATF during 1994 (ATF, 1995).

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[15] The minimum estimate is based on cases in which discharged firearms were recovered, while the maximum estimate is based on cases in which recovered firearms were positively linked to the case with ballistics evidence (New York Division of Criminal Justice Services, 1994).

[16] Note that Washington, DC prohibits semiautomatic firearms accepting magazines with more than 12 rounds (and handguns in general).

[17] The estimates are based on the sum of cases involving AWs or other guns sold with LCMs (Adler et al., 1995, p.4). The minimum estimate is based on AW-LCM cases as a percentage of all gun murders of police. The maximum estimate is based on AW-LCM cases as a percentage of cases in which the gun model was known.

3.3. Summary

In sum, AWs and LCMs were used in up to a quarter of gun crimes prior to the 1994 AW-LCM ban. By most estimates, AWs were used in less than 6% of gun crimes even before the ban. Some may have perceived their use to be more widespread, however, due to the use of AWs in particularly rare and highly publicized crimes such as mass shootings (and, to a lesser extent, murders of police), survey reports suggesting high levels of AW ownership among some groups of offenders, and evidence that some AWs are more attractive to criminal than lawful gun buyers.

In contrast, guns equipped with LCMs – of which AWs are a subset – are used in roughly 14% to 26% of gun crimes. Accordingly, the LCM ban has greater potential for affecting gun crime. However, it is not clear how often the ability to fire more than 10 shots without reloading (the current magazine capacity limit) affects the outcomes of gun attacks (see Chapter 9). All of this suggests that the ban's impact on gun violence is likely to be small.

4. OVERVIEW OF STUDY DESIGN, HYPOTHESES, AND PRIOR FINDINGS

Section 110104 of the AW-LCM ban directed the Attorney General of the United States to study the ban's impact and report the results to Congress within 30 months of the ban's enactment, a provision which was presumably motivated by a sunset provision in the legislation (section 110105) that will lift the ban in September 2004 unless Congress renews the ban. In accordance with the study requirement, the National Institute of Justice (NIJ) awarded a grant to the Urban Institute to study the ban's short-term (i.e., 1994-1996) effects. The results of that study are available in a number of reports, briefs, and articles written by members of this research team (Koper and Roth, 2001a; 2001b; 2002a; Roth and Koper, 1997; 1999).[18] In order to understand the ban's longer-term effects, NIJ provided additional funding to extend the AW research. In 2002, we delivered an interim report to NIJ based on data extending through at least the late 1990s (Koper and Roth, 2002b). This report is based largely on the 2002 interim report, but with various new and updated analyses extending as far as 2003. It is thus a compilation of analyses conducted between 1998 and 2003. The study periods vary somewhat across the analyses, depending on data availability and the time at which the data were collected.

4.1. Logical Framework for Research on the Ban

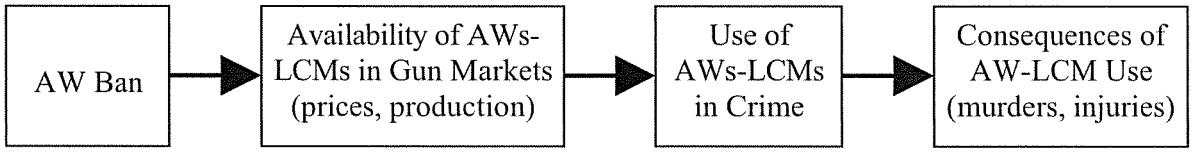
An important rationale for the AW-LCM ban is that AWs and other guns equipped with LCMs are particularly dangerous weapons because they facilitate the rapid firing of high numbers of shots, thereby potentially increasing injuries and deaths from gun violence. Although AWs and LCMs were used in only a modest share of gun crimes before the ban, it is conceivable that a decrease in their use might reduce fatal and non-fatal gunshot victimizations, even if it does not reduce the overall rate of gun crime. (In Chapter 9, we consider in more detail whether forcing offenders to substitute other guns and smaller magazines can reduce gun deaths and injuries.)

It is not clear how quickly such effects might occur, however, because the ban exempted the millions of AWs and LCMs that were manufactured prior to the ban's effective date in September 1994. This was particularly a concern for our first study, which was based on data extending through mid-1996, a period potentially too short to observe any meaningful effects. Consequently, investigation of the ban's effects on gun markets – and, most importantly, how they have affected criminal use of AWs and LCMs – has played a central role in this research. The general logic of our studies, illustrated in Figure 4-1, has been to first assess the law's impact on the availability of AWs and LCMs, examining price and production (or importation) indices in legal markets and relating them to trends in criminal use of AWs and LCMs. In turn, we can relate these market patterns to trends in the types of gun crimes most likely to be affected by changes in the use of AWs and LCMs. However, we cannot make definitive assessments of the

[18] The report to Congress was the Roth and Koper (1997) report.

ban's impact on gun violence until it is clear that the ban has indeed reduced criminal use of AWs and LCMs.

Figure 4-1. Logic Model for Research on the Assault Weapons Ban



4.2. Hypothesized Market Effects

4.2.1. A General Description of Gun Markets

Firearms are distributed in markets commonly referred to as primary and secondary markets. Illicit gun transactions occur in both markets. Primary markets include wholesale and retail transactions by federally-licensed gun dealers, referred to as federal firearm licensees. Licensed dealers are required to, among things, follow federal and state background procedures to verify the eligibility of purchasers, observe any legally required waiting period prior to making transfers, and maintain records of gun acquisitions and dispositions (though records are not required for sales of ammunition magazines).

Despite these restrictions, survey data suggest that as many as 21% of adult gun offenders obtained guns from licensed dealers in the years prior to the ban (Harlow, 2001, p. 6; also see Wright and Rossi, 1986, pp. 183,185). In more recent years, this figure has declined to 14% (Harlow, 2001, p. 6), due likely to the Brady Act, which established a national background check system for purchases from licensed dealers, and reforms of the federal firearms licensing system that have greatly reduced the number of licensed gun dealers (see ATF, 2000; Koper, 2002). Some would-be gun offenders may be legally eligible buyers at the time of their acquisitions, while others may seek out corrupt dealers or use other fraudulent or criminal means to acquire guns from retail dealers (such as recruiting a legally entitled buyer to act as a "straw purchaser" who buys a gun on behalf of a prohibited buyer).

Secondary markets encompass second-hand gun transactions made by non-licensed individuals.[19] Secondary market participants are prohibited from knowingly transferring guns to ineligible purchasers (e.g., convicted felons and drug abusers). However, secondary transfers are not subject to the federal record-keeping and background check requirements placed on licensed dealers, thus making the secondary

[19] Persons who make only occasional sales of firearms are not required to obtain a federal firearms license (ATF, 2000, p. 11).

market almost entirely unregulated and, accordingly, a better source of guns for criminal users.[20] In the secondary market, ineligible buyers may obtain guns from a wide variety of legitimate or illegitimate gun owners: relatives, friends, fences, drug dealers, drug addicts, persons selling at gun shows, or other strangers (e.g., see Wright and Rossi, 1986; Sheley and Wright, 1993a). Of course, ineligible purchasers may also steal guns from licensed gun dealers and private gun owners.

Secondary market prices are generally lower than primary market prices (because the products are used), though the former may vary substantially across a range of gun models, places, circumstances, and actors. For example, street prices of AWs and other guns can be 3 to 6 times higher than legal retail prices in jurisdictions with strict gun controls and lower levels of gun ownership (Cook et al., 1995, p. 72). Nonetheless, experts note that primary and secondary market prices correspond to one another, in that relatively expensive guns in the primary market are also relatively expensive in the secondary market. Moreover, in any given locality, trends in secondary market prices can be expected to track those in the primary market because a rise in primary market prices for new weapons will increase demand for used weapons and therefore increase secondary market prices (Cook et al., 1995, p. 71).

4.2.2. The AW-LCM Ban and Gun Markets

In the long term, we can expect prices of the banned guns and magazines to gradually rise as supplies dwindle. As prices rise, more would-be criminal users of AWs and LCMs will be unable or unwilling to pay the higher prices. Others will be discouraged by the increasing non-monetary costs (i.e., search time) of obtaining the weapons. In addition, rising legal market prices will undermine the incentive for some persons to sell AWs and LCMs to prohibited buyers for higher premiums, thereby bidding some of the weapons away from the channels through which they would otherwise reach criminal users. Finally, some would-be AW and LCM users may become less willing to risk confiscation of their AWs and LCMs as the value of the weapons increases. Therefore, we expect that over time diminishing stocks and rising prices will lead to a reduction in criminal use of AWs and LCMs.[21]

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[20] Some states require that secondary market participants notify authorities about their transactions. Even in these states, however, it is not clear how well these laws are enforced.

[21] We would expect these reductions to be apparent shortly after the price increases (an expectation that, as discussed below, was confirmed in our earlier study) because a sizeable share of guns used in crime are used within one to three years of purchase. Based on analyses of guns recovered by police in 17 cities, ATF (1997, p. 8) estimates that guns less than 3 years old (as measured by the date of first retail sale) comprise between 22% and 43% of guns seized from persons under age 18, between 30% and 54% of guns seized from persons ages 18 to 24, and between 25% and 46% of guns seized from persons over 24. In addition, guns that are one year old or less comprise the largest share of relatively new crime guns (i.e., crime guns less than three years old) (Pierce et al., 1998, p. 11). Similar data are not available for secondary market transactions, but such data would shorten the estimated time from acquisition to criminal use.

However, the expected timing of the market processes is uncertain. We can anticipate that AW and LCM prices will remain relatively stable for as long as the supply of grandfathered weapons is adequate to meet demand. If, in anticipation of the ban, gun manufacturers overestimated the demand for AWs and LCMs and produced too many of them, prices might even fall before eventually rising. Market responses can be complicated further by the continuing production of legal AW substitute models by some gun manufacturers. If potential AW buyers are content with an adequate supply of legal AW-type weapons having fewer military features, it will take longer for the grandfathered AW supply to constrict and for prices to rise. Similarly, predicting LCM price trends is complicated by the overhang of military surplus magazines that can fit civilian weapons (e.g., military M-16 rifle magazines that can be used with AR-15 type rifles) and by the market in reconditioned magazines. The "aftermarket" in gun accessories and magazine extenders that can be used to convert legal guns and magazines into banned ones introduces further complexity to the issue.

4.3. Prior Research on the Ban's Effects

To summarize the findings of our prior study, Congressional debate over the ban triggered pre-ban speculative price increases of upwards of 50% for AWs during 1994, as gun distributors, dealers, and collectors anticipated that the weapons would become valuable collectors' items. Analysis of national and local data on guns recovered by police showed reductions in criminal use of AWs during 1995 and 1996, suggesting that rising prices made the weapons less accessible to criminal users in the short-term aftermath of the ban.

However, the speculative increase in AW prices also prompted a pre-ban boost in AW production; in 1994, AW manufacturers produced more than twice their average volume for the 1989-1993 period. The oversupply of grandfathered AWs, the availability of the AW-type legal substitute models mentioned earlier, and the steady supply of other non-banned semiautomatics appeared to have saturated the legal market, causing advertised prices of AWs to fall to nearly pre-speculation levels by late 1995 or early 1996. This combination of excess supply and reduced prices implied that criminal use of AWs might rise again for some period around 1996, as the large stock of AWs would begin flowing from dealers' and speculators' gun cases to the secondary markets where ineligible purchasers may obtain guns more easily.

We were not able to gather much specific data about market trends for LCMs. However, available data did reveal speculative, pre-ban price increases for LCMs that were comparable to those for AWs (prices for some LCMs continued to climb into 1996), leading us to speculate – incorrectly, as this study will show (see Chapter 8) – that there was some reduction in LCM use after the ban.[22]

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[22] To our knowledge, there have been two other studies of changes in AW and LCM use during the post-ban period. One study reported a drop in police recoveries of AWs in Baltimore during the first half of 1995 (Weil and Knox, 1995), while the other found no decline in recoveries of AWs or LCMs in Milwaukee homicide cases as of 1996 (Hargarten et al., 2000). Updated analyses for both of these cities

Determining whether the reduction in AW use (and perhaps LCM use) following the ban had an impact on gun violence was more difficult. The gun murder rate dropped more in 1995 (the first year following the ban) than would have been expected based on preexisting trends, but the short post-ban follow-up period available for the analysis precluded a definitive assessment as to whether the reduction was statistically meaningful (see especially Koper and Roth, 2001a). The reduction was also larger than would be expected from the AW-LCM ban, suggesting that other factors were at work in accelerating the decline. Using a number of national and local data sources, we also examined trends in measures of victims per gun murder incident and wounds per gunshot victim, based on the hypothesis that these measures might be more sensitive to variations in the use of AWs and LCMs. These analyses revealed no ban effects, thus failing to show confirming evidence of the mechanism through which the ban was hypothesized to affect the gun murder rate. However, newly available data presented in subsequent chapters suggest these assessments may have been premature, because any benefits from the decline in AW use were likely offset by steady or rising use of other guns equipped with LCMs, a trend that was not apparent at the time of our earlier study.

We cautioned that the short-term patterns observed in the first study might not provide a reliable guide to longer-term trends and that additional follow-up was warranted. Two key issues to be addressed were whether there had been a rebound in AW use since the 1995-1996 period and, if so, whether that rebound had yet given way to a long-term reduction in AW use. Another key issue was to seek more definitive evidence on short and long-term trends in the availability and criminal use of LCMs. These issues are critical to assessing the effectiveness of the AW-LCM ban, but they also have broader implications for other important policy concerns, namely, the establishment of reasonable timeframes for sunset and evaluation provisions in legislation. In other words, how long is long enough in evaluating policy and setting policy expiration dates?

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are presented in Chapters 6 and 8.

5. MARKET INDICATORS FOR ASSAULT WEAPONS: PRICES AND PRODUCTION

This chapter assesses the ban's impact on the availability of AWs in primary and secondary markets, as measured by trends in AW prices and post-ban production of legal AW substitute models. Understanding these trends is important because they influence the flow of grandfathered weapons to criminals and the availability of non-banned weapons that are close substitutes for banned ones. In the next chapter, we assess the impact of these trends on criminal use of AWs, as approximated by statistics on gun seizures by police. (Subsequent chapters present similar analyses for LCMs.)

Following our previous methods, we compare trends for AWs to trends for various non-banned firearms. The AW analyses generally focus on the most common AWs formerly produced in the U.S., including Intratec and SWD-type APs and AR-15-type ARs produced by Colt and others. In addition, we selected a small number of domestic pistol and rifle models made by Calico and Feather Industries that fail the features test provision of the AW legislation and that were relatively common among crime guns reported by law enforcement agencies to ATF prior to the ban (see Roth and Koper, 1997, Chapter 5). Together, this group of weapons represented over 80% of AWs used in crime and reported to ATF from 1993 through 1996, and the availability of these guns was not affected by legislation or regulations predating the AW-LCM ban.[23] We also examine substitution of legalized, post-ban versions of these weapons, including the Intratec AB-10 and Sport-22, FMJ's PM models (substitutes for the SWD group), Colt Sporters, Calico Liberty models, and others. We generally did not conduct comparative analyses of named foreign AWs (the Uzi, Galil, and AK weapons) because the 1989 federal import ban had already limited their availability, and their legal status was essentially unchanged by the 1994 ban.

The exact gun models and time periods covered vary across the analyses (based on data availability and the time at which data were collected). The details of each analysis are described in the following sections.

5.1. Price Trends for Assault Weapons and Other Firearms

To approximate trends in the prices at which AWs could be purchased throughout the 1990s, we collected annual price data for several APs, ARs, and non-banned comparison firearms from the *Blue Book of Gun Values* (Fjestad, 1990-1999). The *Blue Book* provides national average prices for an extensive list of new and used firearms based on information collected at gun shows and input provided by networks of dealers

[23] The Intratec group includes weapons made by AA Arms. The SWD group contains related models made by Military Armaments Corporation/Ingram and RPB Industries. The AR-15 group contains models made by Colt and copies made by Bushmaster, Olympic Arms, Eagle Arms, SGW Enterprises, Essential Arms, DPMS, and Sendra.

and collectors. The *Blue Book* is utilized widely in the gun industry, though prices in any given locality may differ notably from the averages appearing in the *Blue Book*.

To assess time trends in gun prices, we conducted hedonic price analyses (Berndt, 1990) in which the gun prices were regressed upon a series of year and model indicators. The coefficients for the year indicators show annual changes in the prices of the guns relative to 1994 (the year the ban went into effect), controlling for time-stable differences in the prices of various gun models. Since manufacturers' suggested retail prices (MSRP) were not available for banned AWs during post-ban years, we utilized prices for AWs in 100% condition for all years.[24] For non-banned firearms, we used MSRP.[25] For all models, we divided the gun prices by annual values of the gross domestic product price deflator provided in the December 2001 and 2000 issues of *Economic Indicators* and logged these adjusted prices.

Each model presented below is based on data pooled across a number of firearm models and years, so that observation P_{jt} represents the price of gun model j during year t. We weighted each observation, P_{jt}, based on cumulative estimates of the production of model j from 1985 or 1986 (depending on data availability) through year t using data provided by gun manufacturers to ATF and published by the Violence Policy Center (1999).[26, 27]

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[24] Project staff also collected prices of weapons in 80% condition. However, the levels and annual changes of the 80% prices were very highly correlated (0.86 to 0.99) with those of the 100% condition prices. Therefore, we limited the analysis to the 100% prices.

[25] We utilized prices for the base model of each AW and comparison firearm (in contrast to model variations with special features or accessories).

[26] The regression models are based on equal numbers of observations for each gun model. Hence, unweighted regressions would give equal weight to each gun model. This does not seem appropriate, however, because some guns are produced in much larger numbers than are other guns. Weighting the regression models by production estimates should therefore give us a better sense of what one could "typically" expect to pay for a generic gun in each study category (e.g., a generic assault pistol).

[27] Several of the selected weapons began production in 1985 or later. In other cases, available production data extended back to only the mid-1980s. Published production figures for handguns are broken down by type (semiautomatic, revolver) and caliber and thus provide perfect or very good approximations of production for the handgun models examined in this study. Rifle production data, however, are not disaggregated by gun type, caliber, or model. For the ARs under study, the production counts should be reasonable approximations of AR production because most of the rifles made by the companies in question prior to the ban were ARs. The rifles used in the comparison (i.e., non-banned) rifle analysis are made by companies (Sturm Ruger, Remington, and Marlin) that produce numerous semiautomatic and non-semiautomatic rifle models. However, the overall rifle production counts for these companies should provide some indication of differences in the availability of the comparison rifles relative to one another. Because production data were available through only 1997 at the time this particular analysis was conducted (Violence Policy Center, 1999), we used cumulative production through 1997 to weight the 1998 and 1999 observations for the comparison handgun and comparison rifle models. This was not a consideration for AWs since their production ceased in 1994 (note that the AW production figures for 1994 may include some post-ban legal substitute models manufactured after September 13, 1994). Nonetheless, weighting had very little effect on the inferences from either of the comparison gun models.

5.1.1. Assault Pistol Prices

The analysis of AP prices focuses on the Intratec TEC-9/DC-9, TEC-22, SWD M-11/9, and Calico M950 models. Regression results are shown in Table 5-1, while Figure 5-1 graphically depicts the annual trend in prices for the period 1990 through 1999. None of the yearly coefficients in Table 5-1 is statistically significant, thus indicating that average annual AP prices did not change during the 1990s after adjusting for inflation. Although the model is based on a modest number of observations (n=40) that may limit its statistical power (i.e., its ability to detect real effects), the size of the yearly coefficients confirm that prices changed very little from year to year. The largest yearly coefficient is for 1990, and it indicates that AP prices were only 4% higher in 1990 than in 1994.[28]

This stands in contrast to our earlier finding (Roth and Koper, 1997, Chapter 4) that prices for SWD APs may have risen by as much as 47% around the time of the ban. However, the earlier analyses were based on semi-annual or quarterly analyses advertised by gun distributors and were intended to capture short-term fluctuations in price that assumed greater importance in the context of the first AW study, which could examine only short-term ban outcomes. *Blue Book* editions released close in time to the ban (e.g., 1995) also cautioned that prices for some AWs were volatile at that time. This study emphasizes longer-term price trends, which appear to have been more stable.[29]

[28] To interpret the coefficient of each indicator variable in terms of a percentage change in the dependent variable, we exponentiate the coefficient, subtract 1 from the exponentiated value, and multiply the difference by 100.

[29] Although the earlier analysis of AP prices focused on the greatest variations observed in semi-annual prices, the results also provide indications that longer-term trends were more stable. Prices in 1993, for example, averaged roughly 73% of the peak prices reached at the time the ban was implemented (i.e., late 1994), while prices in early 1994 and late 1995 averaged about 83% and 79% of the peak prices, respectively. Hence, price variation was much more modest after removing the peak periods around the time of the ban's implementation (i.e., late 1994 and early 1995). The wider range of APs used in the current study may also be responsible for some of the differences between the results of this analysis and the prior study.

Table 5-1. Regression of Assault Pistol and Comparison Handgun Prices on Annual Time Indicators, 1990-1999, Controlling for Gun Model

	Assault Pistols (n=40)		Comparison Handguns (n=38)	
	Estimate	**T Value**	**Estimate**	**T Value**
Constant	1.56	26.94***	-0.21	-6.81***
1990	0.04	1.07	0.12	2.07**
1991	0.01	0.30	0.09	1.79*
1992	-0.01	-0.32	0.05	1.30
1993	-0.03	-1.09	0.02	0.48
1995	0.01	0.22	-0.02	-0.48
1996	-0.01	-0.45	-0.09	-2.69***
1997	-0.03	-1.13	-0.11	-3.26***
1998	0.00	-0.10	-0.07	-1.99*
1999	-0.02	-0.58	-0.14	-4.02***
Tec-9	-0.67	-11.95***		
Tec-22	-0.89	-15.59***		
SWD	-0.64	-11.49***		
Davis P32			0.09	3.63***
Davis P380			0.20	8.20***
Lorcin L380			0.29	11.35***
F value	27.79		16.24	
(p value)	<.01		<.01	
Adj. R-square	0.89		0.83	

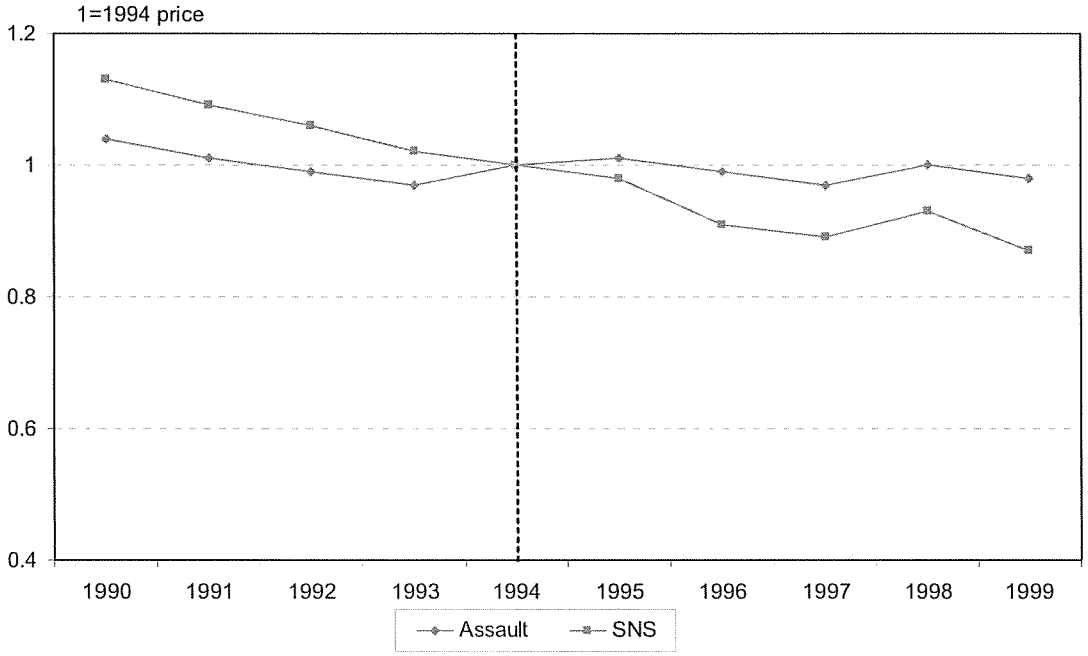
Time indicators are interpreted relative to 1994. Assault pistol model indicators are interpreted relative to Calico 9mm. Comparison handgun models are interpreted relative to Lorcin .25 caliber.

* Statistically significant at p<=.10.

** Statistically significant at p<=.05.

*** Statistically significant at p<=.01.

Figure 5-1. Annual Price Trends for Assault Pistols and SNS Handguns, 1990-1999



Assault pistol prices basd on TEC9, TEC22, SWD M11/9, and Calico M950. SNS prices based on Davis P32 and P380 and Lorcin L25 and L380.

5.1.2. Comparison Handgun Prices

For comparison, Table 5-1 and Figure 5-1 illustrate price trends for a number of non-banned, cheaply priced, and readily concealable semiautomatic handgun models: the Davis P32 and P380 and the Lorcin L25 and L380. Such guns are often referred to as Saturday night specials (SNS). By a number of accounts, SNS-type guns, and Davis and Lorcin models in particular, are among the guns most frequently used in crime (ATF, 1995; 1997; Kennedy et al., 1996; Wintemute, 1994). Although the differences between APs and SNS handguns (particularly the fact that most SNS handguns do not have LCMs) suggest they are likely to be used by gun consumers with different levels of firearms experience and sophistication, the SNS guns are arguably a good comparison group for APs because both groups of guns are particularly sensitive to criminal demand. Like AP buyers, SNS buyers are more likely than other gun buyers to have criminal histories and to be charged with new offenses, particularly violent or firearm offenses, subsequent to their purchases (Wintemute et al., 1998b).

Prices of SNS handguns dropped notably throughout the 1990s. Prices for SNS handguns were 13% higher in 1990 than in 1994. Prices then dropped another 13% from 1994 to 1999. This suggests that although AP prices remained generally stable throughout the 1990s, they increased relative to prices of other guns commonly used in crime. We say more about this below.

5.1.3. Assault Rifle Prices

To assess trends in prices of ARs, we examined prices for several Colt and Olympic rifle models in the AR-15 class, as well as Calico models M900 and M951 and Feather models AT9 and AT22.[30] Because rifle production data are not disaggregated by weapon type (semiautomatic, bolt action, etc.), caliber, or model, the regressions could only be weighted using overall rifle production counts for each company. For this reason, we calculated the average price of the ARs made by each company for each year and modeled the trends in these average prices over time, weighting by each company's total rifle production.[31]

Results shown in Table 5-2 and Figure 5-2 demonstrate that AR prices rose significantly during 1994 and 1995 before falling back to pre-ban levels in 1996 and remaining there through 1999. Prices rose 16% from 1993 to 1994 and then increased another 13% in 1995 (representing an increase of nearly one third over the 1993 level). Yet by 1996, prices had fallen to levels virtually identical to those before 1994. These patterns are consistent with those we found earlier for the 1992-1996 period (Roth and Koper, 1997, Chapter 4), though the annual price fluctuations shown here were not as dramatic as the quarterly changes shown in the earlier study.

Note, however, that these patterns were not uniform across all of the AR categories. The results of the model were driven largely by the patterns for Colt rifles, which are much more numerous than the other brands. Olympic rifles increased in price throughout the time period, while prices for most Calico and Feather rifles tended to fall throughout the 1990s without necessarily exhibiting spikes around the time of the ban.

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[30] Specifically, we tracked prices for the Match Target Lightweight (R6530), Target Government Model (R6551), Competition H-Bar (R6700), and Match Target H-Bar (R6601) models by Colt and the Ultramatch, Service Match, Multimatch M1-1, AR15, and CAR15 models by Olympic Arms. Each of these models has a modified, post-ban version. We utilized prices for the pre-ban configurations during post-ban years.

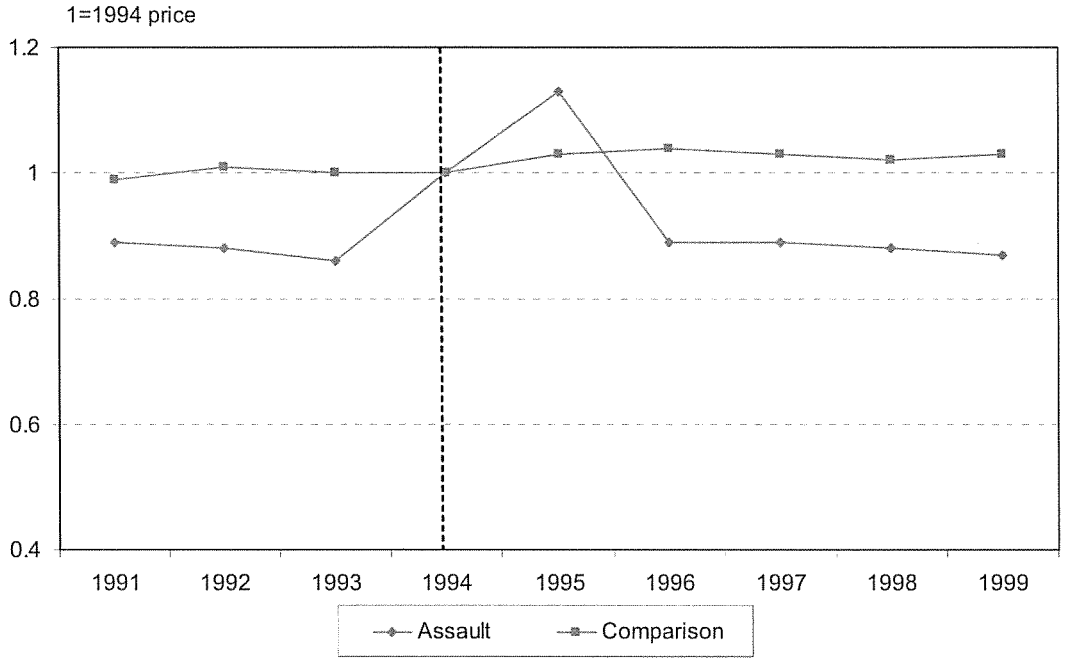
[31] Prices for the different models made by a given manufacturer tended to follow comparable trends, thus strengthening the argument for averaging prices.

Table 5-2. Regression of Assault Rifle and Comparison Semiautomatic Rifle Prices on Annual Time Indicators, 1991-1999, Controlling for Gun Make

	Assault Rifles (n=36)		Comparison Rifles (n=27)	
	Estimate	**T value**	**Estimate**	**T value**
Constant	1.31	21.15***	1.40	76.75***
1991	-0.12	-1.98*	-0.01	-0.21
1992	-0.13	-2.26**	0.01	0.30
1993	-0.15	-2.78**	0	-0.13
1995	0.12	2.47**	0.03	1.08
1996	-0.11	-2.27**	0.04	1.69
1997	-0.11	-2.23**	0.03	1.46
1998	-0.12	-2.47**	0.02	0.91
1999	-0.14	-2.71**	0.03	1.21
Colt (AR-15 type)	1.07	19.93***		
Olympic (AR-15 type)	1.14	16.08***		
Calico	0.43	5.53***		
Ruger			0.26	20.07***
Remington			0.29	21.69***
F statistic	50.52			63.62
(p value)	<.01			<.01
Adj. R-square	0.94			0.96

Time indicators interpreted relative to 1994. Assault rifle makes interpreted relative to Feather.
Comparison rifle makes interpreted relative to Marlin.
* Statistically significant at p<=.10.
** Statistically significant at p<=.05.
*** Statistically significant at p<=.01.

Figure 5-2. Annual Price Trends for Assault Rifles and Comparison Semiautomatic Rifles, 1991-1999



Assault rifle prices based on Colt and Olympic AR-type, Calico, and Feather models. Comparison rifle prices based on selected Remington, Marlin, and Sturm Ruger models.

5.1.4. Comparison Semiautomatic Rifles.

The analysis of comparison rifle prices includes the Remington 7400, Marlin Model 9, and Sturm Ruger Mini-14 and Mini-30 models (the Ruger model prices were averaged for each year). The AW legislation exempted each of these semiautomatic rifles by name, though the exemption does not apply to Mini-14 models with folding stocks (a feature included in the ban's features test). The Ruger models are of particular interest since they are among only four exempted guns that can accept LCMs made for military rifles (U.S. Department of the Treasury, 1998, p. 23), though Ruger produced LCMs only for the Mini-14 model and substituted a 5-round magazine for this gun in 1989 (Fjestad, 2002, pp. 1361-1362). The Marlin model was also manufactured with an LCM prior to 1990 (Fjestad, 2002, p. 917). The Remington model is manufactured with a detachable 4-round magazine.

