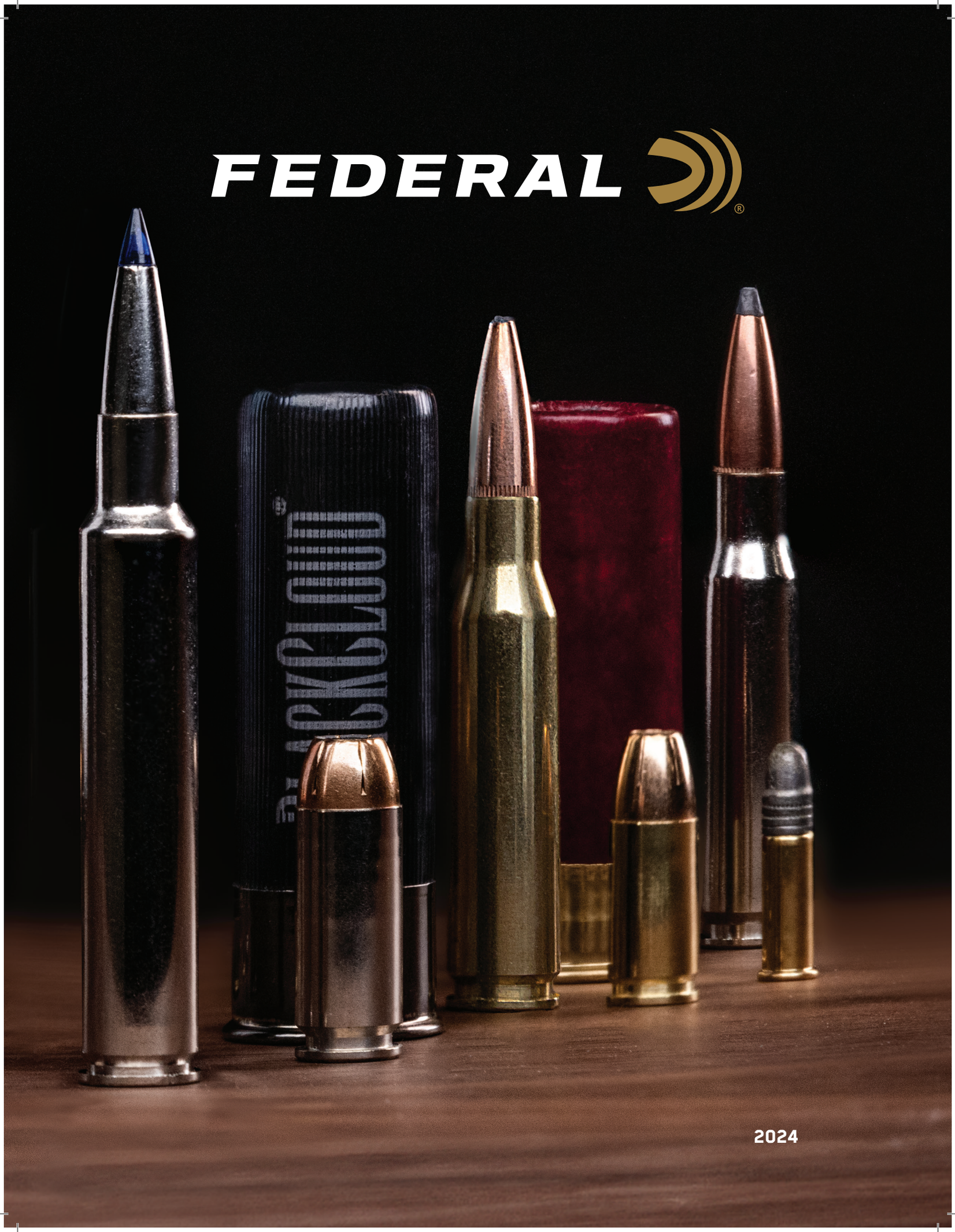
FEDERAL



2024

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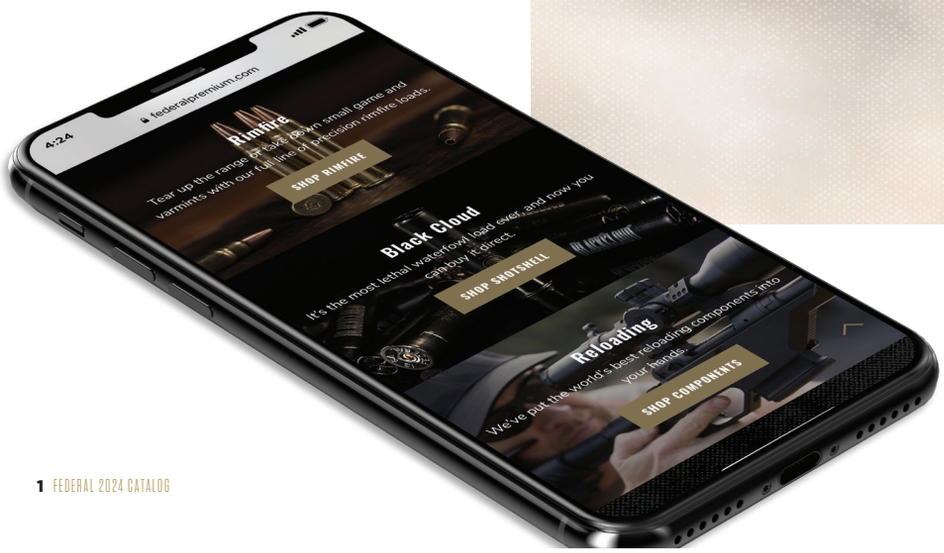
BUY DIRECT

We were the industry's first ammunition manufacturer to offer direct online sales. Today, you can check out your local retailer or shop online.



ADVANCEMENT NEVER STOPS

It all started with an idea. To go farther. To rethink what was possible. For more than 100 years, Federal has been delivering on that. Never stopping. We keep ammunition technology moving forward, improving performance whether you hunt, plink, protect or compete. In 2024, you're going to see more of that innovation coming to life with products that are changing the way the world shoots.

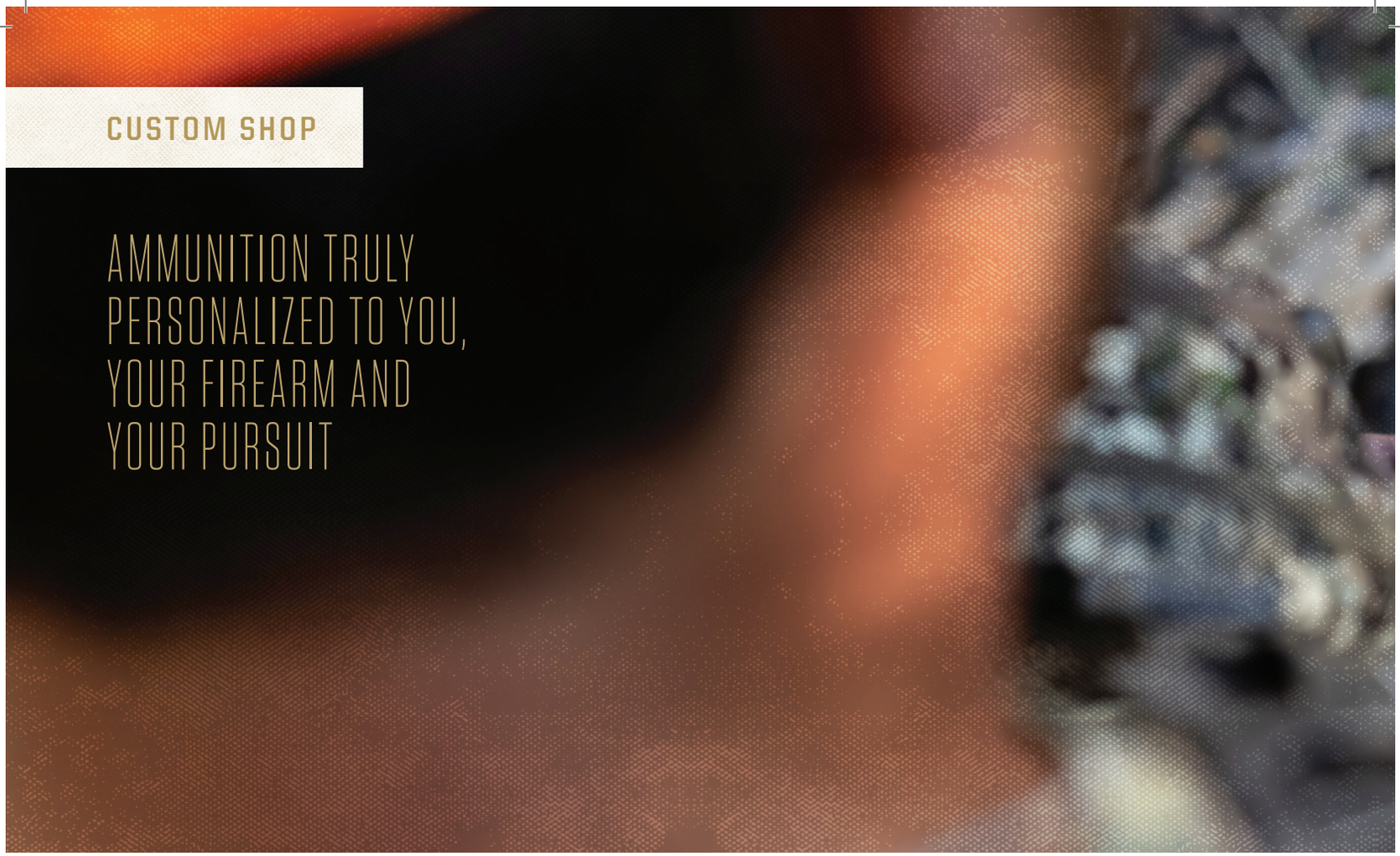
Thank you for choosing Federal.

Federal Merchandise

We're happy to offer a wide selection of Federal-branded apparel and gear. Go to ***federalpremium.com*** to start your order.

Connect, Shoot, Share

We're connecting with thousands of fans every day through social media. Share your passion for all things shooting on Facebook, YouTube, X, Instagram, Threads and TikTok.



FEDERAL CUSTOM SHOP

Every intimate detail of a great hunt combines to produce an experience as singular as the individual hunter—as personal as Federal Custom Shop™ ammunition. Our team of experts builds each round to order for results that are not merely accurate, but truly personalized to you, your firearm and your pursuit. These veteran craftsmen combine the best components with extra quality checks at every stage for the most consistent overall performance. Loads are then hand-checked for final inspection and cleaned before being custom-packed in durable, personalized packaging.

CUSTOM SHOP RIFLE

You'll find Federal Custom Shop centerfire rifle offerings in a wide selection of the best bullets from Federal®, Nosler®, Sierra®, Berger®, Swift® and more. Choose from a wide selection of bullet designs and dozens of cartridges built specifically for how you hunt and shoot.

CUSTOM SHOP SHOTSHELL

Precision payloads for any shotgun or application are just a few clicks away. Federal Custom Shop offers a full array of handloaded Tungsten Super Shot (TSS) loads for waterfowl, upland and turkey hunters.

SPECIAL EDITION WAYPOINT 2020

The Waypoint 2020 from Springfield Arms represents a class of features and customization you won't find in other factory rifles. It's only fitting that Federal Custom Shop would offer loads built for the revolutionary platform. Choose from three special-edition Custom Shop offerings loaded with Terminal Ascent bullets and optimized for the best performance from the Waypoint rifle.

ROB ROBERTS EDITION

Patterns, precision and personalization have all come together. We collaborated with legendary choke tube designer Rob Roberts Custom Gunworks on Tungsten Super Shot loads that deliver optimal pattern density and downrange energy.

Start your order at ***federalpremium.com/custom-shop***.

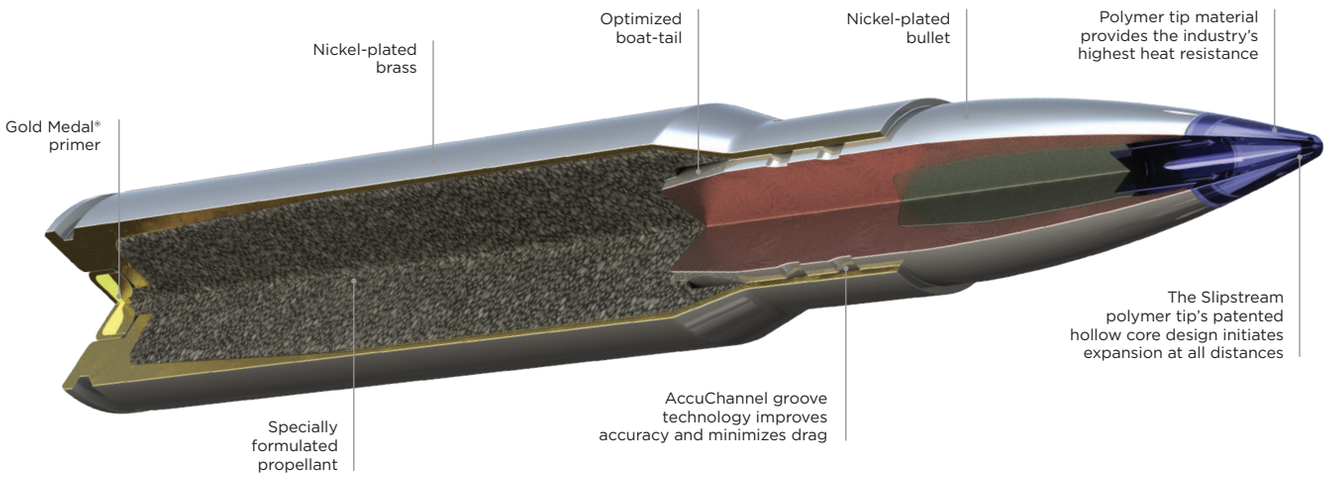
TERMINAL ASCENT

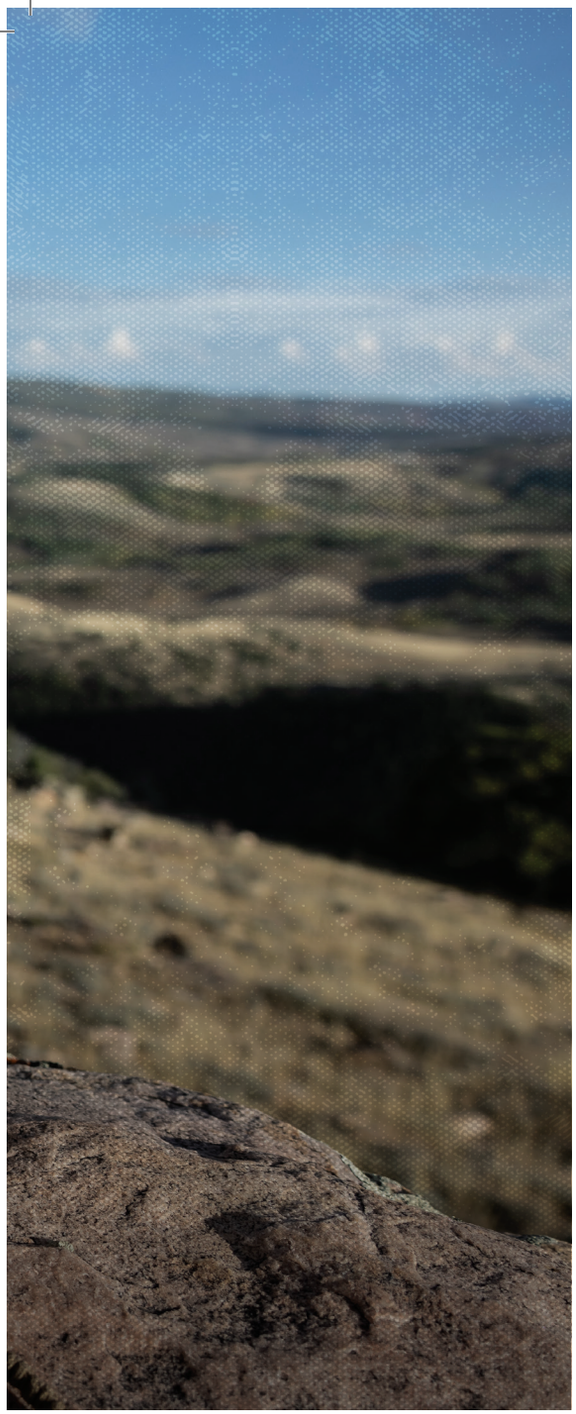
NEW

Any hunt. Any range. Go beyond what you ever thought possible with Federal Premium® Terminal Ascent®. Bonded construction penetrates deep on close targets, while the bullet's long, sleek profile offers an extremely high ballistic coefficient. Its AccuChannel® groove technology improves accuracy and minimizes drag for extreme long-range precision. ***Available in a full selection of long-range hunting cartridges, including new 6.5 PRC, 7 PRC and 300 PRC loads.***

Slipstream's Secret

The Slipstream® tip provides a perfectly aerodynamic meplat, yet initiates expansion at velocities 200 fps lower than comparable bullets. The secret is its hollow core, which is exposed when the tip breaks off on impact, allowing target material into the bullet nose to start the expansion process.





Simply the best rifle bullet made. Period.

15 YARDS
85% Weight Retention
300 Win. Magnum

Moose

160 YARDS
96% Weight Retention
6.5 PRC

Whitetail Deer

400 YARDS
91% Weight Retention
7mm Rem. Magnum

Elk

997 YARDS
99% Weight Retention
300 Win. Magnum

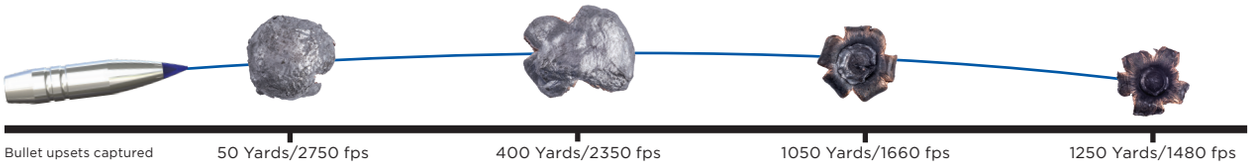
Oryx

1,200-Yard Performance

The Terminal Ascent's Slipstream polymer tip ensures proper expansion during low-velocity impact at extreme distances. In this ballistics gel block, shot at 1,200-yard velocity with P300WSMTA1, you can see where the Slipstream tip has initiated expansion and separated from the bullet immediately after entering the block, exactly as designed.

"Every hunt, every animal deserves your best shot. Terminal Ascent gives you the accuracy, the effective range and the power to ensure any hunt is a success."

REMI WARREN
GUIDE, WRITER, PHOTOGRAPHER, VIDEOGRAPHER & TV HOST



Bullet upsets captured from 200-grain 300 Win. Magnum load, P300WTA1

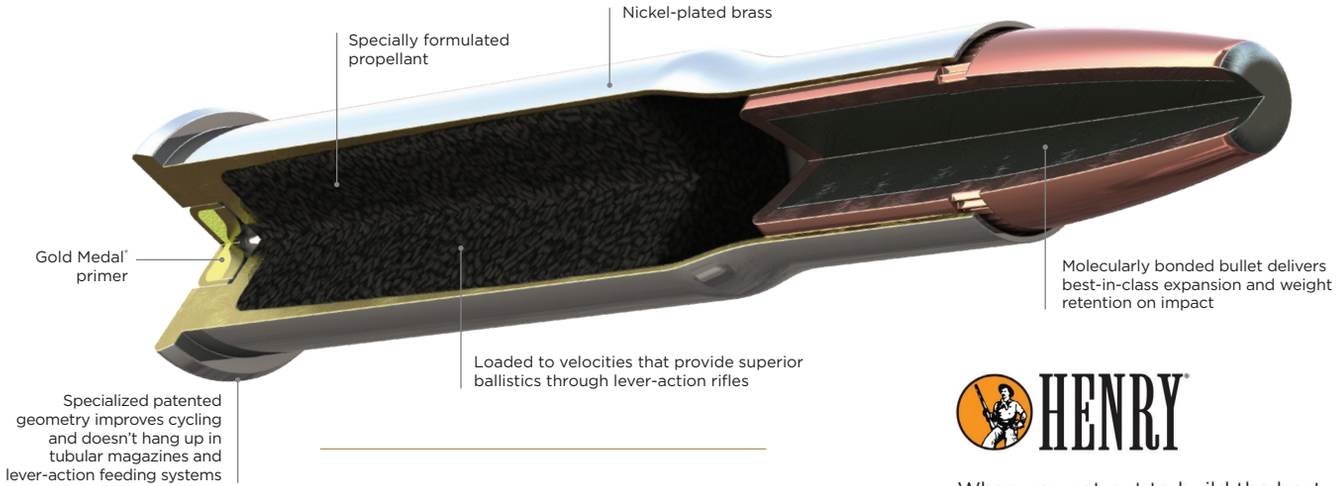
Expansion Redefined: Lethal extreme-range bullet performance doesn't look like the 2x expansion hunters see at conventional distances—it's not supposed to. With petals that open instantly and peel back uniformly every time, Terminal Ascent transfers more energy to the animal on impact and carves straight, deadly wound channels at all velocities.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 17-24.

HAMMERDOWN

NEW

Make your lever-gun run like never before with the industry's only ammunition truly designed for optimal cycling and overall performance from the time-tested rifle platform. Velocities of Federal Premium® HammerDown™ loads are customized to produce superior ballistics and terminal performance through lever-action barrel lengths. The construction of the molecularly bonded soft point bullets has also been adjusted for the best accuracy and expansion at those velocities. The geometry of each round's case, bullet and cartridge ensures flawless cycling through tubular magazines and typical lever-action feeding systems. ***Now available in a full line of the most popular lever-action cartridges, including new 360 Buckhammer.***



The Ultimate Leverage

Whether you're putting your lever-gun to work on bucks, bulls or boars, HammerDown's molecularly bonded bullets are optimized for terminal performance through lever-action barrel lengths.

HENRY®

When you set out to build the best lever-action rifle ammunition, you go to the industry's leading lever-gun manufacturer. Federal is proud to have partnered with Henry Repeating Arms when developing HammerDown. Their insight into the classic firearm platform helped ensure the utmost reliability and accuracy from each and every load.

TROPHY BONDED TIP

Surgical accuracy. Terminal results. Trophy Bonded® Tip combines bonded construction and a bone-crushing solid copper shank with a boat-tail design and polymer tip that reduce wind resistance. The resulting toughness and accuracy make it a perfect choice for the full spectrum of medium and big game.

TROPHY COPPER

Pinpoint precision and almost 100 percent weight retention have made Trophy® Copper an industry leader. All loads in the line provide extreme accuracy and aggressive expansion.

NOSLER PARTITION

The Nosler® Partition® was the first bullet loaded in the Federal Premium® line, and it continues to be a standard for consistency and reliability. Its partitioned lead core allows the front half of the bullet to mushroom on impact, but keeps the back half intact for deep penetration.

SWIFT SCIROCCO II

Push effective range to new extremes while delivering a more lethal blow on impact with Federal Premium Swift® Scirocco® II loads. The polymer-tipped bullet's streamlined design and high ballistic coefficient produce flat trajectories, while retaining more velocity and energy downrange.

ELD-X

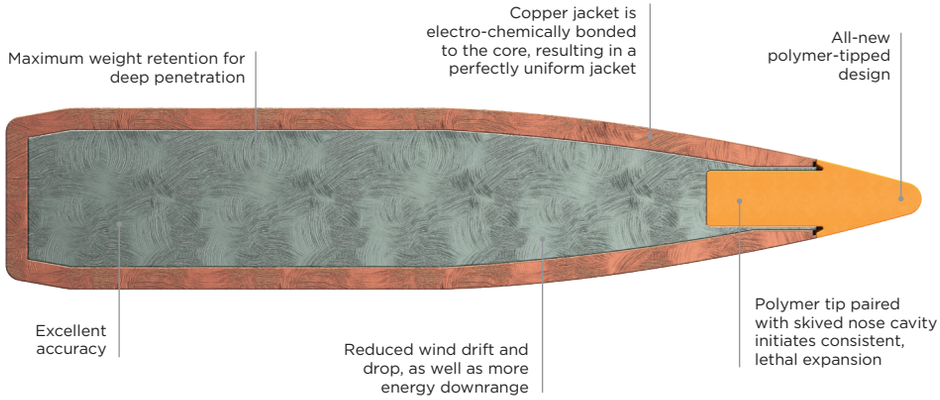
This match-accurate, hard-hitting hunting bullet features a high ballistic coefficient and offers effective expansion at a wide range of distances and velocities. ELD-X® uses a unique polymer tip that resists deformation to achieve the most consistent ballistics and initiate extreme-range expansion. ***Available in a full lineup of cartridges, including new 6.5mm PRC and 7mm PRC loads.***

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 17-24.

NEW

FUSION TIPPED

Federal® Fusion® became a legend in the deer woods for a reason. Its pressure-formed lead core is molecularly bonded to a consistent copper jacket, resulting in the highest weight retention, deepest penetration and best expansion in its class. Now, we're writing a new chapter to the Fusion story with all-new Fusion Tipped. The new design offers the same great terminal performance as the original, but with a polymer tip that increases ballistic coefficient, flattens trajectories and boosts energy for better accuracy and extended effective range.



COMING SOON	
6.5 CREEDMOOR	140 GRAIN
6.5 PRC	140 GRAIN
270 WIN.	150 GRAIN
7MM REM. MAGNUM	175 GRAIN
7MM PRC	175 GRAIN
300 BLK SUBSONIC	190 GRAIN
308 WIN	180 GRAIN
30-06 SPRG.	180 GRAIN
300 WIN. MAGNUM	180 GRAIN

BARNES TSX

The Barnes® TSX® is a proven all-copper hollow-point that groups tightly and delivers consistent, deep penetration. The monolithic design retains nearly 100 percent of its weight, and its grooved shank minimizes barrel fouling and improves accuracy.

BERGER HYBRID HUNTER

The profile of a match bullet. The versatility of a traditional hunting projectile. Berger® Hybrid Hunter bullet weights have been fine-tuned to provide exceptional accuracy through factory rifles. Ballistic coefficients exceed those of comparable designs thanks to a hybrid nose design that combines tangent and secant ogive features.

POWER-SHOK

The only tag these loads won't fill is the price tag. The jacketed lead-core bullets in Power-Shok® rifle loads fly straight and knock down a wide variety of medium and big game. ***Available in the widest selection of loads.***

POWER-SHOK COPPER

Practical hunters trust Power-Shok® rifle ammunition to fill freezers. Power-Shok Copper provides that same consistency and value, yet with a hollow-point, copper-alloy bullet that creates large wound channels.

FUSION

Fusion® was the first rifle ammunition specifically built for deer hunting and it's still the best, offering the largest expansion and highest weight retention in head-to-head comparisons against the competition. Its concentric jacket is molecularly bonded to the lead core.

FUSION MSR

The modern sporting rifle is a highly adapted hunting machine, and it needs ammunition that's just as customized. From primer to projectile, virtually every component is optimized for use in MSR platforms and peak ballistic performance through short barrels.

"I've been shooting Fusion on deer for more than 10 years and love its accuracy. I leave the science to experts on how it is designed, but what I know is it knocks bucks down from Alabama to Texas to Saskatchewan. Whenever I recover a Fusion bullet, it's always mushroomed perfectly."

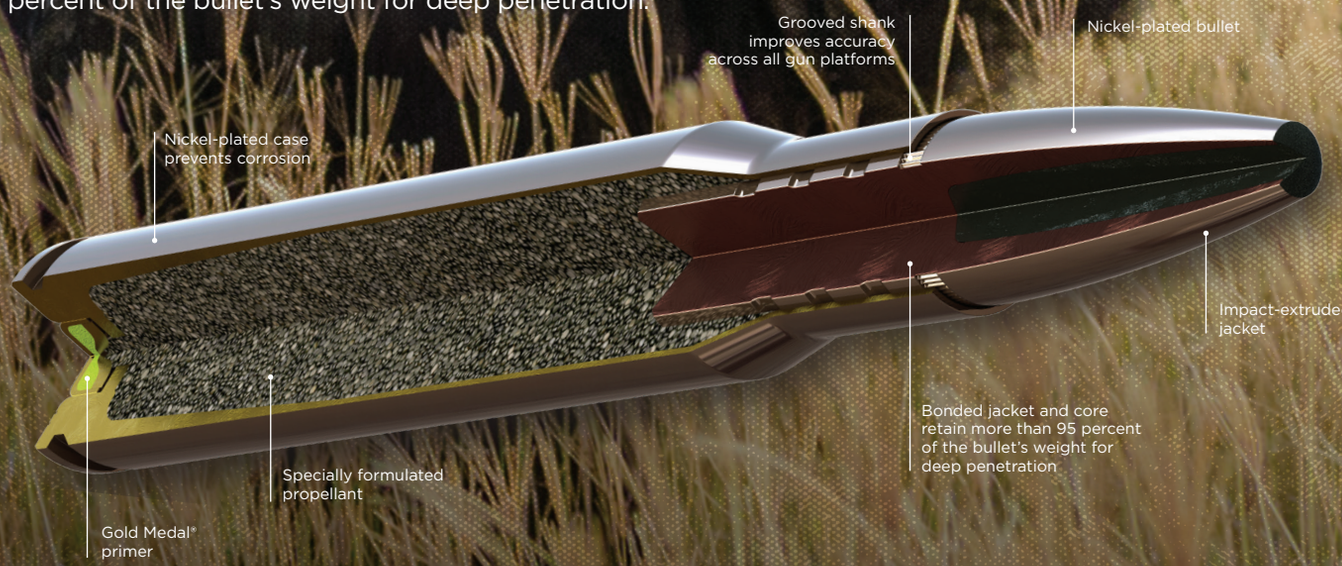
JACKIE BUSHMAN
THE BUCKMASTER

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 17-24.

Additional offerings are available in the Federal Custom Shop. See page 3 for more information.

TROPHY BONDED BEAR CLAW

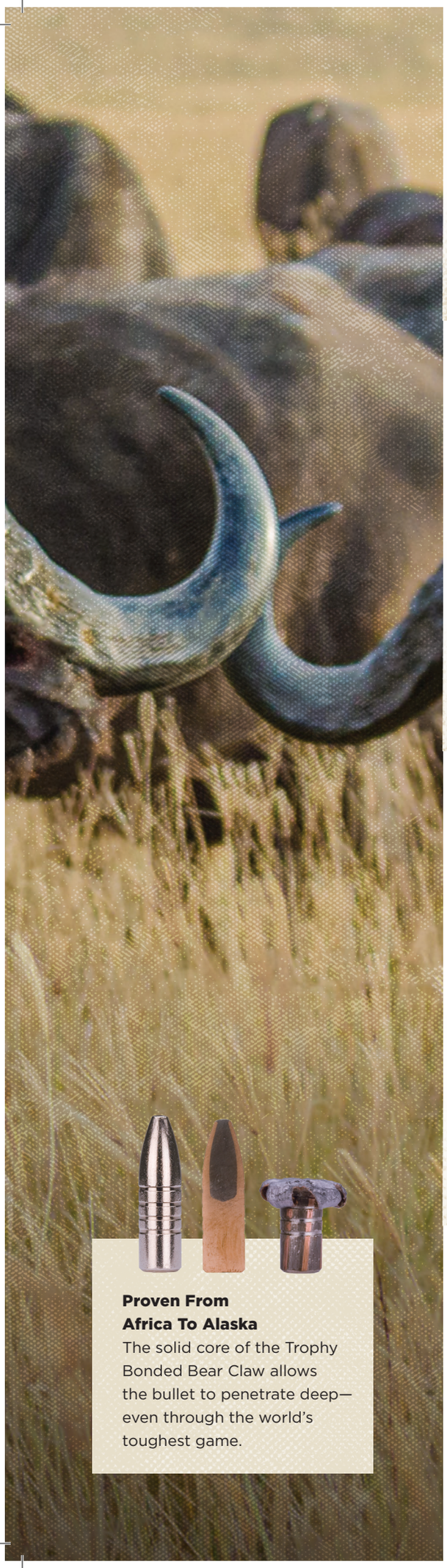
The world-famous Trophy Bonded® Bear Claw® has proven its reliability on large, heavy game from Africa to Alaska and everywhere in between. Its bonded jacket and core retain more than 95 percent of the bullet's weight for deep penetration.



Bear Attack

Although the rear core of the Trophy Bonded Bear Claw stays intact on impact, the nose upsets aggressively for large wound channels. Gel shot with 300-grain 375 H&H Magnum (P375T1) at 100 yards.

Penetration: Deep
Weight Retention: Maximum
Expansion: High/Controlled
Range: Medium



TROPHY BONDED SLEDGEHAMMER SOLID

The legendary Trophy Bonded® Sledgehammer® Solid bonds its core to a thick brass jacket for bone-crushing penetration. Its flat nose minimizes deflection to create a straight, deep wound cavity, and the grooved shank improves accuracy across an array of rifle platforms.

SWIFT A-FRAME

Those who hunt game that hunts back trust their lives to Federal Premium® Swift® A-Frame® loads. The bullet features a bonded front lead core and rear core separated by a progressively tapered jacket. The front core expands while the rear remains intact for high weight retention and deep penetration.

WOODLEIGH HYDRO SOLID

When targeting the largest and most dangerous game, hunters have long relied on solid, non-expanding bullets that blow through bone and thick hide. Woodleigh Hydro Solid loads offer that same unstoppable penetration while also creating a massive wound channel and large entry cavity that won't close.

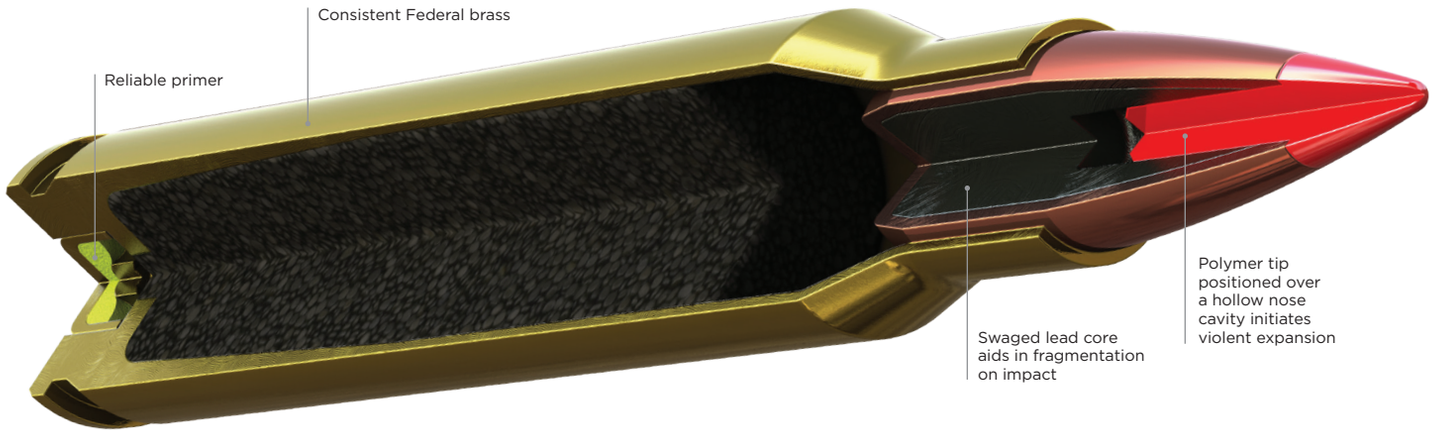
Proven From Africa To Alaska
The solid core of the Trophy Bonded Bear Claw allows the bullet to penetrate deep—even through the world's toughest game.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 17-24.

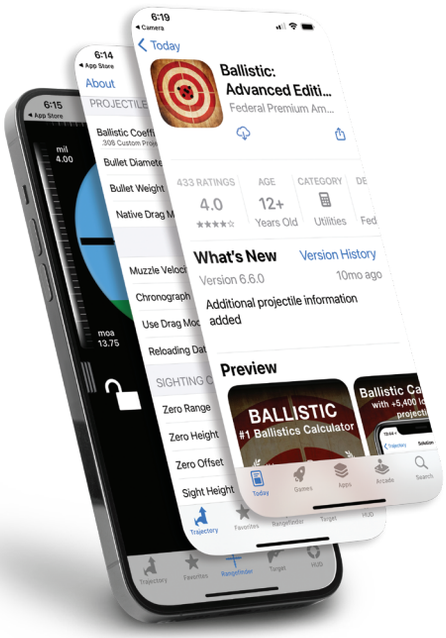
VARMINT & PREDATOR V-MAX

Destroy everything from prairie dogs to coyotes with the precision of Federal® Varmint & Predator V-Max®. The loads deliver accuracy and explosive expansion, and our extremely reliable brass, primer and propellant ensure the utmost reliability. ***Available in 20-count boxes.***

Ready To Explode
The V-Max bullet's polymer tip is carefully positioned over a hollow nose cavity to initiate violent fragmentation of the jacket and swaged lead core.



V-Max is a registered trademark of Hornady.



