

2026

FEDERAL 



7MM BACKCOUNTRY™
20-INCH BARRELS | 3,000 FPS | 170-GRAIN BULLETS

AWARD WINNER:



TABLE OF CONTENTS

Subsonic & America 250th	3-4
7mm Backcountry	5-6
Hunting Rifle	7-12
Safari Rifle	13-14
Varmint Rifle	15-16
Target Rifle	17-18
Personal Defense® Handgun	19-22
Personal Defense Shotgun	23-24
Syntech®	25-26
Target Handgun	27-28
Handgun Hunting	29-30
Muzzleloading	31-32
Rimfire	33-34
Waterfowl	35-37
Lead-Free Upland	38
Upland	39-40
Turkey	41-42
Slug & Buckshot	43-44
Target Shotgun	45-50
Rifle Ballistics	51-58
Handgun Ballistics	59-60
Shotgun Load Data	61-62
Rimfire Ballistics & Reloading	63-64
Custom Shop	65-66

PROUDLY AMERICAN

It's been 250 years since a handful of visionaries gathered in Philadelphia for something truly revolutionary. They could have well been signing their own death warrants as they inscribed their names across the Declaration of Independence and into history, but the ideals of freedom that inspired them could not be compromised. Doctors and farmers, merchants and ministers, vastly different individuals from all corners of the young nation set aside their rivalries and put it all on the line, giving birth to America with the stroke of a pen.

At Federal, we feel a unique bond to these events—not only as Americans, but because the Founding Fathers' concepts are so intrinsic to the work we do, the products we make and the purposes they serve. In addition to providing a livelihood for hardworking Americans who keep our factory running 24-7, Federal Ammunition quite literally protects lives, defends liberty, and supports the self-sufficient lifestyle that's been part of this country's fabric since its earliest days. As we mark America's semisecular centennial in 2026, our dedication to these principles has never been so strong, and we're proud to build the world's best ammunition right here in the USA. You'll see proof of this in these pages and the new crop of innovative products that make us the undisputed leader in ammunition technology. We couldn't do any of it without our loyal customers.

Thank you for shooting Federal.

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.

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.





SILENCER
CENTRAL

OFFICIAL SUPPRESSOR OF FEDERAL

FEDERAL  **SUBSONIC**

NEW

For noise reduction that's real—not just relative—there's finally a solution. The all-new Federal® Subsonic line gives hunters the expansion and accuracy of conventional centerfire rifle ammunition at subsonic velocities that deliver truly whisper-quiet shooting through suppressors. Loaded with proven Federal bullet designs that have been carefully selected and modified for low-velocity performance, all loads in the lineup provide the lethality hunters demand. And although they're optimized for suppressors, they offer many of the same benefits to hunters who shoot without one—less noise and less recoil with tag-filling terminal performance.

NEW

AMERICA 250TH ANNIVERSARY AMMUNITION

We're honoring the country's 250th birthday with limited-edition Top Gun®, American Eagle® and Champion™ ammunition. Every box is emblazoned with a collectible design that embodies the American spirit—today, tomorrow and for our next 250 years.



COMING SOON

FUSION[®] TIPPED 300 BLACKOUT & 308 WIN.

With a molecularly bonded bullet and precision polymer tip, these 300 Blackout and 308 Win. loads accomplish what their counterparts can't, expanding aggressively and delivering lethal terminal performance at subsonic velocities, with pinpoint accuracy and downrange energy.

FUSION 30-30 WIN AND 45-70 GOVT.

We've given classic cartridges the silent treatment with the proven Fusion bullet design loaded in 30-30 Win. and 45-70 Govt. Both loads feature Fusion's molecularly bonded bullet and skived nose to open reliably at low velocities with the weight retention to penetrate deep.



7MM BACKCOUNTRY

7MM BACKCOUNTRY™

20-INCH BARRELS | 3,000 FPS | 170-GRAIN BULLETS

When Federal's 7mm Backcountry hit last year, it not only reset the bar when it came to all-range magnum performance, with superior ballistics through shorter-barreled suppressed rifles, it forever changed how ammunition is made.

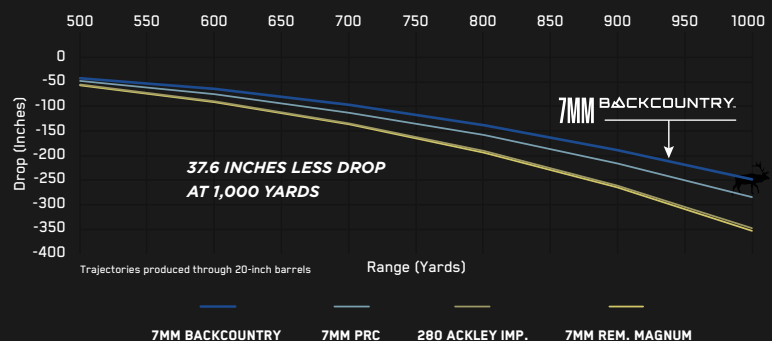
Built around the patented Peak Alloy™ case, the one-piece case design allows higher velocities over modern brass case ammunition. And because the cartridge is dimensionally smaller than its brass-case counterparts, 7mm Backcountry achieves these ballistic advantages through smaller rifles and with an extra round in the magazine of most platforms.

That's the power of 7mm Backcountry: Magnum velocity out of shorter barrels without increasing recoil, and a new way to make all rifle ammunition faster, flatter shooting and more powerful.



Ballistically Best

Powered by Peak Alloy case technology, 7mm Backcountry can be loaded to higher chamber pressures than brass case counterparts. As a result, it produces higher muzzle velocities than comparable cartridges, retaining that velocity downrange for less drop and wind drift.



AWARD WINNER:

NASGW + POMA
CALIBER
AWARD FOR EXCELLENCE



"The Peak Alloy case is definitely a game changer. You get higher pressures and better performance. It's forefront of what's next."

REMI WARREN
Federal Brand Ambassador

TRUSTED BY THESE TOP OUTFITTERS

High West Outfitters
highwestoutfitter.com

Frontier Outfitting
frontieroutfitting.com

Western Lands Outfitters
[instagram.com/westernlandsoutfitters](https://www.instagram.com/westernlandsoutfitters)

Coastal Inlet Adventures
coastalinletadventures.com



Patented Peak Alloy™ case technology is fundamentally different than brass cases. It utilizes a proprietary steel alloy that includes other unique elements. This same alloy is used in manufacturing safes, nuclear reactors and other high-strength applications.

Peak Alloy allows Federal to safely increase chamber pressures far beyond the limits of brass case ammunition, significantly increasing velocity and energy.



With a stronger, more efficient case design in its arsenal of proprietary technologies, Federal can harness the untapped reservoir of energy in all ammunition, paving the way for a whole new family of high-performance, suppressor-optimized cartridges.

The Peak Alloy case is also reloadable when following Federal's lab-tested processes and data.

HUNTING RIFLE

NICK HOFFMAN

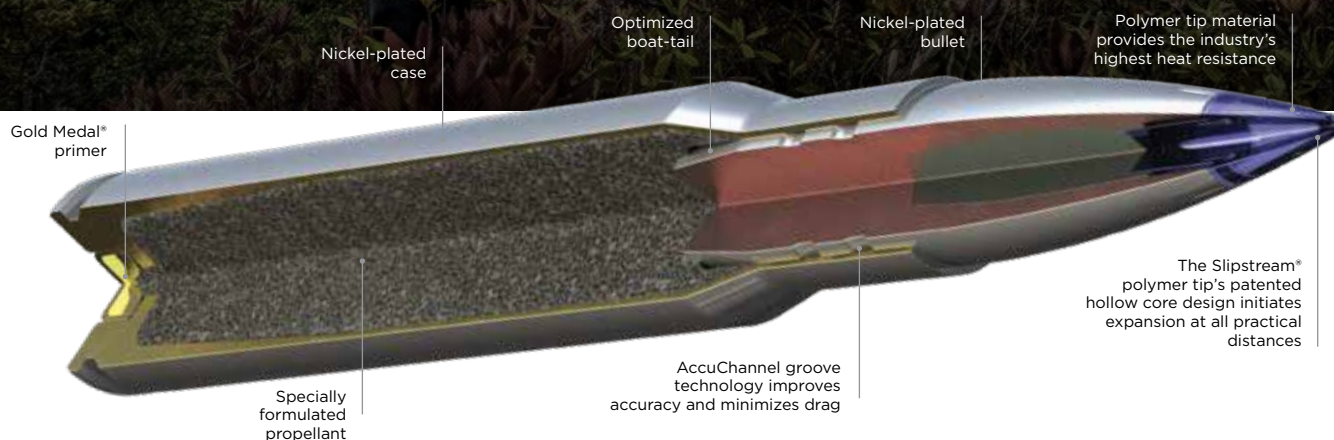
Federal Brand Ambassador
Host of "Nick's Wild Ride"

AVAILABLE IN
7MM BACKCOUNTRY.

AVAILABLE IN
COMPONENT BULLETS
See details on page 64.

TERMINAL ASCENT™

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 7mm Backcountry and 300 PRC.**



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

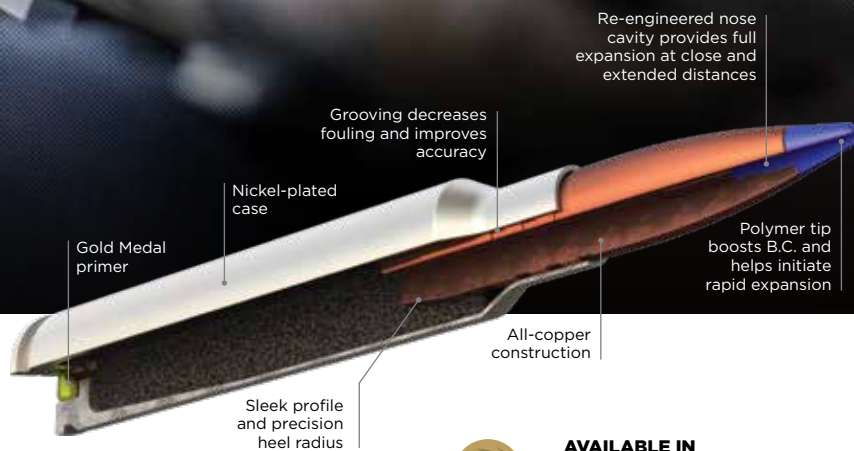


997 YARDS

99% Weight Retention
300 Win. Magnum

Oryx





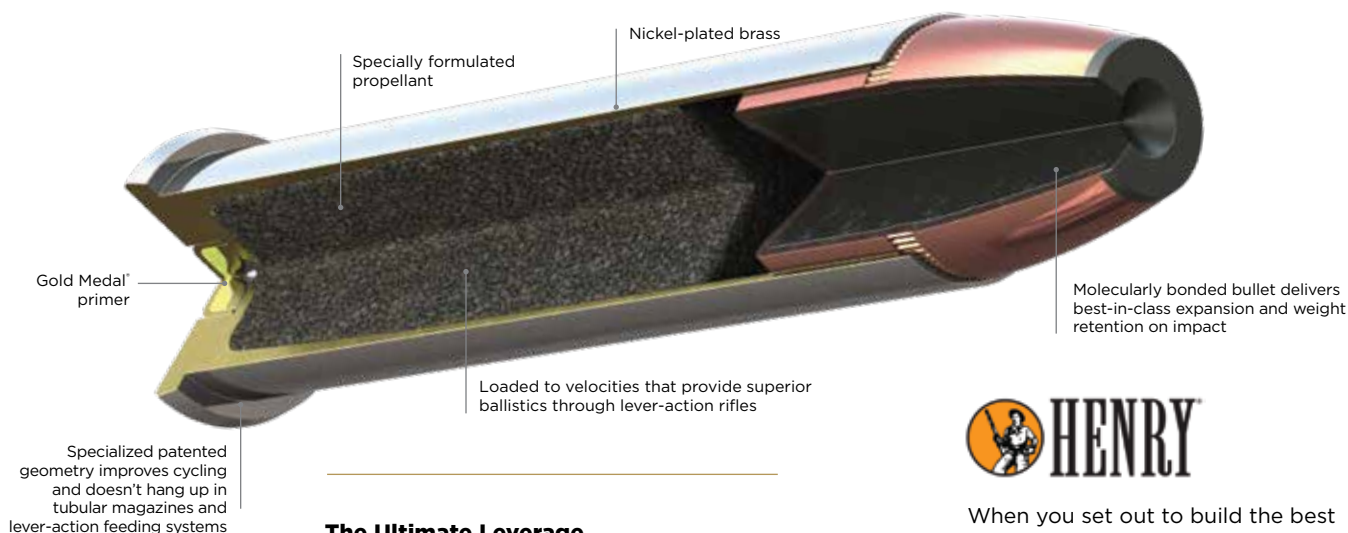
AVAILABLE IN
7MM BACKCOUNTRY.