Prices for these guns remained steady throughout the decade (see Table 5-2 and Figure 5-2). The largest change was a 4% increase (non-significant) in prices in 1996 relative to prices in 1994. Therefore, the rifle price spikes in 1994 and 1995 were specific to assault rifles. However, the steady annual price trends may mask short-term fluctuations that we found

previously (Roth and Koper, 1997, Chapter 4) for some non-banned semiautomatic rifles (including the Ruger Mini-14) during 1994 and early 1995.[32]

5.2. Production Trends for Assault Weapons and Other Firearms

To more fully assess the ban's effects on gun markets, examination of pre and post-ban trends in production of AWs and legal AW substitutes is a useful complement to studying price trends. Our earlier work revealed a spike in AW production during 1994 as the ban was being debated. Post-ban production of legal AW substitutes should reveal additional information about the reaction of gun markets to the ban. If production of these models has fallen off dramatically, it may suggest that the market for AWs has been temporarily saturated and/or that consumers of AWs favor the original AW models that have more military-style features. Stable or rising production levels, on the other hand, may indicate substantial consumer demand for AW substitutes, which would suggest that consumers consider the legal substitute models to be as desirable as the banned models.

5.2.1. Production of Assault Pistols and Other Handguns

Figure 5-3 presents production trends for a number of domestic AP manufacturers from 1985 through 2001 (the most recent year available for data on individual manufacturers).[33] After rising in the early 1990s and surging notably to a peak in 1994, production by these companies dropped off dramatically, falling 80% from 1993-1994 to 1996-1997 and falling another 35% by 1999-2000 (Table 5-3).[34] Makers of Intratec and SWD-type APs continued manufacturing modified versions of their APs for at least a few years following the ban, but at much lower volumes than that at which they produced APs just prior to the ban. Companies like AA Arms and Calico produced very few or no AP-type pistols from 1995 onward, and Intratec – producers of the APs most frequently used in crime – went out of business after 1999.

However, the pattern of rising and then falling production was not entirely unique to APs. Table 5-3 shows that production of all handguns and production of SNS-type pistols both declined sharply in the mid to late 1990s following a peak in 1993. Nonetheless, the trends –

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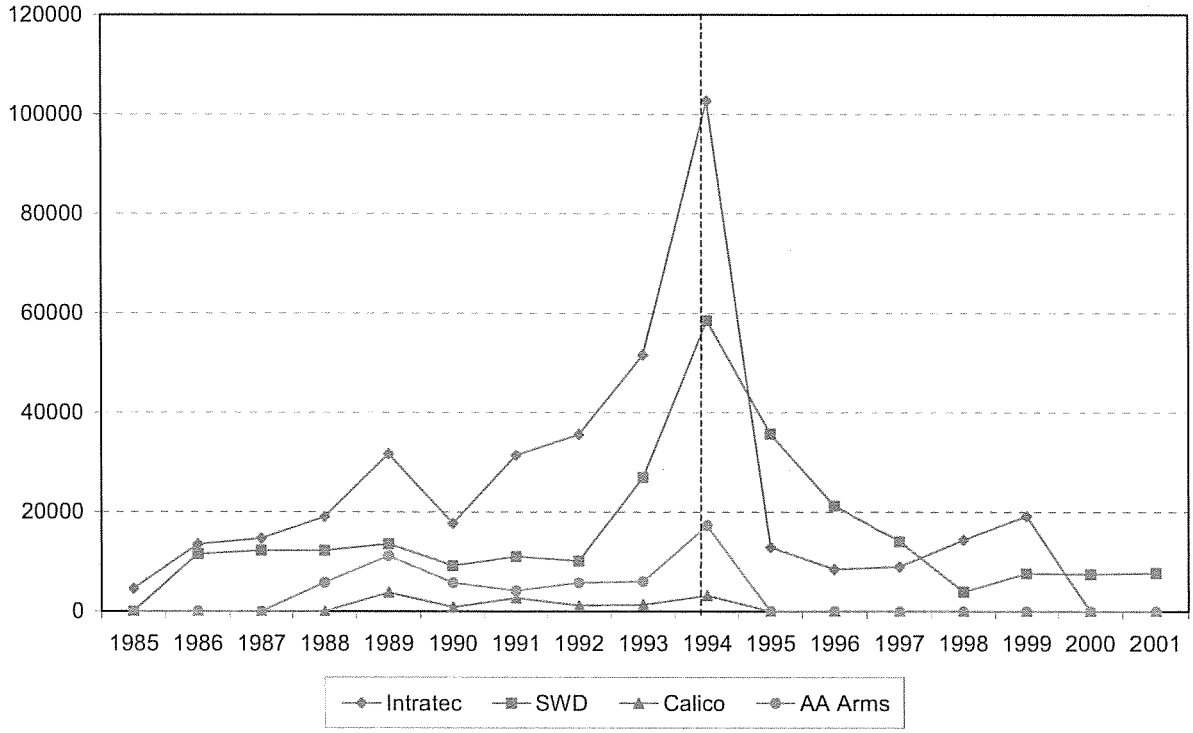
[32] We attributed those short-term fluctuations to pre-ban uncertainty regarding which semiautomatic rifles would be prohibited by the ban. Also note that the prior findings were based on a different set of comparison semiautomatic rifles that included a number of foreign rifles. We concentrated on domestically produced rifles for this updated analysis in order to make more explicit links between rifle price and production trends (data for the latter are available only for domestic firearms).

[33] Production figures for individual manufacturers through 2000 have been compiled by the Violence Policy Center (2002). Year 2001 data are available from ATF via the Internet (see www.atf.treas.gov). National gun production totals through 1998 are also available from ATF (2000, p. A-3).

[34] The assault pistol production figures used here and in the price analysis include 9mm and .22 caliber pistols made by Intratec, 9mm pistols manufactured by AA Arms, all non-.22 caliber pistols manufactured by S.W. Daniels, Wayne Daniels, and Military Armaments Corporation (which together constitute the SWD group), and .22 and 9mm pistols manufactured by Calico. Intratec produces a few non-AW models in .22 and 9mm calibers, so the Intratec figures will overstate production of assault pistols and their legal substitutes to some degree. The comparison, SNS production figures are based on all handguns produced by Lorcin Engineering and Davis Industries.

both peak and decline – were more dramatic for APs than for other handguns. Production of APs rose 69% from 1990-1991 to 1993-1994, while SNS production and overall handgun production each increased 47%. From 1993-1994 to 1996-1997, production of AP-type handguns, SNS models, and all handguns declined 80%, 66%, and 47%, respectively. Further, production of AP-type handguns continued to decline at a faster rate than that of other handguns through the end of the decade.[35]

Figure 5-3. Assault Pistol Production, 1985-2001



[35] Lorcin, a prominent SNS brand that we examined for the price and production analyses, went out of business after 1998. Unlike the situation in the AP market (where, to our knowledge, former AP makers have not been replaced on any large scale), the SNS market appears to have compensated somewhat to offset the loss of Lorcin. The SNS change from 1996-1997 to 1999-2000 is based on examination of a larger group of SNS-type makers, including Lorcin, Davis, Bryco, Phoenix Arms, and Hi-Point. Production among this group declined by 22% from 1996-1997 to 1999-2000, a decline greater than that for total handgun production but less than that for AP-type production.

Table 5-3. Production Trends for Assault Weapons and Other Firearms, 1990-2000*

Firearm Category	% Change 1990/91 to 1993/94	% Change 1993/94 to 1996/97	% Change 1996/97 to 1999/2000
Total Handguns	47%	-47%	-10%
Assault Pistols (or Post-Ban Models)	69%	-80%	-35%
SNS Handguns	47%	-66%	-22%
Total Rifles	22%	8%	18%
Assault Rifles (or Post-Ban Models)	81%	-51%	156%
Comparison Rifles	15%	13%	-16%

* Total handgun and rifle figures include all production by U.S. manufacturers. Assault pistols include Intratec group, SWD group, and Calico models. SNS figures are based on Lorcin Engineering and Davis Industries for changes up through 1996-1997. Because Lorcin went out of business after 1998, the SNS change from 1996-1997 to 1999-2000 is based on a larger group of SNS makers including Lorcin, Davis, Bryco, Phoenix Arms, and Hi-Point. Assault rifles include AR-15 type models by Colt and others. Comparison rifles include Sturm Ruger, Remington, and Marlin.

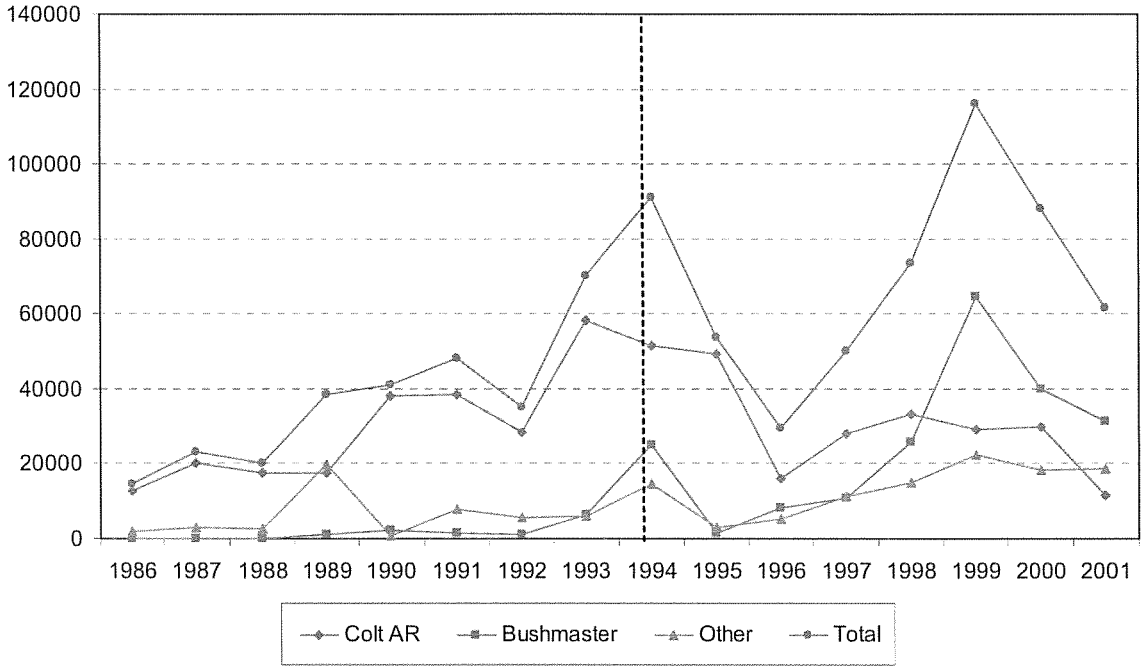
5.2.2. Production of Assault Rifles and Other Rifles

As shown in Figure 5-4, production of AR-15 type rifles surged during the early 1990s, reaching a peak in 1994.[36] AR production during the early 1990s rose almost 4 times faster than total rifle production and over 5 times faster than production of the comparison rifles examined in the price analysis (Table 5-3). Yet, by 1996 and 1997, production of legalized AR-type rifles had fallen by 51%, as production of other rifles continued increasing. AR production trends reversed again during the late 1990s, however, rising over 150%.[37] Total rifle production increased much more modestly during this time (18%), while production of the comparison rifles declined.

[36] Note again that the AR and legalized AR production figures are approximations based on all rifles produced by the companies in question (rifle production data are not available by type, caliber, or model), but it appears that most rifles made by these companies during the study period were AR-type rifles. Also, the figures for the comparison rifle companies (Ruger, Marlin, and Remington) are based on all rifles produced by these companies (the price analysis focused on selected semiautomatic models).

[37] There was also a notable shift in market shares among AR makers, as Bushmaster overtook Colt as the leading producer of AR-15 type rifles (Figure 5-4).

Figure 5-4. Assault Rifle Production, 1986-2001 (AR-15 Type)



Other: Olympic, Eagle/Armalite, DPMS, Essential Arms, Sendra.

5.3. Summary and Interpretations

Below, we offer some interpretations of the patterns found in the price and production analyses, keeping in mind that these analyses were largely descriptive, so causal inferences must be made cautiously. As documented in our earlier study, Congressional debate over the AW-LCM ban triggered speculative price increases for AWs in the months leading up to the ban's enactment. This study's examination of longer-term, annual price trends suggests that this speculative effect was very brief (and perhaps quite variable across jurisdictions) for APs but persisted through 1995 for ARs. This implies that speculators and sophisticated gun collectors (who we suspect played a large role in driving price trends) have more interest in ARs, which tend to be higher in quality and price than APs.

Responding to the speculative price growth, AW manufacturers boosted their production of AWs in 1994. Although total handgun and rifle production were increasing during the early 1990s, the rise in AW production was steeper, and there was a production peak unique to AWs in 1994 (production of other handguns peaked in 1993). It seems that this boost in the supply of grandfathered AWs was sufficient to satisfy speculative demand, thereby restoring national average AP prices to pre-ban levels within a year of the ban and doing the same for AR prices by 1996. AW prices remained stable through the late 1990s, and production of legalized AW-type weapons dropped off

substantially, at least through 1998. This suggests that the supply of grandfathered AWs was sufficient to meet demand through the late 1990s.

However, prices of APs rose relative to other handguns commonly used in crime during the 1990s. Handgun prices and production declined in general during the late 1990s, implying a decrease in demand for APs and other handguns that probably stemmed from the nation's declining crime rates.[38] But the AW ban's restriction of the AP supply, combined with the interest of speculators and collectors in these guns, may have prevented AP prices from falling as did prices for other handguns. The market patterns also suggest that consumers of APs are not as easily satisfied by legalized APs with fewer military-style features; despite the increasing value of APs (in relative terms), post-ban production of legalized APs declined faster than did production of other handguns, and some AP makers went out of business.

Prices of ARs, on the other hand, remained steady during the late 1990s (after the speculative price bubble of 1994-1995) both in absolute terms and relative to other rifles. The failure of AR prices to rise in at least relative terms, as occurred for APs, and the temporary drop in production of AR-type rifles after the ban may signify that the AR market was saturated relative to the AP market for a least a number of years following the ban. However, demand for AR-type rifles later rebounded, as evidenced by the resurgence in production of legalized, AR-type rifles in the late 1990s. In fact, more of these guns were produced in 1999 than in 1994. Unlike AP users, therefore, rifle users appear to be readily substituting the legalized AR-type rifles for the banned ARs, which may be another factor that has kept prices of the latter rifles from rising. All of this suggests that rifle owners, who have a lower prevalence of criminal users than do handgun owners, can more easily substitute rifles with fewer or no military features for the hunting and other sporting purposes that predominate among rifle consumers.

Another relevant factor may have been a surge in the supply of foreign semiautomatic rifles that can accept LCMs for military weapons (the LCMM rifles discussed in Chapter 2) during the early 1990s. Examples of LCMM rifles include legalized versions of banned AK-47, FN-FAL, and Uzi rifles. Importation of LCMM rifles rose from 19,147 in 1991 to 191, 341 in 1993, a nine-fold increase (Department of the Treasury, 1998, p. 34). Due to an embargo on the importation of firearms from China (where many legalized AK-type rifles are produced), imports of LCMM rifles dropped

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[38] It seems likely that the rise and fall of handgun production was linked to the rising crime rates of the late 1980s and early 1990s and the falling crime rates of the mid and late 1990s. Self-defense and fear of crime are important motivations for handgun ownership among the general population (e.g., Cook and Ludwig, 1996; McDowall and Loftin, 1983), and the concealability and price of handguns make them the firearms of choice for criminal offenders. It is likely that the peak in 1993 was also linked to the Congressional debate and passage of the Brady Act, which established a background check system for gun purchases from retail dealers. It is widely recognized in the gun industry that the consideration of new gun control legislation tends to increase gun sales.

The decline in production was more pronounced for SNS handguns, whose sales are likely to be particularly sensitive to crime trends. Criminal offenders make disproportionate use of these guns. We can also speculate that they are prominent among guns purchased by low-income citizens desiring guns for protection. In contrast, the poor quality and reliability of these guns make them less popular among more knowledgeable and affluent gun buyers.

back down to 21,261 in 1994. Importation of all foreign LCMM rifles was ended by federal executive order in 1998.

ATF has reported that criminal use of LCMM rifles increased more quickly during the early 1990s than did that of other military-style rifles (U.S. Department of the Treasury, 1998, p. 33; also see Chapter 6). Accordingly, it is possible that the availability of LCMM rifles also helped to depress the prices of domestic ARs and discourage the production of legalized ARs during the 1990s, particularly if criminal users of rifles place a premium on the ability to accept LCMs. It is noteworthy, moreover, that the rebound in domestic production of legalized ARs came on the heels of the 1998 ban on LCMM rifles, perhaps suggesting the LCMM ban increased demand for domestic rifles accepting LCMs.

In sum, this examination of the AW ban's impact on gun prices and production suggests that there has likely been a sustained reduction in criminal use of APs since the ban but not necessarily ARs. Since most AWs used in crime are APs, this should result in an overall decline in AW use. In the following chapter, we examine the accuracy of this prediction.

6. CRIMINAL USE OF ASSAULT WEAPONS AFTER THE BAN

6.1. Measuring Criminal Use of Assault Weapons: A Methodological Note

In this chapter, we examine trends in the use of AWs using a number of national and local data sources on guns recovered by law enforcement agencies (we focus on the domestic AW models discussed at the beginning of the previous chapter). Such data provide the best available indicator of changes over time in the types (and especially the specific makes and models) of guns used in violent crime and possessed and/or carried by criminal and otherwise deviant or high-risk persons. The majority of firearms recovered by police are tied to weapon possession and carrying offenses, while the remainder are linked primarily to violent crimes and narcotics offenses (e.g., see ATF, 1976; 1977; 1997; Brill, 1977). In general, up to a quarter of guns confiscated by police are associated with violent offenses or shots fired incidents (calculated from ATF, 1977, pp. 96-98; 1997; Brill, 1977, pp. 24,71; Shaw, 1994, pp. 63, 65; also see data presented later in this chapter). Other confiscated guns may be found by officers, turned in voluntarily by citizens, or seized by officers for temporary safekeeping in situations that have the potential for violence (e.g., domestic disputes).

Because not all recovered guns are linked to violent crime investigations, we present analyses based on all gun recoveries and gun recoveries linked to violent crimes where appropriate (some of the data sources are based exclusively, or nearly so, on guns linked to violent crimes). However, the fact that a seized gun is not clearly linked to a violent crime does not rule out the possibility that it had been or would have been used in a violent crime. Many offenders carry firearms on a regular basis for protection and to be prepared for criminal opportunities (Sheley and Wright, 1993a; Wright and Rossi, 1986). In addition, many confiscated guns are taken from persons involved in drugs, a group involved disproportionately in violence and illegal gun trafficking (National Institute of Justice, 1995; Sheley and Wright, 1993a). In some instances, criminal users, including those fleeing crime scenes, may have even possessed discarded guns found by patrol officers. For all these reasons, guns recovered by police should serve as a good approximation of the types of guns used in violent crime, even though many are not clearly linked to such crimes.

Two additional caveats should be noted with respect to tracking the use of AWs. First, we can only identify AWs based on banned makes and models. The databases do not contain information about the specific features of firearms, thus precluding any assessment of non-banned gun models that were altered after purchase in ways making them illegal. In this respect, our numbers may understate the use of AWs, but we know of no data source with which to evaluate the commonality of such alterations. Second, one cannot always distinguish pre-ban versions of AWs from post-ban, legalized versions of the same weapons based on weapon make and model information (this occurs when the post-ban version of an AW has the same name as the pre-ban version), a factor which may have caused us to overstate the use of AWs after the ban. This was more of a problem for our assessment of ARs, as will be discussed below.

Finally, we generally emphasize trends in the percentage of crime guns that are AWs in order to control for overall trends in gun violence and gun recoveries. Because gun violence was declining throughout the 1990s, we expected the number of AW recoveries to drop independently of the ban's impact.

6.2. National Analysis of Guns Reported By Police to the Federal Bureau of Alcohol, Tobacco, and Firearms

6.2.1. An Introduction to Gun Tracing Data

In this section, we examine national trends in AW use based on firearm trace requests submitted to ATF by federal, state, and local law enforcement personnel throughout the nation. A gun trace is an investigation that typically tracks a gun from its manufacture to its first point of sale by a licensed dealer. Upon request, ATF traces guns seized by law enforcement as a service to federal, state, and local agencies. In order to initiate a trace on a firearm, the requesting law enforcement agency provides information about the firearm, such as make, model, and serial number.

Although ATF tracing data provide the only available national sample of the types of guns used in crime and otherwise possessed or carried by criminal and high-risk groups, they do have limitations for research purposes. Gun tracing is voluntary, and police in most jurisdictions do not submit trace requests for all, or in some cases any, guns they seize. Crime and tracing data for 1994, for example, suggest that law enforcement agencies requested traces for 27% of gun homicides but only 1% of gun robberies and gun assaults known to police during that year (calculated from ATF, 1995 and Federal Bureau of Investigation, 1995, pp. 13, 18, 26, 29, 31, 32).

The processes by which state and local law enforcement agencies decide to submit guns for tracing are largely unknown, and there are undoubtedly important sources of variation between agencies in different states and localities. For example, agencies may be less likely to submit trace requests in states that maintain their own registers of gun dealers' sales. Knowledge of ATF's tracing capabilities and procedures,[39] as well as participation in federal/state/local law enforcement task forces, are some of the other factors that may affect an agency's tracing practices. Further, these factors are likely to vary over time, a point that is reinforced below.

Therefore, firearms submitted to ATF for tracing may not be representative of the

[39] To illustrate, ATF cannot (or does not) trace military surplus weapons, imported guns without the importer name (generally, pre-1968 guns), stolen guns, or guns without a legible serial number (Zawitz 1995). Tracing guns manufactured before 1968 is also difficult because licensed dealers were not required to keep records of their transactions prior to that time. Throughout much of the 1990s, ATF did not generally trace guns older than 5-10 years without special investigative reasons (Kennedy et al., 1996, p. 171). Our data are based on trace requests rather than successful traces, but knowledge of the preceding operational guidelines might have influenced which guns law enforcement agencies chose to trace in some instances.

types of firearms typically seized by police. In general, not much is known about the nature of potential bias in tracing data. In prior studies, however, AWs tended to be more common in tracing data than in more representative samples of guns confiscated by police (Kleck, 1997, pp. 112, 141). This suggests that police have been more likely historically to initiate traces for seized AWs than for other seized guns. Although comparisons across studies are complicated by varying definitions of AWs used in different analyses, studies of guns confiscated by police or used in particular types of crimes generally suggest that AWs accounted for up to 6% of crime guns and about 2% on average prior to the federal AW ban (see Chapter 3 and Kleck, 1997, p. 141), whereas studies of pre-ban tracing data indicated that 8% of traced guns, and sometimes as many as 11%, were AWs (Cox Newspapers, 1989; Lenett, 1995; Zawitz, 1995).

Changes over time in the tracing practices of law enforcement agencies present additional complexities in analyzing tracing data. Due to improvements in the tracing process, ATF promotional efforts, and special initiatives like the Youth Crime Gun Interdiction Initiative (see ATF, 1997; 1999 and more recent reports available via the Internet at www.atf.treas.gov),[40] the utilization of tracing grew substantially throughout the 1990s in jurisdictions that chose to participate (also see ATF, 2000; Roth and Koper, 1997). To illustrate, trace requests to ATF rose from roughly 42,300 in 1991 to 229,500 in 2002 (see Table 6-1 in the next section), an increase of 443%. This growth reflects changes in tracing practices (i.e., changes in the number of agencies submitting trace requests and/or changes in the percentage of recovered guns for which participating agencies requested traces) rather than changes in gun crime; gun homicides, for example, were falling throughout the 1990s (see Table 6-1 in the next section) and were a third lower in 2002 than in 1991.

Therefore, an increase in trace requests for AWs does not necessarily signal a real increase in the use of AWs. Further, examining trends in the percentage of trace requests associated with AWs is also problematic. Because law enforcement agencies were more likely to request traces for AWs than for other guns in years past, we can expect the growth rate in tracing for non-AWs to exceed the growth rate in traces for AWs as gun tracing becomes more comprehensive. Consequently, AWs are likely to decline over time as a share of trace requests due simply to reporting effects, except perhaps during periods when AWs figure prominently in public discourse on crime.[41]

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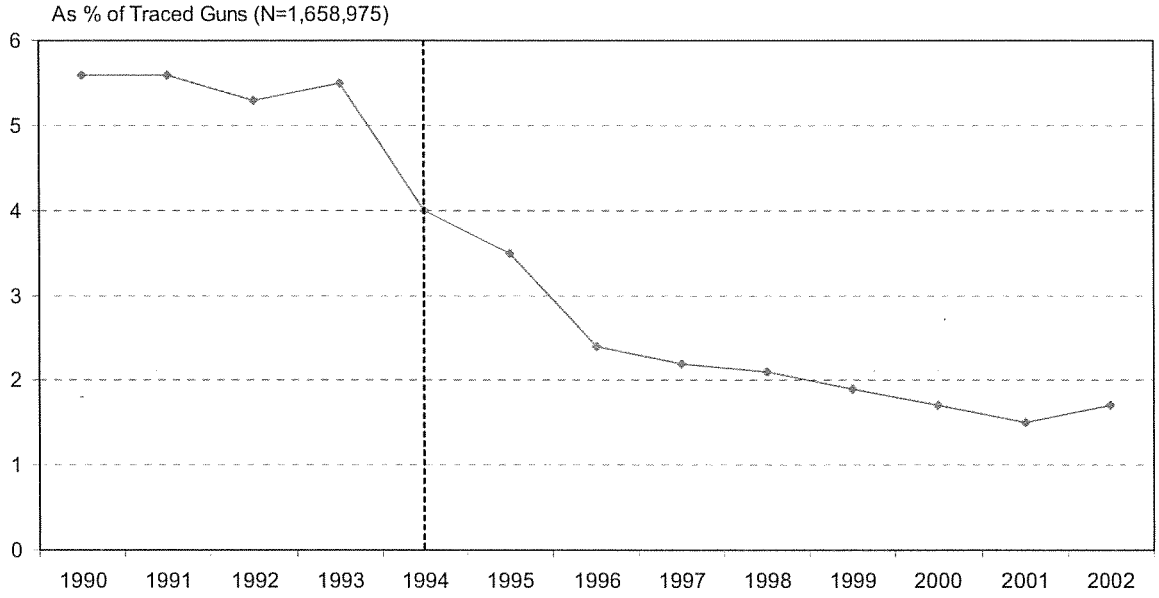
[40] As part of this initiative, police in a few dozen large cities are submitting trace requests to ATF for all guns that they confiscate. The initiative began with 17 cities in 1996 and has since spread to 55 major urban jurisdictions.

[41] To illustrate, assume that a hypothetical police agency recovers 100 guns a year, 2 of which are AWs, and that the agency has a selective tracing policy that results in the submission of trace requests for 20 of the guns, including 1 of the recovered AWs. Under this scenario, the department would be almost three times as likely to request traces for AWs as for other guns. If the department adopted a policy to request traces on all guns (and again recovered 2 AWs and 98 other guns), AW traces would double and traces of other guns would increase by more than 400%. Moreover, AWs would decline from 5% of traced guns to 2% of traced guns due simply to the change in tracing policy.

6.2.2. Traces of Assault Weapons, 1990-2002

Figure 6-1 illustrates the share of all traces that were for AWs from 1990 through 2002. A more detailed assessment of annual changes in traces for AWs and other guns is presented in Table 6-1. Changes in gun murders are also shown in Table 6-1 to emphasize the differences in trends for tracing and gun crime. Below, we summarize key points from the analysis. Due to the instrumentation problems inherent in tracing data, statistical tests are not presented.[42]

Figure 6-1. Police Recoveries of Assault Weapons Reported to ATF (National), 1990-2002



Includes Intratec group, SWD group, AR-15 group, and selected Calico and Feather models.

[42] Nearly 30% of the tracing records lack specific gun model designations (the crucial elements for conducting a trace are the gun make and serial number). For the makes and types of guns likely to be AWs, however, the missing model rate was slightly under 10%. Further, we were able to identity some of the latter weapons as AWs with reasonable confidence based on the makes, types, and calibers alone. Nevertheless, we conducted a supplemental analysis using only those records for which the gun model was identified. The results of that analysis were substantively very similar to those presented below.

Table 6-1. Annual Percentage Changes in Gun Murders and Police Requests to ATF for Traces of Assault Weapons and Other Firearms, 1991-2002 (Number of Traces in Parentheses)

Year	Gun Murders (1)	All Traces (2)	AW Traces* (3)	AP Traces (4)	AR Traces (5)	AW and AW Substitute Traces (6)	Violent Crime Traces (7)	AW Violent Crime Traces (8)	LCMM Rifle Traces** (9)
1991	9%	14% (42281)	14% (2378)	24% (1775)	-6% (603)	14% (2378)	19% (6394)	20% (344)	--
1992	-1%	6% (44992)	1% (2398)	4% (1838)	-7% (560)	1% (2398)	3% (6558)	7% (367)	--
1993	5%	20% (54189)	25% (2994)	20% (2199)	42% (795)	25% (2994)	26% (8248)	41% (516)	252% (183)
1994	-4%	53% (82791)	11% (3337)	23% (2706)	-21% (631)	11% (3337)	22% (10083)	-18% (424)	223% (592)
1995	-10%	-6% (77503)	-19% (2730)	-24% (2051)	8% (679)	-18% (2747)	23% (12439)	-15% (362)	-10% (530)
1996	-9%	66% (128653)	12% (3059)	13% (2309)	10% (750)	17% (3214)	67% (20816)	27% (459)	40% (743)
1997	-7%	42% (183225)	31% (4019)	31% (3017)	34% (1002)	36% (4362)	11% (23147)	13% (519)	24% (925)
1998	-11%	5% (192115)	0% (4014)	-9% (2751)	26% (1263)	7% (4681)	3% (23844)	-22% (404)	33% (1227)
1999	-8%	-2% (188296)	-11% (3581)	-12% (2414)	-8% (1167)	-6% (4406)	3% (24663)	0% (404)	-18% (1003)
2000	1%	-3% (182961)	-11% (3196)	-16% (2027)	0% (1169)	-6% (4143)	-13% (21465)	-25% (305)	-14% (859)
2001	-1%	18% (215282)	1% (3238)	5% (2138)	-6% (1100)	3% (4273)	20% (25822)	6% (322)	-3% (833)
2002	6%	7% (229525)	19% (3839)	4% (2214)	48% (1625)	12% (4765)	20% (30985)	65% (531)	4% (865)

* Based on Intratec group, SWD group, AR-15 group, and Calico and Feather models.

** Foreign semiautomatic rifles accepting large capacity military magazines (banned by executive order in 1998). (Data are not shown for 1991 and 1992 because very few of these guns were traced in those years.)

6.2.2.1. Assault Weapons as a Percentage of Crime Gun Traces

As shown in Figure 6-1, AWs declined from 5.4% of crime gun traces in 1992-1993 to 1.6% in 2001-2002, a decline of 70%. Although this downward trend could be attributable in large part to changes in tracing practices, it is noteworthy that it did not begin until 1994 (the year of the ban); during the pre-ban years, 1990 to 1993, AWs accounted for a steady share of traces despite a 46% increase in total tracing volume. It is also remarkable that about 3,200 AWs were traced in both 2000 and 2001, which is virtually identical to the average number traced during 1993 and 1994 (3,166) even though total traces increased more than 190% during the same period (Table 6-1, columns 2 and 3).[43]

6.2.2.2. Annual Changes in Traces for Assault Weapons and Other Guns

Throughout most of the post-ban period (particularly 1995 to 2001), AW traces either increased less or declined more than total traces (Table 6-1, columns 2 and 3), a pattern that is also consistent with a decline in the use of AWs relative to other guns, though it too may be distorted by changes in tracing practices. This pattern was largely consistent whether analyzing all traces or only traces associated with violent crimes (columns 7 and 8).[44]

The years when total traces declined or were relatively flat are arguably the most informative in the series because they appear to have been less affected by changes in tracing practices. For example, there was a 6% decline in total trace requests from 1994 to 1995 (the years featured in our earlier study) that coincided with a 10% drop in gun murders (Table 6-1, column 1). Therefore, it seems tracing practices were relatively stable (or, conversely, reporting effects were relatively small) from 1994 to 1995. The 19% reduction in AW traces during this same period implies that AW use was declining faster than that of other guns. Furthermore, there were fewer AW traces in 1995 than in 1993, the year prior to the ban. The fact that this occurred during a period when the AW issue was very prominent (and hence police might have been expected to trace more of the AWs they recovered) arguably strengthens the causal inference of a ban effect.[45]

Total traces also declined slightly (2%-3%) in 1999 and 2000. In each of those years, the decline was greater for AWs (11%). Thus, in years when tracing declined overall, AW traces fell 3 to 6 times faster than did total traces. Put another way, AWs fell between 9% and 13% as a percentage of all traces in each of these years.

The general pattern of AW traces increasing less or declining more than those of

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[43] These general findings are consistent with those of other tracing analyses conducted by ATF (2003 Congressional Q&A memo provided to the author) and the Brady Center to Prevent Gun Violence (2004).

