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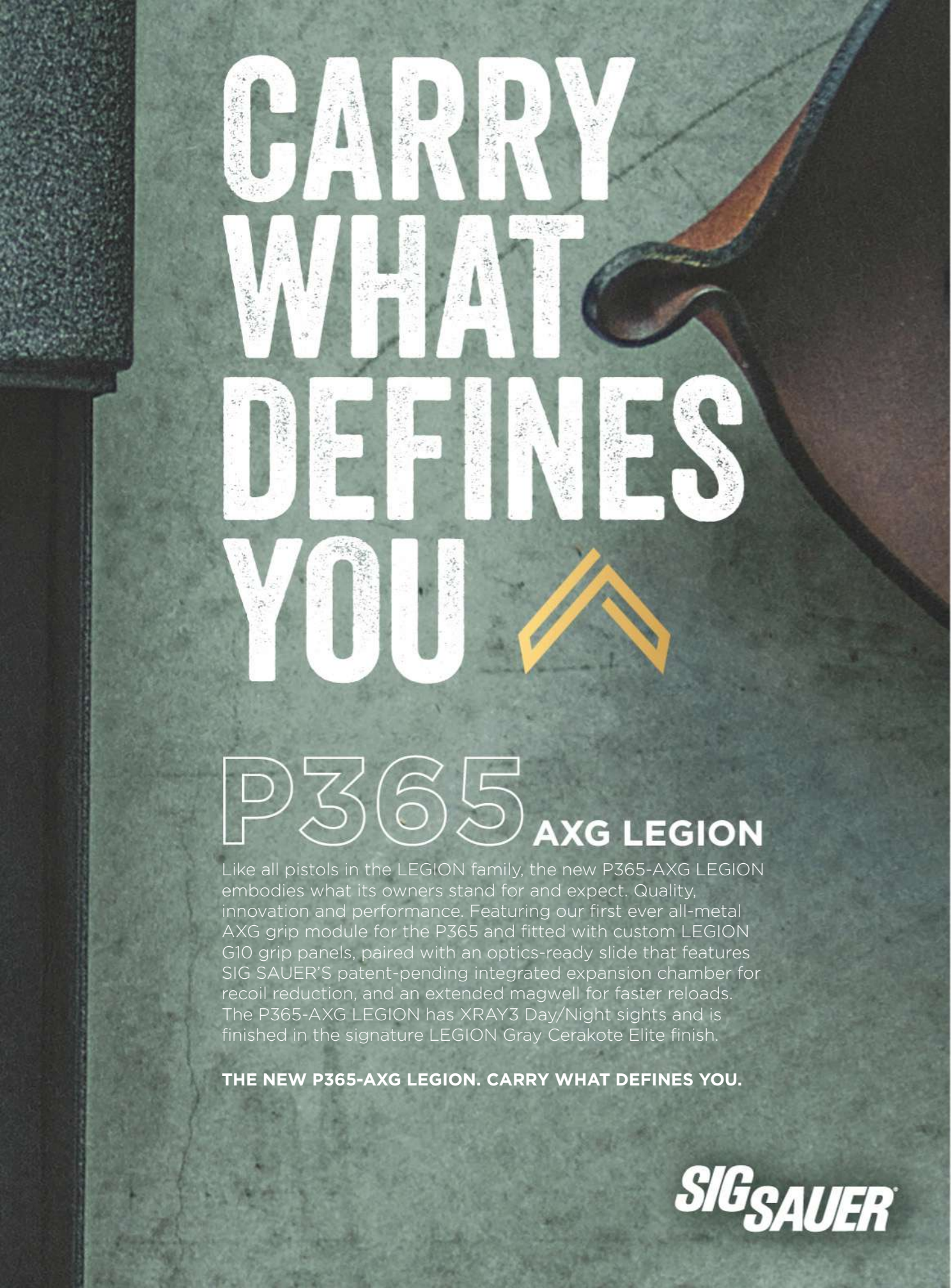
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SHOOTING TIMES FEATURES

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Shooting Times (ISSN 0038-8084) is published monthly with a bimonthly issue in Dec/Jan by Outdoor Sportsman Group®, 1040 6th Ave., 17th Floor, New York, NY 10018. Periodicals Postage Paid at New York, NY and at additional mailing offices.

POSTMASTER: Please send address changes to Shooting Times, P.O. Box 37539, Boone, IA 50037-0539. Return undeliverable Canadian addresses to 500 Rt 46 East, Clifton, NJ 07011. Canada Post International Publications Mail Product/Sales Agreement No. 41405030.

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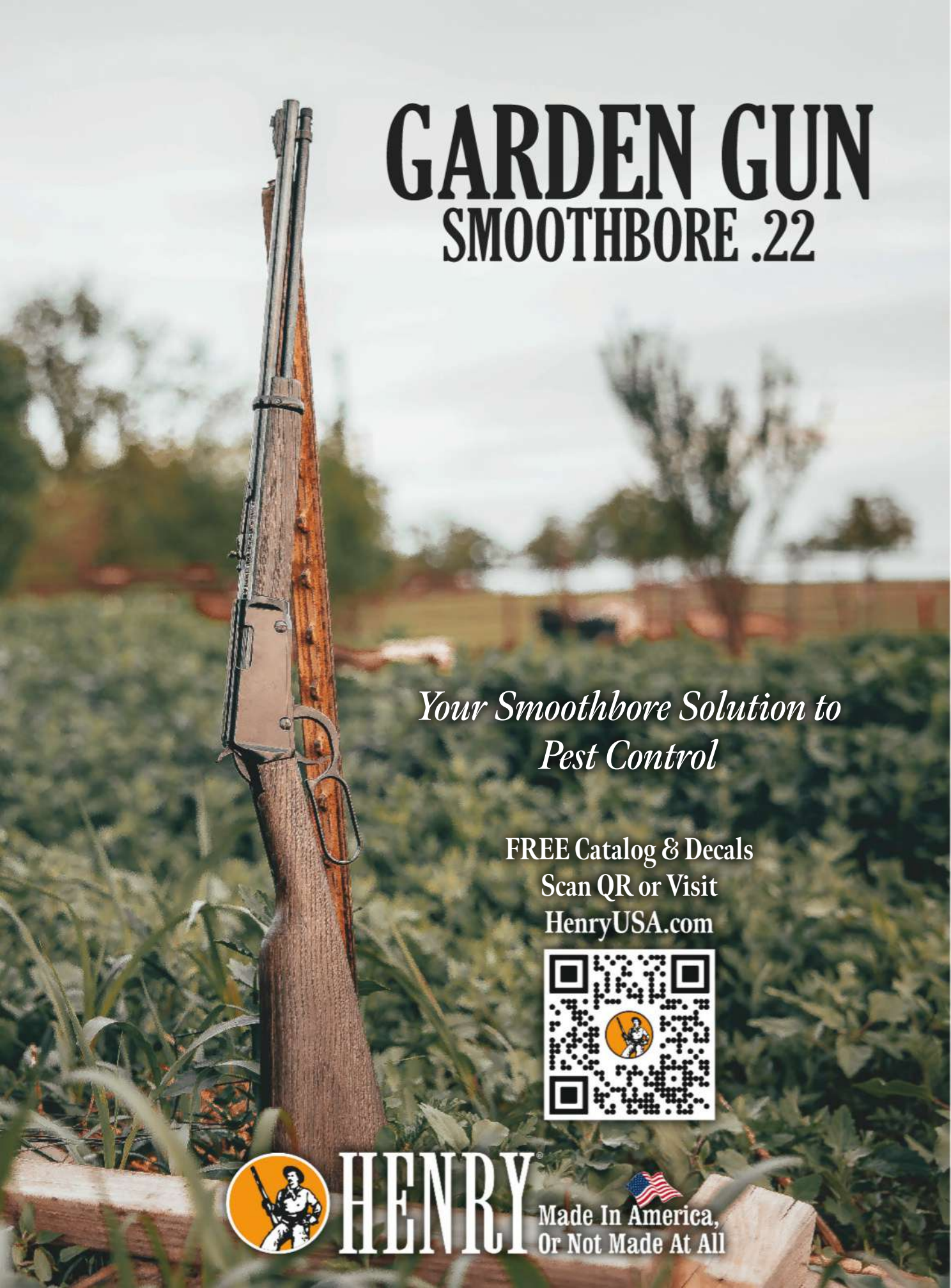
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The Model 50 Spurs Fond Memories

I GREATLY ENJOYED READING THE FEBRUARY ISSUE'S "THE SHOOTIST" column on the J.C. Higgins Model 50 by Joseph von Benedikt. Back in the early 1980s, I was able to convince my brother-in-law to trade to me his FN-made Model 50 (it's chambered for .270 Winchester). The rifle was in excellent shape, with very little usage, but after a few seasons of hunting, I decided to replace the trigger with an aftermarket Timney trigger. For years after, it was one of my favorite deer rifles. I owned much prettier and more modern rifles in various calibers, but that old FN with a handload of IMR 4831 and a Speer 130-grain BTSP shot 0.5-inch to 0.75-inch groups and accounted for numerous Southern whitetails.

I still own that rifle, but now with many dings, dents, minor scratches, and many rounds down the bore, it sees little hunting time. However, it still holds a very dear place in my memories, and from time to time, I bring it out of the safe for oiling and holding just to bring back my youthful times.

D. Lester
Salida, CO

Reduced Loads Make the Difference

I read with interest Joseph von Benedikt's excellent column on the J.C. Higgins Model 50 in the February issue of *Shooting Times*. In 2008 I found a used Model 50 in .30-06 with a Weaver 3-9X Marksman scope (both in very good condition) for sale for $350. I didn't need another rifle, particularly one in .30-06, but, like Joseph, I bought it for the extremely high-quality FN Mauser action. Also like Joseph, I found recoil significant with full-power loads. (I do not like recoil; my other hunting rifles are in low-recoil .25-35, .250-3000, 6.5x55mm, and .30 Rem.) First, I added a LimbSaver slip-on rubber recoil pad to the Model 50. It helped, but the pad was somewhat awkward. Next, I went to reduced .30-06 handloads. Data for such loads are readily available from many sources, and the .30-06 seems well suited for reduced loads. I have found midlevel to maximum .30-40 Krag loads in the *Lyman Reloading Handbook 46th Edition* (1987) to be comfortable, accurate, and quite sufficient for Pennsylvania whitetails in the woods where typical shots are 100 yards or less. The Model 50 is a great rifle, and reduced loads make it more useful for me.

James Hamel, PhD, P.E.
Monroeville, PA

How to Clean Dirty Walnut Shell Cleaning Media

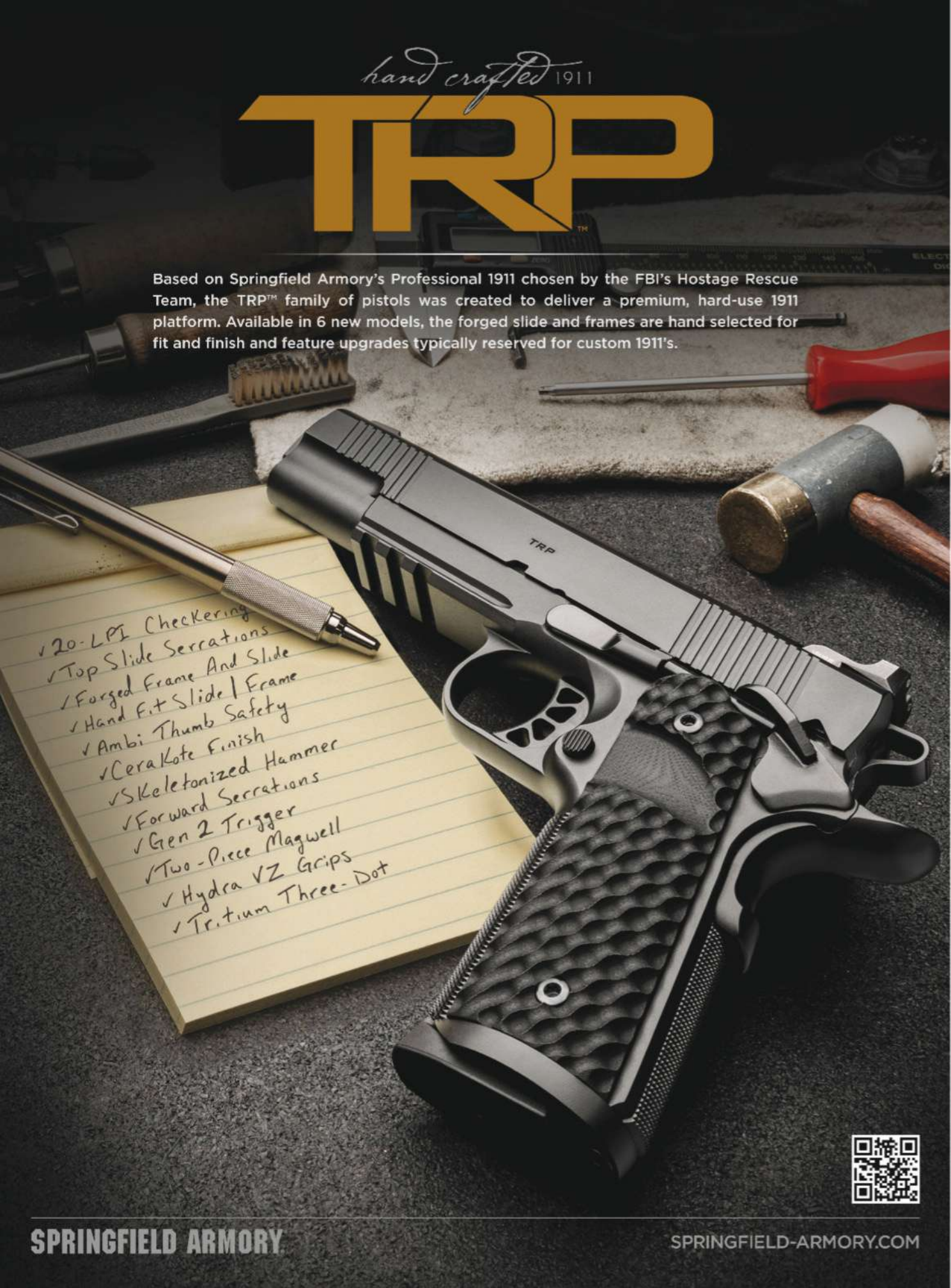
I read in the December/January issue where Tom Reynolds abandoned using dirty walnut shells for case cleaning. I am a small-batch reloader and have used a rubber drum rock polisher for decades to clean brass with walnut shells. When the media gets too gunked up to do its job, I add water and a tablespoon of Dawn dishwashing liquid to the drum and let it run several hours. It will look like an ugly mess, but then I set the drum in the kitchen sink and let a small stream of water run until it overflows. The gunk will come to the top, and the crushed shells will stay down as long as you don't run the water too hard. You can stir it gently to flush it completely. When the water is clean, drain it off and spread the shells on newspaper to dry for a few days. They will be as good as new. Re-dope with your favorite product, and you are in business. You may experiment with the amount of water and Dawn according to the size of your equipment.

Larry Novak
Augusta, KS

Ruger Model 77 Accuracy Fix

I was almost giddy when I read Allan Jones's comments about his fondness for the Ruger 77 in the February issue. Finally, a writer who shares my appreciation for the Ruger 77, the 7x57 cartridge, and Jack O'Connor! I feel like a kindred brother.

I'll be 70 in July, and I bought my 7x57 Ruger 77 (with a beautifully grained stock) back in 1977 when I was 24. I started handloading shortly thereafter to maximize the performance of this sweet little cartridge, and I must say it's been a love-hate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relationship over the past 46 years. I had the stock slimmed down, rechecked, and refinished. I also had Paul Jaeger jewel the bolt, glass bed the recoil lug and 2 inches of barrel, and install a Pachmayr recoil pad.

While I have taken countless deer with this gun, and even an elk, the rifle has never been a "shooter." I always struggled with the exceedingly long throat, which didn't mesh well with my desire to shoot lightweight bullets in the 130- to 150-grain range. Velocity was good (2,800+ fps and surpassing 2,900 fps with some powders), but the accuracy always left much to be desired.

Then, after about 3,000 rounds through it, I had Mark Bansner replace the shot-out barrel with a Douglas Premium 22-inch barrel. With the new, shorter throat and some additional work to rebed the action, add an aluminum rear pillar, replace the firing pin spring, and relieve the tension in the magazine box, the accuracy finally improved. But it wasn't until I took the advice of Joseph von Benedikt and tried using Reloder 19 powder and Nosler Ballistic Tip bullets that it became a sub-MOA rifle.

Greg Levengood
Boyertown, PA

March Issue Was Special

While *Shooting Times* usually has an article or more of interest to me, I have to say what a special issue the March edition was. Articles by Boddington, Simpson, Hutchcroft, and von Benedict were a very great change from AR-style black rifle articles. As you might guess, I am an older shooter and enjoy more traditional-style rifles and hunting tales.

B.B. Toothaker
Via email

Military Training with a Straight-Pull Rifle

The March issue contains an article by Craig Boddington on straight-pull rifles, in which he compares straight-pull to turnbolt rifles. He mentions that Mauser intended his turnbolt to be operated from the shoulder, maintaining the sight picture while working the bolt, adding that this is how armies trained their soldiers. This is an odd belief.

All full-length Mauser infantry rifles, as well as others like Mosin, Arisaka, etc., have straight bolt handles that stick out at 90 degrees with the bolt closed and stick straight up when the bolt is open, completely blocking the sight picture. Many short rifles and cavalry carbines had bent bolts.

I also find the '96 or '98 Mauser bolt throw is just a bit too long to keep one's head on the stock while working the bolt. I shoot a lot of CMP Vintage Military Rifle matches with Mausers and have a technique to just move my head to the left as my hand brings the bolt back.

While giving several examples of modern straight-pull hunting rifles, Boddington left one out, probably deservedly so. In 1996 Mauser introduced the New Model 96, advertising it as "the rifle for the next hundred years." I don't think it stayed on the market more than 100 weeks. The bolt is modern, with two rows of small lugs like an AR-15 or Weatherby, but one terrible feature is that the bolt handle is near the front of the bolt instead of the rear, meaning the shooting hand is well behind the knob of the bolt handle when closed and has to be moved forward to grab the bolt before pulling straight back. It's not really much faster than a turnbolt. Also, the ideal place to grasp the rifle when carrying it in the field, the center of the action between forward bolt knob and trigger guard, is a bit too small for a human hand. And the bolt handle has to be detached to remove the bolt for cleaning the bore. No wonder it was a commercial failure.

Bill Poole
Scottsdale, AZ

Primer Info Was Invaluable

I started handloading metallic cartridges as a high school senior in 1982, and even back then, it was written that one should not swap primer brands on your favorite handload willy-nilly. If you needed to change a brand of primer, you should lower your powder charge back down to a starting load and work up all over again. Didn't know why, but that's what my then-new Speer manual said to do. Little did I know that Allan Jones may have had a hand in writing that very well-used book. Thank goodness CCI primers were ubiquitous then and cost about $20 for 1,000 of them. We didn't run out.

But what was never clear was why. How much difference could there really be? In the 40 years since, much more information has been written about primers, and diligent handloaders pay attention to that stuff.

And then along comes another excellent *Shooting Times* column by Allan in the March issue. He answered all the questions I had quietly wondered about all these years, when he described the techniques used by the manufacturers to create their own house blends (by varying the ratios of the initiators, oxidizers, fuel, and even some atomized aluminum). While I don't understand much of the chemistry, I do understand the point that they can all be a little different. And there it is! Don't simply swap primer brands, because they really are different.