Copper has never been so lethal. The Barnes® LRX™ leans on its high ballistic coefficient to maximize range and power, then closes the deal with a unique nose cavity that expands reliably and devastatingly to take big game at all practical distances. We load it with Federal Premium® cases, Gold Medal® primers and specially formulated propellant to our tightest specifications for the ultimate accuracy and terminal performance. **Available in 7mm Backcountry, and coming soon in 280 Ackley Improved, 300 Win. Mag., 308 Win., 6.5 Creedmoor, 6.5 PRC, and 7 PRC.**

HUNTING RIFLE



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.



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.



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.

AVAILABLE IN COMPONENT BULLETS

See details on page 64.

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 ELITE HUNTER

Take long range further. The Berger® Elite Hunter offers some of the industry's highest ballistic coefficients in a hunting bullet, and its thin-jacket design produces extreme hydrostatic shock and a massive wound cavity on impact. Loaded with Federal Premium® components to incredibly tight tolerances, the loads produce lethal accuracy at extended distances. **Available in 7mm Backcountry and 7mm PRC.**

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.



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. **Now available in 300 PRC.**

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 51-58.

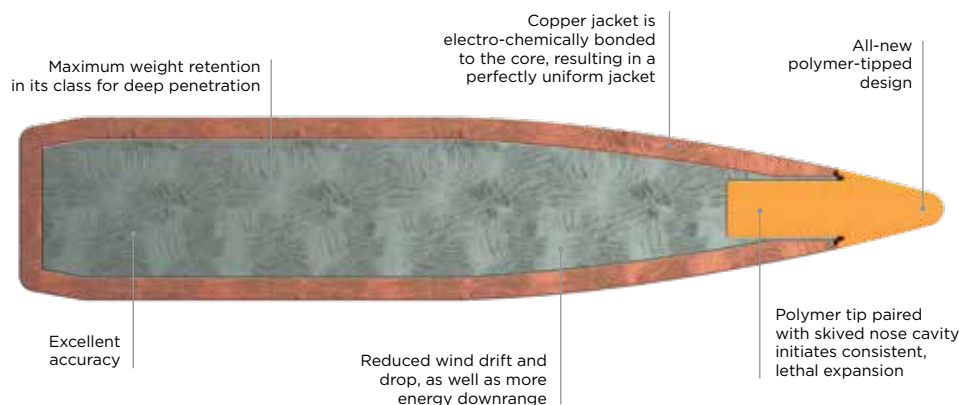
HUNTING RIFLE



NEW

FUSION® TIPPEO

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. We've written a new chapter to the Fusion story with Fusion Tipped. The 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. **Now available in 6mm ARC and coming soon in 243 Win.**



AVAILABLE IN
7MM BACKCOUNTRY.



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 our 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.



**AVAILABLE IN
COMPONENT BULLETS**
See details on page 64.

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.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 51-58.

SAFARI RIFLE

*Additional offerings are available
in the Federal Custom Shop.
See page 65 for more information.*

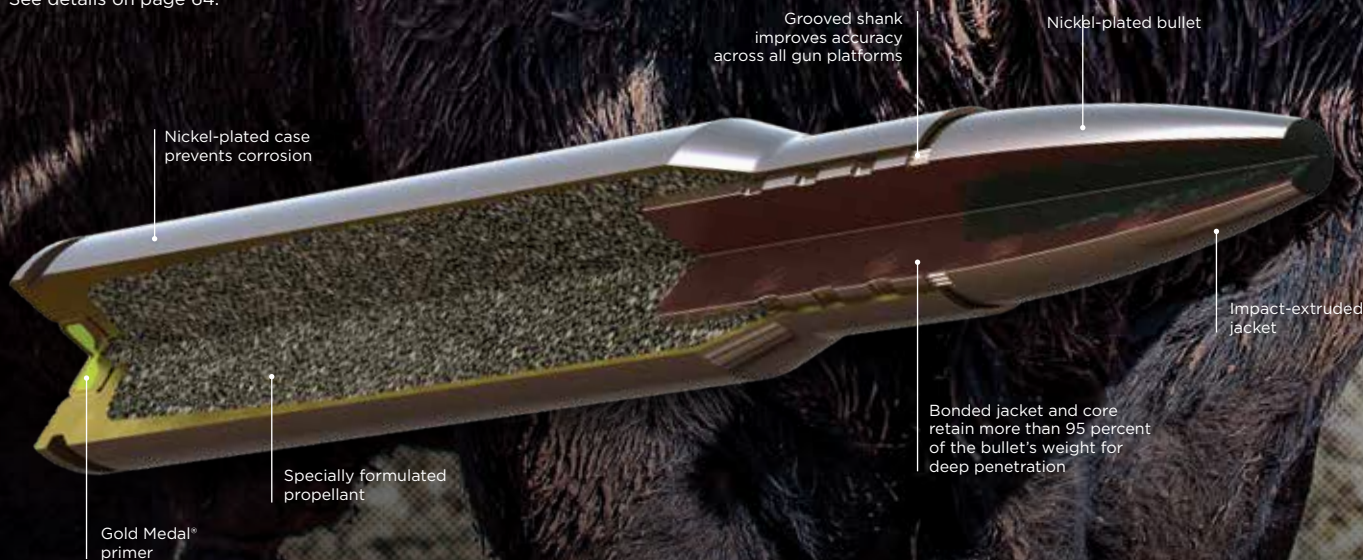


TROPHY BONDED® BEAR CLAW®

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.

AVAILABLE IN COMPONENT BULLETS

See details on page 64.



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.

AVAILABLE IN COMPONENT BULLETS

See details on page 64.



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.



Proven From Africa To Alaska

The solid rear core of the Trophy Bonded Bear Claw allows the bullet to penetrate deep—even through the world's toughest game.



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.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 51-58.

VARMINT RIFLE



VARMINT & PREDATOR V-MAX

Take down 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.

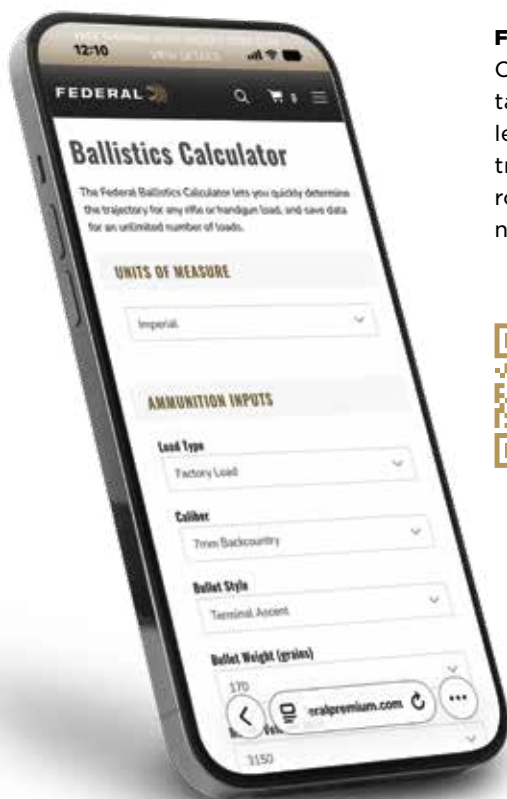


Ready To Explode

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.



Federal Ballistics Calculator

Crunch the numbers, then hit your target. The Federal Ballistics Calculator lets you quickly determine the trajectory for any rifle or handgun round, and save data for an unlimited number of loads.



FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 51-58.

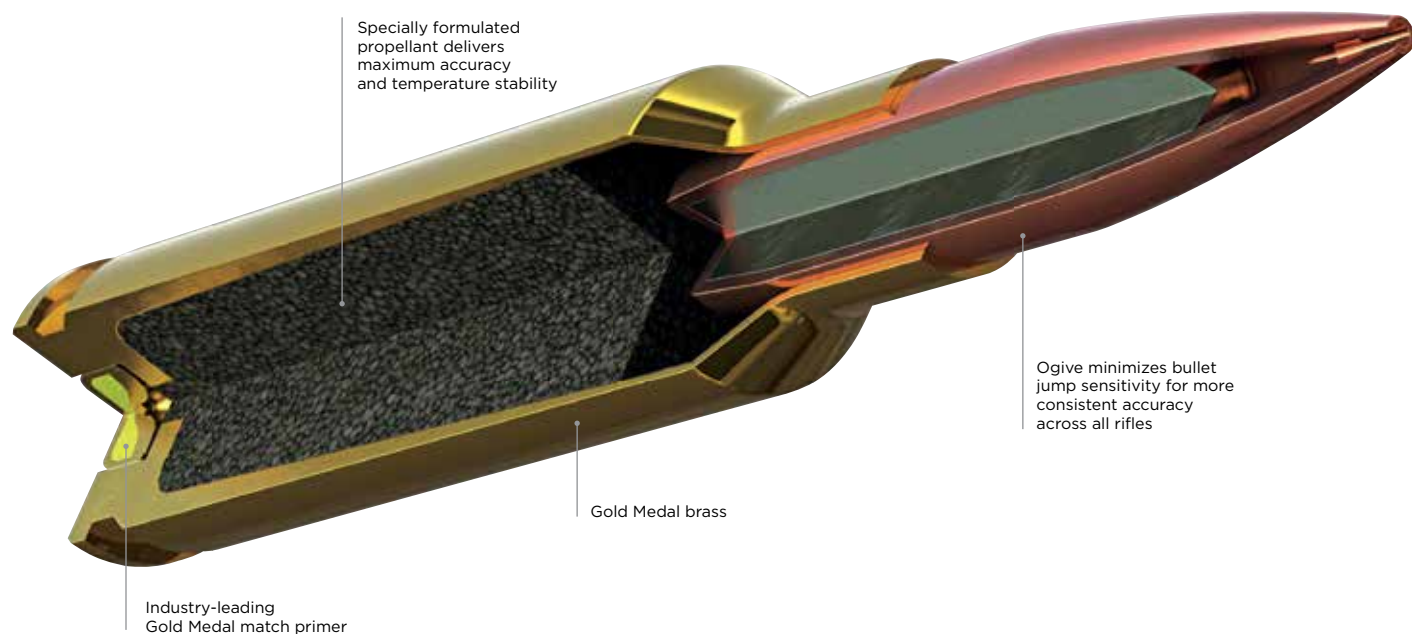
TARGET RIFLE



GOLD MEDAL®

CENTER STRIKE

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.





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.

Now available in 6mm ARC.

FOR A FULL LIST OF AVAILABLE LOADS AND BALLISTICS, REFER TO PAGES 51-58.

PERSONAL DEFENSE® HANDGUN

JOSH FROELICH
Federal Brand Ambassador

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.

Heavy Clothing

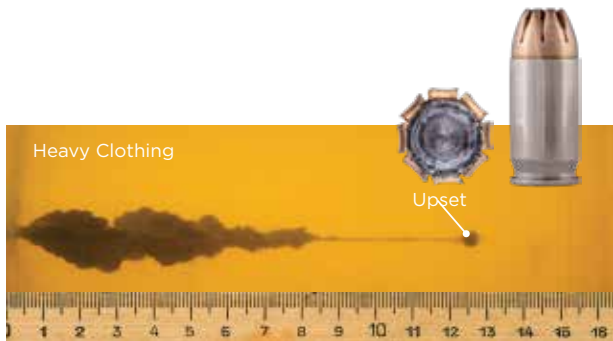


Consistency Counts

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.

HYDRA-SHOK DEEP

A redesigned center post and core push the performance of Hydra-Shok Deep® further. The design maximizes the cartridge's available energy to deliver critical penetration depths through bare ballistics gelatin and heavy clothing.



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

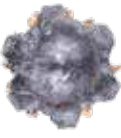
We pair 50 HST loads with 50 Syntech Training Match™ rounds in Practice & Defend packs for the most complete combination available. All produce identical velocities, trajectories and point of impact for the most realistic training and the utmost protection.

