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Rifleman's Rifle—Not

I have been reading Scott Rupp's articles over the years and enjoying them as much as his latest article featuring Sako's new Model 90 (September/October). The rifle is pleasant to the eye and brings an ingenious trigger design as well as the magazine release lock. However, I must disagree with Mr. Rupp for naming it "the rifleman's rifle," as the controlled-round-feed action of the Winchester Model 70 is a proven better design, and its three-position safety is simpler to operate and actually safer. And to the savvy hunter, a hinged floorplate is of more practical use than having an external magazine. With regard to aesthetics, the classic Winchester Model 70 is second to none among other production rifles, while preserving the essence of the functional American sporter stock design.

Eduardo Olachea; Lima, Peru

As I told Mr. Olachea, I've used both controlled-round-feed and push-feed actions, and I just prefer push feeds. As to the other characteristics, I actually like two-position safeties best, and while I do prefer a hinged floorplate over a detachable box, the Sako design is really good.—Scott

Maximum Straightness

Craig Boddington missed at least one good straight cartridge in his article "Get it Straight" (July/August). The Remington .357 Maximum! My eight- and nine-year old grandsons and I have killed several deer with one chambered in a T/C Contender. Not a lot of recoil for a young hunter, and it kills just fine with one shot, loaded with Remington 150-grain softpoint bullets pulled from factory .35 Rem. ammo.

Tim Foltz, Indiana

Fast-Changing Landscape

Kudos and thanks for more excellent content from *RifleShooter* magazine. "Current Cartridge Trends" by Scott Rupp and "Betting on Bullets" by Craig Boddington are educational, knowledgeable and practical. I appreciate, like many readers, good honest writing not steeped in agendas or strong opinions. The modern-day media industry cannot be easy. The products, trends and markets are changing faster than the weather. Thank you for simply staying true to the reader and yourselves for quality coverage. It's fun to live vicariously through the variety of guns and hunts shared in the magazine.

Kenny Myers, Virginia

More .17 HMRs

I would be very pleased if *RifleShooter* had a shoot-off, an evaluation of the many .17 HMRs available. I have three .17 HMRs, and none of them embarrass themselves when shooting very good groups at 100 yards. My CZ 457 Varmint is the best, just by a trifle. I'll bet there are at least 10 different manufacturers of .17 HMR, and if somebody makes one more accurate than my CZ, I would buy it. Woodchucks are a major problem on my farm. I have a wonderful Remington Model 700 heavy-barrel in .223, and it's dispatched hundreds of woodchucks, but it's now a safe queen because of the .17 HMRs.

John Mills, Michigan

INDUSTRY NEWS

The Scholastic Action Shooting Program

conducted its national championships at the Cardinal Shooting Center in Marengo, Ohio, this past July. SASP provides action competition in rimfire rifle and pistol and centerfire pistol for grade school through college athletes. These are all-steel, timed events. Senior/varsity class shooter Timothy Guerrero of South Texas Shooters bested more than 550 competitors to capture the individual top spot in both the iron-sight and optics rifle competitions. SASP is sponsored by a veritable who's who of firearms and ammunition manufacturers. For more information, visit MySASP.com.



Federal was recently awarded a one-year, \$3.6 million contract by the U.S. Special Operations Command for a 175-grain precision match load in 7.62x51. "This contract award for long-range rifle ammunition for SOCOM continues our long-standing support of the U.S. military," said Federal's president and CEO, Jason Vanderbrink. "This proven load is currently being produced for the U.S. Navy in a separate contract, validating our American manufacturing expertise and commitment to supplying the U.S. warfighter with the best products to protect and defend."



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Burris Brings It

THE VERACITY PH IS AN EASY DIAL-UP SOLUTION FOR GETTING SOLID HITS AT LONG RANGE.

by J. Scott Rupp

There's a lot of tech out there to help shooters increase their effectiveness at longer distances. Some of these require a full-blown IT department, or at least a seventh-grader, to understand and use to their fullest potential. The Burris Veracity PH rifle-scope is not one of those. It's easy to set up and even easier to use.