Allan's column also included a lot of info on the history of the chemicals used to make primers, both good and bad, going back to the mercury fulminate-filled caplocks. Every veteran handloading geek worth his sodium chloride should find that interesting.

Thanks for the great research, Allan. Keep up the good work. We really enjoy it!

Mike Smith
Fountain Valley, CA

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Ruger 75th Anniversary Mark IV .22 Auto

IN CELEBRATION OF THE COMPANY'S 75TH ANNIVERSARY, RUGER IS OFFER-ing commemorative SR1911s, 10/22 rifles, LCP Max pistols, and Mark IV .22 Auto pistols. The special Mark IV pistol features a 6.88-inch tapered barrel, fully checkered wood laminate grips, a fully adjustable rear sight, an undercut Patridge front sight, and two 10-round magazines. It has special laser engraving on the receiver and the back of the bolt, and it comes in a throwback-style 75th anniversary printed box.

MSRP: $599
ruger.com

Savage Model 64 Color Series

Savage Arms has announced new color options for the classic Model 64 .22 LR semiautomatic rifle. According to Savage Director of Marketing Beth Shimanski, "The Model 64 is a staple for small-game hunters and plinkers. We're happy to offer six new color options in this accurate and fun semiauto."

The Model 64 Color Series rifles have synthetic stocks, 10-round detachable box magazines, 21-inch-long carbon-steel barrels, open sights, and grooved receivers. The barreled actions are matte black, and the colored stocks are offered in blue; green; orange; pink; purple; and red, white, and blue in an American flag motif.

MSRP: $159 (blue, green, orange, pink, purple), $199 (red, white, and blue)
savagearms.com

CCI Uppercut Defense .22 LR Ammo

The new Uppercut Defense .22 LR ammunition from CCI is designed for use in handguns with barrel lengths ranging from 2.5 inches to 4.0 inches. As CCI's first-ever .22 LR loading specifically for defense, it is loaded with an exclusive 32-grain jacketed hollowpoint bullet that features nose skives for optimal expansion to a muzzle velocity of 950 fps. At that velocity, it produces 64 ft-lbs of muzzle energy. It comes in 100-round boxes.

MSRP: $12.99
cci-ammunition.com

Remington 22 Golden Hunter .22 LR Ammo

Remington's new 22 Golden Hunter high-velocity .22 LR ammo features carefully engineered propellant and a 40-grain hollowpoint bullet that's designed for use on small game. Its velocity is factory rated at 1,255 fps. It comes in 100-round and 550-round packs.

MSRP: $11.99 (100 rounds), $54.99 (550 rounds)
remington.com ST

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Reduced Handloads for .30-30 Winchester?

Q. **I WOULD LIKE TO START TEACHING MY GRANDKIDS HOW TO SHOOT** a rifle, so I want to find out if there are reduced loads for the .30-30 Winchester using pistol powders like W231, Bullseye, etc. What does Lane Pearce say about that?

Jack DeYoung
Via email

A. The short answer is, I don't think so, because I've never seen any published .30-30 data for fast-burn-rate handgun propellants. Lyman offers several recipes for 2400 and Unique powders for handloading cast bullets. The company also lists loads for Trail Boss and Herco. Although Herco is a pistol and shotgun propellant, both 2400 and Unique were originally developed many years ago as rifle powders that today are also used to load some handgun cartridges. None of them exhibits burn rates as fast as W231, except for Trail Boss.

If you load cast bullets in your .30-30, stick with Lyman's data or check out the Hodgdon Reloading Data Center (RDC) online. You'll find loads with very modest ballistics using H4895, H4198, and Trail Boss on Hodgdon's website. If you prefer loading jacketed bullets, Lyman's 51st edition manual and the Hodgdon RDC offer lab-tested recipes with a wide range of bullet weights. The starting loads assure there will be less recoil, so the kids won't likely develop a flinch. Actually, the *Speer Handloading Manual Number 15* lists starting loads two or three grains below Lyman's data for several propellants and jacketed bullets.

Whichever way you choose, there are reliable sources readily available to assemble safe .30-30 ammunition for the grandkids to shoot. Thanks for your interest in our future citizens. And as soon as you think they are ready, teach them how to handload. When you're comfortable firing their handloads, you've done another great service!

Lane Pearce

Rule of Thumb for Cast-Bullet Load Data?

Q. I am a handloader, and I only shoot at the range. I cast all my bullets using 6 percent antimony alloy or clip-on wheelweight alloy. My club's indoor pistol range is a lead-only range, no FMJ. Many load data charts only include a few, if any, cast bullets, and more than likely not the bullet weights I cast in .45 ACP, 9mm, .40 S&W, and .380 ACP and use in pistols or pistol-caliber carbines. Is there a rule of thumb for increasing or decreasing published jacketed-bullet data for use with cast bullets?

Phil Nutting
Via email

A. Previously, I thought that for cast and jacketed bullets of the same weight you could safely drop the powder charge about 10 percent when loading the cast bullet and achieve similar safe velocity and pressure as a round topped with the jacketed bullet. While researching my various references to verify that assumption, I determined that I was wrong.

One of the best sources for load recipes with cast bullets is Lyman Products. The company has been making mold blocks and other casting equipment since Methuselah was a teenager (circa 1878). Back then the company was known as the Ideal Company. Lyman has issued a few load manuals during these many years; in fact, the 51st edition was published just two years ago, and it has a lot of information on loading all kinds of powders, primers, and cast and jacketed bullets in 37 handgun cartridges. (I didn't bother to count the rifle cartridges also included in the book.) The company also has issued several cast-bullet handbooks with, obviously, only cast-bullet recipes for rifle and pistol cartridges.

I looked through my copies of these manuals and found several examples that corresponded to my long-held assumption; however, there were many more that did not. In fact, I relearned a lesson once more that you can't draw seemingly logical conclusions when you're reloading. With the myriad sources of reliable load data from Lyman, Hodgdon, Speer, Hornady, Sierra, etc., you do not have to and shouldn't assume anything. For handloading cast bullets, Lyman and Hodgdon's Reloading Data Center will likely have recipes with velocity and pressure data for a broad range of bullet weights that are commonly loaded in every popular handgun cartridge.

Again, I was wrong assuming that there was a rule of thumb for adjusting jacketed-bullet load data for loading cast bullets. There is no such thing.

Lane Pearce ST

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The Original Colt Python

Introduced in 1955, Colt's Python is second only to Colt's single-action "Peacemaker" revolver in legendary status.

BY JOSEPH VON BENEDIKT

Often called the handsomest revolver ever made, Colt's 1st Generation Python isn't just a looker; it also set the standard for smooth operation.

UNTIL RECENTLY, ORIGINAL COLT PYTHONS WERE scarce. Although production was plentiful through the 1980s, Colt struggled to get its act together and produce revolvers for decades after that. Those 1st Generation Python sixshooters were coveted by all and sold by few.

Being featured as the chosen sidearm of the primary character in the hit TV show *The Walking Dead* drove the popularity of the Python through the roof and contributed to the demand that ultimately inspired Colt to bring out the 2nd Generation Python in stainless steel in 2020 and the subsequent blued version that's new for 2024. (See Joel Hutchcroft's report on the new blued Python elsewhere in this issue of *Shooting Times*.)

The new 2nd Generation Pythons are said to be built of better steel than the originals and to feature a couple of design corrections that eliminate the Python's tendency to go slightly out of time after high-volume use with heavy magnum loads. However, the original 1st Generation Python is and always will be special. Unlike the modern versions, which rely on CNC machining and precise MIM parts, the 1st Generation revolvers were handfitted by Colt's finest gunsmiths. Those 1st Generation Python revolvers achieved a level of smooth sophistication never previously seen in a double-action revolver.

Colt opted to engineer the Python with a V-shaped mainspring rather than the leaf spring used by S&W or the coil spring used by Ruger. While some claim the V-spring isn't as durable as the others, it's undeniably the smoothest-feeling.

According to one source, the Python was originally intended to be a target revolver chambered in .38 Special. That's why it came standard with refined adjustable sights, a full barrel underlug that added aim-stabilizing weight, and a ventilated rib atop the barrel. Exacting attention was given to ensure Pythons had a smooth, crisp trigger pull.

Python revolvers were the first to feature Colt's superb Royal Blue finish, the result of a wonderfully fine polish before bluing. Colt's nickel finish was added not long after the model was introduced. Several barrel lengths were offered, from 2.5 to 8.0 inches,

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with the 4.0-inch versions becoming widely favored by peace officers.

I don't have total production numbers, but about 100,000 were produced between 1955 and 1969. Beginning in the 1980s several additional variants were offered. Among the most common were stainless-steel versions. Some, like the Stalker and the Silhouette, came as ready-to-go combinations.

In 1997 the Python was shifted from the standard production line to Colt's Custom Shop, where it was produced in limited numbers until being discontinued in 2004.

Mechanicals

Colt's Python revolver cylinders rotate clockwise, unlike S&W and Ruger revolver cylinders. Uniquely, cylinder lockup completes as the trigger releases and the hammer begins to fall, resulting in a very tight, consistent mechanism.

Loading and firing the Python is much the same as with any other double-action revolver, so I won't detail the step-by-step process here. It's worth noting, however, that the cylinder latch must be pulled rearward to unlock and open the cylinder.

Provenance

I found the Python reviewed here at Neal's Gun Shop (my favorite little historic shop in northern Utah). It was built in 1970 and has some holster wear and signs of use but appears to have been well cared for. All appears to be original, aside from the aftermarket Pachmayr grips.

Aside from that, I have no information about the history of this particular Python. I do, however, have a little personal history with the model—or perhaps I should say longing absence of history with it. When we were young, my brother and I inherited two handguns from a wealthy old doctor we trained horses for. I got a Colt 1911 Gold Cup .45 ACP, and my brother got a pristine, like-new Python. That was before Pythons were worth a mint, and he packed it over a lot of long weeks working cattle in southern Utah's desert country. It's now very well worn.

At any rate, I'd always admired that revolver but could never justify the expense to own one for myself. Neal's had this Python priced right, so I purchased it.

Rangetime

At the range, recoil with the .38 Special loads was mild, and the clean, crisp trigger pull made my Python easy to shoot. The sights were spot on, and the Black Hills 125-grain JHP +P load took top honors in the accuracy department, averaging 1.56 inches.

Predictably, the .357 Magnum cartridges kicked harder, but accuracy was still good. The results are listed in the accompanying chart.

Throughout my testing the old Python functioned perfectly. Operation was smooth as silk.

I experienced a trace of particulate blowback during a few of the shots with the .357 Magnum ammo, making me wonder if the revolver could be slightly out of time—something not uncommon among well-used Pythons. Even if so, it's not really an issue aside from a potential slight degradation of accuracy and that tendency to spit a little.

My 1st Generation Python's value is somewhere between $1,500 and $1,800, and being a lover of vintage firearms in original condition, I'm torn. I could send it off to Bobby Tyler, a Python specialist in Texas, to be retimed and maybe even given a restoring coat of rich Royal Blue.

Decisions, decisions. While I ponder whether that's a good idea, I'll just keep enjoying my "new" old Python exactly as is. ST

1ST GENERATION COLT PYTHON ACCURACY & VELOCITY

AMMUNITION	VEL. (FPS)	E.S. (FPS)	S.D. (FPS)	25 YD. ACC. (IN.)
.357 Magnum, 6.0-in. Barrel				
Winchester Big Bore 158-gr. SJHP	1285	93	28	1.88
Speer Gold Dot 170-gr. GDSP	1183	133	41	2.44
.38 Special, 6.0-in. Barrel				
Black Hills 125-gr. JHP+P	967	93	27	1.56
Winchester 150-gr. Lead RN	762	66	26	4.10

NOTES: Accuracy is the average of three, six-shot groups fired from a sandbag benchrest. Velocity is the average of 18 rounds measured with a LabRadar.

PYTHON

MANUFACTURER	Colt's Manufacturing Co.
TYPE	Double-action revolver
CALIBER	.357 Magnum
CYLINDER CAPACITY	6 rounds
BARREL	6.0 in.
OVERALL LENGTH	12.5 in.
WIDTH	1.55 in.
HEIGHT	5.75 in.
WEIGHT, EMPTY	48 oz.
GRIPS	Aftermarket Pachmayr rubber
FINISH	Royal Blue
SIGHTS	Fully adjustable rear, Patridge front
TRIGGER	3.75-lb. single-action pull (as tested)

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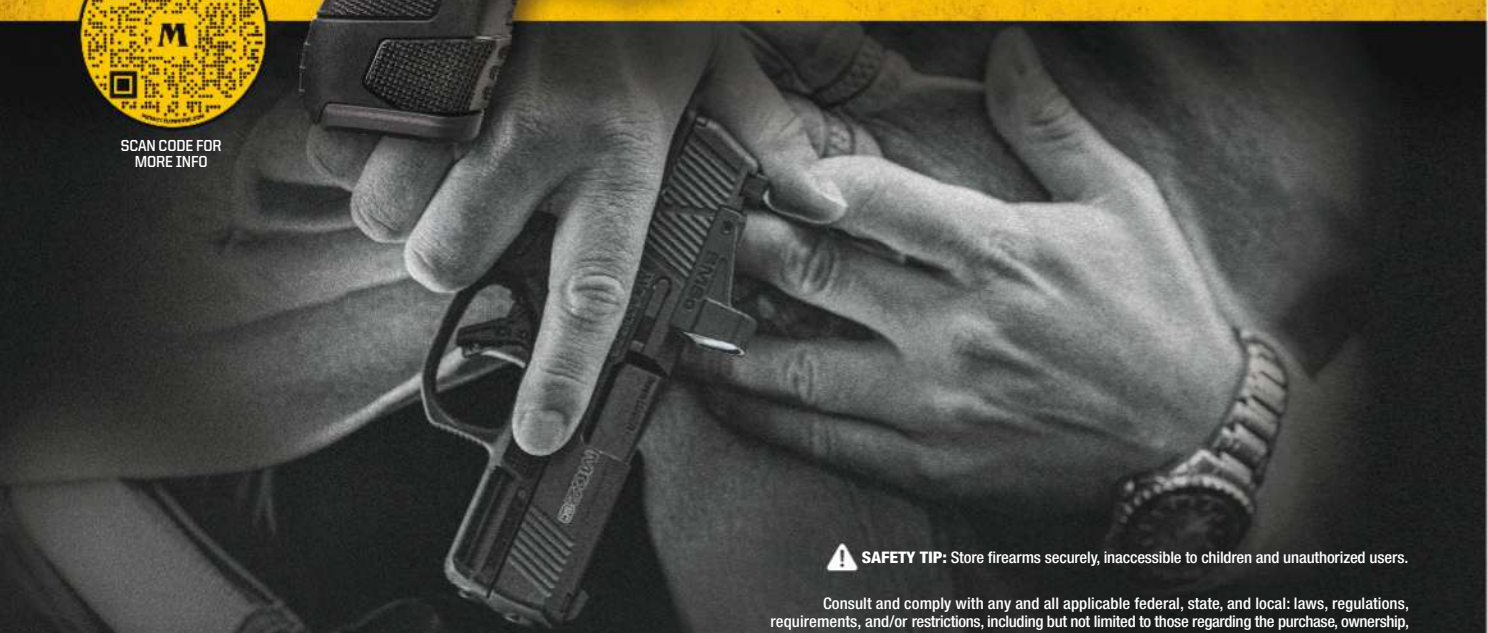

SAFETY TIP: Store firearms securely, inaccessible to children and unauthorized users.

Consult and comply with any and all applicable federal, state, and local: laws, regulations, requirements, and/or restrictions, including but not limited to those regarding the purchase, ownership, use, transport, and carrying of a firearm. Not all products are available in all states or jurisdictions.

Ballistics Challenges the Pros Have Faced—and Conquered

Making safe and properly functioning ammunition requires a lot of development and function testing. **BY ALLAN JONES**

Light-bullet challenges in .38 Special M41 Ball ammo forced the development of the unusual .38 Special Ball PGU-12/B cartridge (right.)

CHALLENGES CULTIVATE EXCELLENCE. Ballistics challenges are real, and it is a credit to smart people in our industry that we enjoy such excellence in our ammunition today. Here are some challenges that I've seen the industry work through.

Rimfire cartridge challenges lurk in three areas: case size; thin metal; and volume of production. Sheer volume makes rimfire ammo one of the most cost-sensitive ammo product groups. That necessitates finding efficient ways to safely make the greatest number of perfect parts per hour day after day.

Case size and thin metal almost go hand in hand. Rimfire propellant charges are tiny, typically measured in milligrams, not grains. One grain of propellant is 64.8 milligrams. Try metering one-grain charges accurately and repeatably on your home powder measure at several per second. Creating accurate propellant metering systems to accurately dispense multiple tiny charges consistently and at speed approaches an art form. It is a challenge that rimfire engineers have accepted and brilliantly overcome.

Likewise, the rimfire case requires incredible manufacturing control of all dimensional variables. If rim cavity volumes vary even a little, the opportunity for misfires increases. A sufficiently thin rim crushable

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by a firing pin blow cannot withstand extreme pressure. Most rimfire cartridges, including the .22 WMR, are loaded to under 24,000 psi. One place I know monitors rimfire case dimensions right at the press to tolerances smaller than 0.0001 inch.

Centerfire cartridges offer challenges too. As odd as it sounds, the .38 Special can be a proper headache with lightweight bullets. When the lightest .38 Special bullets were 148 grains and not jacketed, all was well. Lighter jacketed bullets complicate matters, especially at non+P pressure standards.

One of the early—and troublesome—jacketed .38 Special loads was the U.S. M41 Ball. Sporting a 130-grain FMJ, it was held to a modest pressure rating of 13,000 psi. A big case designed for blackpowder loaded to pressures 23 percent under current non+P specs, and a light bullet with high in-bore resistance—what can go wrong? Plenty.

Bullet-in-bore (BIB) incidents with the M41 in revolvers eventually caused our Air Force to ask for a modified cartridge that became the .38 Special Ball PGU-12/B. To reduce airspace, engineers kept the same FMJ bullet but deep-seated it (cartridge overall length 1.335 inch). The bullet was secured twice. A cannelure was rolled through the case wall into the bullet's normal crimp groove, and the case mouth was heavily roll-crimped over the bullet's ogive. The max pressure limit was increased as well. Although it was funny-looking, it worked.

Loading commercial non+P ammo with jacketed bullets around 130 grains or lighter involves a similar challenge. Variations in firearms also enter the picture. Ammo that works perfectly in one type of revolver may go BIB in another with looser tolerances. The challenge is building the best possible ammo that still works in a worst-case revolver.

Lead bullets' bases can expand on firing. Jacketed bullets seldom expand in the chamber throats at modest pressures, letting gas around them. Although industry max diameter spec for jacketed .38 Special bullets is 0.358 inch, some revolvers' cylinder throats can be 0.360 inch. Here the propellant's burning rate is critical to the solution.

You want the majority of the charge to burn early so that the bullet has significant velocity when it crosses the barrel-cylinder gap. Were this to land on my project list, I would use a fast-burning propellant (Bullseye, W231, Accurate No. 2 class) that keeps the average pressure close to 17,000 psi without going over.

The other development action needed is that propellant and bullet candidates must be vetted in different production firearms in varied condition. Logging velocities from "real" revolvers and muzzle-down function testing are critical here.

There can be issues at the other end of the cartridge spectrum—"super-magnum" revolver cartridges. When the .454 Casull was still a proprietary cartridge, the sharp folks at Freedom Arms quickly identified and acted on the need for a thick bullet jacket to avoid topstrap and barrel throat damage at max pressures. Thin-jacketed .45 Colt bullets swelled excessively when crossing the barrel-cylinder gap, accelerating wear unless pressures were held to under about 75 to 80 percent of what their thick-jacketed counterparts could tolerate.