PERSONAL DEFENSE® HANDGUN

PUNCH™



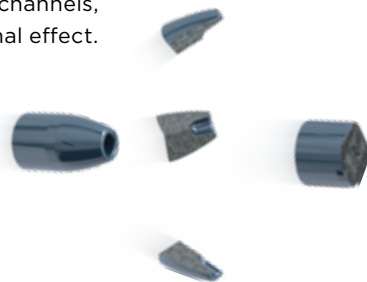
Get protection that delivers a knockout blow. Punch™ draws from Federal® Ammunition's decades of experience designing the world's finest defensive handgun loads. The bullet for each offering is carefully selected and built to optimize terminal performance of the caliber for the most common situations. So, no matter what gun or cartridge you choose, you'll always get the most effective defense possible.

	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 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.

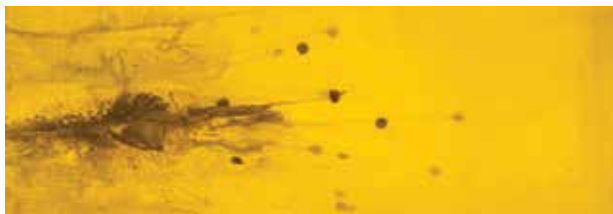


FORCE X2™

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.



.410 HANDGUN

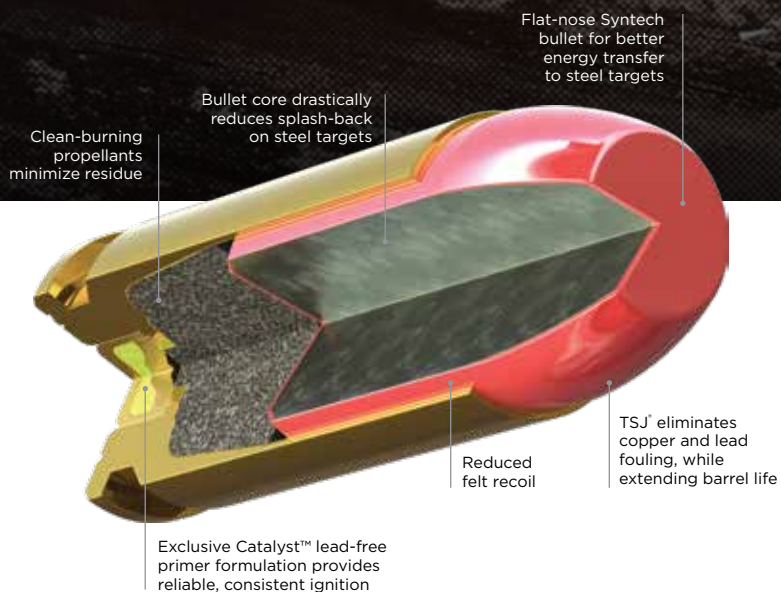
The .410 handgun has emerged as a popular option for self-defense, and Federal Premium® offers a variety of loads for these specialized firearms. A customized hull design, optimal brass thickness and fine-tuned payloads make these perfect for .410 handguns.





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.



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.



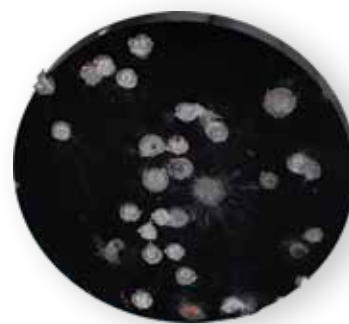
Less Muzzle Rise For Faster Follow-ups

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.



Cleaner

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



Safer On Steel

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



Catalyst Primer

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

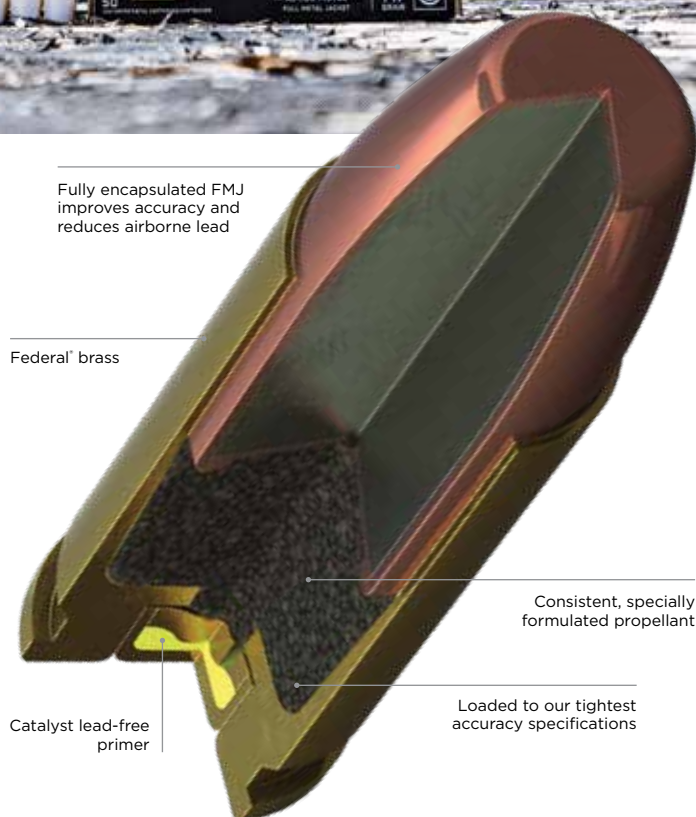


TARGET HANDGUN

KRYSTAL DUNN
Federal Brand Ambassador

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.





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.

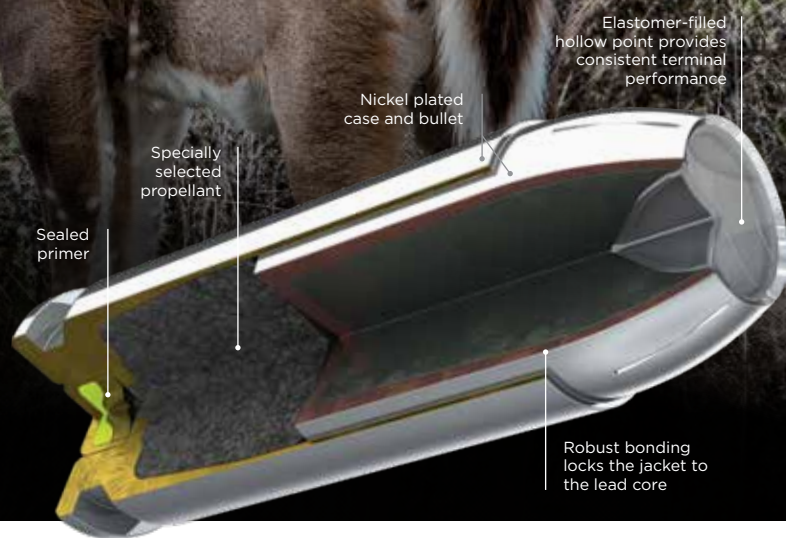


CHAMPION

Stretch your range time further with Federal Champion loads. The affordable offerings feature reloadable brass, quality target bullets, and consistent primers and propellant.

HUNTING HANDGUN

NEW



**TERMINAL
ASCENT™**
HANDGUN

Hunters should never have to sacrifice precision or performance simply because they choose to bring a handgun into the field. Now, longer range, better expansion, deeper penetration and superior accuracy are all within reach with new Terminal Ascent® Handgun. The loads use a bonded bullet design to increase weight retention, while a unique, elastomer-filled nose cavity expands reliably on a variety of game. The nickel-plated case and bullet, along with the sealed primer prevent corrosion and ensure flawless reliability in all conditions.



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.



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.



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.



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.



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.

Now available in 45 Colt.

FIRE STICK

Federal engineers opened a whole new chapter in muzzleloading technology with FireStick®, the critical component of a unique ignition system that charges from the breech, loads from the muzzle and shoots like nothing before. 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.



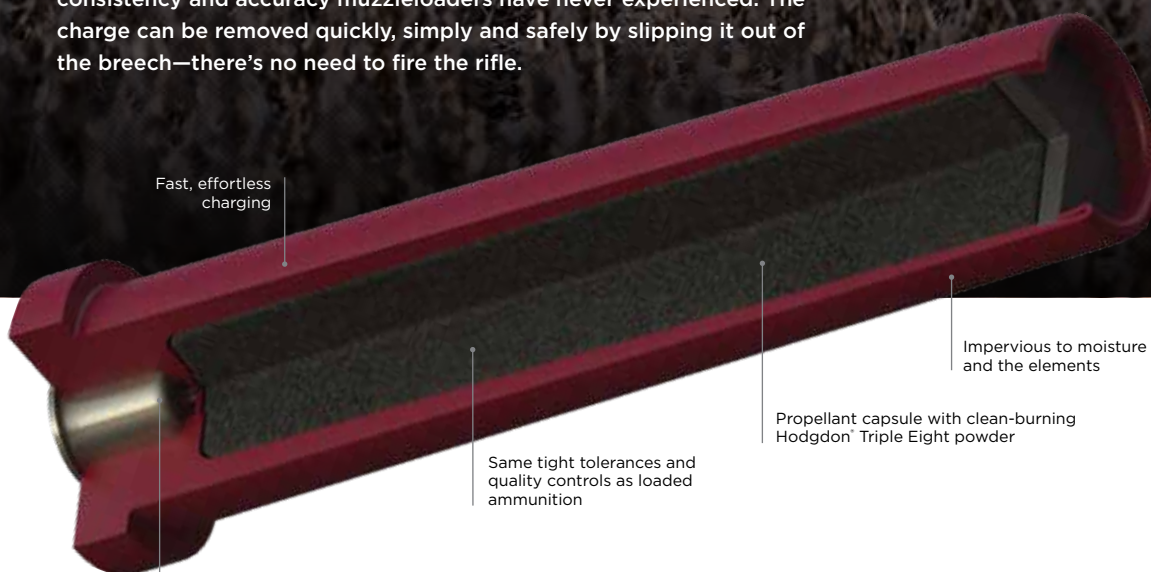
TIFFANY LAKOSKY

Federal Brand Ambassador
Co-host of "Crush With Lee & Tiffany"

**NOW LEGAL
IN MORE THAN
30 STATES**

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.



Fast, effortless
charging

Impervious to moisture
and the elements

Propellant capsule with clean-burning
Hodgdon® Triple Eight powder

Same tight tolerances and
quality controls as loaded
ammunition

Shooter inserts Federal® 209
muzzleloading primer (SOLD
SEPARATELY)

FIRESTICK

PART NO.	GRAIN EQUIVALENT
PMZFS80T8	80
PMZFS100T8	100
PMZFS120T8	120



Charges from the breech
of compatible rifles

Bullet loads
from the muzzle



OFFERED IN RIFLES FROM:



THOMPSON/CENTER



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

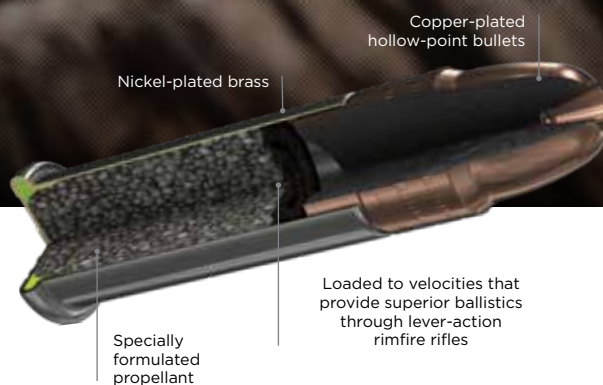
LOAD NO.	CALIBER	GR
PMZ50LMZ1	50	350

MUZZLELOADING PRIMER

PART NO.	TYPE
PMZ209	209

*For best performance, use with magnum primers.

RIMFIRE



The technology that revitalized centerfire lever-action rifles and carbines is now available for rimfire. Velocities of Federal Premium® HammerDown™ rimfire loads are customized to produce superior ballistics and terminal performance on small game through lever-action rimfire rifles. The geometry of each round's case, bullet and cartridge ensures flawless cycling through tubular magazine and typical lever-action feeding systems.



SPEER TNT

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



GOLD MEDAL

Shoot at the highest levels of rimfire competition with Federal Premium Gold Medal®. The rounds are built with precision bullets and ultra-tight tolerances that ensure peak performance and consistency.