The Veracity PH line is available in the 4-20x50mm I tested (\$1,560), plus 2.5-12x42mm and 3-15x44mm. To complete the system you need to put the Burris Connect app, a free download, on your smartphone.

Setup is a snap, and here are the basics. First install the two CR2450 batteries back to back, stacked + to +. Turn the illumination/power knob, which is located outside the parallax adjustment knob, to the Bluetooth symbol. Be sure Bluetooth is active on your phone, open the app and click the plus under "Manage Optics."

The app will show you three options: Thermals, Veracity PH and Eliminator 6. Click on Veracity PH and then "Next" to select your scope. There are a number of settings to address with the scope via the app: elevation units (m.o.a. or mil), inclination compensation (on or off), digital level (0, 0.5 or one degree), display timeout (never

to two minutes) scope auto-off (never to several hours).

One setting I want to address before moving on. If your rangefinder already has inclination compensation, and you use it in that mode, turn off compensation on the Veracity PH. Especially on severe angles at longer distances, doubling down on this variable will skew your results.

Once you're done, tap "Upload Settings," and your choices transmit to the scope. Next, click on "Upload ballistics data" at the top. Here you're creating a gun/ammo profile, and you can choose from an extensive library of factory rounds or build a custom load as you would in any ballistic calculator or app. You can input environmental info for you. When you've completed the profile, click on "Upload Data" to transmit the load to your scope.

At the range, zero the scope. The

very first thing you'll notice is that the PEK (programmable elevation knob) turret does not click. It rotates like a rheostat, and it's paired with a digital sensor and is capable of accuracy down to 0.1 m.o.a. I found this click-less turret disconcerting at first—how can I figure out how much to adjust the scope if I can't count clicks!—but the turret is well-marked. The windage adjustment does have clicks, and they are 1/4 m.o.a.

The Veracity PH incorporates a zero stop, and here Burris has added a most welcome feature. If you need to move your point of impact down past the stop while zeroing, instead of having to remove the turret cap and wrestle with the turret itself, just loosen the hexhead screw located between m.o.a. marks 26 and 28. This allows you to rotate clockwise past the stop.

Once you're finished zeroing, be sure to retighten that screw if you've loosened it. Next, loosen the three top turret cap screws and rotate the cap to the 0 position and tighten.

With scope and app paired, click on "Zero elevation turret" on the app. That's it. Unless you want to change settings or ammo—or perhaps environmental— you never have to touch the app again or even take it with you. All the data you need are stored inside the scope. Aside from the heads-up display I'll discuss in a second, this is my favorite feature. I hate messing with apps in the field, and any tech that doesn't force me to dig out my phone is a godsend.