Download Ballistic: Advanced Edition

Check out Ballistic: Advanced Edition, the industry's No. 1 ballistics app for Apple devices. Powered by the world-renowned JBM Ballistics computer, the app calculates trajectory, windage, velocity, energy, lead, and bullet flight time for any valid range. Ballistic can compensate for atmospheric conditions such as temperature, barometric pressure, humidity and altitude.

With a library of more than 5,000 projectiles and factory loads, GPS and atmosphere awareness, full-size charts, a precision target log, and much more, Ballistic AE is a complete precision marksman tool.

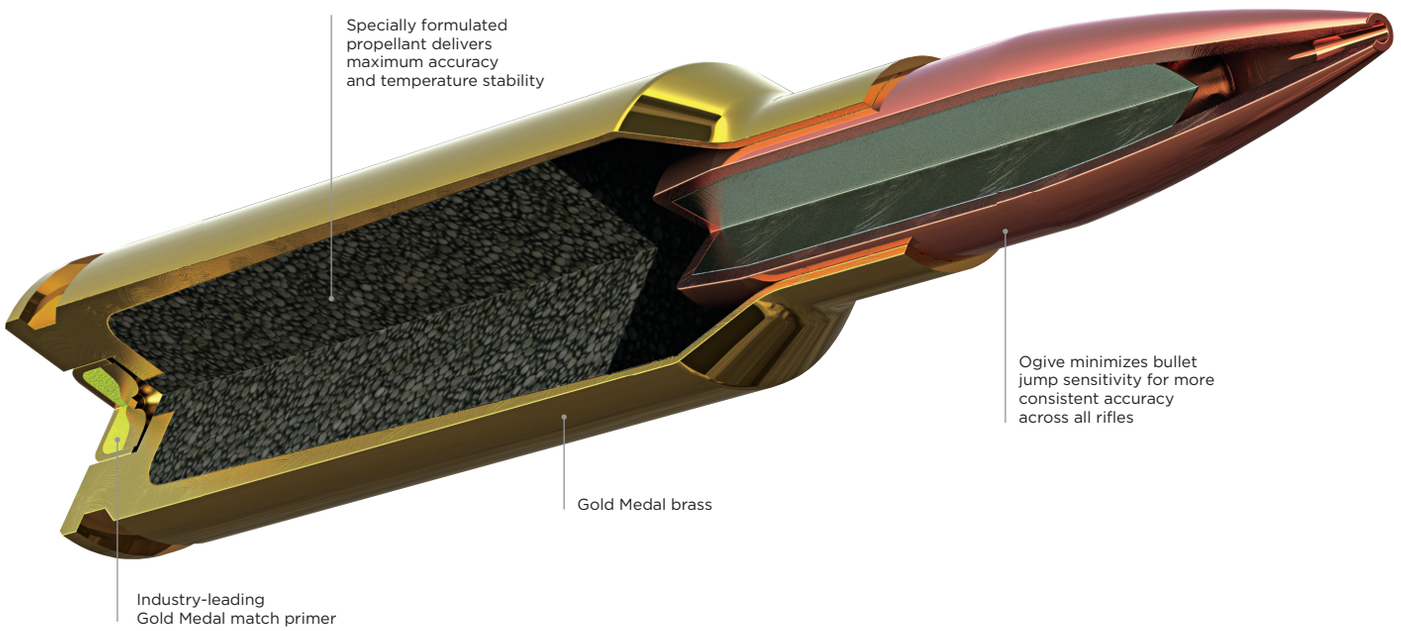
Learn more and start your download today.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 17-24.

GOLD MEDAL CENTERSTRIKE

Now you can truly go the distance. Gold Medal® CenterStrike™ uses a proprietary open tip match bullet with a sleek profile. The loads are held to extremely tight specifications for the ultimate long-range accuracy and consistency. ***Now available in 308 Win., 6.5 Creedmoor and 223 Rem.***

CENTERSTRIKE™



"The quality, control and consistency of Federal's Gold Medal match is simply unparalleled. It's factory ammunition with the precision and low standard deviation of handloads."

JIM GILLILAND
SNIPER SECTION LEADER
& COMPETITIVE LONG-RANGE SHOOTER

GOLD MEDAL BERGER

The most sought-after bullets among competitors on the Precision Rifle Series are now loaded into the industry's most trusted factory rifle ammunition. Gold Medal® Berger® loads feature an advanced boat-tail bullet with a high ballistic coefficient to provide the flattest trajectories, least wind drift and best long-range accuracy.

GOLD MEDAL SIERRA MATCHKING

The precision-built Sierra® MatchKing® bullet is shot to win more matches than any other rifle bullet, and our exclusive primer design provides the best sensitivity and most consistent ballistics in the industry.

AMERICAN EAGLE

Quality bullets, reloadable brass cases and dependable primers mean range-ready accuracy.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 17-24.

RIFLE BALLISTICS

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; CLM=cartridge length longer than SAAMI max, may not fit in all magazines. *Molycoat: molybdenum disulfide dry film lubricant

Federal Premium® Rifle

	FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	GOLD MEDAL PRIMER	BALLISTIC COEFFICIENT G1	BALLISTIC COEFFICIENT G7	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
FEDERAL PREMIUM BIG GAME														
	P223TC1	223 REM.	55	3.56	TROPHY COPPER	X	0.305		3240	2915	2613	2330	2066	1819
	P223S	223 REM.	55	3.56	BARNES TRIPLE-SHOCK X	X	0.209		3200	2738	2320	1940	1604	1323
	P223Q	223 REM.	60	3.89	NOSLER PARTITION	X	0.227		3160	2737	2350	1998	1679	1403
	P22250G	22-250 REM.	60	3.89	NOSLER PARTITION	X	0.227		3500	3043	2630	2253	1908	1601
	P224VLKBTSX1	224 VALKYRIE	78	5.05	BARNES TRIPLE-SHOCK X	X	0.383		2850	2611	2385	2170	1966	1774
	P243TC1	243 WIN.	85	5.51	TROPHY COPPER	X	0.391		3200	2947	2708	2481	2265	2061
	P243K	243 WIN.	85	5.51	BARNES TRIPLE-SHOCK X	X	0.333		3200	2904	2628	2367	2122	1891
	P243SS1	243 WIN.	90	5.83	SWIFT SCIROCCO II	X	0.419		3100	2869	2649	2440	2240	2050
	P243ELDX1	243 WIN.	90	5.83	ELD-X	X	0.409	-	3150	2910	2684	2468	2262	2066
	P243BCH1	243 WIN.	95	6.16	BERGER HYBRID HUNTER	X	0.434	0.223	3050	2829	2619	2418	2226	2043
	P243E	243 WIN.	100	6.48	NOSLER PARTITION	X	0.384		2850	2612	2386	2171	1968	1776
	P2506H	25-06 REM.	100	6.48	BARNES TRIPLE-SHOCK X	X	0.336		3210	2916	2641	2382	2138	1908
	P2506TC1	25-06 REM.	100	6.48	TROPHY COPPER	X	0.409		3210	2967	2737	2519	2311	2113
	P2506E	25-06 REM.	115	7.45	NOSLER PARTITION	X	0.389		3030	2785	2553	2333	2124	1925
	P65CRDTC1	6.5 CREEDMOOR	120	7.78	TROPHY COPPER	X	0.453		2875	2689	2510	2338	2174	2015
	P65CRDTA1	6.5 CREEDMOOR	130	8.42	TERMINAL ASCENT	X	0.532	0.263	2800	2629	2464	2305	2152	2005
	P65CRDBTSX1	6.5 CREEDMOOR	130	8.42	BARNES TRIPLE-SHOCK X	X	0.365		2825	2576	2341	2118	1906	1711
	P65CRDSS1	6.5 CREEDMOOR	130	8.42	SWIFT SCIROCCO II	X	0.571		2800	2640	2486	2337	2193	2054
	P65CRDELDX1	6.5 CREEDMOOR	143	9.27	ELD-X	X	0.625	0.315	2700	2557	2418	2284	2154	2029
	P65PRCTC1	6.5 PRC	120	7.78	TROPHY COPPER	X	0.497		3050	2856	2671	2493	2322	2158
	P65PRCTA1	6.5 PRC	130	8.42	TERMINAL ASCENT	X	0.532	0.263	3000	2821	2649	2483	2324	2170
NEW	P65PRCELDX1	6.5 PRC	143	9.27	ELD-X	X	0.625	0.315	2900	2751	2606	2466	2330	2199
	P270L	270 WIN.	130	8.42	BARNES TRIPLE-SHOCK X	X	0.374		3060	2804	2562	2333	2115	1909
	P270BCH1	270 WIN.	140	9.07	BERGER HYBRID HUNTER	X	0.528	0.271	2950	2772	2600	2435	2276	2123
	P270TA1	270 WIN.	136	8.81	TERMINAL ASCENT	X	0.493	0.247	3000	2807	2622	2445	2274	2111
	P270P	270 WIN.	130	8.42	NOSLER PARTITION	X	0.416		3060	2829	2610	2401	2202	2012
	P270TC1	270 WIN.	130	8.42	TROPHY COPPER	X	0.459		3060	2850	2650	2459	2275	2100
	P270TT1	270 WIN.	130	8.42	TROPHY BONDED TIP	X	0.440		3060	2841	2633	2434	2244	2063
	P270SS1	270 WIN.	130	8.42	SWIFT SCIROCCO II	X	0.450		3050	2837	2633	2439	2253	2075
	P270TT3	270 WIN.	140	9.07	TROPHY BONDED TIP	X	0.455		2950	2744	2547	2358	2177	2004
	P270ELDX1	270 WIN.	145	9.40	ELD-X	X	0.536	0.270	2890	2717	2550	2389	2234	2085
	P270E	270 WIN.	150	9.72	NOSLER PARTITION	X	0.466		2830	2634	2446	2266	2093	1928
	P270WSMTC1	270 WIN. SHORT MAGNUM	130	8.42	TROPHY COPPER	X	0.459		3280	3059	2850	2650	2458	2275
	P270WSMTT1	270 WIN. SHORT MAGNUM	130	8.42	TROPHY BONDED TIP	X	0.440		3280	3050	2832	2624	2426	2236
	P270WSMTA1	270 WIN. SHORT MAGNUM	136	8.81	TERMINAL ASCENT	X	0.493	0.247	3240	3036	2842	2655	2477	2305
	P270WSMBCH1	270 WIN. SHORT MAGNUM	140	9.07	BERGER HYBRID HUNTER	X	0.528	0.271	3200	3011	2830	2657	2489	2328
	P270WSMTT3	270 WIN. SHORT MAGNUM	140	9.07	TROPHY BONDED TIP	X	0.455		3200	2982	2774	2575	2385	2204
	P708C	7MM-08 REM.	140	9.07	BARNES TRIPLE-SHOCK X	X	0.394		2820	2589	2370	2162	1963	1777
	P708TC2	7MM-08 REM.	140	9.07	TROPHY COPPER	X	0.489		2800	2614	2435	2264	2100	1942
	P708TT2	7MM-08 REM.	140	9.07	TROPHY BONDED TIP	X	0.430		2800	2589	2388	2196	2012	1838
	P280TT2	280 REM.	140	9.07	TROPHY BONDED TIP	X	0.430		2950	2732	2524	2326	2136	1956
	P280A	280 REM.	150	9.72	NOSLER PARTITION	X	0.457		2890	2687	2494	2308	2130	1960
	P280AITC1	280 ACKLEY IMPROVED	140	9.07	TROPHY COPPER	X	0.489		3075	2877	2688	2506	2332	2165
	P280AITA1	280 ACKLEY IMPROVED	155	10.04	TERMINAL ASCENT	X	0.586	0.300	2930	2770	2615	2465	2321	2181
	P280AIBCH1	280 ACKLEY IMPROVED	168	10.89	BERGER HYBRID HUNTER	X	0.566	0.290	2830	2668	2511	2360	2214	2073
	P7RG	7MM REM. MAGNUM	140	9.07	NOSLER PARTITION	X	0.434		3150	2924	2709	2504	2308	2122
	P7RTC2	7MM REM. MAGNUM	140	9.07	TROPHY COPPER	X	0.489		3150	2949	2756	2572	2395	2226
	P7RTT2	7MM REM. MAGNUM	140	9.07	TROPHY BONDED TIP	X	0.430		3150	2922	2705	2499	2301	2113
	P7RTC3	7MM REM. MAGNUM	150	9.72	TROPHY COPPER	X	0.498		3025	2833	2649	2472	2302	2139
	P7RSS1	7MM REM. MAGNUM	150	9.72	SWIFT SCIROCCO II	X	0.515		3050	2863	2684	2511	2345	2186
	P7RTA1	7MM REM. MAGNUM	155	10.04	TERMINAL ASCENT	X	0.586	0.300	3000	2837	2680	2528	2382	2240
	P7RTT1	7MM REM. MAGNUM	160	10.37	TROPHY BONDED TIP	X	0.520		2900	2721	2549	2383	2224	2070
	P7RF	7MM REM. MAGNUM	160	10.37	NOSLER PARTITION	X	0.475		2950	2752	2563	2381	2207	2040
	P7RN	7MM REM. MAGNUM	160	10.37	BARNES TRIPLE-SHOCK X	X	0.392		2940	2702	2476	2261	2057	1863
	P7RELDX1	7MM REM. MAGNUM	162	10.50	ELD-X	X	0.631	0.318	2940	2791	2646	2506	2370	2239
	P7RBCH1	7MM REM. MAGNUM	168	10.89	BERGER HYBRID HUNTER	X	0.566	0.290	2870	2706	2549	2396	2249	2107
	P7PRCTA1	7MM PRC	155	10.04	TERMINAL ASCENT	X	0.586	0.300	3100	2933	2773	2618	2468	2324
NEW	P7PRCTA3	7MM PRC	170	11.02	TERMINAL ASCENT	X	0.645	0.325	2950	2803	2662	2524	2391	2262
NEW	P7PRCELDX1	7MM PRC	175	11.34	ELD-X	X	0.689	0.347	3000	2861	2726	2596	2469	2345
	P3030TC1	30-30 WIN.	150	9.72	TROPHY COPPER	X	0.222		2300	1943	1625	1354	1150	1021
	P3030G	30-30 WIN.	150	9.72	BARNES TRIPLE-SHOCK X	X	0.184		2220	1803	1447	1178	1017	919
	P3030D	30-30 WIN.	170	11.02	NOSLER PARTITION	X	0.254		2200	1894	1619	1380	1191	1060
	P308S	308 WIN.	150	9.72	NOSLER PARTITION	X	0.387		2840	2604	2380	2168	1966	1776
	P308V	308 WIN.	150	9.72	BARNES TRIPLE-SHOCK X	X	0.369		2820	2574	2341	2120	1911	1717
	P308TC3	308 WIN.	150	9.72	TROPHY COPPER	X	0.469		2820	2625	2439	2260	2089	1925
	P308TC2	308 WIN.	165	10.69	TROPHY COPPER	X	0.503		2700	2510	2329	2155	1988	1829
	P308TT2	308 WIN.	165	10.69	TROPHY BONDED TIP	X	0.450		2700	2503	2314	2133	1960	1797
	P308H	308 WIN.	165	10.69	BARNES TRIPLE-SHOCK X	X	0.398		2650	2430	2220	2021	1833	1659
	P308SS1	308 WIN.	165	10.69	SWIFT SCIROCCO II	X	0.470		2700	2511	2329	2156	1990	1830
	P308BCH1	308 WIN.	168	10.89	BERGER HYBRID HUNTER	X	0.489	0.251	2700	2518	2343	2176	2015	1860
	P308TA1	308 WIN.	175	11.34	TERMINAL ASCENT	X	0.520	0.258	2600	2432	2271	2116	1967	1824
	P308ELDX1	308 WIN.	178	11.53	ELD-X	X	0.552	0.278	2610	2452	2299	2152	2009	1872
	P308E	308 WIN.	180	11.66	NOSLER PARTITION	X	0.474		2570	2388	2213	2045	1885	1734
	P308TT1	308 WIN.	180	11.66	TROPHY BONDED TIP	X	0.500		2620	2445	2277	2116	1960	1812
	P3006TT2	30-06 SPRING.	165	10.69	TROPHY BONDED TIP	X	0.450		2800	2598	2405	2221	2044	1875
	P3006AD	30-06 SPRING.	165	10.69	NOSLER PARTITION	X	0.409		2830	2607	2395	2193	2000	1818
	P3006AF	30-06 SPRING.	165	10.69	BARNES TRIPLE-SHOCK X	X	0.398		2800	2573	2356	2151	1955	1771
	P3006SS1	30-06 SPRING.	165	10.69	SWIFT SCIROCCO II	X	0.470		2800	2607	2421	2244	2074	1910
	P3006BCH1	30-06 SPRING.	168	10.89	BERGER HYBRID HUNTER	X	0.489	0.251	2800	2614	2435	2264	2100	1942
	P3006TA1	30-06 SPRING.	175	11.34	TERMINAL ASCENT	X	0.520	0.258	2730	2558	2391	2232	2078	1930
	P3006ELDX1	30-06 SPRG.	178	11.53	ELD-X	X	0.552	0.278	2760	2596	2438	2286	2139	1998
	P3006F	30-06 SPRING.	180	11.66	NOSLER PARTITION	X	0.474		2700	2512	2332	2160	1995	1837
	P3006TT1	30-06 SPRING.	180	11.66	TROPHY BONDED TIP	X	0.500		2700	2522	2351	2186	2029	1877
	P3006TC1	30-06 SPRING.	180	11.66	TROPHY COPPER	X	0.523		2700	2530	2366	2208	2056	1910
	P3006AE	30-06 SPRING.	180	11.66	BARNES TRIPLE-SHOCK X	X	0.453		2700	2504	2316	2137	1965	1802
	P300WR	300 WIN. MAGNUM	165	10.69	BARNES TRIPLE-SHOCK X	X	0.398		3050	2810	2582	2365	2159	1963
	P300WK	300 WIN. MAGNUM	165	10.69	NOSLER PARTITION	X	0.409		3050	2816	2594	2382	2180	1989
	P300WTT2	300 WIN. MAGNUM	165	10.69	TROPHY BONDED TIP	X	0.450		3050	2837	2633	2439	2253	2075
	P300WTC2	300 WIN. MAGNUM	165	10.69	TROPHY COPPER	X	0.503		3050	2859	2675	2499	2330	2167
	P300WTT1	300 WIN. MAGNUM	180	11.66	TROPHY BONDED TIP	X	0.500		2960	2771	2591	2417	2250	2089
	P300WTC1	300 WIN. MAGNUM	180	11.66	TROPHY COPPER	X	0.523		2960	2780	2606	2439	2279	2124
	P300WD2	300 WIN. MAGNUM	180	11.66	NOSLER PARTITION	X	0.361		2960	2701	2456	2224	2005	1799
	P300WP	300 WIN. MAGNUM	180	11.66	BARNES TRIPLE-SHOCK X	X	0.453		2960	2752	2554	2364	2182	2009
	P300WSS1	300 WIN. MAGNUM	180	11.66	SWIFT SCIROCCO II	X	0.520		2950	2769	2595	2428	2266	2112
	P300WBCH1	300 WIN. MAGNUM	185	11.99	BERGER HYBRID HUNTER	X	0.533	0.273	2950	2773	2603	2440	2282	2130
	P300WTA1	300 WIN. MAGNUM	200	12.96	TERMINAL ASCENT	X	0.608	0.304	2810	2660	2514	2373	2236	2105

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

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ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)						WIND DRIFT IN INCHES 10 MPH CROSSWIND						HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE.										TEST BARREL LENGTH
												AVERAGE RANGE					LONG RANGE					
MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	INCHES
1282	1038	834	663	521	404	0.9	3.7	8.8	16.6	27.5	-0.3	⊕	-2.6	-10.3	0.4	1.3	⊕	-6.4	-19.3	-40.2	24
1250	915	657	460	314	214	1.3	5.8	14.1	27.7	47.5	-0.3	⊕	-3.2	-12.9	0.5	1.6	⊕	-8.1	-25.8	-57.5	24
1330	998	736	532	375	262	1.2	5.3	13.1	25.2	42.9	-0.2	⊕	-3.2	-12.7	0.5	1.6	⊕	-8.0	-24.8	-54.4	24
1632	1234	922	676	485	341	1.1	4.7	11.3	21.6	36.9	-0.3	⊕	-2.3	-9.6	0.2	1.1	⊕	-6.2	-19.3	-42.4	24
1407	1181	985	815	669	545	0.9	3.4	8.2	15.2	24.9	-0.2	⊕	-3.6	-13.4	0.7	1.8	⊕	-8.0	-23.3	-47.7	24
1933	1639	1384	1162	969	801	0.7	2.9	6.8	12.5	20.5	-0.3	⊕	-2.5	-9.8	0.3	1.3	⊕	-6.0	-17.6	-36.2	24
1933	1592	1303	1057	850	675	0.8	3.5	8.1	15.2	24.9	-0.3	⊕	-2.7	-10.3	0.4	1.3	⊕	-6.3	-19.0	-39.2	24
1920	1644	1402	1189	1003	840	0.6	2.8	6.5	12.1	19.7	-0.3	⊕	-2.8	-10.4	0.4	1.4	⊕	-6.3	-18.5	-37.6	24
1983	1693	1439	1217	1022	853	0.6	2.8	6.5	12.1	19.8	-0.3	⊕	-2.6	-10.1	0.4	1.3	⊕	-6.1	-18.0	-36.7	24
1962	1688	1446	1233	1045	880	0.6	2.8	6.4	11.9	19.3	-0.2	⊕	-2.9	-10.8	0.5	1.4	⊕	-6.5	-18.9	-38.4	24
1803	1515	1264	1047	860	701	0.9	3.4	8.2	15.2	24.8	-0.2	⊕	-3.6	-13.4	0.7	1.8	⊕	-8.0	-23.3	-47.6	24
2288	1888	1549	1260	1015	808	0.8	3.4	7.9	15.0	24.5	-0.3	⊕	-2.6	-10.2	0.4	1.3	⊕	-6.3	-18.8	-38.7	24
2288	1955	1664	1409	1185	991	0.7	2.7	6.4	11.8	19.3	-0.3	⊕	-2.5	-9.6	0.3	1.2	⊕	-5.9	-17.2	-35.2	24
2344	1981	1665	1390	1152	946	0.7	3.1	7.3	13.7	22.2	-0.2	⊕	-3.0	-11.3	0.5	1.5	⊕	-6.8	-20.1	-40.9	24
2202	1926	1679	1457	1259	1082	0.7	2.6	6.0	11.1	17.9	-0.2	⊕	-3.3	-12.1	0.6	1.7	⊕	-7.1	-20.8	-41.6	24
2263	1995	1752	1533	1337	1160	0.7	2.5	5.8	10.7	17.2	-0.2	⊕	-3.5	-12.8	0.7	1.8	⊕	-7.5	-21.6	-43.1	24
2303	1916	1581	1294	1049	845	0.9	3.7	8.8	16.2	26.9	-0.2	⊕	-3.7	-13.9	0.8	1.9	⊕	-8.3	-24.2	-50.0	24
2263	2012	1784	1576	1388	1218	0.6	2.4	5.3	9.9	15.9	-0.2	⊕	-3.5	-12.5	0.7	1.7	⊕	-7.3	-21.1	-42.1	24
2315	2076	1857	1657	1474	1306	0.5	2.1	5.1	9.4	15.1	-0.1	⊕	-3.8	-13.6	0.8	1.9	⊕	-7.9	-22.5	-44.5	24
2478	2174	1901	1656	1436	1241	0.5	2.4	5.6	10.1	16.5	-0.3	⊕	-2.8	-10.5	0.4	1.4	⊕	-6.3	-18.0	-36.5	24
2598	2297	2025	1780	1558	1359	0.5	2.3	5.3	9.6	15.6	-0.2	⊕	-2.9	-10.7	0.5	1.5	⊕	-6.4	-18.4	-36.9	24
2670	2402	2156	1931	1724	1535	0.5	2.1	4.7	8.4	13.6	-0.2	⊕	-3.1	-11.3	0.6	1.6	⊕	-6.6	-19.0	-37.9	24
2703	2269	1895	1571	1292	1052	0.7	3.2	7.5	14.1	23.0	-0.2	⊕	-2.9	-11.2	0.5	1.5	⊕	-6.7	-20.0	-40.8	24
2705	2388	2102	1843	1610	1401	0.6	2.4	5.4	9.9	16.2	-0.2	⊕	-3.1	-11.2	0.5	1.5	⊕	-6.6	-19.1	-38.5	24
2718	2379	2076	1805	1562	1345	0.6	2.5	5.7	10.5	17.1	-0.2	⊕	-2.9	-10.9	0.5	1.5	⊕	-6.5	-18.8	-38.0	24
2703	2310	1966	1664	1399	1168	0.7	2.9	6.6	12.4	20.2	-0.2	⊕	-2.9	-10.8	0.5	1.4	⊕	-6.5	-19.1	-38.8	24
2703	2345	2027	1745	1494	1273	0.6	2.6	6.0	11.0	18.0	-0.3	⊕	-2.8	-10.5	0.4	1.4	⊕	-6.3	-18.4	-37.3	24
2703	2330	2001	1711	1454	1228	0.6	2.7	6.3	11.6	18.9	-0.3	⊕	-2.8	-10.6	0.5	1.4	⊕	-6.4	-18.7	-38.0	24
2685	2322	2001	1717	1465	1242	0.6	2.7	6.1	11.4	18.5	-0.2	⊕	-2.9	-10.7	0.5	1.4	⊕	-6.4	-18.7	-37.9	24
2705	2340	2016	1728	1473	1249	0.7	2.8	6.3	11.9	19.2	-0.2	⊕	-3.1	-11.6	0.6	1.6	⊕	-6.9	-20.1	-40.6	24
2689	2376	2093	1837	1607	1399	0.6	2.4	5.5	10.1	16.4	-0.2	⊕	-3.2	-11.7	0.6	1.6	⊕	-6.9	-20.0	-40.1	24
2667	2310	1992	1709	1459	1238	0.7	2.8	6.6	12.3	19.7	-0.2	⊕	-3.5	-12.8	0.7	1.7	⊕	-7.6	-22.0	-44.1	24
3105	2702	2344	2026	1744	1494	0.6	2.3	5.5	10.1	16.3	-0.3	⊕	-2.2	-8.7	0.2	1.1	⊕	-5.4	-15.8	-31.9	24
3105	2685	2315	1988	1699	1443	0.6	2.4	5.8	10.5	17.1	-0.3	⊕	-2.2	-8.8	0.2	1.1	⊕	-5.5	-16.0	-32.4	24
3170	2783	2438	2129	1852	1604	0.5	2.2	5.2	9.4	15.2	-0.3	⊕	-2.3	-8.9	0.3	1.1	⊕	-5.5	-15.9	-31.9	24
3183	2818	2490	2194	1926	1685	0.5	2.1	4.9	8.9	14.3	-0.3	⊕	-2.3	-9.0	0.3	1.2	⊕	-5.6	-16.0	-32.0	24
3183	2763	2391	2062	1768	1509	0.6	2.4	5.7	10.4	17.1	-0.3	⊕	-2.4	-9.4	0.3	1.2	⊕	-5.8	-16.7	-33.8	24
2472	2084	1746	1452	1198	982	0.9	3.4	8.1	14.9	24.4	-0.2	⊕	-3.7	-13.6	0.8	1.8	⊕	-8.1	-23.6	-48.1	24
2437	2124	1844	1593	1370	1172	0.7	2.7	6.4	11.8	18.9	-0.2	⊕	-3.6	-13.0	0.7	1.8	⊕	-7.7	-22.2	-44.4	24
2437	2084	1772	1498	1258	1050	0.8	3.1	7.4	13.6	22.1	-0.1	⊕	-3.7	-13.5	0.8	1.8	⊕	-8.0	-23.2	-46.8	24
2705	2320	1980	1681	1419	1189	0.7	2.9	6.8	12.7	20.5	-0.2	⊕	-3.2	-11.8	0.6	1.6	⊕	-7.0	-20.6	-41.6	24
2782	2405	2071	1774	1511	1279	0.7	2.9	6.5	12.2	19.6	-0.2	⊕	-3.3	-12.2	0.6	1.7	⊕	-7.2	-21.1	-42.4	24
2939	2573	2246	1953	1691	1457	0.5	2.4	5.5	10.2	16.6	-0.3	⊕	-2.7	-10.2	0.4	1.4	⊕	-6.1	-17.8	-36.0	24
2954	2640	2353	2092	1854	1637	0.5	2.2	4.9	8.9	14.5	-0.2	⊕	-3.1	-11.2	0.6	1.5	⊕	-6.6	-18.8	-37.7	24
2987	2655	2352	2078	1829	1604	0.6	2.3	5.3	9.8	15.8	-0.2	⊕	-3.4	-12.2	0.7	1.7	⊕	-7.2	-20.7	-41.3	24
3084	2657	2281	1949	1656	1399	0.6	2.6	6.1	11.3	18.5	-0.3	⊕	-2.6	-9.9	0.4	1.3	⊕	-6.0	-17.6	-35.8	24
3084	2703	2362	2057	1783	1540	0.5	2.3	5.4	9.8	16.0	-0.3	⊕	-2.5	-9.6	0.3	1.3	⊕	-5.9	-16.9	-34.1	24
3084	2654	2275	1941	1646	1388	0.6	2.7	6.2	11.4	18.7	-0.3	⊕	-2.6	-10.0	0.4	1.3	⊕	-6.1	-17.6	-35.9	24
3047	2673	2337	2035	1765	1524	0.6	2.4	5.6	10.2	16.7	-0.2	⊕	-2.9	-10.7	0.5	1.4	⊕	-6.4	-18.4	-37.1	24
3098	2730	2399	2101	1832	1592	0.5	2.3	5.3	9.7	15.8	-0.3	⊕	-2.8	-10.3	0.4	1.4	⊕	-6.2	-17.8	-36.0	24
3097	2770	2472	2200	1952	1727	0.5	2.1	4.7	8.6	13.9	-0.2	⊕	-2.9	-10.5	0.5	1.4	⊕	-6.2	-17.9	-35.7	24
2988	2630	2308	2017	1757	1523	0.6	2.5	5.6	10.4	16.9	-0.2	⊕	-3.2	-11.7	0.6	1.6	⊕	-6.9	-20.0	-40.2	24
3091	2691	2333	2014	1730	1479	0.6	2.7	6.0	11.3	18.2	-0.2	⊕	-3.1	-11.5	0.6	1.6	⊕	-6.8	-19.8	-40.0	24
3071	2593	2178	1816	1503	1234	0.8	3.2	7.6	14.2	23.0	-0.2	⊕	-3.3	-12.2	0.6	1.6	⊕	-7.3	-21.5	-43.7	24
3109	2801	2518	2259	2021	1803	0.5	2.0	4.5	8.1	13.2	-0.2	⊕	-3.0	-10.9	0.5	1.5	⊕	-6.4	-18.3	-36.6	24
3072	2732	2423	2141	1886	1656	0.6	2.3	5.2	9.6	15.5	-0.2	⊕	-3.3	-11.8	0.6	1.6	⊕	-6.9	-20.0	-40.0	24
3307	2961	2646	2359	2097	1858	0.4	1.9	4.5	8.2	13.2	-0.3	⊕	-2.6	-9.7	0.4	1.3	⊕	-5.8	-16.7	-33.2	24
3285	2966	2674	2405	2157	1930	0.5	1.9	4.4	7.9	12.8	-0.2	⊕	-3.0	-10.8	0.5	1.5	⊕	-6.3	-18.1	-36.1	24
3497	3180	2888	2618	2368	2137	0.4	1.8	4.0	7.2	11.5	-0.2	⊕	-2.8	-10.2	0.4	1.4	⊕	-6.1	-17.3	-34.1	24
1762	1258	880	611	441	347	2.0	8.9	21.5	41.0	67.0	0.2	⊕	-7.9	-29.0	2.2	3.9	⊕	-17.2	-53.8	-117.0	24
1641	1083	697	462	344	281	2.6	11.5	28.4	53.2	84.2	0.3	⊕	-9.4	-35.8	2.7	4.7	⊕	-21.7	-68.6	-147.8	24
1827	1354	990	719	535	424	1.8	8.1	19.4	36.7	59.9	0.3	⊕	-8.4	-30.0	2.4	4.2	⊕	-17.4	-53.5	-114.4	24
2686	2259	1887	1565	1287	1050	0.9	3.4	8.2	15.1	24.7	-0.2	⊕	-3.6	-13.4	0.7	1.8	⊕	-8.0	-23.4	-47.8	24
2648	2207	1825	1497	1217	982	0.9	3.6	8.7	16.0	26.6	-0.2	⊕	-3.7	-13.9	0.8	1.9	⊕	-8.3	-24.2	-49.9	24
2648	2296	1981	1701	1453	1234	0.7	2.8	6.6	12.2	19.7	-0.2	⊕	-3.5	-12.9	0.7	1.8	⊕	-7.6	-22.2	-44.4	24
2671	2309	1986	1701	1448	1225	0.7	2.9	7.1	13.0	20.9	-0.1	⊕	-4.0	-14.5	0.9	2.0	⊕	-8.5	-24.5	-49.0	24
2671	2294	1961	1667	1408	1182	0.7	3.1	7.4	13.6	22.1	-0.1	⊕	-4.1	-14.7	0.9	2.0	⊕	-8.6	-24.7	-49.9	24
2573	2163	1806	1497	1231	1008	0.8	3.7	8.7	16.0	26.7	-0.1	⊕	-4.4	-15.9	1.0	2.2	⊕	-9.3	-26.9	-55.4	24
2671	2310	1988	1702	1450	1227	0.7	2.9	7.0	13.0	20.9	-0.1	⊕	-4.0	-14.5	0.9	2.0	⊕	-8.5	-24.5	-48.9	24
2719	2365	2048	1766	1514	1291	0.7	2.8	6.7	12.3	19.9	-0.1	⊕	-4.0	-14.4	0.9	2.0	⊕	-8.4	-24.1	-48.1	24
2627	2299	2004	1740	1503	1292	0.6	2.8	6.7	12.1	19.6	-0.1	⊕	-4.4	-15.6	1.0	2.2	⊕	-9.0	-25.6	-51.2	24
2692	2375	2088	1829	1596	1386	0.6	2.6	6.2	11.3	18.1	-0.1	⊕	-4.3	-15.2	1.0	2.1	⊕	-8.8	-25.0	-49.6	24
2640	2278	1957	1672	1420	1202	0.7	3.2	7.5	13.6	22.5	-0.1	⊕	-4.7	-16.4	1.1	2.3	⊕	-9.4	-26.9	-54.7	24
2743	2389	2072	1789	1536	1313	0.6	2.9	6.9	12.5	20.3	-0.1	⊕	-4.3	-15.4	1.0	2.2	⊕	-8.9	-25.5	-51.1	24
2872	2473	2119	1806	1531	1288	0.8	2.9	7.0	12.9	20.9	-0.2	⊕	-3.6	-13.3	0.8	1.8	⊕	-7.9	-22.8	-45.8	24
2934	2490	2101	1761	1465	1210	0.8	3.2	7.7	14.2	23.1	-0.2	⊕	-3.6	-13.3	0.7	1.8	⊕	-7.9	-23.0	-46.8	24
2872	2425	2034	1694	1400	1149	0.9	3.4	8.1	14.9	24.4	-0.1	⊕	-3.7	-13.8	0.8	1.9	⊕	-8.2	-23.8	-48.7	24
2872	2489	2148	1844	1575	1337	0.7	2.8	6.7	12.3	19.8	-0.2	⊕	-3.6	-13.2	0.7	1.8	⊕	-7.8	-22.5	-45.0	24
2924	2549	2212	1912	1644	1406	0.7	2.7	6.4	11.8	18.9	-0.2	⊕	-3.6	-13.0	0.7	1.8	⊕	-7.7	-22.2	-44.4	24
2896	2542	2222	1935	1678	1447	0.7	2.6	6.2	11.4	18.2	-0.1	⊕	-3.8	-13.7	0.8	1.9	⊕	-8.1	-23.1	-45.9	24
3011	2664	2350	2065	1809	1578	0.6	2.4	5.7	10.5	17.0	-0.1	⊕	-3.6	-13.1	0.8	1.8	⊕	-7.7	-22.1	-44.2	24
2913	2523	2174	1865	1591	1348	0.7	2.9	7.0	12.9	20.7	-0.1	⊕	-4.0	-14.5	0.9	2.0	⊕	-8.5	-24.4	-48.7	24
2913	2542	2208	1911	1644	1408	0.7	2.7	6.6	12.0	19.4	-0.1	⊕	-3.9	-14.3	0.9	2.0	⊕	-8.4	-23.9	-47.7	24
2913	2557	2236	1948	1689	1457	0.6	2.6	6.2	11.5	18.4	-0.1	⊕	-3.9	-14.1	0.9	2.0	⊕	-8.3	-23.6	-46.9	24
2913	2506	2144	1824	1543	1297	0.7	3.1	7.3	13.5	21.9	-0.1	⊕	-4.0	-14.7	0.9	2.0	⊕	-8.6	-24.7	-49.7	24
3408	2892	2442	2049	1707	1411	0.7	3.0	7.0	13.2	21.4	-0.2	⊕	-2.9	-11.0	0.5	1.5	⊕	-6.6	-19.6	-39.9	24
3408	2905	2464	2078	1742	1449	0.7	3.0	6.8	12.8	20.8	-0.2	⊕	-2.9	-10.9	0.5	1.5	⊕	-6.6	-19.4	-39.5	24
3408	2948	2540	2179	1859	1577	0.6	2.7	6.1	11.4	18.5	-0.2	⊕	-2.9	-10.7	0.5	1.4	⊕	-6.4	-18.7	-37.9	24
3408	2994	2622	2289	1989	1721	0.5	2.4	5.5	10.0	16.3	-0.3	⊕	-2.8	-10.4	0.4	1.4	⊕	-6.3	-18.0	-36.3	24
3502	3070	2682	2334	2023	1745	0.6	2.5	5.7	10.5	17.1	-0.2	⊕	-3.1	-11.2	0.5	1.5	⊕	-6.6	-19.3	-38.9	24
3502	3088	2715	2378	2075	1803	0.6	2.4	5.4	10.0	16.3	-0.2	⊕	-.0	-11.1	0.5	1.5	⊕	-6.6	-19.0	-38.3	24
3502	2915	2411	1978	1607	1294	0.9	3.5	8.3	15.4	25.3	-0.2	⊕	-3.3	-12.3	0.6	1.6	⊕	-7.4	-21.9	-45.0	24
3502	3027	2607	2233	1904	1612	0.7	2.8	6.3	11.8	19.2	-0.2	⊕	-3.1	-11.5	0.6	1.6	⊕	-6.8	-20.0	-40.4	24
3478	3064	2691	2355	2053	1782	0.6	2.4	5.5	10.1	16.4	-0.2	⊕	-3.1	-11.2	0.6	1.5	⊕	-6.6	-19.2	-38.7	24
3575	3159	2784	2445	2139	1864	0.6	2.4	5.3	9.8	16.0	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.6	-19.1	-38.3	24
3506	3141	2806	2500	2221	1967	0.6	2.2	4.9	9.1	14.8	-0.2	⊕	-3.4	-12.3	0.7	1.7	⊕	-7.2	-20.6	-41.1	24