V-MAX

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



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.



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.



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.



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.



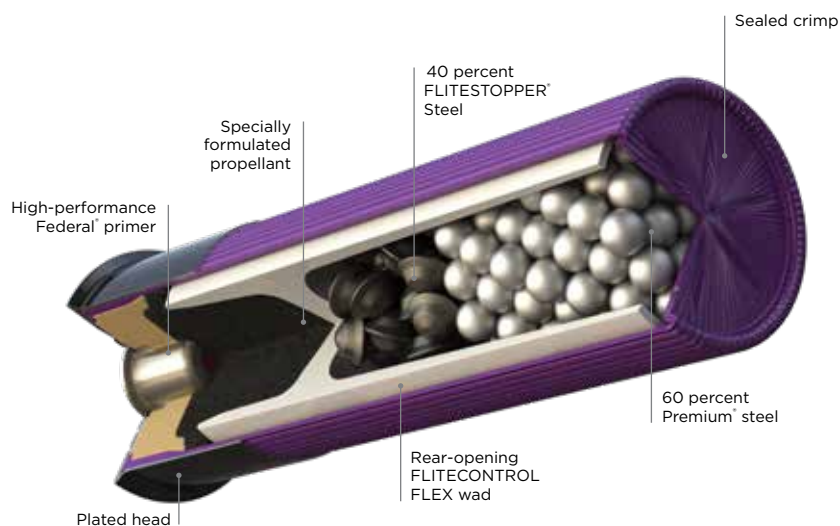
GAME LOADS

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.

BLACKCLOUD



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.





CHAD BELDING
Federal Brand Ambassador
Host of "The Fowl Life"

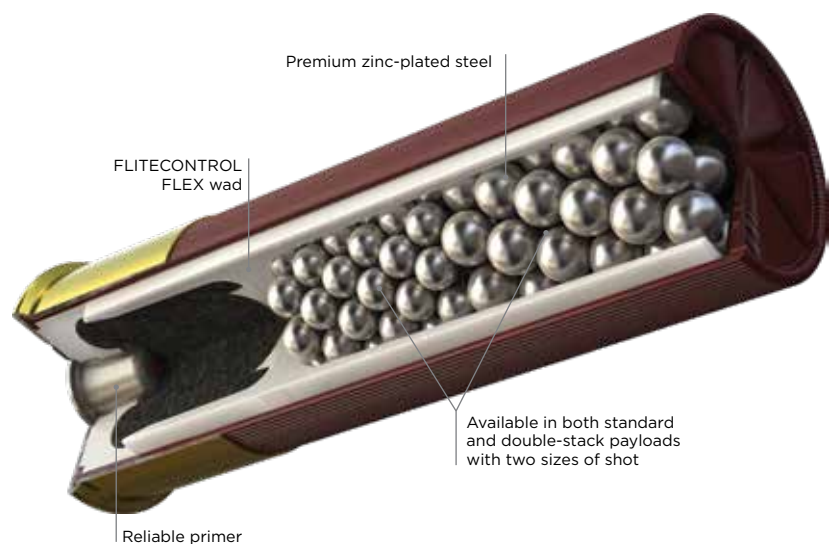


BLACK CLOUD HIGH VELOCITY

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



ULTRA STEEL™



Waterfowlers live for those moments when the birds do it right. And in those moments, they want a shell that does the rest. 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.

WATERFOWL



NEW



ROB ROBERTS
RAPTOR
STEEL

Developed With Rob Roberts
For Optimal Performance
Through Raptor Series Chokes

Plated Head

High-Performance
Federal® Primer

Specially Formulated
Clean-Burning Propellant

Heavy Payloads Of High-Quality
Federal Zinc-Plated Steel Pellets

Collaboration between Federal Ammunition and Rob Roberts Custom Gunworks has given life to all-new Raptor Steel waterfowl loads that put more lethal pellets on target through Raptor Series chokes. Extract the tightest, most efficient patterns from Rob Roberts Raptor Series chokes. Federal® collaborated with Rob Roberts and his team to develop these customized loads, which pair heavy payloads and high shot counts with carefully selected velocities proven to put more pellets on target. The loads combine Federal's high-performance primers and clean-burning propellant to deliver lethal shot strings through the advanced Raptor choke design.



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.



HEVI-BISMUTH 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. Now available in 16- and 28-gauge loads.



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.



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.

UPLAND

UPLAND PAPER

Experience the nostalgic look, feel and even smell of classic upland shotshells without losing the benefits of modern performance with Federal Premium® Upland Paper. The loads' exclusive waxed-paper hull holds a hard-hitting payload of extra-hard copper-plated lead shot, as well as a wad column specially designed for peak performance with these classic components. Upland Paper is ideal for pheasants, grouse, quail and small game.

Exclusive Federal Premium®
paper hull construction

Wad design produces better,
more consistent patterns

Select, high-quality
propellant and primer
for efficient ignition

Extra-hard, copper-plated
shot for uniform patterns
and greater penetration



PRAIRIE STORM

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.

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.

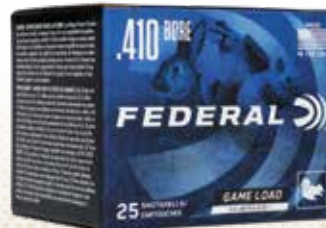


PAPER FLYER

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.

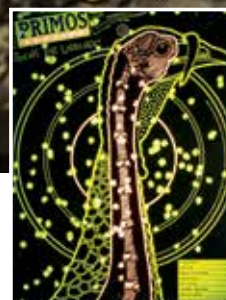
FEDERAL GAME LOAD

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.

TURKEY

LEAD
FREE
SHOT

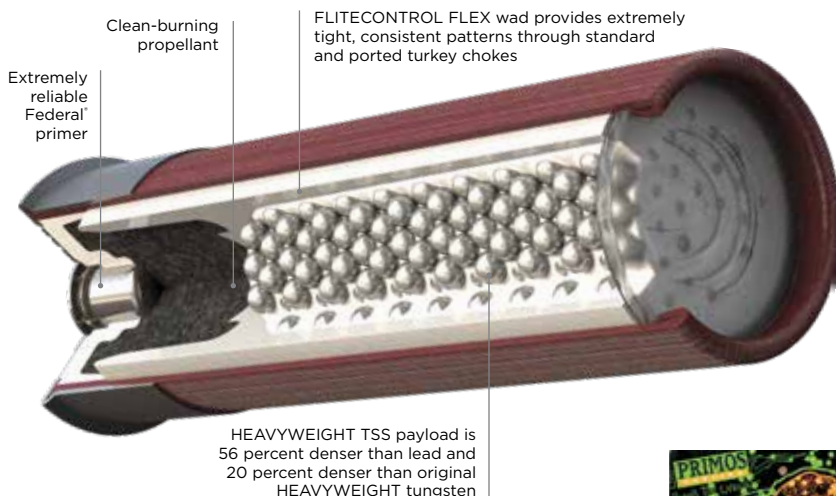
**HEAVYWEIGHT
TSS**



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 28 gauge 2¾ and 3-inch offerings.**

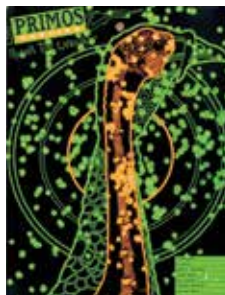
.410 Performer

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.



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.



NEW

REALTREE
40
1986 ANNIVERSARY 2026

We're celebrating four decades of getting close to gobblers with Realtree camouflage. This year, get limited edition Grand Slam and HEAVYWEIGHT TSS packaging wrapped in either Realtree Original or Legacy pattern camouflage.

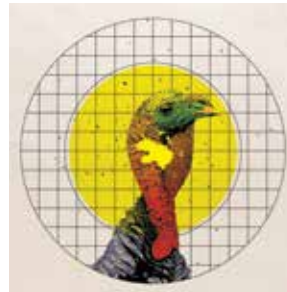




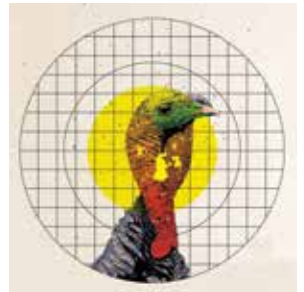
A portion of the proceeds from all Federal Premium® turkey loads goes to support the National Wild Turkey Federation and its important conservation work.



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 Rob Roberts RR 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.

RR ROB ROBERTS Special Edition

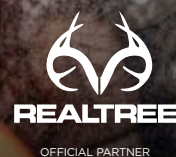
We've collaborated with legendary choke designer Rob Roberts on these powerful special-edition HEAVYWEIGHT TSS loads. Both the 7 and 9 shot offerings are Roberts' personal favorites. The No. 7 payload delivers his ideal balance of pattern efficiency and long-range power that flattens hung-up gobblers, while the No. 9 maxes out pellet counts for the ultimate pattern density.



NEW

SLUG & BUCKSHOT

RIFLED BARRELS



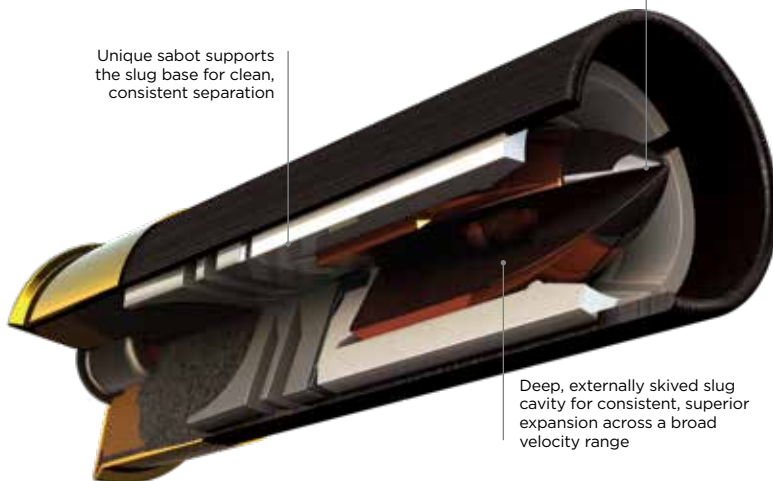
FREIGHT TRAINTM COPPER

Slug accuracy and power are thundering down the tracks with the Federal Premium® Freight Train™ Copper, the first introduction in a 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.

Polymer tip and sleek profile increase the ballistic coefficient for higher downrange velocity and energy

Unique sabot supports the slug base for clean, consistent separation

Deep, externally skived slug cavity for consistent, superior expansion across a broad velocity range



RIFLED BARRELS



POWER-SHOK SABOT SLUG

Power-Shok sabots provide accuracy and power through fully rifled 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 wad design provides better shot alignment and granulated plastic buffer keeps pellets uniform in shape for tight patterns.

COMPETITIVE SHOOTING



HIGH OVER ALL™

PODIUM

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.

MEET TEAM FEDERAL



VINCENT HANCOCK

- FOUR-TIME OLYMPIC GOLD MEDALIST IN MEN'S SKEET
- 2008 BEIJING, 2012 LONDON, 2020 TOKYO, 2024 PARIS
- FIRST REPEAT OLYMPIC GOLD MEDALIST IN MEN'S SKEET
- SIX-TIME WORLD CHAMPION



CONNER PRINCE

- 2024, SILVER MEDALIST
- MADE HIS FIRST USA SHOOTING TEAM IN 2019
- 2023 ISSF RABAT WORLD CUP: GOLD, MEN'S SKEET TEAM; GOLD, MIXED SKEET TEAM
- 2019 ISSF JUNIOR WORLD CUP: GOLD, MEN'S SKEET



DERRICK MEIN

- TWO-TIME MEN'S TRAP OLYMPIAN
- 2020 TOKYO AND 2024 PARIS TEAMS
- 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

See Federal's full list of brand ambassadors at federalpremium.com/this-is-federal/ambassadors/



GOLD MEDAL®

COMPETITION PAPER CLAY TARGET LOADS



The look, feel and performance of Gold Medal® Paper shotshells have made them the favorite of the most serious clay target shooters. Now they're even better, thanks to a high-quality brass head, harder shot, and advanced wad design that improves patterns. **Now available in 20 gauge.**



KAYLE BROWNING

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



BRIAN BURROWS

- 2020 OLYMPIC BRONZE MEDALIST, MIXED TRAP
- PAN AM GOLD MEDALIST
- STARTED SHOOTING INTERNATIONAL BUNKER IN 2004



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



AMBER ENGLISH

- 2020 OLYMPIC GOLD MEDALIST, WOMEN'S SKEET

- 2018 ISSF WORLD CHAMPIONSHIPS GOLD MEDALIST

COMPETITIVE SHOTSHELL



NEW



Your competition has met its match. Federal® Master Class™ is a competition-level Sporting Clay load that features a customized Podium wad that extracts peak performance from Federal's straight-wall hull. Reliable primers, high-antimony lead shot and select propellant combine to break the most challenging targets in high-level Sporting Clays and FITASC shoots.