[44] A caveat is that requests without specific crime type information are often grouped with weapons offenses (ATF, 1999). Therefore, traces associated with violent crimes are likely understated to some degree.

[45] This inference is also supported by our earlier finding that trace requests for AWs declined by only 8% in states that had their own AW bans prior to the federal ban (Roth and Koper, 1997, Chapter 5).

other crime guns was clearly apparent for APs but less consistent for ARs (Table 6-1, columns 4 and 5). For example, AR traces went up 26% in 1998 while total traces went up only 5% and AP traces declined 9%. In 2000, total and AP traces fell 3% and 16%, respectively, but AR traces remained flat. This is consistent with predictions derived from the price and production analyses described above. But note that the post-ban AR counts could be overstated because the data do not distinguish pre-ban from post-ban versions of some popular AR-15 type rifles like the Colt Sporter and Bushmaster XM-15. (Also note that the percentage of traces for ARs did fall from 1.4% in 1992-1993 to 0.6% in 2001-2002.)

More generally, the use of post-ban AW-type weapons (including both legalized APs and ARs) has not been widespread enough to completely offset the apparent decline in the use of banned AWs. Combined traces for banned AWs and AW substitutes (Table 6-1, column 6) also followed the pattern of increasing less or declining more than did total traces throughout most of the period, though the differences were not as pronounced as those between AWs and total traces. In 1999 and 2000, for example, AWs traces dropped 11%, while combined traces for AWs and legal substitutes declined only 6%. Still, the latter figure was greater than the 2%-3% drop for total traces.

Finally, traces of the LCMM rifles banned by executive order in 1998 were generally rising to that point, reaching levels as high as those for AR-15 type rifles (Table 6-1, column 9). Since 1998, however, the number of traces for LCMM rifles has fallen substantially. Despite a 4% increase from 2001 to 2002, the number of LCMM traces in 2002 (865) was 30% lower than the peak number traced in 1998 (1,227). Tentatively, this suggests that the 1998 extension of the ban has been effective in curtailing weapons that offenders may have been substituting for the ARs banned in 1994.

6.2.2.3. Did Use of Assault Weapons Rebound in 2002?

In 2002, tracing volume increased 7%, which closely matched the 6% increase in gun murders for that year. In contrast to the general pattern, AW traces increased by 19%, suggesting a possible rebound in AW use independent of changes in tracing practices, a development that we have predicted elsewhere (Roth and Koper, 1997) based on the boom in AW production leading up to the ban. The disproportionate growth in AW traces was due to ARs, however, so it could partially reflect increasing use of post-ban AR-type rifles (see the discussion above).

Moreover, this pattern could be illusory. With data from the most recent years, it was possible to run a supplementary analysis screening out traces of older weapons (not shown). Focusing on just those guns recovered and traced in the same year for 2000 through 2002 revealed that recoveries of AWs declined in 2001, more so for ARs (16%) than for APs (9%), while total traces increased 1%.[46] Traces for APs and ARs then

[46] The tracing database indicates when guns were recovered and when they were traced. However, the recovery dates were missing for 30% of the records overall and were particularly problematic for years prior to 1998. For this reason, the main analysis is based on request dates. The auxiliary analysis for 2000-

increased in 2002 (1% and 6%, respectively) but by less than total traces (8%). Therefore, the disproportionate growth in AR traces in 2002 shown in Table 6-1 may have been due to tracing of older AWs by newly participating police agencies.

6.2.2.4. Summary of the ATF Gun Tracing Analysis

Complexities arising from recent changes in the use of gun tracing by law enforcement warrant caution in the interpretation of ATF gun tracing data. Notwithstanding, the data suggest that use of AWs in crime, though relatively rare from the start, has been declining. The percentage of gun traces that were for AWs plummeted 70% between 1992-1993 and 2001-2002 (from 5.4% to 1.6%), and this trend did not begin until the year of the AW ban. On a year-to-year basis, AW traces generally increased less or declined by more than other gun traces. Moreover, in years when tracing volume declined – that is, years when changes in reporting practices were least likely to distort the data – traces of AWs fell 3 to 6 times faster than gun traces in general. The drop in AW use seemed most apparent for APs and LCMM rifles (banned in 1998). Inferences were less clear for domestic ARs, but assessment of those guns is complicated by the possible substitution of post-ban legal variations.

6.3. Local Analyses of Guns Recovered By Police

Due to concerns over the validity of national ATF tracing data for investigating the types of guns used in crime, we sought to confirm the preceding findings using local data on guns recovered by police. To this end, we examined data from half a dozen localities and time periods.

- All guns recovered by the Baltimore Police Department from 1992 to 2000 (N=33,933)
- All guns recovered by the Metro-Dade Police Department (Miami and Dade County, Florida) from 1990 to 2000 (N=39,456)
- All guns recovered by the St. Louis Police Department from 1992 to 2003 (N=34,143)
- All guns recovered by the Boston Police Department (as approximated by trace requests submitted by the Department to ATF) from 1991 to 1993 and 2000 to 2002 (N=4,617)[47]

2002 focuses on guns both recovered and traced in the same year because it is likely that some guns recovered in 2002 had not yet been traced by the spring of 2003 when this database was created. Using only guns recovered and traced in the same year should mitigate this bias.

[47] The Boston Police Department has been tracing guns comprehensively since 1991 (Kennedy et al., 1996). However, we encountered difficulties in identifying Boston Police Department traces for several years in the mid-1990s. For this reason, we chose to contrast the 1991 to 1993 period with the 2000 to 2002 period.

- Guns recovered during murder investigations in Milwaukee County from 1991 to 1998 (N=592)[48]
- Guns linked to serious crimes in Anchorage and other parts of Alaska and submitted to state firearm examiners for evidentiary testing from 1987 to 2000 (N=900)[49]

The selection of these particular locations and samples reflects data availability.[50] The locations were not selected randomly, and some of the samples are small for conducting trend analysis of relatively rare events (i.e., AW recoveries). Accordingly, we must use caution in generalizing the results to other places. However, the data sources reflect a wide geographic range and cover post-ban periods extending through at least the latter 1990s (and typically through the year 2000 or beyond). To the extent that the results are similar across these jurisdictions, therefore, we can have more confidence that they reflect national patterns.

In each jurisdiction, we examined pre-post changes in recoveries of AWs (focusing on the domestic AW group defined earlier) and substitution of post-ban AW models for the banned models. Where possible, we conducted separate analyses of all AW recoveries and those linked specifically to violent crimes.[51] We also differentiated between AP and AR trends using the larger databases from Baltimore, Miami, and St. Louis. But since most of these databases do not extend more than two years beyond 1998, we do not present analyses specifically for LCMM rifles.

Key summary results are summarized in Table 6-2, while more detailed results from each site appear at the end of the chapter in Tables 6-3 through 6-6 and Figures 6-2 through 6-6.[52] The number of AW recoveries declined by 28% to 82% across these

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[48] The data are described in reports from the Medical College of Wisconsin (Hargarten et al., 1996; 2000) and include guns used in the murders and other guns recovered at the crime scenes. Guns are recovered in approximately one-third of Milwaukee homicide cases.

[49] The data include guns submitted by federal, state, and local agencies throughout the state. Roughly half come from the Anchorage area. Guns submitted by police to the state lab are most typically guns that were used in major crimes against persons (e.g. murder, attempted murder, assault, robbery).

[50] We contacted at least 20 police departments and crime labs in the course of our data search, focusing much of our attention on police departments participating in ATF's Youth Crime Gun Interdiction Initiative (YCGII) (ATF, 1997; 1999). Departments participating in the YCGII submit data to ATF on all guns that they recover. Though the YCGII did not begin until 1996 (well after the implementation of the AW ban), we suspected that these departments would be among those most likely to have electronically-stored gun data potentially extending back in time to before the ban. Unfortunately, most of these departments either did not have their gun data in electronic format or could not provide data for other reasons (e.g., resource constraints). In the course of our first AW study (Roth and Koper, 1997), we contacted many other police departments that also did not have adequate data for the study.

[51] All of the Milwaukee and Anchorage analyses were limited to guns involved in murders or other serious crimes. Despite evidence of a decline, AW recoveries linked to violence were too rare in Boston to conduct valid test statistics.

[52] We omitted guns recovered in 1994 from both the pre and post-ban counts because the speculative price increases for AWs that occurred in 1994 (see previous section and Roth and Koper, 1997, Chapter 4) raise questions about the precise timing of the ban's impact on AW use during that year, thereby clouding the designation of the intervention point. This is particularly a concern for the Baltimore analysis due to a

locations and time periods, but the discussion below focuses on changes in AWs as a share of crime guns in order to control for general trends in gun crime and gun seizures. Prior to the ban, AWs ranged from about 1% of guns linked to violent crimes in St. Louis to nearly 6% of guns recovered in Milwaukee murder cases.[53]

AWs dropped as share of crime guns in all jurisdictions after the ban. Reductions ranged from a low of 17% in Milwaukee (based on guns linked to homicides) to a high of 72% in Boston (based on all crime guns) but were generally between 32% and 40%.[54, 55] A decline in the use of AWs relative to other guns was generally apparent whether examining all AW recoveries or just those linked to violent crimes.[56] An exception was in St. Louis, where

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state AP ban that took effect a few months prior to the federal AW ban.

[53] These figures should be treated as approximations of the prevalence of AWs. On the one hand, the numbers may understate the prevalence of AWs to a small degree because they are based on only the domestic AW group defined earlier. Based on analysis of national ATF gun tracing data, we estimated previously that the domestic AW group accounts for 82% of AWs used in crime (Roth and Koper, 1997, Chapter 5). To further test the reliability of this assessment, we investigated the prevalence of all banned AW models among guns recovered in Baltimore using an ATF list of all guns defined as AWs under the 1994 Crime Act criteria (118 model and caliber combinations). We chose the Baltimore database because it provides a complete inventory of guns recovered by police in that city during the study period and, having been maintained by crime lab personnel, is particularly thorough with regard to make and model identifications. Though there was some ambiguity in classifying a small number of AK-type semiautomatic rifles (there are many civilian variations of the AK-47 rifle, some of which were legal under the 1994 legislation), our examination suggested that the domestic AW group accounted for approximately 90% of the AWs recovered in Baltimore. (In addition, including all AWs had virtually no effect on the pre-post changes in AW use in Baltimore.) But as discussed previously, the counts could also overstate AW use to some degree because imprecision in the identification of gun models in some data sources may have resulted in some legalized firearms being counted as banned AWs.

[54] The AW counts for Miami also include Interdynamics KG9 and KG99 models. These models were produced during the early 1980s and were forerunners to the Intratec models (ATF restricted the KG9 during the early 1980s because it could be converted too easily to fully automatic fire). These weapons were very rare or non-existent in most of the local data sources, but they were more common in Miami, where Interdynamics was formerly based. Including these guns increased the AW count in Miami by about 9% but did not affect pre-post changes in AW recoveries.

[55] State AW legislation passed in Maryland and Massachusetts could have had some impact on AW trends in Baltimore and Boston, respectively. Maryland implemented an AP ban, similar in coverage to the federal AW ban, in June 1994 (Maryland has also required background checks for retail sales of a broader list of state-defined AWs since 1989), and Massachusetts implemented additional legislation on federally-defined AWs in late 1998. The timing and scope of these laws make them largely redundant with the federal ban, so they should not unduly complicate inferences from the analysis. However, Maryland forbids additional transfers of grandfathered APs, and Massachusetts has imposed additional requirements for possession and transfer of LCMs and guns accepting LCMs. Both states also have enhanced penalties for certain crimes involving APs, LCMs, and/or guns accepting LCMs. Hence, the ban on AWs was arguably strengthened in Baltimore and Boston, relative to the other jurisdictions under study. This does not appear to have affected trends in AW use in Baltimore, which were very similar to those found in the other study sites. However, use of AWs and combined use of AWs and post-ban AW substitutes declined more in Boston than in any other study site. Although the trends in Boston could reflect ongoing, post-2000 reductions in use of AWs and similar weapons (Boston was one of the only study sites from which we obtained post-2000 data), it is possible that the Massachusetts legislation was also a contributing factor.

[56] There may be some inconsistency across jurisdictions in the identification of guns associated with violent crimes. In Miami, for example, 28% of the guns had an offense code equal to "other/not listed," and this percentage was notably higher for the later years of the data series.

Table 6-2. Pre-Post Changes in Assault Weapons As a Share of Recovered Crime Guns For Selected Localities and Time Periods: Summary Results (Total Number of Assault Weapons for Pre and Post Periods in Parentheses) [a]

Locality and Time Period	AWs	AWs (Linked to Violence)	APs	ARs	AWs and Post-Ban Substitutes
Baltimore (all recoveries) pre=1992-1993, post=1995-2000	-34%*** (425)	-41%** (75)	-35%*** (383)	-24% (42)	-29%*** (444)
Miami-Dade (all recoveries) pre=1990-1993, post=1995-2000	-32%*** (733)	-39%*** (101)	-40%*** (611)	37%* (115)	-30%*** (746)
St. Louis (all recoveries) pre=1992-1993, post=1995-2003	-32%*** (306)	1% (28)	-34%*** (274)	10% (32)	-24%** (328)
Boston (all recoveries) pre=1991-1993, post=2000-2002	-72%*** (71)	N/A	N/A	N/A	-60%*** (76)
Milwaukee (recoveries in murder cases) pre=1991-1993, post=1995-1998	N/A	-17% (28)	N/A	N/A	2% (31)
Anchorage, AK (recoveries in serious crimes) pre=1987-1993, post=1995-2000	N/A	-40% (24)	N/A	N/A	-40% (24)

a. Based on Intratec group, SWD group, AR-15 group, and Calico and Feather models. See the text for additional details about each sample and Tables 6-3 through 6-6 for more detailed results from each locality.

* Statistically significant change at chi-square p level < .1

** Statistically significant change at chi-square p level < .05

*** Statistically significant change at chi-square p level < .01

AWs declined as share of all guns but not of guns linked to violent crimes, though the latter test was based on rather small samples.

These reductions were not due to any obvious pre-ban trends (see Figures 6-2 through 6-6 at the end of the chapter). On the contrary, AW recoveries reached a peak in most of these jurisdictions during 1993 or 1994 (Boston, which is not shown in the graphs due to missing years, was an exception). We tested changes in AW prevalence using simple chi-square tests since there were no observable pre-existing time trends in the data. Due to the small number of AWs in some of these samples, these changes were not all statistically significant. Nonetheless, the uniformity of the results is highly suggestive, especially when one considers the consistency of these results with those found in the national ATF tracing analysis.

The changes in Tables 6-2 through 6-6 reflect the average decline in recoveries of AWs during the post-ban period in each locality. However, some of these figures may understate reductions to date. In several of the localities, the prevalence of AWs among crime guns was at, or close to, its lowest mark during the most recent year analyzed (see Figures 6-2 through 6-6 at the end of the chapter), suggesting that AW use continues to decline. In Miami, for example, AWs accounted for 1.7% of crime guns for the whole 1995 to 2000 period but had fallen to 1% by 2000. Further, the largest AW decline was recorded in Boston, one of two cities for which data extended beyond the year 2000 (however, this was not the case in St. Louis, the other locality with post-2000 data).

Breakouts of APs and ARs in Baltimore, Miami, and St. Louis show that the decline in AW recoveries was due largely to APs, which accounted for the majority of AWs in these and almost all of the other localities (the exception was Anchorage, where crimes with rifles were more common, as a share of gun crimes, than in the other sites). Pre-post changes in recoveries of the domestic AR group weapons, which accounted for less than 1% of crime guns in Baltimore, Miami, and St. Louis, were inconsistent. AR recoveries declined after the ban in Baltimore but increased in St. Louis and Miami. As discussed previously, however, the AR figures may partly reflect the substitution of post-ban, legalized versions of these rifles, thus overstating post-ban use of the banned configurations. Further, trends for these particular rifles may not be indicative of those for the full range of banned rifles, including the various foreign rifles banned by the 1994 law and the import restrictions of 1989 and 1998 (e.g., see the ATF gun tracing analysis of LCMM rifles).[57]

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[57] As discussed in the last chapter, our research design focused on common AWs that were likely to be most affected by the 1994 ban as opposed to earlier regulations (namely, the 1989 import ban) or other events (e.g., company closings or model discontinuations prior to 1994). However, an auxiliary analysis with the Baltimore data revealed a statistically meaningful drop in recoveries of all ARs covered by the 1994 legislation (not including the LCMM rifles) that was larger than that found for just the domestic group ARs discussed in the text. Similarly, an expanded AR analysis in Miami showed that total AR recoveries declined after the ban, in contrast to the increase found for the domestic group ARs. (Even after expanding the analysis, ARs still accounted for no more than 0.64% of crime guns before the ban in both locations. As with the domestic AR group, there are complexities in identifying banned versus non-banned versions of some of the other ARs, so these numbers are approximations.) Consequently, a more nuanced view of AR trends may be that AR use is declining overall, but this decline may be due largely to the 1989 import

Finally, the overall decline in AW use was only partially offset by substitution of the post-ban legalized models. Even if the post-ban models are counted as AWs, the share of crime guns that were AWs still fell 24% to 60% across most jurisdictions. The exception was Milwaukee where recoveries of a few post-ban models negated the drop in banned models in a small sample of guns recovered during murder investigations.[58]

6.4. Summary

Consistent with predictions derived from the analysis of market indicators in Chapter 5, analyses of national ATF gun tracing data and local databases on guns recovered by police in several localities have been largely consistent in showing that criminal use of AWs, while accounting for no more than 6% of gun crimes even before the ban, declined after 1994, independently of trends in gun crime. In various places and times from the late 1990s through 2003, AWs typically fell by one-third or more as a share of guns used in crime.[59, 60] Some of the most recent, post-2000 data suggest

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restrictions that predated the AW ban. It is not yet clear that there has been a decline in the most common ARs prohibited exclusively by the 1994 ban.

[58] This was not true when focusing on just those guns that were used in the incident as opposed to all guns recovered during the investigations. However, the samples of AWs identified as murder weapons were too small for valid statistical tests of pre-post changes.

[59] These findings are also supported by prior research in which we found that reported thefts of AWs declined 7% in absolute terms and 14% as a fraction of stolen guns in the early period following the ban (i.e., late 1994 through early 1996) (Koper and Roth, 2002a, p. 21). We conducted that analysis to account for the possibility that an increase in thefts of AWs might have offset the effect of rising AW prices on the availability of AWs to criminals. Because crimes with AWs appear to have declined after the ban, the theft analysis is not as central to the arguments in this paper.

[60] National surveys of state prisoners conducted by the federal Bureau of Justice Statistics show an increase from 1991 to 1997 in the percentage of prisoners who reported having used an AW (Beck et al., 1993; Harlow, 2001). The 1991 survey (discussed in Chapter 3) found that 2% of violent gun offenders had carried or used an AW in the offense for which they were sentenced (calculated from Beck et al. 1993, pp. 18,33). The comparable figure from the 1997 survey was nearly 7% (Harlow, 2001, pp.3, 7).

Although these figures appear contrary to the patterns shown by gun recovery data, there are ambiguities in the survey findings that warrant caution in such an interpretation. First, the definition of an AW (and most likely the respondents' interpretation of this term) was broader in the 1997 survey. For the 1991 survey, respondents were asked about prior ownership and use of a "…military-type weapon, such as an Uzi, AK-47, AR-15, or M-16" (Beck et al., 1993, p. 18), all of which are ARs or have AR variations. The 1997 survey project defined AWs to "…include the Uzi, TEC-9, and the MAC-10 for handguns, the AR-15 and AK-47 for rifles, and the 'Street Sweeper' for shotguns" (Harlow, 2001, p. 2). (Survey codebooks available from the Inter-University Consortium for Political and Social Research also show that the 1997 survey provided more detail and elaboration about AWs and their features than did the 1991 survey, including separate definitions of APs, ARs, and assault shotguns.)

A second consideration is that many of the respondents in the 1997 survey were probably reporting criminal activity prior to or just around the time of the ban. Violent offenders participating in the survey, for example, had been incarcerated nearly six years on average at the time they were interviewed (Bureau of Justice Statistics, 2000, p. 55). Consequently, the increase in reported AW use may reflect an upward trend in the use of AWs from the 1980s through the early to mid 1990s, as well as a growing recognition of these weapons (and a greater tendency to report owning or using them) stemming from publicity about the AW issue during the early 1990s.

Finally, we might view the 1997 estimate skeptically because it is somewhat higher than that from most other sources. Nevertheless, it is within the range of estimates discussed earlier and could reflect a

reductions as high as 70%.[61] This trend has been driven primarily by a decline in the use of APs, which account for a majority of AWs used in crime. AR trends have been more varied and complicated by the substitution of post-ban guns that are very similar to some banned ARs. More generally, however, the substitution of post-ban AW-type models with fewer military features has only partially offset the decline in banned AWs.

These findings raise questions as to the whereabouts of surplus AWs, particularly APs, produced just prior to the ban. Presumably, many are in the hands of collectors and speculators holding them for their novelty and value.[62] Even criminal possessors may be more sensitive to the value of their AWs and less likely to use them for risk of losing them to police.

Finally, it is worth noting the ban has not completely eliminated the use of AWs, and, despite large relative reductions, the share of gun crimes involving AWs is similar to that before the ban. Based on year 2000 or more recent data, the most common AWs continue to be used in up to 1.7% of gun crimes.

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somewhat higher use of AWs among the subset of offenders who are most active and/or dangerous; recall that the highest estimate of AW use among the sources examined in this chapter came from a sample of guns recovered during murder investigations in Milwaukee (also see the discussion of offender surveys and AWs in Chapter 3).

[61] Developing a national estimate of the number of AW crimes prevented by the ban is complicated by the range of estimates of AW use and changes therein derived from different data sources. Tentatively, nonetheless, it appears the ban prevents a few thousand crimes with AWs annually. For example, using 2% as the best estimate of the share of gun crimes involving AWs prior to the ban (see Chapter 3) and 40% as a reasonable estimate of the post-ban drop in this figure implies that almost 2,900 murders, robberies, and assaults with AWs were prevented in 2002 (this assumes that 1.2% of the roughly 358,000 gun murders, gun robberies, and gun assaults reported to police in 2002 [see the *Uniform Crime Reports*] involved AWs but that 2% would have involved AWs had the ban not been in effect). Even if this estimate is accurate, however, it does not mean the ban prevented 2,900 gun crimes in 2002; indeed, the preceding calculation assumes that offenders prevented from using AWs committed their crimes using other guns. Whether forcing such weapon substitution can reduce the number of persons wounded or killed in gun crimes is considered in more detail in Chapter 9.

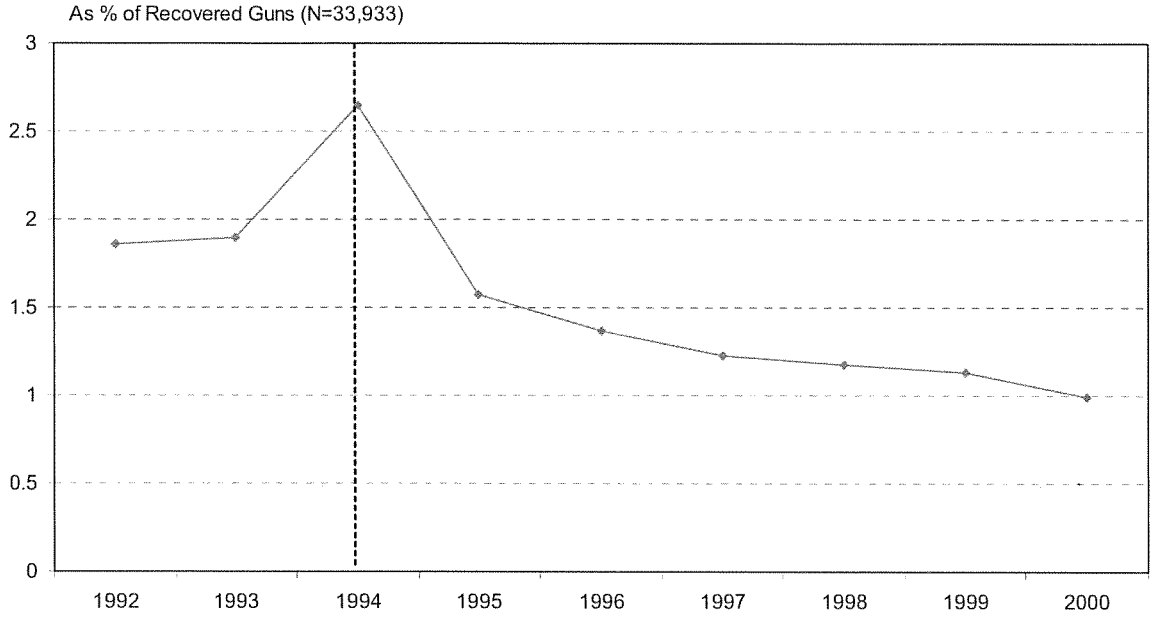
[62] The 1997 national survey of state prisoners discussed in footnote 60 found that nearly 49% of AW offenders obtained their gun from a "street" or illegal source, in contrast to 36% to 42% for other gun users (Harlow, 2001, p. 9). This could be another sign that AWs have become harder to acquire since the ban, but the data cannot be used to make an assessment over time.

Table 6-3. Trends in Police Recoveries of Domestic Assault Weapons in Baltimore, 1992-2000 [a]

	Pre-Ban Period	Post-Ban Period	Change
A. All Recoveries	Jan. 1992-Dec. 1993	Jan. 1995-Dec. 2000	
Total AWs	135	290	
Annual Mean	67.5	48.33	-28%
AW's as % of Guns	1.88%	1.25%	-34%**
APs	123	260	
Annual Mean	61.5	43.33	-30%
APs as % of Guns	1.71%	1.12%	-35%**
ARs	12	30	
Annual Mean	6	5	-17%
ARs as % of Guns	0.17%	0.13%	-24%
Total AWs and Substitutes	135	309	
Annual Mean	67.5	51.5	-24%
AWs/Subs as % of Guns	1.88%	1.33%	-29%**
B. Recoveries Linked to Violent Crimes [b]			
Total AWs	28	47	
Annual Mean	14	7.83	-44%
AWs as % of Violent Crime Guns	2.1%	1.24%	-41%*

a. Domestic assault weapons include Intratec group, SWD group, AR-15 group, and Calico and Feather models.
b. Murders, assaults, and robberies
* Chi-square p level < .05 (changes in percentages of guns that were AWs/APs/ARs/AW-subs were tested for statistical significance).
** Chi-square p level < .01 (changes in percentages of guns that were AWs/APs/ARs/AW-subs were tested for statistical significance).

Figure 6-2. Police Recoveries of Assault Weapons in Baltimore, 1992-2000



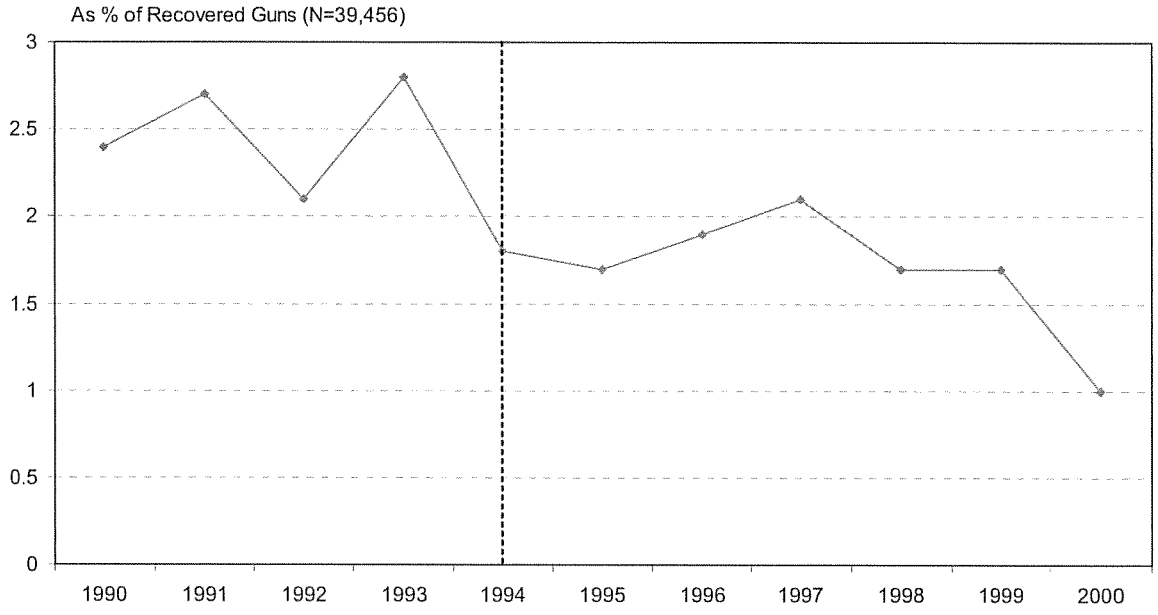
Includes Intratec group, SWD group, AR-15 group, and selected Calico and Feather models.

Table 6-4. Trends in Police Recoveries of Domestic Assault Weapons in Miami (Metro-Dade), 1990-2000 [a]

	Pre-Ban Period	Post-Ban Period	Change
A. All Recoveries	Jan. 1990-Dec. 1993	Jan. 1995-Dec. 2000	
Total AWs	403	330	
Annual Mean	100.75	55	-45%
AW's as % of Guns	2.53%	1.71%	-32%***
APs	355	256	
Annual Mean	88.75	42.67	-52%
APs as % of Guns	2.23%	1.33%	-40%***
ARs	43	72	
Annual Mean	10.75	12	12%
ARs as % of Guns	0.27%	0.37%	37%*
Total AWs and Substitutes	403	343	
Annual Mean	100.75	57.17	-43%
AWs/Subs as % of Guns	2.53%	1.78%	-30%***
B. Recoveries Linked to Violent Crimes [b]			
Total AWs	69	32	
Annual Mean	17.25	5.33	-69%
AWs as % of Violent Crime Guns	2.28%	1.39%	-39%**

a. Domestic assault weapons include Intratec group, SWD group, AR-15 group, and Calico and Feather models.
b. Murders, assaults, and robberies
* Chi-square p level < .1 (changes in percentages of guns that were AWs/APs/ARs/AW-subs were tested for statistical significance)
** Chi-square p level < .05 (changes in percentages of guns that were AWs/APs/ARs/AW-subs were tested for statistical significance)
*** Chi-square p level <.01 (changes in percentages of guns that were AWs/APs/ARs/AW-subs were tested for statistical significance)

Figure 6-3. Police Recoveries of Assault Weapons in Miami (Metro-Dade), 1990-2000



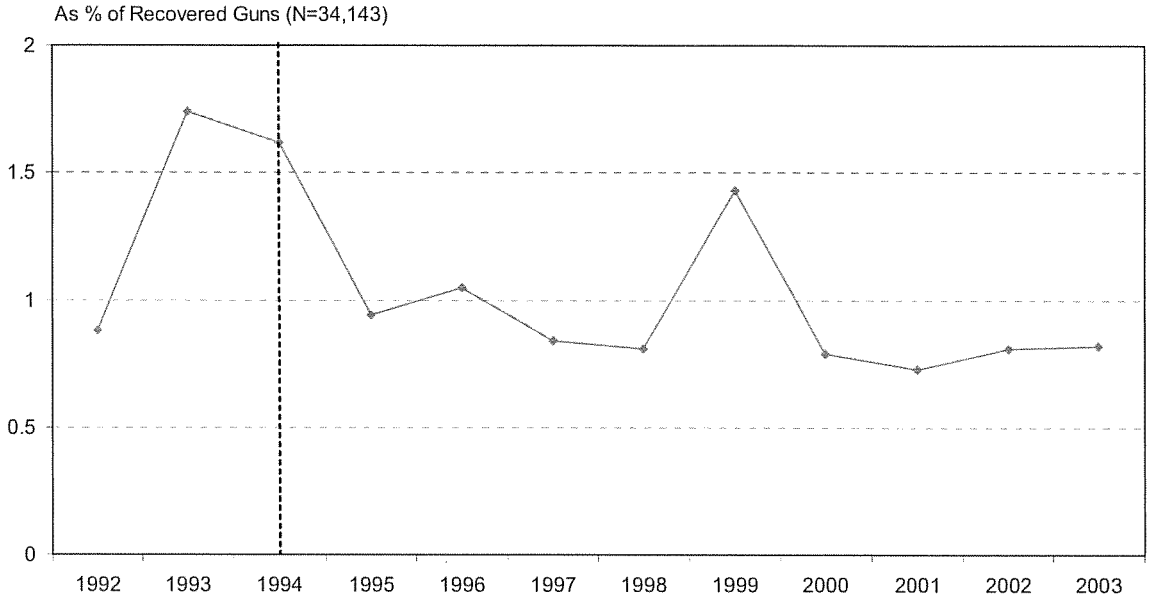
Includes Intratec group, SWD group, AR-15 group, and selected Calico and Feather models.