RIFLE BALLISTICS

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; CLM=cartridge length longer than SAAMI max, may not fit in all magazines. *Molycoat: molybdenum disulfide dry film lubricant

Federal Premium® Rifle

	FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	GOLD MEDAL PRIMER	BALLISTIC COEFFICIENT G1	BALLISTIC COEFFICIENT G7	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
FEDERAL PREMIUM BIG GAME (CONT.)														
	P300WELDX1	300 WIN. MAGNUM	200	12.96	ELD-X	X	0.597	0.301	2860	2705	2555	2410	2270	2135
	P300WSMTT2	300 WIN. SHORT MAGNUM	165	10.69	TROPHY BONDED TIP	X	0.450		3130	2913	2706	2508	2319	2138
	P300WSMTC2	300 WIN. SHORT MAGNUM	165	10.69	TROPHY COPPER	X	0.503		3120	2926	2739	2561	2389	2224
	P300WSMG	300 WIN. SHORT MAGNUM	165	10.69	BARNES TRIPLE-SHOCK X	X	0.398		3130	2885	2653	2433	2224	2024
	P300WSMTT1	300 WIN. SHORT MAGNUM	180	11.66	TROPHY BONDED TIP	X	0.500		2960	2771	2591	2417	2250	2089
	P300WSMB	300 WIN. SHORT MAGNUM	180	11.66	NOSLER PARTITION	X	0.474		2980	2780	2589	2406	2231	2063
	P300WSMTC1	300 WIN. SHORT MAGNUM	180	11.66	TROPHY COPPER	X	0.523		2960	2780	2606	2439	2279	2124
	P300WSMSS1	300 WIN. SHORT MAGNUM	180	11.66	SWIFT SCIROCCO II	X	0.520		2960	2779	2604	2436	2275	2120
	P300WSMBCH1	300 WIN. SHORT MAGNUM	185	11.99	BERGER HYBRID HUNTER	X	0.533	0.273	2950	2773	2603	2440	2282	2130
	P300WSMTA1	300 WIN. SHORT MAGNUM	200	12.96	TERMINAL ASCENT	X	0.608	0.304	2810	2660	2514	2373	2236	2105
	P300WSMELDX1	300 WIN. SHORT MAGNUM	200	12.96	ELD-X	X	0.597	0.301	2820	2666	2518	2374	2235	2101
NEW	P300PRCTA3	300 PRC	210	13.61	TERMINAL ASCENT	X	0.663	0.341	2850	2711	2575	2444	2317	2193
	P338FTC2	338 FEDERAL	200	12.96	TROPHY COPPER	X	0.425		2630	2424	2228	2041	1863	1697
	P338FTT2	338 FEDERAL	200	12.96	TROPHY BONDED TIP	X	0.440		2630	2431	2241	2060	1887	1725
	P338LTC1	338 LAPUA MAGNUM	250	16.20	TROPHY COPPER	X	0.625		2850	2702	2559	2420	2286	2156
	P375T4	375 H&H MAGNUM	250	16.20	TROPHY BONDED BEAR CLAW	X	0.340		2670	2412	2169	1940	1728	1534
	P375F	375 H&H MAGNUM	300	19.44	NOSLER PARTITION	X	0.398		2440	2230	2031	1841	1666	1504
	P4570T4	45-70 GOVERNMENT	300	19.44	TROPHY BONDED BEAR CLAW	X	0.215		1850	1612	1401	1227	1099	1011
FEDERAL PREMIUM SAFARI														
	P9362SA	9.3X62 MAUSER	286	18.53	SWIFT A-FRAME	X	0.385		2360	2147	1945	1756	1582	1423
	P9362WH	9.3X62 MAUSER	286	18.53	WOODLEIGH HYDRO	X	0.260		2360	2049	1763	1509	1295	1133
	P9374SA	9.3X74 R	286	18.53	SWIFT A-FRAME	X	0.385		2360	2147	1945	1756	1582	1423
	P9374WH	9.3X74 R	286	18.53	WOODLEIGH HYDRO	X	0.260		2360	2049	1763	1509	1295	1133
	P375SA	375 H&H MAGNUM	300	19.44	SWIFT A-FRAME	X	0.325		2450	2194	1953	1730	1527	1349
	P375T1	375 H&H MAGNUM	300	19.44	TROPHY BONDED BEAR CLAW	X	0.342		2400	2159	1932	1721	1529	1359
	P375T2	375 H&H MAGNUM	300	19.44	TROPHY BONDED SLEDGEHAMMER SOLID	X	0.253		2440	2115	1815	1548	1321	1147
	P375WH	375 H&H MAGNUM	300	19.44	WOODLEIGH HYDRO	X	0.260		2500	2179	1881	1614	1380	1195
	P416SA	416 RIGBY	400	25.92	SWIFT A-FRAME	X	0.367		2350	2128	1917	1722	1542	1381
	P416T1	416 RIGBY	400	25.92	TROPHY BONDED BEAR CLAW	X	0.374		2300	2084	1880	1691	1517	1362
	P416T2	416 RIGBY	400	25.92	TROPHY BONDED SLEDGEHAMMER SOLID	X	0.273		2370	2073	1798	1551	1339	1171
	P416WH	416 RIGBY	400	25.92	WOODLEIGH HYDRO	X	0.260		2400	2086	1797	1539	1319	1149
	P416RSA	416 REM. MAGNUM	400	25.92	SWIFT A-FRAME	X	0.367		2400	2175	1962	1763	1580	1413
	P416RT1	416 REM. MAGNUM	400	25.92	TROPHY BONDED BEAR CLAW	X	0.373		2400	2179	1969	1772	1591	1426
	P416RT2	416 REM. MAGNUM	400	25.92	TROPHY BONDED SLEDGEHAMMER SOLID	X	0.273		2400	2100	1823	1574	1357	1185
	P458T1	458 WIN. MAGNUM	400	25.92	TROPHY BONDED BEAR CLAW	X	0.353		2250	2025	1813	1619	1442	1290
	P458T2	458 WIN. MAGNUM	500	32.40	TROPHY BONDED BEAR CLAW	X	0.282		2090	1822	1580	1369	1198	1076
	P458T3	458 WIN. MAGNUM	500	32.40	TROPHY BONDED SLEDGEHAMMER SOLID	X	0.328		1950	1729	1528	1352	1205	1096
	P458SA	458 WIN. MAGNUM	500	32.40	SWIFT A-FRAME	X	0.361		2090	1878	1683	1503	1345	1212
	P458LT1	458 LOTT	500	32.40	TROPHY BONDED BEAR CLAW	X	0.282		2300	2016	1755	1520	1319	1161
	P458LT2	458 LOTT	500	32.40	TROPHY BONDED SLEDGEHAMMER SOLID	X	0.328		2300	2055	1825	1616	1427	1267
	P470T1	470 NITRO EXPRESS	500	32.40	TROPHY BONDED BEAR CLAW	X	0.299		2150	1892	1657	1445	1268	1131
	P470T2	470 NITRO EXPRESS	500	32.40	TROPHY BONDED SLEDGEHAMMER SOLID	X	0.280		2150	1875	1627	1406	1226	1094
	P500NSA	500 NITRO EXPRESS	570	36.94	SWIFT A-FRAME	X	0.306		2100	1851	1625	1422	1252	1122
	P500NWH	500 NITRO EXPRESS	570	36.94	WOODLEIGH HYDRO	X	0.260		2100	1809	1550	1328	1156	1040
FEDERAL PREMIUM GOLD MEDAL®														
	GM223M	223 REM.	69	4.47	SIERRA MATCHKING BTHP	X	0.301	0.165	2950	2642	2353	2084	1832	1604
	GM223BH73	223 REM.	73	4.73	BERGER BT TARGET	X	0.348	0.178	2800	2541	2296	2065	1847	1648
	GM223M3	223 REM.	77	4.99	SIERRA MATCHKING BTHP	X	0.372	0.188	2720	2481	2255	2041	1838	1652
	GM223OTM3	223 REM.	77	4.99	CENTERSTRIKE OTM	X	0.356	0.183	2720	2471	2235	2012	1803	1612
	GM224VLKBH2	224 VALKYRIE	80.5	5.22	BERGER BT TARGET	X	0.441	0.226	2925	2713	2512	2318	2134	1958
	GM224VLK1	224 VALKYRIE	90	5.83	SIERRA MATCHKING BTHP	X	0.563	0.274	2700	2542	2388	2241	2098	1961
	GM6CRDBH1	6MM CREEDMOOR	105	6.80	BERGER HYBRID	X	0.536	0.275	3025	2846	2674	2509	2350	2196
	GM6CRDM1	6MM CREEDMOOR	107	6.93	SIERRA MATCHKING BTHP	X	0.547	0.271	3000	2826	2658	2497	2341	2191
	GM6CRDLRHT1	6MM CREEDMOOR	109	7.06	BERGER HYBRID	X	0.568	0.292	2975	2808	2647	2492	2342	2197
	GM65CRDBH130	6.5 CREEDMOOR	130	8.42	BERGER HYBRID OTM	X	0.560	0.287	2825	2661	2503	2351	2204	2062
	GM65CRD1	6.5 CREEDMOOR	140	9.07	SIERRA MATCHKING BTHP	X	0.535	0.261	2675	2509	2350	2196	2048	1905
	GM65CRDBH2	6.5 CREEDMOOR	140	9.07	BERGER HYBRID	X	0.607	0.311	2725	2577	2434	2295	2161	2031
	GM65CRDOTM1	6.5 CREEDMOOR	140	9.07	CENTERSTRIKE OTM	X	0.554	0.285	2675	2515	2360	2211	2068	1929
	GM65PRCBH1	6.5 PRC	140	9.07	BERGER HYBRID	X	0.607	0.311	2925	2770	2621	2476	2336	2201
	GM308M	308 WIN.	168	10.89	SIERRA MATCHKING BTHP	X	0.462	0.224	2650	2460	2277	2103	1936	1778
	GM308OTM1	308 WIN.	168	10.89	CENTERSTRIKE OTM	X	0.450	0.221	2650	2455	2268	2089	1918	1758
	GM308OTM2	308 WIN.	175	11.34	CENTERSTRIKE OTM	X	0.505	0.257	2600	2427	2262	2102	1949	1803
	GM308M2	308 WIN.	175	11.34	SIERRA MATCHKING BTHP	X	0.505	0.250	2600	2427	2262	2102	1949	1803
	GM308BH185	308 WIN.	185	11.99	BERGER JUGGERNAUT OTM	X	0.552	0.283	2600	2442	2289	2143	2001	1864
	GM3006M	30-06 SPRING.	168	10.89	SIERRA MATCHKING BTHP	X	0.463	0.224	2700	2508	2324	2148	1980	1819
	GM300WM	300 WIN. MAGNUM	190	12.31	SIERRA MATCHKING BTHP	X	0.533	0.275	2900	2725	2557	2395	2239	2089
	GM300WMBH1	300 WIN. MAGNUM	215	13.93	BERGER HYBRID	X	0.691	0.354	2825	2692	2563	2437	2315	2196
	GM338LM	338 LAPUA MAG	250	16.20	SIERRA MATCHKING BTHP	X	0.587	0.318	2950	2789	2634	2484	2339	2199
	GM338LM2	338 LAPUA MAG	300	19.44	SIERRA MATCHKING BTHP	X	0.768	0.387	2580	2466	2355	2248	2143	2040
FEDERAL PREMIUM HAMMERDOWN™														
	LG30301	30-30 WIN.	150	9.72	BONDED HOLLOW POINT	X	0.268		2390	2086	1805	1553	1337	1167
	LG35R1	35 REM.	220	14.26	BONDED HOLLOW POINT	X	0.286		1990	1734	1505	1309	1155	1048
NEW	LG360BH1	360 BUCKHAMMER	220	14.26	BONDED SOFT POINT	X	0.263		2000	1723	1476	1271	1117	1016
	LG444M1	444 MARLIN	270	17.50	BONDED HOLLOW POINT	X	0.193		2250	1848	1500	1225	1049	945
	LG45701	45-70 GOVERNMENT	300	19.44	BONDED HOLLOW POINT	X	0.290		1850	1612	1401	1227	1099	1011

FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	125 YDS.	150 YDS.
FEDERAL PREMIUM HAMMERDOWN™ REVOLVER CALIBER CARBINE											
LG327F1	327 FEDERAL MAGNUM	127	8.23	BONDED HOLLOW POINT	1650	1566	1486	1411	1341	1277	1218
LG3571	357 MAGNUM	170	11.02	BONDED SOFT POINT	1610	1523	1441	1366	1296	1232	1176
LG441	44 REM. MAGNUM	270	17.50	BONDED SOFT POINT	1715	1628	1544	1464	1390	1321	1257
LG45C1	45 COLT	250	16.20	BONDED HOLLOW POINT	1025	988	955	926	900	875	852

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

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ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)						WIND DRIFT IN INCHES 10 MPH CROSSWIND					HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE.										TEST BARREL LENGTH
												AVERAGE RANGE				LONG RANGE					
MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	INCHES
3632	3249	2900	2580	2289	2024	0.6	2.2	4.9	9.1	14.7	-0.2	⊕	-3.3	-11.8	0.6	1.6	⊕	-6.9	-19.9	-39.6	24
3589	3108	2682	2305	1970	1675	0.6	2.6	5.9	10.9	17.9	-0.3	⊕	-2.6	-10.0	0.4	1.3	⊕	-6.0	-17.6	-35.7	24
3566	3135	2749	2403	2091	1813	0.5	2.3	5.3	9.6	15.7	-0.3	⊕	-2.6	-9.8	0.4	1.3	⊕	-5.9	-17.1	-34.5	24
3589	3049	2579	2169	1811	1501	0.7	2.9	6.8	12.7	20.7	-0.3	⊕	-2.7	-10.3	0.4	1.4	⊕	-6.3	-18.4	-37.7	24
3502	3070	2682	2334	2023	1745	0.6	2.5	5.7	10.5	17.1	-0.2	⊕	-3.1	-11.2	0.5	1.5	⊕	-6.6	-19.3	-38.9	24
3549	3089	2680	2314	1989	1700	0.6	2.6	6.0	11.1	18.0	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.6	-19.4	-39.1	24
3502	3088	2715	2378	2075	1803	0.6	2.4	5.4	10.0	16.3	-0.2	⊕	-3.0	-11.1	0.5	1.5	⊕	-6.6	-19.0	-38.3	24
3502	3085	2710	2372	2068	1796	0.6	2.4	5.5	10.1	16.4	-0.2	⊕	-3.0	-11.1	0.5	1.5	⊕	-6.6	-19.1	-38.4	24
3575	3159	2784	2445	2139	1864	0.6	2.4	5.3	9.8	16.0	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.6	-19.1	-38.3	24
3506	3141	2806	2500	2221	1967	0.6	2.2	4.9	9.1	14.8	-0.2	⊕	-3.4	-12.3	0.7	1.7	⊕	-7.2	-20.6	-41.1	24
3531	3157	2815	2503	2219	1960	0.6	2.2	5.0	9.3	15.0	-0.2	⊕	-3.4	-12.2	0.7	1.7	⊕	-7.1	-20.6	-40.9	24
3787	3426	3092	2785	2502	2243	0.5	2.0	4.4	8.1	13.1	-0.2	⊕	-3.2	-11.7	0.6	1.6	⊕	-6.8	-19.5	-38.7	24
3071	2610	2205	1850	1541	1279	0.8	3.5	8.1	15.0	24.8	-0.1	⊕	-4.5	-15.9	1.0	2.2	⊕	-9.2	-26.6	-54.6	24
3071	2625	2231	1884	1581	1321	0.7	3.3	7.9	14.4	23.7	-0.1	⊕	-4.4	-15.8	1.0	2.2	⊕	-9.2	-26.3	-53.6	24
4508	4053	3635	3252	2901	2581	0.6	2.1	4.7	8.7	14.0	-0.2	⊕	-3.3	-11.8	0.6	1.6	⊕	-6.9	-19.8	-39.4	24
3957	3230	2612	2089	1657	1305	1.0	4.4	10.2	19.4	32.1	-0.1	⊕	-4.5	-16.4	1.1	2.3	⊕	-9.6	-28.6	-59.4	24
3966	3313	2747	2259	1850	1506	1.0	4.2	9.7	18.5	30.0	⊕	-0.1	-5.7	-19.7	0.1	⊕	-5.5	-19.3	-43.9	-80.5	24
2280	1731	1307	1003	804	681	2.3	8.7	20.6	37.6	59.3	0.7	⊕	-11.9	-41.6	3.7	5.9	⊕	-23.8	-70.9	-146.5	24
3537	2928	2403	1959	1589	1285	1.2	4.5	10.8	20.2	32.9	0.1	⊕	-6.0	-21.3	1.6	3.0	⊕	-12.3	-36.1	-73.4	24
3537	2666	1974	1446	1065	815	1.7	7.1	17.1	32.6	53.9	0.1	⊕	-6.8	-24.9	1.9	3.4	⊕	-14.7	-45.0	-96.5	24
3537	2928	2403	1959	1589	1285	1.2	4.5	10.8	20.2	32.9	0.1	⊕	-6.0	-21.3	1.6	3.0	⊕	-12.3	-36.1	-73.4	24
3537	2666	1974	1446	1065	815	1.7	7.1	17.1	32.6	53.9	0.1	⊕	-6.8	-24.9	1.9	3.4	⊕	-14.7	-45.0	-96.5	24
3998	3206	2541	1994	1553	1213	1.3	5.2	12.4	23.3	38.6	0.1	⊕	-5.7	-20.7	1.5	2.9	⊕	-12.1	-35.8	-74.8	24
3837	3105	2486	1974	1557	1230	1.3	5.0	12.1	22.6	37.3	⊕	-0.2	-6.3	-21.9	0.1	⊕	-5.9	-21.3	-48.5	-90.7	24
3966	2978	2194	1597	1163	877	1.7	6.9	16.9	32.2	53.6	0.1	⊕	-6.3	-23.4	1.7	3.1	⊕	-13.9	-42.6	-91.6	24
4163	3161	2357	1735	1269	951	1.5	6.4	15.8	30.0	50.1	0.1	⊕	-5.8	-21.7	1.5	2.9	⊕	-13.0	-39.4	-84.6	24
4905	4021	3264	2633	2111	1693	1.2	4.7	11.5	21.5	35.2	⊕	-0.3	-6.6	-22.6	0.1	⊕	-6.1	-21.9	-49.4	-91.6	24
4698	3859	3139	2540	2043	1647	1.2	4.8	11.6	21.6	35.4	0.2	⊕	-6.4	-23.0	1.8	3.2	⊕	-13.3	-38.6	-79.3	24
4988	3815	2870	2137	1591	1217	1.6	6.6	16.1	30.5	50.5	0.1	⊕	-6.6	-24.2	1.8	3.3	⊕	-14.3	-43.1	-91.8	24
5115	3865	2867	2103	1545	1173	1.7	6.8	16.7	31.9	52.8	0.1	⊕	-6.5	-24.0	1.7	3.2	⊕	-14.2	-43.4	-92.9	24
5115	4202	3419	2760	2216	1774	1.2	4.7	11.1	20.9	34.1	⊕	-0.2	-6.2	-21.3	0.1	⊕	-5.8	-20.8	-47.1	-87.1	24
5115	4215	3443	2789	2248	1806	1.2	4.6	10.9	20.5	33.4	0.1	⊕	-5.8	-20.6	1.5	2.9	⊕	-11.9	-35.1	-71.8	24
5115	3918	2951	2200	1636	1246	1.6	6.5	15.8	29.9	49.7	0.1	⊕	-6.4	-23.5	1.7	3.2	⊕	-13.9	-41.9	-89.2	24
4496	3641	2919	2327	1846	1478	1.3	5.3	12.9	23.8	39.2	0.2	⊕	-7.0	-24.8	1.9	3.5	⊕	-14.3	-41.6	-86.3	24
4849	3684	2773	2080	1594	1285	1.7	7.7	18.3	34.4	55.8	0.4	⊕	-9.2	-32.2	2.7	4.6	⊕	-18.5	-55.8	-117.6	24
4221	3320	2593	2028	1613	1333	1.8	7.2	16.9	31.2	50.2	0.6	⊕	-10.2	-35.3	3.1	5.1	⊕	-20.1	-59.2	-122.6	24
4849	3916	3144	2508	2009	1631	1.2	5.9	13.7	25.7	41.8	⊕	-0.7	-9.9	-31.1	0.3	⊕	-8.5	-29.2	-65.5	-121.1	24
5873	4514	3419	2566	1933	1496	1.6	6.7	16.1	30.5	50.3	0.2	⊕	-7.1	-25.6	2.0	3.6	⊕	-14.9	-45.2	-95.7	24
5873	4689	3699	2900	2260	1782	1.4	5.6	13.6	25.2	41.7	0.2	⊕	-6.7	-24.1	1.8	3.3	⊕	-14.1	-41.2	-86.0	24
5132	3973	3047	2318	1784	1419	1.5	7.0	16.4	31.0	50.6	0.3	⊕	-8.4	-29.3	2.4	4.2	⊕	-16.7	-50.5	-106.1	24
5132	3902	2937	2195	1669	1329	1.6	7.5	17.8	33.5	54.7	0.3	⊕	-8.6	-30.2	2.5	4.3	⊕	-17.3	-52.6	-111.3	24
5581	4336	3342	2559	1985	1594	1.5	7.0	16.5	31.0	50.5	⊕	-0.7	-10.2	-32.8	0.3	⊕	-8.8	-30.7	-70.1	-131.9	24
5581	4143	3041	2232	1691	1369	1.8	8.4	20.1	37.7	60.8	0.4	⊕	-9.3	-33.1	2.7	4.6	⊕	-19.2	-58.3	-123.7	24
1333	1069	848	665	514	394	1.0	4.3	10.3	19.3	32.4	-0.2	⊕	-3.5	-13.3	0.7	1.7	⊕	-8.1	-24.1	-51.0	24
1271	1046	854	691	553	440	1.0	3.9	9.4	17.4	29.1	-0.1	⊕	-3.9	-14.4	0.8	1.9	⊕	-8.6	-25.2	-52.6	24
1265	1053	869	712	578	466	0.9	3.8	9.0	16.7	27.9	-0.1	⊕	-4.2	-15.2	0.9	2.1	⊕	-9.0	-26.1	-54.1	24
1265	1044	854	692	556	444	0.9	4.0	9.5	17.7	29.5	-0.1	⊕	-4.2	-15.4	0.9	2.1	⊕	-9.1	-26.7	-55.5	24
1529	1316	1127	961	814	685	0.7	2.9	6.7	12.5	20.1	-0.2	⊕	-3.2	-11.9	0.6	1.6	⊕	-7.1	-20.8	-42.0	24
1457	1291	1140	1003	880	768	0.6	2.4	5.7	10.6	16.9	-0.1	⊕	-3.8	-13.9	0.8	1.9	⊕	-8.1	-23.2	-45.9	24
2133	1889	1668	1468	1287	1124	0.5	2.2	5.1	9.4	15.3	-0.2	⊕	-2.8	-10.5	0.5	1.4	⊕	-6.2	-18.0	-36.1	24
2138	1897	1679	1481	1302	1140	0.5	2.2	5.2	9.3	15.1	-0.2	⊕	-2.9	-10.7	0.5	1.4	⊕	-6.4	-18.2	-36.6	24
2142	1908	1696	1503	1327	1168	0.5	2.2	5.0	9.0	14.6	-0.2	⊕	-2.9	-10.8	0.5	1.5	⊕	-6.4	-18.3	-36.8	24
2303	2044	1809	1595	1402	1227	0.6	2.3	5.4	10.0	16.1	-0.2	⊕	-3.4	-12.3	0.7	1.7	⊕	-7.2	-20.9	-41.6	24
2224	1957	1716	1499	1303	1128	0.6	2.6	6.2	11.3	18.1	-0.1	⊕	-4.0	-14.4	0.9	2.0	⊕	-8.4	-23.9	-47.5	24
2308	2064	1841	1637	1452	1283	0.6	2.2	5.2	9.6	15.4	-0.1	⊕	-3.7	-13.3	0.8	1.9	⊕	-7.7	-22.2	-44.0	24
2224	1966	1732	1520	1329	1157	0.6	2.5	5.9	10.9	17.4	-0.1	⊕	-4.0	-14.3	0.9	2.0	⊕	-8.3	-23.7	-47.0	24
2659	2386	2135	1906	1696	1506	0.5	2.1	4.8	8.6	13.9	-0.2	⊕	-3.1	-11.1	0.6	1.5	⊕	-6.6	-18.7	-37.5	24
2619	2257	1935	1650	1398	1179	0.7	3.1	7.4	13.4	22.0	-0.1	⊕	-4.3	-15.3	1.0	2.1	⊕	-8.9	-25.5	-51.5	24
2619	2248	1918	1628	1373	1152	0.7	3.2	7.6	13.8	22.8	-0.1	⊕	-4.3	-15.4	1.0	2.1	⊕	-9.0	-25.7	-52.1	24
2627	2290	1987	1717	1476	1264	0.6	2.9	6.9	12.5	20.3	-0.1	⊕	-4.4	-15.7	1.0	2.2	⊕	-9.1	-25.8	-51.8	24
2627	2290	1987	1717	1476	1264	0.6	2.9	6.9	12.5	20.3	-0.1	⊕	-4.4	-15.7	1.0	2.2	⊕	-9.1	-25.8	-51.8	24
2777	2449	2153	1886	1644	1428	0.6	2.6	6.2	11.3	18.2	-0.1	⊕	-4.3	-15.4	1.0	2.2	⊕	-8.9	-25.2	-50.0	24
2719	2346	2015	1721	1462	1234	0.7	3.0	7.2	13.2	21.3	-0.1	⊕	-4.0	-14.6	0.9	2.0	⊕	-8.5	-24.5	-49.2	24
3548	3133	2758	2420	2115	1841	0.6	2.4	5.5	10.1	16.4	-0.2	⊕	-3.2	-11.6	0.6	1.6	⊕	-6.9	-19.9	-39.9	24
3810	3459	3135	2835	2558	2303	0.5	1.9	4.3	7.8	12.7	-0.2	⊕	-3.3	-11.8	0.7	1.7	⊕	-6.9	-19.7	-39.1	24
4830	4318	3851	3426	3037	2685	0.5	2.1	4.9	8.8	14.3	-0.2	⊕	-3.0	-11.0	0.5	1.5	⊕	-6.5	-18.5	-37.1	24
4434	4052	3696	3365	3058	2772	0.4	1.8	4.3	8.0	12.8	-0.1	⊕	-4.2	-14.7	1.0	2.1	⊕	-8.5	-23.8	-46.6	24
1902	1449	1085	803	595	453	1.6	6.6	16.2	30.8	51.1	0.1	⊕	-6.5	-23.9	1.7	3.2	⊕	-14.2	-42.8	-91.5	24
1934	1469	1106	837	652	537	1.9	8.0	19.2	35.7	57.3	0.5	⊕	-10.1	-35.8	3.1	5.0	⊕	-20.6	-61.6	-128.8	24
1954	1449	1064	789	610	504	2.1	8.8	21.1	39.1	62.4	0.5	⊕	-10.3	-36.7	3.1	5.1	⊕	-21.3	-64.3	-135.1	20
3035	2047	1349	900	660	535	2.4	10.7	26.3	49.7	79.5	0.3	⊕	-8.9	-33.5	2.5	4.4	⊕	-20.2	-63.9	-138.4	24
2280	1731	1307	1003	804	681	2.3	8.7	20.6	37.6	59.3	0.7	⊕	-11.9	-41.6	3.7	5.9	⊕	-23.8	-70.9	-146.5	24

ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)							WIND DRIFT IN INCHES 10 MPH CROSSWIND						HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE.						TEST BARREL LENGTH
MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	125 YDS.	150 YDS.	25 YDS.	50 YDS.	75 YDS.	100 YDS.	125 YDS.	150 YDS.	25 YDS.	50 YDS.	75 YDS.	100 YDS.	125 YDS.	150 YDS.	INCHES
768	692	623	561	507	459	418	0.2	0.8	1.9	3.5	5.6	8.2	-0.3	⊕	-0.7	-2.5	-5.4	-9.7	20
978	876	784	704	634	573	522	0.2	0.8	2.1	3.8	6.1	8.8	-0.3	⊕	-0.8	-2.7	-5.9	-10.6	20
1763	1589	1429	1285	1158	1047	948	0.3	0.8	1.9	3.4	5.5	8.0	-0.3	⊕	-0.6	-2.1	-4.9	-8.8	20
583	541	506	476	449	425	403	0.2	1.0	2.2	3.8	5.7	8.1	0.4	⊕	-2.8	-8.0	-16.0	-26.7	20

RIFLE BALLISTICS

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; CLM=cartridge length longer than SAAMI max, may not fit in all magazines. *Molycoat: molybdenum disulfide dry film lubricant

Federal® Rifle

FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
FEDERAL POWER•SHOK										
222A	**222 REM.**	50	3.24	SP	3140	2626	2166	1755	1408	1152
223A	**223 REM.**	55	3.56	SP	3240	2800	2400	2035	1705	1420
223L	**223 REM.**	64	4.15	SP	3050	2682	2342	2027	1740	1485
22250A	**22-250 REM.**	55	3.56	SP	3650	3136	2679	2264	1888	1558
243AS	**243 WIN.**	80	5.18	SP	3330	3051	2790	2543	2309	2088
24385LFA	**243 WIN.**	85	5.51	COPPER HP	3200	2783	2403	2054	1737	1459
243B	**243 WIN.**	100	6.48	SP	2960	2697	2448	2213	1991	1783
2506BS	**25-06 REM.**	117	7.58	SP	3030	2767	2519	2283	2061	1851
65CRDB	**6.5 CREEDMOOR**	140	9.07	SP	2725	2522	2327	2142	1964	1796
6555B	**6.5X55 SWEDISH**	140	9.07	SP	2650	2450	2258	2075	1900	1736
270A	**270 WIN.**	130	8.42	SP	3060	2803	2560	2329	2111	1904
270130LFA	**270 WIN.**	130	8.42	COPPER HP	3060	2729	2422	2135	1867	1625
270B	**270 WIN.**	150	9.72	SPRN	2830	2486	2166	1871	1606	1374
270WSME	**270 WIN. SHORT MAGNUM**	130	8.42	SP	3250	2978	2722	2480	2251	2034
7B	**7MM MAUSER**	140	9.07	SP	2660	2454	2256	2069	1889	1722
7A	**7MM MAUSER**	175	11.34	SPRN	2390	2090	1812	1564	1348	1177
708CS	**7MM-08 REM.**	150	9.72	SP	2650	2438	2235	2043	1859	1689
280B	**280 REM.**	150	9.72	SP	2890	2667	2455	2253	2060	1877
7RA	**7MM REM. MAGNUM**	150	9.72	SP	3110	2841	2587	2347	2120	1905
7RB	**7MM REM. MAGNUM**	175	11.34	SP	2860	2646	2441	2246	2060	1882
30CA	**30 CARBINE**	110	7.13	SPRN	1990	1564	1231	1031	919	839
300BLK120LFA	**300 BLACKOUT**	120	7.78	COPPER HP	2100	1799	1533	1307	1136	1024
300BLKB	**300 BLACKOUT**	150	9.72	SP	1900	1685	1490	1320	1181	1079
76239B	**7.62X39MM SOVIET**	123	7.97	SP	2350	2055	1783	1539	1329	1164
3030A	**30-30 WIN.**	150	9.72	SPFN	2390	2019	1686	1399	1179	1037
3030B	**30-30 WIN.**	170	11.02	SPRN	2200	1894	1619	1380	1191	1060
300A	**300 SAVAGE**	150	9.72	SP	2630	2353	2094	1850	1629	1430
300B	**300 SAVAGE**	180	11.66	SP	2350	2137	1934	1745	1571	1412
308A	**308 WIN.**	150	9.72	SP	2820	2532	2261	2007	1771	1557
308150LFA	**308 WIN.**	150	9.72	COPPER HP	2820	2497	2195	1915	1661	1434
308B	**308 WIN.**	180	11.66	SP	2570	2345	2131	1929	1740	1565
3006CS	**30-06 SPRING.**	125	8.10	SP	3140	2779	2446	2136	1850	1593
3006A	**30-06 SPRING.**	150	9.72	SP	2910	2616	2340	2081	1839	1619
3006150LFA	**30-06 SPRING.**	150	9.72	COPPER HP	2910	2580	2273	1988	1725	1491
3006B	**30-06 SPRING.**	180	11.66	SP	2700	2470	2252	2045	1848	1667
300WGS	**300 WIN. MAGNUM**	150	9.72	SP	3150	2898	2661	2435	2221	2017
300WBS	**300 WIN. MAGNUM**	180	11.66	SP	2960	2746	2542	2346	2160	1982
300W180LFA	**300 WIN. MAGNUM**	180	11.66	COPPER HP	2960	2693	2441	2203	1979	1769
300WSMC	**300 WIN. SHORT MAGNUM**	180	11.66	SP	2980	2736	2504	2284	2075	1877
300WSM180LFA	**300 WIN. SHORT MAGNUM**	180	11.66	COPPER HP	2950	2684	2432	2195	1971	1761
303B	**303 BRITISH**	150	9.72	SP	2690	2442	2208	1988	1780	1590
303AS	**303 BRITISH**	180	11.66	SP	2460	2206	1966	1744	1542	1363
32A	**32 WIN. SPECIAL**	170	11.02	SPFN	2250	1923	1630	1376	1179	1047
8A	**8MM MAUSER**	170	11.02	SP	2250	2025	1814	1620	1444	1292
C357G	**357 MAGNUM**	180	11.66	HP	1550	1282	1095	982	904	841
35A	**35 REM.**	200	12.96	SPRN	2080	1697	1374	1138	999	910
350LA	**350 LEGEND**	180	11.66	SP	2100	1793	1520	1292	1123	1013
360BHAS	**360 BUCKHAMMER**	180	11.66	SP	2,374	1,917	1,522	1,216	1,031	924
360BHBS	**360 BUCKHAMMER**	200	12.96	SP	1,197	1,777	1,421	1,157	1,003	908
375A	**375 H&H MAGNUM**	270	17.50	SP	2690	2418	2162	1922	1700	1500
375B	**375 H&H MAGNUM**	300	19.44	SP	2530	2267	2021	1790	1581	1394
C44A	**44 REM. MAGNUM**	240	15.55	HP	1760	1387	1123	978	885	813
4570AS	**45-70 GOVERNMENT**	300	19.44	HP	1850	1612	1400	1226	1097	1010
450BMB	**450 BUSHMASTER**	300	19.44	SP	1900	1602	1346	1153	1028	945
FEDERAL VARMINT & PREDATOR										
AE17H20TVP	**17 HORNET**	20	1.30	TIPPED VARMINT	3610	3042	2541	2092	1694	1361
AE22H35TVP	**22 HORNET**	35	2.27	TIPPED VARMINT	3000	2188	1526	1094	908	795
V204VM32	**204 RUGER**	32	2.07	HORNADY® V-MAX®	4100	3536	3040	2596	2193	1827
AE22350VP	**223 REM.**	50	3.24	JHP	3325	2839	2402	2006	1653	1355
V223VM53	**223 REM.**	53	3.43	HORNADY V-MAX	3400	3046	2720	2416	2132	1868
V224VLKM60	**224 VALKYRIE**	60	3.89	HORNADY V-MAX	3300	2923	2577	2255	1958	1687
V22250VM2	**22-250 REM.**	55	3.56	HORNADY V-MAX	3670	3244	2858	2504	2176	1873
AE22250VP	**22-250 REM.**	50	3.24	JHP	3850	3303	2819	2384	1990	1639
AE24375VP	**243 WIN.**	75	4.86	JHP	3375	2943	2551	2191	1861	1569
V243VM75	**243 WIN.**	75	4.86	HORNADY V-MAX	3425	3111	2819	2545	2286	2044
AE65GDL90VP	**6.5 GRENDEL**	90	5.83	SPEER TNT	3000	2641	2309	2002	1721	1472
V65CRDVM95	**6.5 CREEDMOOR**	95	6.16	HORNADY V-MAX	3300	3023	2763	2518	2285	2065
AE6890VP	**6.8 SPC**	90	5.83	JACKETED HOLLOW POINT	2990	2651	2335	2043	1772	1530
V308VM110	**308 WIN.**	110	7.13	HORNADY V-MAX	3300	2954	2635	2336	2058	1799
AE308130VP	**308 WIN.**	130	8.42	JHP	3050	2691	2359	2052	1769	1516