Harder-Hitting Pellets

Both All-American and Master Class use a unique high-antimony lead in their pellets to produce denser patterns and more power downrange.



ALL 
AMERICAN™

NEW

The next big break is here. New Federal® All-American™ is engineered to win competition Trap events with a Podium™ wad that's customized for straight-wall hulls. The design's exclusive compression zone cushions the payload at ignition for softer shooting. High-antimony lead pellets strike the perfect balance of hardness and density, providing the energy needed to break distant clays while resisting deformation and maintaining pattern efficiency. Pushed by Federal's high-quality propellant and legendary primers, All-American crushes the toughest targets.

FOR A FULL LIST OF AVAILABLE LOADS REFER TO PAGES 61-62.

TARGET SHOTSHELL



Rule every 3-gun stage and anywhere you compete with the hard-hitting performance and reliable feeding of Federal® Action Shotgun™. The load's roll crimp adds rigidity, improving cycling through both tube- and magazine-fed shotguns. The 1 $\frac{1}{8}$ -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.

ACTION SHOTGUN RIFLED SLUG

Win any competition with Federal Action Shotgun rifled slugs. The hulls' rigidity improves cycling through both tube- and magazine-fed shotguns, for fast, reliable performance when fractions of a second mean everything. The proven Federal TruBall® system uses a polymer sphere nested in the base of the slug to center the projectile as it travels down the barrel, for unmatched accuracy through smoothbores. The 1-ounce rifled slug is pushed out the muzzle at 1,300 fps, providing the power needed to knock down targets as well as manageable recoil.





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.



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.*



FOR A FULL LIST OF AVAILABLE LOADS REFER TO PAGES 61-62.

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		BULLET STYLE	GOLD MEDAL PRIMER	BALLISTIC COEFFICIENT		MUZZLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)					500 YDS.
		GRAINS	GRAMS			G1	G7		100 YDS.	200 YDS.	300 YDS.	400 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	
P224VLKBTX1	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	
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	
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	
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	
P655SWTSX	6.5X55 SWEDISH	130	8.42	BARNES TRIPLE-SHOCK X	X	0.365		2550	2316	2094	1884	1691	1512	
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	
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	
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	0.44		3060	2841	2633	2434	2244	2063	
P270SS1	270 WIN.	130	8.42	SWIFT SCIROCCO II	X	0.45		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	9.4	ELD-X	X	0.536	0.27	2890	2717	2550	2389	2234	2085	
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	0.44		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	0.43		2800	2589	2388	2196	2012	1838	
P280TT2	280 REM.	140	9.07	TROPHY BONDED TIP	X	0.43		2950	2732	2524	2326	2136	1956	
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	0.3	2930	2770	2615	2465	2321	2181	
P280AIBCH1	280 ACKLEY IMPROVED	168	10.89	BERGER HYBRID HUNTER	X	0.566	0.29	2830	2668	2511	2360	2214	2073	
P28NTA1	28 NOSLER	155	10.04	TERMINAL ASCENT	X	0.586	0.3	3200	3029	2865	2707	2555	2407	
P764BTSX	7X64 BRENNKE	150	9.72	BARNES TRIPLE-SHOCK X	X	0.408		2650	2435	2231	2036	1851	1679	
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	0.43		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	0.3	3000	2837	2680	2528	2382	2240	
P7RTT1	7MM REM. MAGNUM	160	10.37	TROPHY BONDED TIP	X	0.52		2900	2721	2549	2383	2224	2070	
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	10.5	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	0.29	2870	2706	2549	2396	2249	2107	
P7PRCTA1	7MM PRC	155	10.04	TERMINAL ASCENT	X	0.586	0.3	3100	2933	2773	2618	2468	2324	
P7PRCTA3	7MM PRC	170	11.02	TERMINAL ASCENT	X	0.645	0.325	2950	2803	2662	2524	2391	2262	
P7PRCELDX1	7MM PRC	175	11.34	ELD-X	X	0.689	0.347	3000	2861	2726	2596	2469	2345	
P7PRCEH1	7MM PRC	195	12.64	BERGER ELITE HUNTER	X	0.755	0.387	2760	2640	2523	2408	2297	2189	
P7BCTA1	7MM BACKCOUNTRY	155	10.04	TERMINAL ASCENT	X	0.586	0.3	3300	3125	2958	2796	2641	2491	
P7BCLRX1	7MM BACKCOUNTRY	168	10.89	BARNES® LRX	X	0.513	0.257	3150	2958	2774	2598	2428	2265	
P7BCTA3	7MM BACKCOUNTRY	170	11.02	TERMINAL ASCENT	X	0.645	0.325	3150	2997	2848	2705	2566	2432	
P7BCEH1	7MM BACKCOUNTRY	195	12.64	BERGER ELITE HUNTER	X	0.755	0.387	3000	2873	2750	2630	2513	2399	
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	
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	0.45		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	0.47		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	0.52	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	
P308TT1	308 WIN.	180	11.66	TROPHY BONDED TIP	X	0.5		2620	2445	2277	2116	1960	1812	
P3006TT2	30-06 SPRG.	165	10.69	TROPHY BONDED TIP	X	0.45		2800	2598	2405	2221	2044	1875	
P3006AF	30-06 SPRG.	165	10.69	BARNES TRIPLE-SHOCK X	X	0.398		2800	2573	2356	2151	1955	1771	
P3006SS1	30-06 SPRG.	165	10.69	SWIFT SCIROCCO II	X	0.47		2800	2607	2421	2244	2074	1910	
P3006BCH1	30-06 SPRG.	168	10.89	BERGER HYBRID HUNTER	X	0.489	0.251	2800	2614	2435	2264	2100	1942	
P3006TA1	30-06 SPRG.	175	11.34	TERMINAL ASCENT	X	0.52	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	
P3006TT1	30-06 SPRG.	180	11.66	TROPHY BONDED TIP	X	0.5		2700	2522	2351	2186	2029	1877	
P3006TC1	30-06 SPRG.	180	11.66	TROPHY COPPER	X	0.523		2700	2530	2366	2208	2056	1910	
P3006AE	30-06 SPRG.	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	
P300WTT2	300 WIN. MAGNUM	165	10.69	TROPHY BONDED TIP	X	0.45		3050	2837	2633	2439	2253	2075	

NEW

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.

CHECK OUT THE FEDERAL
BALLISTICS CALCULATOR



	MUZZLE	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 0 YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE.										TEST BARREL LENGTH INCHES	
		100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	AVERAGE RANGE					LONG RANGE					
													100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.		
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		
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	-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	-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	-39.2	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	-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		
2288	1888	1549	1260	1015	808	0.8	3.4	7.9	15	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		
2202	1926	1679	1457	1259	1082	0.7	2.6	6	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	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		
1877	1548	1266	1025	825	660	1	4.3	10	19.1	31.3	0	⊕	-5	-17.9	1.2	2.5	⊕	-10.3	-30.8	-63.2	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	-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	-37.9	24		
2703	2269	1895	1571	1292	1052	0.7	3.2	7.5	14.1	23	-0.2	⊕	-2.9	-11.2	0.5	1.5	⊕	-6.7	-20	-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	24		
2703	2345	2027	1745	1494	1273	0.6	2.6	6	11	18	-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	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	-40.1	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	-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	0.3	1.2	⊕	-5.6	-16	-32	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	0.7	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	-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	-20.6	-41.6	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	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		
3524	3158	2826	2523	2246	1994	0.5	1.8	4.3	7.9	12.6	-0.3	⊕	-2.3	-8.8	0.3	1.1	⊕	-5.4	-15.6	-30.9	24		
2339	1975	1657	1380	1141	939	0.8	3.6	8.4	15.5	25.8	-0.1	⊕	-4.4	-15.8	1	2.2	⊕	-9.2	-26.6	-54.7	24		
3084	2703	2362	2057	1783	1540	0.5	2.3	5.4	9.8	16	-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	0.4	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	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	-40.2	24		
3071	2593	2178	1816	1503	1234	0.8	3.2	7.6	14.2	23	-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	4.5	8.1	13.2	-0.2	⊕	-3	-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	-40	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	-10.8	0.5	1.5	⊕	-6.3	-18.1	-36.1	24		
3497	3180	2888	2618	2368	2137	0.4	1.8	4	7.2	11.5	-0.2	⊕	-2.8	-10.2	0.4	1.4	⊕	-6.1	-17.3	-34.1	24		
3298	3017	2755	2511	2285	2075	0.5	1.8	4	7.3	11.8	-0.2	⊕	-3.5	-12.4	0.7	1.7	⊕	-7.2	-20.4	-40.3	24		
3748	3362	3011	2691	2400	2135	0.5	1.8	4.2	7.6	12.2	-0.3	⊕	-2	-8.1	0.2	1	⊕	-5	-14.5	-28.9	24		
3701	3264	2870	2517	2199	1913	0.5	2.2	5.1	9.3	15.1	-0.3	⊕	-2.5	-9.5	0.3	1.2	⊕	-5.8	-16.6	-33.5	24		
3745	3389																						

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		BULLET STYLE	PRIMER	BALLISTIC COEFFICIENT		MUZZLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)				
		GRAINS	GRAMS			G1	G7		100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
FEDERAL PREMIUM BIG GAME (CONT.)													
P300WTC2	300 WIN. MAGNUM	165	10.69	TROPHY COPPER	X	0.503		3050	2859	2675	2499	2330	2167
P300WTA2	300 WIN. MAGNUM	175	11.34	TERMINAL ASCENT	X	0.52	0.258	3030	2846	2669	2499	2335	2177
P300WTT1	300 WIN. MAGNUM	180	11.66	TROPHY BONDED TIP	X	0.5		2960	2771	2591	2417	2250	2089
P300WTC1	300 WIN. MAGNUM	180	11.66	TROPHY COPPER	X	0.523		2960	2780	2606	2439	2279	2124
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	0.52		2950	2769	2595	2428	2266	2112
P300WBC1	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
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	0.45		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	0.5		2960	2771	2591	2417	2250	2089
P300WSMTC1	300 WIN. SHORT MAGNUM	180	11.66	TROPHY COPPER	X	0.523		2960	2780	2606	2439	2279	2124
P300WSMS1	300 WIN. SHORT MAGNUM	180	11.66	SWIFT SCIROCCO II	X	0.52		2960	2779	2604	2436	2275	2120
P300WSMBC1	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
P300PRCTA3	300 PRC	210	13.61	TERMINAL ASCENT	X	0.663	0.341	2850	2711	2575	2444	2317	2193
P300PRCELDX1	300 PRC	212	13.74	ELD-X	X	0.663	0.334	2860	2720	2585	2453	2325	2202
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	0.44		2630	2431	2241	2060	1887	1725
P9362TSX	9.3X62 MAUSER	250	16.2	BARNES TRIPLE-SHOCK X	X	0.361		2400	2171	1955	1753	1568	1401
P338LTC1	338 LAPUA MAGNUM	250	16.2	TROPHY COPPER	X	0.625		2850	2702	2559	2420	2286	2156
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
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 SPRG.	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
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		BULLET STYLE	MUZZLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)						
		GRAINS	GRAMS			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.