Table 6-5. Trends in Police Recoveries of Domestic Assault Weapons in St. Louis, 1992-2003 [a]

	Pre-Ban Period	Post-Ban Period	Change
A. All Recoveries	Jan. 1992-Dec. 1993	Jan. 1995-Dec. 2003	
Total AWs	94	212	
Annual Mean	47	23.56	-50%
AW's as % of Guns	1.33%	0.91%	-32%**
APs	87	187	
Annual Mean	43.5	20.78	-52%
APs as % of Guns	1.23%	0.81%	-34%**
ARs	7	25	
Annual Mean	3.5	2.78	-21%
ARs as % of Guns	0.1%	0.11%	10%
Total AWs and Substitutes	94	234	
Annual Mean	47	26	-45%
AWs/Subs as % of Guns	1.33%	1.01%	-24%*
B. Recoveries Linked to Violent Crimes [b]			
Total AWs	8	20	
Annual Mean	4	2.2	-45%
AWs as % of Violent Crime Guns	0.8%	0.81%	1%

a. Domestic assault weapons include Intratec group, SWD group, AR-15 group, and Calico and Feather models.
b. Murders, assaults, and robberies
* Chi-square p level < .05 (changes in percentages of guns that were AWs/APs/ARs/AW-subs were tested for statistical significance)
** Chi-square p level <.01 (changes in percentages of guns that were AWs/APs/ARs/AW-subs were tested for statistical significance)

Figure 6-4. Police Recoveries of Assault Weapons in St. Louis, 1992-2003



Includes Intratec group, SWD group, AR-15 group, and selected Calico and Feather models.

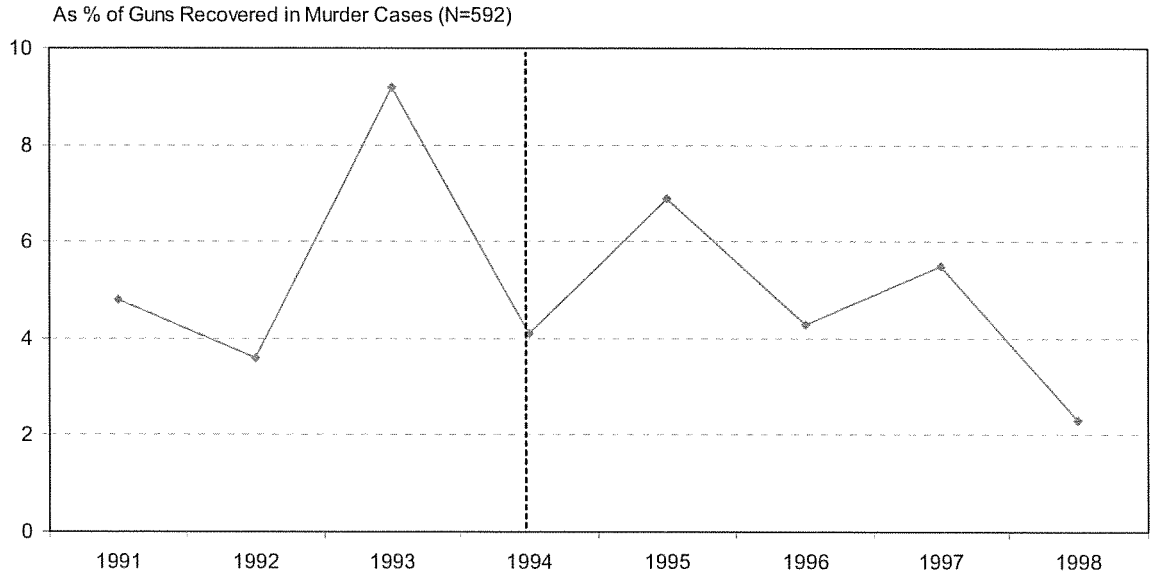
Table 6-6. Trends in Police Recoveries of Domestic Assault Weapons in Boston, Milwaukee, and Anchorage (Alaska) [a]

	Pre-Ban Period	Post-Ban Period	Change
Boston	Jan. 1991-Dec. 1993	Jan. 2000-Dec. 2002	
(All Gun Traces)			
AWs	60	11	
Annual Mean	20	3.7	-82%
AWs as % of Guns	2.16%	0.6%	-72%*
AWs and Substitutes	60	16	
Annual Mean	20	5.3	-74%
AWs/Subs as % of Guns	2.16%	0.87%	-60%*
Milwaukee	Jan. 1991-Dec. 1993	Jan. 1995-Dec. 1998	
(Guns Recovered in Murder Cases)			
AWs	15	13	
Annual Mean	5	3.25	-35%
AWs as % of Guns	5.91%	4.91%	-17%
AWs and Substitutes	15	16	
Annual Mean	5	4	-20%
AWs/Subs as % of Guns	5.91%	6.04%	2%
Anchorage	Jan. 1987-Dec. 1993	Jan. 1995-Dec. 2000	
(Guns Tested for Evidence)			
AWs	16	8	
Annual Mean	2.29	1.33	-42%
AW's as % of Guns	3.57%	2.13%	-40%
AWs and Substitutes	N/A	N/A	

a. Domestic assault weapons include Intratec group, SWD group, AR-15 group, and Calico and Feather models.

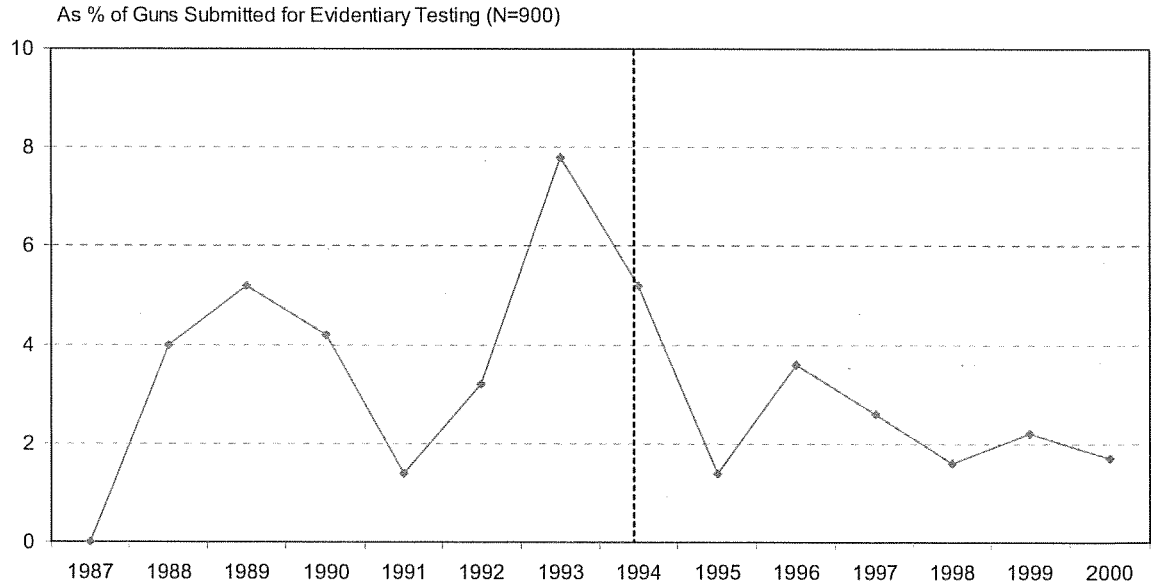
* Chi-square p level < .01 (changes in percentages of guns that were AWs/AW-subs were tested for statistical significance)

Figure 6-5. Assault Weapons Recovered in Milwaukee County Murder Cases, 1991-1998



Includes Intratec group, SWD group, AR-15 group, and selected Calico and Feather models.

Figure 6-6. Police Recoveries of Assault Weapons in Anchorage (Alaska), 1987-2000



Includes Intratec group, SWD group, AR-15 group, and selected Calico and Feather models.

7. MARKET INDICATORS FOR LARGE CAPACITY MAGAZINES: PRICES AND IMPORTATION

The previous chapters examined the AW-LCM ban's impact on the availability and criminal use of AWs. In this chapter and the next, we consider the impact of the ban's much broader prohibition on LCMs made for numerous banned and non-banned firearms. We begin by studying market indicators. Our earlier study of LCM prices for a few gun models revealed that prices rose substantially during 1994 and into 1995 (Roth and Koper, 1997, Chapter 4). Prices of some LCMs remained high into 1996, while others returned to pre-ban levels or oscillated more unpredictably. The price increases may have reduced LCM use at least temporarily in the short-term aftermath of the ban, but we could not confirm this in our prior investigation.

7.1. Price Trends for Large Capacity Magazines

For this study, we sought to approximate longer term trends in the prices at which users could purchase banned LCMs throughout the country. To that end, we analyzed quarterly data on the prices of LCMs advertised by eleven gun and magazine distributors in *Shotgun News*, a national gun industry publication, from April 1992 to December 1998.[63] Those prices are available to any gun dealer, and primary market retailers generally re-sell within 15% of the distributors' prices.[64] The distributors were chosen during the course of the first AW study (Roth and Koper, 1997) based on the frequency with which they advertised during the April 1992 to June 1996 period. For each quarterly period, project staff coded prices for one issue from a randomly selected month. We generally used the first issue of each selected month based on a preliminary, informal assessment suggesting that the selected distributors advertised more frequently in those issues. In a few instances, first-of-month issues were unavailable to us or provided too few observations, so we substituted other issues.[65] Also, we were unable to obtain *Shotgun News* issues for the last two quarters of 1996. However, we aggregated the data annually to study price trends, and the omission of those quarters did not appear to affect the results (this is explained further below).

We ascertained trends in LCM prices by conducting hedonic price analyses,

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[63] The *Blue Book of Gun Values*, which served as the data source for the AW price analysis, does not contain ammunition magazine prices.

[64] According to gun market experts, retail prices track wholesale prices quite closely (Cook et al., 1995, p. 71). Retail prices to eligible purchasers generally exceed wholesale (or original-purchase) prices by 3% to 5% in the large chain stores, by about 15% in independent dealerships, and by about 10% at gun shows (where overhead costs are lower).

[65] The decision to focus on first-of-month issues was made prior to data collection for price analysis update. For the earlier study (Roth and Koper, 1997), project staff coded data for one or more randomly selected issues of every month of the April 1992 to June 1996 period. For this analysis, we utilized data from only the first-of-month issues selected at random during the prior study. If multiple first-of-month issues were available for a given quarter, we selected one at random or based on the number of recorded advertisements. If no first-of-month issue was available for a given quarter, we selected another issue at random from among those coded during the first study.

similar to those described in the AW price analysis (Chapter 5), in which we regressed inflation-adjusted LCM prices (logged) on several predictors: magazine capacity (logged), gun make (for which the LCM was made), year of the advertisement, and distributor. We cannot account fully for the meaning of significant distributor effects. They may represent unmeasured quality differentials in the merchandise of different distributors, or they may represent other differences in stock volume or selling or service practices between the distributors.[66] We included the distributor indicators when they proved to be significant predictors of advertised price. In addition, we focused on LCMs made for several of the most common LCM-compatible handguns and rifles, rather than try to model the differences in LCM prices between the several hundred miscellaneous makes and models of firearms that were captured in the data. Finally, for both the handgun and rifle models, we created and tested seasonal indicator variables to determine if their incorporation would affect the coefficient for 1996 (the year with winter/spring data only), but they proved to be statistically insignificant and are not shown in the results below.[67]

7.1.1. Large Capacity Magazines for Handguns

The handgun LCM analysis tracks the prices of LCMs made for Intratec and Cobray (i.e., SWD) APs and non-banned semiautomatic pistols made by Smith and Wesson, Glock, Sturm Ruger, Sig-Sauer, Taurus, and Beretta (each of the manufacturers in the former group produces numerous models capable of accepting LCMs). In general, LCMs with greater magazine capacities commanded higher prices, and there were significant price differentials between LCMs made for different guns and sold by different distributors (see Table 7-1). Not surprisingly, LCMs made for Glock handguns were most expensive, followed by those made for Beretta and Sig-Sauer firearms.

Turning to the time trend indicators (see Table 7-1 and Figure 7-1), prices for these magazines increased nearly 50% from 1993 to 1994, and they rose another 56% in 1995. Prices declined somewhat, though not steadily, from 1996 to 1998. Nevertheless, prices in 1998 remained 22% higher than prices in 1994 and nearly 80% higher than those in 1993.

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[66] For example, one possible difference between the distributors may have been the extent to which they sold magazines made of different materials (e.g., steel, aluminum, etc.) or generic magazines manufactured by companies other than the companies manufacturing the firearms for which the magazines were made. For example, there were indications in the data that 3% of the handgun LCMs and 10% of the AR-15 and Mini-14 rifle LCMs used in the analyses (described below) were generic magazines. We did not control for these characteristic, however, because such information was often unclear from the advertisements and was not recorded consistently by coders.

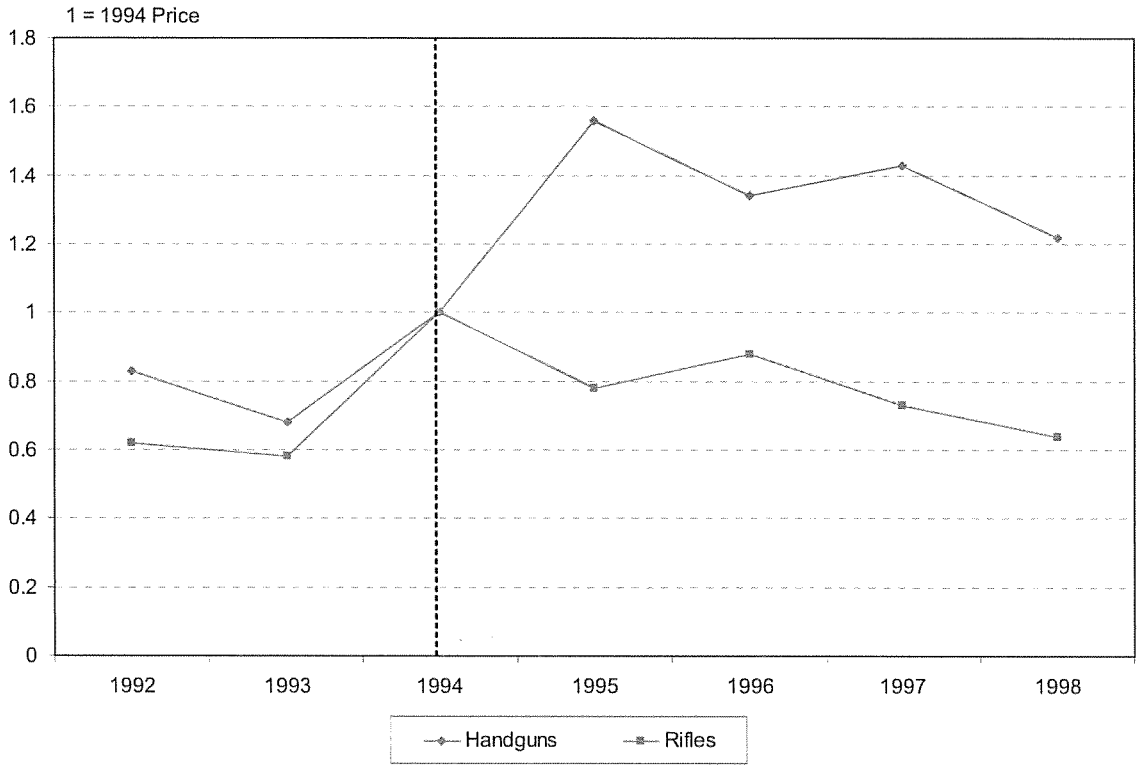
[67] Project staff coded all LCM advertisements by the selected distributors. Therefore, the data are inherently weighted. However, the weights are based on the frequency with which the different LCMs were advertised (i.e., the LCMs that were advertised most frequently have the greatest weight in the models) rather than by production volume.

Table 7-1. Regression of Handgun and Rifle Large Capacity Magazine Prices on Annual Time Indicators, 1992-1998, Controlling for Gun Makes/Models and Distributors

	Handgun LCMs (n=1,277)		Rifle LCMs (n=674)	
	Estimate	**T value**	**Estimate**	**T value**
Constant	-1.79	-12.74***	-4.10	-19.12***
1992	-0.19	-2.11**	-0.48	-4.20***
1993	-0.38	-6.00***	-0.55	-6.14***
1995	0.44	6.88***	-0.25	-2.64***
1996	0.29	4.05***	-0.12	-0.93
1997	0.36	6.33***	-0.31	-3.68***
1998	0.20	3.51***	-0.44	-5.19***
Rounds (logged)	0.26	5.73***	0.84	15.08***
Cobray	-0.36	-4.15***		
Glock	0.41	8.15***		
Intratec	-0.40	-4.18***		
Ruger	-0.42	-7.79***		
Smith&Wesson	-0.08	-1.71*		
Sig-Sauer	0	-0.09		
Taurus	-0.31	-6.10***		
AK-type			-0.25	-3.15***
Colt AR-15			0.14	1.68*
Ruger Mini-14			-0.08	-0.92
Distributor 1	-0.72	-16.38***	-0.35	-5.15***
Distributor 2	-0.15	-0.97	-0.83	-5.24***
Distributor 3	-0.16	-3.93***	0.19	2.69***
Distributor 4	-0.55	-5.72***	0.16	0.80
Distributor 5	-0.07	-1.79*	-0.18	-2.65***
Distributor 6	-0.53	-1.23	-0.12	-0.32
Distributor 7	-1.59	-3.70***	-0.10	-0.91
Distributor 8			0.14	0.70
Distributor 9	-0.91	-12.52***	-0.48	-4.00***
F statistic	58.76		21.22	
(p value)	<.0001		<.0001	
Adj. R-square	0.51		0.38	

Year indicators are interpreted relative to 1994, and distributors are interpreted relative to distributor 10. Handgun makes are relative to Beretta and rifle models are relative to SKS.
* Statistically significant at p<=.10.
** Statistically significant at p<=.05.
*** Statistically significant at p<=.01.

Figure 7-1. Annual Price Trends for Large Capacity Magazines, 1992-1998



Based on 1,277 sampled ads for LCMs fitting models of 8 handgun makers and 674 sampled ads for LCMs fitting 4 rifle model groups.

7.1.2. Large Capacity Magazines for Rifles

We approximated trends in the prices of LCMs for rifles by modeling the prices of LCMs manufactured for AR-15, Mini-14, SKS,[68] and AK-type rifle models (including various non-banned AK-type models). As in the handgun LCM model, larger LCMs drew higher prices, and there were several significant model and distributor effects. AR-15 magazines tended to have the highest prices, and magazines for AK-type models had the lowest prices (Table 7-1).

Like their handgun counterparts, prices for rifle LCMs increased over 40% from 1993 to 1994, as the ban was debated and implemented (see Table 7-1 and Figure 7-1). However, prices declined over 20% in 1995. Following a rebound in 1996, prices moved downward again during 1997 and 1998. Prices in 1998 were over one third lower than the peak prices of 1994 and were comparable to pre-ban prices in 1992 and 1993.

[68] The SKS is a very popular imported rifle (there are Russian and Chinese versions) that was not covered by either the 1989 AR import ban or the 1994 AW ban. However, importation of SKS rifles from China was discontinued in 1994 due to trade restrictions.

7.2. Post-Ban Importation of Large Capacity Magazines

ATF does not collect (or at least does not publicize) statistics on production of LCMs. Therefore, we cannot clearly document pre-ban production trends. Nevertheless, it seems likely that gun and magazine manufacturers boosted their production of LCMs during the debate over the ban, just as AW makers increased production of AWs. Regardless, gun industry sources estimated that there were 25 million LCMs available as of 1995 (including aftermarket items for repairing magazines or converting them to LCMs) (Gun Tests, 1995, p. 30).

Moreover, the supply of LCMs continued to grow even after the ban due to importation of foreign LCMs that were manufactured prior to the ban (and thus grandfathered by the LCM legislation), according to ATF importation data.[69] As shown in Table 7-2, nearly 4.8 million LCMs were imported for commercial sale (as opposed to law enforcement uses) from 1994 through 2000, with the largest number (nearly 3.7 million) arriving in 1999.[70] During this period, furthermore, importers received permission to import a total of 47.2 million LCMs; consequently, an additional 42 million LCMs may have arrived after 2000 or still be on the way, based on just those approved through 2000.[71, 72]

To put this in perspective, gun owners in the U.S. possessed 25 million firearms that were equipped with magazines holding 10 or more rounds as of 1994 (Cook and Ludwig, 1996, p. 17). Therefore, the 4.7 million LCMs imported in the U.S. from 1994 through 2000 could conceivably replenish 19% of the LCMs that were owned at the time of the ban. The 47.2 million approved during this period could supply nearly 2 additional LCMs for all guns that were so equipped as of 1994.

7.3. Summary and Interpretations

Prices of LCMs for handguns rose significantly around the time of the ban and, despite some decline from their peak levels in 1995, remained significantly higher than pre-ban prices through at least 1998. The increase in LCM prices for rifles proved to be more temporary, with prices returning to roughly pre-ban levels by 1998.[73]

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[69] To import LCMs into the country, importers must certify that the magazines were made prior to the ban. (The law requires companies to mark post-ban LCMs with serial numbers.) As a practical matter, however, it is hard for U.S. authorities to know for certain whether imported LCMs were produced prior to the ban.

[70] The data do not distinguish between handgun and rifle magazines or the specific models for which the LCMs were made. But note that roughly two-thirds of the LCMs imported from 1994 through 2000 had capacities between 11 and 19 rounds, a range that covers almost all handgun LCMs as well as many rifle LCMs. It seems most likely that the remaining LCMs (those with capacities of 20 or more rounds) were primarily for rifles.

[71] The statistics in Table 7-2 do not include belt devices used for machine guns.

[72] A caveat to the number of approved LCMs is that importers may overstate the number of LCMs they have available to give themselves leeway to import additional LCMs, should they become available.

[73] A caveat is that we did not examine prices of smaller magazines, so the price trends described here may not have been entirely unique to LCMs. Yet it seems likely that these trends reflect the unique impact of the ban on the market for LCMs.

Table 7-2. Large Capacity Magazines Imported into the United States or Approved For Importation for Commercial Sale, 1994-2000

Year	Imported	Approved
1994	67,063	77,666
1995	3,776	2,066,228
1996	280,425	2,795,173
1997	99,972	1,889,773
1998	337,172	20,814,574
1999	3,663,619	13,291,593
2000	346,416	6,272,876
Total	*4,798,443*	*47,207,883*

Source: Firearms and Explosives Imports Branch, Bureau of Alcohol, Tobacco, Firearms, and Explosives. Counts do not include "links" (belt devices) or imports for law enforcement purposes.

The drop in rifle LCM prices between 1994 and 1998 may have due to the simultaneous importation of approximately 788,400 grandfathered LCMs, most of which appear to have been rifle magazines (based on the fact that nearly two-thirds had capacities over 19 rounds), as well as the availability of U.S. military surplus LCMs that fit rifles like the AR-15 and Mini-14. We can also speculate that demand for LCMs is not as great among rifle consumers, who are less likely to acquire their guns for defensive or criminal purposes.

The pre-ban supply of handgun LCMs may have been more constricted than the supply of rifle LCMs for at least a few years following the ban, based on prices from 1994 to 1998. Although there were an estimated 25 million LCMs available in the U.S. as of 1995, some major handgun manufacturers (including Ruger, Sig Sauer, and Glock) had or were close to running out of new LCMs by that time (Gun Tests, 1995, p. 30). Yet the frequency of advertisements for handgun LCMs during 1997 and 1998, as well as the drop in prices from their 1995 peak, suggests that the supply had not become particularly low. In 1998, for example, the selected distributors posted a combined total of 92 LCM ads per issue (some of which may have been for the same make, model, and capacity combinations) for just the handguns that we incorporated into our model.[74] Perhaps the

[74] Project staff found substantially more advertisements per issue for 1997 and 1998 than for earlier years. For the LCMs studied in the handgun analysis, staff recorded an average of 412 LCM advertisements per year (103 per issue) during 1997 and 1998. For 1992-1996, staff recorded an average of about 100 ads per year (25 per issue) for the same LCMs. A similar but smaller differential existed in the volume of ads for the LCMs used in the rifle analysis. The increase in LCM ads over time may reflect changes in supply and

demand for enhanced firepower among handgun consumers, who are more likely to acquire guns for crime or defense against crime, was also a factor (and perhaps a large one) putting a premium on handgun LCMs.

Although we might hypothesize that high prices depressed use of handguns with LCMs for at least a few years after the ban, a qualification to this prediction is that LCM use may be less sensitive to prices than is use of AWs because LCMs are much less expensive than the firearms they complement and therefore account for a smaller fraction of users' income (e.g., see Friedman, 1962). To illustrate, TEC-9 APs typically cost $260 at retail during 1992 and 1993, while LCMs for the TEC-9, ranging in capacity from 30 to 36 rounds, averaged $16.50 in *Shotgun News* advertisements (and probably $19 or less at retail) during the same period. So, for example, a doubling of both gun and LCM prices would likely have a much greater impact on purchases of TEC-9 pistols than purchases of LCMs for the TEC-9. Users willing and able to pay for a gun that accepts an LCM are most likely willing and able to pay for an LCM to use with the gun.

Moreover, the LCM supply was enhanced considerably by a surge in LCM imports that occurred after the period of our price analysis. During 1999 and 2000, an additional 4 million grandfathered LCMs were imported into the U.S., over two-thirds of which had capacities of 11-19 rounds, a range that covers almost all handgun LCMs (as well as many rifle LCMs). This may have driven prices down further after 1998.

In sum, market indicators yield conflicting signs on the availability of LCMs. It is perhaps too early to expect a reduction in crimes with LCMs, considering that tens of millions of grandfathered LCMs were available at the time of the ban, an additional 4.8 million – enough to replenish one-fifth of those owned by civilians – were imported from 1994 through 2000, and that the elasticity of demand for LCMs may be more limited than that of firearms. And if the additional 42 million foreign LCMs approved for importation become available, there may not be a reduction in crimes with LCMs anytime in the near future.

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demand for LCMs during the study period, as well as product shifts by distributors and perhaps changes in ad formats (e.g., ads during the early period may have been more likely to list magazines by handgun model without listing the exact capacity of each magazine, in which case coders would have been more likely to miss some LCMs during the early period). Because the data collection effort for the early period was part of a larger effort that involved coding prices in *Shotgun News* for LCMs and numerous banned and non-banned firearms, it is also possible that coders were more likely to miss LCM ads during that period due to random factors like fatigue or time constraints.

8. CRIMINAL USE OF LARGE CAPACITY MAGAZINES AFTER THE BAN

Assessing trends in criminal use of LCMs is difficult. There is no national data source on crime guns equipped with LCMs (ATF national tracing data do not include information about magazines recovered with traced firearms), and, based on our contacts with numerous police departments over the course of this study and the first AW study, it seems that even those police departments that maintain electronic databases on recovered firearms do not typically record the capacity of the magazines with which the guns are equipped.[75,76] Indeed, we were unable to acquire sufficient data to examine LCM use for the first AW study (Roth and Koper, 1997).

For the current study, we obtained four data sources with which to investigate trends in criminal use of LCMs. Three of the databases utilized in the AW analysis – those from Baltimore, Milwaukee, and Anchorage – contained information about the magazines recovered with the guns (see the descriptions of these databases in Chapter 6). Using updated versions of these databases, we examined all LCM recoveries in Baltimore from 1993 through 2003, recoveries of LCMs in Milwaukee murder cases from 1991 to 2001, and recoveries of LCMs linked to serious crimes in Anchorage (and other parts of Alaska) from 1992 through 2002.[77] In addition, we studied records of guns and magazines submitted to the Jefferson Regional Forensics Lab in Louisville, Kentucky from 1996 through 2000. This lab of the Kentucky State Police services law enforcement agencies throughout roughly half of Kentucky, but most guns submitted to the lab are from the Louisville area. Guns examined at the lab are most typically those associated with serious crimes such as murders, robberies, and assaults.

The LCM analyses and findings were not as uniform across locations as were those for AWs. Therefore, we discuss each site separately. As in the AW analysis, we emphasize changes in the percentage of guns equipped with LCMs to control for overall trends in gun crime and gun recoveries. Because gun crime was falling during the latter 1990s, we anticipated that the number of guns recovered with LCMs might decline independently of the ban's impact. (Hereafter, we refer to guns equipped with LCMs as LCM guns.)

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[75] For the pre-ban period, one can usually infer magazine capacity based on the firearm model. For post-ban recoveries, this is more problematic because gun models capable of accepting LCMs may have been equipped with grandfathered LCMs or with post-ban magazines designed to fit the same gun but holding fewer rounds.

[76] As for the AW analysis in Chapter 6, we utilize police data to examine trends in criminal use of LCMs. The reader is referred to the general discussion of police gun seizure data in Chapter 6.

[77] Findings presented in our 2002 interim report (Koper and Roth, 2002b) indicated that LCM use had not declined as of the late 1990s. Therefore, we sought to update the LCM analyses where possible for this version of the report.

8.1. Baltimore

In Baltimore, about 14% of guns recovered by police were LCM guns in 1993. This figure remained relatively stable for a few years after the ban but had dropped notably by 2002 and 2003 (Figure 8-1). For the entire post-ban period (1995-2003), recoveries of LCM guns were down 8% relative to those of guns with smaller magazines (Table 8-1, panel A), a change of borderline statistical significance. Focusing on the most recent years, however, LCM gun recoveries were 24% lower in 2002 and 2003 than during the year prior to the ban, a difference that was clearly significant (Table 8-1, panel B).[78,79,80] This change was attributable to a 36% drop in LCM handguns (Table 8-1, panel C). LCM rifles actually increased 36% as a share of crime guns, although they still accounted for no more than 3% in 2002 and 2003 (Table 8-1, panel D).[81]

Yet there was no decline in recoveries of LCM guns used in violent crimes (i.e., murders, shootings, robberies, and other assaults). After the ban, the percentage of violent crime guns with LCMs generally oscillated in a range consistent with the pre-ban level (14%) and hit peaks of roughly 16% to 17% in 1996 and 2003 (Figure 8-1).[82] Whether comparing the pre-ban period to the entire post-ban period (1995-2003) or the most recent years (2002-2003), there was no meaningful decline in LCM recoveries linked to violent crimes (Table 8-2, panels A and B).[83] Neither violent uses of LCM

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[78] Data on handgun magazines were also available for 1992. An auxiliary analysis of those data did not change the substantive inferences described in the text.

[79] The Maryland AP ban enacted in June 1994 also prohibited ammunition magazines holding over 20 rounds and did not permit additional sales or transfers of such magazines manufactured prior to the ban. This ban, as well as the Maryland and federal bans on AWs that account for many of the guns with magazines over 20 rounds, may have contributed to the downward trend in LCMs in Baltimore, but only 2% of the guns recovered in Baltimore from 1993 to 2000 were equipped with such magazines.

[80] All comparisons of 1993 to 2002-2003 in the Baltimore data are based on information from the months of January through November of each year. At the time we received these data, information was not yet available for December 2003, and preliminary analysis revealed that guns with LCMs were somewhat less likely to be recovered in December than in other months for years prior to 2003. Nevertheless, utilizing the December data for 1993 and 2002 did not change the substantive inferences. We did not remove December data from the comparisons of 1993 and the full post-ban period because those comparisons seemed less likely to be influenced by the absence of one month of data.

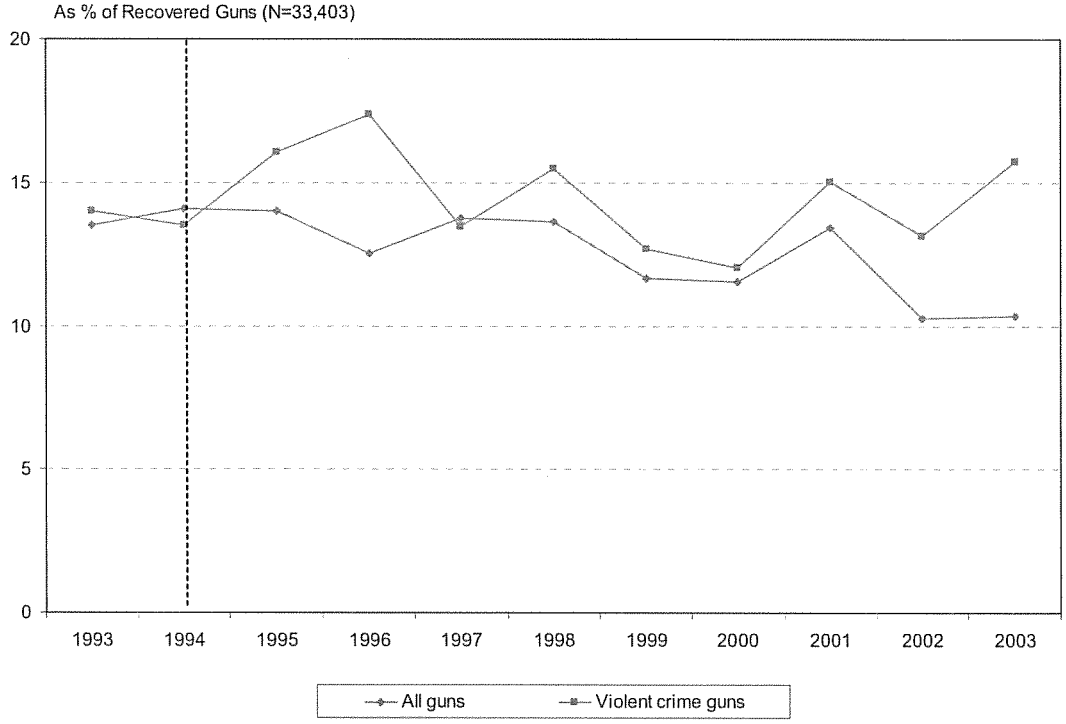
[81] This increase may have been due largely to a general increase in rifle seizures. LCM rifles actually dropped as a percentage of all rifle recoveries from 1993 to 2002-2003, suggesting that recoveries of LCM rifles were increasing less than recoveries of other rifles.