There also is the industry maximum pressure specification versus what gets loaded in the real world. When the Casull was finally fully standardized in 1998, copper pressure standards were already phased out, and the maximum pressure was set for piezo-electric transducer measurement at 65,000 psi, the same as the .300 WSM and other potent rifle cartridges. But does the U.S. industry load the .454 Casull to that pressure?

Not in the factory ammo we tested at Speer. Some of the first .454 factory loads issued by another maker tested just over 55,000 psi. That trend continued. Even with thick-jacketed bullets, we held our handloads to the same number for the Speer manual as well as Speer factory ammo. The reason goes back almost 90 years.

When the .357 Magnum was standardized, the copper crusher pressure standard was 45,000 CUP. It still is. But the highest factory ammo pressures I assessed using crusher protocols were all under 39,000 CUP across brands. It was—and is —extraction problems in double-action (DA) revolvers that forced the issue.

The extractor in DA revolvers forms part of the chamber walls near a point where fired case expansion is greatest. Single-action revolvers do not have this "split chamber" arrangement and the ejector rod only has to remove one case at a time. The DA extractor "star" has to remove five or six cases. With most high-pressure revolver cartridges, you can load to max "safe" pressure, but you may not get the fired cases out of the revolver without beating it with your boot.

In addition to the Casull, we witnessed and applied this "not to max" practice in data for .480 Ruger, .460 S&W Magnum, .500 S&W Magnum, and .327 Federal Magnum, among others. Development requires a lot of function testing in different production DA revolvers. ST

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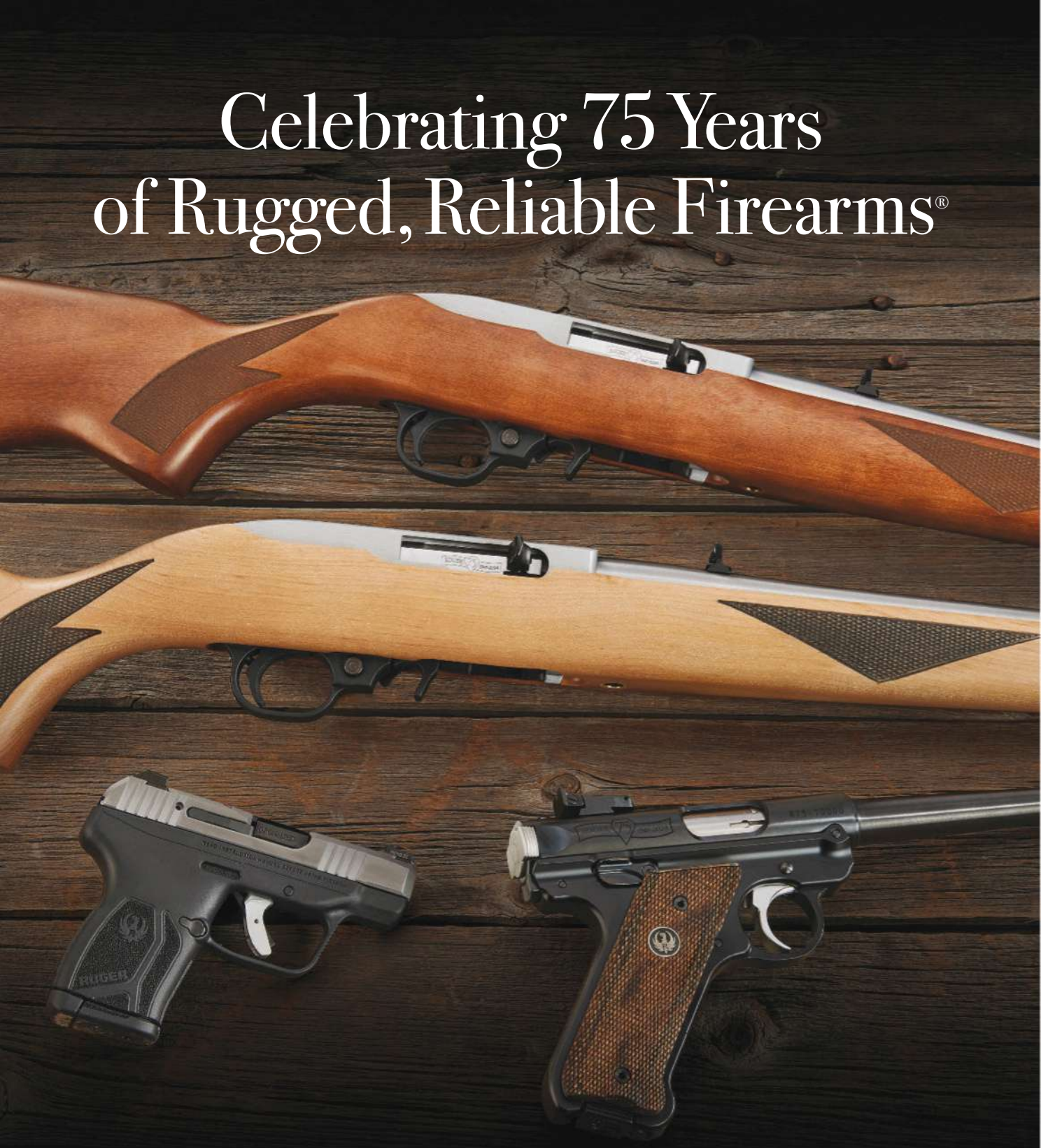

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New Reloading Products

New products for handloaders in 2024 include the latest *Hodgdon Annual Manual*, a click-adjustable bulletseating micrometer from Hornady, and a commemorative RCBS Summit press. **BY LANE PEARCE**

The 2024 *Hodgdon Annual Manual*, the Hornady Click-Adjust Bulletseating Micrometer, and the RCBS commemorative Summit press are three new products for handloaders.

SHOOTING TIMES **HAS A LONG HISTORY OF** announcing new products in the June issue following the annual SHOT Show. Carrying on that tradition, here's a quick look at three new reloading products.

2024 *Hodgdon Annual Manual* (MSRP: $14.99)

Hodgdon has a new-for-2024 *Annual Manual*. I've been contributing to the *Annual Manual* for close to two decades and keep copies of every edition near my loading bench. While comparing the first one with the latest one, I discovered a few interesting facts. Both contain about 200 pages. They include rifle, handgun, and shotgun load recipes, usually with both velocity and pressure data. Propellant descriptions include suggested applications. There's a comprehensive powder-burn-rate chart for almost all currently available powder options. The

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list has expanded from 103 to 164 different propellants over 20-plus years, reflecting new products and those that are no longer available.

The first manual included recipes only for Hodgdon brand propellants. A few years later, Hodgdon arranged with Winchester to distribute their canister powder and promptly expanded the load data provided. In more recent years, they acquired IMR's intellectual property rights and the Accurate and Ramshot product lines, which required adding even more data to subsequent manuals.

Every edition of the *Annual Manual* offers up to a dozen interesting articles prepared by prominent and upcoming writers from across the industry. This year's edition introduces handloaders to three new powders: Hodgdon Perfect Pattern shotshell powder, Hodgdon High Gun shotshell powder, and Ramshot Grand magnum rifle powder. It also includes reloading articles on primers as variables in .308 Winchester handloads, loads for subsonic rifle ammunition, the effects of barrel length on velocity, and more. My contribution to it is an article on handloads for 9mm budget bullets.

Hornady Click-Adjust Bulletseating Micrometer (MSRP: $109.73)

Hornady is celebrating its 75th anniversary this year, and the 2024 catalog announces the Click-Adjust Bulletseating Micrometer. The typical Hornady seater die features a floating internal sleeve and seating stem. The sleeve ensures the case and bullet are properly aligned as the stem presses the bullet into the case mouth. A threaded plug mounted in the top of the die body is adjusted up or down to achieve the desired bulletseating depth. The new accessory replaces the threaded plug.

So what does this gain the serious handloader? First of all, the old part is unadorned with any markings to allow you to record the position it's adjusted to in oreder to obtain the desired cartridge overall length (COL) for a favorite handload. Several of my old Hornady seater dies have an ink mark drawn halfway across the top of the plug so that when I achieve the desired bulletseating depth, I will note on my load data sheet the clock position the mark is pointing at. I often have unscrewed the plug and counted the number of rotations required to reestablish the proper position of the seater stem in the die. This crude process works, but it's obviously tedious.

With the new seating device installed, simply adjust the stem/dial setting until you achieve the COL desired and record the micrometer reading for later reference. If you, like my late mentor John Redmon, shoot five-round batches of a test load with everything the same except COL, you now can easily adjust the micrometer setting five-thousandths of an inch, ten-thousandths of an inch, or lower in multiple steps to evaluate the effect of bulletseating depth on accuracy. It's a handy device.

RCBS Commemorative Summit Press (MSRP: $379.99)

RCBS has offered many new reloading presses, both metallic and shotshell, since the company started making bullet swages during World War II. When I started reloading in the early 1970s, I wanted an RCBS A2 single-stage press because it was the "Cadillac" of anything on the market. Fred Roe, another mentor of mine, had one on his bench and was so startled with my oohing and ahing when I saw it, he stamped his name on it!

My first press was an RCBS Jr., and I progressed through a Rock Chucker, an A4, and a Rock Chucker Supreme. However, I also have provisions and room to mount other presses I have on hand (including an A2 I acquired a few years back—not Fred's!) as needed. One of those on standby is an early production Summit press. It doesn't have the leverage of the Rock Chucker models, so I don't reform cases or full-length resize .416 Rigby brass with it.

Fitted with the short operating handle, the Summit press mounts in a small footprint on your bench and doesn't have to overhang the edge. I often load straight-wall handgun and small rifle ammo that requires much less leverage when resizing with it. And I usually seat rifle bullets with it because I prefer to hold the bullet in position and lower the die instead of trying to keep the bullet properly aligned with the die while the ram lifts my hand holding the bullet atop the case mouth. It's just a scheme that seems to work best for me. This year marks the 10th anniversary of the Summit press, and the new limited-edition commemorative Summit press wears a bold red, white, and blue Freedom camo finish. It's every bit as good as the original one I have used for a decade. ST

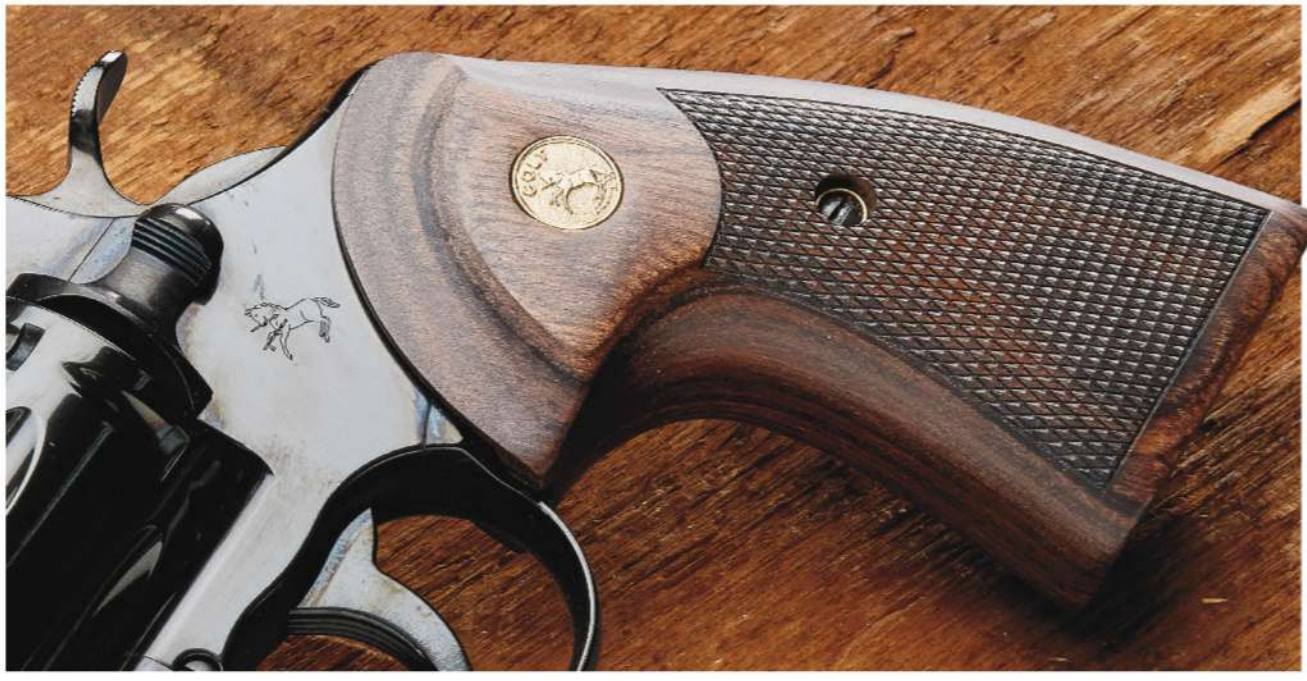
MAKIN' HISTORY

FOUR YEARS AGO, COLT BROUGHT BACK THE PYTHON WITH A REVISED MECHANISM IN A STAINLESS-STEEL CONFIGURATION. CUSTOMERS ASKED FOR A BLUED VERSION, AND COLT IS OFFERING IT NEW FOR 2024.

BY JOEL J. HUTCHCROFT

PHOTOS BY **MICHAEL ANSCHUETZ**


(Circa 1995)
Hornady
mm/in
(Circa 2024)



The new-for-2024 blued Python comes with two-piece, checkered walnut target-style grips.

THE ORIGINAL DOUBLE-ACTION COLT Python revolver was introduced to the world in 1955. A period advertisement for it I recently came across prominently displayed these words: "A finer gun than you actually need." I'd say that's a pretty unusual marketing slogan. Other words used in the ad include "masterwork," "superbly handsome," "smooth beyond belief," and "aristocrat of guns." It was discontinued almost 50 years later in 2004. (See this month's installment of "The Shootist" beginning on page 16 for more about the original Python.) Four years ago, Colt brought it back in a modified, updated form in stainless steel. But customers wanted a new Python with a blued finish. They asked, and Colt answered. Here's a close examination of the brand-new carbon-steel blued Colt Python.

Features & Specifications

The new blued Python is being offered with 6.0-inch and 4.25-inch barrels. Both feature checkered walnut target-style grips, fully adjustable rear sights, and red ramp front sights. Of course, they are chambered for .357 Magnum, which means .38 Special ammunition also can be fired. *Shooting Times* received the 4.25-inch-barreled revolver for review, so let's take a good look at it.

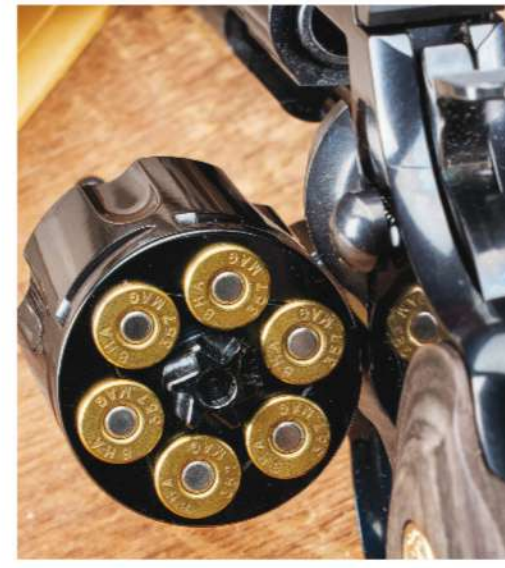
Like I said, the grips are checkered walnut. They are two pieces that are attached by a slot-head screw, and they have a gold Colt medallion on each side. The grip circumference across from the trigger guard and over the location of the grip screw measures 5.125 inches.

Removing the grips reveals the frame's square butt and the V-type mainspring. It's similar to the mainspring on my 1995-vintage Python that's shown in the background of the introductory photograph to this report, but I would say the new Python's mainspring is more U-shaped than V-shaped.

The new Python's trigger is blued and grooved (three grooves), and it measures 0.26 inch wide at the top and 0.24 inch at the bottom, according to my calipers. The trigger mechanism is very smooth—as smooth as my vintage revolver's. The new revolver's double-action trigger pull averaged 11 pounds over a series of 10 measurements with my RCBS trigger pull scale. The single-action trigger pull averaged 5 pounds, 9 ounces. I use two different RCBS trigger pull scales for measuring a double-action revolver's trigger pulls. The

Our sample's trigger pull averaged 5 pounds, 9 ounces in single-action mode and 11 pounds in double-action mode. It was as smooth as Joel's 1995-vintage Python.

The Python utilizes a transfer-bar firing mechanism and a frame-mounted firing pin. Note the revolver's grooved hammerspur.



The Python's cylinder holds six rounds of ammunition, and it rotates clockwise in operation. It's chambered for .357 Magnum, which means it also fires .38 Special ammo.

The new Python's cylinder release is shaped just like the original Python's. Pulling the release to the rear allows the cylinder to swing out to the left side.

one I use for measuring single-action mode maxes out at 8 pounds and is graduated in 2-ounce increments. It's shown in the introductory photograph. The other RCBS trigger pull scale I use to measure double-action mode maxes out at 25 pounds and is graduated in 4-ounce increments. Anyway, the new Python's single-action trigger pull is a little heavier than I prefer, but its double-action trigger pull is less than what I'm used to. As I said earlier, the mechanism is very smooth.

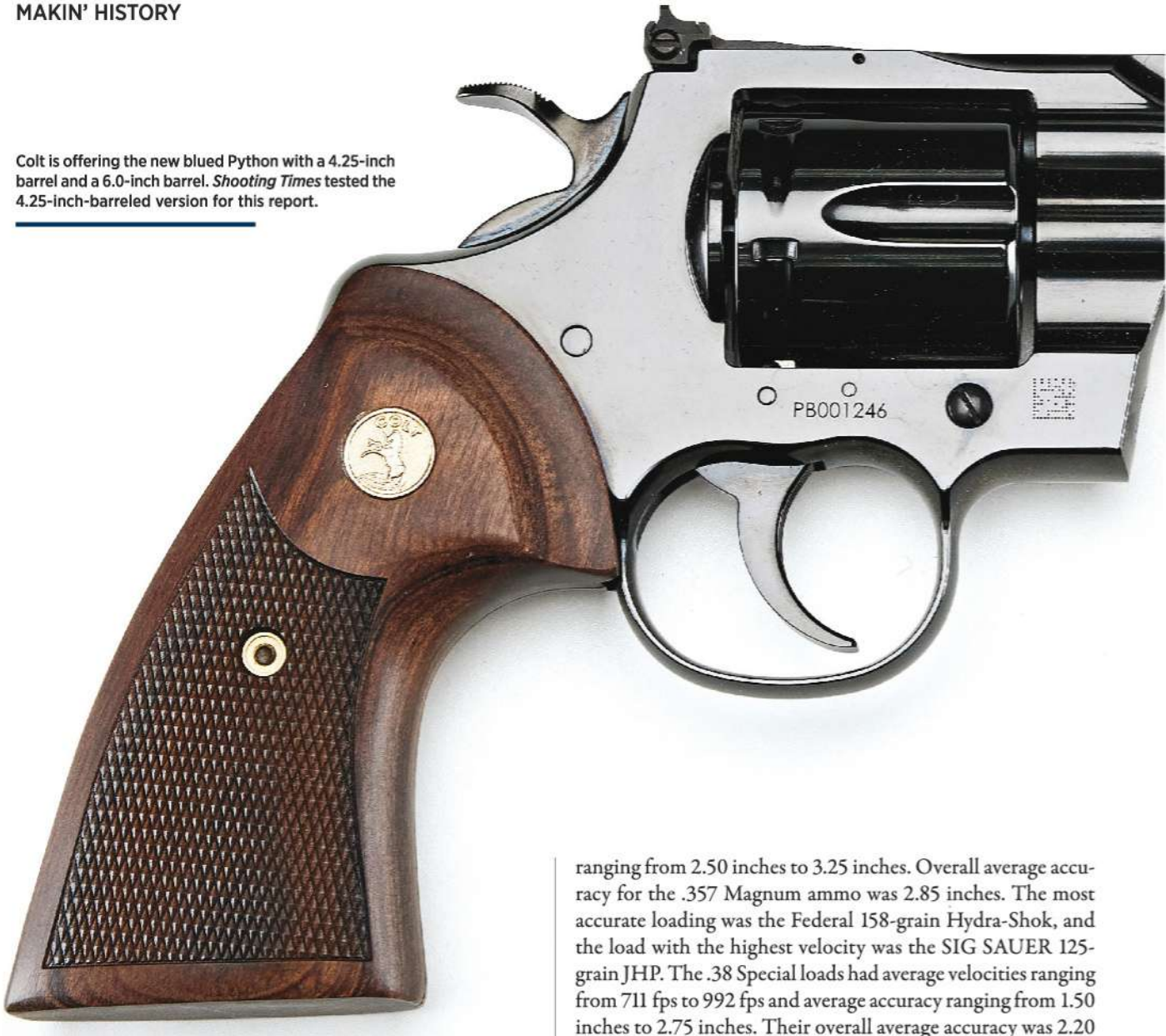
The new Python's hammer is blued, and the hammerspur is grooved. It is oval shaped and measures 0.424 inch wide at the widest point. The Python uses a transfer-bar firing mechanism and a frame-mounted firing pin.