CHECK OUT THE FEDERAL
BALLISTICS CALCULATOR



MUZZLE	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 0 YARDS, SIGHTS 1.5 INCHES ABOVE BORE LINE.										TEST BARREL LENGTH INCHES
	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	AVERAGE RANGE		LONG RANGE							
												100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	
3408	2994	2622	2289	1989	1721	0.5	2.4	5.5	10	16.3	-0.3	⊕	-2.8	-10.4	0.4	1.4	⊕	-6.3	-18	-36.3	24
3567	3146	2767	2426	2118	1842	0.5	2.3	5.4	9.7	15.8	-0.2	⊕	-2.8	-10.5	0.5	1.4	⊕	-6.3	-18.1	-36.4	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	16.3	-0.2	⊕	-3	-11.1	0.5	1.5	⊕	-6.6	-19	-38.3	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	-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	-0.2	⊕	-3	-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
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	0.4	1.3	⊕	-6	-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
3502	3088	2715	2378	2075	1803	0.6	2.4	5.4	10	16.3	-0.2	⊕	-3	-11.1	0.5	1.5	⊕	-6.6	-19	-38.3	24
3502	3085	2710	2372	2068	1796	0.6	2.4	5.5	10.1	16.4	-0.2	⊕	-3	-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	-0.2	⊕	-3	-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	9.3	15	-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	4.4	8.1	13.1	-0.2	⊕	-3.2	-11.7	0.6	1.6	⊕	-6.8	-19.5	-38.7	24
3850	3483	3145	2833	2545	2282	0.5	2	4.4	8	13	-0.2	⊕	-3.2	-11.6	0.6	1.6	⊕	-6.8	-19.3	-38.4	24
3071	2610	2205	1850	1541	1279	0.8	3.5	8.1	15	24.8	-0.1	⊕	-4.5	-15.9	1	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	2.2	⊕	-9.2	-26.3	-53.6	24
3197	2617	2122	1706	1365	1089	1.2	4.8	11.3	21.3	34.8	0.1	⊕	-5.9	-20.9	1.6	2.9	⊕	-12.1	-35.7	-73.3	24
4508	4053	3635	3252	2901	2581	0.6	2.1	4.7	8.7	14	-0.2	⊕	-3.3	-11.8	0.6	1.6	⊕	-6.9	-19.8	-39.4	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
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

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		BULLET STYLE	MUZZLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)				
		GRAINS	GRAMS			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	2965	2641	2339	2058	1797	1562
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 SPRG.	125	8.10	SP	3140	2779	2446	2136	1850	1593
3006A	30-06 SPRG.	150	9.72	SP	2910	2616	2340	2081	1839	1619
3006150LFA	30-06 SPRG.	150	9.72	COPPER HP	2910	2580	2273	1988	1725	1491
3006B	30-06 SPRG.	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
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
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 GRENDDEL	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.

CHECK OUT THE FEDERAL
BALLISTICS CALCULATOR



MUZZLE	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 0 YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE.										TEST BARREL LENGTH INCHES	
	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	AVERAGE RANGE					LONG RANGE					
												100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.		
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	1.1	4.5	10.8	20.3	34.2	-0.2	⊕	-3.5	-13.4	0.7	1.7	⊕	-8.2	-24.5	-52.1	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	
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	
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</																	

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

FEDERAL LOAD NO.		CARTRIDGE	BULLET WEIGHT IN		BULLET STYLE	MUZZLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)				
			GRAINS	GRAMS			100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.
	AMERICAN EAGLE										
NEW	AE193	5.56X45MM	55	3.56	FMJ BT	3165	2772	2412	2080	1776	1506
NEW	AE855	5.56X45MM	62	4.02	FMJ BT	3020	2749	2493	2252	2024	1810
NEW	AE193C	5.56X45MM	55	3.56	FMJ BT	3165	2772	2412	2080	1776	1506
	AE223G	223 REM.	50	3.24	JHP	3325	2839	2402	2006	1653	1355
	AE223C	223 REM.	55	3.56	FMJ BT	3240	2874	2536	2222	1931	1667
	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
	AE2225OG	22-250 REM.	50	3.24	JHP	3850	3303	2819	2384	1990	1639
NEW	AE6ARC1	6MM ARC	110	7.13	TMJ	2600	2403	2214	2034	1862	1702
	AE65GDL1	6.5 GRENDDEL	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
	AE3006M1	30-06 SPRG.	150	9.72	FMJ BT	2740	2522	2314	2116	1928	1751
NEW	AE3006USA	30-06 SPRG.	150	9.72	FMJ BT	2740	2522	2314	2116	1928	1751
	AE3006N	30-06 SPRG.	150	9.72	FMJ BT	2910	2683	2466	2260	2064	1877
NEW	AE4570USA	45-70 GOVERNMENT	300	19.44	HP	1850	1612	1400	1226	1097	1010

Fusion® Rifle

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	F6ARCTFS2	6MM ARC	110	7.13	FUSION TIPPED	2600	2426	2259	2099	1944	1798	
	F65CRDTFS1	6.5 CREEDMOOR	140	9.07	FUSION TIPPED	2715	2546	2383	2226	2076	1930	
	F65PRCTFS1	6.5 PRC	140	9.07	FUSION TIPPED	2975	2796	2624	2458	2299	2145	
	F270TFS2	270 WIN.	150	9.72	FUSION TIPPED	2850	2664	2486	2314	2150	1992	
	F7RTFS2	7MM REM. MAGNUM	175	11.34	FUSION TIPPED	2775	2617	2465	2317	2175	2038	
	F7PRCTFS2	7MM PRC	175	11.34	FUSION TIPPED	2925	2762	2605	2453	2306	2164	
	F7BCTFS2	7MM BACKCOUNTRY	175	11.34	FUSION TIPPED	3125	2954	2790	2632	2479	2331	
	F308TFS3	308 WIN.	180	11.66	FUSION TIPPED	2600	2426	2259	2099	1944	1798	
	F3006TFS3	30-06 SPRG.	180	11.66	FUSION TIPPED	2725	2546	2375	2210	2051	1899	
	F300WTFS3	300 WIN. MAGNUM	180	11.66	FUSION TIPPED	2950	2762	2582	2409	2243	2083	
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	
	F6555FS2	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 SPRG.	150	9.72	FUSION	2900	2674	2459	2254	2059	1874	
	F3006FS2	30-06 SPRG.	165	10.69	FUSION	2790	2590	2399	2217	2042	1875	
	F3006FS3	30-06 SPRG.	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 GRENDDEL	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.

CHECK OUT THE FEDERAL
BALLISTICS CALCULATOR



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 100 YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE. AVERAGE RANGELONG RANGE										TEST BARREL LENGTH INCHES
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.	400 YDS.	500 YDS.	600 YDS.	700 YDS.	800 YDS.	900 YDS.	1000 YDS.
1223	939	711	528	385	277	1.1	4.8	11.8	22.5	38.1	-0.3	⊕	-3	-12.1	0.5	1.5	⊕	-7.6	-23.2	-50.3	20
1255	1040	856	698	564	451	0.8	3.6	8.3	15.6	25.6	-0.2	⊕	-3.1	-11.8	0.6	1.6	⊕	-7.1	-21.2	-43.7	20
1223	939	711	528	385	277	1.1	4.8	11.8	22.5	38.1	-0.3	⊕	-3	-12.1	0.5	1.5	⊕	-7.6	-23.2	-50.3	20
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	-53.7	24
1282	1008	785	603	455	339	1	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
1282	1008	785	603	455	339	1	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	4	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	0.9	⊕	-5.3	-16.8	-37.5	24
1651	1410	1197	1010	847	707	0.7	3.4	8	14.6	24.2	-0.1	⊕	-4.6	-16.2	1.1	2.3	⊕	-9.4	-27	-55.1	24
1818	1586	1378	1192	1026	879	0.6	2.9	6.9	12.5	20.3	-0.1	⊕	-4.5	-16	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	-0.1	⊕	-4.4	-15.8	1	2.2	⊕	-9.2	-27	-55.8	24
967	597	370	260	206	172	3.5	15.1	35.8	63.7	97.4	0.7	⊕	-13	-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	14.7	27.6	45.7	0.1	⊕	-6.5	-23.8	1.8	3.3	⊕	-14	-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	-23.3	-47.2	24
2500	2118	1783	1492	1238	1021	0.8	3.4	8	14.7	24.3	-0.1	⊕	-4	-14.5	0.9	2	⊕	-8.6	-24.7	-50.5	24
2500	2118	1783	1492	1238	1021	0.8	3.4	8	14.7	24.3	-0.1	⊕	-4	-14.5	0.9	2	⊕	-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
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	-146.8	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 100 YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE.										TEST BARREL LENGTH INCHES
MUZZLE	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.	50 YDS.	AVERAGE RANGE			LONG RANGE							
												100 YDS.	200 YDS.	300 YDS.	50 YDS.	100 YDS.	200 YDS.	300 YDS.	400 YDS.	500 YDS.		
1651	1438	1246	1076	923	789	0.6	2.9	6.9	12.6	20.5	-0.1	⊕	-4.4	-15.7	1	2.2	⊕	-9.1	-25.9	-51.9	24	
2291	2015	1765	1541	1339	1158	0.6	2.5	6.1	11.3	18	-0.1	⊕	-3.8	-13.9	0.8	1.9	⊕	-8.1	-23.3	-46.2	24	
2751	2430	2140	1878	1642	1430	0.5	2.3	5.3	9.8	15.9	-0.2	⊕	-3	-11	0.5	1.5	⊕	-6.5	-18.7	-37.7	24	
2705	2364	2058	1784	1539	1322	0.7	2.7	6.1	11.3	18.4	-0.2	⊕	-3.4	-12.4	0.7	1.7	⊕	-7.3	-21.2	-42.6	24	
2992	2662	2361	2087	1839	1614	0.6	2.3	5.3	9.9	16	-0.1	⊕	-3.6	-12.8	0.7	1.8	⊕	-7.5	-21.6	-42.9	24	
3324	2964	2636	2337	2066	1819	0.5	2.2	5	9.1	14.8	-0.2	⊕	-3.1	-11.2	0.6	1.5	⊕	-6.6	-19	-38.1	24	
3794	3391	3024	2691	2387	2111	0.4	1.9	4.6	8.3	13.3	-0.3	⊕	-2.5	-9.5	0.3	1.2	⊕	-5.7	-16.5	-32.8	24	
2702	2352	2040	1760	1511	1292	0.6	2.9	6.9	12.6	20.5	-0.1	⊕	-4.4	-15.7	1	2.2	⊕	-9.1	-25.9	-51.9	24	
2968	2591	2253	1951	1681	1441	0.7	2.7	6.5	11.9	19.1	-0.1	⊕	-3.8	-13.9	0.8	1.9	⊕	-8.2	-23.4	-46.7	24	
3478	3049	2665	2319	2010	1734	0.6	2.5	5.7	10.6	17.2	-0.2	⊕	-3.1	-11.3	0.6	1.5	⊕	-6.7	-19.5	-39.2	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	5.1	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	-17.71	2.8	4.9	⊕	-22.5	-71.2	-158.2	24