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

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ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)						WIND DRIFT IN INCHES 10 MPH CROSSWIND					HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE.										TEST BARREL LENGTH
											AVERAGE RANGE				LONG RANGE						
MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	INCHES
1095	765	521	342	220	147	1.6	6.9	17.2	34.0	58.9	-0.2	⊕	-3.6	-14.8	0.7	1.8	⊕	-9.3	-30.4	-70.1	24
1282	957	703	505	355	246	1.2	5.3	12.9	25.0	42.6	-0.3	⊕	-3.0	-12.0	0.5	1.5	⊕	-7.6	-23.8	-52.3	24
1322	1022	779	584	430	313	1.2	4.9	11.8	22.6	38.2	-0.2	⊕	-3.3	-13.1	0.6	1.7	⊕	-8.1	-24.7	-53.2	24
1627	1201	876	626	435	296	1.2	4.9	11.9	22.9	39.4	-0.4	⊕	-2.1	-9.0	0.1	1.0	⊕	-5.9	-18.7	-41.8	24
1970	1654	1382	1148	947	774	0.7	3.0	6.9	12.8	21.1	-0.3	⊕	-2.2	-9.0	0.2	1.1	⊕	-5.6	-16.6	-34.2	24
1933	1462	1090	796	569	402	1.2	5.1	12.4	23.9	40.5	-0.3	⊕	-3.0	-12.1	0.5	1.5	⊕	-7.6	-23.6	-51.4	24
1945	1615	1331	1087	880	706	0.9	3.6	8.4	15.8	25.9	-0.2	⊕	-3.3	-12.4	0.6	1.6	⊕	-7.5	-22.1	-45.4	24
2385	1989	1648	1354	1104	890	0.8	3.4	8.0	14.9	24.4	-0.2	⊕	-3.1	-11.6	0.5	1.5	⊕	-7.0	-20.8	-42.5	24
2308	1977	1683	1426	1199	1003	0.8	3.1	7.5	13.8	22.5	-0.1	⊕	-4.0	-14.4	0.9	2.0	⊕	-8.5	-24.4	-49.4	24
2183	1865	1585	1338	1122	937	0.7	3.3	7.8	14.3	23.6	-0.1	⊕	-4.3	-15.5	1.0	2.2	⊕	-9.0	-25.9	-52.8	24
2703	2267	1891	1566	1286	1046	0.8	3.2	7.6	14.2	23.1	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.7	-20.0	-40.9	24
2703	2150	1693	1315	1006	763	1.0	4.3	10.3	19.3	32.6	-0.2	⊕	-3.2	-12.4	0.6	1.6	⊕	-7.6	-22.7	-48.4	24
2667	2057	1563	1166	859	629	1.3	5.4	12.8	24.9	41.7	-0.1	⊕	-4.2	-15.7	0.9	2.1	⊕	-9.4	-29.2	-62.6	24
3049	2559	2138	1775	1462	1194	0.7	3.0	7.1	13.2	21.7	-0.3	⊕	-2.4	-9.6	0.3	1.2	⊕	-5.9	-17.5	-36.0	24
2199	1871	1583	1330	1109	922	0.8	3.4	8.0	14.7	24.3	-0.1	⊕	-4.3	-15.5	1.0	2.1	⊕	-9.0	-25.9	-53.1	24
2219	1697	1276	950	706	538	1.6	6.5	16.0	30.2	50.2	0.1	⊕	-6.5	-23.7	1.7	3.2	⊕	-14.1	-42.4	-90.4	24
2339	1979	1664	1390	1151	950	0.8	3.5	8.3	15.3	25.4	-0.1	⊕	-4.4	-15.7	1.0	2.2	⊕	-9.2	-26.5	-54.4	24
2782	2369	2008	1690	1414	1173	0.8	3.1	7.3	13.6	22.0	-0.2	⊕	-3.4	-12.6	0.7	1.7	⊕	-7.5	-21.9	-44.2	24
3221	2687	2229	1834	1497	1209	0.8	3.3	7.7	14.5	23.6	-0.3	⊕	-2.8	-10.8	0.4	1.4	⊕	-6.6	-19.6	-40.1	24
3178	2720	2316	1961	1649	1377	0.8	3.0	7.2	13.3	21.4	-0.2	⊕	-3.5	-12.8	0.7	1.7	⊕	-7.6	-22.1	-44.6	24
967	597	370	260	206	172	3.5	15.1	35.8	63.7	97.4	0.7	⊕	-13.0	-49.1	3.9	6.5	⊕	-29.7	-90.9	-190.2	18
1175	863	626	455	344	279	1.9	8.7	20.9	39.2	63.2	0.4	⊕	-9.4	-33.7	2.7	4.7	⊕	-19.6	-59.9	-127.1	16
1202	946	739	580	465	388	1.9	7.4	17.4	31.9	51.0	0.6	⊕	-10.8	-37.3	3.3	5.4	⊕	-21.2	-62.4	-128.7	24
1508	1153	868	646	482	370	1.6	6.7	16.2	30.7	50.8	0.2	⊕	-6.7	-24.6	1.8	3.4	⊕	-14.5	-43.9	-93.3	20
1902	1358	947	652	463	358	2.0	8.6	20.8	40.0	65.9	0.1	⊕	-7.2	-26.7	1.9	3.6	⊕	-15.9	-50.1	-109.8	24
1827	1354	990	719	535	424	1.8	8.1	19.4	36.7	59.9	0.3	⊕	-8.4	-30.0	2.4	4.2	⊕	-17.4	-53.5	-114.4	24
2304	1844	1460	1140	884	681	1.1	4.9	11.5	22.1	36.4	-0.1	⊕	-4.8	-17.5	1.2	2.4	⊕	-10.2	-31.1	-64.8	24
2207	1825	1495	1217	986	797	1.2	4.5	10.9	20.5	33.3	0.1	⊕	-6.1	-21.6	1.6	3.0	⊕	-12.5	-36.5	-74.4	24
2648	2134	1702	1341	1044	807	1.1	4.4	10.4	19.7	32.9	-0.1	⊕	-3.9	-14.7	0.8	2.0	⊕	-8.8	-26.3	-55.2	24
2648	2076	1605	1221	918	685	1.2	5.0	12.0	23.0	38.4	-0.1	⊕	-4.1	-15.4	0.9	2.1	⊕	-9.2	-28.3	-59.9	24
2640	2197	1816	1486	1209	979	0.9	4.1	9.4	17.8	29.4	0.0	⊕	-4.9	-17.3	1.2	2.4	⊕	-10.0	-29.5	-60.7	24
2736	2143	1660	1267	949	704	1.0	4.5	10.8	20.4	34.6	-0.3	⊕	-3.0	-11.9	0.5	1.5	⊕	-7.4	-22.3	-48.0	24
2820	2279	1823	1442	1126	873	1.0	4.2	10.0	18.7	31.4	-0.2	⊕	-3.6	-13.6	0.7	1.8	⊕	-8.2	-24.4	-51.3	24
2820	2217	1721	1316	991	740	1.2	4.8	11.5	21.9	36.7	-0.2	⊕	-3.7	-14.3	0.8	1.9	⊕	-8.7	-26.2	-55.7	24
2913	2439	2026	1671	1365	1111	0.9	3.7	8.8	16.2	27.0	-0.1	⊕	-4.2	-15.3	1.0	2.1	⊕	-9.0	-26.2	-54.0	24
3305	2798	2358	1975	1643	1355	0.7	3.0	6.9	12.9	21.1	-0.3	⊕	-2.7	-10.2	0.4	1.3	⊕	-6.2	-18.3	-37.5	24
3502	3013	2582	2200	1864	1570	0.7	2.9	6.6	12.3	20.0	-0.2	⊕	-3.1	-11.6	0.6	1.6	⊕	-6.9	-20.3	-41.0	24
3502	2898	2382	1940	1565	1250	0.9	3.6	8.6	16.0	26.4	-0.2	⊕	-3.3	-12.5	0.6	1.6	⊕	-7.5	-22.2	-45.8	24
3549	2991	2506	2084	1721	1408	0.8	3.2	7.6	14.2	23.0	-0.2	⊕	-3.2	-11.9	0.6	1.6	⊕	-7.1	-21.0	-42.7	24
3478	2878	2364	1925	1552	1240	0.9	3.6	8.6	16.1	26.5	-0.2	⊕	-3.3	-12.6	0.6	1.7	⊕	-7.6	-22.4	-46.2	24
2410	1987	1624	1316	1055	842	0.9	4.1	9.7	18.0	30.0	-0.1	⊕	-4.4	-15.9	1.0	2.2	⊕	-9.3	-27.4	-56.9	24
2418	1944	1545	1215	950	742	1.2	5.1	12.2	23.0	37.9	0.1	⊕	-5.7	-20.4	1.5	2.8	⊕	-11.9	-35.3	-73.6	24
1911	1395	1002	715	524	414	1.8	8.4	20.1	38.3	62.5	0.2	⊕	-8.1	-29.3	2.3	4.0	⊕	-17.2	-53.1	-114.4	24
1911	1548	1242	991	786	630	1.3	5.3	12.8	23.7	39.1	0.2	⊕	-6.9	-24.8	1.9	3.5	⊕	-14.3	-41.6	-86.1	24
960	657	479	385	326	283	3.5	14.2	31.2	53.4	79.9	1.5	⊕	-19.7	-68.1	6.4	9.9	⊕	-38.5	-111.9	-225.7	18
1921	1278	838	575	443	368	2.8	12.0	29.1	53.5	83.6	0.5	⊕	-10.7	-40.2	3.2	5.4	⊕	-24.1	-75.1	-159.2	24
1762	1284	924	668	504	410	2.0	8.9	21.6	40.4	64.9	0.4	⊕	-9.4	-34.1	2.8	4.7	⊕	-20.0	-61.0	-129.6	16
2,252	1,468	926	591	425	341	2.5	11.2	28.0	53.3	85.3	0.2	⊕	-8.1	-31.5	-	-	-	-	-	-	20
2,144	1,402	896	595	447	366	2.7	12.0	29.3	54.6	86.0	0.4	⊕	-9.7	-36.9	-	-	-	-	-	-	20
4338	3505	2803	2214	1733	1348	1.0	4.6	10.7	20.4	33.9	-0.1	⊕	-4.5	-16.4	1.0	2.3	⊕	-9.6	-28.9	-60.3	24
4263	3424	2720	2135	1665	1294	1.2	5.0	11.8	22.5	37.1	0.0	⊕	-5.3	-19.1	1.3	2.6	⊕	-11.1	-33.5	-69.5	24
1651	1025	672	509	417	352	3.9	16.5	37.1	64.0	96.4	1.0	⊕	-16.8	-60.9	5.2	8.4	⊕	-35.6	-106.0	-217.7	20
2280	1730	1305	1001	802	679	2.3	8.8	20.7	37.8	59.5	0.7	⊕	-11.9	-41.7	3.7	5.9	⊕	-23.9	-71.0	-146.8	24
2405	1708	1208	885	703	595	2.7	10.8	25.6	46.5	72.4	0.7	⊕	-12.2	-43.7	3.7	6.1	⊕	-25.4	-77.1	-160.6	24
579	411	287	194	127	82	1.3	5.7	14.0	27.5	47.7	-0.4	⊕	-2.3	-10.1	0.2	1.1	⊕	-6.6	-21.4	-49.1	24
699	372	181	93	64	49	3.0	14.4	38.3	74.2	118.8	-0.1	⊕	-6.1	-28.3	1.4	3.1	⊕	-19.1	-66.9	-152.6	24
1194	888	657	479	342	237	1.0	4.2	10.2	19.4	32.8	-0.4	⊕	-1.3	-6.4	-0.1	0.6	⊕	-4.4	-14.1	-31.1	24
1227	895	640	447	303	204	1.3	5.6	13.8	27.1	46.5	-0.3	⊕	-2.8	-11.8	0.4	1.4	⊕	-7.5	-24.0	-53.7	24
1360	1092	871	687	535	410	0.9	3.7	8.7	16.5	27.3	-0.3	⊕	-2.3	-9.2	0.2	1.1	⊕	-5.8	-17.7	-37.1	24
1451	1138	884	678	511	379	1.0	4.3	10.2	19.3	32.4	-0.3	⊕	-2.6	-10.4	0.3	1.3	⊕	-6.5	-20.0	-42.8	24
1645	1285	998	766	578	428	0.9	3.9	9.2	17.5	29.1	-0.4	⊕	-1.8	-7.9	0.1	0.9	⊕	-5.2	-16.0	-34.1	24
1645	1211	882	631	439	298	1.1	4.7	11.3	21.9	37.5	-0.4	⊕	-1.7	-7.8	0.0	0.9	⊕	-5.3	-16.8	-37.5	24
1897	1443	1084	800	577	410	1.1	4.8	11.5	21.9	37.3	-0.3	⊕	-2.5	-10.5	0.3	1.3	⊕	-6.7	-20.6	-45.1	24
1953	1612	1323	1078	871	696	0.8	3.2	7.5	13.9	23.0	-0.3	⊕	-2.1	-8.6	0.2	1.0	⊕	-5.5	-16.3	-33.8	24
1798	1394	1065	801	592	433	1.2	4.9	11.9	22.8	38.3	-0.2	⊕	-3.5	-13.6	0.7	1.7	⊕	-8.3	-25.5	-54.6	24
2297	1928	1610	1337	1101	900	0.7	3.0	7.0	13.0	21.4	-0.3	⊕	-2.3	-9.2	0.3	1.2	⊕	-5.7	-16.9	-34.9	24
1786	1404	1090	834	628	468	1.1	4.6	11.2	21.2	35.7	-0.2	⊕	-3.5	-13.4	0.7	1.7	⊕	-8.2	-24.7	-52.6	24
2660	2132	1695	1333	1034	791	0.9	3.9	9.1	17.2	28.6	-0.3	⊕	-2.5	-10.0	0.3	1.3	⊕	-6.2	-19.0	-39.9	24
2685	2090	1606	1215	903	664	1.1	4.7	11.5	21.8	36.8	-0.2	⊕	-3.3	-12.9	0.6	1.7	⊕	-8.0	-24.3	-52.0	24

RIFLE BALLISTICS

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; CLM=cartridge length longer than SAAMI max, may not fit in all magazines. *Molycoat: molybdenum disulfide dry film lubricant

American Eagle® Rifle

			BULLET WEIGHT IN			VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)					
FEDERAL LOAD NO.	CARTRIDGE	GRAINS	GRAMS	BULLET STYLE	MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
AMERICAN EAGLE										
AE5728A	5.7X28 MM	40	2.59	TMJ	2250	1606	1151	942	825	735
AE223G	223 REM.	50	3.24	JHP	3325	2839	2402	2006	1653	1355
AE223	223 REM.	55	3.56	FMJ BT	3240	2874	2536	2222	1931	1667
AE223N	223 REM.	62	4.02	FMJ BT	3020	2713	2426	2156	1904	1674
AE223T75	223 REM.	75	4.86	TMJ	2775	2550	2336	2132	1938	1756
AE224VLK1	224 VALKYRIE	75	4.86	TMJ	3000	2763	2539	2325	2122	1929
AE22250G	22-250 REM.	50	3.24	JHP	3850	3303	2819	2384	1990	1639
AE65GDL1	6.5 GRENDEL	120	7.97	OTM	2580	2410	2246	2089	1938	1794
AE65CRD2	6.5 CREEDMOOR	120	7.78	OTM	2900	2680	2470	2270	2079	1897
AE68A	6.8 SPC	115	7.45	FMJ	2675	2442	2221	2012	1815	1633
AE30CB	30 CARBINE	110	7.13	FMJ	1990	1564	1231	1031	919	839
AE300BLK1	300 BLACKOUT	150	9.72	FMJ BT	1900	1724	1561	1411	1282	1174
AE300BLKSUP2	300 BLACKOUT	220	14.26	OTM	1000	970	944	920	897	876
A76239A	7.62X39MM SOVIET	124	8.04	FMJ	2350	2078	1824	1595	1392	1224
AE308D	308 WIN.	150	9.72	FMJ BT	2820	2597	2385	2183	1990	1808
A76251M1A	7.62X51MM	168	10.89	OTM	2650	2459	2276	2101	1933	1774
AE3006M1	30-06 SPRING.	150	9.72	FMJ BT	2740	2522	2314	2116	1928	1751
AE3006N	30-06 SPRING.	150	9.72	FMJ BT	2910	2683	2466	2260	2064	1877

Fusion® Rifle

			BULLET WEIGHT IN			VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)					
	FEDERAL LOAD NO.	CARTRIDGE	GRAINS	GRAMS	BULLET STYLE	MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
	FUSION TIPPED										
NEW	F65CRDTFS1	6.5 CREEDMOOR	140	9.07	FUSION TIPPED	2700	2531	2367	2210	2059	1914
NEW	F65PRCTFS1	6.5 PRC	140	9.07	FUSION TIPPED	2975	2795	2622	2455	2295	2141
NEW	F270TFS2	270 WIN	150	9.72	FUSION TIPPED	2850	2680	2516	2358	2206	2060
NEW	F7RTFS2	7MM REM. MAGNUM	175	11.34	FUSION TIPPED	2860	2692	2530	2373	2222	2077
NEW	F7PRCTFS2	7MM PRC	175	11.34	FUSION TIPPED	3000	2826	2659	2498	2343	2193
NEW	F300BMSR3	300 BLACKOUT	190	12.31	FUSION TIPPED	1050	1004	965	931	901	873
NEW	F308TFS3	308 WIN	180	11.66	FUSION TIPPED	2600	2435	2277	2125	1978	1837
NEW	F3006TFS3	30-06 SPRG	180	11.66	FUSION TIPPED	2700	2532	2370	2214	2064	1919
NEW	F300WTFS3	300 WIN MAGNUM	180	11.66	FUSION TIPPED	2950	2772	2601	2437	2278	2126
	FUSION										
	F223FS1	223 REM.	62	4.02	FUSION	3000	2697	2413	2148	1898	1671
	F224VLKMSR1	224 VALKYRIE	90	5.83	FUSION	2700	2491	2291	2101	1919	1749
	F22250FS1	22-250 REM.	55	3.56	FUSION	3600	3108	2667	2267	1902	1580
	F243FS1	243 WIN.	95	6.16	FUSION	2980	2730	2493	2268	2056	1854
	F2506FS1	25-06 REM.	120	7.78	FUSION	2980	2778	2585	2399	2222	2052
	F65CRDFS1	6.5 CREEDMOOR	140	9.07	FUSION	2725	2522	2327	2142	1964	1796
	F65PRCFS1	6.5 PRC	140	9.07	FUSION	2925	2713	2510	2316	2131	1954
	F6555FS1	6.5X55 SWEDISH	140	9.07	FUSION	2530	2336	2150	1973	1804	1648
	F6555FSI2	6.5X55 SWEDISH	156	10.11	FUSION	2500	2326	2159	1999	1845	1702
	F270FS1	270 WIN.	130	8.42	FUSION	3050	2811	2584	2368	2163	1968
	F270FS2	270 WIN.	150	9.72	FUSION	2850	2655	2468	2289	2117	1953
	F270WSMFS1	270 WIN. SHORT MAGNUM	150	9.72	FUSION	3060	2867	2682	2504	2333	2169
	F708FS2	7MM-08 REM.	120	7.78	FUSION	3000	2719	2455	2206	1971	1753
	F708FS1	7MM-08 REM.	140	9.07	FUSION	2850	2615	2393	2181	1980	1791
	F280FS1	280 REM.	140	9.07	FUSION	2990	2794	2607	2427	2255	2089
	F7RFS1	7MM REM. MAGNUM	150	9.72	FUSION	3050	2861	2680	2505	2338	2177
	F7RFS2	7MM REM. MAGNUM	175	11.34	FUSION	2760	2592	2430	2274	2123	1978
	F76239FS1	7.62X39MM SOVIET	123	7.97	FUSION	2350	2077	1823	1593	1389	1222
	F3030FS1	30-30 WIN.	150	9.72	FUSION	2390	2086	1805	1553	1337	1167
	F3030FS2	30-30 WIN.	170	11.02	FUSION	2200	1950	1719	1510	1329	1182
	F308FS1	308 WIN.	150	9.72	FUSION	2820	2600	2391	2191	2001	1821
	F308FS2	308 WIN.	165	10.69	FUSION	2700	2501	2310	2128	1954	1789
	F308FS3	308 WIN.	180	11.66	FUSION	2600	2427	2260	2101	1947	1801
	F3006FS1	30-06 SPRING.	150	9.72	FUSION	2900	2674	2459	2254	2059	1874
	F3006FS2	30-06 SPRING.	165	10.69	FUSION	2790	2590	2399	2217	2042	1875
	F3006FS3	30-06 SPRING.	180	11.66	FUSION	2700	2521	2349	2185	2026	1874
	F300WFS1	300 WIN. MAGNUM	150	9.72	FUSION	3200	2958	2729	2512	2304	2107
	F300WFS2	300 WIN. MAGNUM	165	10.69	FUSION	3080	2865	2660	2464	2276	2097
	F300WFS3	300 WIN. MAGNUM	180	11.66	FUSION	2960	2766	2580	2401	2230	2065
	F300WSMFS3	300 WIN. SHORT MAGNUM	150	9.72	FUSION	3250	3005	2774	2555	2345	2146
	F300WSMFS1	300 WIN. SHORT MAGNUM	165	10.69	FUSION	3100	2885	2680	2484	2296	2116
	F300WSMFS2	300 WIN. SHORT MAGNUM	180	11.66	FUSION	2950	2756	2570	2391	2220	2055
	F338FFS2	338 FEDERAL	200	12.96	FUSION	2700	2487	2284	2090	1905	1733
	F35FS1	35 WHELEN	200	12.96	FUSION	2800	2537	2289	2055	1835	1634
	F350LFS1	350 LEGEND	160	10.37	FUSION	2300	1993	1712	1463	1257	1107
	F4570FS1	45-70 GOVERNMENT	300	19.44	FUSION	1850	1612	1401	1227	1099	1011
	F450BMFS1	450 BUSHMASTER	260	16.85	FUSION	2200	1777	1419	1155	1002	907
	FUSION MSR										
	F223MSR1	223 REM.	62	4.02	FUSION	2750	2463	2194	1942	1710	1500
	F224VLKMSR1	224 VALKYRIE	90	5.83	FUSION	2700	2491	2291	2101	1919	1749
	F65GDLMSR1	6.5 GRENDEL	120	7.78	FUSION	2600	2346	2107	1881	1674	1485
	F68MSR2	6.8 SPC	90	5.83	FUSION	2850	2524	2221	1939	1682	1453
	F68MSR1	6.8 SPC	115	7.45	FUSION	2470	2248	2037	1838	1654	1485
	F300BMSR2	300 BLACKOUT	150	9.72	FUSION	1900	1685	1490	1320	1181	1079
	F308MSR1	308 WIN.	150	9.72	FUSION	2770	2553	2345	2148	1960	1782
	F338FMSR2	338 FEDERAL	185	11.99	FUSION	2680	2447	2226	2016	1819	1636

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

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ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)						WIND DRIFT IN INCHES 10 MPH CROSSWIND					HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE.										TEST BARREL LENGTH
												AVERAGE RANGE				LONG RANGE					
MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	INCHES
450	229	118	79	60	48	4.4	20.2	48.0	84.7	129.1	0.5	⊕	-12.6	-51.3	3.6	6.3	⊕	-32.4	-101.1	-216.1	24
1227	895	640	447	303	204	1.3	5.6	13.8	27.1	46.5	-0.3	⊕	-2.8	-11.8	0.4	1.4	⊕	-7.5	-24.0	-53.7	24
1282	1008	785	603	455	339	1.0	4.3	10.2	19.4	32.7	-0.3	⊕	-2.7	-10.9	0.4	1.4	⊕	-6.8	-20.6	-44.2	24
1255	1013	810	640	499	386	1.0	4.0	9.7	18.1	30.4	-0.2	⊕	-3.2	-12.4	0.6	1.6	⊕	-7.6	-22.6	-47.6	24
1282	1083	908	757	625	514	0.8	3.4	8.1	14.9	24.6	-0.1	⊕	-3.8	-14.1	0.8	1.9	⊕	-8.4	-24.2	-49.6	24
1499	1272	1073	900	750	619	0.7	3.1	7.2	13.4	21.8	-0.2	⊕	-3.1	-11.5	0.5	1.5	⊕	-6.9	-20.4	-41.3	24
1645	1211	882	631	439	298	1.1	4.7	11.3	21.9	37.5	-0.4	⊕	-1.7	-7.8	0.0	0.9	⊕	-5.3	-16.8	-37.5	24
1818	1586	1378	1192	1026	879	0.6	2.9	6.9	12.5	20.3	-0.1	⊕	-4.5	-16.0	1.1	2.3	⊕	-9.2	-26.1	-52.5	24
2241	1913	1626	1373	1152	959	0.8	3.1	7.2	13.3	21.5	-0.2	⊕	-3.3	-12.4	0.6	1.7	⊕	-7.4	-21.6	-43.5	24
1827	1523	1260	1034	841	681	0.9	3.8	9.1	16.9	28.0	-0.1	⊕	-4.4	-15.8	1.0	2.2	⊕	-9.2	-27.0	-55.8	24
967	597	370	260	206	172	3.5	15.1	35.8	63.7	97.4	0.7	⊕	-13.0	-49.1	3.9	6.5	⊕	-29.7	-90.9	-190.2	18
1202	990	811	663	547	459	1.6	6.1	13.7	25.3	40.6	0.6	⊕	-10.3	-34.7	3.2	5.1	⊕	-19.3	-56.3	-114.5	16
488	460	435	413	393	375	0.7	3.3	7.2	12.5	19.1	3.7	⊕	-35.6	-110.4	12.6	17.8	⊕	-56.9	-154.7	-294.9	16
1520	1189	916	701	533	412	1.5	6.0	14.7	27.6	45.7	0.1	⊕	-6.5	-23.8	1.8	3.3	⊕	-14.0	-41.5	-87.5	20
2648	2246	1894	1586	1319	1089	0.8	3.3	7.8	14.4	23.3	-0.2	⊕	-3.6	-13.5	0.8	1.8	⊕	-8.0	-23.3	-47.2	24
2619	2255	1932	1646	1394	1174	0.7	3.1	7.4	13.5	22.1	-0.1	⊕	-4.3	-15.3	1.0	2.1	⊕	-8.9	-25.5	-51.6	24
2500	2118	1783	1492	1238	1021	0.8	3.4	8.0	14.7	24.3	-0.1	⊕	-4.0	-14.5	0.9	2.0	⊕	-8.6	-24.7	-50.5	24
2820	2397	2026	1701	1419	1173	0.8	3.2	7.4	13.7	22.2	-0.2	⊕	-3.3	-12.4	0.6	1.7	⊕	-7.4	-21.7	-43.8	24

ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)						WIND DRIFT IN INCHES 10 MPH CROSSWIND					HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE.										TEST BARREL LENGTH
												AVERAGE RANGE				LONG RANGE					
MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	INCHES
2266	1991	1742	1519	1318	1138	0.6	2.6	6.2	11.4	18.2	-0.1	⊕	-3.9	-14.1	0.9	2.0	⊕	-8.2	-23.6	-46.8	24
2751	2428	2137	1874	1637	1425	0.5	2.4	5.4	9.8	16.0	-0.2	⊕	-3.0	-11.0	0.5	1.5	⊕	-6.5	-18.8	-37.8	24
2705	2392	2109	1852	1621	1413	0.6	2.4	5.5	10.2	16.5	-0.2	⊕	-3.3	-12.1	0.7	1.7	⊕	-7.1	-20.6	-41.2	24
3178	2815	2486	2188	1919	1676	0.6	2.4	5.4	10.0	16.2	-0.2	⊕	-3.3	-12.0	0.6	1.6	⊕	-7.0	-20.4	-40.7	24
3497	3104	2748	2425	2133	1869	0.5	2.2	5.1	9.2	15.0	-0.2	⊕	-2.9	-10.7	0.5	1.4	⊕	-6.4	-18.2	-36.5	24
465	425	393	366	342	322	1.2	4.5	10.1	17.3	26.5	3.4	⊕	-32.9	-103.5	11.6	16.5	⊕	-54.1	-147.6	-283.8	16
2702	2370	2072	1804	1563	1348	0.6	2.7	6.5	11.9	19.1	-0.1	⊕	-4.4	-15.5	1.0	2.2	⊕	-9.0	-25.6	-50.8	24
2913	2562	2244	1959	1702	1472	0.6	2.6	6.1	11.3	18.1	-0.1	⊕	-3.9	-14.1	0.9	1.9	⊕	-8.2	-23.5	-46.7	24
3478	3071	2705	2373	2075	1806	0.6	2.4	5.4	9.9	16.1	-0.2	⊕	-3.1	-11.2	0.5	1.5	⊕	-6.6	-19.1	-38.4	24
1239	1001	802	635	496	384	1.0	4.0	9.7	18.1	30.4	-0.2	⊕	-3.3	-12.6	0.6	1.6	⊕	-7.7	-22.8	-48.0	24
1457	1240	1049	882	736	611	0.8	3.3	7.9	14.5	23.8	-0.1	⊕	-4.1	-14.9	0.9	2.0	⊕	-8.8	-25.2	-51.4	24
1583	1179	869	627	442	305	1.1	4.8	11.6	22.3	38.3	-0.4	⊕	-2.1	-9.2	0.2	1.1	⊕	-6.0	-18.8	-41.8	24
1873	1572	1311	1085	891	725	0.8	3.3	7.8	14.6	23.7	-0.2	⊕	-3.2	-11.9	0.6	1.6	⊕	-7.2	-21.2	-43.2	24
2366	2056	1780	1534	1315	1122	0.6	2.6	6.0	11.3	18.3	-0.2	⊕	-3.0	-11.2	0.5	1.5	⊕	-6.7	-19.5	-39.3	24
2308	1977	1683	1426	1199	1003	0.8	3.1	7.5	13.8	22.5	-0.1	⊕	-4.0	-14.4	0.9	2.0	⊕	-8.5	-24.4	-49.4	24
2659	2287	1958	1667	1411	1187	0.7	2.9	6.7	12.5	20.2	-0.2	⊕	-3.2	-12.0	0.6	1.6	⊕	-7.1	-20.8	-42.0	24
1990	1696	1437	1210	1012	844	0.8	3.6	8.3	15.3	25.3	0.0	⊕	-4.9	-17.4	1.2	2.5	⊕	-9.9	-28.7	-58.7	24
2165	1874	1614	1384	1179	1003	0.7	3.3	7.7	13.7	22.7	0.0	⊕	-5.0	-17.5	1.2	2.5	⊕	-10.0	-28.3	-57.5	24
2685	2280	1927	1618	1350	1117	0.7	3.0	7.0	13.1	21.3	-0.2	⊕	-2.9	-11.0	0.5	1.5	⊕	-6.6	-19.6	-39.8	24
2705	2347	2029	1745	1493	1270	0.7	2.8	6.5	12.0	19.3	-0.2	⊕	-3.4	-12.6	0.7	1.7	⊕	-7.4	-21.6	-43.3	24
3118	2737	2395	2088	1813	1567	0.5	2.4	5.5	10.0	16.3	-0.3	⊕	-2.8	-10.3	0.4	1.4	⊕	-6.2	-17.9	-36.1	24
2398	1970	1605	1296	1035	819	0.9	3.7	8.8	16.5	27.3	-0.2	⊕	-3.2	-12.2	0.6	1.6	⊕	-7.4	-22.0	-45.6	24
2525	2126	1779	1479	1219	997	0.9	3.4	8.0	14.9	24.3	-0.2	⊕	-3.6	-13.3	0.7	1.8	⊕	-7.9	-23.2	-47.2	24
2779	2427	2113	1831	1580	1357	0.6	2.5	5.8	10.7	17.5	-0.2	⊕	-3.0	-11.0	0.5	1.5	⊕	-6.5	-19.1	-38.5	24
3098	2726	2391	2091	1820	1578	0.5	2.3	5.4	9.8	16.0	-0.3	⊕	-2.8	-10.4	0.4	1.4	⊕	-6.2	-17.9	-36.1	24
2960	2610	2294	2008	1751	1521	0.7	2.5	5.8	10.8	17.4	-0.1	⊕	-3.6	-13.2	0.8	1.8	⊕	-7.8	-22.3	-44.5	24
1508	1178	907	693	527	407	1.5	6.0	14.8	27.7	45.9	0.1	⊕	-6.5	-23.8	1.8	3.3	⊕	-14.0	-41.6	-87.7	24
1902	1449	1085	803	595	453	1.6	6.6	16.2	30.8	51.1	0.1	⊕	-6.5	-23.9	1.7	3.2	⊕	-14.2	-42.8	-91.5	24
1827	1435	1115	860	666	527	1.4	6.3	15.1	28.5	46.7	0.3	⊕	-7.7	-27.2	2.2	3.9	⊕	-15.6	-46.8	-97.8	24
2648	2252	1903	1599	1333	1104	0.8	3.2	7.6	14.1	22.9	-0.2	⊕	-3.6	-13.4	0.7	1.8	⊕	-8.0	-23.1	-46.9	24
2671	2291	1955	1660	1399	1173	0.7	3.1	7.5	13.7	22.3	-0.1	⊕	-4.1	-14.7	0.9	2.0	⊕	-8.6	-24.8	-50.1	24
2702	2354	2042	1763	1515	1296	0.6	2.9	6.9	12.6	20.4	-0.1	⊕	-4.4	-15.7	1.0	2.2	⊕	-9.1	-25.8	-51.9	24
2801	2382	2014	1693	1412	1169	0.8	3.1	7.4	13.7	22.2	-0.2	⊕	-3.4	-12.5	0.7	1.7	⊕	-7.5	-21.8	-44.1	24
2852	2458	2109	1800	1527	1287	0.8	2.9	7.0	12.9	20.7	-0.1	⊕	-3.7	-13.4	0.8	1.8	⊕	-7.9	-22.9	-46.0	24
2913	2540	2206	1907	1640	1403	0.7	2.7	6.6	12.1	19.4	-0.1	⊕	-4.0	-14.3	0.9	2.0	⊕	-8.4	-23.9	-47.8	24
3410	2915	2481	2101	1769	1479	0.6	2.7	6.4	11.8	19.4	-0.3	⊕	-2.5	-9.6	0.3	1.2	⊕	-5.9	-17.3	-35.4	24
3475	3006	2591	2223	1898	1610	0.6	2.6	6.1	11.2	18.3	-0.3	⊕	-2.8	-10.4	0.4	1.4	⊕	-6.3	-18.3	-37.1	24
3502	3057	2659	2304	1987	1704	0.6	2.6	5.9	10.9	17.7	-0.2	⊕	-3.1	-11.3	0.6	1.5	⊕	-6.7	-19.5	-39.4	24
3518	3008	2563	2173	1832	1534	0.6	2.7	6.3	11.6	18.9	-0.3	⊕	-2.4	-9.3	0.3	1.2	⊕	-5.7	-16.7	-34.2	24
3521	3048	2630	2260	1931	1641	0.6	2.6	6.0	11.1	18.1	-0.3	⊕	-2.7	-10.2	0.4	1.4	⊕	-6.2	-18.0	-36.5	24
3478	3035	2639	2285	1969	1688	0.6	2.6	5.9	11.0	17.9	-0.2	⊕	-3.1	-11.4	0.6	1.5	⊕	-6.8	-19.7	-39.7	24
3237	2746	2316	1940	1612	1334	0.8	3.4	8.1	14.8	24.4	-0.1	⊕	-4.1	-15.0	0.9	2.1	⊕	-8.8	-25.3	-51.9	24
3481	2858	2327	1876	1495	1185	1.0	4.0	9.5	17.7	29.6	-0.1	⊕	-3.9	-14.5	0.8	2.0	⊕	-8.7	-25.4	-53.0	24
1879	1411	1041	760	562	435	1.8	7.4	17.8	33.9	55.8	0.2	⊕	-7.3	-26.6	2.0	3.7	⊕	-15.6	-47.8	-102.4	16
2280	1731	1307	1003	804	681	2.3	8.7	20.6	37.6	59.3	0.7	⊕	-11.9	-41.6	3.7	5.9	⊕	-23.8	-70.9	-146.5	24
2794	1823	1162	770	579	475	2.7	12.0	29.5	54.9	86.4	0.4	⊕	-9.7	-177.1	2.8	4.9	⊕	-22.5	-71.2	-152.8	24
1041	835	663	519	402	310	1.1	4.6	10.9	20.8	34.6	-0.1	⊕	-4.3	-15.7	1.0	2.1	⊕	-9.3	-28.1	-58.8	16
1457	1240	1049	882	736	611	0.8	3.3	7.9	14.5	23.8	-0.1	⊕	-4.1	-14.9	0.9	2.0	⊕	-8.8	-25.2	-51.4	24
1801	1467	1183	943	747	588	1.0	4.5	10.6	20.2	33.3	0.0	⊕	-4.9	-17.5	1.2	2.4	⊕	-10.1	-30.5	-63.1	24
1623	1273	986	751	565	422	1.2	5.0	11.8	22.7	37.8	-0.1	⊕	-4.0	-15.0	0.9	2.0	⊕	-9.0	-27.6	-58.4	16
1558	1290	1059	862	699	563	1.0	4.3	10.1	19.3	31.5	0.0	⊕	-5.4	-19.1	1.4	2.7	⊕	-11.0	-32.7	-66.8	16
1202	946	739	580	465	388	1.9	7.4	17.4	31.9	51.0	0.6	⊕	-10.8	-37.3	3.3	5.4	⊕	-21.2	-62.4	-128.7	16
2555	2170	1832	1536	1279	1058	0.8	3.3	7.8	14.4	23.6	-0.1	⊕	-3.8	-14.1	0.8	1.9	⊕	-8.3	-24.1	-48.9	20
2950	2459	2035	1670	1358	1100	0.9	3.8	9.0	16.8	28.0	-0.1	⊕	-4.3	-15.7	1.0	2.2	⊕	-9.2	-26.8	-55.5	20

MORE CHANGES EVERYTHING

NEW

The performance of the most popular self-defense round in history. The size and recoil of the most compact, concealable pistol platforms. The capacity and versatility of nothing else. Meet 30 Super Carry, Federal's newest cartridge that bridges the ultimate gap in handgun self-defense. Unlike most popular handgun calibers that were developed for military and law enforcement, the 30 Super Carry was designed solely for concealed carry, ensuring every facet—from physical size to terminal performance—is perfectly suited to real-world defense. Shooters can get even more from the cartridge with loads across the Federal line, including HST®, Punch™, American Eagle® and a new offering from Champion®.