The cylinder is 1.55 inches in diameter, and it holds six rounds. It is fluted, and the front edge is beveled, but the chambers are not recessed. The chamber throats measure 0.351 inch, 0.349 inch, 0.354 inch, 0.355 inch, 0.353 inch, and 0.353 inch. That's excellent consistency. The barrel-cylinder gap measures 0.005 inch. And the cylinder rotates clockwise, just like the original. The cylinder release also is shaped just like the original. Pull the release to the rear to allow the cylinder to be swung out to the left side.

The barrel features a full-length underlug and a ventilated rib on top. The rib is 0.251 inch wide, and its top is smooth. Since our sample has the 4.25-inch-long barrel, the rib has three vents. The barrel diameter is 0.738 inch at the muzzle end, and the muzzle is recessed. The left-hand twist rate is one turn in 14 inches.

The front sight is a red ramp type, with the blade measuring 0.155 inch thick and 0.176 inch tall. It is held in place by a setscrew that is accessed from the front of the vent rib, and that makes it user-replaceable. The rear sight is recessed into the topstrap. It is adjustable for windage and elevation, and it has a smooth, all-black face and angled corners. The square notch is 0.127 inch wide.

Our sample new Python weighs 42 ounces and is 9.75 inches long, 5.5 inches tall, and 1.55 inches thick. "Python .357" and "* .357 Magnum *" are marked on the left side of the barrel, and the left side of the frame has the rampant Colt logo below the cylinder release latch. "Colt's Mfg. Hartford CT USA" are marked on the right side of the barrel. The serial number is marked on the right side of the frame below the cylinder, and there is a QR code etched into the right side of the frame near the lower front corner. The new Python's MSRP is $1,599.



Colt is offering the new blued Python with a 4.25-inch barrel and a 6.0-inch barrel. *Shooting Times* tested the 4.25-inch-barreled version for this report.

Shooting Impressions

Putting the new Python through a thorough shooting session showed me that it was accurate and fun to shoot—very fun to shoot. I fired five .357 Magnum factory loads and five .38 Special factory loads in the new Python from a benchrest at a distance of 25 yards for accuracy and velocity. I fired five, five-shot groups of each load and averaged them for the accuracy results. I fired six rounds of each load for the velocity results and averaged them. I placed my chronograph 12 feet from the revolver's muzzle. All results are listed in the accompanying chart.

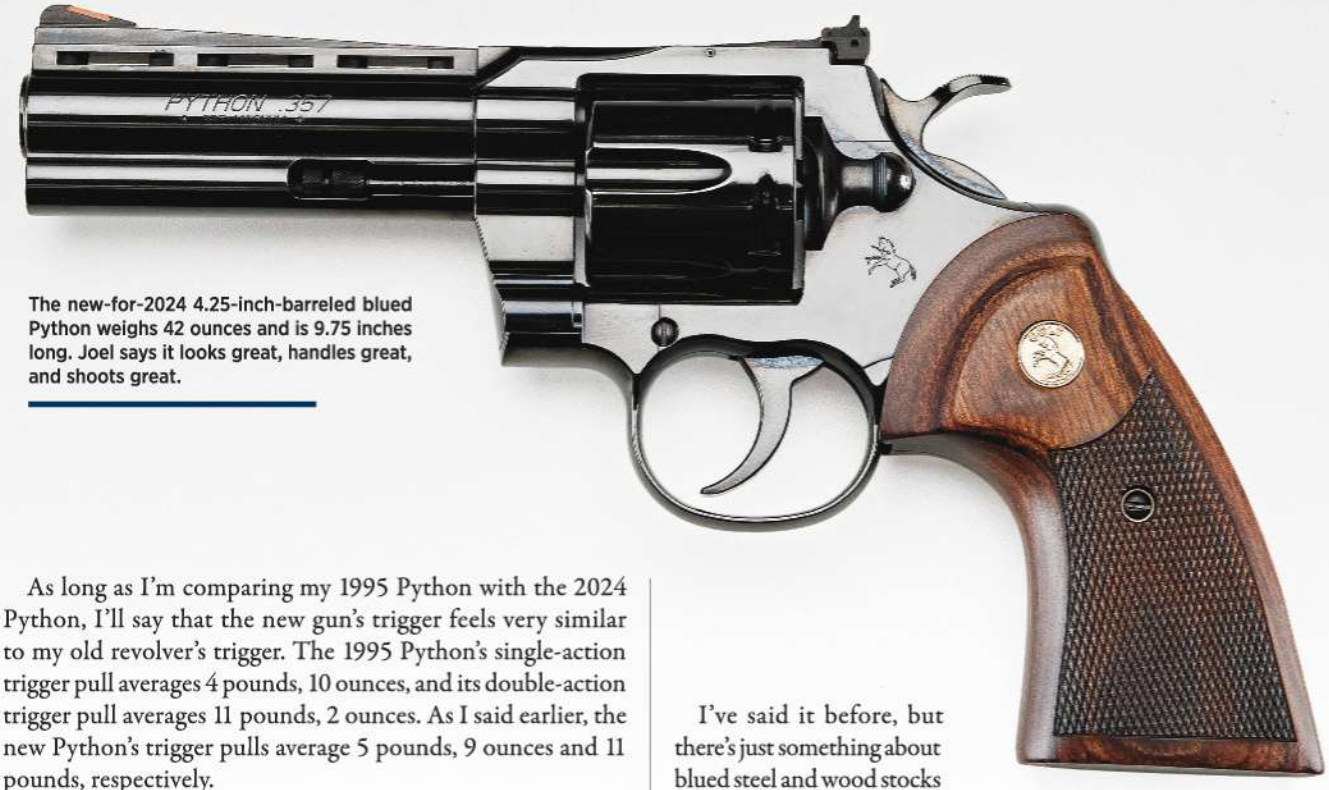
As you can see, the .357 Magnum loads had average velocities ranging from 1,193 fps to 1,391 fps and average accuracy ranging from 2.50 inches to 3.25 inches. Overall average accuracy for the .357 Magnum ammo was 2.85 inches. The most accurate loading was the Federal 158-grain Hydra-Shok, and the load with the highest velocity was the SIG SAUER 125-grain JHP. The .38 Special loads had average velocities ranging from 711 fps to 992 fps and average accuracy ranging from 1.50 inches to 2.75 inches. Their overall average accuracy was 2.20 inches. The most accurate loading was the Black Hills 148-grain WC, and the load with the highest velocity was the Remington Golden Saber 125-grain BJHP +P. The combined overall average accuracy for all 10 loads was 2.53 inches.

To put those figures into perspective, as I wrote for an old "The Shootist" column in the June 2014 issue of *Shooting Times*, my 1995-vintage Python averaged 1.25 inches, 1.48 inches, 1.50 inches, and 2.25 inches for the 125-grain, 140-grain, and 158-grain (two different loadings) factory-loaded .357 Magnum ammo I test-fired in it. One of the 158-grain loadings achieved the 1.25-inch average, and the other 158-grain loading turned in the 2.25-inch average. Averaging all four loads gives an overall average accuracy of 1.62 inches. Full disclosure, my old Python has an 8.0-inch barrel. The 6.0-inch-barreled old Python that Joseph featured in his "The Shootist" column elsewhere in this magazine averaged 2.50 inches at 25 yards for two .357 Magnum loads and two .38 Special loads.

PYTHON	
MANUFACTURER	Colt's Mfg. Co. LLC colt.com
TYPE	Double-action revolver
CALIBER	.357 Magnum/.38 Special
CYLINDER CAPACITY	6 rounds
BARREL	4.25 in.
OVERALL LENGTH	9.75 in.
WIDTH	1.55 in.
HEIGHT	5.5 in.
WEIGHT, EMPTY	42 oz.
GRIPS	Checkered walnut
FINISH	Black oxide
SIGHTS	Fully adjustable rear, red ramp front
TRIGGER	11.0-lb. double-action pull, 5.6-lb. single-action pull (as tested)
SAFETY	Transfer-bar firing mechanism
MSRP	$1,599

The Python's front sight is a red ramp type, and it is held in place by a setscrew located on the front of the vent rib, which means it can be changed out easily.

The rear sight is fully adjustable, and it has a smooth, all-black face. The corners are angled to help provide snagging.



The new-for-2024 4.25-inch-barreled blued Python weighs 42 ounces and is 9.75 inches long. Joel says it looks great, handles great, and shoots great.

As long as I'm comparing my 1995 Python with the 2024 Python, I'll say that the new gun's trigger feels very similar to my old revolver's trigger. The 1995 Python's single-action trigger pull averages 4 pounds, 10 ounces, and its double-action trigger pull averages 11 pounds, 2 ounces. As I said earlier, the new Python's trigger pulls average 5 pounds, 9 ounces and 11 pounds, respectively.

After shooting the five-shot groups, just to be thorough, I also fired 12-shot groups with each of the 10 different factory loads in the new Python. That's two full cylinders of ammo into a single group, and the results were informative. Generally, when you shoot all six charge holes in a revolver's cylinder, you'll likely find one or two that aren't quite as consistent as the others, causing groups to open up, sometimes quite a lot. Not so with this new Python. With three of the 10 loads fired, the 12-shot groups were essentially the same as the five-shot group average. Five out of the remaining seven loads were just a half-inch larger for the 12 shots. One of the other two loads went up a full inch, and the other one grew by 1.50 inches. Those results indicate how consistent this revolver is.

I've said it before, but there's just something about blued steel and wood stocks that appeals to me, and after handling and shooting the new blued Python, I can tell you that it *really* appeals to me. It looks great. It handles great. And it shoots great.

According to sources at Colt, the blued Python has been the number one request ever since the company introduced the new stainless-steel Python in 2020. Based on the sample I got my hands on, I'd say the shooters who want a new blued Python are going to be very happy. ST

COLT NEW PYTHON ACCURACY & VELOCITY

AMMUNITION	VEL. (FPS)	E.S. (FPS)	S.D. (FPS)	25-YD. ACC. (IN.)
.357 Magnum, 4.25-in. Barrel				
Black Hills 125-gr. JHP	1333	39	23	3.00
Remington HTP 125-gr. SJHP	1339	57	16	3.25
SIG SAUER 125-gr. JHP	1391	30	17	2.75
Hornady Handgun Hunter 130-gr. MonoFlex	1244	34	20	2.75
Federal 158-gr. Hydra-Shok	1193	30	17	2.50
.38 Special, 4.25-in. Barrel				
Hornady Critical Defense 110-gr. FTX +P	955	25	13	2.25
Black Hills 125-gr. JHP +P	972	30	16	2.75
Remington 125-gr. Golden Saber BJHP +P	992	37	15	1.75
Winchester Train & Defend 130-gr. JHP	820	38	13	2.75
Black Hills 148-gr. WC	711	29	12	1.50

NOTES: Accuracy is the average of five, five-shot groups fired from a sandbag benchrest. Velocity is the average of six rounds measured 12 feet from the gun's muzzle.

22 CREEDMOOR

HORNADY INTRODUCED THE 22 CREEDMOOR CARTRIDGE IN EXCLUSIVE PARTNERSHIP WITH HORIZON FIREARMS, AND IT MAY BE THE BEST LONG-RANGE PREDATOR CARTRIDGE EVER.

BY JOSEPH VON BENEDIKT

THIS IS A MULTI-FACETED STORY, BUT the crucial elements are that in 2023 Hornady submitted the 22 Creedmoor to SAAMI, legitimizing it. And Horizon Firearms has been the primary driving force behind the cartridge, offering rifles and ammunition for the cartridge for some time now. As the godfather of the 22 Creedmoor, Horizon built a tight relationship with Hornady, and now that the cartridge is going mainstream, Horizon has exclusive distributing privileges for Hornady 22 Creedmoor ammunition. (As the presenting member of SAAMI, Hornady has the obligation for proof and reference ammo for gunmakers.)

Based on a necked-down 6mm Creedmoor case, the 22 Creedmoor joins other current .22 centerfire cartridges, including (from left) .223 Remington .224 Valkyrie, 22 Nosler, .22-250, 22 Creedmoor, and .220 Swift.

22 CREEDMOOR	
PARENT CARTRIDGE	6.5 Creedmoor
WATER CAPACITY	52.6 grains filled to case mouth (as measured)
OVERALL CASE LENGTH	1.920 in.
TRIM-TO CASE LENGTH	1.910 in.
CARTRIDGE OVERALL LENGTH	2.70 in.
RIFLING	1:7; 1:8, 1:10
PRIMER	Large Rifle or Small Rifle depending on brass
PRESSURE LIMIT	62,000 psi

Horizon manufactures precision rifles chambered in 22 Creedmoor. I've been working with the Vandal model, and I'm super impressed with both the rifle and the cartridge. Let's take a look at each in turn, starting with Horizon's part in promoting the cartridge and its spectacular Vandal rifle chambered exclusively for the 22 Creedmoor.

Horizon Firearms built its first 22 Creedmoor in 2014 and aggressively tested the then-wildcat cartridge. The rifle company got behind the cartridge for the long haul, and reloading dies, Horizon-branded ammo, and the Horizon-owned website 22Creedmoor.com followed. By 2019 Horizon Firearms became synonymous with the 22 Creedmoor.

In 2019 and 2020, Peterson Cartridge and Hornady released 22 Creedmoor headstamped brass, solidifying the cartridge's future viability.

In 2021 Texas Ammunition began selling 22 Creedmoor factory-loaded ammo, and in 2023 the cartridge was "made" when Hornady submitted it to SAAMI. As mentioned earlier, Hornady will sell 22 Creedmoor factory-loaded ammo exclusively through Horizon, much the same way that Hornady 6mm GT ammo is sold exclusively through GA Precision.

More on 22 Creedmoor development and factory ammo offerings in a bit. Let's shift gears to the flashy (and awesome) rifle featured in this report.

To set the stage, it's worth noting that Horizon Firearms is owned by Kaspar Outdoors, which also owns Stiller actions, Iota stocks, and Texas Ammo. Why is this important? It means Horizon has primary access to excellent precision actions and carbon-fiber riflestocks.

The Rifle

This custom-level precision rifle retails for $2,499. I have to lead with that, because after unboxing, handling, and shooting it, I figured it would be priced on a par with a top-shelf rifle from Gunwerks, Proof Research, or AllTerra Arms.

Vandal and Vandal X (the lightweight version) are two of Horizon's CORE Series. These rifle models aren't customizable, but they have all the bells and whistles you could want. Horizon

also offers its fully custom SELECT Series rifles, which are proper bespoke firearms.

Other CORE Series models are available in a variety of popular precision rifle cartridges, but the Vandal is made only in 22 Creedmoor. Vandal rifles feature 18-inch barrels ideal for suppressing—and those barrels are visually arresting thanks to "pins & needles" fluting. It's an unconventional and really interesting pattern.

Vandal barrels don't just look cool, they're premium match-grade tubes of 416R stainless steel with a 1:8 twist rate that's ideal for long, sleek .22-caliber projectiles. Up front, Vandal barrels are cut with 5/8-24 threads, so they're suppressor-ready and come with a nice knurled thread cap.

Vandal carbon-fiber Iota EKO stocks have visual pizzazz equal to the racy-looking barrels. They're painted with an aggressive texture that's grip-worthy in mud, blood, and sweaty conditions—and pop with eye-catching red/gray/black graphics.

On a more practical note, the carbon Iota EKO stock is configured properly for modern precision-shooting tasks, with a vertical pistol grip shaped just right; a high comb to support a good cheekweld; and a flat-bottomed, hand-filling fore-end to aid accurate shooting whether off sandbags or a quickly improvised field position. Each stock is hand laid of carbon fiber and hand-finished, so the pattern and color vary slightly from stock to stock.

Barrel and stock are mated with a Stiller action. Custom rifle aficionados know the brand. Stiller has been a household name among precision riflemen for decades. The action is a Remington 700 clone, so it's compatible with Model 700 triggers, scope mounts, stocks, and other accessories. The bolt is fitted with a Sako-type extractor,

VANDAL	
MANUFACTURER	Horizon Firearms horizonfirearms.com
TYPE	Bolt-action repeater
CALIBER	22 Creedmoor
MAGAZINE CAPACITY	5 rounds
BARREL	18 in.
OVERALL LENGTH	37.5 in.
WEIGHT, EMPTY	7.3 lbs.
STOCK	Carbon fiber
LENGTH OF PULL	13.75 in.
FINISH	KG Coatings NaNo Series Gun Kote
TRIGGER	3.0-lb. pull (as tested)
SIGHTS	None
SAFETY	Two position
MSRP	$2,499

Horizon Firearms could be considered the godfather of the 22 Creedmoor. The company's Vandal rifle features a Stiller action, an 18-inch barrel, the Iota EKO carbon-fiber stock, an AICS-style Magpul five-round detachable magazine, and a TriggerTech Primary trigger. It weighs 7.3 pounds.

and there's a nice bolt-release button at the left rear of the receiver. Barrels and actions are finished in KG Coatings NaNo Series Gun Kote—an excellent abrasion- and corrosion-resistant finish.

Vandal rifles feed from a single-stack AICS-type Magpul PMAG 5. Horizon's bottom metal features a nice paddle-shaped mag release just forward of the trigger bow. I haven't tried other magazines, but presumably most AICS-type mags will fit and function.

Horizon fits each Vandal rifle with a TriggerTech Primary trigger. The one on my test rifle is super crisp and weighs exactly 3.0 pounds as shipped. That's heavier than most competitive shooters like, but it is just right for a predator rifle that may be used in subzero temps. Conveniently, the trigger is user adjustable without taking the action out of the stock.

Up top, each Stiller Horizon action is fitted with a full-length 1913-spec Picatinny rail. It makes mounting a scope simple, and it's optimal if using a relatively heavy precision optic like the Revic Acura RS25i shown in my photograph. If I were setting up the rifle with a lighter scope for backcountry hunting, I'd pull the rail off and mount the scope nice and low to the action in a set of Talley lightweight alloy rings.