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 STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)					ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)					TRAJECTORY SIGHTS .9 INCHES ABOVE BORE LINE				TEST BARREL LENGTH INCHES
					MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	25 YDS.	50 YDS.	75 YDS.	100 YDS.	
FEDERAL PREMIUM PERSONAL DEFENSE																			
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
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
P32HRHSD1	32 H&R MAGNUM	85	5.51	HYDRA-SHOK DEEP	1025	988	957	928	902	198	184	173	163	154	⊕	-1.3	-5	-11.2	4-V
P380HSTIS	380 AUTO	99	6.42	HST	1030	986	948	915	885	233	213	197	184	172	⊕	-1.3	-5.1	-11.4	3.75
P380HSD1	380 AUTO	99	6.42	HYDRA-SHOK DEEP	975	929	888	853	820	209	189	173	160	148	⊕	-1.6	-6	-13.3	3.75
PD380HS1 H	380 AUTO	90	5.83	HYDRA-SHOK	1000	953	914	879	847	200	182	167	154	143	⊕	-1.5	-5.6	-12.5	3.75
P327HSTIS	327 FEDERAL MAGNUM	104	6.74	HST	1525	1080	895	781	690	537	270	185	141	110	⊕	-0.9	-4.4	-11.2	4
PD327HS1 H	327 FEDERAL MAGNUM	85	5.51	HYDRA-SHOK	1400	1306	1221	1150	1091	370	322	281	250	225	⊕	-0.4	-2.2	-5.7	4-V
P30HSTIS	30 SUPER CARRY	100	6.48	HST	1250	1185	1129	1081	1041	347	312	283	260	241	⊕	-0.6	-3	-7.2	4
P9HSTIS	9MM LUGER	124	8.04	HST	1150	1095	1049	1010	977	364	330	303	281	263	⊕	-0.9	-3.8	-8.8	4
P9HST1T1M100	9MM LUGER	124	8.04	HST	1150	1095	1049	1010	977	364	330	303	281	263	⊕	-0.9	-3.8	-8.8	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
P9HST2T1M100	9MM LUGER	147	9.53	HST	1000	976	953	933	914	326	311	297	284	273	⊕	-1.4	-5.2	-11.5	4
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
P9HS1	9MM LUGER	124	8.04	HYDRA-SHOK	1120	1070	1028	993	961	345	315	291	271	255	⊕	-1	-4	-9.3	4
P9HST3S	9MM LUGER +P	124	8.04	HST	1200	1136	1083	1039	1002	396	355	323	297	277	⊕	-0.8	-3.4	-8	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	4-V
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
P357HSTIS	357 MAGNUM	154	9.98	HST	1340	1127	999	914	848	614	434	341	286	246	⊕	-0.8	-3.7	-9.2	4
P357HS1	357 MAGNUM	158	10.24	HYDRA-SHOK	1240	1187	1139	1098	1063	539	494	455	423	396	⊕	-0.6	-3	-7.1	4-V
P357SHSTIS	357 SIG	125	8.1	HST	1360	1275	1200	1136	1083	513	451	400	358	326	⊕	-0.4	-2.4	-6	4
P40HSTIS	40 S&W	180	11.66	HST	1010	980	954	930	908	408	384	364	346	329	⊕	-1.4	-5.1	-11.4	4
P40HST1T1M100	40 S&W	180	11.66	HST	1010	980	954	930	908	408	384	364	346	329	⊕	-1.4	-5.1	-11.4	4
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
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
P10HSTIS	10MM AUTO	200	12.96	HST	1130	1051	991	943	902	567	490	436	395	361	⊕	-1.1	-4.3	-10	5
P45HST2S	45 AUTO	230	14.9	HST	890	872	856	840	824	404	389	374	360	347	⊕	-2	-6.9	-15	5
P45HST2T1M100	45 AUTO	230	14.9	HST	890	872	856	840	824	404	389	374	360	347	⊕	-2	-6.9	-15	5
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
P45HS1	45 AUTO	230	14.9	HYDRA-SHOK	900	882	865	848	832	414	397	382	367	354	⊕	-1.9	-6.7	-14.6	5
P45HSTIS	45 AUTO +P	230	14.9	HST	950	929	909	890	873	461	440	422	405	389	⊕	-1.6	-5.9	-12.8	5
P44HSTIS	44 REM. MAGNUM	230	14.9	HST	1085	1046	1012	982	955	601	558	523	492	466	⊕	-1.1	-4.3	-9.7	4V
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
P45CHSD1	45 COLT	210	13.61	HYDRA-SHOK DEEP	913	886	860	837	815	388	366	345	327	310	⊕	-1.9	-6.7	-14.6	6V
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
P9SHCI	9MM LUGER +P	147	9.53	SOLID CORE	1120	1082	1048	1019	993	409	382	359	339	322	⊕	-1	-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	-5.3	6-V
P357SHCI	357 MAGNUM	180	11.66	SOLID CORE	1400	1333	1270	1214	1163	783	710	645	589	541	⊕	-0.3	-2	-5.1	4-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
P357TA1	357 MAGNUM	157	10.17	TERMINAL ASCENT	1410	1330	1256	1191	1135	693	617	550	495	449	⊕	-0.3	-2	-5.3	6
P40SHCI	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
P10SHCI	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	-4.1	-9.3	5
P10TA1	10MM AUTO	203	13.15	TERMINAL ASCENT	1180	1128	1084	1047	1014	628	574	530	494	463	⊕	-0.8	-3.5	-8.1	5
P10TI	10MM AUTO	180	11.66	TROPHY BONDED JSP	1275	1192	1123	1067	1021	650	568	504	455	417	⊕	-0.6	-3	-7.2	5
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
P44SHCI	44 REM. MAGNUM	300	19.44	SOLID CORE	1150	1100	1057	1021	989	881	805	744	694	652	⊕	-0.9	-3.7	-8.6	6.5-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
P44TA1	44 REM. MAGNUM	235	15.23	TERMINAL ASCENT	1380	1297	1222	1158	1103	994	878	779	700	635	⊕	-0.4	-2.2	-5.7	6
P45SHCI	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	16.2	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	-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	5
GM45A	45 AUTO	230	14.9	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	4

Federal® Handgun

||
||
||

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		BULLET WEIGHT IN		BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)					ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)					TRAJECTORY SIGHTS .9 INCHES ABOVE BORE LINE				TEST BARREL LENGTH INCHES
FEDERAL LOAD NO.	CARTRIDGE	GRAINS	GRAMS		MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	25 YDS.	50 YDS.	75 YDS.	100 YDS.	
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
FEDERAL CHAMPION™																			
C32HRA	32 H&R MAGNUM	95	6.16	LSW	980	937	899	865	835	203	185	170	158	147	⊕	-1.6	-5.8	-13	4-V
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
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	-4.1	-9.6	4
C9124A	9MM LUGER	124	8.04	FMJ	1090	1052	1019	991	965	327	305	286	270	256	⊕	-1.1	-4.2	-9.6	4
C38130A	38 SPECIAL	130	8.42	FMJ	890	870	852	834	817	229	219	209	201	193	⊕	-2	-7	-15.1	4-V
WM5221	10MM AUTO	180	11.66	FMJ	1200	1129	1073	1035	980	576	509	460	428	383	⊕	-1.4	-4.7	-10.1	5
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
C445A	44 SPECIAL	200	12.96	SWHP	870	850	830	810	790	335	320	305	290	275	⊕	-2.1	-7.4	-16	4-V
WM5233	45 AUTO	230	14.9	FMJ	845	829	814	800	786	365	351	339	327	315	⊕	-2.3	-7.8	-16.6	5
C45LCA	45 COLT	225	14.58	SWCHP	830	811	793	776	759	344	329	314	300	288	⊕	-2.4	-8.2	-17.7	4-V
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		BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)					ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)					TRAJECTORY SIGHTS .9 INCHES ABOVE BORE LINE				TEST BARREL LENGTH INCHES
		GRAINS	GRAMS		MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	25 YDS.	50 YDS.	75 YDS.	100 YDS.	
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

AMERICAN EAGLE HANDBOOK					VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)					ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)					TRAJECTORY SIGHTS .9 INCHES ABOVE BORE LINE				TEST BARREL
FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN		BULLET STYLE	MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	25 YDS.	50 YDS.	75 YDS.	100 YDS.	LENGTH INCHES
AMERICAN EAGLE																			
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	4.6	FMJ	900	872	846	821	798	128	120	113	106	100	⊕	-2	-7	-15.2	4
AE32HR	32 H&R MAGNUM	85	5.51	JSP	975	939	907	878	852	179	166	155	146	137	⊕	-1.6	-5.7	-12.8	4V
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	3.75
AE30SCA	30 SUPER CARRY	100	6.48	FMJ FP	1250	1185	1129	1081	1041	347	312	283	260	241	⊕	-0.6	-3	-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	-4.1	-9.5	5
AE357S2	357 SIG	125	8.1	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	-7	-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	-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	-4	-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	14.9	FMJ	890	872	856	840	824	404	389	374	360	347	⊕	-2	-6.9	-15	5
AE45USA	45 AUTO	230	14.9	FMJ	890	872	856	840	824	404	389	374	360	347	⊕	-2	-6.9	-15	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	-4	-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	14.9	TMJ	850	834	819	804	790	369	355	343	330	319	⊕	-2.2	-7.7	-16.4	5
AMERICAN EAGLE IRT LEAD FREE																			
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

SHOTSHELL LOAD DATA

Waterfowl

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD	SHOT
FEDERAL PREMIUM BLACK CLOUD® FS STEEL					
PWBX107	10	3½	1375	1½	BB, 2
PWBX134	12	3½	1500	1½	BBB, BB, 2, 3, 4
PWBX142	12	3	1450	1¼	BB, 2, 3, 4
PWBX147	12	2¾	1500	1½	2, 3, 4
PWBX167	16	2¾	1450	¾	2, 4
PWBX209	20	3	1350	1	2, 3, 4
PWBX285	28	3	1400	¾	3, 4
FEDERAL PREMIUM BLACK CLOUD FS STEEL HIGH VELOCITY					
PWBXH143	12	3	1635	1½	BB, 1, 2, 3, 4
FEDERAL PREMIUM ULTRA STEEL					
PWUX107	10	3½	1400	1½	BBB/1, BB/2
PWUX134	12	3½	1500	1½	BB/2, 2/4
PWUX142	12	3	1450	1¼	2, 2/4, 3/5, BB/2, BB
PWUX209	20	3	1400	1	3/5, 2/4, 2
RAPTOR STEEL					
RRS138	12	3	1400	1¾	2, 3, 4
RRS209	20	3	1400	1	2, 3, 4
SPEED•SHOK® WATERFOWL					
WF107	10	3½	1450	1½	T, BBB, BB, 2
WF133	12	3½	1550	1½	T, BBB, BB, 2, 3, 4
WF142	12	3	1450	1¼	BB, 1, 2, 3, 4
WF143	12	3	1550	1½	BB, 1, 2, 3, 4
WF145	12	2¾	1500	1½	BB, 2, 3, 4
WF168	16	2¾	1350	15/16	2, 4
WF209	20	3	1550	¾	1, 2, 3, 4
WF208	20	2¾	1425	¾	4, 6, 7
WF283	28	2¾	1350	5/8	6
WF413	.410	3	1400	¾	6

Upland & Waterfowl

LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD	SHOT
FEDERAL PREMIUM HEVI-BISMUTH					
PHBX138	12	3	1450	1¾	3, 4, 5
PHBX144	12	2¾	1350	1¼	3, 4, 5
PHBX163	16	2¾	1400	1½	3, 4, 5
PHBX244	20	3	1350	1½	3, 4, 5
PHBX285	28	3	1400	¾	3, 4
PHBX289	28	2¾	1375	¾	3, 4

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 000	12	3	1225	10 PELLETS - 000 BUCK
P158 00	12	3	1100	15 PELLETS - 00 BUCK
P158 4B	12	3	1100	41 PELLETS - 4 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 00	12	2¾	1145	9 PELLETS - 00 BUCK
PD204 2B	20	2¾	1325	10 PELLETS - 2 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 4B	12	2¾	1100	34 PELLETS - 4 BUCK
PD256 4B	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	¾ 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	1½	5
FEDERAL PREMIUM GRAND SLAM® REALTREE 40TH ANNIVERSARY EDITION						
NEW	PFCX157FRT	12	3	1200	1¾	5
NEW	PFCX258FRT	20	3	1185	1½	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	1½	7/9
	PTSSX259F	20	3	1100	1½	7, 9
	PTSSX257F	20	2¾	1000	1½	9
	PTSSX289F	28	2¾	1100	1¼	9
	PTSSX285F	28	3	1050	1½	9
	PTSS419F	.410	3	1100	1½	7, 9
FEDERAL PREMIUM HEAVYWEIGHT TSS ROB ROBERTS SPECIAL EDITION						
NEW	PTSSX198FRR	12	3	1100	2	7, 9
NEW	PTSSX295FRR	20	3	1000	1½	7, 9
FEDERAL PREMIUM HEAVYWEIGHT TSS REALTREE 40TH ANNIVERSARY EDITION						
NEW	PTSSX193FRT	12	3	1200	1¾	9
NEW	PTSSX259FRT	20	3	1100	1½	9
NEW	PTSS419FRT	.410	3	1100	1½	9