More Rounds
The 30 Super Carry's slimmed-down dimensions result in a simple physical truth. A magazine the size of your standard 9mm Luger pistol's will carry more rounds of 30 Super Carry. You get the power equivalent to the proven 9mm Luger with added capacity that can make all the difference in a real-world self-defense scenario.

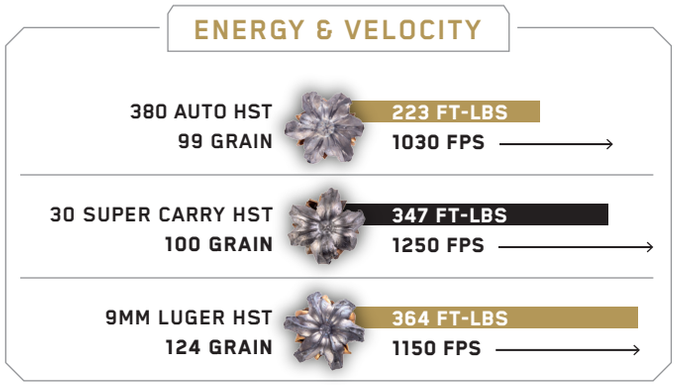
When More Matters
When lives are on the line, accuracy can evaporate. Statistics don't lie: In armed threat scenarios, typically only one out of every five shots finds the mark. It's also estimated that as many as one-third of defensive encounters involve multiple attackers. That's why 30 Super Carry's added capacity is so important. Every round you have available significantly boosts your chances of walking away from a dangerous encounter.

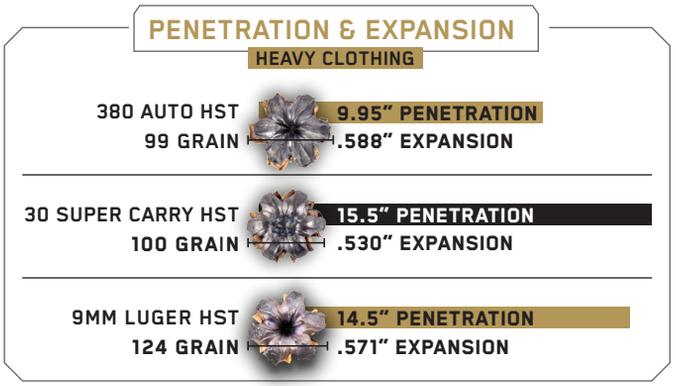
MAGAZINE CAPACITY

*Cartridges shown at actual size

More Power, No Tradeoffs
The .312-inch-diameter projectile used in 30 Super Carry allows more magazine capacity than 9mm Luger, yet delivers equivalent muzzle energy and performance.

Drastically Reduced Recoil
Not only does 30 Super Carry provide more magazine capacity than 9mm without sacrificing power, it produces less recoil and muzzle rise. This means you can put more rounds on target, faster.





NO COMPROMISES: MORE ROUNDS PER MAGAZINE WITH PERFORMANCE THAT MATCHES 9MM LUGER

More Effective Training
Extract more from the 30 Super Carry cartridge with loads for both serious training and recreational shooting. Our American Eagle offering provides a similar feel and point of impact to defensive loads, while the **new Champion 30 Super Carry** provides a fun low-recoil option for plinking.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 39-40.

HST

Whether you want to maximize the power of your magnum revolver, get the most from the game-changing 30 Super Carry cartridge, or anything in between, Federal Premium® HST® provides options that define performance. All loads boost expansion and hit critical penetration depths through a variety of barriers, with nearly 100 percent weight retention.

Consistency Counts
The exclusive HST bullet is engineered to expand extremely reliably and retain nearly all of its weight through almost every barrier. The result is consistent, nearly identical penetration and expansion in any situation, shot after shot. Gelatin shot with 10mm Auto HST (P10HST1S) at 10 feet.

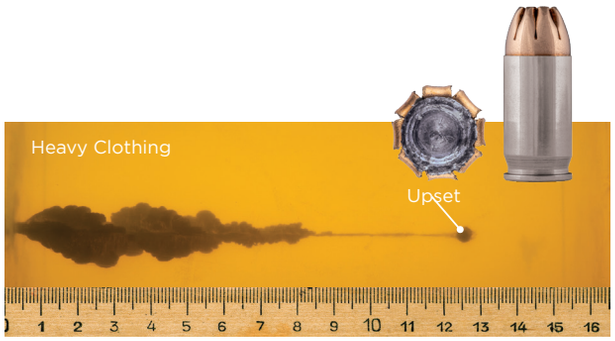
"A self-defense situation unfolds quickly and is full of unknowns. That's why it's so critical to have ammunition you can count on. I choose HST."

JULIE GOLOB
WORLD CHAMPION SHOOTER
FEDERAL AMBASSADOR

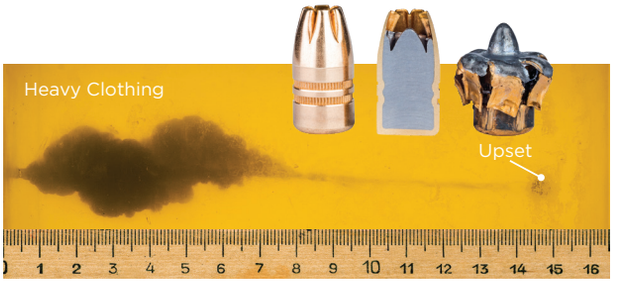
HYDRA-SHOK DEEP

NEW

A redesigned center post and core push the performance of Hydra-Shok Deep® further. That technology is giving the classic 32 Auto defensive cartridge a new life. The Hydra-Shok Deep design maximizes the cartridge's available energy to deliver critical penetration depths through bare ballistics gelatin and heavy clothing. ***Available in a full lineup of loads, including the new 32 Auto.***



380 Auto Redefined
Powered by the Hydra-Shok Deep design, the 380 Auto easily meets the FBI's penetration guidelines, surpassing the 12-inch mark. Bare gel shot with 380 Auto (P380HSD1) at 10 feet; 13.5 inches of penetration.



Deep Defense
A beefed-up center post and redesigned core give Hydra-Shok Deep loads the ability to hit critical depths through the most common self-defense barriers. Bare gelatin shot with 9mm Luger (P9HSD1) at 10 feet; 15 inches of penetration.

HYDRA-SHOK

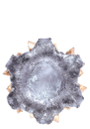
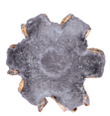
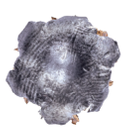
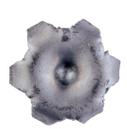
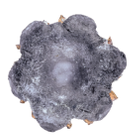
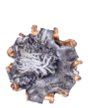
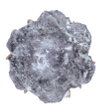
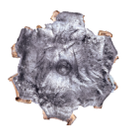
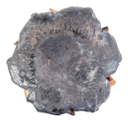
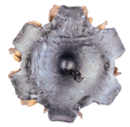
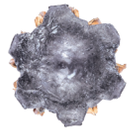
Original Hydra-Shok remains one of the most popular choices among self-defense experts. We use stringent manufacturing processes to ensure Hydra-Shok loads perform accurately and consistently.

PRACTICE & DEFEND PACKS

We pair 50 HST loads with 50 Syntech Training Match™ rounds in Practice & Defend packs for the most complete combination available. All produce identical velocities, trajectories and point of impact for the most realistic training and the utmost protection.

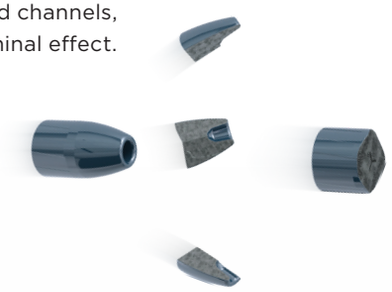
FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 39-40.

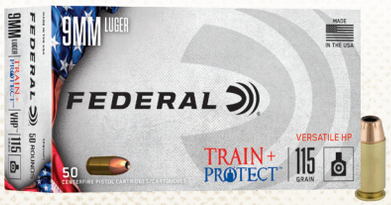
Any cartridge should be able to deliver a knockout blow. That concept guided the development of Federal® Punch™ ammunition and it's what keeps pushing us to develop more loads like this year's **new deep-penetrating 25 Auto solid**. Like all Punch offerings, it's designed around the unique properties of the specific cartridge to provide caliber-optimized penetration needed in real-world self-defense situations. ***Now available!***

	380 Auto Punch JHP	38 Special Punch JHP	30 Super Carry Punch JHP	9mm Luger Punch JHP	40 S&W Punch JHP	10mm Auto Punch JHP	44 S&W Special Punch JHP	45 Auto Punch JHP
Bare Gel								
Heavy Clothing								

SYNTECH DEFENSE

Syntech® changed the range forever. Now the technology is revolutionizing protection as well. Syntech Defense™ provides dynamic terminal performance with a hollow-point bullet that separates into three segments and a deep-penetrating core on impact. The core penetrates 12 to 18 inches through bare ballistics gel and heavy clothing—a critical benchmark in self-defense situations and the best terminal performance of any round in its class. The petals create three secondary wound channels, each more than 6 inches deep, adding to the terminal effect.





TRAIN + PROTECT

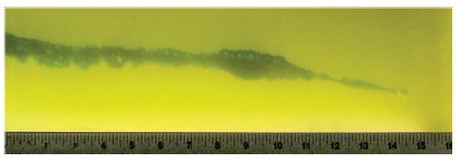
Honor the American birthright to bear arms. Federal® Train + Protect uses the VHP bullet design to provide precise, practical performance at the range, and instant reliable expansion on impact.

25 AUTO PUNCH SOLID

When we introduced Punch, it was to provide the best performance for whatever platform or cartridge you choose. To that end, we gave our new Punch 25 Auto offering a solid bullet that doesn't expand on impact, which allows the bullet to hit critical penetration depths and maximize the cartridge's available energy.

FEDERAL PREMIUM PUNCH RIMFIRE

Punch Personal Defense 22 LR and 22 WMR loads use a nickel-plated lead-core bullet propelled at extreme velocities to hit critical penetration depths of 12 to 16 inches in ballistics gelatin through short-barrel handguns. Combined with stringent function testing that ensures the most consistent ignition and cycling, Punch ammunition makes rimfire a legitimate defense option.

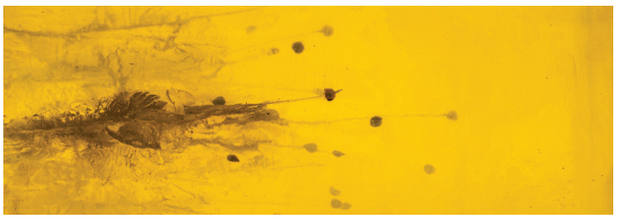


FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 39-40.

FORCE X2

Turn your shotgun into the ultimate defensive platform with Force X2™ from Federal Premium®. Its nine copper-plated 00 FX2 buckshot pellets are specially engineered to split into two equal-size pieces on impact. This potentially doubles the number of wound channels from nine to 18, improves the transfer of energy from the payload to the target, and minimizes the potential for over-penetration, reducing the risk to bystanders. Force X2 is also loaded for more manageable recoil, allowing the shooter to stay on target for faster follow-ups and better accuracy in a self-defense situation.

Double Trouble
Split pellets are designed to separate on impact, as much as doubling the number of wound channels.



FORCE X2 SHORTY

We've combined the power of our newest technologies to create a shotshell option that changes the nature of self-defense. Force X2 Shorty™ shells measure just 1 ¾ inches, but hold a payload of six 00 segmenting buckshot. When used with firearms designed to cycle sub-length shotshells like the Mossberg 590S, the loads offer much higher magazine capacities with up to twice the wound channels over standard buckshot loads.

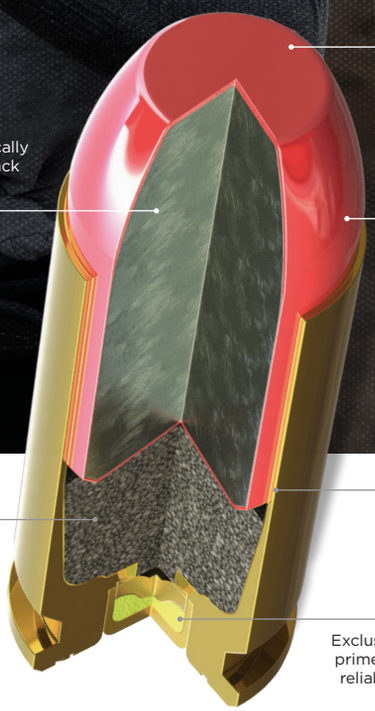
BUCKSHOT

Make the threat scatter. Federal Premium buckshot penetrates to optimal depths for effective self-defense. Loads with the FLITECONTROL® wad system deliver the tightest patterns possible. ***Now available in a full range of offerings, including a new 20-gauge 2 buck load.***

.410 HANDGUN

The .410 handgun has emerged as a popular option for self-defense, and Federal Premium® offers a variety of loads for these specialized firearms. A customized hull design, optimal brass thickness and fine-tuned payloads make these perfect for .410 handguns.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 39-40.



SYNTECH ACTION PISTOL

Syntech Action Pistol® loads are specifically designed for competition and loaded to power factor requirements with heavy, flatter-nosed bullets for more reliable knock-downs on steel targets.

SYNTECH RANGE

An exclusive polymer coating prevents metal-on-metal contact between the bullet and bore, eliminating copper and lead fouling.

SYNTECH TRAINING MATCH

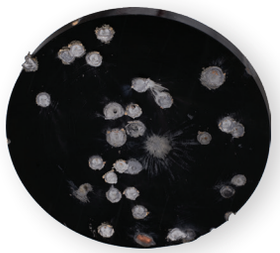
If practice isn't realistic, it's not really practice. Make range time matter with Syntech Training Match® loads that offer the same velocity, trajectory and point of impact as equivalent Federal Premium® HST® ammunition.

Cleaner
With a polymer-encapsulated bullet, all Syntech loads virtually eliminate barrel fouling and airborne lead.

Official Ammunition Of The USPSA
Syntech Action Pistol is the official ammunition of the United States Practical Shooting Association (USPSA). The alliance supports the organization's tireless stewardship of competitive practical shooting.

SYNTECH PCC

Velocity and accuracy of Syntech PCC® are optimized for long gun barrel lengths, with a bullet profile that provides excellent accuracy and reliable feeding in a variety of carbine platforms.



Safer On Steel
Without a copper jacket, all Syntech varieties drastically reduce the amount of splash-back on steel targets.

CATALYST
CLEANER BURNING
PRIMER TECHNOLOGY

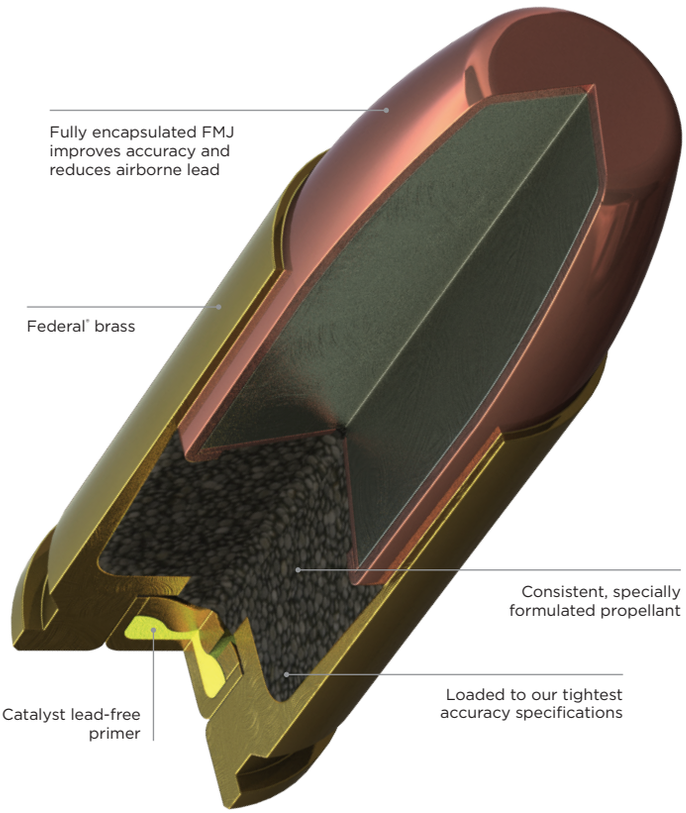
Catalyst Primer
This lead-free primer technology provides the most reliable, consistent ignition possible in range ammunition.

Less Muzzle Rise For Faster Follow-ups
Syntech Action Pistol's unique blend of propellants, bullet weights and the Total Synthetic Jacket result in as much as 14 percent less muzzle rise than comparable target loads. This allows competitive shooters to get back on target more quickly, for faster follow-up shots and stage times. Still frame from high-speed video showing 150-grain 9mm Luger (AE9SJAP1) fired through a Tangfolio Stock II.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 39-40.

GOLD MEDAL ACTION PISTOL

Compete at the highest level with loads designed specifically for the action shooting sports. Gold Medal® Action Pistol offers even better accuracy and consistency than original Gold Medal, and it's loaded to power-factor requirements. The fully encapsulated FMJ bullet and Catalyst™ lead-free primer deliver cleaner shooting. ***Available in 9mm Luger and 40 S&W.***



GOLD MEDAL

Demand the performance to compete. Gold Medal loads are built with the finest components and held to the tightest tolerances to deliver in competitive shooting situations. They feature match-grade primers and bullets, with consistent powders and the best Federal® brass.

AMERICAN EAGLE

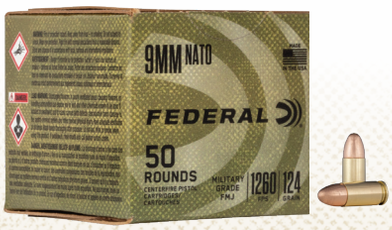
Hit your target and train harder with this proven line. It provides performance similar to self-defense and competition loads for a familiar feel and realistic practice.

AMERICAN EAGLE IRT

Safe range time starts here. American Eagle® Indoor Range Training (IRT) has a reduced-lead bullet fully encapsulated in copper for safer, economical training. It's powered by a toxic metal-free primer and produces ballistics matched to those of equivalent self-defense rounds.

AMERICAN EAGLE IRT LEAD FREE

We've made the firing line even cleaner with American Eagle IRT Lead Free. Its proprietary bullets are completely lead-free and its Federal Catalyst™ primer offers the same reliability, shelf life and ballistics of conventional lead styphnate primers—without the lead.



9MM NATO MILITARY GRADE BALL

Federal 9mm NATO features military-quality 124-grain FMJ bullets loaded to higher velocities than rounds typically offered for the consumer market. The ammunition is built to NATO specifications and its sealed case ensures reliable ignition, cycling and ballistics.

NEW

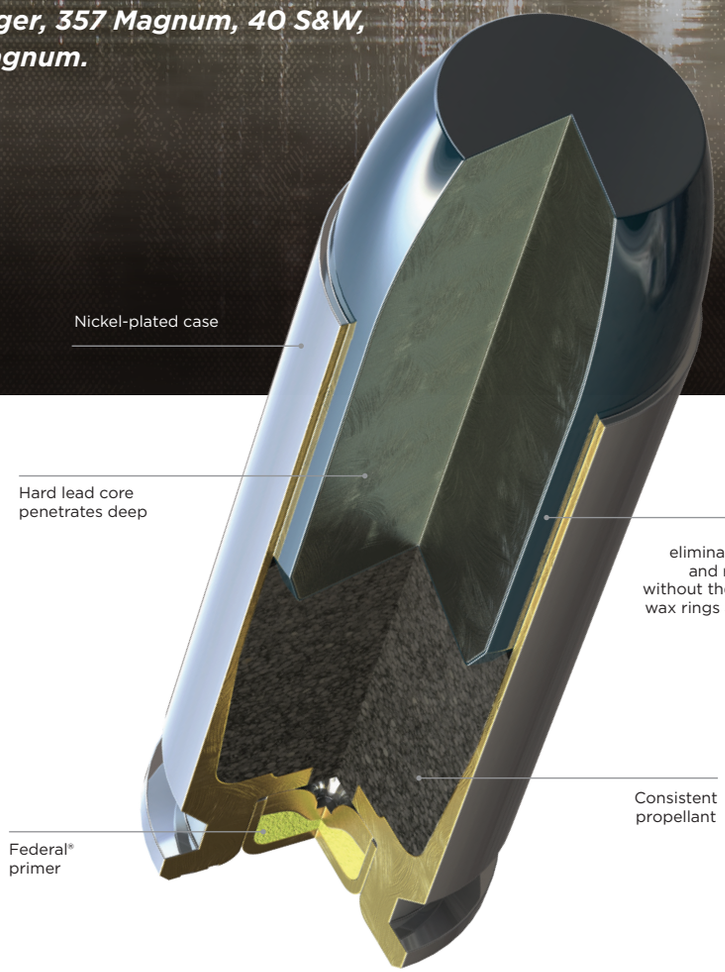
CHAMPION

Stretch your range time further with new Federal Champion loads in 30 Super Carry, as well as 380 Auto and 38 Special. The affordable offering features reloadable brass, quality FMJ bullets, and consistent primers and propellant.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 39-40.

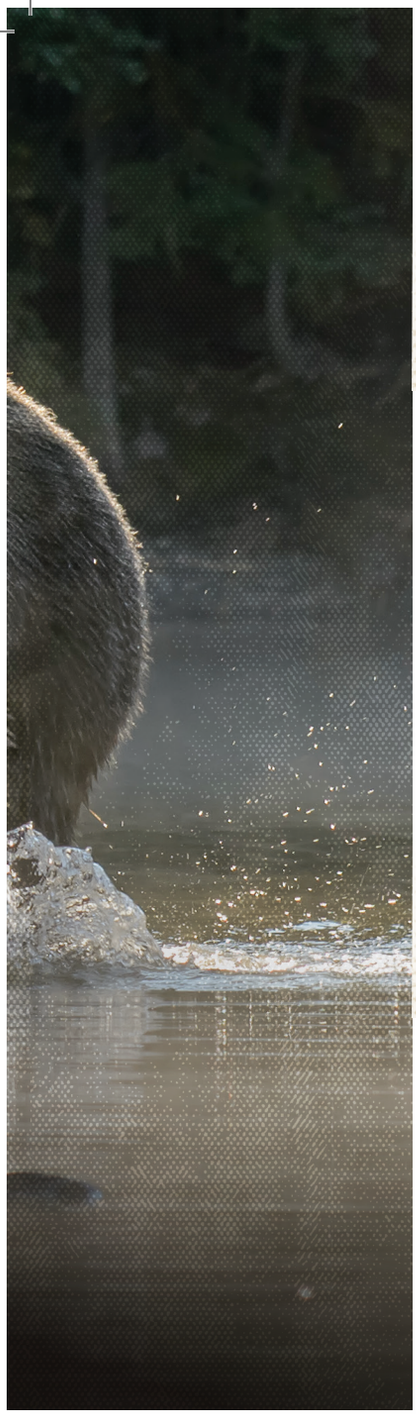
SOLID CORE

Sometimes wild places can put you in a tight spot. That's why we designed Solid Core. Its extremely hard, flat-nose lead bullet holds together while blowing through bone, providing high weight retention and deep penetration. Polymer jacket technology reduces the friction and leading that plague hard cast bullets. ***Available in popular hunting and defense calibers, including 9mm Luger, 357 Magnum, 40 S&W, 10mm Auto, 45 Auto +P and 44 Rem. Magnum.***



Go Deep

Solid Core's hard lead bullet blasts through the toughest hide and bone, for extremely deep penetration. Its polymer jacket improves performance without costly features like wax rings and gas checks.



TROPHY BONDED BEAR CLAW

Take complete advantage of 10mm Auto ballistics with Trophy Bonded® Bear Claw®. The full-power load and its tough, bonded bullet construction result in superb accuracy, high weight retention and deep penetration. It's just the thing for blasting through the vitals of bears, hogs, deer and more.

BARNES EXPANDER

The all-copper construction of the Barnes® Expander brings non-lead handgun hunting performance to new heights. The loads provide 100 percent weight retention, outstanding expansion and superb accuracy.

SWIFT A-FRAME

Handgun hunters leave nothing to chance when it comes to bullet choice. That's why we're proud to offer the robust Swift® A-Frame®. High weight retention and controlled expansion, regardless of distance, make these rounds ideal for big game.

FUSION

These handgun loads feature the same molecularly bonded bullet construction as their rifle counterparts for the toughness, accuracy and terminal performance short-barrel hunters need. Bullet weights and velocities have also been optimized to be lethal on deer without punishing the shooter.

POWER-SHOK

Short-barrel performance that goes the distance. Handgun hunters can get the reliability and accuracy they need at an affordable price with Federal® Power-Shok® loads. The rounds feature a powerful jacketed hollow-point bullet suited to a variety of medium and big game.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 39-40.

HANDGUN BALLISTICS

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; CLM=cartridge length longer than SAAMI max, may not fit in all magazines. *Molycoat: molybdenum disulfide dry film lubricant

Federal Premium® Handgun

	FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	TRAJECTORY SIGHTS .9 INCHES ABOVE BORE LINE 25 YDS.	50 YDS.	75 YDS.	100 YDS.	TEST BARREL LENGTH INCHES
FEDERAL PREMIUM PERSONAL DEFENSE HST®																				
	P380HST1S	380 AUTO	99	6.42	HST	935	986	948	915	885	233	213	197	184	172	⊕	-1.3	-5.1	-11.4	3.75
	P327HST1S	327 FEDERAL MAGNUM	104	6.74	HST	1525	1080	895	781	690	537	270	185	141	110	⊕	-0.9	-4.4	-11.2	4
	P30HST1S	30 SUPER CARRY	100	6.48	HST	1250	1185	1129	1081	1041	347	312	283	260	241	⊕	-0.6	-3.0	-7.2	4
	P9HST1S	9MM LUGER	124	8.04	HST	1150	1095	1049	1010	977	364	330	303	281	263	⊕	-0.9	-3.8	-8.8	4
	P9HST3S	9MM LUGER +P	124	8.04	HST	1200	1136	1083	1039	1002	396	355	323	297	277	⊕	-0.8	-3.4	-8.0	4
	P9HST2S	9MM LUGER	147	8.04	HST	1000	976	953	933	914	326	311	297	284	273	⊕	-1.4	-5.2	-11.5	4
	P357HST1S	357 MAGNUM	154	9.98	HST	1340	1127	999	914	848	614	434	341	286	246	⊕	-0.8	-3.7	-9.2	4
	P357SHST1S	357 SIG	125	8.10	HST	1360	1275	1200	1136	1083	513	451	400	358	326	⊕	-0.4	-2.4	-6.0	4
	P40HST1S	40 S&W	180	11.66	HST	1010	980	954	930	908	408	384	364	346	329	⊕	-1.4	-5.1	-11.4	4
	P10HST1S	10MM AUTO	200	12.96	HST	1130	1051	991	943	902	567	490	436	395	361	⊕	-1.1	-4.3	-10.0	5
	P45HST2S	45 AUTO	230	14.90	HST	890	872	856	840	824	404	389	374	360	347	⊕	-2.0	-6.9	-15.0	5
	P45HST1S	45 AUTO +P	230	14.90	HST	950	929	909	890	873	461	440	422	405	389	⊕	-1.6	-5.9	-12.8	5
FEDERAL PREMIUM PERSONAL DEFENSE PRACTICE & DEFEND																				
	P9HST1TM100	9MM LUGER	124	8.04	HST	1150	1095	1049	1010	977	364	330	303	281	263	⊕	-0.9	-3.8	-8.8	4
	P9HST2TM100	9MM LUGER	147	9.53	HST	1000	976	953	933	914	326	311	297	284	273	⊕	-1.4	-5.2	-11.5	4
	P40HST1TM100	40 S&W	180	11.66	HST	1010	980	954	930	908	408	384	364	346	329	⊕	-1.4	-5.1	-11.4	4
	P45HST2TM100	45 AUTO	230	14.90	HST	890	872	856	840	824	404	389	374	360	347	⊕	-2.0	-6.9	-15.0	5
FEDERAL PREMIUM PERSONAL DEFENSE HYDRA-SHOK DEEP®																				
NEW	P32HSD1	32 AUTO	68	4.41	HYDRA-SHOK DEEP	1000	949	907	869	835	151	136	124	114	105	⊕	-1.5	-5.7	-12.7	4
	P380HSD1	380 AUTO	99	6.42	HYDRA-SHOK DEEP	975	929	888	853	820	209	189	173	160	148	⊕	-1.6	-6.0	-13.3	3.75
	P9HSD1	9MM LUGER	135	8.75	HYDRA-SHOK DEEP	1060	1026	996	970	946	337	316	298	282	268	⊕	-1.2	-4.5	-10.2	4
	P38HSD1	38 SPECIAL +P	130	8.42	HYDRA-SHOK JHP	900	877	856	836	816	234	222	211	202	192	⊕	-1.9	-6.9	-14.9	4-V
	P40HSD1	40 S&W	165	10.69	HYDRA-SHOK DEEP	100	1011	978	949	922	404	375	350	330	311	⊕	-1.2	-4.7	-10.6	4
	P45HSD1	45 AUTO	210	13.61	HYDRA-SHOK DEEP	980	952	927	903	882	448	423	400	381	363	⊕	-1.5	-5.5	-12.2	5
FEDERAL PREMIUM PERSONAL DEFENSE® HYDRA-SHOK®																				
	P32HS1	32 AUTO	65	4.21	HYDRA-SHOK	925	892	862	834	808	123	115	107	100	94	⊕	-1.8	-6.6	-14.5	4
	PD327HS1 H	327 FEDERAL MAGNUM	85	5.51	HYDRA-SHOK JHP	1400	1306	1221	1150	1091	370	322	281	250	225	⊕	-0.4	-2.2	-5.7	4-V
	PD380HS1 H	380 AUTO	90	5.83	HYDRA-SHOK	975	953	914	879	847	200	182	167	154	143	⊕	-1.5	-5.6	-12.5	3.75
	P9HS1	9MM LUGER	124	8.04	HYDRA-SHOK	1120	1070	1028	993	961	345	315	291	271	255	⊕	-1.0	-4.0	-9.3	4
	PD38HS3 H	38 SPECIAL	110	7.13	HYDRA-SHOK	980	943	911	882	855	235	217	203	190	179	⊕	-1.5	-5.7	-12.6	4-V
	P38HS1	38 SPECIAL +P	129	8.36	HYDRA-SHOK	950	926	904	884	865	258	246	234	224	214	⊕	-1.6	-5.9	-13.0	4-V
	P357HS1	357 MAGNUM	158	10.24	HYDRA-SHOK	1240	1187	1139	1098	1063	539	494	455	423	396	⊕	-0.6	-3.0	-7.1	4-V
	P40HS3	40 S&W	165	10.69	HYDRA-SHOK	980	950	924	899	876	352	331	312	296	281	⊕	-1.5	-5.6	-12.3	4
	P44HS1	44 REM. MAGNUM	240	15.55	HYDRA-SHOK	1210	1152	1102	1060	1024	780	707	647	599	559	⊕	-0.7	-3.3	-7.7	4-V
	P45HS1	45 AUTO	230	14.90	HYDRA-SHOK	900	882	865	848	832	414	397	382	367	354	⊕	-1.9	-6.7	-14.6	5
FEDERAL PREMIUM HUNTING HANDGUN																				
	P327SA	327 FEDERAL MAGNUM	100	6.47	SWIFT A-FRAME	1500	1411	1329	1254	1189	500	442	392	349	314	⊕	-0.2	-1.6	-4.4	4-V
	P9SHC1	9MM LUGER	147	9.53	SOLID CORE	1120	1082	1048	1019	993	409	382	359	339	322	⊕	-1.0	-3.9	-8.9	4
	P357XB1	357 MAGNUM	140	9.07	BARNES EXPANDER	1400	1326	1257	1196	1143	609	546	491	445	406	⊕	-0.3	-2.0	-5.3	6-V
	P357SA	357 MAGNUM	180	11.66	SWIFT A-FRAME	1130	1086	1049	1016	988	510	471	439	413	390	⊕	-0.9	-3.9	-8.9	6-V
	P357SHC1	357 MAGNUM	180	11.66	SOLID CORE	1400	1333	1270	1214	1163	783	710	645	589	541	⊕	-0.3	-2.0	-5.1	4-V
	P40SHC1	40 S&W	200	12.96	SOLID CORE	1000	976	953	933	914	444	423	404	386	371	⊕	-1.4	-5.2	-11.5	4
	P10T1	10MM AUTO	180	11.66	TROPHY BONDED JSP	1275	1192	1123	1067	1021	650	568	504	455	417	⊕	-0.6	-3.0	-7.2	5
	P10SHC1	10MM AUTO	200	12.96	SOLID CORE	1200	1143	1095	1054	1019	639	580	532	493	461	⊕	-0.8	-3.3	-7.9	5
	P10SA	10MM AUTO	200	12.96	SWIFT A-FRAME	1100	1062	1030	1001	975	537	501	471	445	423	⊕	-1.0	-4.1	-9.3	5
	P41XB1	41 REM. MAGNUM	180	11.66	BARNES EXPANDER	1340	1262	1193	1134	1084	718	636	569	514	470	⊕	-0.5	-2.5	-6.1	6-V
	P41SA	41 REM. MAGNUM	210	13.61	SWIFT A-FRAME	1360	1289	1224	1167	1118	862	775	698	635	582	⊕	-0.4	-2.3	-5.7	6-V
	P44XB1	44 REM. MAGNUM	225	14.58	BARNES EXPANDER	1280	1209	1147	1096	1052	818	730	658	600	553	⊕	-0.6	-2.8	-6.9	6-V
	P44SA	44 REM. MAGNUM	280	18.14	SWIFT A-FRAME	1170	1107	1056	1013	977	851	762	693	638	594	⊕	-0.9	-3.7	-8.6	6-V
	P44SHC1	44 REM. MAGNUM	300	19.44	SOLID CORE	1300	1230	1169	1117	1073	1126	1008	911	831	766	⊕	-0.5	-2.7	-6.5	4-V
	P45SHC1	45 AUTO +P	240	15.55	SOLID CORE	1000	973	949	926	906	533	505	480	457	437	⊕	-1.4	-5.2	-11.6	5
	P454XB1	454 CASULL	250	16.20	BARNES EXPANDER	1530	1423	1326	1239	1165	1299	1123	976	852	753	⊕	-0.2	-1.6	-4.4	5.7-V
	P454SA	454 CASULL	300	19.44	SWIFT A-FRAME	1520	1410	1311	1223	1149	1539	1324	1145	996	879	⊕	-0.2	-1.7	-4.6	5.7-V
	P460XB1	460 S&W	275	17.82	BARNES EXPANDER	1670	1595	1522	1453	1388	1703	1553	1415	1289	1177	⊕	0.1	-0.8	-2.7	8.4-V
	P460SA	460 S&W	300	19.44	SWIFT A-FRAME	1750	1625	1506	1397	1300	2040	1758	1510	1300	1125	⊕	0.1	-0.8	-2.8	8.4-V
	P500XB1	500 S&W	275	17.82	BARNES EXPANDER	1660	1544	1435	1337	1249	1682	1455	1257	1091	952	⊕	0.0	-1.1	-3.4	8.4-V
	P500SA	500 S&W	325	21.06	SWIFT A-FRAME	1800	1677	1559	1449	1350	2338	2028	1754	1515	1315	⊕	0.1	-0.6	-2.4	8.4-V
FEDERAL PREMIUM GOLD MEDAL®																				
	GM38A	38 SPECIAL	148	9.59	LW MATCH	690	650	610	570	540	155	140	120	110	95	⊕	-4.3	-14.4	-31.2	4-V
	GM45B	45 AUTO	185	11.99	FMJ-SWC MATCH	770	740	700	670	640	245	220	205	185	170	⊕	-3.1	-10.6	-23.0	5
	GM45A	45 AUTO	230	14.90	FMJ MATCH	860	840	830	810	800	380	365	350	340	325	⊕	-2.2	-7.5	-16.1	5
FEDERAL PREMIUM GOLD MEDAL® ACTION PISTOL																				
	GM9AP1	9MM LUGER	147	9.53	FMJ MATCH	900	883	866	851	836	264	254	245	236	228	⊕	-1.9	-6.7	-14.5	4
	GM40AP1	40 S&W	180	11.66	FMJ MATCH	950	926	904	884	865	361	343	327	312	299	⊕	-1.6	-5.9	-13.0	4