Hornady's factory-loaded 22 Creedmoor ammo sports properly headstamped brass and very consistent precision—a hallmark of Hornady Match factory ammo.

The Ammo

Predictably, the 22 Creedmoor is created by necking down 6.5mm Creedmoor cases to hold 0.224-inch-diameter bullets. The cartridge is spec'd with a relatively fast 1:8 twist to make it compatible with modern long-range bullets.

Horizon and Hornady settled on 80-grain bullets as optimal for 22 Creedmoor factory-loaded ammo, pushed to a muzzle velocity of nearly 3,300 fps. Heavier bullets are available and do provide superior aerodynamics, but they are commonly finicky about accuracy. Bullets like Hornady's 88-grain ELD Match and Sierra's 90-grain MatchKing are well suited for 22 Creedmoor handloaders who like to tinker and fine-tune their ammo.

What drove development of the 22 Creedmoor? Coyote competitions. According to a history of the cartridge posted on 22Creedmoor.com, hunters in Texas's high-stakes coyote-calling tournaments were searching for a flat-shooting, hard-hitting cartridge with minimal recoil, minimal wind drift, and maximum downrange clobber.

The 22 Creedmoor with long, sleek, high-ballistic-coefficient bullets was the answer. Although its 80-grain bullets start slower than 55-grain pills from the .22-250 and .220 Swift, they hold onto speed much better. Past 300 yards or so they're more effective, and the farther the shot, the greater the advantage.

About the only cartridge that comes close to matching the 22 Creedmoor's performance is the 6mm Creedmoor, and it recoils more and tears up fur worse. Plus, it's not as laser-flat inside 400 yards.

Let's look at some specific numbers, comparing the 22 Creedmoor's 80-grain ELD Match bullet (G1 BC of .485) to the .22-250 with a 55-grain V-Max bullet (G1 BC of .255). We'll use standardized sea-level atmospherics and a 200-yard sight-in distance.

A Hornady 80-grain ELD Match bullet launched at 3,285 fps drops 31.1 inches at 500 yards. It drifts 15.4 inches in a 10-mph crosswind. Impact velocity at 500 yards is 2,315 fps, and the energy is 952 ft-lbs.

In contrast, the Hornady 55-grain V-Max .22-250 bullet launched at 3,680 fps drops 34.5 inches at 500 yards. It drifts 30.4 inches—double what the 22 Creedmoor bullet drifts.

Impact velocity at 500 yards is 1,840 fps, and the energy is just 413 ft-lbs.

No wonder the 22 Creedmoor proved to be a game-changer in the coyote-calling competition world.

How about farther? The .22-250 load goes transonic at about 825 yards, so that's as far as we can draw a useful comparison. (The speed of sound is generally accepted as 1,128 fps.) As a triumphant side note, the 22 Creedmoor load stays supersonic all the way to 1,300 yards.

At 800 yards, the 22 Creedmoor's 80-grain ELD Match bullet drops 122 inches and drifts 44.6 inches in that 10-mph crosswind. Impact velocity is 1,817 fps (nearly as much as the .22-250 back at 500 yards), and impact energy is 586 ft-lbs.

At that distance, the .22-250's 55-grain V-Max bullet drops 170 inches and drifts 98.3 inches. Impact velocity is 1,147 fps—less than many popular .22 rimfire loads. Retained energy is a paltry 160 ft-lbs.

Out of curiosity, and because I love the 6mm Creedmoor for big predators (although it's hard on fur), I crunched 800-yard numbers for the 108-grain ELD Match bullet (G1 BC of .536) started at 2,960 fps from the muzzle. That bullet drops 147 inches at 800 yards. Drift in a 10-mph crosswind is 46.3 inches. Impact velocity is 1,693 fps, and impact energy is 687 ft-lbs.

That's right, the only factor where the 6mm Creedmoor outperforms the 22 Creedmoor at 800 yards is impact energy. Drop is considerably more, drift is a tad more, and retained velocity is less. Recoil is worse. For comparison, in an 8.0-pound rifle the .22-250 with a 55-grain bullet at 3,680 fps over 38 grains of powder produces 6.1 ft-lbs of recoil energy whereas the 22 Creedmoor with an 80-grain bullet at a velocity of 3,285 fps over 44 grains of powder has 9.24 ft-lbs of recoil, the 6mm Creedmoor with a 108-grain bullet at 3,000 fps over 45 grains of powder has 11.95 ft-lbs of recoil, and the 6.5 Creedmoor with a 140-grain bullet at 2,700 fps over 43 grains of powder has 13.94 ft-lbs of recoil.

Now, before I leap joyfully in the air and proclaim the 22 Creedmoor to be the best lightweight centerfire for everything, there are some modifying factors. Primarily, the cartridge is quite overbore. Meaning for its bore diameter it burns way too much propellant to be an efficient cartridge.

Unlike its grandfather (the 6.5 Creedmoor), which isn't overbore at all and is in fact wonderfully balanced and efficient, or its father (the 6mm Creedmoor), which is only nearly overbore and is still efficient enough to serve as a high-volume competition cartridge, the 22 Creedmoor has the potential to be a barrel burner.

Three factory loads will be available exclusively through Horizon Firearms, but handloading the 22 Creedmoor is not difficult. Data is available from Hodgdon; dies are available from Hornady, Redding, RCBS, and Forster; and there are myriad good projectiles from many major bullet manufacturers.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This means it's not ideal for PRS-type competition, where running 200 rounds in fast-paced 10-shot strings in one weekend is the norm.

Not that the 22 Creedmoor is a fire-breathing dragon of a cartridge like the 28 Nosler. It won't likely burn out in 300 to 500 rounds—unless you shoot a lot of fast-paced 10-shot strings.

It's a pity, because I'd love to put the mild-kicking, laser-like 22 Creedmoor to work in PRS shooting. But out of pure respect for the cartridge and what it's so good for, I'll confine it to hunting. When fired once or twice at the occasional coyote, Coues deer, or pronghorn, I suspect a 22 Creedmoor barrel would have a very long life—potentially 3,000 rounds or more.

Another modifying factor is popular barrel length. As with all cartridges, the 22 Creedmoor loses velocity with every inch chopped off the 24-inch standard barrel length. With that in mind, short barrels are currently so popular Horizon doesn't even offer Vandal rifles with shorter barrel lengths; all are fitted with 18-inch barrels.

How much does this affect velocity? The test rifle averaged 3,020 fps with Hornady factory ammo and 3,080 with Texas Ammunition loads. If we average the two at 3,050 fps, we can deduce that the 22 Creedmoor loses about 25 fps per inch of barrel.

The .22-250, 6mm Creedmoor, .243 Winchester, and every other cartridge in the realm does the same—or worse. Some lose as much as 50 or 60 fps per inch of reduced barrel length.

If you want to shoot suppressed with a very short barrel, that's an acceptable trade-off. At 3,050 fps muzzle velocity, the 22 Creedmoor still stays supersonic to 1,175 yards. At 800 yards, it drops 145 inches, drifts 50.4 inches, and impacts at 1,644 fps and with 480 ft-lbs of energy. Aside from less energy, that's quite similar to the 6mm Creedmoor with a full-length 24-inch barrel.

A final caveat to the 22 Creedmoor is a surprising benefit. It's apparently a quite capable deer cartridge. Lots of folks shoot 80-grain .243-caliber bullets at deer. A 0.224-inch 80-grain ELD-X bullet has as much energy as a 0.243-inch 80-grain bullet, and it holds that energy farther downrange. Plus, it has a higher sectional density (.228 compared to the .243's .194), which is a measure of its penetration potential. Now, if Hornady will just make a heavy-for-caliber, aerodynamic, monometal CX bullet for us who love deep-penetrating hunting bullets.

Joseph fired these two 22 Creedmoor factory loads in the Vandal rifle. Both achieved sub-half-MOA accuracy in less than ideal weather conditions.

HORIZON VANDAL ACCURACY & VELOCITY

AMMUNITION	VEL. (FPS)	E.S. (FPS)	S.D. (FPS)	100-YD. ACC. (IN.)
22 Creedmoor, 18-in Barrel, 1:8 Twist				
Hornady 80-gr. ELD Match	3080	70	21	0.47
Texas Ammo 80-gr. ELD Match	3020	58	26	0.28

NOTES: Accuracy is the average of three, three-shot groups fired from a bipod, without allowing the barrel to cool. Velocity is the average of nine rounds measured 10 feet from the gun's muzzle. Ambient temperature: 25 degrees Fahrenheit. Elevation: 4,600 feet. Wind: gusting lightly

Range Results

With a Gunwerks 6IX steel suppressor spun onto the Vandal's muzzle, I shot the two factory loads I was able to source. It was a cold, windy December day. Temps hovered around 25 degrees Fahrenheit, and ice crystals blew in a constant flurry across the range.

Still, the 22 Creedmoor Vandal performed wonderfully. Both loads averaged sub-half-MOA groups. Felt recoil was negligible. The effect of the zippy 80-grain projectiles on downrange steel was more discernible.

Only one parameter performed below par. The velocity extreme spreads and standard deviations were a bit wider than I prefer. No doubt this was mostly due to the cold, which often causes gunpowder to be a bit less consistent, and to a lesser extent the short 18-inch barrel.

The Vandal rifle operated flawlessly. I walked away from that range session scheming how to scrounge up the funds to buy it. One just doesn't send back a consistently sub-half-MOA rifle if one can help it. ST

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THE MODESTLY PRICED STEVENS MODEL 334 BOLT-ACTION RIFLE IS CHAMBERED FOR POPULAR HUNTING CARTRIDGES, AND OUR TESTING PROVED IT IS QUITE SUITABLE FOR THAT PURPOSE.

BY STEVE GASH

RECENT ECONOMIC TRENDS HAVE ALTERED THE MARketplace for many items, and deer rifles are not immune to such artificial reallocations of resources. Many firms have introduced low-cost models from which the prospective rifle buyer can choose. A recent addition to this group is the Stevens Model 334 that's imported by Savage Arms Co. The rifle's MSRP is $389 or $509, depending on the choice of riflestock.

The Model 334 bolt-action rifle was announced over a year ago at the 2023 SHOT Show, and I requested a test gun right away. Be that as it may, the rifle didn't arrive until mid-July. The Model 334 is currently available in .308 Winchester, 6.5 Creedmoor, and .243 Winchester. My test gun is chambered for the .243.

Key Features

The Stevens Model 334 is made for Savage by the well-respected firm ATA in Istanbul, Turkey. ATA makes many different types of firearms and exports them all over the world. The Model 334 is an example of clever design and manufacturing, and being available in three effective and popular cartridges sure helps. There are plenty of high-dollar rifles on the market, but a lot of hunters just want a solid, serviceable rifle that they can use to fill the freezer with venison. The Model 334 certainly can do that.

Like many current rifles, the Model 334 has a three-lug bolt. It provides a 60-degree bolt lift. Unlike some three-lug bolts, the Model 334 doesn't need a cheater on the bolt handle to open the action; it opens rather easily. The bolt looks bead-blasted and is finished in what Stevens calls "silver." Okay, so it's probably not silver, but it's darn attractive. The boltface holds a sliding-plate extractor and a plunger-type ejector. Nothing fancy, just good, solid machinery. The bolt body of my test rifle measures a fat 0.784 inch. The locking lugs are 0.496 inch in length, just about the same diameter as the bolt body, and provide a solid lockup.

The Stevens Model 334 is offered with a Turkish walnut stock (MSRP: $509) or a synthetic stock (MSRP: $389), a 20-inch or 22-inch barrel (depending on the chambering), and a factory-installed Picatinny optic rail.

Interestingly, the bolt body has several flutes. There are two flutes about 2.67 inches long at what we can call the 12 and 9 o'clock positions, and three shorter lugs at roughly 2, 4, and 6 o'clock.

The Model 334's carbon-steel barrel for the .243 and .308 Winchesters is 20 inches long, while the 6.5 Creedmoor's barrel is 22 inches long. The twist rate for the .243 is a steep one turn in 9.25 inches (1:9.25), for the .308, the twist is 1:10, and for the Creedmoor, it's 1:8.

My .243 rifle's barrel has six grooves, and it is button rifled. The muzzle measures 0.708 inch, and it has a nice 11-degree target crown.

The Model 334 can be had with a synthetic stock or a walnut stock. Mine has the walnut stock, and it is nice-looking Turkish walnut. It has a rich color and even a little figure. It has a smooth oil finish, a 1-inch-thick recoil pad, and sling-swivel studs. The stock does not have a Monte Carlo comb, but it does have the hint of a cheekpiece on the right-hand side of the buttstock. I think that's classy. Both sides of the pistol grip and fore-end have nice checkering. I'm guessing it's machine cut, but that doesn't bother me. It's really well done, looks good, and feels great.

The barrel is totally free-floated in the stock, but the space between the barrel and the wood is not excessive. It is very uniform throughout its length.

A big safety feature is the three-position safety on the right rear of the receiver. In the rear position, the gun is "Safe." This blocks the sear and locks the bolt. The middle position allows for bolt movement, but the rifle is still "Safe." This allows a cartridge to be safely removed from the chamber with the safety on. In the forward position, the safety is off, and the rifle is ready to fire.

The trigger guard "bottom metal" isn't metal at all. It's a tough, black plastic. The trigger is steel.

Regarding the trigger, the Savage literature on the web (circa January 2023) stated that the two-stage trigger is adjustable, but page 21 of the owner's manual states that the "trigger screw is fixed and is factory set, do not try to force it." Additionally, I recently received a communiqué from a Savage representative stating that after the PR release at the initial launch, the trigger was changed to a "set weight" and is "not adjustable." So I say don't fiddle with the trigger screw.

One might think about it, however, because the trigger pull weight of my test rifle averaged 6 pounds, 5.9 ounces. Plus, it has a fair amount of take-up. As best I can measure it, the trigger moves about 0.095 inch before encountering resistance. After that, the trigger has to move about 0.033 inch to fire the rifle. With practice, I got used to it, and I don't think it impeded the rifle's accuracy.

Shooting Impressions

Speaking of the rifle's accuracy, to put it to the test, I fired 11 factory loads and six handloads. The overall average accuracy for all loads was 1.29 inches for five-shot groups at 100 yards.

I was not enamored with the height of the supplied Picatinny rail, so I removed it and tried to install a pair of Weaver bases, which are the same as for the Savage Model 110, numbers 61 (front) and 46 (rear). However, I ran into a problem. While the hole spacing is indeed the same as the Model 110, the thread pitch is larger, and darned if I could find any screws that matched. (They may be metric, as they didn't fit any blade in my thread gauge.) So I ended up mounting the Leupold VX-1 3-9X scope in Weaver 1-inch rings and attaching them to the Picatinny rail. This put the scope about 2.6 inches above the line of bore, but all went well from then on out.

I followed my usual testing protocol. I fired three, five-shot groups at 100 yards from a benchrest with each load. The barrel was cooled as necessary and cleaned after each 15-round series, and one fouling round was fired before the start of the next load. Ammo supply in my neck of the woods was tight,

The three-position sliding safety is located on the right-hand side of the receiver.

The rifle features a detachable box magazine, and the *Shooting Times* sample holds three rounds of the .243 Winchester ammunition.

MODEL 334 WALNUT

MANUFACTURER	Savage Arms savagearms.com
TYPE	Bolt-action repeater
CALIBER	.243 Winchester
MAGAZINE CAPACITY	3 rounds
BARREL	20 in.
OVERALL LENGTH	41.25 in.
WEIGHT, EMPTY	7.6 lbs.
STOCK	Checkered Turkish walnut
LENGTH OF PULL	14.5 in.
FINISH	Matte black barreled receiver, oil-finished stock
SIGHTS	None
TRIGGER	6.4-lb. pull (as tested)
SAFETY	Three position
MSRP	$509

but I managed to round up 11 factory loads, with bullet weights varying from 55 to 100 grains, with standard cup-and-core, polymer-tipped, and copper-alloy bullets represented.

The overall average of the factory loads was a tidy 1.45 inches. Not match worthy, but definitely deer and antelope ready. And some loads shot very well, indeed. For example, Hornady's Superformance load with the 80-grain GMX (3,207 fps) turned in a 0.86-inch average. The Superformance load with the 95-grain SST bullet averaged 0.93 inch (2,955 fps). And Remington's 95-grain AccuTip load averaged 0.88 inch (2,835 fps).

Some folks may balk at the 20-inch barrel on a .243 Win. rifle and worry about the velocity loss, so I compared the velocities of the factory loads in the Model 334 with the velocities listed by the respective ammo manufacturers. As we all know, there can be considerable "blue sky" in factory velocities, taken in tight SAAMI minimum-spec barrels that are usually 24 inches long. In other words, their systems are much different from our home systems.

Overall, the difference in velocities averaged 6.42 percent. The numbers are shown in the accompanying chart. The two 58-grain varmint loads lost 284 fps and 325 fps. The deer loads lost less. These data are interesting, but I have to say they don't mean all that much. What matters is how the loads shoot in the specific rifle and what the actual velocities are.

The .243 isn't just for deer, so as I alluded to earlier, I included some varmint loads in my testing. Nosler's Varmageddon load with the 55-grain Flat Base Hollow Point clocked a sizzling 3,580 fps and averaged 0.92 inch. Winchester's varmint load with the 58-grain Polymer Tip bullet averaged 1.09 inches at 3,525 fps.

The six handloads that I fired in the Model 334 are ones that I have had good luck with in several other .243 rifles, and they are loaded with mostly deer-weight bullets (from 80 to

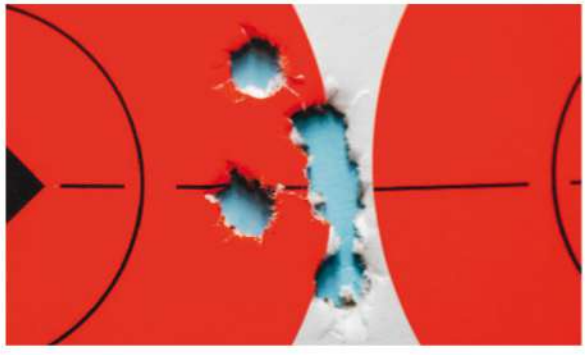
.243 WINCHESTER VELOCITY COMPARISON

AMMUNITION	LISTED VEL. (FPS)	MEASURED VEL. (FPS)	DIFFERENCE (FPS)	DIFFERENCE (PERCENT)
Nosler Varmageddon 55-gr. FB HP	3800	3580	220	5.79
Hornady Superformance 58-gr. V-Max	3925	3641	284	7.24
Winchester Varmint-X 58-gr. Polymer Tip	3850	3525	325	8.44
Hornady Superformance 75-gr. V-Max	3580	3408	172	4.80
Hornady Superformance 80-gr. GMX	3425	3207	218	6.36
Winchester Deer Season 85-gr. Copper EXP	3260	3076	184	5.64
Federal 90-gr. AccuBond	3100	2984	116	3.74
Hornady Superformance 95-gr. SST	3185	2955	230	7.22
Remington Premier 95-gr. AccuTip	3120	2835	285	9.13
Browning BRX 97-gr. Matrix Tip	3100	2933	167	5.39
Hornady American Whitetail 100-gr. InterLock	2960	2756	204	6.89

100 grains). The rifle's 1:9.25 twist did just fine with them. Velocities were from around 2,800 to almost 3,000 fps.

A word of caution. There are many different brands of ammo available, and case dimensions have been shown to vary considerably. So one shouldn't switch case brands after you've worked up a good load in one case brand, as high pressures can result.