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	1½	7.5, 8
FEDERAL PREMIUM HI-BIRD FIBER WAD						
	HVF12HW	12	2¾	1330	1¼	4, 5, 6
FEDERAL PREMIUM HI-BIRD FIBER WAD BISMUTH						
	HVFB12HW	12	2¾	1330	1 ¼	5
FEDERAL PREMIUM UPLAND						
	P129	12	3	1350	1½	5, 6
	P128	12	2¾	1500	1½	4, 6, 7.5
	P138	12	2¾	1500	1½	4, 5, 6
	P258	20	3	1300	1¼	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	1½	4, 5, 6
	PF204	20	2¾	1350	1	4, 5, 6, 7.5
FEDERAL PREMIUM UPLAND PAPER						
	PUP154	12	2¾	1330	1¼	4, 5, 6
	PUP204	20	2¾	1250	1	4, 5, 6
FEDERAL PREMIUM PRAIRIE STORM® FS LEAD						
	PFX129FS	12	3	1350	1½	4, 5, 6
	PFX154FS	12	2¾	1500	1¼	4, 5, 6
	PFX126FS	12	2¾	1330	1¼	4, 5, 6
	PFX164FS	16	2¾	1425	1½	4, 5, 6
	PFX258FS	20	3	1300	1¼	4, 5, 6
	PFX204FS	20	2¾	1350	1	4, 5, 6
	PFX285FS	28	3	1300	1	6
	PFX289FS	28	2¾	1300	15/16	6
FEDERAL PREMIUM PRAIRIE STORM FS STEEL						
	PFSX143FS	12	3	1600	1½	3, 4
	PFSX147FS	12	2¾	1500	1½	3, 4
	PFSX207FS	20	3	1500	¾	3, 4
FEDERAL PREMIUM PAPER FLYER						
	P154	12	2¾	1330	1¼	7.5, 8
UPLAND STEEL						
NEW	USH122	12	2¾	1375	1	6, 7.5
	USH12	12	2¾	1400	1½	4, 5, 6, 7.5
	USH20	20	2¾	1500	¾	6, 7.5
	USH28	28	2¾	1350	5/8	6, 7.5
	USH410	.410	3	1400	¾	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	1½	4, 6, 7.5
	H204	20	2¾	1220	1	4, 5, 6, 7.5
	H258	20	3	1300	1¼	5, 6
	H289	28	2¾	1220	1	5, 6, 7.5
	H413	.410	3	1135	1½	4, 5, 6, 7.5
	H412	.410	2½	1200	½	6, 7.5
GAME LOAD - HEAVY FIELD						
	H123	12	2¾	1255	1½	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	¾	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 Premium Sabot Slug																								
FEDERAL LOAD NO.	GAUGE	SHELL LENGTH		SLUG TYPE	SLUG WEIGHT		VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)						ENERGY IN FOOT-POUNDS (TO NEAREST FOOT-POUND)						HEIGHT OF SLUG TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS .5 INCHES ABOVE BORE LINE.					TEST BARREL LENGTH INCHES
		INCHES	MM		GRAINS	MUZZLE	25 YDS.	50 YDS.	100 YDS.	150 YDS.	200 YDS.	MUZZLE	25 YDS.	50 YDS.	100 YDS.	150 YDS.	200 YDS.	25 YDS.	50 YDS.	100 YDS.	150 YDS.	200 YDS.		
FEDERAL PREMIUM FREIGHT TRAIN™ COPPER (FULLY RIFLED SLUG BARREL)																								
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
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
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
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 Premium Smoothbore Slug																						
FEDERAL LOAD NO.	GAUGE	SHELL LENGTH		SLUG TYPE	SLUG WEIGHT		VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)				ENERGY IN FOOT-POUNDS (TO NEAREST FOOT-POUND)				HEIGHT OF SLUG TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS .5 INCHES ABOVE BORE LINE.				TEST BARREL LENGTH INCHES			
		INCHES	MM		OUNCES	GRAINS	MUZZLE	25 YDS.	50 YDS.	100 YDS.	MUZZLE	25 YDS.	50 YDS.	100 YDS.	25 YDS.	50 YDS.	100 YDS.					
FEDERAL PREMIUM TRUBALL® RIFLED SLUGS (SMOOTHBORE BARREL)																						
PB127 LRS*	12	2 3/4	70	TRUBALL RIFLED SLUG	1	438	1300	1150	1040	910.	1640	1275	1055	805	0.6	⊕	-7.4	30				
PB127 RS	12	2 3/4	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	2 3/4	70	TRUBALL RIFLED SLUG	3/4	328	1600	1390	1220	1010	1865	1410	1090	745	0.3	⊕	-5.3	30				
PB209 RS	20	3	76	TRUBALL RIFLED SLUG	3/4	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	2 3/4	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 Slug																			HEIGHT OF SLUG TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT ⊕ YARDS. SIGHTS .5 INCHES ABOVE BORE LINE.					TEST BARREL LENGTH INCHES
FEDERAL LOAD NO.	GAUGE	SHELL LENGTH		SLUG TYPE	SLUG WEIGHT		VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)						ENERGY IN FOOT-POUNDS (TO NEAREST FOOT-POUND)						25 YDS.	50 YDS.	75 YDS.	100 YDS.	125 YDS.	
		INCHES	MM			OUNCES	GRAINS	MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	125 YDS.	MUZZLE	25 YDS.	50 YDS.	75 YDS.	100 YDS.	125 YDS.	25 YDS.	50 YDS.	75 YDS.	100 YDS.	125 YDS.
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	¾	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	¾	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	¾	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	1½	8, 9
	HOA12H	12	2¾	1200	3	1½	7.5, 8
	HOA12HC	12	2¾	1250	HDCP	1½	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	¾	7.5, 8
	HOA20H	20	2¾	1275	3	¾	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							
	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	1½	7.5, 8
	GMT118	12	2¾	1200	3	1½	7.5, 8
	GMT171	12	2¾	1235	HDCP	1½	7.5, 8
	GMT224	20	2¾	1250	2¾	¾	7.5, 8
FEDERAL MASTER CLASS							
	MC12H1	12	2¾	1250	3	1	7.5, 8
	MC12HC1	12	2¾	1300	3¼	1	7.5, 8
	MC12HC	12	2¾	1235	HDCP	1½	7.5, 8
NEW	MC224	20	2¾	1250	2¾	¾	7.5, 8
FEDERAL ALL-AMERICAN							
NEW	FAA12L1	12	2¾	1200	2¾	1	7.5, 8
NEW	FAA12L	12	2¾	1145	2¾	1½	7.5, 8
NEW	FAA12H	12	2¾	1200	3	1½	7.5, 8
NEW	FAA12HC	12	2¾	1250	HDCP	1½	7.5, 8
NEW	FAA20	20	2¾	1200	2½	¾	7.5, 8

	LOAD NO.	GAUGE	SHELL LENGTH	VELOCITY	PAYLOAD	SHOT
ACTION SHOTGUN						
	AS12H 7.5*	12	2¾	1235	1½	7.5
NEW	AS12H LRS**	12	2¾	1300	1	-
TOP GUN TARGET						
	TG12EL	12	2¾	1200	¾	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	1½	7.5, 8
	TGL12	12	2¾	1145	1½	7.5, 8, 9
	TGL12US	12	2¾	1145	1½	8
NEW	TGL12US 8USA	12	2¾	1145	1½	8
	TGL12P	12	2¾	1145	1½	8
	TG20	20	2¾	1210	¾	7.5, 8, 9
	TGS224	20	2¾	1250	¾	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	1½	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	1½/6	8

*200-round case

** Rifled slug

RIMFIRE BALLISTICS & MUZZLELOADING

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

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® Rimfire

FEDERAL PREMIUM RIMFIRE														HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT 50 YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE. AVERAGE RANGE		
FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN GRAINS GRAMS		BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)			ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)			WIND DRIFT IN INCHES 10 MPH CROSSWIND		50 YDS.	100 YDS.		
					MUZZLE	50 YDS.	100 YDS.	MUZZLE	50 YDS.	100 YDS.	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		
FEDERAL PREMIUM GOLD MEDAL®																
711B	22 LONG RIFLE	40	2.59	SOLID	1080	994	930	104	88	77	1.1	4.2	⊕	-7.3		
719	22 LONG RIFLE	40	2.59	SOLID	1200	1075	991	128	103	87	1.3	4.9	⊕	-6		
FEDERAL PREMIUM HAMMERDOWN® RIMFIRE																
22HAM	22 LONG RIFLE	40	2.59	CPHP	1200	1051	957	128	98	81	1.6	6.0	⊕	-6.3		

American Eagle® Rimfire

AMERICAN EAGLE RIFLE														HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT 50 YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE.			
FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN GRAINS GRAMS		BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)			ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)			WIND DRIFT IN INCHES 10 MPH CROSSWIND		50 YDS.	AVERAGE RANGE	100 YDS.		
					MUZZLE	50 YDS.	100 YDS.	MUZZLE	50 YDS.	100 YDS.	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

Federal® Rimfire

FEDERAL RIFLES															HEIGHT OF BULLET TRAJECTORY IN INCHES ABOVE OR BELOW LINE OF SIGHT IF ZEROED AT 50 YARDS. SIGHTS 1.5 INCHES ABOVE BORE LINE. AVERAGE RANGE			
FEDERAL LOAD NO.	CARTRIDGE	BULLET WEIGHT IN		BULLET STYLE	VELOCITY IN FEET PER SECOND (TO NEAREST 10 FPS)			ENERGY IN FOOT-POUNDS (TO NEAREST 5 FOOT-POUNDS)			WIND DRIFT IN INCHES 10 MPH CROSSWIND		50 YDS.	100 YDS.				
		GRAINS	GRAMS		MUZZLE	50 YDS.	100 YDS.	MUZZLE	50 YDS.	100 YDS.	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				
FEDERAL SUBSONIC																		
SUB325	22 LONG RIFLE	40	2.59	SOLID	1050	973	913	98	84	74	1.0	3.9	⊕	-7.7				

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

Terminal Ascent

	PART NO.	DIAMETER	GR.	BALLISTIC COEFFICIENT		COUNT
				G1	G7	
	PB264TA1	6.5MM, .264"	130	0.532	0.263	50
NEW	PB264TA2	6.5MM, .264"	140			50
	PB277TA1	270 CAL., .277"	136	0.493	0.247	50
	PB277TA2	270 CAL., .277"	155	0.585	0.3	50
	PB284TA1	7MM, .284"	155	0.586	0.3	50
NEW	PB284TA3	7MM, .284"	170			50
	PB284TA2	7MM, .284"	175	0.625	0.32	50
	PB308TA1	308 CAL., .308"	175	0.52	0.258	50
	PB308TA2	308 CAL., .308"	200	0.608	0.304	50
	PB308TA3	308 CAL., .308"	210	0.65	0.333	50

Fusion

	PART NO.	DIAMETER	GR.	BALLISTIC COEFFICIENT		COUNT
				G1	G7	
	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
	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

	PART NO.	DIAMETER	GR.	BALLISTIC COEFFICIENT		COUNT
				G1	G7	
	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
	PB458TBBC500	458 CAL., .458"	500	0.282		25
	PB474TBBC500	474 CAL., .474"	500	0.299		25

Trophy Bonded Bear Claw[®]

	PART NO.	DIAMETER	GR.	BALLISTIC COEFFICIENT		COUNT
				G1	G7	
	PB375TBBC250	375 CAL., .375"	250	0.375		25
	PB375TBBC300	375 CAL., .375"	300	0.342		25
	PB416TBBC400	416 CAL., .416"	400	0.373		25
	PB458TBBC500	458 CAL., .458"	500	0.282		25
	PB474TBBC500	474 CAL., .474"	500	0.299		25

Trophy Bonded Sledgehammer[®] Solid

	PART NO.	DIAMETER	GR.	BALLISTIC COEFFICIENT		COUNT
				G1	G7	
	PB375TBSH300	375 CAL., .375"	300	0.253		25
	PB416TBSH400	416 CAL., .416"	400	0.273		25
	PB458TBSH500	458 CAL., .458"	500	0.328		25
	PB474TBSH500	474 CAL., .474"	500	0.280		25

Podium Wad

PART NO.	GAUGE	USE
12P1	12GA	1 OZ
12P18	12GA	1½ OZ

Gold Medal Primers

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

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



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.



AMMUNITION TRULY PERSONALIZED TO YOU, YOUR FIREARM AND YOUR PURSUIT

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.



MORE OPTIONS

Check out other special-edition Custom Shop loads built in partnership with Gunwerks, Springfield Armory, The Origins Foundation and more.

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



JOIN THE COMMUNITY

WE LOVE SEEING OUR GEAR IN USE. SHARE YOUR PHOTOS WITH
#FEDERALPREMIUM AND TAG @FEDERALPREMIUM TO BE FEATURED.

[@federalpremiumammo](#)
[@federalpremiumammo](#)
[@federalpremiumammo](#)
[@federalpremium](#)
[@federalpremium](#)
[@federalammunition](#)
[federalpremium.com](#)