Federal® Handgun

	FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	TRAJECTORY SIGHTS .9 INCHES ABOVE BORE LINE 25 YDS.	50 YDS.	75 YDS.	100 YDS.	TEST BARREL LENGTH INCHES
FEDERAL POWER•SHOK®																				
	C357G	357 MAGNUM	180	11.66	JHP	1080	1050	1020	1000	970	465	440	415	395	380	⊕	-1.1	-4.2	-9.6	4-V
	C41A	41 REM. MAGNUM	210	13.61	JHP	1230	1170	1120	1080	1040	705	640	585	545	505	⊕	-0.7	-3.1	-7.3	4-V
	C44B	44 REM. MAGNUM	180	11.66	JHP	1460	1340	1240	1160	1090	850	720	615	535	470	⊕	-0.3	-2.0	-5.4	4-V
	C44A	44 REM. MAGNUM	240	15.55	JHP	1230	1170	1120	1070	1040	805	730	665	615	570	⊕	-0.7	-3.1	-7.4	4-V
FEDERAL PERSONAL DEFENSE PUNCH™																				
	PD22L1	22 LONG RIFLE	29	1.87	SOLID	1070	1020	978	843	912	74	67	62	57	54	⊕	-0.61	-3.5	-8.9	2
	PD22WMR1	22 WMR	45	2.91	JHP	1000	961	933	905	880	100	93	87	82	77	0.4	⊕	-2.9	-8.48	2
NEW	PD25P1	25 AUTO	45	2.92	SOLID	825	795	766	739	714	68	63	59	55	51	⊕	-2.5	-8.8	-19.1	2
	PD380P1	380 AUTO	85	5.51	JHP	1000	949	907	869	835	189	170	155	143	132	⊕	-1.5	-5.7	-12.7	3.75
	PD30P1	30 SUPER CARRY	103	6.67	JHP	1130	1082	1042	1008	978	292	268	248	232	219	⊕	-1.0	-3.9	-9.0	4
	PD9P1	9MM LUGER	124	8.04	JHP	1150	1095	1049	1010	977	364	330	303	281	263	⊕	-0.9	-3.8	-8.8	4
	PD38P1	38 SPECIAL +P	120	7.78	JHP	1000	949	907	869	835	266	240	219	201	186	⊕	-1.5	-5.7	-12.7	4-V
	PD40P1	40 S&W	165	10.69	JHP	1130	1078	1035	999	967	468	426	392	365	342	⊕	-1.0	-4.0	-9.1	4
	PD10P1	10MM AUTO	200	12.96	JHP	1100	1075	1052	1031	1012	537	513	491	472	454	⊕	-1.0	-3.9	-8.9	5
	PD44SP1	44 SPECIAL	180	11.66	JHP	815	795	777	759	741	265	253	241	230	220	⊕	-2.5	-8.7	-18.6	4-V
	PD45P1	45 AUTO	230	14.90	JHP	890	872	856	840	824	404	389	374	360	347	⊕	-2.0	-6.9	-15.0	5
FEDERAL PERSONAL DEFENSE REVOLVER																				
	C32HRB	32 H&R MAGNUM	85	5.51	JHP	1120	1070	1020	990	950	235	215	195	185	170	⊕	-1.0	-4.1	-9.4	5
FEDERAL TRAIN+PROTECT™																				
	TP380VHP1	380 AUTO	85	5.51	JHP	1000	953	914	879	847	189	172	158	146	135	⊕	-1.5	-5.6	-12.5	3.75
	TP9VHP1	9MM LUGER	115	7.45	JHP	1180	1110	1050	1000	960	355	310	280	255	235	⊕	-0.9	-3.7	-8.7	4
	TP38VHP1	38 SPECIAL	158	10.24	SWHP	830	816	802	789	776	242	233	226	218	211	⊕	-2.3	-8.0	-17.3	4-V
	TP357VHP1	357 MAGNUM	125	8.10	JHP	1440	1335	1240	1161	1096	575	494	427	374	333	⊕	-0.3	-2.1	-5.4	4-V
	TP40VHP1	40 S&W	180	11.66	JHP	1000	970	950	920	900	400	375	360	340	325	⊕	-1.4	-5.3	-11.6	4
	TP10VHP1	10MM AUTO	180	11.66	JHP	1175	1122	1077	1039	1006	552	503	463	431	404	⊕	-0.8	-3.5	-8.2	5
	TP45VHP1	45 AUTO	230	14.90	JHP	850	830	820	800	790	370	355	345	330	320	⊕	-2.2	-7.7	-16.4	5

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

Federal® Handgun

	FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	TRAJECTORY SIGHTS .9 INCHES ABOVE BORE LINE 25 YDS.	50 YDS.	75 YDS.	100 YDS.	TEST BARREL LENGTH INCHES
	FEDERAL CHAMPION™																			
	C32HRA	32 H&R MAGNUM	95	6.16	LSW	1020	970	930	890	860	220	200	180	170	155	⊕	-1.4	-5.3	-12.0	5
NEW	C38095A	380 AUTO	95	6.16	FMJ	990	945	906	872	841	207	188	173	160	149	⊕	-1.5	-5.7	-12.7	3.75
NEW	C3090A	30 SUPER CARRY	90	5.83	FMJ	1300	1228	1166	1113	1068	338	301	272	247	228	⊕	-0.5	-2.7	-6.6	4
	WM5199	9MM LUGER	115	7.45	FMJ	1125	1063	1013	972	936	323	288	262	241	224	⊕	-1.0	-4.1	-9.6	4
NEW	C38130A	38 SPECIAL	130	8.42	FMJ	890	870	852	834	817	229	219	209	201	193	⊕	-2.0	-7.0	-15.1	4-V
	WM5223	40 S&W	180	11.66	FMJ	1000	972	946	923	901	400	377	358	340	324	⊕	-1.4	-5.3	-11.6	4
	WM5221	10MM AUTO	180	11.66	FMJ	1200	1129	1073	1035	980	576	509	460	428	383	⊕	-1.4	-4.7	-10.1	5
	C44SA	44 SPECIAL	200	12.96	SWHP	870	850	830	810	790	335	320	305	290	275	⊕	-2.1	-7.4	-16.0	4-V
	C45LCA	45 COLT	225	14.58	SWHP	830	811	793	776	759	344	329	314	300	288	⊕	-2.4	-8.2	-17.7	4-V
	WM5233	45 AUTO	230	14.90	FMJ	845	829	814	800	786	365	351	339	327	315	⊕	-2.3	-7.8	-16.6	5
	FEDERAL MILITARY GRADE																			
	C9N882	9MM LUGER	124	8.04	FMJ	1260	1187	1126	1074	1032	437	388	349	318	293	⊕	-0.6	-3.0	-7.2	4

Syntech® Handgun

FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	TRAJECTORY SIGHTS .9 INCHES ABOVE BORE LINE 25 YDS.	50 YDS.	75 YDS.	100 YDS.	TEST BARREL LENGTH INCHES
SYNTECH RANGE™																			
AE9SJ2	9MM LUGER	124	8.04	TSJ	1050	1011	978	949	922	304	282	263	248	234	⊕	-1.2	-4.7	-10.6	4
AE40SJ1	40 S&W	165	10.69	TSJ	1050	1027	1007	988	970	404	387	371	357	345	⊕	-1.2	-4.4	-10.0	4
AE45SJ1	45 AUTO	230	14.90	TSJ	830	821	812	803	795	352	344	337	329	322	⊕	-2.3	-7.9	-16.8	5
AE10SJ1	10MM AUTO	205	13.28	TSJ	1150	1101	1059	1023	992	602	551	510	477	448	⊕	-0.9	-3.7	-8.6	5
SYNTECH ACTION PISTOL™																			
AE9SJAP1	9MM LUGER	150	9.72	TSJ	890	873	857	842	827	264	254	245	236	228	⊕	-2.0	-6.9	-14.9	4
AE40SJAP1	40 S&W	205	13.28	TSJ	830	813	797	782	767	314	301	289	278	267	⊕	-2.4	-8.1	-17.5	4
AE45SJAP1	45 AUTO	220	14.26	TSJ	810	795	780	766	752	320	309	297	287	277	⊕	-2.5	-8.6	-18.5	5
SYNTECH PCC™																			
AE9SJPC1	9MM LUGER	130	8.42	TSJ	1130	1078	1035	999	967	369	336	309	288	270	⊕	-1.0	-4.0	-9.1	16
SYNTECH TRAINING MATCH®																			
AE9SJ4	9MM LUGER	124	8.04	TSJ	1150	1064	1000	949	907	364	312	275	248	226	⊕	-1.0	-4.2	-9.8	4
AE9SJ3	9MM LUGER	147	9.53	TSJ	1000	976	953	933	914	326	311	297	284	273	⊕	-1.4	-5.2	-11.5	4
AE40SJ2	40 S&W	180	11.66	TSJ	1010	958	914	876	842	408	367	334	307	283	⊕	-1.5	-5.5	-12.4	4
AE45SJ2	45 AUTO	230	14.90	TSJ	890	855	824	794	767	404	374	346	322	300	⊕	-2.1	-7.3	-16.0	5
SYNTECH DEFENSE™																			
S9SJT2	9MM LUGER	138	8.94	SHP	1050	989	940	899	862	338	300	271	248	228	⊕	-1.3	-5.1	-11.5	4
S40SJT2	40 S&W	175	11.34	SHP	1000	950	907	870	836	389	350	320	294	272	⊕	-1.5	-5.6	-12.7	4
S45SJT2	45 AUTO	205	13.28	SHP	970	926	887	853	821	428	390	358	331	307	⊕	-1.6	-6.0	-13.4	5

American Eagle® Handgun

FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	TRAJECTORY SIGHTS .9 INCHES ABOVE BORE LINE 25 YDS.	50 YDS.	75 YDS.	100 YDS.	TEST BARREL LENGTH INCHES
AMERICAN EAGLE																			
AE5728A	5.7X28MM	40	2.59	TMJ	1655	1514	1387	1275	1179	243	204	171	144	124	⊕	0.0	-1.2	-3.8	4.8
AE25AP	25 AUTO	50	3.24	FMJ	760	738	717	697	677	64	60	57	54	51	⊕	-3.1	-10.4	-22.1	2
AE32AP	32 AUTO	71	4.60	FMJ	900	872	846	821	798	128	120	113	106	100	⊕	-2.0	-7.0	-15.2	4
AE327A	327 FEDERAL MAGNUM	85	5.51	JSP	1400	1306	1221	1150	1091	370	322	281	250	225	⊕	-0.4	-2.2	-5.7	4-V
AE327	327 FEDERAL MAGNUM	100	6.48	JSP	1500	1408	1324	1248	1181	500	440	389	346	310	⊕	-0.2	-1.6	-4.5	4-V
AE380AP	380 AUTO	95	6.16	FMJ	980	937	899	865	835	203	185	170	158	147	⊕	-1.6	-5.8	-13.0	3.75
AE30SCA	30 SUPER CARRY	100	6.48	FMJ FP	1250	1185	1129	1081	1041	347	312	283	260	241	⊕	-0.6	-3.0	-7.2	4
AE9DP	9MM LUGER	115	7.45	FMJ	1180	1106	1048	1001	961	356	312	280	256	236	⊕	-0.9	-3.7	-8.7	4
AE9AP	9MM LUGER	124	8.04	FMJ	1150	1095	1049	1010	977	364	330	303	281	263	⊕	-0.9	-3.8	-8.8	4
AE9FP	9MM LUGER	147	9.53	FMJ FP	1000	976	953	933	914	326	311	297	284	273	⊕	-1.4	-5.2	-11.5	4
AE38S3	38 SUPER +P	115	7.45	JHP	1130	1067	1016	974	938	326	290	264	242	225	⊕	-1.0	-4.1	-9.5	5
AE357S2	357 SIG	125	8.10	FMJ	1350	1266	1192	1130	1078	506	445	395	354	323	⊕	-0.5	-2.4	-6.1	4
AE38K	38 SPECIAL	130	8.42	FMJ	890	870	852	834	817	229	219	209	201	193	⊕	-2.0	-7.0	-15.1	4-V
AE38B	38 SPECIAL	158	10.24	LRN	770	758	745	733	722	208	201	195	189	183	⊕	-2.9	-9.8	-20.7	4-V
AE357A	357 MAGNUM	158	10.24	JSP	1240	1187	1139	1098	1063	539	494	455	423	396	⊕	-0.6	-3.0	-7.1	4-V
AE40R2	40 S&W	155	10.04	FMJ	1160	1095	1043	1000	963	463	413	374	344	319	⊕	-0.9	-3.8	-8.9	4
AE40R3	40 S&W	165	10.69	FMJ	1130	1078	1035	999	967	468	426	392	365	342	⊕	-1.0	-4.0	-9.1	4
AE40R1	40 S&W	180	11.66	FMJ	1000	972	946	923	901	400	377	358	340	324	⊕	-1.4	-5.3	-11.6	4
AE10A	10MM AUTO	180	11.66	FMJ	1030	998	970	945	921	424	398	376	357	339	⊕	-1.3	-4.9	-10.9	5
AE44A	44 REM. MAGNUM	240	15.55	JHP	1230	1169	1117	1073	1035	806	729	665	613	571	⊕	-0.7	-3.1	-7.4	4-V
AE45A	45 AUTO	230	14.90	FMJ	1090	1045	1007	974	945	488	449	417	390	367	⊕	-2.0	-6.9	-15.0	5
AE45LC	45 COLT	225	14.58	JSP	860	844	828	813	799	369	356	343	330	319	⊕	-2.2	-7.5	-16.1	4
AMERICAN EAGLE IRT																			
AE9N1	9MM LUGER	124	8.04	TMJ	1120	1070	1028	993	961	345	315	291	271	255	⊕	-1.0	-4.0	-9.3	4
AE9N2	9MM LUGER	147	9.53	TMJ	1000	976	953	933	914	326	311	297	284	273	⊕	-1.4	-5.2	-11.5	4
AE40N1	40 S&W	180	11.66	TMJ	1000	972	946	923	901	400	377	358	340	324	⊕	-1.4	-5.3	-11.6	4
AE45N1	45 AUTO	230	14.90	TMJ	850	834	819	804	790	369	355	343	330	319	⊕	-2.2	-7.7	-16.4	5
AMERICAN EAGLE IRT LEAD																			
AE380LF1	380 AUTO	70	4.54	RHT	1110	1035	977	930	890	191	166	148	135	123	⊕	-1.1	-4.5	-10.4	3.75
AE9LF1	9MM LUGER	70	4.54	RHT	1625	1457	1312	1190	1096	410	330	268	220	187	⊕	-0.1	-1.5	-4.4	4
AE38LF1	38 SPECIAL	100	6.48	RHT	960	935	913	892	872	205	194	185	177	169	⊕	-1.6	-5.8	-12.7	4-V
AE40LF1	40 S&W	120	7.78	RHT	1330	1199	1099	1026	970	471	383	322	280	251	⊕	-0.6	-3.0	-7.4	4
AE45LF1	45 AUTO	137	8.88	RHT	1200	1136	1083	1039	1002	438	393	357	329	306	⊕	-0.8	-3.4	-8.0	5

Fusion® Handgun

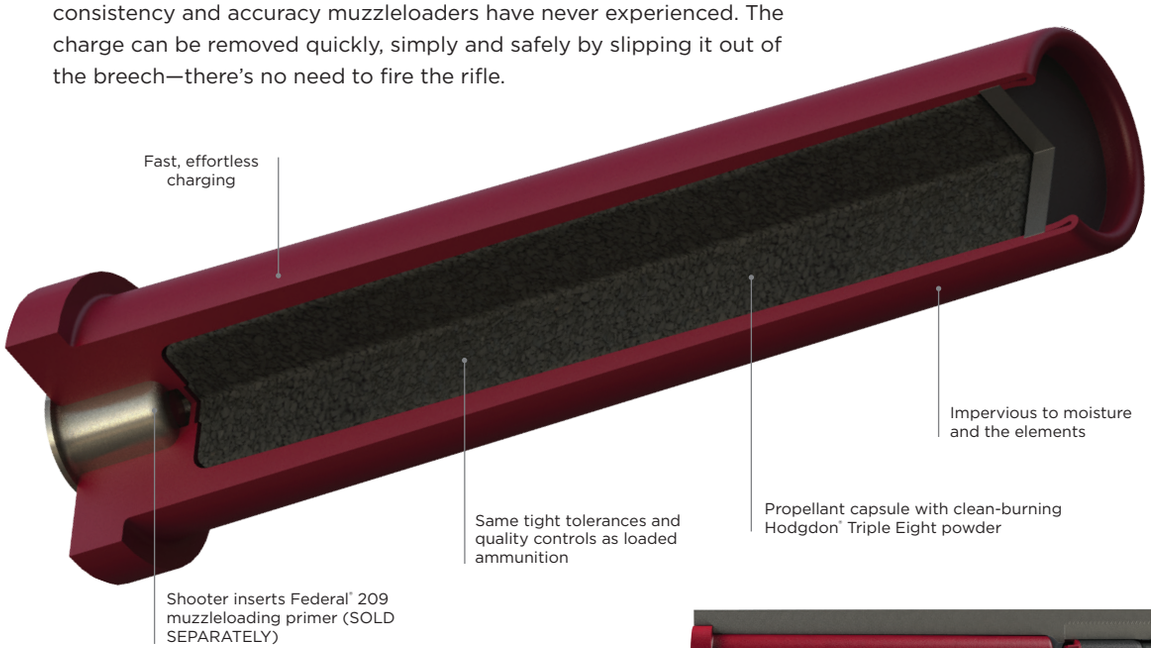
FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	TRAJECTORY SIGHTS .9 INCHES ABOVE BORE LINE 25 YDS.	50 YDS.	75 YDS.	100 YDS.	TEST BARREL LENGTH INCHES
FUSION																			
F357FS1	357 MAGNUM	158	10.24	FUSION SP	1240	1187	1139	1098	1063	539	494	455	423	396	⊕	-0.6	-3.0	-7.1	4-V
F10FS1	10MM AUTO	200	12.96	FUSION SP	1200	1147	1102	1063	1030	639	585	539	502	471	⊕	-0.8	-3.3	-7.7	5
F44FS1	44 REM. MAGNUM	240	15.55	FUSION SP	1290	1221	1162	1110	1067	887	795	719	657	607	⊕	-0.6	-2.7	-6.7	4-V
F454FS1	454 CASULL	260	16.85	FUSION SP	1350	1266	1192	1130	1078	1052	925	821	737	671	⊕	-0.5	-2.4	-6.1	5.7-V
F460FS1	460 S&W	260	16.85	FUSION SP	1600	1495	1397	1309	1229	1478	1289	1126	989	872	⊕	-0.1	-1.3	-3.7	8.4-V
F500FS2	500 S&W	325	21.06	FUSION SP	1450	1357	1272	1198	1134	1517	1329	1168	1035	929	⊕	-0.3	-1.9	-5.0	8.4-V
F50AEFS1	50 ACTION EXPRESS	300	19.44	FUSION SP	1550	1451	1361	1278	1205	1600	1402	1233	1088	967	⊕	-0.1	-1.5	-4.1	6

FIRESTICK

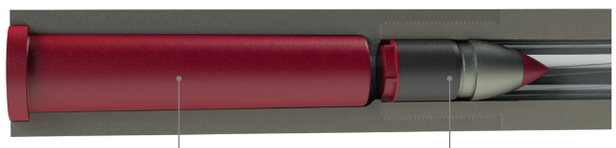
As long as there have been muzzleloading firearms, their shooters have been burdened by reliability, consistency and safety concerns. It all ends with Federal Premium® FireStick™, the critical component of a whole new ignition system that uses an encapsulated propellant charge that inserts from the breech, with the bullet loaded from the muzzle. It's the perfect match for Federal Premium Trophy® Copper or Lead Tipped muzzleloader bullets and is compatible with the Traditions™ NitroFire and CVA Crossfire. ***Available in 80-, 100- and 120-grain equivalent charges.***

Breech Breakthrough

FireStick's charge is completely impervious to moisture and built to the same tight tolerances as Federal Premium factory ammunition, ensuring shot-to-shot consistency and accuracy muzzleloaders have never experienced. The charge can be removed quickly, simply and safely by slipping it out of the breech—there's no need to fire the rifle.



FIRESTICK	
PART NO.	GRAIN EQUIVALENT
PMZFS80T8	80
PMZFS100T8	100
PMZFS120T8	120



"For us, muzzleloading is the ultimate season extender, and FireStick allows us to focus solely on the hunt. Combined with the Traditions NitroFire rifle, the system makes shooting a muzzleloader safer and simpler than it's ever been."

LEE & TIFFANY LAKOSKY
FEDERAL AMBASSADORS
HOSTS OF "CRUSH WITH LEE & TIFFANY"

LEAD FREE SHOT

B.O.R. LOCK MZ TROPHY COPPER & LEAD

We redefined modern in-line performance with the B.O.R. Lock MZ® system. Available in Trophy® Copper and Lead Tipped versions, it provides outstanding accuracy in a non-sabot design that's easy to load, scrubs fouling from the breech and ensures consistent bullet seating.

209 MUZZLELOADING PRIMER

Ignition is everything. The specialized formulation of our 209 Muzzleloading Primer provides superior resistance to moisture, as well as hot, reliable ignition of both granulated powder and pellets in any conditions. The design eliminates the excessive breech fouling typical of standard shotshell primers.

TROPHY COPPER MUZZLELOADER BULLET WITH B.O.R. LOCK MZ

LOAD NO.	CALIBER	GR
PMZ50TC1*	50	270

LEAD MUZZLELOADER BULLET WITH B.O.R. LOCK MZ

LOAD NO.	CALIBER	GR
PMZ50LMZ1	50	350

MUZZLELOADING PRIMER

PART NO.	TYPE
PMZ209	209

**For best performance, use with magnum primers.*

AUTOMATCH

Fuel your semi-auto rimfire right with ammunition built specifically for it. Federal AutoMatch™ cycles reliably in the full range of semi-auto platforms and serves up the accuracy needed for the range, competition or backyard plinking.

SPEER TNT

Explosive on impact and pinpoint accurate. Federal Premium Speer® TNT® rimfire loads deliver at a distance.

BYOB

There's a party at the range, so BYOB. Federal® BYOB® rimfire buckets and bottles stack, store and carry easily. They're loaded with high-quality 17 HMR, 22 LR or 22 WMR rounds that are perfect for a day at the range or in the field.

V-MAX

If you hunt varmints with a rimfire rifle, extract maximum range and power from the platform with Federal Premium® V-Max® loads.

AMERICAN EAGLE

Whether you're shooting targets or small game, you'll get the precision and consistency you need with American Eagle® rimfire loads. They provide reliable, affordable performance with quality bullets, brass and priming.

AMERICAN EAGLE SUPPRESSOR

Sub-sonic loading slashes the volume of these rounds, yet their carefully selected propellants, bullet weights and primers mean they still perform to their ballistic peak and cycle flawlessly in suppressed firearms.

CHAMPION

Plinking. Targets. Training. Whatever rimfire pursuit drives you, get accurate, affordable performance with Federal® Champion™ rimfire. The reliable bullets, priming and brass are suited to a wide variety of rimfire range applications. ***Now available in 525- and 325-count bulk packs.***

GAME LOADS

Whether you're after bushytails or bunnies, you'll put more in your bag with Federal Game Loads. The rimfire rounds offer consistent, reliable performance on small game, yet are affordably priced to keep you in the field for less.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 45-46.

RIMFIRE BALLISTICS

Abbreviation Key: BTHP = boat-tail hollow point; BTSP = boat-tail soft point; FN = flat nose; LRN = lead round nose; LSW = lead semi-wadcutter; LW = lead wadcutter; SWC = semi-wadcutter; SWHP = semi-wadcutter hollow point; CB = conical ball reduced power/noise; FP = flat point; CP = copper-plated; L = lead; J = jacketed; HP = hollow-point; RN = round nose; SHP = segmented hollow-point; SP = soft point; FMJ = full metal jacket; TSJ = total synthetic jacket; TMF = toxic-metal-free; TMJ = totally encapsulated bullet; V = vented barrel; HE = high energy (not for use in semi-automatic rifles); † = not for revolvers; CLM=cartridge length longer than SAAMI max, may not fit in all magazines. *Molycoat: molybdenum disulfide dry film lubricant

Federal Premium® Rimfire

FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	50 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	50 YDS.	100 YDS.	WIND DRIFT IN INCHES 10 MPH CROSSWIND 50 YDS.	100 YDS.	HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE. AVERAGE RANGE 50 YDS.	100 YDS.
FEDERAL PREMIUM VARMINT														
P770	**17 HMR**	17	1.1	SPEER TNT JHP	2530	2150	1804	242	174	123	0.9	3.8	⊕	-0.4
P771	**17 HMR**	17	1.1	HORNADY® V-MAX®	2530	2194	1884	242	182	134	0.8	3.3	⊕	-0.3
FEDERAL PREMIUM PERSONAL DEFENSE PUNCH														
PD22L1	**22 LONG RIFLE**	29	1.87	SOLID	1070	978	912	74	62	54	1.25	2.2	⊕	-7.5
PD22WMR1	**22 WMR**	45	2.91	JHP	1000	933	880	100	87	77	1.1	3.8	⊕	-8.48

American Eagle® Rimfire

FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	50 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	50 YDS.	100 YDS.	WIND DRIFT IN INCHES 10 MPH CROSSWIND 50 YDS.	100 YDS.	HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE. AVERAGE RANGE 50 YDS.	100 YDS.
AMERICAN EAGLE														
AE22*	**22 LONG RIFLE**	38	2.46	CPHP	1260	1110	1010	134	104	86	1.5	5.5	⊕	-5.5
AMERICAN EAGLE SUPPRESSOR														
AE22SUP1	**22 LONG RIFLE**	45	2.92	CP SOLID	970	908	856	94	82	73	1.0	3.7	⊕	-9.0

V-Max is a registered trademark of Hornady.

*40-count box

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

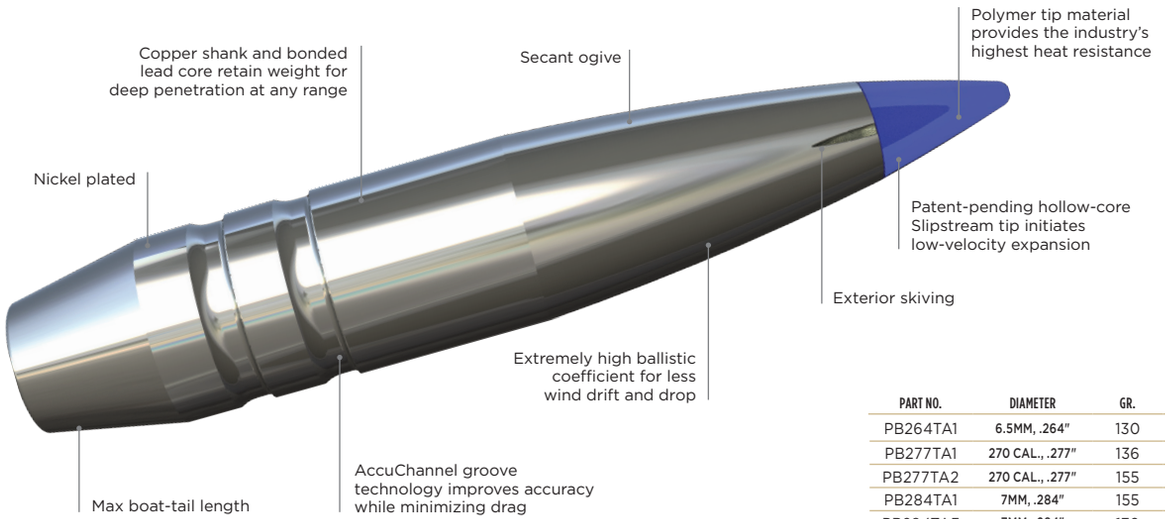
Federal® Rimfire

FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN GRAINS	BULLET WEIGHT IN GRAMS	BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	50 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS) MUZZLE	50 YDS.	100 YDS.	WIND DRIFT IN INCHES 10 MPH CROSSWIND 50 YDS.	100 YDS.	HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE. AVERAGE RANGE 50 YDS.	100 YDS.
FEDERAL GAME LOAD														
716	**22 LONG RIFLE**	25	1.62	NO. 12 LEAD BIRD SHOT	-	-	-	-	-	-	-	-	-	-
757	**22 WMR**	50	3.24	JHP	1530	1347	1197	260	201	159	1.2	4.7	⊕	-3.3
FEDERAL CHAMPION™														
745***	**22 LONG RIFLE**	36	2.33	CPHP	1260	1104	1003	127	97	80	1.5	5.7	⊕	-5.6
747***	**22 LONG RIFLE**	36	2.33	CPHP	1260	1104	1003	127	97	80	1.5	5.7	⊕	-5.6
749**	**22 LONG RIFLE**	36	2.33	CPHP	1260	1104	1003	127	97	80	1.5	5.7	⊕	-5.6
AM22**	**22 LONG RIFLE**	40	2.59	SOLID	1200	1075	991	128	103	87	1.3	4.9	⊕	-6.0
510	**22 LONG RIFLE**	40	2.59	SOLID	1240	1103	1011	137	108	91	1.4	5.1	⊕	-5.6
737	**22 WMR**	40	2.59	FMJ	1880	1570	1311	314	219	153	1.4	5.8	⊕	-2.1
BYOB BULK PACKS														
750BTL450	**22 LONG RIFLE**	36	2.33	CPHP	1260	1104	1003	127	97	80	1.5	5.7	⊕	-5.6
750BKT1375	**22 LONG RIFLE**	36	2.33	CPHP	1260	1104	1003	127	97	80	1.5	5.7	⊕	-5.6
757BTL250	**22 WMR**	50	3.24	JHP	1530	1347	1197	260	201	159	1.2	4.7	⊕	-3.3
770BTL250	**17 HMR**	17	1.1	JHP	2530	2150	1804	242	174	123	0.9	3.8	⊕	-0.4

***525-count bulk pack
**325-count bulk pack

TERMINAL ASCENT

Harness the world's best all-range performance in every handload that leaves your press. Federal Premium® Terminal Ascent™ component bullets' bonded construction fuels deep penetration on close targets, while the patented Slipstream® polymer tip initiates expansion at velocities 200 fps lower than comparable designs. The bullet's long, sleek profile offers an extremely high ballistic coefficient, and its AccuChannel® groove technology improves accuracy and minimizes drag. ***Now available in a full selection of bullet weights and diameters, including heavy for-caliber .277, .284 and .308 options.***



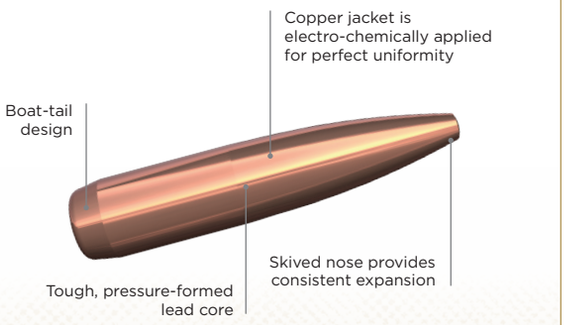
PART NO.	DIAMETER	GR.	BALLISTIC COEFFICIENT G1	BALLISTIC COEFFICIENT G7	COUNT
PB264TA1	6.5MM, .264"	130	0.532	0.263	50
PB277TA1	270 CAL., .277"	136	0.493	0.247	50
PB277TA2	270 CAL., .277"	155	0.585	0.300	50
PB284TA1	7MM, .284"	155	0.586	0.300	50
PB284TA3	7MM, .284"	170	0.645	0.325	50
PB308TA1	308 CAL, .308"	175	0.520	0.258	50
PB308TA2	308 CAL., .308"	200	0.608	0.304	50
PB308TA3	308 CAL., .308"	210	0.650	0.333	50

FUSION

Handloaders can roll their own with the bullet that changed hunting ammunition forever. Fusion® component bullets provide the largest expansion and highest weight retention in their class. With a molecularly bonded jacket and a pressure-formed core, Fusion transfers maximum energy on target.

PART NO.	DIAMETER	GR.	BALLISTIC COEFFICIENT G1	COUNT
FB224F1	224 CAL., .224"	90	0.424	50
FB264F2	6.5MM, .264"	140	0.497	100
FB277F2	270 CAL., .277"	130	0.367	100
FB277F4	270 CAL., .277"	150	0.413	100
FB284F1	7MM, .284"	140	0.416	100
FB284F3	7MM, .284"	160	0.455	100
FB284F4	7MM, .284"	175	0.537	100

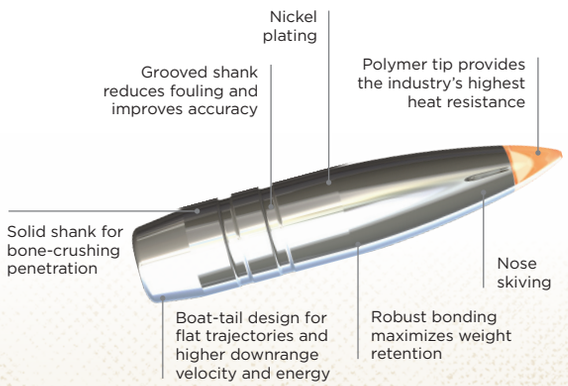
PART NO.	DIAMETER	GR.	BALLISTIC COEFFICIENT G1	COUNT
FB308F1	30 CAL., 308"	150	0.387	50
FB308F4	30 CAL., 308"	180	0.483	50
FB338F1	338 CAL., .338"	200	0.458	50
FB338F2	338 CAL., .338"	225	0.416	50
FB350F1	350 CAL., .358"	160	0.259	100
FB450F1	450 CAL., .452"	260	0.180	100



TROPHY BONDED® TIP

This proven design stands apart from all other big game bullets, combining bonded construction, a bone-crushing copper shank, boat-tail design and a polymer tip.