[82] For 1996, 45% of all records and 24% of those linked to violent crimes had missing data for magazine capacity (due to temporary changes in operational procedures in the Baltimore crime lab). For other years, missing data rates were no more than 6%. Based on those cases for which data were available, the share of guns with LCMs in 1996 was comparable to that in other years, particularly when examining all gun recoveries. At any rate, the analyses focusing on 1993, 2002, and 2003 reinforce the findings of those that include the 1996 data.

[83] The ammunition capacity code in the Baltimore data usually reflected the full capacity of the magazine and weapon, but sometimes reflected the capacity of the magazine only. (For instance, a semiautomatic with a 10-round magazine and the ability to accept one additional round in the chamber might have been coded as having a capacity of 10 or 11.) Informal assessment suggested that capacity was more likely to reflect the exact capacity of the magazine in the early years of the database and more likely to reflect the full capacity of the gun and magazine in later years. For the main runs presented in the text and tables, guns were counted as having LCMs if the coded capacity was greater than 11 rounds. This ensured that LCMs were not overestimated, but it potentially understated LCM prevalence, particularly for the earlier

handguns or LCM rifles had declined appreciably by 2002-2003 (Table 8-2, panels C and D). Hence, the general decline in LCM recoveries may reflect differences in the availability and use of LCMs among less serious offenders, changes in police practices,[84] or other factors.

Figure 8-1. Police Recoveries of Guns Equipped With Large Capacity Magazines in Baltimore, 1993-2003



years. However, coding the guns as LCM weapons based on a threshold of 10 (i.e., a coded capacity over 10 rounds) in 1993 and a threshold of 11 (i.e., a coded capacity over 11 rounds) for 2002-2003 did not change the inferences of the violent crime analysis. Further, this coding increased the pre-ban prevalence of LCMs by very little (about 4% in relative terms).

[84] During the late 1990s, for example, Baltimore police put greater emphasis on detecting illegal gun carrying (this statement is based on prior research and interviews the author has done in Baltimore as well as the discussion in Center to Prevent Handgun Violence, 1998). One can hypothesize that this effort reduced the fraction of recovered guns with LCMs because illegal gun carriers are probably more likely to carry smaller, more concealable handguns that are less likely to have LCMs.

Table 8-1. Trends in All Police Recoveries of Firearms Equipped With Large Capacity Magazines, Baltimore, 1993-2003

	Pre-Ban Period	Post-Ban Period	Change
A. All LCM Guns	Jan.-Dec. 1993	Jan. 1995-Nov. 2003	
Total	473	3703	
Annual Mean	473	445.86 [a]	-6%
LCM Guns as % of All Guns	13.51%	12.38%	-8%*
B. All LCM Guns	Jan.-Nov. 1993	Jan.-Nov. 2002-2003	
Total	430	626	
Annual Mean	430	313	-27%
LCM Guns as % of All Guns	13.47%	10.3%	-24%***
C. LCM Handguns	Jan.-Nov. 1993	Jan.-Nov. 2002-2003	
Total	359	440	
Annual Mean	359	220	-39%
LCM Handguns as % of All Guns	11.25%	7.24%	-36%***
D. LCM Rifles	Jan.-Nov. 1993	Jan.-Nov. 2002-2003	
LCM Rifles	71	183	
Annual Mean	71	91.5	29%
LCM Rifles as % of All Guns	2.22%	3.01%	36%**

a. Annual average calculated without 1996 and 2003 (to correct for missing months or missing magazine data).
* Chi-square p level < .10 (changes in percentages of guns equipped with LCMs were tested for statistical significance)
** Chi-square p level <.05 (changes in percentages of guns equipped with LCMs were tested for statistical significance)
** Chi-square p level < .01 (changes in percentages of guns equipped with LCMs were tested for statistical significance)

Table 8-2. Trends in Police Recoveries of Firearms Equipped With Large Capacity Magazines in Violent Crime Cases, Baltimore, 1993-2003

	Pre-Ban Period	Post-Ban Period	Change [a]
A. All LCM Guns	Jan.-Dec. 1993	Jan. 1995-Nov. 2003	
Total	87	711	
Annual Mean	87	81.86 [b]	-6%
LCM Guns as % of All Guns	14.01%	14.44%	3%
B. All LCM Guns	Jan.-Nov. 1993	Jan.-Nov. 2002-2003	
Total	79	104	
Annual Mean	79	52	-34%
LCM Guns as % of All Guns	13.96%	13.65%	-2%
C. LCM Handguns	Jan.-Nov. 1993	Jan.-Nov. 2002-2003	
Total	62	81	
Annual Mean	62	40.5	-35%
LCM Handguns as % of All Guns	10.95%	10.63%	-3%
D. LCM Rifles	Jan.-Nov. 1993	Jan.-Nov. 2002-2003	
LCM Rifles	17	23	
Annual Mean	17	11.5	-32%
LCM Rifles as % of All Guns	3%	3.02%	1%

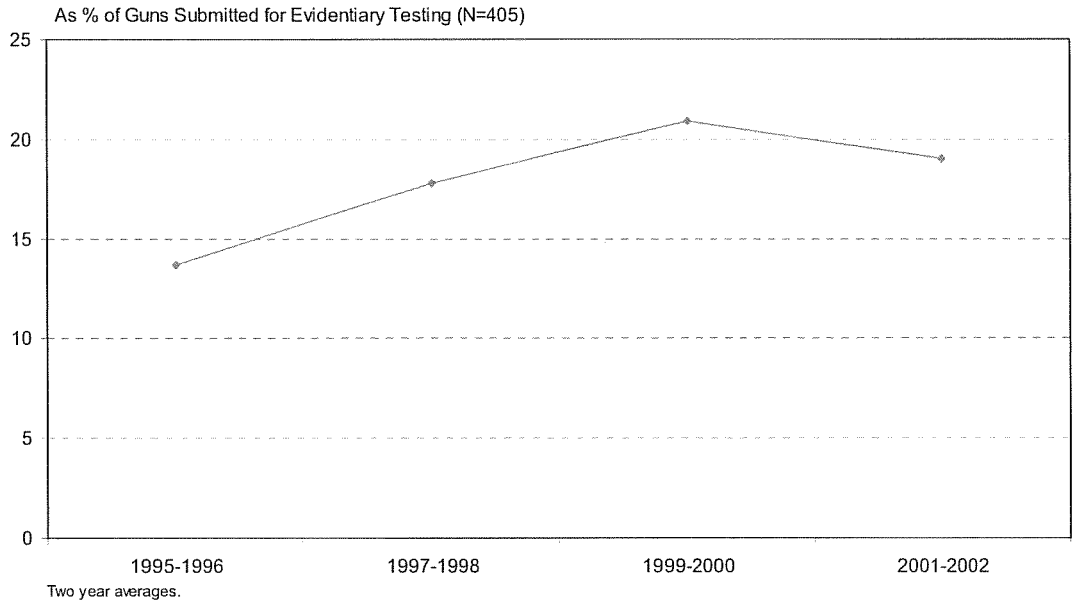
a. Changes in the percentages of guns with LCMs were statistically insignificant in chi-square tests.
b. Annual average calculated without 1996 and 2003 (to correct for missing months or missing magazine data).

8.2. Anchorage

In the Alaska database, magazine capacity was recorded only for guns recovered during the post-ban years, 1995 through 2002. However, we estimated pre-ban use of LCM handguns by identifying handgun models inspected during 1992 and 1993 that were manufactured with LCMs prior to the ban.[85] This permitted an assessment of pre-post changes in the use of LCM handguns.

As shown in Figure 8-2 (also see Table 8-3, panel A), LCM guns rose from 14.5% of crime guns in 1995-1996 to 24% in 2000-2001 (we present two-year averages because the sample are relatively small, particularly for the most recent years) and averaged about 20% for the entire post-ban period. LCM handguns drove much of this trend, but LCM rifles also increased from about 3% of crime guns in 1995-96 to 11% in 2000-2001.

Figure 8-2. Police Recoveries of Guns Equipped With Large Capacity Magazines in Anchorage (Alaska), 1995-2002



[85] To make these determinations, we consulted gun catalogs such as the *Blue Book of Gun Values* and *Guns Illustrated.*

Table 8-3. Trends in Police Recoveries of Firearms Equipped With Large Capacity Magazines in Violent Crime Cases, Anchorage (Alaska), 1992-2002 [a]

	Pre-Ban Period	Post-Ban Period	Change [b]
A. All LCM Guns	N/A	Jan. 1995-Dec. 2002	
Total		80	
Annual Mean		10	N/A
LCM Guns as % of All Guns		19.75%	N/A
B. LCM Handguns	Jan. 1992-Dec. 1993	Jan. 1995-Dec. 2002	
Total	17	57	
Annual Mean	8.5	7.13	-16%
LCM Handguns as % All Handguns	26.15%	22.35%	-15%
C. LCM Handguns	Jan. 1992-Dec. 1993	Jan. 2001-Dec. 2002	
Total	17	10	
Annual Mean	8.5	5	-41%
LCM Handguns as % of All Handguns	26.15%	19.23%	-26%

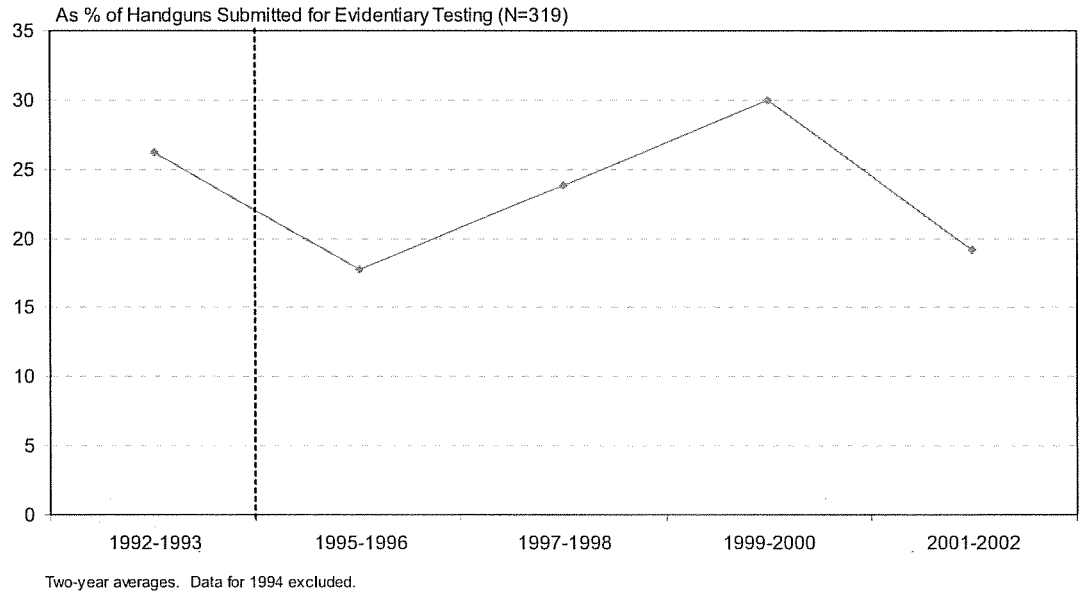
a. Based on guns submitted to State Police for evidentiary testing.
b. Changes in the percentages of guns equipped with LCMs were statistically insignificant in chi-square tests.

Investigation of pre-post changes for handguns revealed an inconsistent pattern (Figure 8-3). LCM handguns dropped initially after the ban, declining from 26% of handguns in 1992-1993 to 18% in 1995-1996. However, they rebounded after 1996, reaching a peak of 30% of handguns in 1999-2000 before declining to 19% in 2001-2002.

For the entire post-ban period, the share of handguns with LCMs was about 15% lower than in the pre-ban period (Table 8-3, panel B). By the two most recent post-ban years (2001-2002), LCM use had dropped 26% from the pre-ban years (Table 8-3, panel C). These changes were not statistically significant, but the samples of LCM handguns were rather small for rigorous statistical testing. Even so, it seems premature to conclude

that there has been a lasting reduction in LCM use in Alaska. LCM use in 2001-2002 was somewhat higher than that immediately following the ban in 1995-1996, after which there was a substantial rebound. Considering the inconsistency of post-ban patterns, further follow-up seems warranted before making definitive conclusions about LCM use in Alaska.

Figure 8-3. Police Recoveries of Handguns Equipped With Large Capacity Magazines in Anchorage (Alaska), 1992-2002



Two-year averages. Data for 1994 excluded.

8.3. Milwaukee

LCM guns accounted for 21% of guns recovered in Milwaukee murder investigations from 1991 to 1993 (Table 8-4, panel A). Following the ban, this figure rose until reaching a plateau of over 36% in 1997 and 1998 (Figure 8-4). On average, the share of guns with LCMs grew 55% from 1991-1993 to 1995-1998, a trend that was driven by LCM handguns (Table 8-4, panels A and B).[86] LCM rifles held steady at between 4% and 5% of the guns (Table 8-4, panel C).

We also analyzed a preliminary database on 48 guns used in murders during 2000 and 2001 (unlike the 1991-1998 database, this database did not include information on other guns recovered during the murder investigations). About 11% of these guns were LCM guns, as compared to 19% of guns used in murders from 1991 to 1993 (analyses not shown). However, nearly a quarter of the 2000-2001 records were missing information on magazine capacity.[87] Examination of the types and models of guns with

[86] LCM guns also increased as share of guns that were used in the murders (the full sample results discussed in the text include all guns recovered during the investigations).
[87] Magazine capacity was missing for less than 4% of the records in earlier years.

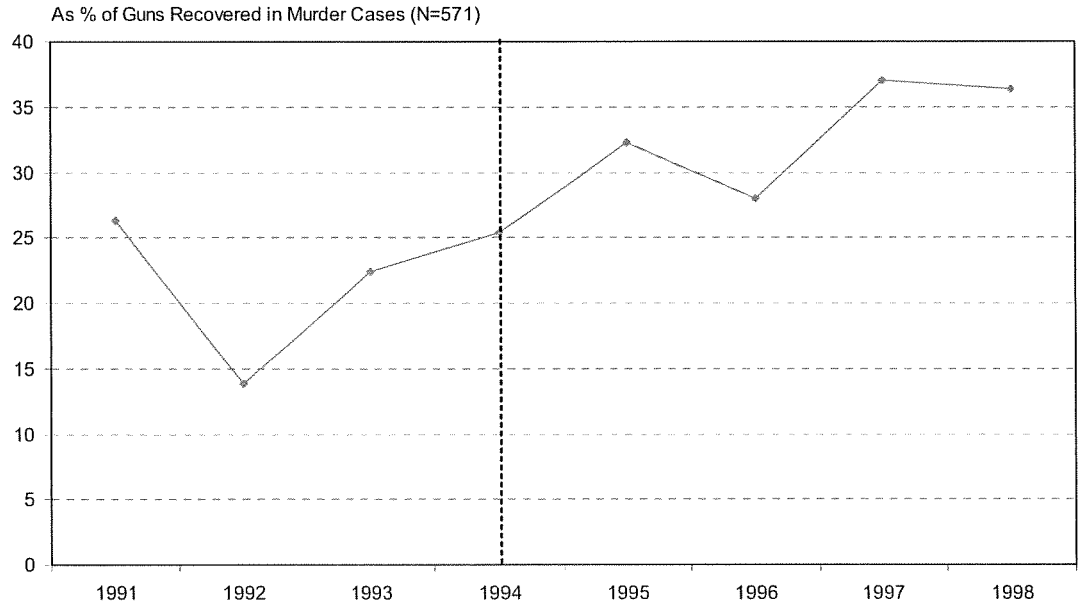
unidentified magazines suggested that as many as 17% of guns used in murders during 2000 and 2001 may have been LCM guns (based on all those that either had LCMs, were models sold with LCMs prior to the ban, or were unidentified semiautomatics). While this still suggests a drop in LCM use from the peak levels of the late 1990s (26% of guns used in murders from 1995 to 1998 had LCMs), it is not clear that LCM use has declined significantly below pre-ban levels.

Table 8-4. Trends in Police Recoveries of Firearms Equipped With Large Capacity Magazines in Murder Cases, Milwaukee County, 1991-1998

	Pre-Ban Period	Post-Ban Period	Change
A. All LCM Guns	Jan. 1991-Dec. 1993	Jan. 1995-Dec. 1998	
Total	51	83	
Annual Mean	17	20.75	22%
LCM Guns as % of All Guns	20.9%	32.42%	55%*
B. LCM Handguns	Jan. 1991-Dec. 1993	Jan. 1995-Dec. 1998	
Total	40	71	
Annual Mean	13.33	17.75	33%
LCM Handguns as % of All Guns	16.39%	27.73%	69%*
C. LCM Rifles	Jan. 1991-Dec. 1993	Jan. 1995-Dec. 1998	
Total	11	12	
Annual Mean	3.67	3	-18%
LCM Rifles as % of All Guns	4.51%	4.69%	4%

* Chi-square p level < .01 (changes in percentages of guns equipped with LCMs were tested for statistical significance)

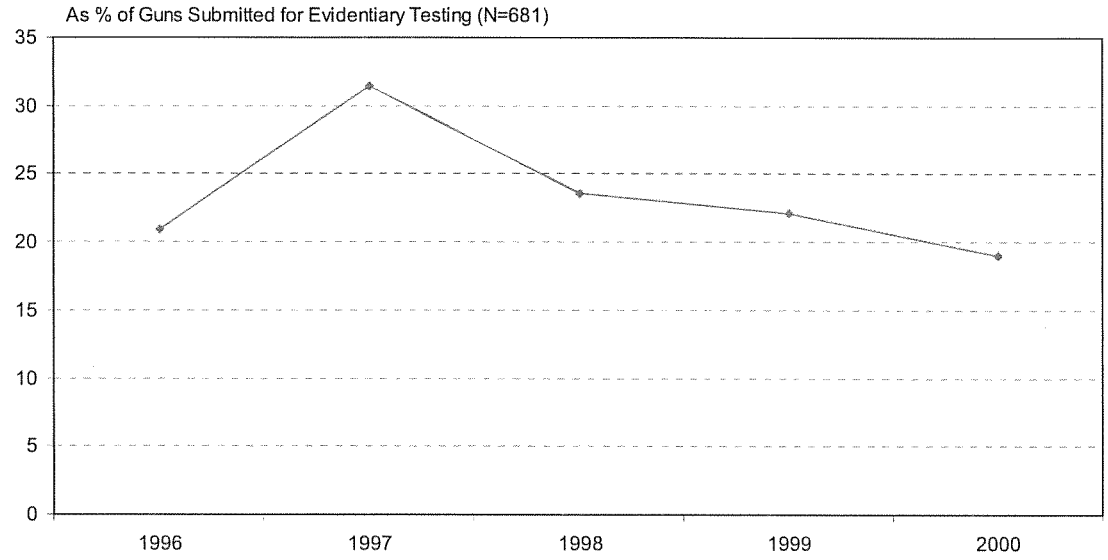
Figure 8-4. Recoveries of Guns Equipped With Large Capacity Magazines in Milwaukee County Murder Cases, 1991-1998



8.4. Louisville

The Louisville LCM data are all post-ban (1996-2000), so we cannot make pre-post comparisons. Nonetheless, the share of crime guns with LCMs in Louisville (24%) was within the range of that observed in the other cities during this period. And similar to post-ban trends in the other sites, LCM recoveries peaked in 1997 before leveling off and remaining steady through the year 2000 (Figure 8-5). LCM rifles dropped 21% as a share of crime guns between 1996 and 2000 (analyses not shown), but there were few in the database, and they never accounted for more than 6.2% of guns in any year.

Figure 8-5. Police Recoveries of Guns Equipped With Large Capacity Magazines in Louisville (Kentucky), 1996-2000



Year 2000 data are not for the full year.

8.5. Summary

Despite a doubling of handgun LCM prices between 1993 and 1995 and a 40% increase in rifle LCM prices from 1993 to 1994, criminal use of LCMs was rising or steady through at least the latter 1990s, based on police recovery data from four jurisdictions studied in this chapter. These findings are also consistent with an earlier study finding no decline in seizures of LCM guns from juveniles in Washington, DC in the year after the ban (Koper, 2001).[88] Post-2000 data, though more limited and inconsistent, suggest that LCM use may be dropping from peak levels of the late 1990s but provide no definitive evidence of a drop below pre-ban levels.[89] These trends have been driven primarily by LCM handguns, which are used in crime roughly three times as

[88] From 1991 to 1993, 16.4% of guns recovered from juveniles in Washington, DC had LCMs (14.2% had LCMs in 1993). In 1995, this percentage increased to 17.1%. We did not present these findings in this chapter because the data were limited to guns recovered from juveniles, the post-ban data series was very short, and the gun markets supplying DC and Baltimore are likely to have much overlap (Maryland is a leading supplier of guns to DC – see ATF, 1997; 1999).

[89] We reran selected key analyses with the Baltimore, Milwaukee, and Louisville data after excluding .22 caliber guns, some of which could have been equipped with attached tubular magazines that are exempted from the LCM ban, and obtained results consistent with those reported in the text. It was possible to identify these exempted magazines in the Anchorage data. When they were removed from Anchorage's LCM count, the general pattern in use of banned LCMs was similar to that presented in the main 1995-2002 analysis: guns with banned LCMs rose, reaching a peak of 21% of crime guns in 1999-2000, before declining slightly to 19% in 2001-2002.

often as LCM rifles. Nonetheless, there has been no consistent reduction in the use of LCM rifles either.

The observed patterns are likely due to several factors: a hangover from pre-ban growth in the production and marketing of LCM guns (Cook and Ludwig, 1997, pp. 5-6; Wintemute, 1996);[90] the low cost of LCMs relative to the firearms they complement, which seems to make LCM use less sensitive to prices than is firearm use;[91] the utility that gun users, particularly handgun users, attach to LCMs; a plentiful supply of grandfathered LCMs, likely enhanced by a pre-ban surge in production (though this has not been documented) and the importation of millions of foreign LCMs since the ban;[92] thefts of LCM firearms (see Roth and Koper, 1997, Chapter 4); or some combination of these factors.[93] However, it is worth noting that our analysis did not reveal an upswing in use of LCM guns following the surge of LCM importation in 1999 (see the previous chapter). It remains to be seen whether recent imports will have a demonstrable effect on patterns of LCM use.

Finally, we must be cautious in generalizing these results to the nation because they are based on a small number of non-randomly selected jurisdictions. Nonetheless, the consistent failure to find clear evidence of a pre-post drop in LCM use across these geographically diverse locations strengthens the inference that the findings are indicative of a national pattern.

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[90] To illustrate this trend, 38% of handguns acquired by gun owners during 1993 and 1994 were equipped with magazines holding 10 or more rounds, whereas only 14% of handguns acquired before 1993 were so equipped (Cook and Ludwig, 1997, pp. 5-6).

[91] Although elevated post-ban prices did not suppress use of LCMs, a more subtle point is that LCM use rose in most of these locations between 1995 and 1998, as LCM prices were falling from their peak levels of 1994-1995. Therefore, LCM use may have some sensitivity to price trends.

[92] However, we do not have the necessary data to determine if LCMs used in crime after the ban were acquired before or after the ban.

[93] In light of these considerations, it is conceivable that the ban slowed the rate of growth in LCM use, accelerated it temporarily (due to a pre-ban production boom), or had no effect. We do not have the data necessary to examine this issue rigorously. Moreover, the issue might be regarded as somewhat superfluous; the more critical point would seem to be that nearly a decade after the ban, LCM use has still not declined demonstrably below pre-ban levels.

9. THE CONSEQUENCES OF CRIMES WITH ASSAULT WEAPONS AND LARGE CAPACITY MAGAZINES

One of the primary considerations motivating passage of the ban on AWs and LCMs was a concern over the perceived dangerousness of these guns and magazines. In principal, semiautomatic weapons with LCMs enable offenders to fire high numbers of shots rapidly, thereby potentially increasing both the number of person wounded per gunfire incident (including both intended targets and innocent bystanders) and the number of gunshot victims suffering multiple wounds, both of which would increase deaths and injuries from gun violence. Ban advocates also argued that the banned AWs possessed additional features conducive to criminal applications.

The findings of the previous chapters suggest that it is premature to make definitive assessments of the ban's impact on gun violence. Although criminal use of AWs has declined since the ban, this reduction was offset through at least the late 1990s by steady or rising use of other guns equipped with LCMs. As argued previously, the LCM ban has greater potential for reducing gun deaths and injuries than does the AW ban. Guns with LCMs – of which AWs are only a subset – were used in up to 25% of gun crimes before the ban, whereas AWs were used in no more than 8% (Chapter 3). Furthermore, an LCM is arguably the most important feature of an AW. Hence, use of guns with LCMs is probably more consequential than use of guns with other military-style features, such as flash hiders, folding rifle stocks, threaded barrels for attaching a silencers, and so on.[94]

This is not to say that reducing use of AWs will have no effect on gun crime; a decline in the use of AWs does imply fewer crimes with guns having particularly large magazines (20 or more rounds) and other military-style features that could facilitate some crimes. However, it seems that any such effects would be outweighed, or at least

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[94] While it is conceivable that changing features of AWs other than their magazines might prevent some gunshot victimizations, available data provide little if any empirical basis for judging the likely size of such effects. Speculatively, some of the most beneficial weapon redesigns may be the removal of folding stocks and pistol grips from rifles. It is plausible that some offenders who cannot obtain rifles with folding stocks (which make the guns more concealable) might switch to handguns, which are more concealable but generally cause less severe wounds (e.g. see DiMaio, 1985). However, such substitution patterns cannot be predicted with certainty. Police gun databases rarely have information sufficiently detailed to make assessments of changes over time in the use of weapons with specific features like folding stocks. Based on informal assessments, there was no consistent pattern in post-ban use of rifles (as a share of crime guns) in the local databases examined in the prior chapters (also see the specific comments on LCM rifles in the previous chapters).

Pistol grips enhance the ability of shooters to maintain control of a rifle during rapid, "spray and pray" firing (e.g., see Violence Policy Center, 2003). (Heat shrouds and forward handgrips on APs serve the same function.) While this feature may prove useful in military contexts (e.g., firefights among groups at 100 meters or less – see data of the U.S. Army's Operations Research Office as cited in Violence Policy Center, 2003), it is unknown whether civilian attacks with semiautomatic rifles having pistol grips claim more victims per attack than do those with other semiautomatic rifles. At any rate, most post-ban AR-type rifles still have pistol grips. Further, the ban does not count a stock thumbhole grip, which serves the same function as a pistol grip (e.g., see the illustration of LCMM rifles in Chapter 2), as an AR feature.

obscured, by the wider effects of LCM use, which themselves are likely to be small at best, as we argue below.[95]

Because offenders can substitute non-banned guns and small magazines for banned AWs and LCMs, there is not a clear rationale for expecting the ban to reduce assaults and robberies with guns.[96] But by forcing AW and LCM offenders to substitute non-AWs with small magazines, the ban might reduce the number of shots fired per gun attack, thereby reducing both victims shot per gunfire incident and gunshot victims sustaining multiple wounds. In the following sections, we consider the evidence linking high-capacity semiautomatics and AWs to gun violence and briefly examine recent trends in lethal and injurious gun violence.

9.1. The Spread of Semiautomatic Weaponry and Trends in Lethal and Injurious Gun Violence Prior to the Ban

Nationally, semiautomatic handguns grew from 28% of handgun production in 1973 to 80% in 1993 (Zawitz, 1995, p. 3). Most of this growth occurred from the late 1980s onward, during which time the gun industry also increased marketing and production of semiautomatics with LCMs (Wintemute, 1996). Likewise, semiautomatics grew as a percentage of crime guns (Koper, 1995; 1997), implying an increase in the average firing rate and ammunition capacity of guns used in crime.[97]

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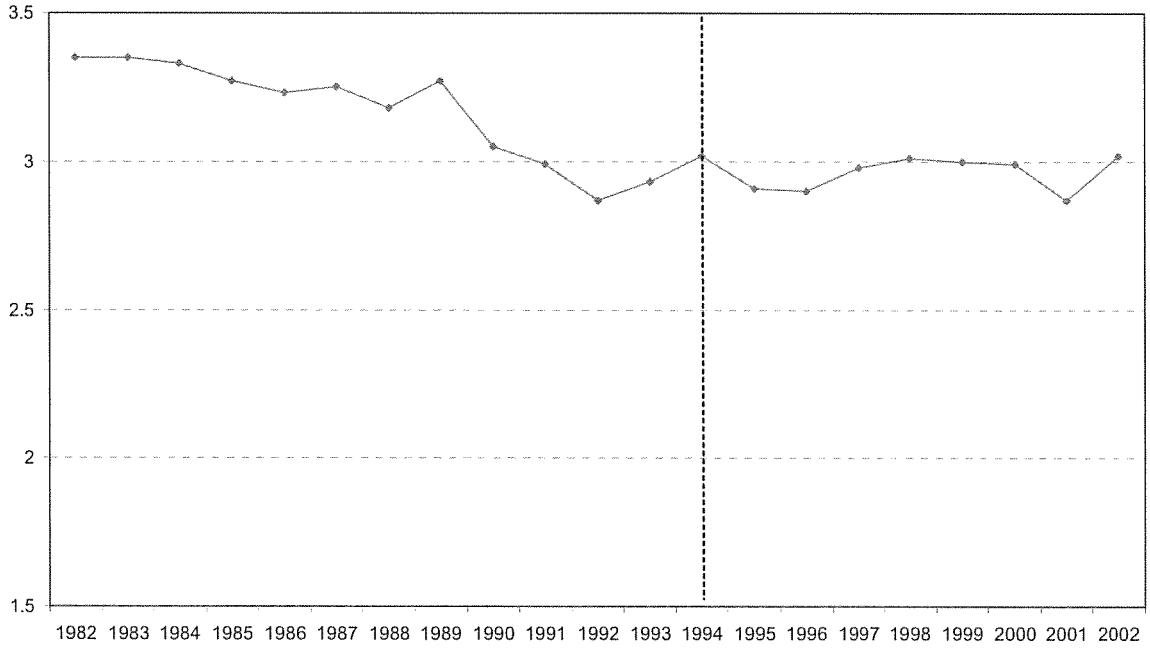
[95] On a related note, a few studies suggest that state-level AW bans have not reduced crime (Koper and Roth, 2001a; Lott, 2003). This could be construed as evidence that the federal AW ban will not reduce gunshot victimizations without reducing LCM use because the state bans tested in those studies, as written at the time, either lacked LCM bans or had LCM provisions that were less restrictive than that of the federal ban. (New Jersey's 1990 AW ban prohibited magazines holding more than 15 rounds. AP bans passed by Maryland and Hawaii prohibited magazines holding more than 20 rounds and pistol magazines holding more than 10 rounds, respectively, but these provisions did not take effect until just a few months prior to the federal ban.) However, it is hard to draw definitive conclusions from these studies for a number of reasons, perhaps the most salient of which are the following: there is little evidence on how state AW bans affect the availability and use of AWs (the impact of these laws is likely undermined to some degree by the influx of AWs from other states, a problem that was probably more pronounced prior to the federal ban when the state laws were most relevant); studies have not always examined the effects of these laws on gun homicides and shootings, the crimes that are arguably most likely to be affected by AW bans (see discussion in the main text); and the state AW bans that were passed prior to the federal ban (those in California, New Jersey, Hawaii, Connecticut, and Maryland) were in effect for only three months to five years (two years or less in most cases) before the imposition of the federal ban, after which they became largely redundant with the federal legislation and their effects more difficult to predict and estimate.

[96] One might hypothesize that the firepower provided by AWs and other semiautomatics with LCMs emboldens some offenders to engage in aggressive behaviors that prompt more shooting incidents. On the other hand, these weapons might also prevent some acts of violence by intimidating adversaries, thus discouraging attacks or resistance. We suspect that firepower does influence perceptions, considering that many police departments have upgraded their weaponry in recent years – often adopting semiautomatics with LCMs – because their officers felt outgunned by offenders. However, hypotheses about gun types and offender behavior are very speculative, and, pending additional research on such issues, it seems prudent to focus on indicators with stronger theoretical and empirical foundations.