The handload with 36.0 grains of Varget with 80-grain bullets is my "get acquainted load" for the .243. It's mild but usually shoots well. The Model 334 liked this load with the Nosler Ballistic Tip bullet better than with the Sierra SBT. Hunters have relied on Nosler Partition bullets for decades, and the 0.243-inch 95-grain version over 42.1 grains of Reloder 19 produced an average velocity of 2,990 fps and an average accuracy of 1.18 inches. The handloads' overall average accuracy was 1.13 inches.



The Stevens Model 334 acquitted itself well on the shooting range, averaging 1.29-inch, five-shot groups at 100 yards with a total of 17 different .243 Win. loads. Steve says it's ready to hunt.

A bane of rifle testing is the buildup of jacket fouling, to the detriment of accuracy. Plus, frequent bore cleaning and firing fouling shots eat up time and ammo. Thus, I am delighted to report that during range testing, the barrel (A) didn't foul badly at all, and (B) it cleaned up easily. This is an unexpected bonus in a rifle of this modest price.

And here's an odd quirk. On my initial range sessions, I noted that the bolt was hard to close. I finally figured out that it was caused by the extractor being pushed over the case rim. I had to really slam the bolt closed on a round. This situation loosened up as testing proceeded and is nothing that would hamper a hunter in the field.

The bottom line is this modestly priced rifle acquitted itself nicely on the range. It digested all the rounds I fed it without a malfunction of any kind. I would suggest the company improve the trigger pull, if that can be done. But as the range results show, it shoots well enough as is. Hunters in the market for a nice deer rifle should give the Stevens Model 334 a look. ST

STEVENS MODEL 334 ACCURACY & VELOCITY

BULLET	POWDER (TYPE)	POWDER (GRS.)	CASE	PRIMER	COL (IN.)	VEL. (FPS)	S.D. (FPS)	ENERGY (FT-LBS)	100-YD. ACC. (IN.)
.243 Winchester, 20-in. Barrel, 1:9.25 Twist									
Nosler 80-gr. Ballistic Tip	Varget	36.0	Rem.	Fed. 210	2.760	2887	16	1481	0.99
Sierra 80-gr. SBT	Varget	36.0	Rem.	Fed. 210	2.650	2761	23	1354	1.28
Speer 90-gr. Hot-Cor SP	H4350	40.0	Rem.	Fed. 210	2.735	2842	18	1615	1.03
Berger 95-gr. Classic Hunter	VV N555	40.0	Rem.	WLR	2.722	2849	19	1713	1.13
Nosler 95-gr. Partition	Reloder 19	42.1	Horn.	Fed. 210	2.680	2990	21	1886	1.18
Speer 100-gr. Grand Slam	VV N555	39.5	Rem.	WLR	2.695	2818	19	1764	1.14
Nosler Varmageddon 55-gr. FB HP	Factory Load				2.452	3580	16	1566	0.92
Hornady Superformance 58-gr. V-Max	Factory Load				2.575	3641	15	1708	1.74
Winchester Varmint-X 58-gr. Polymer Tip	Factory Load				2.560	3525	14	1601	1.09
Hornady Superformance 75-gr. V-Max	Factory Load				2.612	3408	9	1935	1.80
Hornady Superformance 80-gr. GMX	Factory Load				2.630	3207	26	1827	0.93
Winchester Deer Season 85-gr. Copper EXP	Factory Load				2.656	3076	23	1786	2.18
Federal 90-gr. AccuBond	Factory Load				2.660	2984	32	1780	1.76
Hornady Superformance 95-gr. SST	Factory Load				2.620	2955	15	1842	0.86
Remington Premier 95-gr. AccuTip	Factory Load				2.613	2835	32	1696	0.88
Browning BXR 97-gr. Matrix Tip	Factory Load				2.660	2933	20	1853	1.95
Hornady American Whitetail 100-gr. InterLock	Factory Load				2.604	2756	23	1687	1.85

NOTES: Accuracy is the average of three, five-shot groups fired from an indoor benchrest. Velocity is the average of 10 rounds measured eight feet from the gun's muzzle. Range temperature was 78 to 93 degrees Fahrenheit.

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LIVING UP TO ITS LEGACY

SHOTGUNNING IS ART, NOT SCIENCE, SO THE MOST IMPORTANT THING ABOUT A SHOTGUN IS HOW IT FEELS. WINCHESTER'S SXP (SUPER X PUMP) FEELS LIKE A MODEL 12.

BY CRAIG BODDINGTON

WINCHESTER STARTED ITS SLIDE-ACTION SHOTgun tradition in 1893 with the exposed-hammer Model 1893 (patent by John Moses Browning). Not quite strong enough for smokeless powder, the Model 1893 was improved and modified into the similar Model 1897. Amazingly, the '97 was manufactured until 1957, despite its archaic exposed-hammer design. In 60 years of production, more than a million were made.

The internal-hammer Model 1912, introduced in August of that year, was a combination of existing Browning patents and improvements by Browning and Winchester's great engineer Thomas Crossley Johnson. The Model 12 was advertised as "the perfect repeater." In its day, it surely was.

I have little experience with the earlier exposed-hammer guns. In their days, most shotgun stocks had a lot of drop at the comb and the heel, at best shooting "dead-on," if not low. Later, as trapshooting (rising clays) became popular, drop at the comb and the heel decreased, and we could hit birds by seeing them over the top of the bead, rather than covering them. For me, the typical Model 12 had a near-perfect stock for upland birds, putting patterns just a bit high. Although not high enough for serious trapshooting, it was good for skeet and sporting clays.

In the early 1960s I shot my first game, a bobwhite quail, with my dad's 20-gauge Model 12. I wish I still had it, but I have my grandfather's 12-gauge Model 12 with a 28-inch barrel and Modified choke that was given to him by my grandmother as a first anniversary present in 1918.

In 1973 I bought a 1950 Model 12 skeet gun from trapshooting friend Dave Bledsoe. I still have it. Dubbed "Death Ray," its WS1 choke prints an even barn-door pattern that no bird can fly through. In 2007 I used that Model 12 to win the Grand National Quail Hunt in Enid, Oklahoma. Luck was a factor, and I had a pretty good day. Even so, I'm as proud of that as all the big game and various awards because I started as a quail hunter with a Winchester pump gun.

As a lifelong lefty, i'm probably foolish to shoot a right-hand-eject shotgun, whether pump or semiautomatic. Sooner or later, you'll get debris in your eyes. I have, many times. But I still keep coming back. With shotguns, it's all about feel. Speed is less important, but as other action types have become more dominant, we are forgetful of just how fast the slide action is.

The backward movement in working the slide is neutral because we're in recoil. Movement in slamming the forearm forward is positive because we are pointing the supporting arm and hand at the target. A double-barrel gun is faster for the second shot, but with practice, no manually operated action is as fast for third and subsequent shots. As often proven by exhibition shooters, in experienced and practiced hands, the slide action may be faster than the semiautomatic.

When I was young, with the best eyes and fastest reflexes I will ever have, and with a young hunter's eagerness to take more birds, I tried a semiauto. I wasted more shells, and I doubt my hits increased. That business of pushing the supporting arm and hand toward the bird is a very real advantage to the slide action, not to be underestimated. It's almost a subconscious check of your aim as the gun goes into battery for the next shot. After a couple of seasons, I abandoned the semiauto and returned to the Model 12.

The SXP

That was a lifetime ago. Today, I own and shoot the full gamut of shotgun actions, but I still love pump guns. At our OSG editorial roundtable, the Winchester folks had several of their current SXP variants in the rack at the Crazy Quail range. I grabbed a walnut-stocked Field model and stepped to the line. It felt good. So good that to break clays, it seemed all I needed to do was wave it in the general direction of the target. Seemed to me this shotgun was worth a story.

The stock dimensions are familiar and standard: 13.75-inch length of pull, which fits Joe Average 5-foot, 9-inch me perfectly, 1-inch drop at the comb, 2.0-inch drop at the heel, which puts me looking slightly down at the rib, much like a Model 12 that's older than me.

However, the SXP is very much not a Model 12. It locks with a rotating bolt (the Model 12 locked with a tilting bolt), and it has two action bars (the Model 12 had just one). These key features are in common with the Winchester Model 1200 that replaced the Model 12 in 1964. In 1978, with primarily cosmetic changes, Winchester's pump shotgun was redesignated the Model 1300, continuing until U.S. Repeating Arms ceased production in 2006. With nearly three million 1200s/1300s manufactured, it was a highly successful design. Although mechanically similar, the SXP is not a Model 1300. It also is not new. Trading on Winchester's Super X brand (in both firearms and ammo), plus its long tradition of pump shotguns, Fabrique Nationale Herstal (FN) introduced the SXP in 2009.

Continuing the lineage, with Winchester engineering and to Winchester specifications, the current SXP is manufactured in

SXP HIGH GRADE FIELD

MANUFACTURER	Winchester Repeating Arms winchesterguns.com
TYPE	Pump-action repeater
GAUGE	12, 3.0-in. chamber
MAGAZINE CAPACITY	Four 2¾-in. rounds
BARREL	28 in.
OVERALL LENGTH	48.75 in.
WEIGHT, EMPTY	7.13 lbs.
STOCK	Turkish walnut
LENGTH OF PULL	13.75 in.
FINISH	Gloss blue barrel and receiver, satin stock
SIGHTS	TruGlo fiber-optic front
SAFETY	Crossbolt
MSRP	$549.99

SXP HYBRID HUNTER

MANUFACTURER	Winchester Repeating Arms winchesterguns.com
TYPE	Pump-action repeater
GAUGE	12, 3½-in. chamber
MAGAZINE CAPACITY	Four 2¾-in. rounds
BARREL	28 in.
OVERALL LENGTH	49 in.
WEIGHT, EMPTY	7.0 lbs.
STOCK	Synthetic
LENGTH OF PULL	13.75 in.
FINISH	FDE barrel and receiver, Mossy Oak Bottomland camo stock
SIGHTS	TruGlo fiber-optic front
SAFETY	Crossbolt
MSRP	$449.99

According to Craig, the current SXP High Grade Field pump gun feels very much like the classic Winchester Model 12.

The Hybrid Hunter version of the SXP wears a Mossy Oak Bottomland camo synthetic stock and FDE finish on the receiver and barrel.

Modern features of the SXP include the six-lug rotating bolt and the reversible safety located in the trigger guard bow.

The SXP pump-action mechanism (top) utilizes two action bars, whereas the classic Model 12 (bottom) has just one. The Model 12 shown here is a 1916-vintage 20-gauge gun.

Turkey. Not a bad thing. Obviously, that keeps the price down, but there's more. With a large bird-hunting and clay-target-shooting public, the Turks build excellent shotguns. Among the three-dozen-plus variations of the SXP, about nine have traditional wood stocks, including trap guns with high combs. Turkey is one of the best remaining sources in the world for good gun stock walnut, so that's also a fit.

Like most repeating shotguns, the SXP feeds from a tubular magazine under the barrel. Capacity without a plug is four 2¾-inch shells. The slide release is a positive, round plunger located to the left rear of the trigger guard bow. The pushbutton safety is in the forward trigger guard bow, ahead of the trigger. As supplied, it's in right-hand mode, push left to "Fire," right for "Safe." Before 2020, the SXP safety wasn't reversible for easier left-hand operation, but the current SXPs, after 2020, have a safety that is easily reversible, thus more accessible for the left-hand trigger finger. For shotgunning, I'm totally left-handed. However, I did not reverse the safety. For the initial hunting I had in mind, I figured the test guns would be passed around, thus probably also used by right-handers. Trust me, after a lifetime of using wrong-handed guns, I can handle a right-hand safety—at least better than most right-handers could manipulate a left-hand safety.

As much as I love it, the Model 12 is downright tricky to take down, and removing or inserting a magazine plug is a nightmare for fumble-fingered folks like me. By comparison, the SXP is simple and easy in all ways. For barrel removal, with the slide to the rear, simply unscrew the knurled magazine cap and pull the barrel out. Reattach it in reverse.

As delivered, the magazine is plugged for two-shell capacity. To remove or reinstall the plug, remove the magazine cap. This exposes the internal polymer magazine spring retainer, which has a slot for a flat-head screwdriver. Push it down, rotate it a quarter-turn, and the retainer and spring can be pulled out. The three-shot adapter, or "plug," within the magazine spring, is easily removed and reinserted.

The trigger group and bolt also are easily removed for detailed cleaning. The SXP instruction manual even makes sense!

The SXP receiver is aluminum, the bore is chrome-plated, and the bolt is matte black chrome. With the SXP's myriad variations, it's dangerous to say "all," but most SXPs are back-bored, with Winchester's Invector-Plus interchangeable choke system. A choke tube wrench is supplied, and typically three tubes in Full, Modified, and Improved Cylinder are included.

Easily switched out, the tubes are clearly marked for choke restriction. However, with use, the printing will fade. Like most systems, Invector-Plus tubes are notched at the muzzle to identify the choke, the restriction decreasing as notches increase. One notch is Full, up to five notches for Skeet, with no notches for a Cylinder tube. The Modified tube has three notches. Improved Cylinder has four.

Any Way You Want It

The SXP is offered in a wide variety of configurations; some three dozen variations are currently cataloged. That's difficult to describe and, trust me, not easy to write about. Gauges offered are 12 and 20, 2¾-inch and 3.0-inch chambers across the board, with some 12-gauge models digesting 2¾-inch to 3½-inch shells.

Barrels are generally 26 or 28 inches long, and the majority have synthetic stocks, either in camo or black. Within the array, there also are short-barreled SXPs and vertical handgrip models with adjustable combs for three-gun shooters. There also are youth models; turkey and waterfowl guns with extended choke tubes; turkey guns with rear sights; deer guns with adjustable sights, drilled and tapped for optics; SXPs with Picatinny rails; a rustproof Marine model; a basic short-barreled Defender SXP; and even a Trench gun.

Basically, you can have an SXP almost any way you want one. For this report, I asked Winchester to send me two shotguns. First, a basic walnut-stocked Field gun, in part because this was the shotgun that had felt so good at Crazy Quail, but also I could compare it to my Model 12s. The other is a more modern synthetic-stocked version. So, the SXPs I've been shooting are the High Grade Field and the Hybrid Hunter Camo, both in 12 gauge with 28-inch barrels. Both have quarter-inch ventilated ribs with TruGlo fiber-optic front beads.

The SXP Hybrid Hunter proved to be quite effective on ptarmigans during Craig's Alaskan bear hunt, and its all-weather finish stood up to the harsh weather conditions.

The High Grade is a traditional, good-looking shotgun in walnut and blue, chambered for 2¾- and 3.0-inch shells. The wood is upgraded Turkish walnut, with a satin finish, laser-cut checkering, and Inflex 1 recoil pad. Factory wood is always going to vary, and this stock has plain wood, good, straight grain but little figure. Considering the cost of gun stock walnut today, the MSRP of $549.99 is very reasonable. It's a good basic field pump gun that handles well and shucks smooth and fast.

It all depends on what you like—and what you intend to do—but the Hybrid Hunter is quite a different shotgun. The synthetic stock is dipped in Mossy Oak Bottomland camo, with a rear sling-swivel stud molded into the buttstock and one on the magazine cap. This model is chambered for 2¾- to 3½-inch shells, and it digests all with equal appetite.

A primary feature that sets it apart, and the reason it has the Hybrid model designation, is Perma-Cote FDE (Flat Dark Earth) finish on the barrel and the action. Rustproof and glare-free, the Hybrid Hunter Camo is a more modern shotgun. Both guns are rated at 7.0 pounds, which is a nice weight to carry. Realistically, since walnut is usually (though not always) heavier than synthetic and varies with the density of wood, wood-stocked shotguns might be an ounce or two heavier. Stock dimensions are exactly the same, as are the handling qualities, which are very good. MSRP is $449.99. It has an amazing array of features at that price.

In the Field

The Hybrid Hunter is a lively shotgun; the action is smooth and fast. At the pattern board, both shotguns printed exactly where stock fit suggested they should: Six o'clock hold, two-thirds of the pattern above point of aim. Using lead No. 8 target loads and lead No. 6 high-base loads, 40-yard patterns with the Invector-Plus choke tubes also checked out perfectly. They were even and well-distributed. Not intending to hunt waterfowl with either shotgun, I didn't try it with steel shot, but that's often a different story, typically patterning tighter than the choke suggests and blowing patterns with too much choke. Winchester's SXP manual is clear about dropping down to a more open choke with steel. Neither the Extra-Full Turkey extended tube, nor standard Full choke tubes is recommended for use with steel shot.

I took both guns to my son-in-law's Texas ranch during dove season, with young Devin Saenz and me trading off between the two. On doves, I'll be honest. It wasn't a matter of just waving the shotgun in their general direction. If you must know, Devin shot better than I did. Maybe being nearly 50 years my junior helped. Devin mostly shot the High Grade Field, and he impressed me. Using the Hybrid Hunter, I didn't impress myself at all. But near sunset I finally hit my stride and finished the day with a respectable string of hits.

Although walnut and blue are more my style for upland birds, I needed to get familiar with the Hybrid Hunter because I was shortly headed to the Alaska Peninsula for a brown bear hunt. Old friend and outfitter Dave Leonard of Mountain Monarchs of Alaska told me there should be some ptarmigans around, so I decided to take the Hybrid Hunter, which is perfect for Alaska.

Turns out the ptarmigans had a fantastic hatch in '23. I've never seen so many upland birds in one place, some flocks into the hundreds, covering the tundra like a pale blanket. To me, the birds were at their prettiest, half snowy white, half russet. There were so many around that I could wander out from the David River base camp for just an hour or so—usually in rain—and be certain to come back with a few tasty birds. Despite being right on the Bering Sea with the Peninsula's near-constant wind and rain, the Hybrid Hunter remained rust-free, which is more than I can say for my bear rifle.

Thanks, perhaps, to some practice on faster-flying doves, I shot well on ptarmigans. Once more, it seemed like all I needed to do was wave the SXP in the right direction and a bird would fall. I didn't get a bear and wish I'd spent more time on the birds.