PART NO.	DIAMETER	GR.	BALLISTIC COEFFICIENT G1	COUNT
PB277TT130	270 CAL., .277"	130	0.440	50
PB277TT140	270 CAL., .277"	140	0.455	50
PB284TT140	7MM, .284"	140	0.430	50
PB284TT160	7MM, .284"	160	0.520	50
PB308TT165	30 CAL., .308"	165	0.450	50
PB308TT180	30 CAL., .308"	180	0.500	50

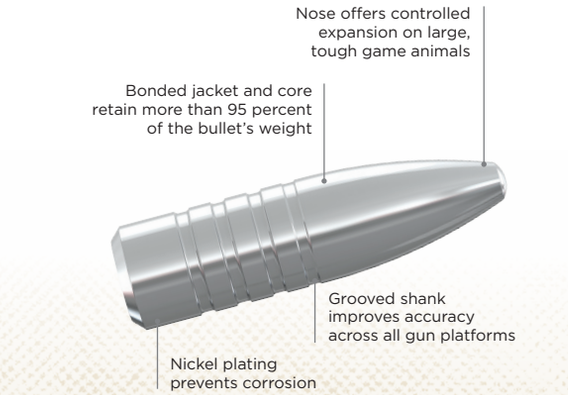


TROPHY BONDED BEAR CLAW®

Deadly reliability made this bullet a legend across the wildest corners of the globe. Its bonded jacket and core provide controlled expansion and retain more than 95 percent of the bullet's weight to penetrate deep.

PART NO.	DIAMETER	GR.	BALLISTIC COEFFICIENT G1	COUNT
PB375TBBC250	375 CAL., .375"	250	0.375	25
PB375TBBC300	375 CAL., .375"	300	0.342	25
PB416TBBC400	416 CAL., .416"	400	0.373	25

PART NO.	DIAMETER	GR.	BALLISTIC COEFFICIENT G1	COUNT
PB458TBBC500	458 CAL., .458"	500	0.282	25
PB474TBBC500	474 CAL., .474"	500	0.299	25

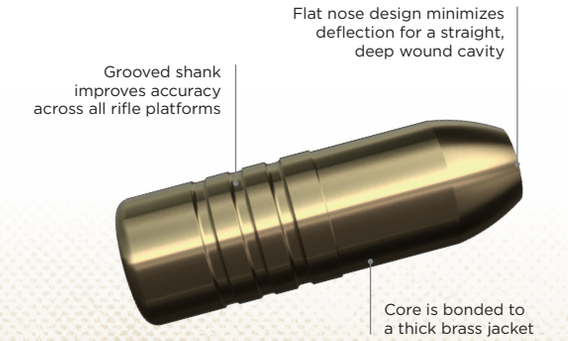


TROPHY BONDED SLEDGEHAMMER® SOLID

This time-tested design bonds a lead core to a thick brass jacket to achieve bone-crushing penetration on the toughest, most dangerous game on the planet. Its flat nose minimizes deflection for a straight, deep wound cavity.

PART NO.	DIAMETER	GR.	BALLISTIC COEFFICIENT G1	COUNT
PB375TBSH300	375 CAL., .375"	300	0.253	25
PB416TBSH400	416 CAL., .416"	400	0.273	25

PART NO.	DIAMETER	GR.	BALLISTIC COEFFICIENT G1	COUNT
PB458TBSH500	458 CAL., .458"	500	0.328	25
PB474TBSH500	474 CAL., .474"	500	0.280	25

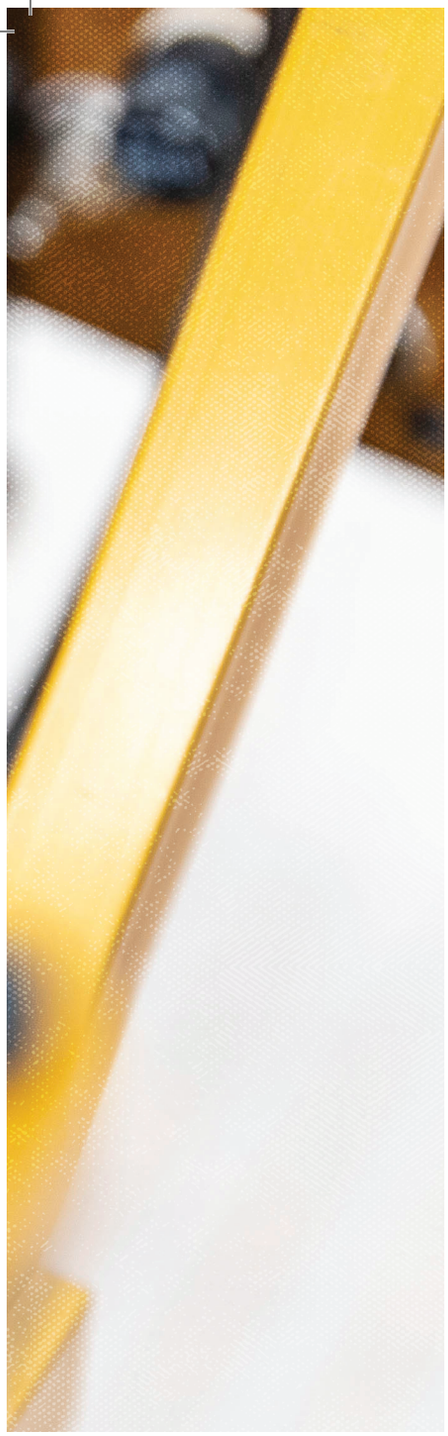


PODIUM WAD

Craft your own victory with the wad design that's changing clay target shooting. The Podium™ wad's cylinder-shaped compression zone supports the payload and provides unmatched protection from deformation at ignition for the best patterns and fewer flyers. The wad profile allows it to be loaded in all tapered hulls.

PART NO.	GAUGE	USE
12P1	12GA	1 OZ
12P18	12GA	1⅛ OZ

PODIUM



GOLD MEDAL PRIMERS

The most exacting tolerances translate to ignition consistency that makes Federal Premium® Gold Medal® cartridges the choice of match shooters everywhere.

CENTERFIRE PRIMERS			
PART NO.	TYPE	USE	NOMINAL DIA.
GM100M	SMALL PISTOL MATCH	STD. VELOCITY PISTOL AND REVOLVER	.175
GM150M	LARGE PISTOL MATCH	STD. AND MAGNUM PISTOL AND REVOLVER	.210
GM155M	LARGE MAGNUM PISTOL MATCH	MAGNUM REVOLVER	.210
GM200M	SMALL MAGNUM PISTOL MATCH	HIGH VELOCITY AND MAGNUM PISTOL AND REVOLVER	.175
GM205M	SMALL RIFLE MATCH	SMALL RIFLE	.175
GM210M	LARGE RIFLE MATCH	LARGE RIFLE	.210
GM215M	LARGE MAGNUM RIFLE MATCH	MAGNUM RIFLE	.210
AR CENTERFIRE PRIMERS			
GM205MAR	SMALL RIFLE AR MATCH	SMALL RIFLE AR	.175

CHAMPION WADS & PRIMERS

Affordable and reliable. Champion components are consistent options for high-volume shooters and reloaders.

WADS		
PART NO.	TYPE	USE
28S1	28 GAUGE	¾ OZ. LOADS
410SC	.410 BORE	½ OZ. LOADS (SHOT CUP ONLY)

CENTERFIRE PRIMERS			
PART NO.	TYPE	USE	NOMINAL DIA.
100	SMALL PISTOL	STD. VELOCITY PISTOL AND REVOLVER	.175
150	LARGE PISTOL	STD. AND MAGNUM PISTOL AND REVOLVER	.210
155	LARGE MAGNUM PISTOL	MAGNUM REVOLVER	.210
200	SMALL MAGNUM PISTOL	HIGH VELOCITY AND MAGNUM PISTOL AND REVOLVER	.175
205	SMALL RIFLE	SMALL RIFLE	.175
210	LARGE RIFLE	LARGE RIFLE	.210
215	LARGE MAGNUM RIFLE	MAGNUM RIFLE	.210
SHOTSHELL PRIMERS			
209A	SHOTSHELL	10, 12, 20, 28 GAUGE AND .410 BORE	.243

RESOURCES TO CHOOSE THE RIGHT LOAD

Breaking clay targets, wingshooting gamebirds, launching slugs at big game, protecting your home—there's almost no limit to what a shotgun paired with the right ammunition can do. But to maximize the platform's potential, you need to choose the load that best fits the application. Use the resources here to make the right call no matter what your pursuit might be.

Average Pellet Count — Steel Shot

	Payload Weight									
Shot Size	3/4 (21.25)	7/8 (24.81)	15/16 (26.58)	1 (28.35)	1 1/8 (31.89)	1 1/4 (35.44)	1 3/8 (39.98)	1 1/2 (42.52)	1 9/16 (44.30)	1 5/8 (46.06)
7.5	316	369	395	422	475	527	580	633	659	685
6	236	275	295	315	354	394	433	472	492	512
5	182	212	228	243	273	304	334	364	380	395
4	144	168	180	192	216	240	264	288	300	312
3/5	-	-	-	199	-	248	-	-	-	-
3	118	136	143	158	178	197	217	237	247	257
2/4	-	-	-	158	-	198	-	-	-	-
2	94	109	117	125	141	156	172	187	195	203
1	77	90	97	103	116	129	142	154	161	167
BB/1	-	-	-	-	-	109	-	-	-	-
BB	54	63	67	72	81	90	99	108	112	117
BBB	46	54	58	62	70	77	85	93	97	101
T	39	46	49	52	58	65	71	78	81	84

WEIGHT OF SHOT IN OUNCES (GRAMS)

Average Pellet Count — Lead Shot

	Payload Weight															
Shot Size	1/2 (14.17)	11/16 (19.49)	3/4 (21.25)	7/8 (24.80)	1 (28.35)	1 1/8 (31.89)	1 1/4 (35.44)	1 5/16 (37.21)	1 3/8 (38.98)	1 1/2 (42.52)	1 5/8 (46.06)	1 3/4 (49.61)	1 7/8 (53.15)	2 (56.70)	2 1/4 (63.78)
9	292	402	439	512	585	658	731	767	804	877	951	1024	1097	1170	1316
8½	249	342	373	435	497	559	621	652	683	745	808	870	932	994	1118
8	205	282	307	359	410	461	512	538	564	615	666	718	769	820	922
7½	175	241	262	306	350	394	437	459	481	525	569	613	656	700	787
6	112	155	169	197	225	253	281	295	309	337	366	394	422	450	506
5	85	117	127	149	170	191	212	223	234	255	276	298	319	340	382
4	67	93	101	118	135	152	169	177	186	202	219	236	253	270	304
2	43	60	65	76	87	98	109	114	120	130	141	152	163	174	196
BB	25	34	37	44	50	56	62	65	69	75	81	88	94	100	112

WEIGHT OF SHOT IN OUNCES (GRAMS) (3% ANTIMONY)

Average Pellet Count — Bismuth-Steel Blend

	Payload Weight		
Shot Size	1 (28.35)	1 1/8 (31.89)	1 1/4 (35.44)
3/5	167	188	209
4/6	212	238	264

WEIGHT OF SHOT IN OUNCES (GRAMS)

Average Pellet Count — Black Cloud TSS

	Payload Weight	
Shot Size	1 (28.35)	1 1/4 (35.44)
3/9	215	280
7/BB	-	145

WEIGHT OF SHOT IN OUNCES (GRAMS)

Average Pellet Count — Bismuth Shot

	Payload Weight		
Shot Size	1 1/8 (31.89)	1 1/4 (35.44)	1 3/8 (39.98)
3	137	152	168
4	170	189	208
5	219	243	268

WEIGHT OF SHOT IN OUNCES (GRAMS)

Average Pellet Count — HEAVYWEIGHT® TSS Shot

	Payload Weight								
Shot Size	13/16 (23.03)	1 1/8 (31.89)	1 1/2 (42.52)	1 5/8 (47.07)	1 3/4 (49.61)	2 (56.70)	2 1/4 (63.78)	2 1/2 (70.87)
9	294	408	544	-	634	-	815	-
7	-	-	283	-	330	-	424	-
7/9	-	-	-	470	-	610	-	718

WEIGHT OF SHOT IN OUNCES (GRAMS)

10 GAUGE 12 GAUGE 16 GAUGE 20 GAUGE 28 GAUGE .410 BORE

Color Coding

To increase safety among shooters, Federal was the first manufacturer to use color-coding for shotshells. This safety measure became an industry norm after it was introduced in 1960.

Buckshot Sizes (Actual Size)

.24" (6.10MM)	.25" (6.35MM)	.27" (6.86MM)	.30" (7.62MM)	.33" (8.38MM)	.36" (9.14MM)

Shot Size Reference

	T	BBB	BB	1	2	3	4	5	6	7	7½	8	8½	9	10
PELLET															
DIAMETER INCHES	.20	.19	.18	.16	.15	.14	.13	.12	.11	.10	.095	.09	.085	.08	.07
DIAMETER MM	5.08	4.83	4.57	4.06	3.81	3.56	3.30	3.05	2.79	2.54	2.41	2.29	2.16	2.03	1.78

Game Guide

GAME	GAUGE	DISTANCE (YDS)	CHOKE	STEEL SHOT SIZES	BISMUTH SHOT SIZES	HWT TSS SHOT SIZES
LARGE DUCKS *(MALLARD, PINTAIL, BLACK)*	10, 12, 16, 20	20-30	IC/M	1, 2, 3, 4	3,4,5	7, 9
	10, 12, 16, 20	30+	IC/M/F	BB, 1, 2, 3	3,4,5	7, 9
MEDIUM DUCKS *(WOOD DUCK, SCAUP, WIDGEON)*	12, 16, 20	20-30	IC/M	2, 3, 4, 6	3,4,5	7, 9
	12, 16, 20	30+	IC/M/F	1, 2, 3, 4	3,4,5	7, 9
SMALL DUCKS *(TEAL, BUFFLEHEAD)*	12, 16, 20, 28, .410	20-30	IC/M/F	3, 4, 6, 7.5	3,4,5	7, 9
	12, 16, 20	30+	IC/M/F	3, 4	3,4,5	7, 9
LARGE GEESE *(GIANT, WESTERN CANADA)*	10, 12	20-30	IC/M	T, BBB, BB	3,4,5	
	10, 12	30+	IC/M	T, BBB, BB	3	
MEDIUM GEESE *(SNOW, LESSER CANADA)*	10, 12	20-30	IC/M	BBB, BB, 1	3	
	10, 12	30+	IC/M	BBB, BB, 1	3	

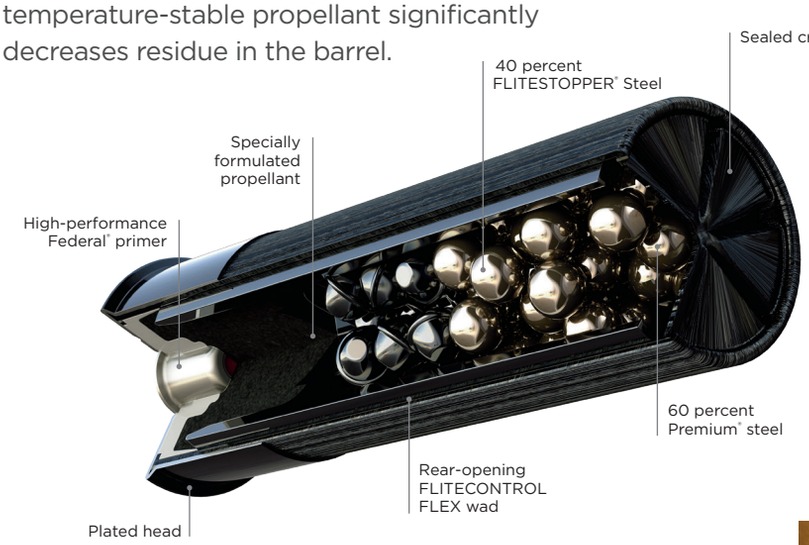
GAME	GAUGE	DISTANCE (YDS)	CHOKE	STEEL SHOT SIZES	HWT TSS SHOT SIZES	LEAD SHOT SIZES	BISMUTH SHOT SIZES
TURKEY	10, 12, 20, .410	20-30	F	-	7, 9	4, 5, 6	4,5
	10, 12, 20	30+	F/EF	-	7, 9	4, 5, 6	4,5
PHEASANT, PRAIRIE GROUSE	12, 16, 20, 28	20-30	IC/M	3, 4	7, 9	4, 5, 6, 7.5	3,4,5
	12, 16, 20	30+	M/F	2, 3	7, 9	4, 5, 6	3,4,5
RUFFED GROUSE, PARTRIDGE	12, 16, 20, 28	20-30	SK/IC/M	-	7, 9	6, 7.5, 8, 9	3,4,5
	12, 16, 20	30+	IC/M	-	7, 9	5, 6, 7.5	3,4,5
QUAIL, DOVE	12, 16, 20, 28	20-30	SK/IC/M	-	7, 9	6, 7.5, 8, 9	3,4,5
	12, 16, 20	30+	IC/M	-	7, 9	6, 7.5, 8	3,4,5
WOODCOCK, SNIPE	12, 16, 20, 28	20-30	SK/IC/M	-	7, 9	7.5, 8, 9	3,4,5
	12, 16, 20	30+	IC/M	-	7, 9	7.5, 8	3,4,5
RABBIT, SQUIRREL	12, 16, 20, 28, .410	20-30	IC/M	-	7, 9	4, 5, 6, 7.5	3,4,5
	12, 16, 20	30+	IC/M/F	-	7, 9	4, 5, 6	3,4,5

*Federal recommends patterning your gun to determine the optimum choke. *EF=Extra Full F = Full Choke M = Modified Choke IC = Improved Cylinder, SK=Skeet*

BLACK CLOUD

LEAD FREE SHOT

The best load in waterfowl hunting has never been so deadly. Black Cloud® FS Steel® is now equipped with the FLITECONTROL FLEX® wad to deliver improved pattern density and consistency through both ported and standard waterfowl chokes. The clean-burning, temperature-stable propellant significantly decreases residue in the barrel.



Cutting-Edge Technology—Literally
FLITESTOPPER Steel creates massive wound cavities visible in ballistic gelatin. Its amazing shot construction features a cutting edge that devastates on impact

FLITECONTROL FLEX™ WAD

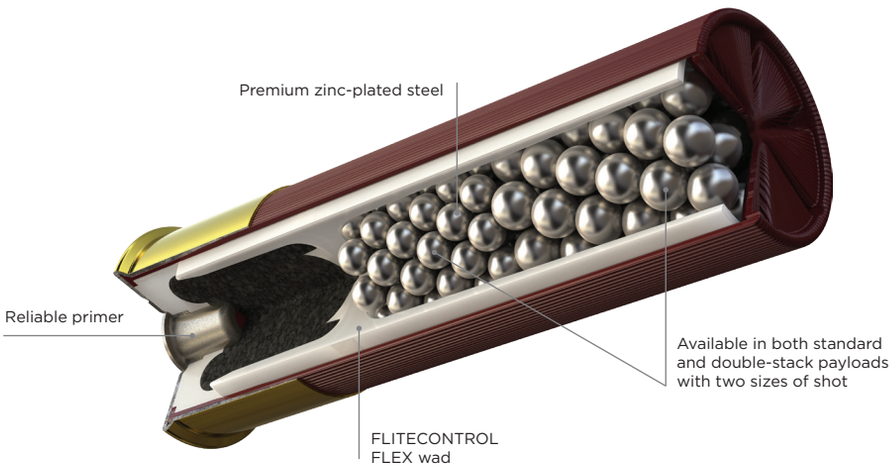
30 Percent Better Patterns*
Produce more efficient patterns through both ported chokes and standard tubes with the FLITECONTROL FLEX wad. Patent-pending rear-deploying petals feature reinforced gussets to allow them to deploy when fired through ported chokes that decrease muzzle pressure. Side-mounted slits stimulate the payload for separation from the wad at the ideal moment for consistent, deadly patterns.

**Claim based on 10-round average pattern efficiency comparison of PWB134 BB and PWBX134 BB shot through Patternmaster®, Indian Creek Black Diamond Triumph and Kick's High Flyer™ chokes at 40 yards.*

FEDERAL PREMIUM ULTRA STEEL

NEW

Waterfowlers live for those moments when the birds do it right. And in those moments, they want a shell that does the rest. New Federal Premium® Ultra™ Steel blends the rear-opening FLITECONTROL FLEX wad with a payload of our best zinc-plated steel, producing extremely tight patterns for even deadlier performance. Available in a variety of standard payloads, as well as loads that feature two sizes of shot: smaller pellets that create full patterns and larger ones that deliver better lethality.



LEAD FREE SHOT

DUCKS UNLIMITED
BANQUET PARTNER

BLACK CLOUD TSS

Duck and goose hunting entered a deadly new age with the introduction of Black Cloud® TSS. Now hunters can get that same performance in both 12- and 20-gauge loads that blend FLITESTOPPER® Steel with 18 g/cc Tungsten Super Shot. More pellets. More range.

LEAD FREE SHOT

BLACK CLOUD HIGH VELOCITY

Shorten leads and hit birds even harder with Black Cloud® FS Steel® High Velocity. Faster. More lethal.

LEAD FREE SHOT

DELTA WATERFOWL

SPEED-SHOK

Speed kills ducks and geese. Now it kills even cleaner with redesigned Federal® Speed-Shok®. Its fast-burning powder dramatically reduces residue, while its optimized velocities knock birds out of the sky.

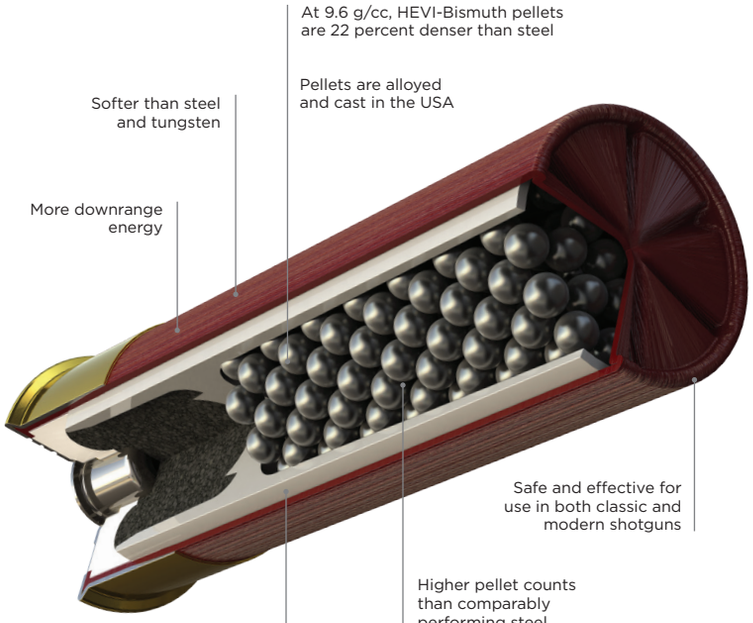
FOR A FULL LIST OF AVAILABLE LOADS REFER TO PAGES 67-68.

HEVI-BISMUTH

LEAD FREE SHOT

WATERFOWL & UPLAND

If you've never experienced the performance of bismuth, you need to. Federal Premium® HEVI-Bismuth™ hits both upland birds and waterfowl with the power of 9.6 g/cc density pellets. Sourced from our partners at HEVI-Shot®, the industry leader in pellet technology, HEVI-Bismuth shot is 22 percent denser than steel, delivering more lethal energy downrange. Launched by the FLITECONTROL FLEX® wad, bismuth pellets pattern consistently, and their metallic properties make them safe in both modern and classic shotguns.



ALLOYED & CAST IN THE USA

FLITECONTROL FLEX™ WAD

PRAIRIE STORM BISMUTH BLEND

NEW

When you need a non-lead upland option that doesn't sacrifice performance, fill your vest with new Prairie Storm® Bismuth Blend. The loads build off Prairie Storm's proven formula of the FLITECONTROL FLEX® wad and Premium® steel shot, with the added performance boost of HEVI-Bismuth™ pellets alloyed and cast in Sweet Home, Oregon. Making up 30 percent of the payload, the 9.6 g/cc HEVI-Bismuth pellets are nearly as dense as lead, retaining more energy and velocity at longer range.

PRAIRIE STORM STEEL

Pheasants are fast, tough birds. That's why we combined the FLITECONTROL® FLEX wad and FLITESTOPPER® pellet technologies to create Prairie Storm® FS Steel. It puts more than 75 percent of its pellets in a 30-inch circle at 40 yards, with energy similar to the most popular lead loads.

NEW

HI-BIRD FIBER WAD BISMUTH

Introducing a more effective way to minimize your footprint without giving up performance. This new offering features the same cellulose over-powder wad technology as the original Hi-Bird Fiber Wad, but with a payload of 9.6 g/cc bismuth to meet non-toxic requirements.

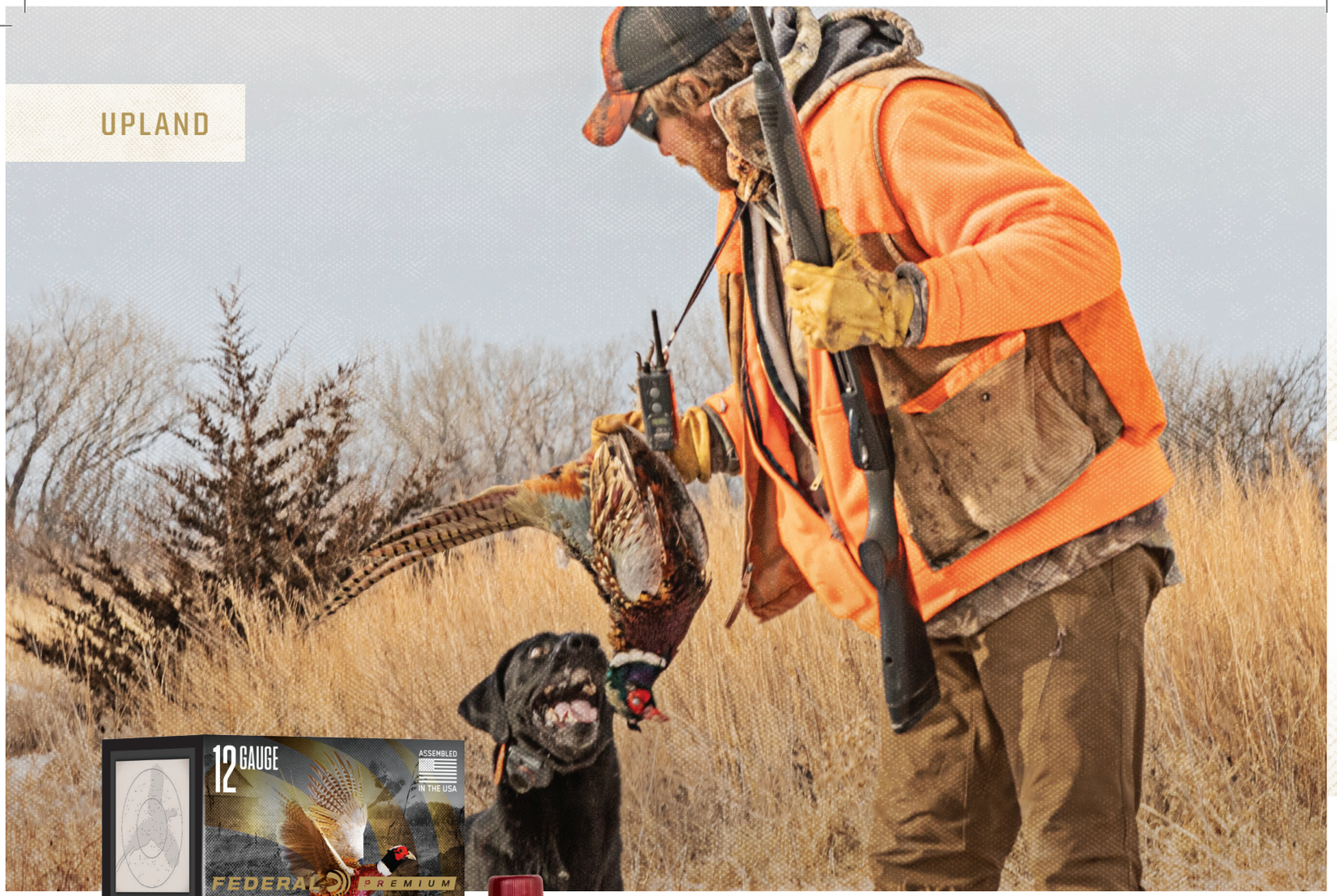
UPLAND STEEL

Doves are done. Federal® Upland Steel serves up the patterns and power hunters need for hard-to-hit birds at a price that keeps them shooting all day. The loads are consistent and reliable, with high velocities that make the most of the steel payload.

UPLAND STEEL WITH PAPER WAD

Put more birds on the ground—and less plastic. Federal Upland Steel with the new Paper Wad uses fiber construction to produce dove-dropping patterns.

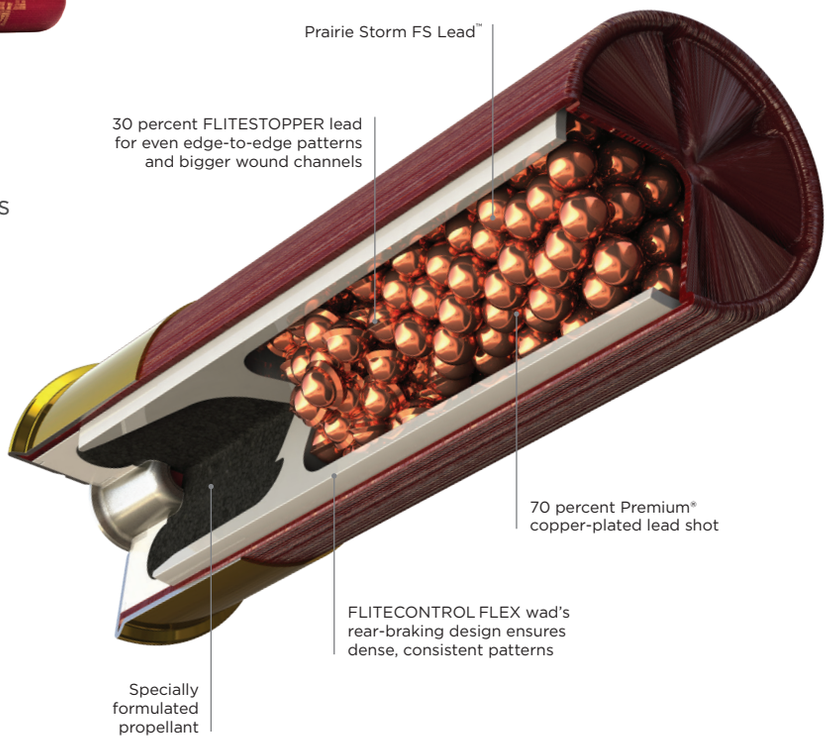
FOR A FULL LIST OF AVAILABLE LOADS REFER TO PAGES 67-68.



PRAIRIE STORM

NEW

Federal Premium® Prairie Storm® FS Lead loads now use the updated FLITECONTROL FLEX® wad and a mixed payload of standard pellets and FLITESTOPPER® lead to produce full, consistent patterns through both ported and standard upland chokes. ***Now available in new 1,330 fps 12-gauge and 1,300 fps 28-gauge offerings.***



FEDERAL PREMIUM UPLAND

Upland loads feature Federal Premium® copper-plated lead shot and the best components for consistent, deadly patterns. Magnum loads have buffered shot for tighter patterns, less feather draw and maximum penetration.

PAPER FLYER

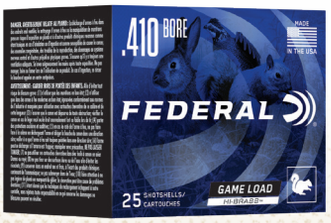
Hit upland birds harder and experience the unmistakable performance of paper hulls with Federal Premium Paper Flyer loads. The exclusive waxed paper hull holds a powerful payload of extra-hard, copper-plated lead shot for patterns and penetration that drop the toughest, fastest upland birds.

HI-BIRD

Combine speed, hard-hitting pellets and a specialized wad to fold the highest upland birds. Hi-Bird® uses a two-piece wad with SoftCell™ technology to decrease perceived recoil and produce more consistent long-range patterns.

HI-BIRD FIBER WAD

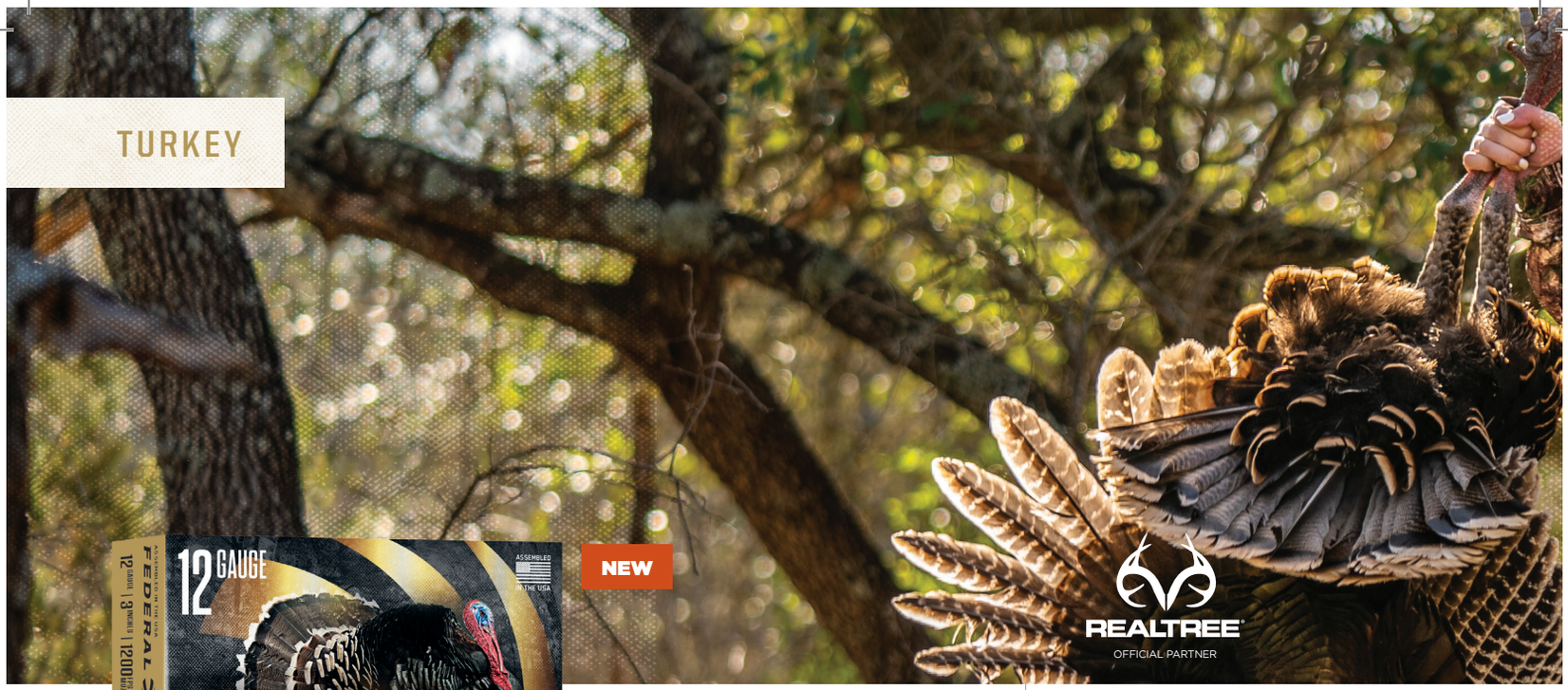
Reduce your impact in high-volume shoots. Hi-Bird Fiber Wad's cellulose-based over-powder wad construction helps minimize plastic left in the field with the same great performance as the original. It's perfect for the field or preserve hunting situations.



FEDERAL GAME LOAD

Woods or fields. Fur or feathers. Federal® Game Loads have you covered with carefully crafted shotshells packed with features that provide reliable, effective performance on a variety of small game and upland birds.

FOR A FULL LIST OF AVAILABLE LOADS REFER TO PAGES 67-68.

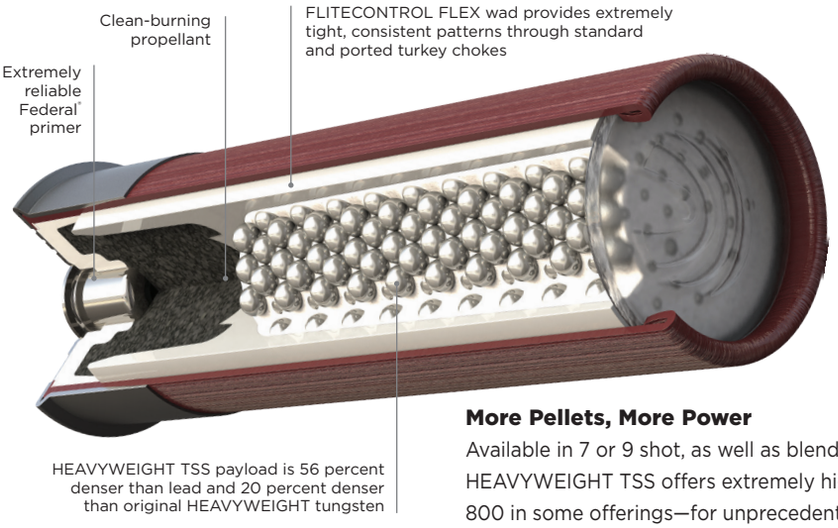


NEW

LEAD FREE SHOT

HEAVYWEIGHT TSS

Kill gobblers at longer distances than ever before. Payloads of HEAVYWEIGHT® Tungsten Super Shot provide the highest pellet counts possible, with an 18 g/cc density that's 20 percent higher than standard tungsten and 56 percent more than lead. The rear-braking FLITECONTROL FLEX® wad performs flawlessly through ported and standard turkey chokes for the most consistent, deadly patterns possible. ***Available in a full lineup of loads, including a new No. 7 .410.***

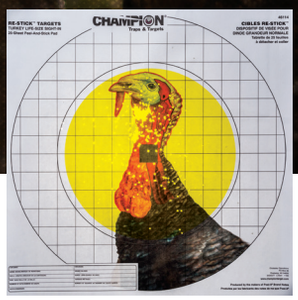


More Pellets, More Power
Available in 7 or 9 shot, as well as blended loads with both sizes, HEAVYWEIGHT TSS offers extremely high pellet counts—topping 800 in some offerings—for unprecedented pattern density across the range spectrum. Target shot with 2-ounce load of No. 7 and 9 HEAVYWEIGHT TSS (PTSSX197F 79) at 40 yards.