[97] Revolvers, the most common type of non-semiautomatic handgun, typically hold only 5 or 6 rounds (and sometimes up to 9). Semiautomatic pistols, in contrast, hold ammunition in detachable magazines that, prior to the ban, typically held 5 to 17 bullets and sometimes upwards of 30 (Murtz et al., 1994).

The impact of this trend is debatable. Although the gun homicide rate rose considerably during the late 1980s and early 1990s (Bureau of Justice Statistics, 1994, p. 13), the percentage of violent gun crimes resulting in death was declining (see Figure 9-1 and the related discussion in section 9.3). Similarly, the percentage of victims killed or wounded in handgun discharge incidents declined from 27% during the 1979-1987 period to 25% for the 1987-1992 period (calculated from Rand, 1990, p. 5; 1994, p. 2) as semiautomatics were becoming more common crime weapons.[98] On the other hand, an increasing percentage of gunshot victims died from 1992 to 1995 according to hospital data (Cherry et al., 1998), a trend that could have been caused in part by a higher number of gunshot victims with multiple wounds (also see McGonigal et al., 1993). Most notably, the case fatality rate for assaultive gunshot cases involving 15 to 24-year-old males rose from 15.9% in late 1993 to 17.5% in early 1995 (p. 56).

Figure 9-1. Percentage of Violent Gun Crimes Resulting in Death (National), 1982-2002



Based on gun homicides, gun robberies, and gun assaults reported in the Uniform Crime Reports and Supplemental Homicide Reports.

[98] A related point is that there was a general upward trend in the average number of shots fired by offenders in gunfights with New York City police from the late 1980s through 1992 (calculated from Goehl, 1993, p. 51). However, the average was no higher during this time than during many years of the early 1980s and 1970s.

Some researchers have inferred links between the growing use of semiautomatics in crime and the rise of both gun homicides and bystander shootings in a number of cities during the late 1980s and early 1990s (Block and Block, 1993; McGonigal et al., 1993; Sherman et al., 1989; Webster et al., 1992). A study in Washington, DC, for example, reported increases in wounds per gunshot victim and gunshot patient mortality during the 1980s that coincided with a reported increase in the percentage of crime guns that were semiautomatics (Webster et al., 1992).

Nevertheless, changes in offender behavior, coupled with other changes in crime guns (e.g., growing use of large caliber handguns – see Caruso et al., 1999; Koper, 1995; 1997; Wintemute, 1996), may have been key factors driving such trends. Washington, DC, for example, was experiencing an exploding crack epidemic at the time of the aforementioned study, and this may have raised the percentage of gun attacks in which offenders had a clear intention to injure or kill their victims. Moreover, studies that attempted to make more explicit links between the use of semiautomatic firearms and trends in lethal gun violence via time series analysis failed to produce convincing evidence of such links (Koper, 1995; 1997). However, none of the preceding research related specific trends in the use of AWs or LCMs to trends in lethal gun violence.

9.2. Shots Fired in Gun Attacks and the Effects of Weaponry on Attack Outcomes

The evidence most directly relevant to the potential of the AW-LCM ban to reduce gun deaths and injuries comes from studies examining shots fired in gun attacks and/or the outcomes of attacks involving different types of guns. Unfortunately, such evidence is very sparse.

As a general point, the faster firing rate and larger ammunition capacities of semiautomatics, especially those equipped with LCMs, have the potential to affect the outcomes of many gun attacks because gun offenders are not particularly good shooters. Offenders wounded their victims in no more than 29% of gunfire incidents according to national, pre-ban estimates (computed from Rand, 1994, p. 2; also see estimates presented later in this chapter). Similarly, a study of handgun assaults in one city revealed a 31% hit rate per shot, based on the sum totals of all shots fired and wounds inflicted (Reedy and Koper, 2003, p. 154). Other studies have yielded hit rates per shot ranging from 8% in gunfights with police (Goehl, 1993, p. 8) to 50% in mass murders (Kleck, 1997, p. 144). Even police officers, who are presumably certified and regularly re-certified as proficient marksman and who are almost certainly better shooters than are average gun offenders, hit their targets with only 22% to 39% of their shots (Kleck, 1991, p. 163; Goehl, 1993). Therefore, the ability to deliver more shots rapidly should raise the likelihood that offenders hit their targets, not to mention innocent bystanders.[99]

[99] However, some argue that this capability is offset to some degree by the effects of recoil on shooter aim, the limited number of shots fired in most criminal attacks (see below), and the fact that criminals using non-semiautomatics or semiautomatics with small magazines usually have the time and ability to deliver multiple shots if desired (Kleck, 1991, pp. 78-79).

A few studies have compared attacks with semiautomatics, sometimes specifically those with LCMs (including AWs), to other gun assaults in terms of shots fired, persons hit, and wounds inflicted (see Tables 9-1 and 9-2). The most comprehensive of these studies examined police reports of attacks with semiautomatic pistols and revolvers in Jersey City, New Jersey from 1992 through 1996 (Reedy and Koper, 2003), finding that use of pistols resulted in more shots fired and higher numbers of gunshot victims (Table 9-1), though not more gunshot wounds per victim (Table 9-2).[100] Results implied there would have been 9.4% fewer gunshot victims overall had semiautomatics not been used in any of the attacks. Similarly, studies of gun murders in Philadelphia (see McGonigal et al., 1993 in Table 9-1) and a number of smaller cities in Pennsylvania, Ohio, and Iowa (see Richmond et al., 2003 in Table 9-2) found that attacks with semiautomatics resulted in more shots fired and gunshot wounds per victim. An exception is that the differential in shots fired between pistol and revolver cases in Philadelphia during 1990 did not exist for cases that occurred in 1985, when semiautomatics and revolvers had been fired an average of 1.6 and 1.9 times, respectively. It is not clear whether the increase in shots fired for pistol cases from 1985 to 1990 was due to changes in offender behavior, changes in the design or quality of pistols (especially an increase in the use of models with LCMs – see Wintemute, 1996), the larger sample for 1990, or other factors.

[100] But unlike other studies that have examined wounds per victim (see Table 9-2), this study relied on police reports of wounds inflicted rather than medical reports, which are likely to be more accurate.

Table 9-1. Shots Fired and Victims Hit in Gunfire Attacks By Type of Gun and Magazine

Data Source	Measure	Outcome
Gun attacks with semiautomatic pistols and revolvers, Jersey City, 1992-1996 [a]	Shots Fired	Avg. = 3.2 – 3.7 (n=165 pistol cases) * Avg. = 2.3 – 2.6 (n=71 revolver cases) *
Gun homicides with semiautomatic pistols and revolvers, Philadelphia, 1985 and 1990 [b]	Shots Fired	Avg. = 1.6 (n=21 pistol cases, 1985) Avg. = 1.9 (n=57 revolver cases, 1985) Avg. = 2.7 (n=95 pistol cases, 1990) Avg. = 2.1 (n=108 revolver cases, 1990)
Gun attacks with semiautomatic pistols and revolvers, Jersey City, 1992-1996 [a]	Victims Hit	Avg. = 1.15 (n=95 pistol cases) * Avg. = 1.0 (n=40 revolver cases) *
Mass shootings with AWs, semiautomatics having LCMs, or other guns, 6+ dead or 12+ shot, United States, 1984-1993 [c]	Victims Hit	Avg. = 29 (n=6 AW/LCM cases) Avg. = 13 (n=9 non-AW/LCM cases)
Self-reported gunfire attacks by state prisoners with AWs, other semiautomatics, and non-semiautomatic firearms, United States, 1997 or earlier [d]	% of Attacks With Victims Hit	19.5% (n=72 AW or machine gun cases) 22.3% (n=419 non-AW, semiautomatic cases) 23.3% (n=608 non-AW, non-semiautomatic cases)

a. Reedy and Koper (2003)
b. McGonigal et al. (1993)
c. Figures calculated by Koper and Roth (2001a) based on data presented by Kleck (1997, p. 144)
d. Calculated from Harlow (2001, p. 11). (Sample sizes are based on unpublished information provided by the author of the survey report.)
* Pistol/revolver differences statistically significant at $p<.05$ (only Reedy and Koper [2003] and Harlow [2001] tested for statistically significant differences). The shots fired ranges in Reedy and Koper are based on minimum and maximum estimates.

Table 9-2. Gunshot Wounds Per Victim By Type of Gun and Magazine

Data Source	Measure	Outcome
Gun attacks with semiautomatic pistols and revolvers, Jersey City, 1992-1996 [a]	Gunshot Wounds	Avg. = 1.4 (n=107 pistol victims) Avg. = 1.5 (n=40 revolver victims)
Gun homicides with semiautomatic pistols and revolvers, Iowa City (IA), Youngstown (OH), and Bethlehem (PA), 1994-1998 [b]	Gunshot Wounds	Avg. = 4.5 total (n=212 pistol victims)* Avg. = 2.9 entry Avg. = 2.0 total (n=63 revolver victims)* Avg. = 1.5 entry
Gun homicides with assault weapons (AWs), guns having large capacity magazines (LCMs), and other firearms, Milwaukee, 1992-1995 [c]	Gunshot Wounds	Avg. = 3.23 (n=30 LCM victims) ** Avg. = 3.14 (n=7 AW victims) Avg. = 2.08 (n=102 non-AW/LCM victims)**

a. Reedy and Koper (2003)
b. Richmond et al. (2003)
c. Roth and Koper (1997, Chapter 6)
* Pistol/revolver differences statistically significant at p<.01.
** The basic comparison between LCM victims and non-AW/LCM victims was moderately significant (p<.10) with a one-tailed test. Regression results (with a slightly modified sample) revealed a difference significant at p=.05 (two-tailed test). Note that the non-LCM group included a few cases involving non-banned LCMs (.22 caliber attached tubular devices).

Also, a national survey of state prisoners found that, contrary to expectations, offenders who reported firing on victims with AWs and other semiautomatics were no more likely to report having killed or injured victims than were other gun offenders who reported firing on victims (Table 9-1). However, the measurement of guns used and attack outcomes were arguably less precise in this study, which was based on offender self-reports, than in other studies utilizing police and medical reports.[101]

Attacks with AWs or other guns with LCMs may be particularly lethal and injurious, based on very limited evidence. In mass shooting incidents (defined as those in which at least 6 persons were killed or at least 12 were wounded) that occurred during the decade preceding the ban, offenders using AWs and other semiautomatics with LCMs (sometimes in addition to other guns) claimed an average of 29 victims in comparison to an average of 13 victims for other cases (Table 9-1). (But also see the study discussed in the preceding paragraph in regards to victims hit in AW cases.)

Further, a study of Milwaukee homicide victims from 1992 through 1995 revealed that those killed with AWs were shot 3.14 times on average, while those killed with any

[101] See the discussion of self-reports and AW use in Chapter 3.

gun having an LCM were shot 3.23 times on average (Table 9-2). In contrast, victims shot with guns having small magazines had only 2.1 wounds on average. If such a wound differential can be generalized to other gun attacks – if, that is, both fatal and non-fatal LCM gunshot victims are generally hit one or more extra times – then LCM use could have a considerable effect on the number of gunshot victims who die. To illustrate, the fatality rate among gunshot victims in Jersey City during the 1990s was 63% higher for those shot twice than for those shot once (26% to 16%) (Koper and Roth, 2001a; 2001b). Likewise, fatality rates are 61% higher for patients with multiple chest wounds than for patients with a single chest wound (49% to 30.5%), based on a Washington, DC study (Webster et al., 1992, p. 696).

Similar conclusions can also be inferred indirectly from the types of crimes involving LCM guns. To illustrate, handguns associated with gunshot victimizations in Baltimore (see the description of the Baltimore gun and magazine data in the preceding chapter) are 20% to 50% more likely to have LCMs than are handguns associated with other violent crimes, controlling for weapon caliber (Table 9-3). This difference may be due to higher numbers of shots and hits in crimes committed with LCMs, although it is also possible that offenders using LCMs are more likely to fire on victims. But controlling for gunfire, guns used in shootings are 17% to 26% more likely to have LCMs than guns used in gunfire cases resulting in no wounded victims (perhaps reflecting higher numbers of shots fired and victims hit in LCM cases), and guns linked to murders are 8% to 17% more likely to have LCMs than guns linked to non-fatal gunshot victimizations (perhaps indicating higher numbers of shots fired and wounds per victim in LCM cases).[102] These differences are not all statistically significant, but the pattern is consistent. And as discussed in Chapter 3, AWs account for a larger share of guns used in mass murders and murders of police, crimes for which weapons with greater firepower would seem particularly useful.

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[102] Cases with and without gunfire and gunshot victims were approximated based on offense codes contained in the gun seizure data (some gunfire cases not resulting in wounded victims may not have been identified as such, and it is possible that some homicides were not committed with the guns recovered during the investigations). In order to control for caliber effects, we focused on 9mm and .38 caliber handguns. Over 80% of the LCM handguns linked to violent crimes were 9mm handguns. Since all (or virtually all) 9mm handguns are semiautomatics, we also selected .38 caliber guns, which are close to 9mm in size and consist almost entirely of revolvers and derringers.

The disproportionate involvement of LCM handguns in injury and death cases is greatest in the comparisons including both 9mm and .38 caliber handguns. This may reflect a greater differential in average ammunition capacity between LCM handguns and revolvers/derringers than between LCM handguns and other semiautomatics. The differential in fatal and non-fatal gunshot victims may also be due to caliber effects; 9mm is generally a more powerful caliber than .38 based on measures like kinetic energy or relative stopping power (e.g., see DiMaio, 1985, p. 140; Warner 1995, p. 223; Wintemute, 1996, p. 1751).

Table 9-3. Probabilities That Handguns Associated With Murders, Non-Fatal Shootings, and Other Violent Crimes Were Equipped With Large Capacity Magazines in Baltimore, 1993-2000

Handgun Sample	% With LCM	% Difference (#2 Relative to #1)
A. Handguns Used in Violent Crimes With and Without Gunshot Injury		
1) 9mm and .38: violence, no gunshot victims	23.21%	
2) 9mm and .38: violence with gunshot victims	34.87%	50%*
1) 9mm: violence, no gunshot victims	52.92%	
2) 9mm: violence with gunshot victims	63.24%	20%*
B. Handguns Used in Gunfire Cases With and Without Gunshot Injury		
1) 9mm and .38: gunfire, no gunshot victims	27.66%	
2) 9mm and .38: gunfire with gunshot victims	34.87%	26%
1) 9mm: gunfire, no gunshot victims	54.17%	
2) 9mm: gunfire with gunshot victims	63.24%	17%
C. Handguns Used in Fatal Versus Non-Fatal Gunshot Victimizations		
1) 9mm and .38: non-fatal gunshot victims	32.58%	
2) 9mm and .38: homicides	38.18%	17%
1) 9mm: non-fatal gunshot victims	61.14%	
2) 9mm: homicides	66.04%	8%

* Statistically significant difference at $p<.01$ (chi-square).

The findings of the preceding studies are subject to numerous caveats. There were few if any attempts to control for characteristics of the actors or situations that might have influenced weapon choices and/or attack outcomes.[103] Weapons data were typically missing for substantial percentages of cases. Further, many of the comparisons in the tables were not tested for statistical significance (see the notes to Tables 9-1 and 9-2).[104]

Tentatively, nonetheless, the evidence suggests more often than not that attacks with semiautomatics, particularly those equipped with LCMs, result in more shots fired, leading to both more injuries and injuries of greater severity. Perhaps the faster firing rate and larger ammunition capacities afforded by these weapons prompt some offenders to fire more frequently (i.e., encouraging what some police and military persons refer to as a "spray and pray" mentality). But this still begs the question of whether a 10-round limit on magazine capacity will affect the outcomes of enough gun attacks to measurably reduce gun injuries and deaths.

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[103] In terms of offender characteristics, recall from Chapter 3 that AP buyers are more likely than other gun buyers to have criminal histories and commit subsequent crimes. This does not seem to apply, however, to the broader class of semiautomatic users: handgun buyers with and without criminal histories tend to buy pistols in virtually the same proportions (Wintemute et al., 1998b), and youthful gun offenders using pistols and revolvers have very comparable criminal histories (Sheley and Wright, 1993b, p. 381). Further, semiautomatic users, including many of those using AWs, show no greater propensity to shoot at victims than do other gun offenders (Harlow, 2001, p. 11; Reedy and Koper, 2003). Other potential confounders to the comparisons in Tables 9-1 and 9-2 might include shooter age and skill, the nature of the circumstances (e.g., whether the shooting was an execution-style shooting), the health of the victim(s), the type of location (e.g., indoor or outdoor location), the distance between the shooter and intended victim(s), the presence of multiple persons who could have been shot intentionally or accidentally (as bystanders), and (in the mass shooting incidents) the use of multiple firearms.

[104] Tables 9-1 and 9-2 present the strongest evidence from the available studies. However, there are additional findings from these studies and others that, while weaker, are relevant. Based on gun model information available for a subset of cases in the Jersey City study, there were 12 gunfire cases involving guns manufactured with LCMs before the ban (7 of which resulted in wounded victims) and 94 gunfire cases involving revolvers or semiautomatic models without LCMs. Comparisons of these cases produced results similar to those of the main analysis: shot fired estimates ranged from 2.83 to 3.25 for the LCM cases and 2.22 to 2.6 for the non-LCM cases; 1.14 victims were wounded on average in the LCM gunshot cases and 1.06 in the non-LCM gunshot cases; and LCM gunshot victims had 1.14 wound on average, which, contrary to expectations, was less than the 1.47 average for other gunshot victims.

The compilation of mass shooting incidents cited in Table 9-1 had tentative shots fired estimates for 3 of the AW-LCM cases and 4 of the other cases. The AW-LCM cases averaged 93 shots per incident, a figure two and a half times greater than the 36.5 shot average for the other cases.

Finally, another study of firearm mass murders found that the average number of victims killed (tallies did not include others wounded) was 6 in AW cases and 4.5 in other cases (Roth and Koper, 1997, Appendix A). Only 2 of the 52 cases studied clearly involved AWs (or very similar guns). However, the make and model of the firearm were available for only eight cases, so additional incidents may have involved LCMs; in fact, at least 35% of the cases involved unidentified semiautomatics. (For those cases in which at least the gun type and firing action were known, semiautomatics outnumbered non-semiautomatics by 6 to 1, perhaps suggesting that semiautomatics are used disproportionately in mass murders.)

9.2.1. Will a 10-Round Magazine Limit Reduce Gunshot Victimizations?

Specific data on shots fired in gun attacks are quite fragmentary and often inferred indirectly, but they suggest that relatively few attacks involve more than 10 shots fired.[105] Based on national data compiled by the FBI, for example, there were only about 19 gun murder incidents a year involving four or more victims from 1976 through 1995 (for a total of 375) (Fox and Levin, 1998, p. 435) and only about one a year involving six or more victims from 1976 through 1992 (for a total of 17) (Kleck, 1997, p. 126). Similarly, gun murder victims are shot two to three times on average according to a number of sources (see Table 9-2 and Koper and Roth, 2001a), and a study at a Washington, DC trauma center reported that only 8% of all gunshot victims treated from 1988 through 1990 had five or more wounds (Webster et al., 1992, p. 696).

However, counts of victims hit or wounds inflicted provide only a lower bound estimate of the number of shots fired in an attack, which could be considerably higher in light of the low hit rates in gunfire incidents (see above).[106] The few available studies on shots fired show that assailants fire less than four shots on average (see sources in Table 9-1 and Goehl, 1993), a number well within the 10-round magazine limit imposed by the AW-LCM ban, but these studies have not usually presented the full distribution of shots fired for all cases, so it is usually unclear how many cases, if any, involved more than 10 shots.

An exception is the aforementioned study of handgun murders and assaults in Jersey City (Reedy and Koper, 2003). Focusing on cases for which at least the type of handgun (semiautomatic, revolver, derringer) could be determined, 2.5% of the gunfire cases involved more than 10 shots.[107] These incidents – all of which involved pistols – had a 100% injury rate and accounted for 4.7% of all gunshot victims in the sample (see Figure 9-2). Offenders fired a total of 83 shots in these cases, wounding 7 victims, only 1 of whom was wounded more than once. Overall, therefore, attackers fired over 8 shots

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[105] Although the focus of the discussion is on attacks with more than 10 shots fired, a gun user with a post-ban 10-round magazine can attain a firing capacity of 11 shots with many semiautomatics by loading one bullet into the chamber before loading the magazine.

[106] As a dramatic example, consider the heavily publicized case of Amadou Diallo, who was shot to death by four New York City police officers just a few years ago. The officers in this case fired upon Diallo 41 times but hit him with only 19 shots (a 46% hit rate), despite his being confined in a vestibule. Two of the officers reportedly fired until they had emptied their 16-round magazines, a reaction that may not be uncommon in such high-stress situations. In official statistics, this case will appear as having only one victim.

[107] The shots fired estimates were based on reported gunshot injuries, physical evidence (for example, shell casings found at the scene), and the accounts of witnesses and actors. The 2.5% figure is based on minimum estimates of shots fired. Using maximum estimates, 3% of the gunfire incidents involved more than 10 shots (Reedy and Koper, 2003, p. 154).

A caveat to these figures is that the federal LCM ban was in effect for much of the study period (which spanned January 1992 to November 1996), and a New Jersey ban on magazines with more than 15 rounds predated the study period. It is thus conceivable that these laws reduced attacks with LCM guns and attacks with more than 10 shots fired, though it seems unlikely that the federal ban had any such effect (see the analyses of LCM use presented in the previous chapter). Approximately 1% of the gunfire incidents involved more than 15 shots.

for every wound inflicted, suggesting that perhaps fewer persons would have been wounded had the offenders not been able to fire as often.[108]

Figure 9-2. Attacks With More Than 10 Shots Fired

Jersey City Handgun Attacks, 1992-1996

- **2.5% - 3% of gunfire incidents involved 11+ shots**
  - **3.6% - 4.2% of semiauto pistol attacks**
- **100% injury rate**
- **Produced 4.7% of all gunshot wound victims**
- **8.3 shots per gunshot wound**

Based on data reported by Reedy and Koper (2003). Injury statistics based on the 2.5% of cases involving 11+ shots by minimum estimate.

Caution is warranted in generalizing from these results because they are based on a very small number of incidents (6) from one sample in one city. Further, it is not known if the offenders in these cases had LCMs (gun model and magazine information was very limited); they may have emptied small magazines, reloaded, and continued firing. But subject to these caveats, the findings suggest that the ability to deliver more than 10 shots without reloading may be instrumental in a small but non-trivial percentage of gunshot victimizations.

On the other hand, the Jersey City study also implies that eliminating AWs and LCMs might only reduce gunshot victimizations by up to 5%. And even this estimate is probably overly optimistic because the LCM ban cannot be expected to prevent all incidents with more than 10 shots. Consequently, any effects from the ban (should it be extended) are likely to be smaller and perhaps quite difficult to detect with standard statistical methods (see Koper and Roth, 2001a), especially in the near future, if recent patterns of LCM use continue.

9.3. Post-Ban Trends in Lethal and Injurious Gun Violence

Having established some basis for believing the AW-LCM ban could have at least a small effect on lethal and injurious gun violence, is there any evidence of such an effect to date? Gun homicides plummeted from approximately 16,300 in 1994 to 10,100 in 1999, a reduction of about 38% (see the Federal Bureau of Investigation's *Uniform Crime*

[108] These figures are based on a supplemental analysis not contained in the published study. We thank Darin Reedy for this analysis.

Reports). Likewise, non-fatal, assaultive gunshot injuries treated in hospitals nationwide declined one-third, from about 68,400 to under 46,400, between 1994 and 1998 (Gotsch et al., 2001, pp. 23-24). Experts believe numerous factors contributed to the recent drop in these and other crimes, including changing drug markets, a strong economy, better policing, and higher incarceration rates, among others (Blumstein and Wallman, 2000). Attributing the decline in gun murders and shootings to the AW-LCM ban is problematic, however, considering that crimes with LCMs appear to have been steady or rising since the ban. For this reason, we do not undertake a rigorous investigation of the ban's effects on gun violence.[109]

But a more casual assessment shows that gun crimes since the ban have been no less likely to cause death or injury than those before the ban, contrary to what we might expect if crimes with AWs and LCMs had both declined. For instance, the percentage of violent gun crimes resulting in death has been very stable since 1990 according to national statistics on crimes reported to police (see Figure 9-1 in section 9.1).[110] In fact, the percentage of gun crimes resulting in death during 2001 and 2002 (2.94%) was slightly higher than that during 1992 and 1993 (2.9%).

Similarly, neither medical nor criminological data sources have shown any post-ban reduction in the percentage of crime-related gunshot victims who die. If anything, this percentage has been higher since the ban, a pattern that could be linked in part to more multiple wound victimizations stemming from elevated levels of LCM use. According to medical examiners' reports and hospitalization estimates, about 20% of gunshot victims died nationwide in 1993 (Gotsch et al., 2001). This figure rose to 23% in 1996, before declining to 21% in 1998 (Figure 9-3).[111] Estimates derived from the Uniform Crime Reports and the Bureau of Justice Statistics' annual National Crime Victimization Survey follow a similar pattern from 1992 to 1999 (although the ratio of fatal to non-fatal cases is much higher in these data than that in the medical data) and also show a considerable increase in the percentage of gunshot victims who died in 2000 and 2001 (Figure 9-3).[112] Of course, changes in offender behavior or other changes in crime

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[109] In our prior study (Koper and Roth 2001a; Roth and Koper, 1997, Chapter 6), we estimated that gun murders were about 7% lower than expected in 1995 (the first year after the ban), adjusting for pre-existing trends. However, the very limited post-ban data available for that study precluded a definitive judgment as to whether this drop was statistically meaningful (see especially Koper and Roth, 2001a). Furthermore, that analysis was based on the assumption that crimes with both AWs and LCMs had dropped in the short-term aftermath of the ban, an assumption called into question by the findings of this study. It is now more difficult to credit the ban with any of the drop in gun murders in 1995 or anytime since. We did not update the gun murder analysis because interpreting the results would be unavoidably ambiguous. Such an investigation will be more productive after demonstrating that the ban has reduced crimes with both AWs and LCMs.

[110] The decline in this figure during the 1980s was likely due in part to changes in police reporting of aggravated assaults in recent decades (Blumstein, 2000). The ratio of gun murders to gun robberies rose during the 1980s, then declined and remained relatively flat during the 1990s.

[111] Combining homicide data from 1999 with non-fatal gunshot estimates for 2000 suggests that about 20% of gunshot victimizations resulted in death during 1999 and 2000 (Simon et al., 2002).

[112] The SHR/NCVS estimates should be interpreted cautiously because the NCVS appears to undercount non-fatal gunshot wound cases by as much as two-thirds relative to police data, most likely because it fails to represent adequately the types of people most likely to be victims of serious crime (i.e., young urban males who engage in deviant lifestyles) (Cook, 1985). Indeed, the rate of death among gunshot victims

weaponry (such as an increase in shootings with large caliber handguns) may have influenced these trends. Yet is worth noting that multiple wound shootings were elevated over pre-ban levels during 1995 and 1996 in four of five localities examined during our first AW study, though most of the differences were not statistically significant (Table 9-4, panels B through E).

Another potential indicator of ban effects is the percentage of gunfire incidents resulting in fatal or non-fatal gunshot victimizations. If attacks with AWs and LCMs result in more shots fired and victims hit than attacks with other guns and magazines, we might expect a decline in crimes with AWs and LCMs to reduce the share of gunfire incidents resulting in victims wounded or killed. Measured nationally with UCR and NCVS data, this indicator was relatively stable at around 30% from 1992 to 1997, before rising to about 40% from 1998 through 2000 (Figure 9-4).[113] Along similar lines, multiple victim gun homicides remained at relatively high levels through at least 1998, based on the national average of victims killed per gun murder incident (Table 9-4, panel A).[114]

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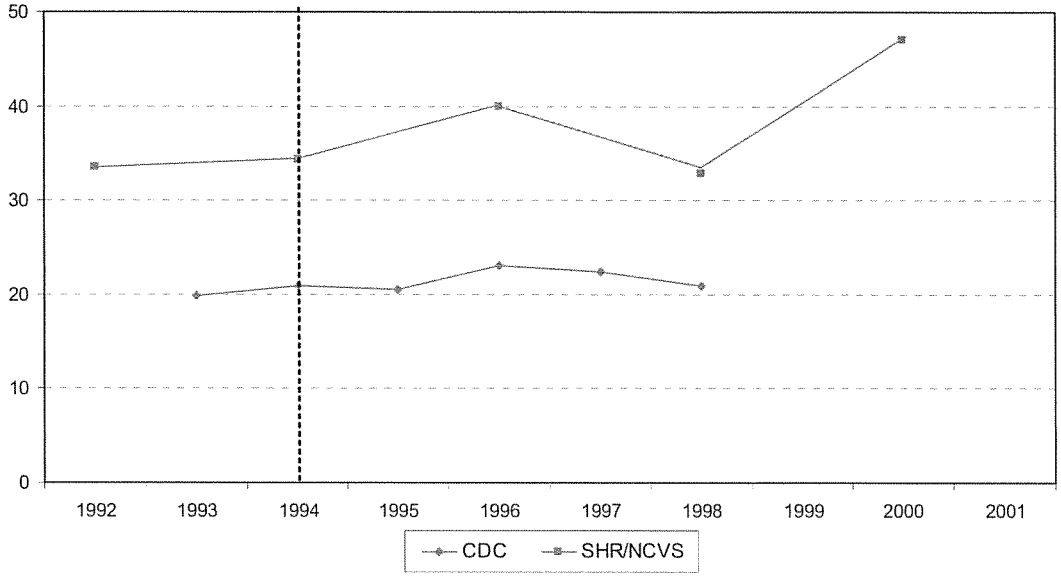
appears much higher in the SHR/NCVS series than in data compiled from medical examiners and hospitals (see the CDC series in Figure 9-3). But if these biases are relatively consistent over time, the data may still provide useful insights into trends over time.

[113] The NCVS estimates are based on a compilation of 1992-2002 data recently produced by the Inter-University Consortium for Political and Social Research (ICPSR study 3691). In 2002, only 9% of non-fatal gunfire incidents resulted in gunshot victimizations. This implies a hit rate for 2002 that was below pre-ban levels, even after incorporating gun homicide cases into the estimate. However, the 2002 NCVS estimate deviates quite substantially from earlier years, for which the average hit rate in non-fatal gunfire incidents was 24% (and the estimate for 2001 was 20%). Therefore, we did not include the 2002 data in our analysis. We used two-year averages in Figures 9-3 and 9-4 because the annual NCVS estimates are based on very small samples of gunfire incidents. The 2002 sample was especially small, so it seems prudent to wait for more data to become available before drawing conclusions about hit rates since 2001.

[114] We thank David Huffer for this analysis.

Figure 9-3. Percentage of Gunshot Victimizations Resulting in Death (National), 1992-2001



SHR/NCVS series based on two-year averages from the Supplemental Homicide Reports and National Crime Victimization Survey. CDC series based on homicide and hospitalization data from the Centers for Disease Control (reported by Gotsch et al. 2001).