At this writing, hunting season is still on, and I'm not done with these shotguns. I'm sure I'll buy one of them, maybe both. My favorite Model 12 (the "Death Ray") has been shot so much it's terribly loose, long ready for a rebuild. I need another fast-shooting pump gun, and both these SXPs feel just as good. Whichever one I decide on, *then* I'll reverse the safety. ST

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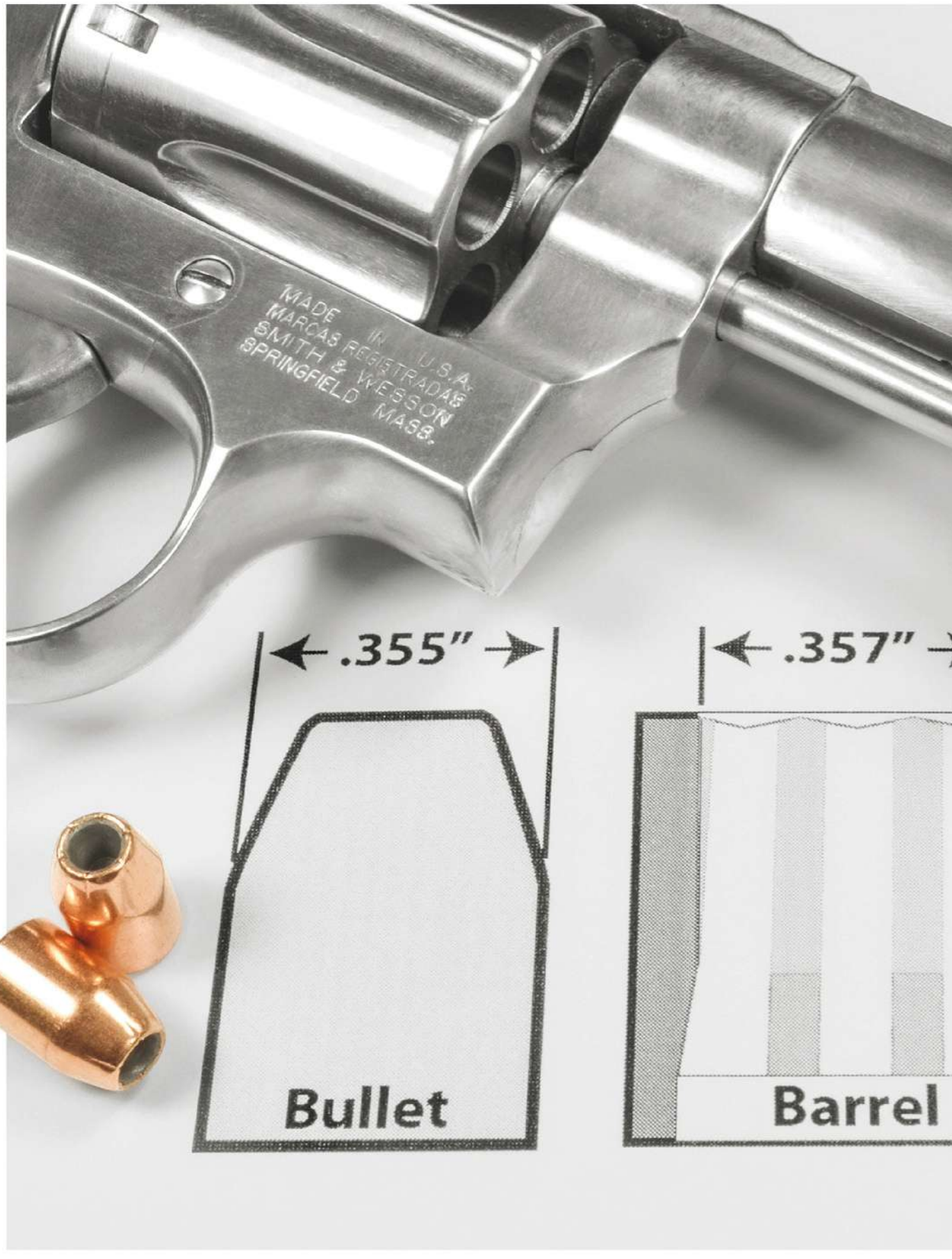
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UNDERSIZE BULLET ACCURACY

EVER WONDER HOW ACCURACY MIGHT BE AFFECTED BY UNDERSIZE BULLETS? DR. MILLER FOUND OUT IN THE CASE OF HIS .38 SPECIAL REVOLVER.

BY BRAD MILLER PHD

IN MY PREVIOUS BULLETS AND BORES article in the May 2024 issue of *Shooting Times*, I described the similarities and differences of 9mm and .38 Special bullets and barrels. The surprising part was that the SAAMI (Sporting Arms and Ammunition Manufacturers' Institute) prescribed dimensions for the barrels of these calibers are the same, but the bullets are not. That is, 9mm and .38 Special barrels share the same groove diameter specification of 0.355 inch, but the bullet specifications are 0.3555 inch for 9mm jacketed bullets and 0.3580 inch for .38 Special jacketed bullets. Certainly, at first glance, those dimensions make no sense because the bullets don't match the barrels. That's right, they don't.

In that previous article I showed that the measured barrel dimensions of multiple barrels in the two calibers are the same. That is, groove diameters were within the range of dimensions of 0.355 + 0.004 inch, meaning between 0.355 and 0.359 inch defined by SAAMI, and I found no difference between 9mm and .38 Special/.357 Magnum barrels.

This raises the question of how accurately undersize bullets shoot. If you're using 0.355-inch bullets in a larger groove diameter, does that ruin accuracy? I tested this.

The Test

I used a Smith & Wesson Model 67 revolver in .38 Special with a 4.0-inch barrel for this comparison. It has a barrel groove diameter of 0.3571 inch, so it was good for comparing the accuracy of 0.355-inch and 0.357-inch bullets.

In order to make the comparison as equal as possible, I selected two jacketed bullets that were identical in shape and weight but of different diameters. (It's not easy to find jacketed bullets that fit this description, even when made by the same manufacturer.) Sierra makes a 0.355-inch 125-grain 9mm JHP bullet that is a twin of the company's 0.357-inch 125-grain .38 Special/.357 Magnum JHP bullet. Their shapes are the same, with a long bearing surface and a short nose, and with a similar wide hollow point, though the 0.357 bullet's hollow point looks a little wider with the ones I have. The only obvious difference is the 0.357 bullet has a cannelure, which the 0.355 bullet lacks.

Bullets for this comparison were measured with a micrometer that's accurate to 0.0001 inch. The 0.355 9mm JHP bullets measured from 0.3547 to 0.3550 inch in diameter. The 0.357 .38/.357 JHP bullets measured from 0.3564 to 0.3568 inch in diameter, not quite coming to a full 0.002-inch difference between the two calibers, but instead a difference from 0.0017 to 0.0018 inch. Still, the 0.355 bullets are a full 0.002-plus inch smaller than the barrel's 0.3571 groove diameter.

These two bullets also are nearly the exact same length. My examples of the 0.355 bullet measured 0.547 inch long, and the 0.357 bullet measured 0.542 inch long, a difference of just 0.005 inch. I seated them to the same depth so that there would be no difference in case space. This meant the 0.355 bullet was loaded 0.005 inch longer in overall length.

I tested six loads with these bullets, all with different powders. They included Bullseye, Titegroup, Power Pistol, BE-86, 3N37, and HS-6.

Cases were specially prepared for loading the 0.355-inch bullets. The .38 Special brass and reloading dies are designed around 0.357-inch bullets. The smaller 0.355 bullets have little if any neck tension when loaded in .38 Special cases. To correct for this, I sized the cases destined for 0.355 bullets with a Lee .38 Special undersize sizing die. It sizes the case down about 0.002 to 0.003 inch more than a regular sizing die. In addition, the necks were expanded and flared with a 9mm flaring die so that they were not expanded too much. This resulted in good neck tension with the 0.355 bullets.

The gun was held in a Ransom Rest, and the target distance was 25 yards. A single 24-shot group was fired with each load. The chambers and bore were cleaned between every 24-shot string.

The Results

The results are shown in the accompanying chart. Most 24-shot groups were around two inches wide, which is quite good for any handgun, and demonstrates that this revolver is capable of precision shooting, a requirement for comparing accuracy. The results show that groups with 0.355 bullets were sometimes bigger, and sometimes smaller, than groups with 0.357 bullets, resulting in no overall difference in accuracy between the two sizes.

Bullseye powder produced the largest difference in group size between the two bullet sizes, with the 0.355 group a full inch larger than the 0.357 group. Groups with the 0.355 bullets were about 0.20 inch larger than the 0.357 bullet groups with 3N37 and BE-86. The groups with HS-6 were virtually identical between the two bullet sizes, with a difference of just 0.04 inch. But the 0.355 bullet groups were clearly smaller than the 0.357 groups with Titegroup and Power Pistol (0.42 inch and 0.78 inch, respectively.)

The author compared the accuracy achieved with undersize 0.355-inch-diameter 125-grain bullets (left) to that of 0.357-inch-diameter 125-grain bullets in the same .38 Special S&W revolver. The results are quite interesting.

UNDERSIZE BULLET ACCURACY

BULLET	BULLET DIA. (IN.)	POWDER (TYPE)	POWDER (GRS.)	CASE	PRIMER	VEL. (FPS)	S.D. (FPS)	25-YD. ACC. (IN.)
.38 Special, 4.0-in Barrel								
Sierra 125-gr. JHP	0.355	Bullseye	4.6	Starline	Fed. 100M	967	14	3.30
Sierra 125-gr. JHP	0.357	Bullseye	4.6	Starline	Fed. 100M	968	13	2.25
Sierra 125-gr. JHP	0.355	BE-86	5.0	Starline	Fed. 100M	841	13	2.10
Sierra 125-gr. JHP	0.357	BE-86	5.0	Starline	Fed. 100M	828	10	1.94
Sierra 125-gr. JHP	0.355	3N37	6.6	Starline	Fed. 100M	998	14	2.06
Sierra 125-gr. JHP	0.357	3N37	6.6	Starline	Fed. 100M	975	15	1.86
Sierra 125-gr. JHP	0.355	HS-6	7.0	Starline	Fed. 100M	971	20	1.98
Sierra 125-gr. JHP	0.357	HS-6	7.0	Starline	Fed. 100M	963	25	1.94
Sierra 125-gr. JHP	0.355	Power Pistol	6.0	Starline	Fed. 100M	989	17	1.71
Sierra 125-gr. JHP	0.357	Power Pistol	6.0	Starline	Fed. 100M	973	11	2.49
Sierra 125-gr. JHP	0.355	Titegroup	4.4	Starline	Fed. 100M	889	26	2.28
Sierra 125-gr. JHP	0.357	Titegroup	4.4	Starline	Fed. 100M	869	20	2.70

NOTES: Accuracy is for a single 24-shot group fired with the revolver mounted in a Ransom Rest. Velocity is the average of 24 rounds measured eight feet from the gun's muzzle. COL for the 0.355-inch bullets was 1.430 inches, and the COL for the 0.357-inch bullets was 1.425 inches.

All load data should be used with caution. Always start with reduced loads first and make sure they are safe in each of your guns before proceeding to the high test loads listed. Since *Shooting Times* has no control over your choice of components, guns, or actual loadings, neither *Shooting Times* nor the various firearms and components manufacturers assumes any responsibility for the use of this data.

Looking at the results, three of the powders had smaller 0.357 bullet groups (Bullseye, 3N37, and BE-86), two had smaller 0.355 bullet groups (Titegroup and Power Pistol), and one was the same (HS-6).

The six-powder average group size shows that the 0.355 bullet average was 2.24 inches, and the 0.357 bullet average was 2.20 inches—virtually the same.

The undersize 0.355-inch bullets showed no clear evidence that they were less accurate than the 0.357-inch bullets in this comparison. There was only one powder, Bullseye, that had an obvious size difference in favor of the 0.357 bullets. Other powders showed very small differences (less than a quarter-inch) with the 0.357 bullets. And with two powders the 0.355-inch bullet groups were smaller than those of the 0.357-inch bullets. If the 0.355 bullets were obviously less accurate, one would expect them to be less accurate more frequently and with larger differences.

This comparison did not find that undersize jacketed bullets were less accurate than bullets that fit the barrel's groove diameter more fully. The bullet diameter difference was just 0.0017 to 0.0018 inch, which isn't much in the first place, and didn't seem to make an obvious difference to the test gun. Another point to be made is that the 0.355 bullets were 0.002 inch smaller than the gun's groove diameter yet still produced excellent accuracy. Thus, a close fit to the barrel's groove size was not a prerequisite for precise shooting with jacketed bullets. ST

HIGH PRECISION

PHOTOS BY **MICHAEL ANSCHUETZ**

RIFLE

PAIRED WITH THE NEW HIGH-TECH BURRIS ELIMINATOR 6 LASER RANGEFINDER SCOPE, BENELLI'S NEW LUPO HPR SHOOTS LIKE A HOUSE ON FIRE.

BY JAKE EDMONDSON

SHOOTING TIMES **HAS REPORTED ON DIFFER-** ent variations of Benelli's bolt-action Lupo rifle before, but the new HPR (High Precision Rifle) is Benelli's big news for 2024. We received one of these new hybrid hunting/target rifles chambered in .300 Winchester Magnum, and since that cartridge is one of my all-time favorites, I was thrilled to get the assignment. Oh, and to sweeten the deal just a bit more, I got to use the newest iteration of Burris's high-tech Eliminator laser rangefinder riflescope, too. (More about it later.) Working with both new products made for a very satisfactory day at the shooting range.

The hybrid hunting/target Lupo HPR has a round steel receiver and an aluminum-alloy chassis. It features a straight-profile, heavy-contour, fluted barrel, and it comes with a three-port muzzle brake attached.

The Lupo HPR

You know a rifle is built to shoot when the company offers an accuracy guarantee right up front, and Benelli does that with the Lupo HPR. In this case, it's 3/4 inch for five shots at 100 yards. The HPR is chambered for 6.5 Creedmoor, 6.5 PRC, .308 Winchester, .300 PRC, .300 Win. Mag., and .338 Lapua, and it comes with a straight-profile, heavy-contour, fluted Crio barrel. The barrel length is 24 or 26 inches, depending on the chambering. Our .300 Win. Mag. rifle has the 26-inch barrel with a twist rate of one turn in 11 inches (1:11), and the muzzle is threaded 5/8-24 and comes with a muzzle brake installed. The brake has three big ports on each side, and the barrel's diameter at the muzzle right before the threads (not counting the brake) is 0.86 inch. The barrel and round receiver are finished in the company's BE.S.T. (Benelli Surface Treatment) finish, which combines physical vapor deposition with plasma-enhanced chemical vapor deposition for corrosion and abrasion resistance.

The Lupo HPR's receiver incorporates an aluminum-alloy chassis, and it is given an anodized finish. On top, the receiver has a 30-MOA Picatinny optic rail, and it is also drilled and tapped for Remington Model 700 scope bases (interestingly, it takes two Model 700 rear bases). The bolt has three locking lugs, and the knob is threaded, which allows shooters to customize with an aftermarket knob of their preference. I like the factory-installed knob just fine, but I appreciate the option of shooters being able to switch it if they like. Another great user-friendly feature is that the bolt disassembles easily for routine cleaning and maintenance without requiring any tools.

It's a smooth-functioning, innovative action to be sure, but I think the heart of the Lupo HPR is the user-adjustable stock system. For instance, the buttstock's comb height, grip style, length of pull (LOP), and cast and drop can be fitted to the individual shooter via different LOP spacers, several cast and drop shims, and eight positions for the comb. The spring-loaded comb is activated by a pushbutton located on

The HPR's stock is user-adjustable and can be individually fitted to the shooter. For example, the spring-loaded, pushbutton-activated comb has eight height settings.

LUPO HPR

MANUFACTURER	Benelli benelliusa.com
TYPE	Bolt-action repeater
CALIBER	.300 Win. Mag.
MAGAZINE CAPACITY	4 rounds
BARREL	26 in.
OVERALL LENGTH	48.25 in.
WEIGHT, EMPTY	10.4 lbs.
STOCK	Synthetic
LENGTH OF PULL	13.8 to 14.75 in.
FINISH	Anodized aluminum, BE.S.T. steel, tan with black spider-webbing stock
SIGHTS	None
TRIGGER	2.56-lb. pull (as tested)
SAFETY	Two-position
MSRP	$2,949

The buttstock's cast and drop can be adjusted by using various shims that come with the rifle.

The grip can be switched between two styles: hunting (as shown on the rifle) and target (shown in the foreground) by simply removing a single retaining screw.

The length of pull can be adjusted via the spacers that are included. The standard range is from 13.8 inches to 14.75 inches.

The Lupo HPR uses a detachable polymer magazine. Our .300 Win. Mag. HPR's magazine holds four rounds of ammo. Nonmagnum chamberings come with five-round magazines.

the right side of the buttstock, and total travel is about 1.5 inches. In addition, the grip angle can be straight or angled by switching between the hunter grip and the target grip inserts. (The accompanying photographs show the hunter grip insert.) LOP ranges from 13.8 inches to 14.75 inches with the factory-installed Progressive Comfort recoil pad, but a thicker recoil pad is available as an extra-cost accessory, and it lengthens the LOP to 15.2 inches. The buttstock also has pocket-style QD attachment points on both sides (complete with polymer covers), a Magpul M-LOK attachment point underneath, and a removable bag rider.

The stock's forearm is separate from the buttstock, and it, too, has many well-thought-out features. For instance, it has a wide, flat bottom with checkered and sculpted gripping areas. It has pocket-style QD attachment points and M-LOK attachment points on both sides, and there's an M-LOK attachment point underneath, too.

Finishing out the details of the Lupo HPR, I'll mention the detachable polymer magazine holds four rounds of .300 Win. Mag. ammo. For other chamberings, the capacity is five rounds. The rifle's safety is a tang-mounted two-position affair, replete with a visible red dot when in the forward "Fire" position. When the safety is in the "Safe" position, the bolt is locked, but the bolt can be unlocked by pressing the small tab that is located behind the bolt handle cutout. And the rifle uses a single-stage trigger. The one on our sample is excellent. Average trigger pull for a series of five measurements is 2 pounds, 9 ounces, and it is very crisp and clean. The variance between those five measurements was a mere 2 ounces, indicating just how consistent it is.

The trigger is a single-stage mechanism. Our sample's crisp, clean trigger pull averaged 2 pounds, 9 ounces.

The Eliminator 6

No doubt the rifle is very high-tech, so now let's take a look at the high-tech scope I used for the shooting sessions. Readers probably already know that Burris was an early pioneer in the field of laser rangefinding riflescopes and has been producing the company's Eliminator scope for almost two decades. New for 2024 is the sixth iteration, and a range of characteristics set the rangefinding, ballistic-compensating Eliminator 6 apart from earlier versions. One of the most important ones in my opinion is that the Eliminator 6 looks like a normal riflescope, as opposed to earlier versions that were very boxy looking.

This new version retails for $3,000, and it is a very sophisticated optic because by just pressing a button conveniently located on

Burris's new-for-2024 Eliminator 6 4-20X 52mm laser rangefinding scope was the perfect high-tech optic to use on the high-tech Lupo HPR.

the left-side turret or by using the independent remote, the scope ranges and displays the distance to the target and swiftly calculates the exact aiming point. It has Bluetooth connectivity to the BurrisConnect app, which allows the shooter to combine ranging, environmental, and ballistic data (customizable by the shooter) to achieve the perfect shot. The scope can provide environmental monitoring via the built-in thermometer, barometer, and inclinometer, plus it automatically measures density altitude. And the scope's heads-up display can present up to 10 data points, including primary value, secondary value, scope level, battery status, DA mode, ambient temperature, Bluetooth connection, bullet impact energy, bullet velocity at target distance, and shot call marker. I could go on about it for a long time, but I think you get the point that, like I said earlier, it's very sophisticated.

The Eliminator 6 can range reflective targets out to 2,000 yards and deer hide out to 1,400 yards. It is adjustable for parallax (25 yards to infinity) and has a fine focus capability. It has a 34mm tube and a 52mm objective lens. The reticle is located in the rear focal plane, and its illuminated dot has nine brightness settings. It's powered by a CR123 battery, and it weighs 30 ounces. If you're into the most modern up-to-date optics technology, you really should check out the Burris website to find out more about everything the Eliminator 6 can do.

Shooting Results

Let me first say that I don't like recoil, so I really appreciated how the rifle's weight, Progressive Comfort buttpad system, and muzzle brake combined to manage the felt recoil. For readers who don't know about the Progressive Comfort system, it uses a series of interlocking "fingers" that compress to absorb the recoil. Of course, a muzzle brake makes for louder muzzle blast, so like most things in life, there's a trade-off to using one. Luckily, I was the only shooter using the range on the February day when I conducted the shooting evaluation, so no one was offended by the blasts.