.410 Performer
With the increased power and pellet counts of HEAVYWEIGHT TSS loads, hunters can get the patterns of hard-kicking 12-gauge lead loads while using a low-recoil .410. Target shot at 40 yards with PTSS419F 9 through a fixed full choke. Load does not include the FLITECONTROL FLEX wad.

A portion of the proceeds from all Federal Premium® turkey loads goes to support the National Wild Turkey Federation and its important conservation work.

3rd Degree
PTDX157 567



Conventional lead turkey load,
1¾-ounce No. 5 shot

3RD DEGREE WITH HEAVYWEIGHT TSS

Rather than simply pattern tightly like conventional loads, 3rd Degree® uses a three-stage payload consisting of No. 5 copper-plated lead, No. 6 FLITESTOPPER® lead and No. 7 HEAVYWEIGHT® TSS shot to deliver larger, more forgiving patterns at close range, while still providing deadly performance at long distance.

Close-Range Forgiveness

The FLITESTOPPER lead portion of the 3rd Degree payload spreads quickly, creating forgiving patterns close up. Targets shot with a 28-inch barrel and Indian Creek ported turkey choke at 12 yards; yellow area denotes effective pattern size.

GRAND SLAM

Extend the range and enhance the lethality of lead turkey payloads. Grand Slam's FLITECONTROL FLEX® wad system works in both standard and ported turkey chokes, and high-quality copper-plated lead pellets are cushioned with an advanced buffering compound to provide dense patterns and ample energy.

22plinkster

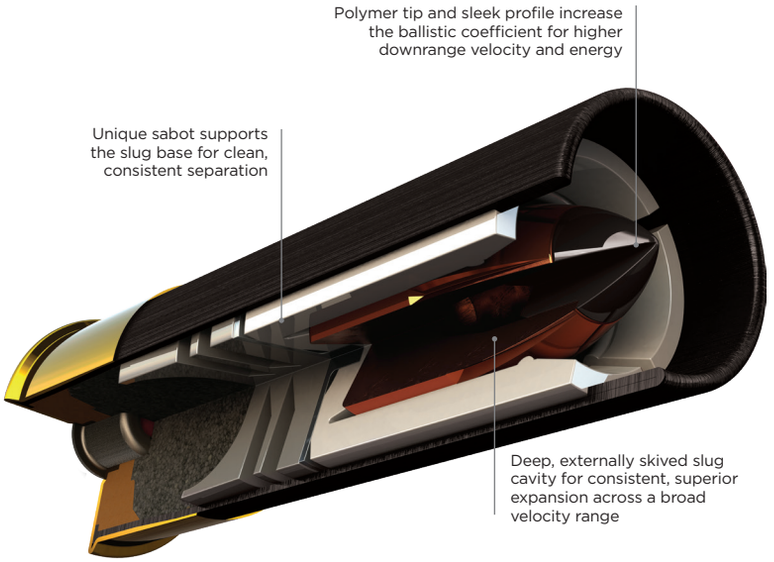
You probably know him best for hundreds of viral videos showing jaw-dropping trick shots with rimfires, but Federal ambassador 22plinkster is a diehard turkey hunter who tags his toms with HEAVYWEIGHT TSS loads. See what happened when he put 10-gauge Federal Custom Shop TSS loads to the 100-yard test: Watch the video at **federalpremium.com/custom-shop.**

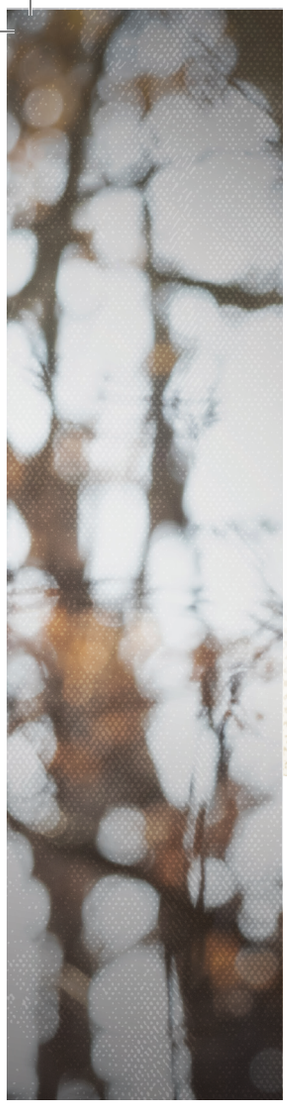
FOR A FULL LIST OF AVAILABLE LOADS REFER TO PAGES 67-68.

NEW

FREIGHT TRAIN COPPER SABOT

Slug accuracy and power are thundering down the tracks with the new Federal Premium® Freight Train™ Copper, the first introduction in an all-new lineup of slugs. The load's streamlined copper projectile and exclusive sabot design team up to print groups of less than 4 inches at 200 yards through rifled barrels. A polymer tip and aerodynamic nose profile maximize downrange energy, while the externally skived nose cavity provides dramatic expansion to drop bucks, bears or boars where they stand.





RIFLED BARRELS

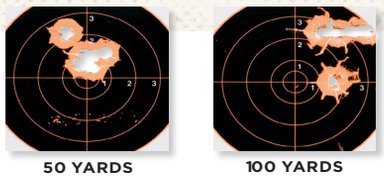
POWER-SHOK SABOT SLUG

Power-Shok sabots provide accuracy and power through fully rifled barrels.

SMOOTHBORE BARRELS

TRUBALL RIFLED SLUG

Forget what you think you know about smoothbore slug gun accuracy. The TruBall® is the most consistent smoothbore slug on the market, capable of groups as tight as 1.4 inches at 50 yards. The TruBall system locks the components together, centering and pushing the rifled slug out of the barrel.



50 YARDS 100 YARDS

SMOOTHBORE SALVATION

TruBall prints groups at 50 and even 100 yards that would rival some rifles. Targets shot with PB127 RS at 50 and 100 yards.

POWER-SHOK RIFLED SLUG

Get solid, reliable performance from your smoothbore shotgun with Power-Shok® rifled slugs.

FEDERAL PREMIUM BUCKSHOT

Engineered to provide precision and power. Federal Premium® Buckshot uses copper-plated pellets to produce more downrange energy. Loads equipped with the FLITECONTROL® wad system deliver the tightest patterns possible.

POWER-SHOK BUCKSHOT

Defense. Hunting. Consistency. The Triple Plus® wad system provides better shot alignment and granulated plastic buffer keeps pellets uniform in shape for tight patterns.

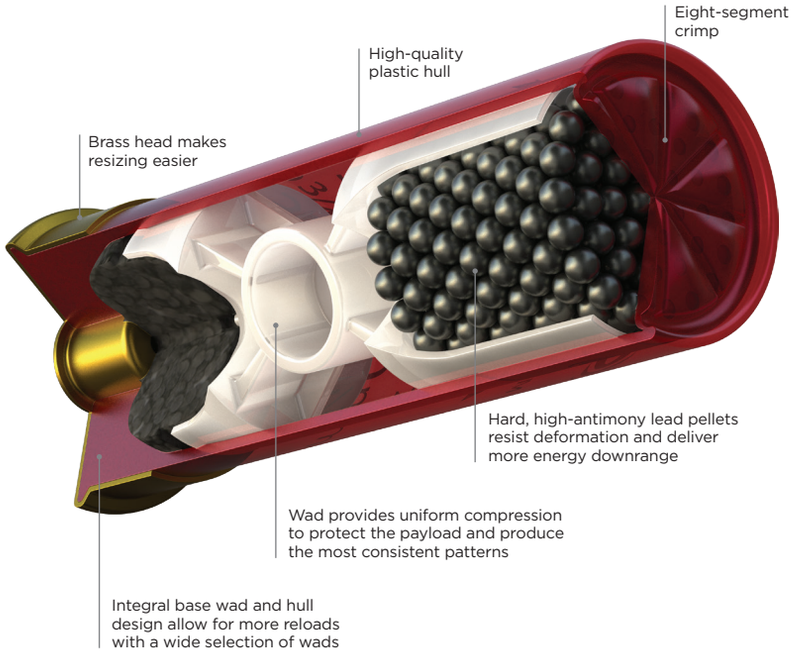
FOR A FULL LIST OF AVAILABLE LOADS REFER TO PAGES 67-68.

"It hits hard, kicks less and shoots like a dream."

DERRICK MEIN
TEAM FEDERAL SHOOTER
USA SHOOTING MEMBER

HIGH OVER ALL

Engineered for the most elite trap, skeet and sporting clays shooters, Federal Premium® High Over All™ leaves a trail of shattered targets in its wake and more reloads per shell. Its hard, high-antimony lead payload and wad produce the most consistent patterns, while the solid brass head and hull design make reloading easier than ever. It's the ultimate competition load for the world's best shooters.



Compression Zone

We've virtually eliminated flyers with the Podium™ wad, featured in all 12- and 20-gauge High Over All offerings. Our engineers gave it a cylinder-shaped compression zone that supports the payload and provides the ultimate protection from deformation at ignition.

More Reloads, More Versatility

Supercharge your press. High Over All .410, 12-, 20- and 28-gauge offerings let you pump out more reloads with a basewad and hull that can be reloaded more often and are compatible with a wide range of available wads.

NEW

GOLD MEDAL PAPER

Our latest addition to the Gold Medal® Paper line lets you connect with the long-range targets of FITASC. These new offerings feature a 1-ounce payload that's optimized for international competition. Like all Gold Medal Grand Paper loads, they feature a high-quality brass head, harder shot, and two-piece SoftCell™ wad design that reduces felt recoil and improves patterns.

TEAM FEDERAL 2024

Team Federal's top shooters are going to show what the world's best clay target loads can do when they compete this year in Paris. Get to know the men and women who will make headlines.

SKEET TEAM | WOMEN

Amber English
- 2020 OLYMPIC GOLD MEDALIST, WOMEN'S SKEET

Caitlin Connor
- 2022 ISSF PRESIDENTS WORLD CUP, GOLD MEDAL
- 2022 WORLD CUP LONATO, GOLD MEDALIST IN WOMEN'S SKEET, WOMEN'S SKEET TEAM, MIXED SKEET
- 2018 ISSF WORLD CHAMPIONSHIPS GOLD MEDALIST

Austen Smith
- 2020 OLYMPIAN
- 2023 ISSF WORLD CHAMPIONSHIP GOLD MEDALIST IN WOMEN'S SKEET TEAM AND MIXED SKEET TEAM
- 2022 WORLD CHAMPIONSHIP GOLD MEDALIST IN WOMEN'S SKEET TEAM

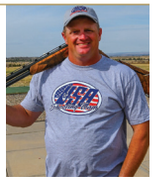
SKEET TEAM | MEN

Vincent Hancock
- THREE-TIME OLYMPIC CHAMPION
- FIRST SKEET SHOOTER TO EVER REPEAT AS OLYMPIC CHAMPION
- FOUR-TIME WORLD CHAMPION

TRAP TEAM | WOMEN

Kayle Browning
- 2020 OLYMPIC SILVER MEDALIST, WOMEN'S TRAP
- 2022 LIMA WORLD CUP GOLD MEDALIST, WOMEN'S TRAP TEAM

TRAP TEAM | MEN



Derrick Mein
- 2022 ISSF PRESIDENTS WORLD CUP, SILVER, MEN'S TRAP
- 2022 WORLD CHAMPIONSHIP, GOLD, MEN'S TRAP (FIRST USA WIN SINCE 1966)
- 2020 ATA GRAND AMERICAN, AAA HIGH ALL AROUND CHAMPION
- 2020 NSCA NATIONAL CHAMPION

Brian Burrows
- PAN AM GOLD MEDALIST
- STARTED SHOOTING INTERNATIONAL BUNKER IN 2004

FOR A FULL LIST OF AVAILABLE LOADS REFER TO PAGES 67-68.

ACTION SHOTGUN

NEW

Rule every 3-gun stage and anywhere you compete with the hard-hitting performance and reliable feeding of new Federal® Action Shotgun™. The load's roll crimp adds rigidity, improving cycling through both tube- and magazine-fed shotguns. The 1⅛-ounce payload of high-quality No. 7.5 lead pellets is pushed out the muzzle at 1,235 fps. This velocity strikes the perfect balance, providing the power needed to knock down targets and the shootability to run through a course with both speed and precision.

TOP GUN WITH PAPER WAD

Experience the clay-crushing performance of new Top Gun® with Paper Wad. Its exclusive fiber wad construction produces effective patterns with less plastic afield.

TOP GUN

Even the most challenging targets are no match for Top Gun. The loads' high-quality lead shot produce even patterns that crush clays. *Also available in loads specifically designed for sporting clays and other competitive shooting.*

SHORTY

Great things really do come in small packages. Although just 1¾ inches long, Shorty shotshells offer similar patterns, energy and accuracy as full-size counterparts.

FOR A FULL LIST OF AVAILABLE LOADS REFER TO PAGES 67-68.

SHOTSHELL LOAD DATA

Waterfowl

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD	SHOT
FEDERAL PREMIUM BLACK CLOUD® FS STEEL					
PWBX107	10	3½	1375	1⅜	BB, 2
PWBX134	12	3½	1500	1½	BBB, BB, 1, 2, 3, 4
PWBX142	12	3	1450	1¼	BB, 1, 2, 3, 4
PWBX147	12	2¾	1500	1⅛	2, 3, 4
PWBX209	20	3	1350	1	2, 3, 4
PWBX285	28	3	1400	¾	3, 4
FEDERAL PREMIUM BLACK CLOUD TSS					
PWBTSSX142 7BB	12	3	1450	1¼	BB FS STEEL/7 TSS
PWBTSSX142 39	12	3	1450	1¼	3 FS STEEL/9 TSS
PWBTSSX209 39	20	3	1350	1	3 FS STEEL/9 TSS
FEDERAL PREMIUM BLACK CLOUD FS STEEL HIGH VELOCITY					
PWBXH143	12	3	1635	1⅛	BB, 1, 2, 3, 4
FEDERAL PREMIUM ULTRA STEEL					
NEW PWUX142	12	3	1450	1¼	BB, BB/2, 2, 2/4, 3/5
NEW PWUX209	20	3	1400	1	2, 2/4, 3/5
SPEED•SHOK® WATERFOWL					
WF107	10	3½	1450	1½	T, BBB, BB, 2
WF133	12	3½	1550	1⅜	T, BBB, BB, 1, 2, 3, 4
WF134	12	3½	1500	1½	BB, 1, 2
WF143	12	3	1550	1⅛	BBB, BB, 1, 2, 3, 4,
WF142	12	3	1450	1¼	T, BBB, BB, 1, 2, 3, 4
WF145	12	2¾	1500	1⅛	BB, 2, 3, 4
WF168	16	2¾	1350	15⁄16	2, 4
WF209	20	3	1550	⅞	1, 2, 3, 4
WF208	20	2¾	1425	¾	4, 6, 7
WF283	28	2¾	1350	⅝	6
WF413	.410	3	1400	⅜	6

Buckshot

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD
FEDERAL PREMIUM BUCKSHOT WITH FLITECONTROL® WAD				
PFC157 00	12	3	1325	12 PELLETS - 00 BUCK
PFC154 00	12	2¾	1325	9 PELLETS - 00 BUCK
FEDERAL PREMIUM BUCKSHOT				
P108F 00	10	3½	1100	18 PELLETS - 00 BUCK
P135F 00	12	3½	1100	18 PELLETS - 00 BUCK
P158 4B	12	3	1100	41 PELLETS - 4 BUCK
P158 00	12	3	1100	15 PELLETS - 00 BUCK
P158 000	12	3	1225	10 PELLETS - 000 BUCK
P154 00	12	2¾	1325	9 PELLETS - 00 BUCK
P154 1B	12	2¾	1325	16 PELLETS - 1 BUCK
P156 00	12	2¾	1290	12 PELLETS - 00 BUCK
P258 2B	20	3	1100	18 PELLETS - 2 BUCK
P256 3B	20	2¾	1175	20 PELLETS - 3 BUCK
POWER•SHOK® BUCKSHOT				
F131 00	12	3	1210	15 PELLETS - 00 BUCK
F131 4B	12	3	1210	41 PELLETS - 4 BUCK
F127 000	12	2¾	1325	8 PELLETS - 000 BUCK
F127 00	12	2¾	1325	9 PELLETS - 00 BUCK
F127 1B	12	2¾	1325	16 PELLETS - 1 BUCK
F127 4B	12	2¾	1325	27 PELLETS - 4 BUCK
F130 00	12	2¾	1290	12 PELLETS - 00 BUCK
F164 1B	16	2¾	1225	12 PELLETS - 1 BUCK
F207 2B	20	3	1100	18 PELLETS - 2 BUCK
F203 3B	20	2¾	1200	20 PELLETS - 3 BUCK
POWER•SHOK BUCKSHOT - LOW RECOIL				
H132 00	12	2¾	1140	9 PELLETS - 00 BUCK

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD
PERSONAL DEFENSE SHOTSHELL WITH FLITECONTROL				
PD132	12	2¾	1145	9 PELLETS - 00 BUCK
NEW PD204	20	2¾	1325	10 PELLETS - 00 BUCK
FORCE X2 PERSONAL DEFENSE SHOTSHELL				
PD12FX2 00	12	2¾	1245	9 PELLET FX2 00 BUCKSHOT
FORCE X2 PERSONAL DEFENSE SHORTY SHOTSHELL				
PD129FX2 00	12	1¾	1245	6 PELLET FX2 00 BUCKSHOT
PERSONAL DEFENSE SHOTSHELL				
PD156	12	2¾	1100	34 PELLETS - 4 BUCK
PD256	20	2¾	1100	24 PELLETS - 4 BUCK

LOAD NO.	SHELL LENGTH	VELOCITY	PAYLOAD
PERSONAL DEFENSE .410 HANDGUN			
PD413JGE 000	3	775	5 PELLETS-000 BUCK
PD413JGE 4B	3	950	9 PELLETS-4 BUCK
PD412JGE 000	2½	850	4 PELLETS - 000 BUCK
PD412JGE 4	2½	950	7⁄16 OUNCE - 4 SHOT

Turkey

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD	SHOT
FEDERAL PREMIUM 3RD DEGREE® WITH FLITECONTROL FLEX® WAD					
PTDX139 567	12	3½	1250	2	5-6-7
PTDX157 567	12	3	1250	1¾	5-6-7
PTDX258 567	20	3	1100	1½	5-6-7
FEDERAL PREMIUM GRAND SLAM® WITH FLITECONTROL FLEX WAD					
PFCX101F	10	3½	1200	2	4, 5
PFCX139F	12	3½	1200	2	4, 5, 6
PFCX157F	12	3	1200	1¾	4, 5, 6
PFCX156F	12	2¾	1200	1½	5
PFCX258F	20	3	1185	1⅝	5
FEDERAL PREMIUM HEAVYWEIGHT® TSS WITH FLITECONTROL FLEX WAD					
PTSSX195F	12	3½	1000	2½	7/9
PTSSX191F	12	3½	1200	2¼	7, 9
PTSSX197F	12	3	1150	2	7/9
PTSSX193F	12	3	1200	1¾	7, 9
PTSSX295F	20	3	1000	1⅝	7/9
PTSSX259F	20	3	1100	1½	7, 9
PTSSX257F	20	2¾	1000	1⅛	9
NEW PTSS419F	.410	3	1100	13⁄16	7,9

Upland & Waterfowl

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD	SHOT
FEDERAL PREMIUM HEVI-BISMUTH					
PHBX138	12	3	1450	1⅜	3, 4, 5
PHBX144	12	2¾	1350	1¼	3, 4, 5
PHBX244	20	3	1350	1⅛	3, 4, 5

Upland

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD	SHOT
FEDERAL PREMIUM HI-BIRD®					
HVF12H	12	2¾	1330	1¼	5, 6, 7.5
HVF12	12	2¾	1275	1⅛	7.5, 8
FEDERAL PREMIUM HI-BIRD FIBER WAD					
HVF12HW	12	2¾	1330	1¼	5
FEDERAL PREMIUM HI-BIRD FIBER WAD BISMUTH					
NEW HVFB12HW 5	12	2¾	1330	1¼	5
FEDERAL PREMIUM UPLAND MAGNUM					
P156	12	2¾	1315	1½	4, 6
P165	16	2¾	1260	1¼	4, 6
P258	20	3	1300	1¼	5, 6
FEDERAL PREMIUM UPLAND HIGH VELOCITY					
P129	12	3	1350	1⅝	5, 6
P128	12	2¾	1500	1⅛	4, 6, 7.5
P138	12	2¾	1500	1⅜	4, 5, 6
P283	28	2¾	1295	¾	6, 7.5, 8
FEDERAL PREMIUM UPLAND PHEASANTS FOREVER HIGH VELOCITY					
PF154	12	2¾	1500	1¼	4, 5, 6, 7.5
PF163	16	2¾	1425	1⅛	4, 5, 6
PF204	20	2¾	1350	1	4, 5, 6, 7.5
FEDERAL PREMIUM PRAIRIE STORM® BISMUTH BLEND					
NEW PFBX142	12	3	1500	1¼	3/5, 4/6
NEW PFBX147	12	2¾	1450	1⅛	3/5, 4/6
NEW PFBX207	20	3	1400	1	3/5, 4/6
FEDERAL PREMIUM PRAIRIE STORM® FS LEAD					
PFX129FS	12	3	1350	1⅝	4, 5, 6
PFX154FS	12	2¾	1500	1¼	4, 5, 6
NEW PFX126FS	12	2¾	1330	1¼	4, 5, 6
PFX164FS	16	2¾	1425	1⅛	4, 5, 6
PFX258FS	20	3	1300	1¼	4, 5, 6
PFX204FS	20	2¾	1350	1	4, 5, 6
NEW PFX285FS	28	3	1300	1	6
PFX289FS	28	2¾	1300	13⁄16	6
FEDERAL PREMIUM PRAIRIE STORM FS STEEL					
PFSX143FS	12	3	1600	1⅛	3, 4
PFSX147FS	12	2¾	1500	1⅛	3, 4
PFSX207FS	20	3	1500	⅞	3, 4
FEDERAL PREMIUM PAPER FLYER					
P154	12	2¾	1330	1¼	7.5, 8
UPLAND STEEL					
USH122	12	2¾	1375	1	6, 7.5
USH12	12	2¾	1400	1⅛	6, 7.5
USH20	20	2¾	1500	¾	6, 7.5
USH28	28	2¾	1350	⅝	6, 7.5
USH410	.410	3	1400	⅜	6, 7.5
UPLAND STEEL WITH PAPER WAD					
USH122W	12	2¾	1330	1	7.5
GAME LOAD - HI-BRASS					
H126	12	2¾	1330	1¼	4, 5, 6, 7.5
H163	16	2¾	1295	1⅛	4, 6, 7.5
H204	20	2¾	1220	1	4, 5, 6, 7.5
H258	20	3	1300	1¼	5, 6
N124	24	2½	1280	1 1⁄16	8
H289	28	2¾	1220	1	5, 6, 7.5
N132	32	2½	1260	½	8
H413	.410	3	1135	1 1⁄16	4, 5, 6, 7.5
H412	.410	2½	1200	½	6, 7.5
GAME LOAD - HEAVY FIELD					
H123	12	2¾	1255	1⅛	4, 6, 7.5, 8
H125	12	2¾	1220	1¼	4, 5, 6, 7.5
H202	20	2¾	1165	1	6, 7.5, 8
GAME LOAD					
H121	12	2¾	1290	1	6, 7.5, 8
H160	16	2¾	1165	1	6, 7.5, 8
H200	20	2¾	1210	⅞	6, 7.5, 8

These trajectory tables were calculated by computer using the best available data for each load. Trajectories are representative of the nominal behavior of each load at standard conditions (59°F temperature; barometric pressure of 29.53 inches; altitude at sea level). Shooters are cautioned that actual trajectories may differ due to variations in altitude, atmospheric conditions, guns, sights and ammunition.

Federal Premium Sabot Slug

	FEDERAL LOAD NO.	GAUGE	SHELL LENGTH INCHES	SHELL LENGTH MM	SLUG TYPE	SLUG WEIGHT GRAINS	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	100 YDS.	150 YDS.	200 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST FOOT-POUND) MUZZLE	25 YDS.	50 YDS.	100 YDS.	150 YDS.	200 YDS.	HEIGHT OF SLUG TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS .5 INCHES ABOVE BORE LINE. 25 YDS.	50 YDS.	100 YDS.	150 YDS.	200 YDS.	TEST BARREL LENGTH INCHES
	FEDERAL PREMIUM FREIGHT TRAIN™ COPPER (FULLY RIFLED SLUG BARREL)																							
NEW	P151 FT	12	3	76	COPPER SABOT	300	2000	1900	1800	1620	1450	1310	2665	2400	2160	1745	1400	1135	1.3	2.6	2.9	⊕	-7.1	30
NEW	P152 FT	12	2¾	70	COPPER SABOT	300	1900	1800	1710	1530	1380	1240	2405	2165	1945	1565	1260	1030	1.7	2.9	3.3	⊕	-7.9	30
NEW	P209 FT	20	3	76	COPPER SABOT	275	1900	1790	1690	1500	1340	1200	2205	1965	1750	1380	1090	875	1.6	3.0	3.4	⊕	-8.3	30
NEW	P208 FT	20	2¾	70	COPPER SABOT	275	1700	1600	1510	1340	1200	-	1765	1570	1390	1100	885	-	1.0	1.7	⊕	-6.5	-	30

Note: For optimum slug performance, we recommend matching the chamber length to the slug length. For example, use a 3-inch slug in a 3-inch chamber.

Federal Premium Smoothbore Slug

FEDERAL LOAD NO.	GAUGE	SHELL LENGTH INCHES	SHELL LENGTH MM	SLUG TYPE	SLUG WEIGHT OUNCES	SLUG WEIGHT GRAINS	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	100 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST FOOT-POUND) MUZZLE	25 YDS.	50 YDS.	100 YDS.	HEIGHT OF SLUG TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS .5 INCHES ABOVE BORE LINE. 25 YDS.	50 YDS.	100 YDS.	TEST BARREL LENGTH INCHES
FEDERAL PREMIUM TRUBALL® RIFLED SLUGS (SMOOTHBORE BARREL)																		
PB127 LRS*	12	2¾	70	TRUBALL RIFLED SLUG	1	438	1300	1150	1040	910.	1640	1275	1055	805	0.6	⊕	-7.4	30
PB127 RS	12	2¾	70	TRUBALL RIFLED SLUG	1	438	1600	1370	1180	970	2485	1810	1355	915	0.3	⊕	-5.7	30
PB131 RS	12	3	76	TRUBALL RIFLED SLUG	1	438	1700	1450	1240	1000	2805	2040	1505	970	0.3	⊕	-5.1	30
PB203 RS	20	2¾	70	TRUBALL RIFLED SLUG	¾	328	1600	1390	1220	1010	1865	1410	1090	745	0.3	⊕	-5.3	30
PB209 RS	20	3	76	TRUBALL RIFLED SLUG	¾	328	1700	1480	1290	1040	2105	1595	1215	795	0.3	⊕	-4.8	30
FEDERAL PREMIUM TRUBALL DEEP PENETRATOR RIFLED SLUGS (SMOOTHBORE BARREL)																		
PB127 DPRS	12	2¾	70	TRUBALL RIFLED SLUG	1	438	1350	1200	1090	950	1775	1400	1150	875	0.5	⊕	-6.8	30

**Low-recoil load*

Federal Slug

FEDERAL LOAD NO.	GAUGE	SHELL LENGTH INCHES	SHELL LENGTH MM	SLUG TYPE	SLUG WEIGHT OUNCES	SLUG WEIGHT GRAINS	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	125 YDS.	ENERGY IN FOOT-POUNDS (TO NEAREST FOOT-POUND) MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	125 YDS	HEIGHT OF SLUG TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS .5 INCHES ABOVE BORE LINE. 25 YDS.	50 YDS.	75 YDS.	100 YDS.	125 YDS.	TEST BARREL LENGTH INCHES
FEDERAL POWER•SHOK® SABOT SLUG (FULLY RIFLED SLUG BARREL)																								
F127 SS2	12	2¾	70	SABOT HP	1	438	1500	1420	1350	1280	1220	1170	2190	1970	1775	1600	1455	1330	1.4	2.1	1.7	⊕	-3.2	30
F203 SS2	20	2¾	70	SABOT HP	⅞	383	1450	1350	1260	1180	1120	1070	1785	1550	1350	1190	1065	965	1.6	2.5	2.0	⊕	-3.8	30
FEDERAL POWER•SHOK RIFLED SLUG (SMOOTHBORE BARREL)																								
F103F RS	10	3½	89	HP	1¾	766	1280	1170	1090	1020	970	930	2785	2325	2000	1770	1600	1465	0.5	⊕	-2.4	-6.8	-13.6	32
F131 RS	12	3	76	HP	1¼	547	1600	1460	1330	1220	1130	1060	3110	2570	2140	1800	1545	1360	0.3	⊕	-1.5	-4.5	-9.1	30
F127 RS	12	2¾	70	HP	1	438	1610	1470	1340	1230	1140	1070	2520	2090	1745	1470	1260	1110	0.3	⊕	-1.5	-4.4	-8.9	30
F130 RS	12	2¾	70	HP	1¼	547	1520	1390	1270	1170	1090	1030	2805	2330	1950	1660	1445	1290	0.3	⊕	-1.7	-4.9	-10.0	30
F164 RS	16	2¾	70	HP	⅘	350	1600	1380	1210	1080	1000	930	1990	1490	1135	910	770	675	0.3	⊕	-1.8	-5.4	-11.2	28
F203 RS	20	2¾	70	HP	¾	328	1600	1430	1280	1160	1070	1000	1865	1480	1190	975	830	730	0.3	⊕	-1.6	-4.8	-10.0	26
F412 RS	.410	2½	64	HP	¼	109	1775	1540	1340	1180	1060	980	760	575	430	335	270	235	0.2	⊕	-1.4	-4.4	-9.3	26

Target

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	DRAM	PAYLOAD	SHOT
FEDERAL PREMIUM HIGH OVER ALL™						
HOA1224H	12	2¾	1335	3¼	24 GRAM	7.5, 9
HOA12L	12	2¾	1145	2¾	1⅛	7.5, 8, 9
HOA12H	12	2¾	1200	3	1⅛	7.5, 8
HOA12HC	12	2¾	1250	HDCP	1⅛	7.5, 8
HOA12L1	12	2¾	1200	2¾	1	7.5, 8
HOA12H1	12	2¾	1250	3	1	7.5, 8
HOA12HC1	12	2¾	1290	3¼	1	7.5, 8, 8.5
HOA20	20	2¾	1200	2½	⅞	7.5, 8
HOA20H	20	2¾	1275	3	⅞	7.5, 8
HOA28	28	2¾	1250	2	¾	8, 8.5, 9
HOA28H	28	2¾	1300	2¼	¾	8, 9
HOA410	.410	2½	1200	MAX	½	8, 8.5, 9
HOA410H	.410	2½	1275	MAX	½	8.5, 9
FEDERAL PREMIUM GOLD MEDAL PAPER						
NEW GMT121	12	2¾	1330	FITASC	1	7.5, 8
GMT111	12	2¾	1290	3¼	1	7.5, 8
GMT175	12	2¾	1180	2¾	1	8
GMT117	12	2¾	1145	2¾	1⅛	7.5, 8
GMT118	12	2¾	1200	3	1⅛	7.5, 8
GMT171	12	2¾	1235	HDCP	1⅛	7.5, 8

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD	SHOT
ACTION SHOTGUN					
NEW AS12H 7.5*	12	2¾	1235	1⅛	7.5
TOP GUN TARGET					
TG12EL	12	2¾	1200	⅞	8
TG121	12	2¾	1180	1	7.5, 8
TGSF128	12	2¾	1330	1	7.5, 8
TGSH12	12	2¾	1300	1	7.5, 8
TGS128	12	2¾	1250	1	7.5, 8
TG12	12	2¾	1200	1⅛	7.5, 8
TGL12	12	2¾	1145	1⅛	7.5, 8, 9
TGL12US	12	2¾	1145	1⅛	8
TGL12P	12	2¾	1145	1⅛	8
TG20	20	2¾	1210	⅞	7.5, 8, 9
TGS224	20	2¾	1250	⅞	7.5, 8
TGS2821	28	2¾	1330	¾	7.5, 8, 9
TGS41214	.410	2½	1330	½	7.5, 8, 9
TOP GUN® WITH PAPER WAD					
TG12W	12	2¾	1200	1⅛	7.5, 8
TOP GUN TARGET – STEEL WITH PAPER WAD					
TG12WS1	12	2¾	1250	1	7.5
TG12WS2	12	2¾	1300	1	7.5
SHORTY SHOTSHELLS					
SH129 4B	12	1¾	1200	15 PELLET	4 BUCK
SH129 RS	12	1¾	1200	1	RIFLED SLUG
SH129 8	12	1¾	1145	15/16	8

**200-round case*

FEDERAL ACCESSORIES NEW

The world's best ammunition deserves the best gear. We're proud to announce a full new line of gun cases, bags and other accessories with features and pricing that fit any shooter or budget. Choose from a wide selection of items from these categories and look for more to come soon.

PREMIUM

Shoot in style with our Premium bags and gear. The lineup includes shotgun and rifle cases as well as shell bags. All are built with the finest materials, including 18-ounce waxed canvas, top-quality zippers, leather accents, brass hardware and embossed leather logo patches.

FIELD & RANGE

Count on the Federal Field & Range line for stylish, functional shotgun and rifle cases that provide flotation for up to 12 pounds. Quality zippers, robust padding, and rugged, waterproof 600 denier polyester construction promise years of use.

TOP GUN

Looking for solid, dependable gear at an affordable price? Federal's Top Gun line includes a variety of shotgun cases, scoped rifle cases, shell bags and range bags—all with durable construction and an embroidered logo.

NEOPRENE GUN SLEEVE

Keep your gun dry and protected with this quality gun sleeve's all-ripstop neoprene construction. It takes up little space, yet keeps your firearm safe from the elements when needed.

TRI-FOLD GUN CASE

Easy-to-pack protection, the Federal Tri-Fold Gun Case is easy to stow, yet offers full protection and comes with a handy shoulder strap and durable buckles.

Accessories

PREMIUM	
FPSP	PREMIUM SHELL POUCH - TAN
FPRB	PREMIUM RANGE BAG - TAN
FPSC48	PREMIUM SHOTGUN CASE - 48" - TAN
FPSC52	PREMIUM SHOTGUN CASE - 52" - TAN
FPSCR44	PREMIUM SCOPED RIFLE CASE - 44" - TAN
FPSRC48	PREMIUM SCOPED RIFLE CASE - 48" - TAN
FIELD & RANGE	
FFRSC48	FIELD & RANGE SHOTGUN CASE - 48" - MX7
FFRSC52	FIELD & RANGE SHOTGUN CASE - 52" - MX7
FFRSRC44	FIELD & RANGE SCOPED RIFLE CASE - 44" - GRY
FFRSRC48	FIELD & RANGE SCOPED RIFLE CASE - 48" - GRY
TOP GUN	
FTGSBP	TOP GUN SINGLE BOX POUCH - BLK
FTGCSHB	TOP GUN COMBO SHELL HULL BAG - BLK
FTGRB	TOP GUN RANGE BAG - BLK
FTGSC52	TOP GUN SHOTGUN CASE - 52" - BLK
FTGSRC40	TOP GUN SCOPED RIFLE CASE - 40" - BLK
FTGSRC48	TOP GUN SCOPED RIFLE CASE - 48" - BLK
NEOPRENE GUN SLEEVE	
FNGS52	FEDERAL NEOPRENE GUN SLEEVE - BLK
TRI-FOLD GUN CASE	
FTFGC52	FEDERAL TRI-FOLD GUN CASE - BLK

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