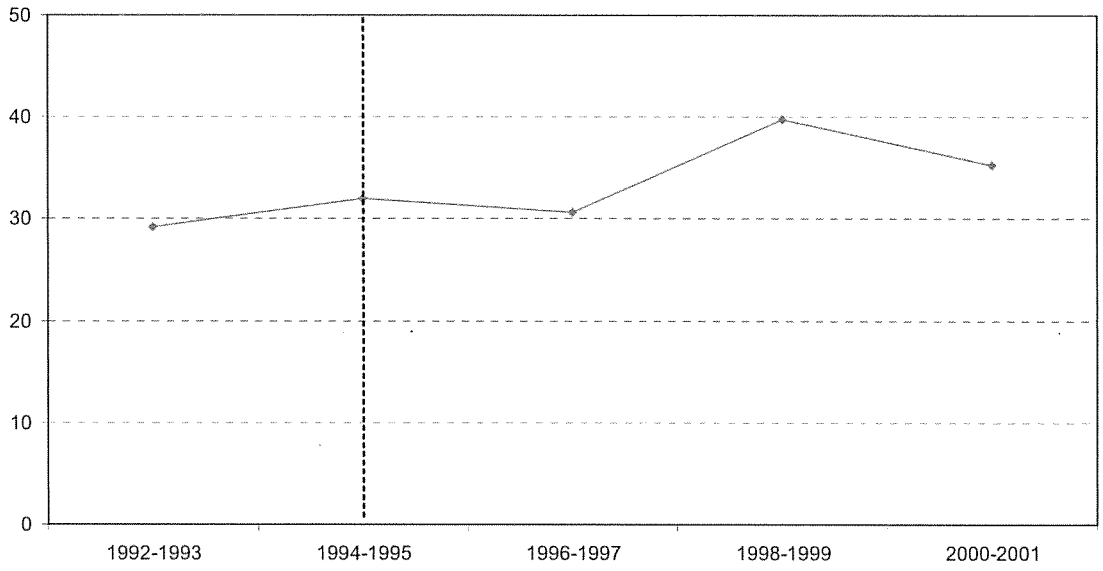
Table 9-4. Short-Term, Post-Ban Changes in the Lethality and Injuriousness of Gun Violence: National and Local Indicators, 1994-1998 [a]

Measure and Location	Pre-Ban Period	Post-Ban Period	Change
A. Victims Per Gun Homicide Incident (National)	Jan. 1986-Sept. 1994 1.05 (N=106,668)	Oct. 1994-Dec. 1998 1.06 (N=47,511)	1%**
B. Wounds per Gun Homicide Victim: Milwaukee County	Jan. 1992-Aug. 1994 2.28 (N=282)	Sept. 1994-Dec. 1995 2.52 (N=136)	11%
C. Wounds Per Gun Homicide Victim: Seattle (King County)	Jan. 1992-Aug. 1994 2.08 (N=184)	Sept. 1994-Jun. 1996 2.46 (N=91)	18%
D. Wounds Per Gunshot Victim: Jersey City (NJ)	Jan. 1992-Aug. 94 1.42 (N=125)	Sept. 1994-Jun. 1996 1.39 (N=137)	-2%
E. % of Gun Homicide Victims With Multiple Wounds: San Diego County	Jan. 1992-Aug. 1994 41% (N=445)	Sept. 1994-Jun. 1996 43% (N=223)	5%
F. % of Non-Fatal Gunshot Victims With Multiple Wounds: Boston	Jan. 1992-Aug. 1994 18% (N=584)	Sept. 1994-Dec. 1995 24% (N=244)	33%*

a. National victims per incident figures based on unpublished update of analysis reported in Roth and Koper (1997, Chapter 5). Gunshot wound data are taken from Roth and Koper (1997, Chapter 6) and Koper and Roth (2001a). Wound data are based on medical examiners' reports (Milwaukee, Seattle, San Diego), hospitalization data (Boston), and police reports (Jersey City).
* Chi-square p level < .1.
** T-test p level < .01.

If anything, therefore, gun attacks appear to have been more lethal and injurious since the ban. Perhaps elevated LCM use has contributed to this pattern. But if this is true, then the reverse would also be true – a reduction in crimes with LCMs, should the ban be extended, would reduce injuries and deaths from gun violence.

Figure 9-4. Percentage of Gunfire Cases Resulting in Gunshot Victimizations (National), 1992-2001



Based on two-year averages from the Supplemental Homicide Reports and National Crime Victimization Survey.

9.4. Summary

Although the ban has been successful in reducing crimes with AWs, any benefits from this reduction are likely to have been outweighed by steady or rising use of non-banned semiautomatics with LCMs, which are used in crime much more frequently than AWs. Therefore, we cannot clearly credit the ban with any of the nation's recent drop in gun violence. And, indeed, there has been no discernible reduction in the lethality and injuriousness of gun violence, based on indicators like the percentage of gun crimes resulting in death or the share of gunfire incidents resulting in injury, as we might have expected had the ban reduced crimes with both AWs and LCMs.

However, the grandfathering provision of the AW-LCM ban guaranteed that the effects of this law would occur only gradually over time. Those effects are still unfolding and may not be fully felt for several years into the future, particularly if foreign, pre-ban LCMs continue to be imported into the U.S. in large numbers. It is thus premature to make definitive assessments of the ban's impact on gun violence.

Having said this, the ban's impact on gun violence is likely to be small at best, and perhaps too small for reliable measurement. AWs were used in no more than 8% of gun crimes even before the ban. Guns with LCMs are used in up to a quarter of gun crimes, but it is not clear how often the outcomes of gun attacks depend on the ability to fire more than 10 shots (the current limit on magazine capacity) without reloading.

Nonetheless, reducing crimes with AWs and especially LCMs could have non-trivial effects on gunshot victimizations. As a general matter, hit rates tend to be low in gunfire incidents, so having more shots to fire rapidly can increase the likelihood that offenders hit their targets, and perhaps bystanders as well. While not entirely consistent, the few available studies contrasting attacks with different types of guns and magazines generally suggest that attacks with semiautomatics – including AWs and other semiautomatics with LCMs – result in more shots fired, persons wounded, and wounds per victim than do other gun attacks. Further, a study of handgun attacks in one city found that about 3% of gunfire incidents involved more than 10 shots fired, and those cases accounted for nearly 5% of gunshot victims. However, the evidence on these matters is too limited (both in volume and quality) to make firm projections of the ban's impact, should it be reauthorized.

10. LOOKING TO THE FUTURE: RESEARCH RECOMMENDATIONS AND SPECULATION ABOUT THE CONSEQUENCES OF REAUTHORIZING, MODIFYING, OR LIFTING THE ASSAULT WEAPONS BAN

In this chapter, we discuss future lines of inquiry that would be informative whether or not the AW-LCM ban is renewed in September 2004. We then offer some brief thoughts about the possible consequences of reauthorizing the ban, modifying it, or allowing it to expire.

10.1. Research Recommendations and Data Requirements

10.1.1. An Agenda for Assault Weapons Research and Recommendations for Data Collection by Law Enforcement

The effects of the AW-LCM ban have yet to be fully realized; therefore, we recommend continued study of trends in the availability and criminal use of AWs and LCMs. Even if the ban is lifted, longer-term study of crimes with AWs and LCMs will inform future assessment of the consequences of these policy shifts and improve understanding of the responses of gun markets to gun legislation more generally.[115]

Developing better data on crimes with LCMs is especially important. To this end, we urge police departments and their affiliated crime labs to record information about magazines recovered with crime guns. Further, we recommend that ATF integrate ammunition magazine data into its national gun tracing system and encourage reporting of magazine data by police departments that trace firearms.

As better data on LCM use become available, more research is warranted on the impacts of AW and LCM trends (which may go up or down depending on the ban's fate) on gun murders and shootings, as well as levels of death and injury per gun crime. Indicators of the latter, such as victims per gunfire incident and wounds per gunshot victim, are useful complementary outcome measures because they reflect the mechanisms through which use of AWs and LCMs is hypothesized to affect gun deaths and injuries.[116] Other potentially promising lines of inquiry might relate AW and LCM use to mass murders and murders of police, crimes that are very rare but appear more likely to involve AWs (and perhaps LCMs) and to disproportionately affect public perceptions.[117]

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[115] Establishing time series data on primary and secondary market prices and production or importation of various guns and magazines of policy interest could provide benefits for policy researchers. Like similar statistical series maintained for illegal drugs, such price and production series would be valuable instruments for monitoring effects of policy changes and other influences on markets for various weapons.

[116] However, more research is needed on the full range of factors that cause variation in these indicators over time and between places.

[117] Studying these crimes poses a number of challenges, including modeling of rare events, establishing the reliability and validity of methods for measuring the frequency and characteristics of mass murders (such as through media searchers; see Duwe, 2000, Roth and Koper, 1997, Appendix A), and controlling for factors like the use of bullet-proof vests by police.

Finally, statistical studies relating AW and LCM use to trends in gun violence should include statistical power analysis to ensure that estimated models have sufficient ability to detect small effects, an issue that has been problematic in some of our prior time series research on the ban (Koper and Roth, 2001a) and is applicable more generally to the study of modest, incremental policy changes.

Research on aggregate trends should be complemented by more incident-based studies that contrast the dynamics and outcomes of attacks with different types of guns and magazines, while controlling for relevant characteristics of the actors and situations. Such studies would refine predictions of the change in gun deaths and injuries that would follow reductions in attacks with AWs and LCMs. For instance, how many homicides and injuries involving AWs and LCMs could be prevented if offenders were forced to substitute other guns and magazines? In what percentage of gun attacks does the ability to fire more than ten rounds without reloading affect the number of wounded victims or determine the difference between a fatal and non-fatal attack? Do other AW features (such as flash hiders and pistol grips on rifles) have demonstrable effects on the outcomes of gun attacks? Studies of gun attacks could draw upon police incident reports, forensic examinations of recovered guns and magazines, and medical and law enforcement data on wounded victims.

10.1.2. Studying the Implementation and Market Impacts of Gun Control

More broadly, this study reiterates the importance of examining the implementation of gun policies and the workings of gun markets, considerations that have been largely absent from prior research on gun control. Typical methods of evaluating gun policies involve statistical comparisons of total or gun crime rates between places and/or time periods with and without different gun control provisions. Without complimentary implementation and market measures, such studies have a "black box" quality and may lead to misleading conclusions. For example, a time series study of gun murder rates before and after the AW-LCM ban might find that the ban has not reduced gun murders. Yet the interpretation of such a finding would be ambiguous, absent market or implementation measures. Reducing attacks with AWs and LCMs may in fact have no more than a trivial impact on gun deaths and injuries, but any such impact cannot be realized or adequately assessed until the availability and use of the banned guns and magazines decline appreciably. Additionally, it may take many years for the effects of modest, incremental policy changes to be fully felt, a reality that both researchers and policy makers should heed. Similar implementation concerns apply to the evaluation of various gun control policies, ranging from gun bans to enhanced sentences for gun offenders.

Our studies of the AW ban have shown that the reaction of manufacturers, dealers, and consumers to gun control policies can have substantial effects on demand and supply for affected weapons both before and after a law's implementation. It is important to study these factors because they affect the timing and form of a law's impact

on the availability of weapons to criminals and, by extension, the law's impact on gun violence.

10.2. Potential Consequences of Reauthorizing, Modifying, or Lifting the Assault Weapons Ban

10.2.1. Potential Consequences of Reauthorizing the Ban As Is

Should it be renewed, the ban might reduce gunshot victimizations. This effect is likely to be small at best and possibly too small for reliable measurement. A 5% reduction in gunshot victimizations is perhaps a reasonable upper bound estimate of the ban's potential impact (based on the only available estimate of gunshot victimizations resulting from attacks in which more than 10 shots were fired), but the actual impact is likely to be smaller and may not be fully realized for many years into the future, particularly if pre-ban LCMs continue to be imported into the U.S. from abroad. Just as the restrictions imposed by the ban are modest – they are essentially limits on weapon accessories like LCMs, flash hiders, threaded barrels, and the like – so too are the potential benefits.[118] In time, the ban may be seen as an effective prevention measure that stopped further spread of weaponry considered to be particularly dangerous (in a manner similar to federal restrictions on fully automatic weapons). But that conclusion will be contingent on further research validating the dangers of AWs and LCMs.

10.2.2. Potential Consequences of Modifying the Ban

We have not examined the specifics of legislative proposals to modify the AW ban. However, we offer a few general comments about the possible consequences of such efforts, particularly as they relate to expanding the range of the ban as some have advocated (Halstead, 2003, pp. 11-12).

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[118] But note that although the ban's impact on gunshot victimizations would be small in percentage terms and unlikely to have much effect on the public's fear of crime, it could conceivably prevent hundreds of gunshot victimizations annually and produce notable cost savings in medical care alone. To help place this in perspective, there were about 10,200 gun homicides and 48,600 non-fatal, assault-related shootings in 2000 (see the FBI's *Uniform Crime Reports* for the gun homicide estimate and Simon et al. [2002] for the estimate of non-fatal shootings). Reducing these crimes by 1% would have thus prevented 588 gunshot victimizations in 2000 (we assume the ban did not actually produce such benefits because the reduction in AW use as of 2000 was outweighed by steady or rising levels of LCM use). This may seem insubstantial compared to the 342,000 murders, assaults, and robberies committed with guns in 2000 (see the *Uniform Crime Reports*). Yet, gunshot victimizations are particularly costly crimes. Setting aside the less tangible costs of lost lives and human suffering, the lifetime medical costs of assault-related gunshot injuries (fatal and non-fatal) were estimated to be about $18,600 per injury in 1994 (Cook et al., 1999). Therefore, the lifetime costs of 588 gun homicides and shootings would be nearly $11 million in 1994 dollars (the net medical costs could be lower for reasons discussed by Cook and Ludwig [2000] but, on the other hand, this estimate does not consider other governmental and private costs that Cook and Ludwig attribute to gun violence). This implies that small reductions in gunshot victimizations sustained over many years could produce considerable long-term savings for society. We do not wish to push this point too far, however, considering the uncertainty regarding the ban's potential impact.

Gun markets react strongly merely to debates over gun legislation. Indeed, debate over the AW ban's original passage triggered spikes upwards of 50% in gun distributors' advertised AW prices (Roth and Koper, 1997, Chapter 4). In turn, this prompted a surge in AW production in 1994 (Chapter 5). Therefore, it seems likely that discussion of broadening the AW ban to additional firearms would raise prices and production of the weapons under discussion. (Such market reactions may already be underway in response to existing proposals to expand the ban, but we have not investigated this issue.) Heightened production levels could saturate the market for the weapons in question, depressing prices and delaying desired reductions in crimes with the weapons, as appears to have happened with banned ARs.

Mandating further design changes in the outward features of semiautomatic weapons (e.g., banning weapons having any military-style features) may not produce benefits beyond those of the current ban. As noted throughout this report, the most important feature of military-style weapons may be their ability to accept LCMs, and this feature has been addressed by the LCM ban and the LCMM rifle ban. Whether changing other features of military-style firearms will produce measurable benefits is unknown.

Finally, curbing importation of pre-ban LCMs should help reduce crimes with LCMs and possibly gunshot victimizations. Crimes with LCMs may not decline substantially for quite some time if millions of LCMs continue to be imported into the U.S.

10.2.3. Potential Consequences of Lifting the Ban

If the ban is lifted, it is likely that gun and magazine manufacturers will reintroduce AW models and LCMs, perhaps in substantial numbers.[119] In addition, AWs grandfathered under the 1994 law may lose value and novelty, prompting some of their lawful owners to sell them in secondary markets, where they may reach criminal users. Any resulting increase in crimes with AWs and LCMs might increase gunshot victimizations, though this effect could be difficult to discern statistically.

It is also possible, and perhaps probable, that new AWs and LCMs will eventually be used to commit mass murder. Mass murders garner much media attention, particularly when they involve AWs (Duwe, 2000). The notoriety likely to accompany mass murders if committed with AWs and LCMs, especially after these guns and magazines have been deregulated, could have a considerable negative impact on public perceptions, an effect that would almost certainly be intensified if such crimes were committed by terrorists operating in the U.S.

[119] Note, however, that foreign semiautomatic rifles with military features, including the LCMM rifles and several rifles prohibited by the 1994 ban, would still be restricted by executive orders passed in 1989 and 1998. Those orders stem from the sporting purposes test of the Gun Control Act of 1968.

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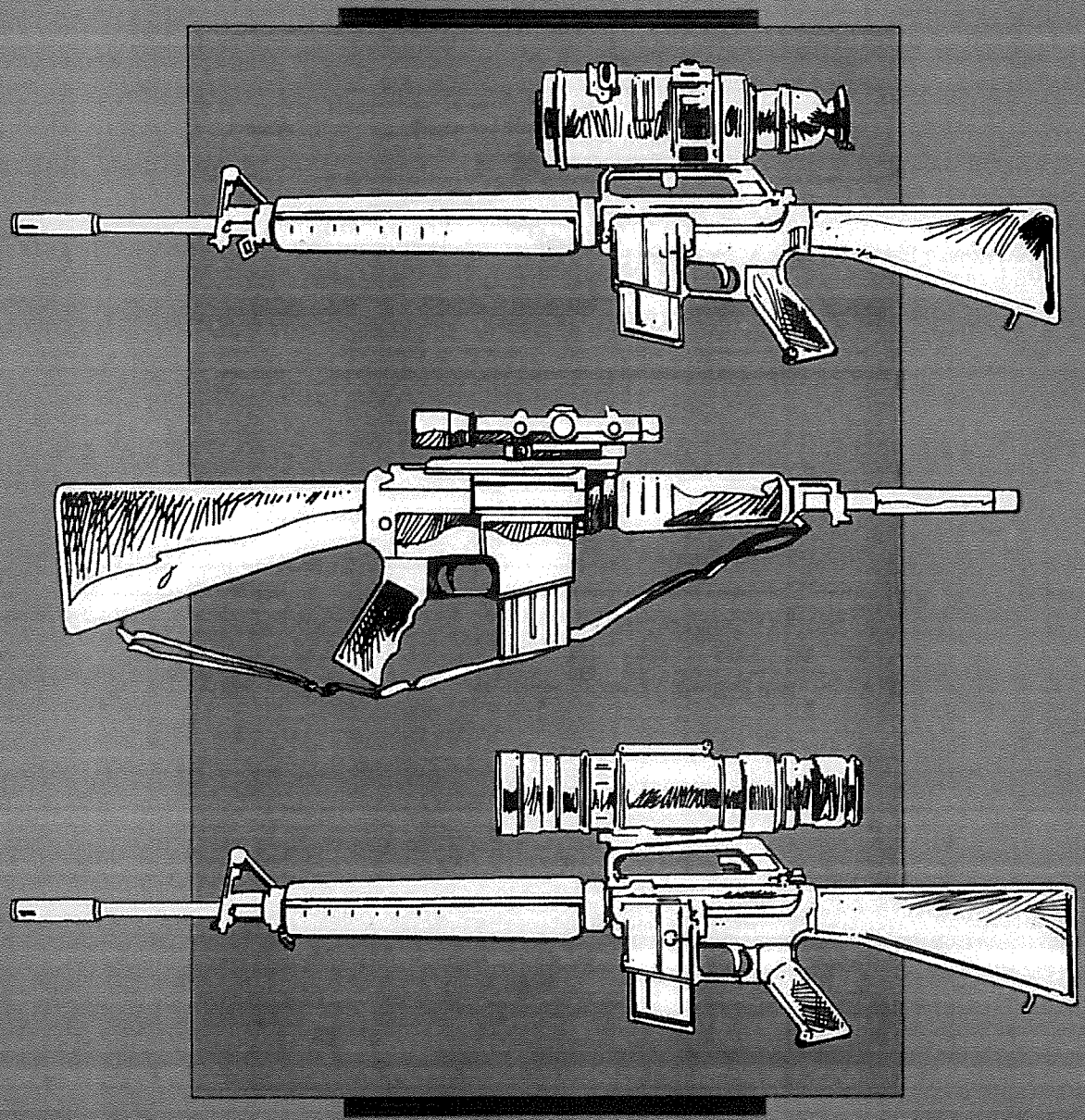
EXHIBIT 26

THE AR-15/M16
A PRACTICAL GUIDE



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vision equipment. I do not receive any kickbacks from any of the manufacturers, nor do I sell anything to make a living (other than my newsletter and books like this one). If I have given a product good marks, it is because I think it is of good quality.

Usually, more than one company offers the products covered in these chapters, and I will only list the company that manufactures them or one or two good sources. If you are ordering a number of accessories, you may find it more convenient to order all from one company, even if some of the products are slightly more expensive.

One fault I do find with some otherwise excellent equipment is that they often have fasteners that need a hex driver or L-wrench. These drivers are easier to use than a screwdriver, but you do not want to discover that something is coming loose in the field and not have the right tool with you with which to tighten it.

For a while I carried the tools, but when you have them, it seems the need for them does not arise. Rather than burden myself at the cost of not carrying essentials (like candy bars), I put a slot in large screws and often replace hex nuts with wing nuts from the hardware stores.

To get the wing nuts, take the piece in and get a clerk to help you locate what you need. (A word of advice: Try to buy something in addition to the fourteen-cent nut so the clerk will wait on you again.) Blue the nut with cold blue. (See the section on building your own rifle.)

To slot a screw, use a triangle file to get the slot location started. With a hacksaw, slowly make a groove for a large screwdriver. Touch-up blue will make everything look like new again, except that now you have a screw that can be tightened in the field with a makeshift screwdriver (such as a chunk of metal or pocketknife). If you are careful, you can make a small enough groove to allow the L-wrench to be used, as well.

That being said, let us look at what is available. I will assume you have your ammunition and about six magazines for your AR-15. If you do not, by all means get them.

The stock, pistol grip, and handguards are the three areas where the AR-15 can be improved with commercial replacement parts. You might consider these changes, though you may find them unnecessary.

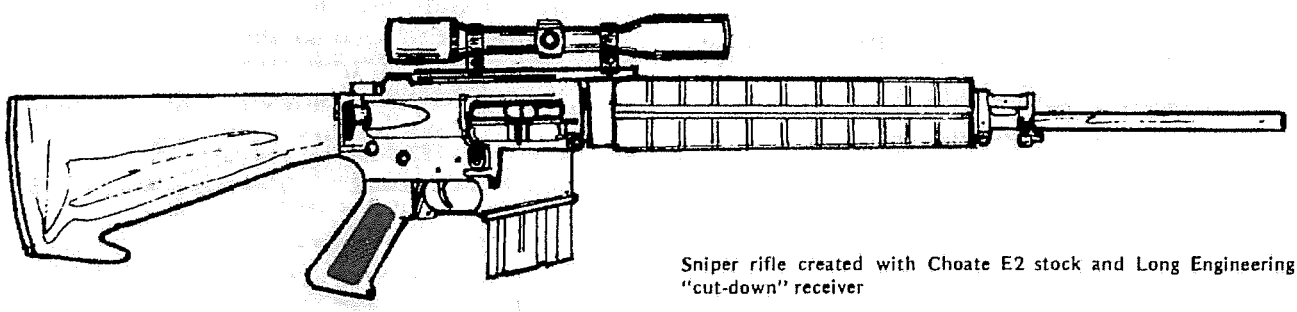
THE STOCK

Many tall shooters find the stock to be about an inch too short to be comfortable. A number of shooters have alleviated this problem by making a wooden insert which they place in the plastic stock after removing the trap door assembly. For a long time, this was the only solution to the problem.

Now there are at least two other routes. One is the new E2 stock from Choate Machine and Tool (Box 218, Bald Knob, AR 72010, 510/724-3138) for $30. This stock is three-quarters of an inch longer than the standard stock and seems just the right length for those folks who are taller than five feet five inches. At my suggestion, the stock also has a small hook so that the shooter can push it back against his shoulder when firing in the prone position. (While the prone position and bipod are not used that often in modern combat, it is nice to have the option, and it certainly does not detract from the stock's usefulness.)

The Choate stock is made of a new plastic, stronger than the old fiberglass stocks, and has more storage room in it. It is a quarter of a pound lighter than standard stocks. (Translation: You can carry six extra rounds of ammo.) Best of all, the swivel is a screw-in type (as found on a sporting bolt-action rifle) so it can be removed if it is not needed; if left on the rifle, it does not get caught in slash pockets like the standard AR-15 rifle swivel does.

The E2 stock is easy to mount. Remove the old



Sniper rifle created with Choate E2 stock and Long Engineering "cut-down" receiver

trap door assembly (by taking out the two screws), slip off the stock, slip on the E2 stock, put the trap door back on (a new longer screw comes with the stock), and it is ready to go!

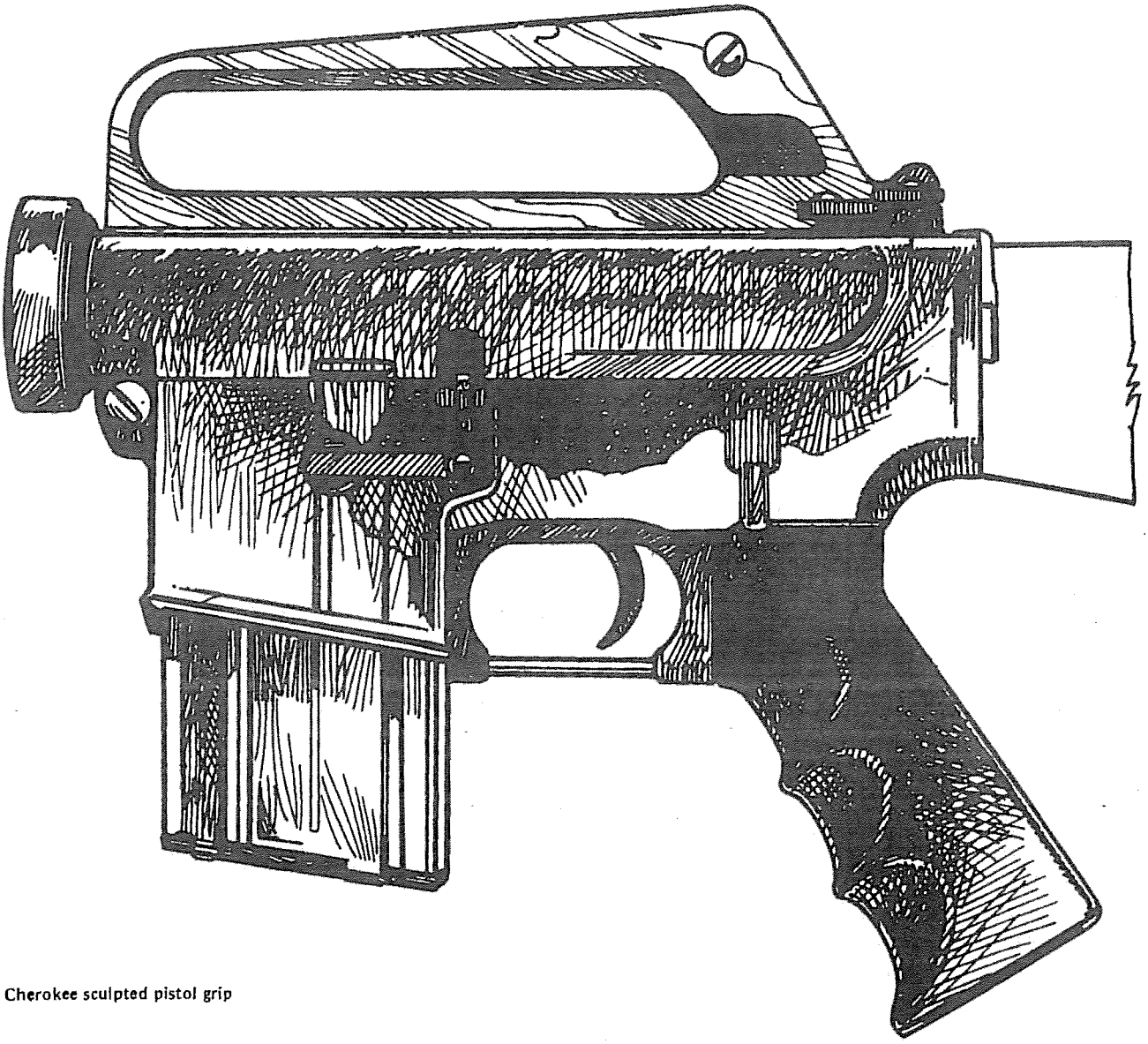
The other solution to the problem of having too short a stock is to try to get some of the M16A2 stocks, which are also longer than the old stocks. These should be available on the surplus market, and I would be surprised if someone did not start making a commercial version of the longer stocks soon (or an extension insert to go into the standard stock).

PISTOL GRIP

The pistol grip on the AR-15 is fine as is, but a grip with a trap door in it allows you to carry a spare-parts kit, cartridge adapter (for firing .22s), small screwdriver, etc.

Years ago, GIs used an M1 Carbine magazine dust cover to cover the hollow grip. This rubber cap was *about* the size of the end of the grip so the cap could be stretched over the hole. Being *about* the right size, it usually did not quite fit. Because it often came off, it had to be taped in place.

The commercial trap-door pistol grip is a big improvement over the M1 Carbine arrangement. The trap door stays shut until you open it with a cartridge or pocketknife. The grip is also somewhat larger, so many of us with larger hands enjoy the bigger size.



Cherokee sculpted pistol grip

Currently, just about every company that carries parts for the AR-15 is selling these grips. One good one is the Stow-Away Grip, available for $9.95 from Lone Star Ordnance (P.O. Box 29404, San Antonio, TX 78229, 512/681-9280).

Since the U.S. military is starting to use a new handguard on the M16A2, it is probable that the A2 grip and its look-alikes will be on the market as well. The new grip has finger ridges in it so that a steadier hold is possible. The best bet would probably be a pistol grip with both trap door and finger ridges; one is available on the commercial market. Although not the one actually on the M16A2, it is called the "M16A2 Contoured Grip."

The nylon "M16A2" is available for $15 from Cherokee Gun Accessories (830 Woodside Rd., Redwood City, CA 94061). It features three finger ridges and is three-eighths of an inch longer than the old-style AR-15 grip. The grip has a sliding cover at the bottom to create a storage compartment in the grip.

To mount either grip, use a large screwdriver to remove the screw and washer from the inside of the pistol grip, slide the new grip in place, and replace the screw and washer. (Occasionally the grips do not fit onto the lower receiver. If this is a problem, use a file to remove some of the plastic on the inside of the pistol grip.)

HANDGUARDS

The first production models of the AR-15 had rounded handguards like those of the 16-inch carbine barrel. These guards were on the first Colt AR-15, but were later changed to the "Beaver Tail" style. The round handguards were much more comfortable, making it much easier to keep a firm grip on the rifle in the rain or mud. Now, the "new" round handguards will be on the M16A2.

If you buy commercial round guards to replace the beaver tails on the AR-15, be sure that the upper and lower halves of the round guards are different so that they will fit into the triangular front retainer rim of the barrel.

Soon, surplus M16A2 handguards may come onto the market, and these *are not* interchangeable with the beaver tail stocks. The front retaining ring of the M16A2 is round, not triangular as found on the beaver-tail style. These round guards will not fit onto old rifles unless the front sight base is removed and a new round retainer is placed on the barrel.

Currently, round guards which are compatible with the beaver-tail style triangular guards are available from Lone Star Ordnance (address above) for $29.95 a set.

To replace the handguard, push back the weld ring (it may be necesarry to use a screwdriver to carefully lever it), lift the rear of each half and pull both halves out, slide in each new half, and let the weld ring spring forward to lock them in place. (If they do not seem to fit, it may be necessary to file a small amount of plastic off the rear, outside lip of each handguard half.)

ACCESSORIES FOR LEFTIES

If you are left-handed, there are some accessories you might consider necessities. One is an ambidextrous safety selector which places a second selector lever on the port side of the rifle as well as the bolt release side. This is available from L. L. Baston Co. (Box 1995, El Dorado, AR 71730, 800/643-1564) for $39.95.

The other accessory of use to lefties is a brass deflector. Some left-handed shooters are bothered by the brass that zings out of the ejection port. (Be sure your right arm is perpendicular, rather than diagonal, to the horizon. This will keep the brass from hitting your arm, while improving your accuracy.)

If you do not wish to be hit by brass, you may be able to locate one of the deflectors used for a time by the U.S. military. It was a simple, stamped metal piece that went over the top and rear side of the port. The deflector was held in place by spring tension and a bolt that fastened through the scope mount hole in the carrying handle of the AR-15.

The whole contraption is a little awkward, making it impossible to use a scope and difficult to carry the gun by the handle. However, it does work.

The new M16A2 model of the AR-15 has a bump that pushes the empties forward and away from lefties. Possibly a commercial rubber "bump" will come onto the market. If so, this might be something to look for if you are left-handed.

SLINGS

The standard AR-15, unfortunately, has sling swivels that seem to have been designed for marching rather than carrying the rifle. This often does not make much difference since the rifle is often used in combat with the sling removed. Sometimes, however, it is a bit aggravating. If you do use slings and may be in combat, try to place some type of

CERTIFICATE OF SERVICE
IN THE UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
SOUTHERN DIVISION

Case Name: *Rupp, et al. v. Becerra*
Case No.: 8:17-cv-00746-JLS-JDE

IT IS HEREBY CERTIFIED THAT:

I, the undersigned, am a citizen of the United States and am at least eighteen years of age. My business address is 180 East Ocean Boulevard, Suite 200, Long Beach, California 90802.

I am not a party to the above-entitled action. I have caused service of:

EXHIBITS 24 Part 3-26 TO DECLARATION OF SEAN A. BRADY IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

on the following party by electronically filing the foregoing with the Clerk of the District Court using its ECF System, which electronically notifies them.

Xavier Becerra
Attorney General of California
Peter H. Chang
Deputy Attorney General
E-mail: peter.chang@doj.ca.gov
John D. Echeverria
Deputy Attorney General
E-mail: john.echeverria@doj.ca.gov
455 Golden Gate Ave., Suite 11000
San Francisco, CA 94102

I declare under penalty of perjury that the foregoing is true and correct.

Executed March 25, 2019.

/s/Laura Palmerin
Laura Palmerin

C. D. Michel – SBN 144258
cmichel@michellawyers.com
Sean A. Brady – SBN 262007
sbrady@michellawyers.com
Matthew D. Cubeiro – SBN 291519
mcubeiro@michellawyers.com
MICHEL & ASSOCIATES, P.C.
180 East Ocean Boulevard, Suite 200
Long Beach, CA 90802
Telephone: 562-216-4444
Facsimile: 562-216-4445

Attorneys for Plaintiffs

UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

SOUTHERN DIVISION

STEVEN RUPP, et al.,

Plaintiffs,

vs.