Now for the accuracy results. As you can see from the accompanying chart, three out of the five .300 Win. Mag. factory loads I test-fired came very close to meeting or beating Benelli's accuracy guarantee. My best accuracy came with the Hornady Superformance 180-grain GMX loading, and it averaged 0.65 inch for three, five-shot groups from the sandbag benchrest. The Winchester Expedition Big Game 190-grain AccuBond LR loading averaged 0.77 inch for its three, five-shot groups. And

ELIMINATOR 6 4-20X

MANUFACTURER	Burris Optics burrisoptics.com
MAGNIFICATION	4X to 20X
OBJECTIVE LENS DIAMETER	52mm
TUBE DIAMETER	34mm
EYE RELIEF	3.4 in.
FIELD OF VIEW	30.5 ft. (4X) to 6.5 ft. (20X) @ 100 yds.
ELEVATION ADJUSTMENT RANGE	40 MOA
WINDAGE ADJUSTMENT RANGE	40 MOA
LENGTH	14.6 in.
WEIGHT	30 oz.
FINISH	Black
MSRP	$3,000

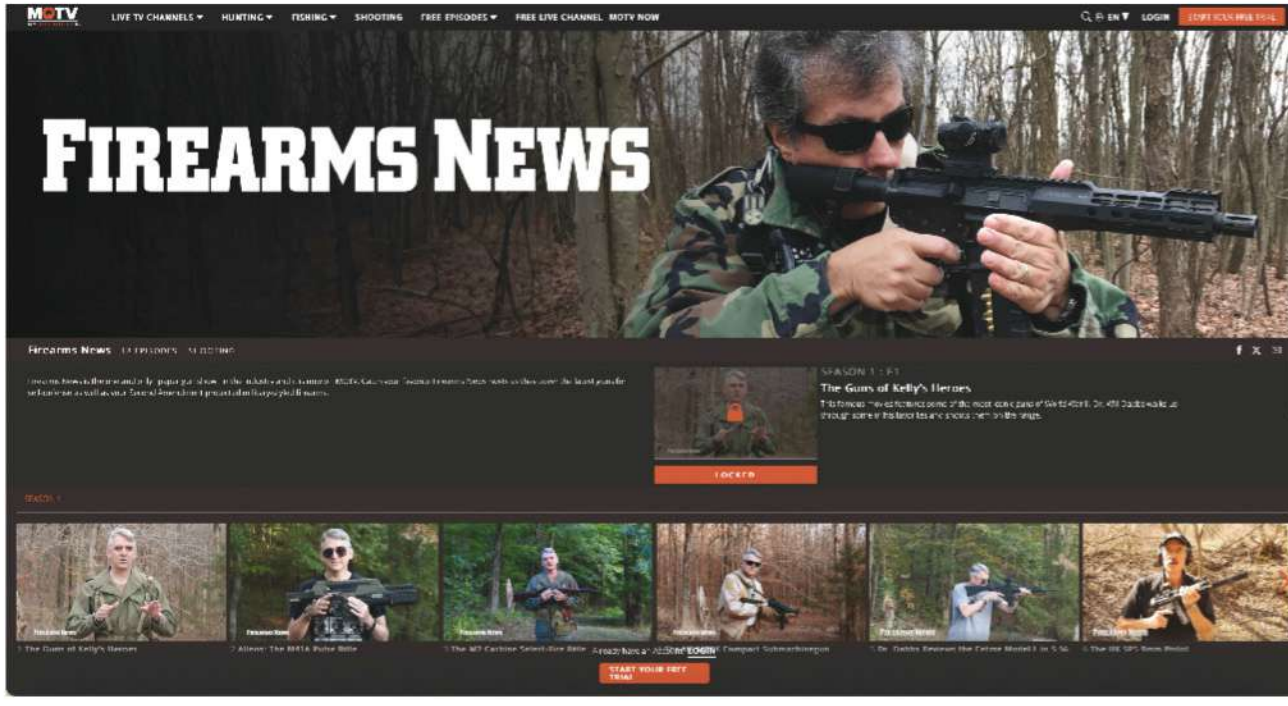
the Federal Big Game 200-grain Edge TLR loading averaged 0.79 inch for its three, five-shot groups. The Federal Non-Typical Whitetail 150-grain SP loading and the Federal Power-Shok Copper 180-grain HP loading turned in sub-1-inch group averages, so all five loadings were under sub-MOA. This is one of the most accurate rifles I have ever fired. I'm not a PRS competitor, in fact, my shooting skills are nothing special—I'm a mediocre shooter. But even I shot the new Lupo HPR extremely well, and in the hands of a better shooter, I'm convinced the rifle could do better. I suspect that combining the individual-fit aspects of the HPR's stock with the high-precision performance of the Burris Eliminator 6 scope accounted for me being able to shoot this rifle so well.

Benelli says the Lupo HPR "answers the call of open-country big-game and varmint hunters for a rifle that delivers the far-reaching accuracy of a competitive long-range custom rifle with the agility of a true hunting bolt action." I say that description is right on the money. ST

BENELLI LUPO HPR ACCURACY & VELOCITY

AMMUNITION	VEL. (FPS)	E.S. (FPS)	S.D. (FPS)	ENERGY (FT-LBS)	100-YD. ACC. (IN.)
.300 Win. Mag., 26-in. Barrel, 1:11 Twist Rate					
Federal Non-Typical Whitetail 150-gr. SP	3111	33	18	3223	0.85
Federal Power-Shok Copper 180-gr. HP	2882	42	27	3319	0.99
Hornady Superformance 180-gr. GMX	3021	47	15	3647	0.65
Winchester Expedition Big Game 190-gr. AccuBond LR	2864	56	24	3460	0.77
Federal Big Game 200-gr. Edge TLR	2904	19	8	3745	0.79

NOTES: Accuracy is the average of three, five-shot groups fired from a sandbag benchrest. Velocity is the average of five rounds measured 12 feet from the gun's muzzle.



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While *Shooting Times* doesn't have its own dedicated space on MOTV, a few of our sister shooting-oriented titles do, and I'd like to draw your attention to one of them. I'm talking about *Firearms News*.

For anyone who doesn't already know it, *Firearms News* started way back in 1946 (it was called *Shotgun News* then). It's gone through several modifications over the decades, and it's still going strong. As stated on MOTV, *Firearms News* is the only "paper gun show" in the industry, and now it's on MOTV. Currently available, Season 1 offers 18 episodes and provides exciting and detailed information on some interesting and unusual guns. I'm not going to list all 18 episodes here, but some that really grabbed my attention include "The Guns of Kelly's Heroes," "Aliens: The M41A Pulse Rifle," "The M2 Carbine Select-Fire Rifle," "The Iconic Steyr AUG Light Machinegun," "Diablo Double-Barrel 12 Gauge Handgun," and "Polish Radom Vis 35 9mm Service Pistol." If you're interested in unique historical firearms, you owe it to yourself to check out *Firearms News* on MOTV.

For a limited time, use the promo code SHOOTING30 and get a 30-day free trial of MyOutdoorTV. Offer valid for a limited time. Cannot be combined with other offers. ST

More or Less New. And Good. Very Good.

These handguns from Smith & Wesson were announced a while ago, but for all intents and purposes, they are new. And they are very interesting. **BY TERRY WIELAND**

The S&W M&P .22 WMR (left), the 9mm Equalizer (center), and the .350 Legend Model 350 are more or less new, and each is very interesting in its own right.

HARDLY A DAY GOES BY THAT THE IN-BASKET does not receive a notice of yet another new shotgun, rifle, riflescope, red-dot sight, or handgun. Truth to tell, many are not really new, and others you just know will be gone from the market within a year—if, that is, they actually appear at all.

It was a pleasant surprise a while back when I got notice from Smith & Wesson of not one, but *three* handguns that would be worth more than a second glance. None of the three was completely new, but all were manifestly interesting. I couldn't decide which one to try, so I solved the problem by requesting all three. And lo and behold, after some months (close to a year, actually) S&W caught up with its backorders sufficiently to spare me some samples to evaluate.

The first is certainly unusual: the semiautomatic M&P .22 WMR. Since its introduction in 1959, the .22 Magnum, as it's popularly known, has not exactly set the world on fire. Ammunition is expensive (30 cents a round compared to five to 10 cents for .22 Long Rifle), and it can't be reloaded. It's not as powerful as the .22 Hornet, which can be reloaded, so it is more economical and versatile in the long run.

Over the years, the .22 WMR has been chambered in revolvers and various rifles, but seldom in semiautomatic pistols. The M&P is thoroughly modern, in the sense that it employs polymers and alloys, with nary a splinter of wood to be seen. Its real stand-out feature to me is the 30-round, double-stack magazine. The pistol comes with two, which gives you, very quickly, 61 shots. That's right. *Sixty-one*!

There's not much more to say except that whatever your problem, if it can't be solved with 61 shots, you probably need more than a pistol.

At the other end of the spectrum we have the seven-shot Model 350 revolver chambered for .350 Legend, weighing in, unloaded, at 4.5 pounds. Obviously, it's not meant for either concealed carry or quick-draw competition. Built on the massive S&W X-Frame, it's a hunting revolver, pure and simple. Back in the 1980s, the honored .35 Remington cartridge found renewed life as a chambering in the Thompson/Center Contender single-shot handgun, decades after it had been all but written off by the industry as under-powered and, with its big, heavy bullet, woefully unfashionable in that velocity-mad era.

The .350 Legend more or less duplicates .35 Remington performance, although factory ammunition is loaded with lighter bullets at higher velocity. Still, as a whitetail cartridge for handgun hunters, out to 150 yards, it's hard to beat. The S&W Model 350 has a 7.5-inch ported barrel with a full underlug, so recoil is minimal. Well, it's light anyway.

Finally—and this is the one I really wanted to get my hands on—we have the Equalizer in 9mm Luger.

A few years ago, I helped a couple of friends get into handgun shooting. Both are ladies past their youth, and both have hands weakened by arthritis. The .380 ACP M&P Shield EZ filled the bill in every way—so well, in fact, that I searched one out for myself at a time when handguns of any kind were hard to come by and commanding high prices.

Serious shooters tend to dismiss many of the complaints about a gun put forth by non-gun folks, insisting that more practice will solve the problem. Man up, we say, and you will get used to difficulty loading magazines or return springs so stiff you can't work the slide or safeties that require the thumb of King Kong. The fact is, though, instead of practicing more, many don't practice at all or give up the idea of having a gun altogether.

Anyway, the Equalizer is a little bigger and a little more powerful, but it incorporates all the non-gun-gal-friendly features of the Shield. It comes with three magazines that hold 10, 13, and 15 rounds, respectively, allowing you to tailor it to your requirements for concealed carry. Clever. Also included is an UpLULA pistol mag loader that saves thumbs and fingernails, which is no small thing with fragile hands.

Which ones will go back to Smith & Wesson with thanks, and which will find a permanent home in my vault? That's the big decision. ST

based on the .300 H&H belted case, and it is considered a modern prototype of the 7mm Remington Magnum (designed and introduced by Remington in 1962). A typical factory loading pushed a 160-grain bullet at a muzzle velocity of 3,100 fps for 3,410 ft-lbs of muzzle energy. It was a popular big-game hunting cartridge in Canada.

Another cartridge co-developed by Sharpe is the landmark .357 Magnum, which of course, is the chambering of Colt's Python and so many other classic revolvers. For readers who don't know, the .357 Magnum is basically a stretched .38 Special that was introduced in 1935, when Sharpe was just 32 years old. Of course, Elmer Keith had a lot to do with handloading the .38 Special to high-performance levels, and he, Douglas B. Wesson (vice president of Smith & Wesson at the time), and Philip B. Sharpe collaborated on the cartridge that became the .357 Magnum. Sharpe was well connected and a personal friend of Wesson's.

During his life, Sharpe was a commander of the Veterans of Foreign Wars at Emmitsburg, a member of the Francis X. Elder American Legion Post and the Emmitsburg Lions Club, vice president of the Outdoor Writers Association, a member of the Campfire Club of America, a staff writer for and lifetime member of the National Rifle Association, and a respected writer on ballistics and other technical subjects. His books *Complete Guide to Handloading* (1937) and *The Rifle in America* (1938) are classics.

Tragically, Philip B. Sharpe passed away on January 24, 1961, at the age of 57. The cause of death was listed as a heart attack. He is buried in Arlington National Cemetery. Interestingly, five years before his death, he and his second wife divorced, and he remarried his first wife. Also interestingly, during World War II, he proved the feasibility of a curved-barrel rifle for house-to-house combat by putting six shots in an eight-inch bullseye at 75 yards while firing around a corner.

As the co-developer of a rifle cartridge that is considered a precursor to arguably the most popular big-game magnum cartridge ever and a handgun cartridge that for much of the 20th century was considered the "most famous" revolver cartridge, Sharpe had an immeasurable impact on the shooting industry. ST

Popular CoQ10 Pills Leave Millions Suffering

Could this newly-discovered brain fuel solve America's worsening memory crisis?

PALM BEACH, FLORIDA — Millions of Americans take the supplement known as CoQ10. It's the coenzyme that supercharges the "energy factories" in your cells known as *mitochondria*. But there's a serious flaw that's leaving millions unsatisfied.

As you age, your mitochondria break down and fail to produce energy. In a revealing study, a team of researchers showed that 95 percent of the mitochondria in a 90-year-old man were damaged, compared to almost no damage in the mitochondria of a 5-year-old.

Taking CoQ10 alone is not enough to solve this problem. Because as powerful as CoQ10 is, there's one critical thing it fails to do: it can't create new mitochondria to replace the ones you lost.

And that's bad news for Americans all over the country. The loss of cellular energy is a problem for the memory concerns people face as they get older.

"We had no way of replacing lost mitochondria until a recent discovery changed everything," says Dr. Al Sears, founder and medical director of the Sears Institute for Anti-Aging Medicine in Palm Beach, Florida. "Researchers discovered the only nutrient known to modern science that has the power to trigger the growth of new mitochondria."

Why Taking CoQ10 is Not Enough

Dr. Sears explains, "This new discovery is so powerful, it can multiply your mitochondria by 55 percent in just a few weeks. That's the equivalent of restoring decades of lost brain power."

This exciting nutrient — called PQQ *(pyrroloquinoline quinone)* — is the driving force behind a revolution in aging. When paired with CoQ10, this dynamic duo has the power to reverse the age-related memory losses you may have thought were beyond your control.

Dr. Sears pioneered a new formula — called **Ultra Accel II** — that combines both CoQ10 and PQQ to support maximum cellular energy and the normal growth of new mitochondria. **Ultra Accel II** is the first of its kind to address both problems and is already creating huge demand.

Over 47 million doses have been shipped to men and women across the country and sales continue to climb for this much sought-after brain fuel. In fact, demand has been so overwhelming that inventories repeatedly sell out. But a closer look at **Ultra Accel II** reveals there are good reasons why sales are booming.

Science Confirms the Many Benefits of PQQ

The medical journal *Biochemical Pharmacology* reports that PQQ is up to 5,000 times more efficient in sustaining energy production than common antioxidants. With the ability to keep every cell in your body operating at full strength, **Ultra Accel II** delivers more than just added brain power and a faster memory.

People feel more energetic, more alert, and don't need naps in the afternoon. The boost in cellular energy generates more power to your heart, lungs, muscles, and more.

"With the PQQ in Ultra Accel, I have energy I never thought possible at my age," says Colleen R., one of Dr. Sears's patients. "I'm in my 70s but feel 40 again. I think clearly, move with real energy and sleep like a baby."

The response has been overwhelmingly positive, and Dr. Sears receives countless emails from his patients and readers. "My patients tell me they feel better than they have in years. This is ideal for people who are feeling old and run down, or for those who feel more forgetful. It surprises many that you can add healthy and productive years to your life simply by taking **Ultra Accel II** every day."

You may have seen Dr. Sears on television or read one of his 12 best-selling books. Or you may have seen him speak at the 2016 WPBF 25 Health and Wellness Festival in South Florida, featuring Dr. Oz and special guest Suzanne Somers. Thousands of people attended Dr. Sears's lecture on anti-aging breakthroughs and waited in line for hours during his book signing at the event.

Will Ultra Accel II Multiply Your Energy?

Ultra Accel II is turning everything we thought we knew about youthful energy on its head. Especially for people over age 50. In less than 30 seconds every morning, you can harness the power of this breakthrough discovery to restore peak energy and your "spark for life."

So, if you've noticed less energy as you've gotten older, and you want an easy way to reclaim your youthful edge, this new opportunity will feel like blessed relief.

The secret is the "energy multiplying" molecule that activates a dormant gene in your body that declines with age, which then instructs your cells to pump out fresh energy from the inside-out. This growth

MEMORY-BUILDING SENSATION: Top doctors are now recommending new Ultra Accel II because it restores decades of lost brain power without a doctor's visit.

of new "energy factories" in your cells is called mitochondrial biogenesis.

Instead of falling victim to that afternoon slump, you enjoy sharp-as-a-tack focus, memory, and concentration from sunup to sundown. And you get more done in a day than most do in a week. Regardless of how exhausting the world is now.

Dr. Sears reports, "The most rewarding aspect of practicing medicine is watching my patients get the joy back in their lives. **Ultra Accel II** sends a wake-up call to every cell in their bodies… And they actually feel young again."

And his patients agree. "I noticed a difference within a few days," says Jerry from Ft. Pierce, Florida. "My endurance has almost doubled, and I feel it mentally, too. There's a clarity and sense of well-being in my life that I've never experienced before."

How To Get Ultra Accel II

This is the official nationwide release of **Ultra Accel II** in the United States. And so, the company is offering a special discount supply to anyone who calls during the official launch.

An Order Hotline has been set up for local readers to call. This gives everyone an equal chance to try **Ultra Accel II**. And your order is backed up by a no-hassle, 90-day money back guarantee. No questions asked.

Starting at 7:00 AM today, the discount offer will be available for a limited time only. All you have to do is call TOLL FREE **1-877-506-4758** right now and use promo code **UAST424** to secure your own supply.

Important: Due to **Ultra Accel II** recent media exposure, phone lines are often busy. If you call and do not immediately get through, please be patient and call back.

A Consequential Cartridge Creator

Philip B. Sharpe was an internationally known ballistician, cartridge creator, and writer, and his impact on the shooting world was considerable. **BY JOEL J. HUTCHCROFT**

Not only did Philip B. Sharpe (1903–1961) co-develop a rifle cartridge that was a predecessor to the 7mm Rem. Mag., but he also co-developed the classic .357 Magnum revolver round.

I'VE SEEN PHILIP B. SHARPE'S NAME MENTIONED in gun-related articles for a long time. I'm 63 years old and started reading about guns and such when I was around nine years old. That means I've seen his name for better than 50 years, but I never looked into his accomplishments and history. Until now. I knew he had done some significant things in this industry, but I wasn't aware of the huge impact he had. Some of it is apropos since we are reporting on the new-for-2024 blued Colt Python in this issue of the magazine. You'll learn why in a few moments.

Philip Burdette Sharpe was born in Portland, Maine, on May 16, 1903, to Elias and Jennie Sharpe. Philip was raised in the Portland area and later graduated from Portland University. By 1930 he was working as a newspaper journalist. Sometime in 1940, he and his second wife moved to a 20-acre farm near Fairfield, Pennsylvania, where he could pursue his shooting interests while writing detective and adventure stories for publication. Then came World War II.

Sharpe was inducted into the United States Army on December 22, 1942, and was honorably discharged on May 15, 1946. He served in the European Theater as chief of the small arms unit in the enemy equipment intelligence service. He attained the rank of captain in the Ordnance Department.

Following the war, Sharpe formed the Philip B. Sharpe Research firm (Fairfield and Emmitsburg, Maryland) and also imported Schultz & Larsen rifles from Denmark with business partner Richard Hart (Sharpe & Hart Associates). He helped design those rifles to his own specifications for cartridges he developed.

One of the cartridges he co-developed with Hart became the 7x61 Sharpe & Hart Super (1953). Originally designed with a nonbelted case, it later was

CONTINUED ON PAGE 70

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