XAVIER BECERRA, in his official capacity as Attorney General of the State of California,

Defendant.

Case No.: 8:17-cv-00746-JLS-JDE

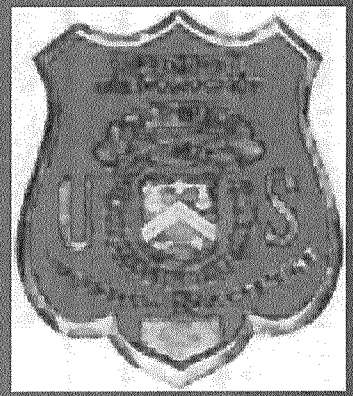
EXHIBIT 27 TO DECLARATION OF SEAN A. BRADY IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

Hearing Date: May 31, 2019
Hearing Time: 10:30 a.m.
Courtroom: 10A
Judge: Josephine L. Staton

[Filed concurrently with Notice of Motion for Summary Judgment, Memorandum of Points and Authorities, Statement of Uncontroverted Facts and Conclusions of Law, Request for Judicial Notice, Declarations of Steven Rupp, Steven Dember, Cheryl Johnson, Christopher Seifert, Alfonso Valencia, Troy Willis, Michael Jones, Dennis Martin, and Richard Travis]

EXHIBIT 27

Data Analysis of .223 Caliber Ammunition



Penetration Capabilities of Law Enforcement Ammunition

This presentation consists of data accumulated from the FBI's "Weapons Selection" test, San Diego County Sheriff's Department's "Structural Penetration Testing" and the Drug Enforcement Administration's "Construction Material Test" and is use with their permission

Purpose of ATF's Presentation

- ⇨ Simplify data currently circulating in the Law Enforcement Community
- ⇨ Dispel myths about ammunition
- ⇨ Allow informed decisions of ammunition choice
- ⇨ Facts of Ballistic superiority

Basic Terminology

- Ballistics
- Terminal Ballistics
- Effective Penetration

Ballistics

⇨ **The science dealing with the motion and impact of projectiles**

Terminal Ballistics

- How the projectile reacts once it hits an object
- The projectile's effect on the object

Effective Penetration

- 12 - 18 inches
- Less than 12 inches, unlikely to reach vital organs from some angles
- More than 18 inches, unlikely to damage additional vital organs

Consideration of Under Penetration

- Failure to incapacitate subject
- Subject may cause injury to Agents and innocent parties

Consideration of Over Penetration

- Exits subject's body and wounds others
- Some projectile's penetration can be increased as a result of penetrating through an intervening barrier (plywood, dry wall, steel)

2669

Ammunition and Weapon Consideration

- Operational use
- Ballistic Superiority
- Threat to Innocent Parties

Considerations for Operational Use

- A number of ATF arrests involved arrests take place in and around vehicles or making entry into residences
- Vehicles provide cover and concealment for agents and suspects
- Interior and exterior walls of a residence provide cover and concealment
- There is an increasing number of suspects using body armor

Ballistics Superiority

- Shotgun (slug) and rifle/carbines are always ballistically superior to other choices
- Handguns and subguns have similar ballistics
- Shoulder weapons are tactically superior
- Use of shoulder weapons will increase hit probability

Threat to Innocent Parties

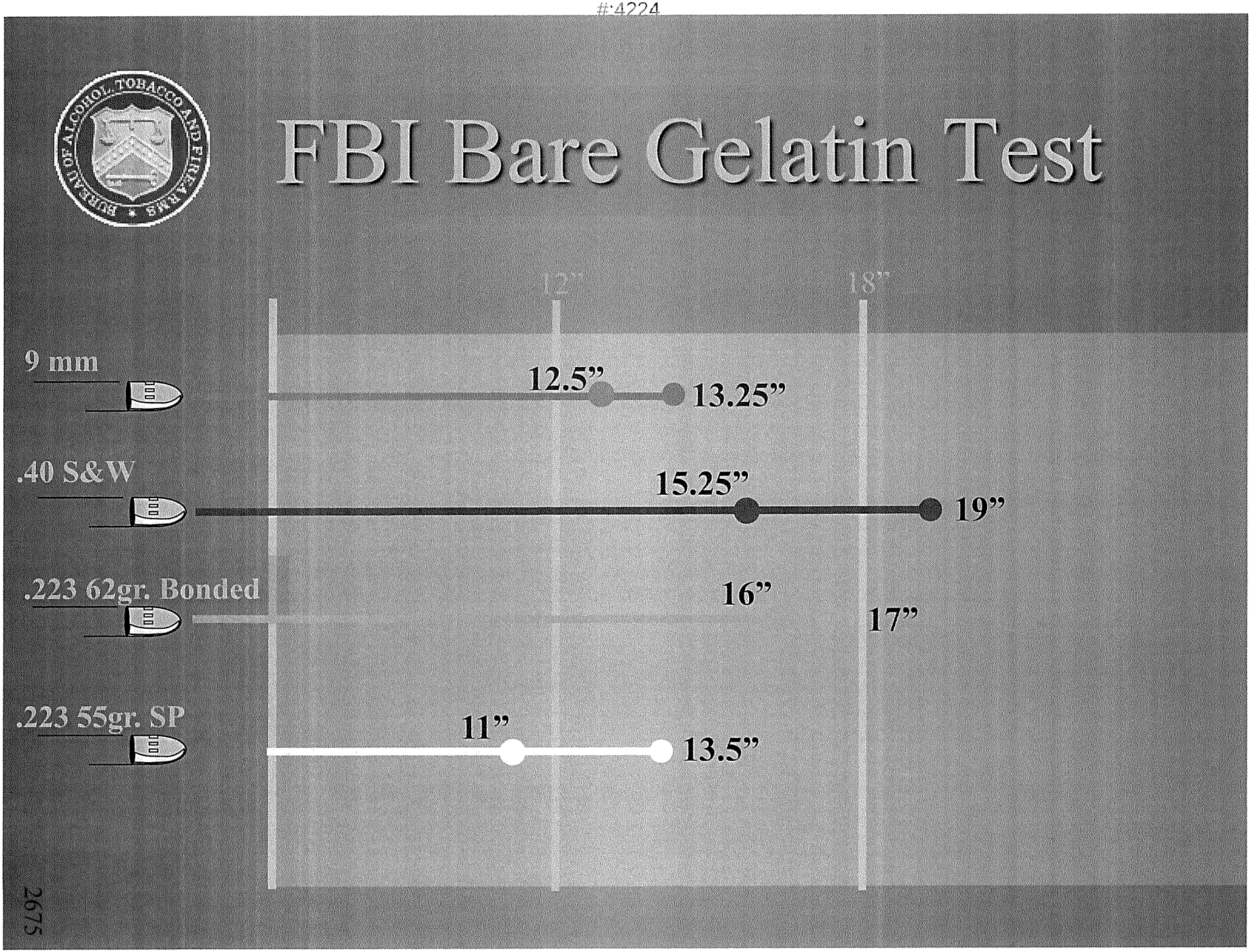
- Approximately 80% of rounds fired in Law Enforcement shootings miss the intended target according to FBI static's
- All missed shots will eventually hit something
- It is believed that the use of a shoulder weapon will increase hit probability
- What happens next will depend on the projectile and what it hits

2673

How far will a projectile travel before it falls 60 inches to the earth?

- **This calculation is based on the assumption that an average person would fire a weapon from a height of 60 inches, Center mass to a target at the same height.**

– 870 Shotgun - 12ga. Slug	200 yards
– MP5 - 9mm	200 yards
– M-4 - .223cal.	500 yards

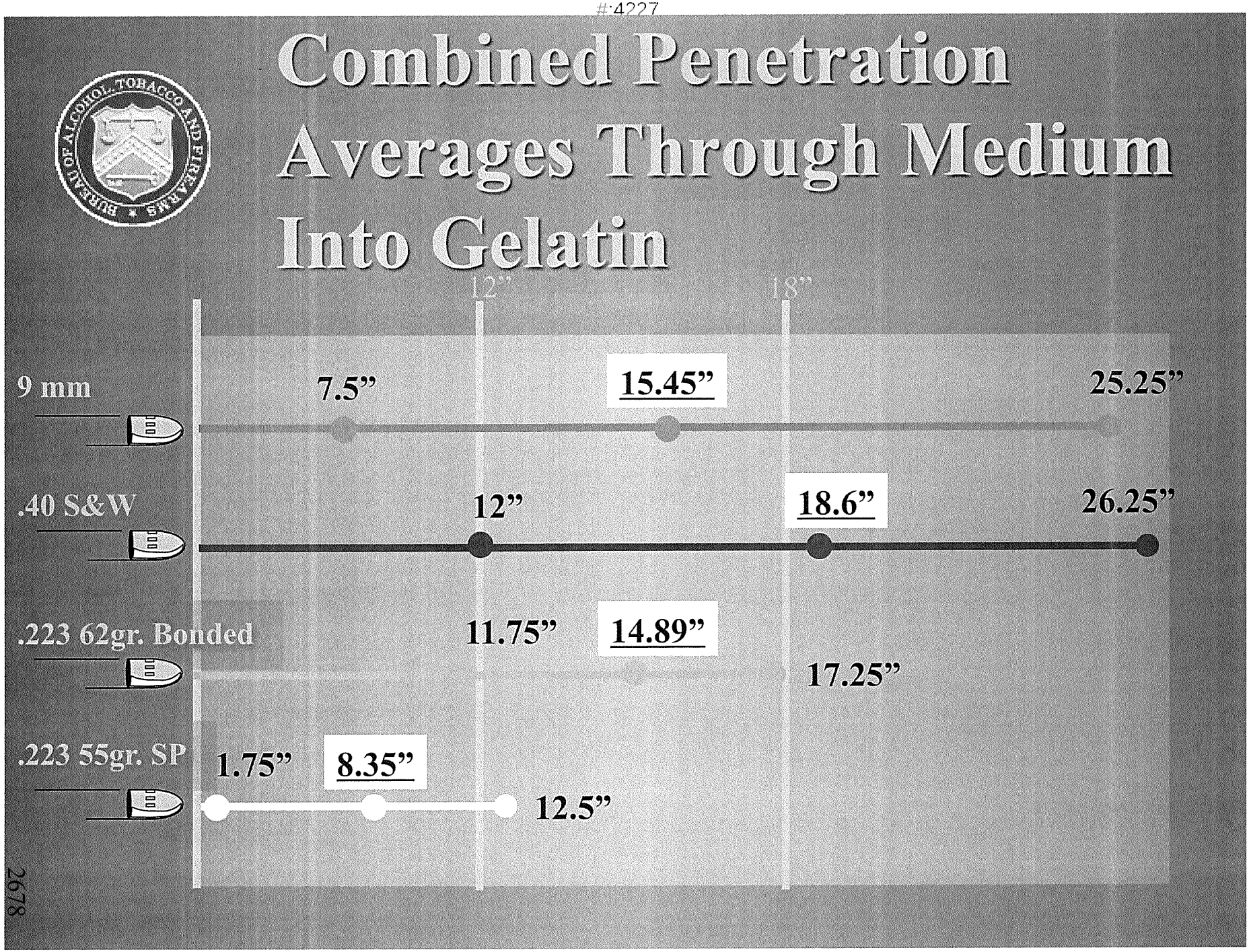


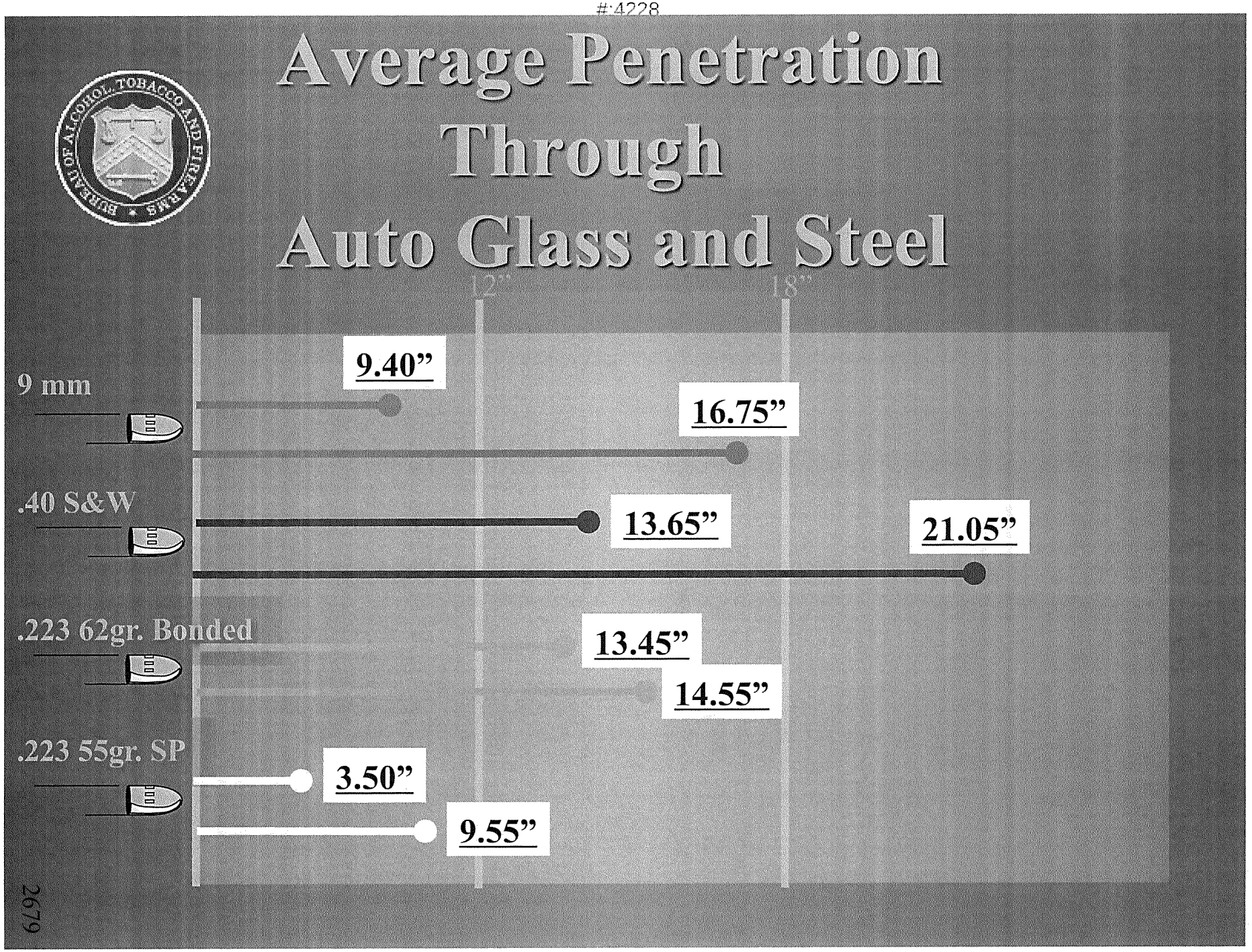
Penetration Tests

- FBI penetration test
- San Diego penetration test
- DEA penetration test

FBI Penetration Test

- Consisted of firing through a variety of different material barriers into ballistic gelatin
- Barrier Materials
  - Steel car door
  - Automobile glass
  - Plywood
  - Drywall
  - etc.

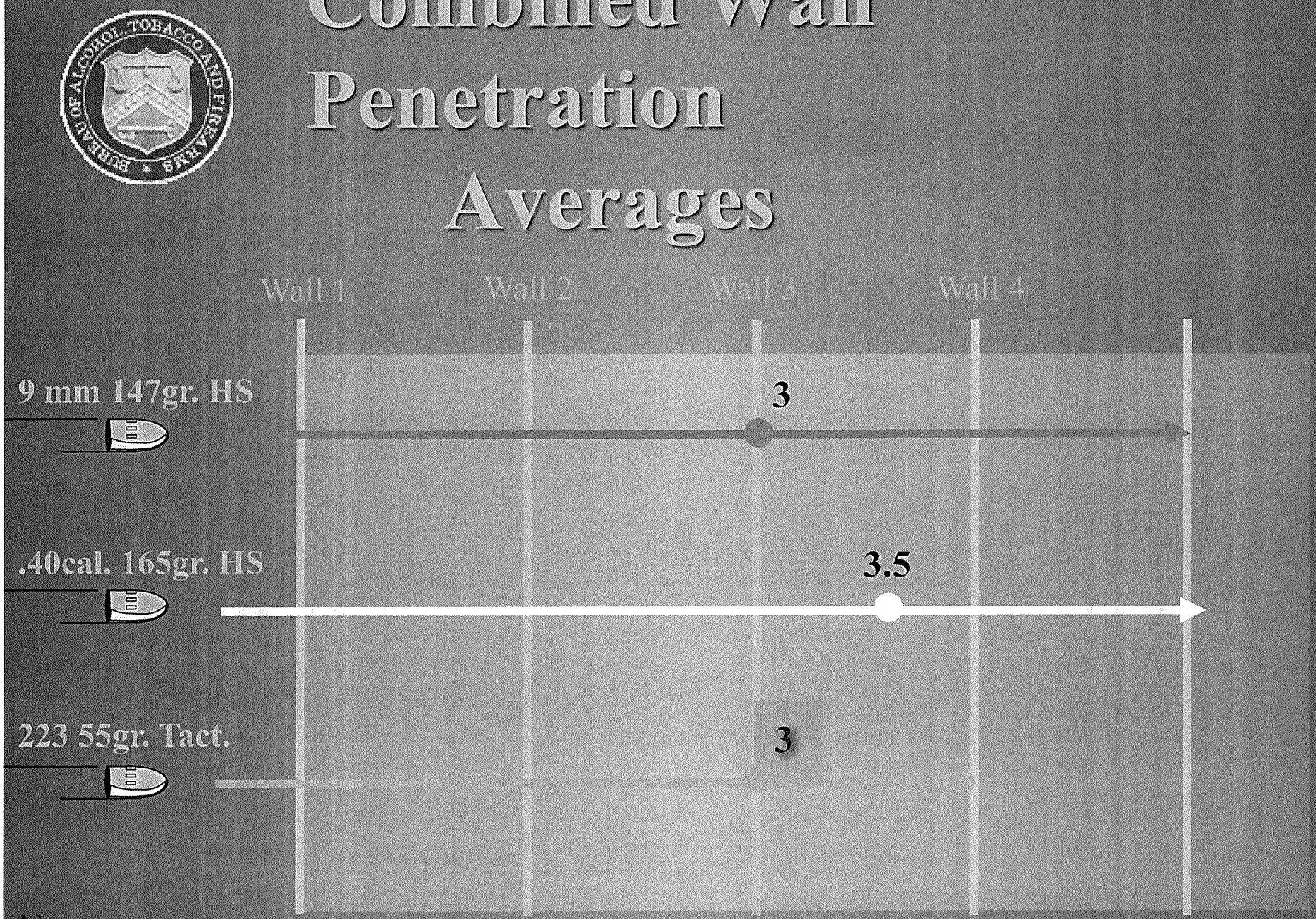




San Diego Wall Penetration Test

- Consisted of firing rounds through 4 walls approximately 5 yards apart. The walls were constructed of various materials to include:
  - 1/2" Wood Siding
  - Stucco material
  - Insulation
  - 1/2" Gypsum
  - Cinder block

Combined Wall Penetration Averages

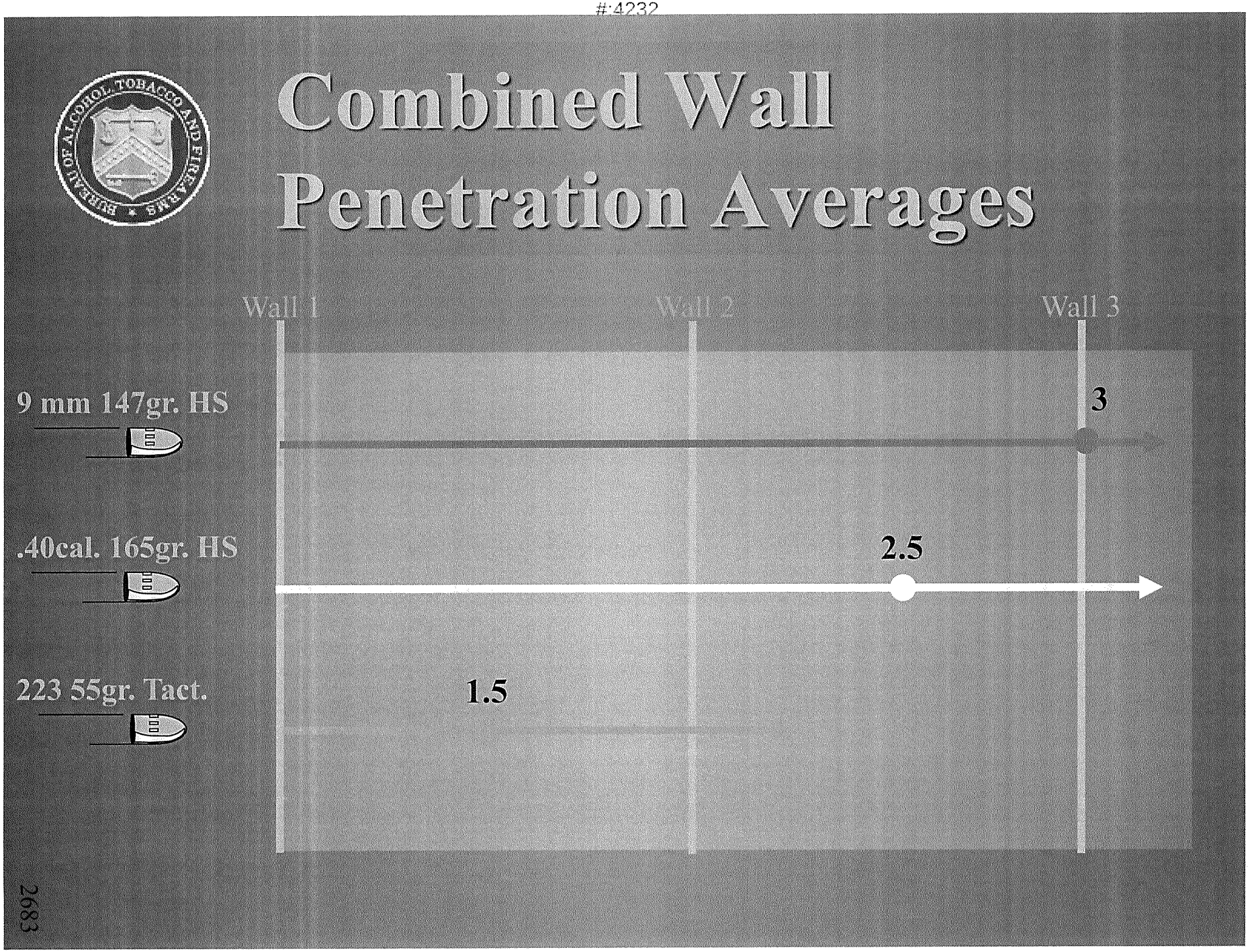


DEA Wall Penetration Test #1

- Consisted of firing rounds through 3 walls approximately 2 yards apart.
- Wall #1 was constructed of:
  - 1 sheet of 1/16" plastic siding
  - 2 sheets of 7/16" plywood
  - 1 sheet of 9/16" hard insulation
  - 2" of soft insulation
  - 1 sheet of 1/2" drywall
- Walls # 2 and #3 were constructed of:
  - 2 sheets of 7/16" plywood
  - 2 sheets of 1/2" drywall
  - 2" of soft insulation

2682

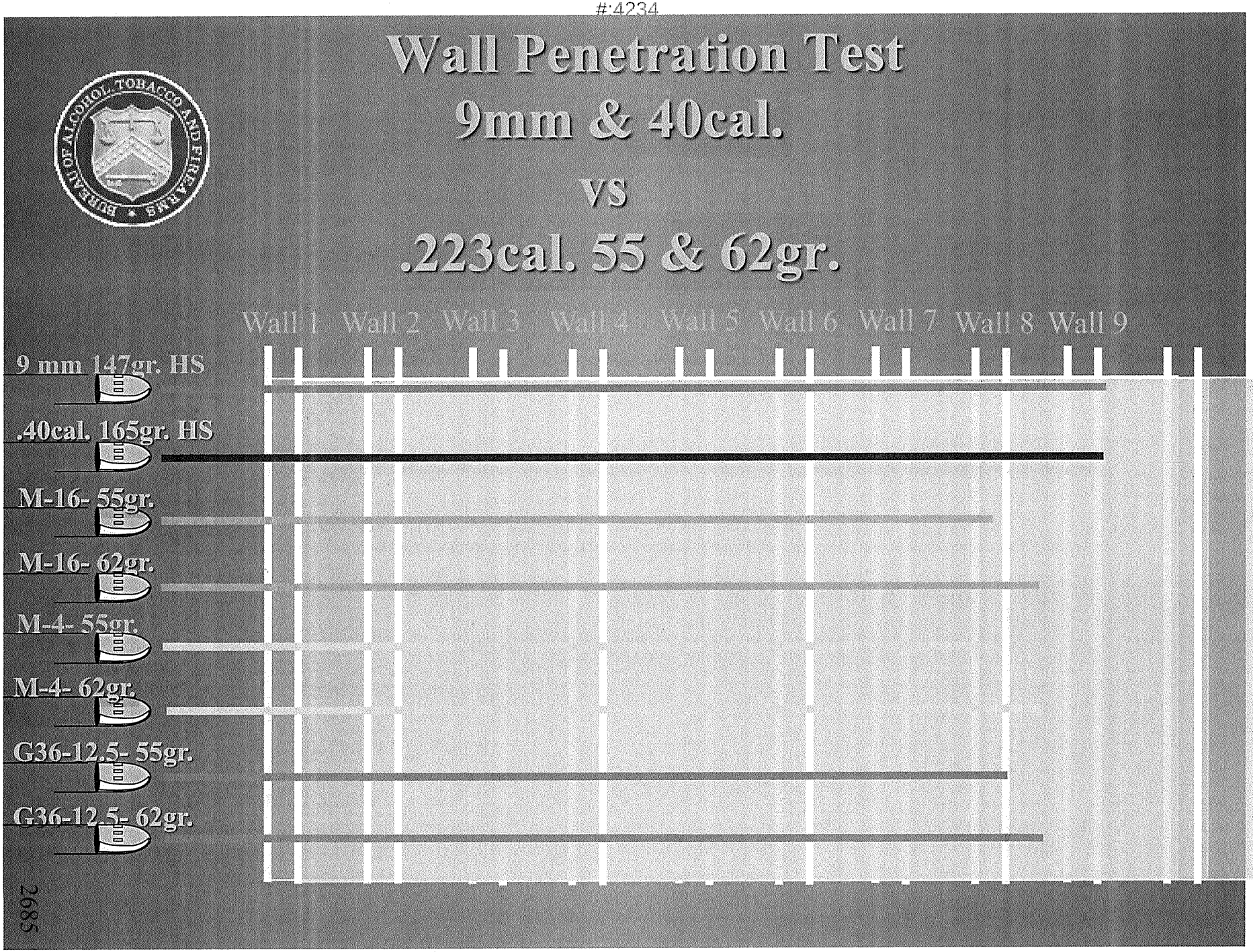
Combined Wall Penetration Averages



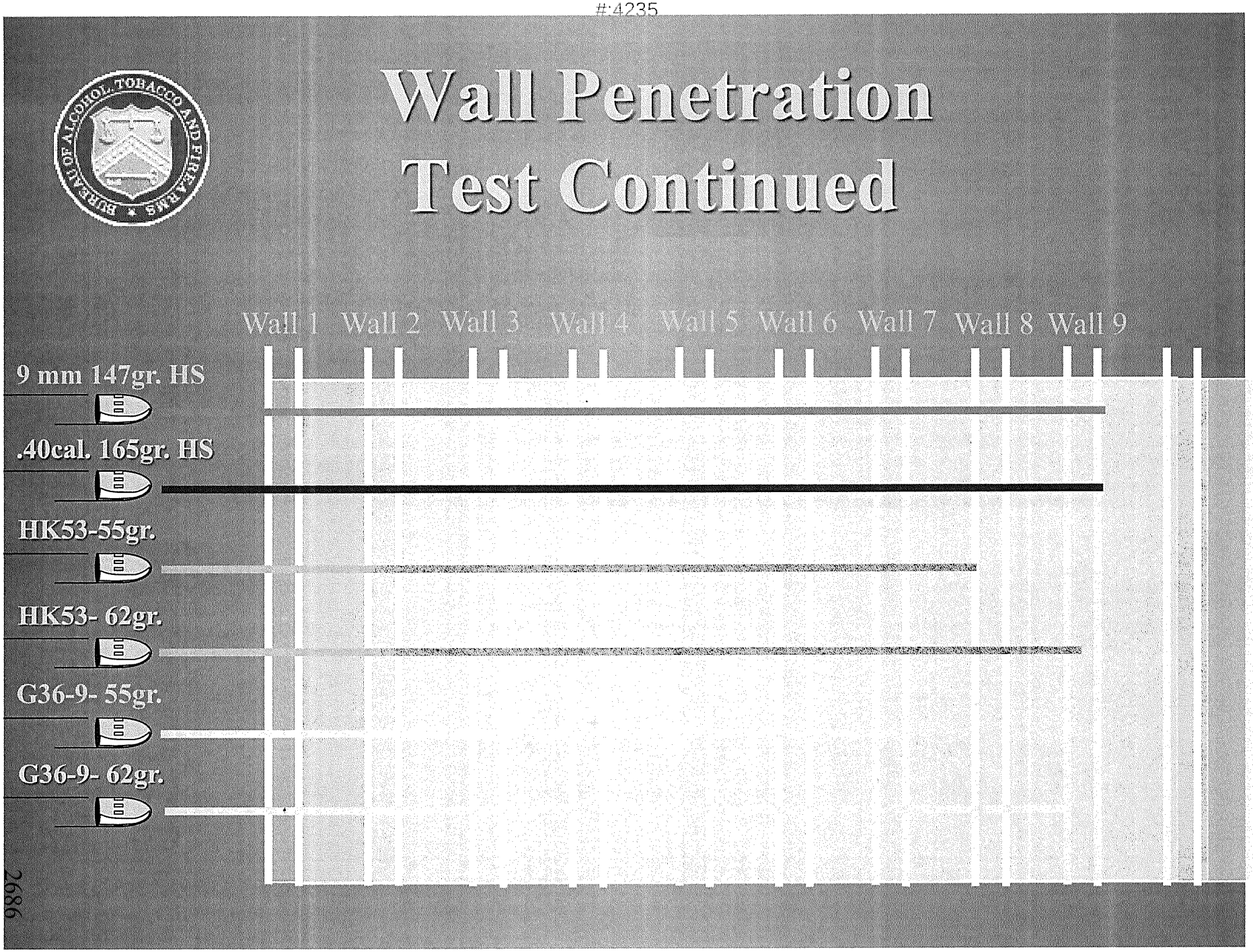
2683

DEA Wall Penetration Test #2

- Consisted of firing rounds through 9 walls approximately 4 yards apart.
- Walls #1 - #8 were constructed of:
  - 2 sheets of 1/2" drywall, this simulates the construction of an interior wall of a residence
- Wall # 9 was constructed of:
  - 1 sheet of 1/2" drywall
  - 1 sheet of 7/16" plywood
  - 3" soft insulation
  - 9/16" hard insulation
  - 1/16" plastic siding, this simulates the construction of an exterior wall of a residence



Wall Penetration Test Continued

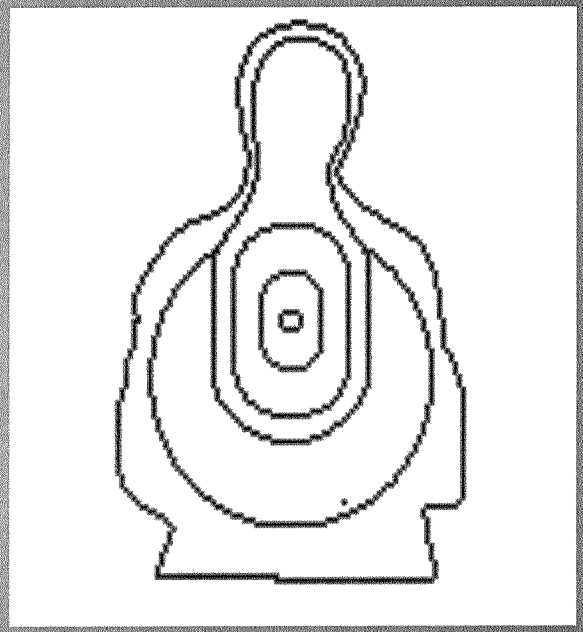


2686

Results of Data for ATF's Mission

⇨ Weapon of choice

/ Colt M4



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Peter H. Chang
Deputy Attorney General
E-mail: peter.chang@doj.ca.gov
John D. Echeverria
Deputy Attorney General
E-mail: john.echeverria@doj.ca.gov
455 Golden Gate Ave., Suite 11000
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Executed March 25, 2019.

/s/Laura Palmerin
Laura Palmerin