I zeroed the Veracity PH at 100

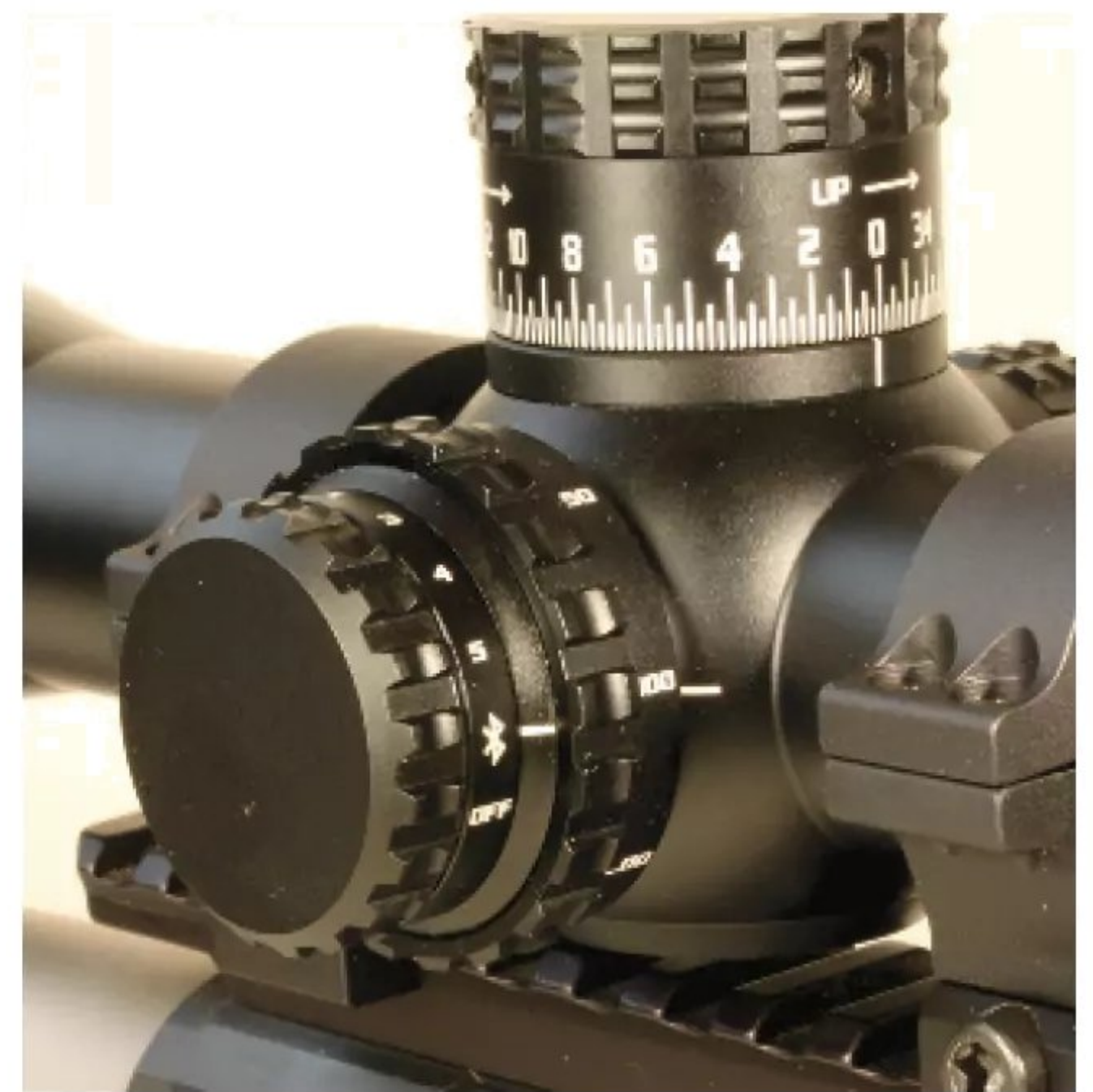
yards on a Browning X-Bolt Target 6.5 Creedmoor with Hornady ELD Match 140-grainers. I let the rifle cool, then reconfirmed the cold point of impact. I zeroed the elevation turret via the app and headed to the steel range.

Our steel starts at 400, so I turned the elevation turret until the heads-up display read "400" and squeezed the trigger. First-round hit. Then on to 500, 600 and 700 yards, with first-round hits on each. All I had to do was range the target, dial the turret until the heads-up display number matched the yardage and fire. No consulting a dope card or a ballistic app. No counting clicks or trying to make out small turret markings.

In addition to the yardage readout in the heads-up display, you also get battery level, a confirmation of your units of measure and any wind correction you might have input in the app. My test scope was an early media sample, and the two gripes I had with it—a sometimes balky Bluetooth connection and not displaying the selected load—have been addressed with new internals. So in Bluetooth mode you will also see what ballistic profile is currently uploaded to the scope.

Certainly you'll want to confirm by shooting at actual yardages to the extent possible, and remember the "garbage in, garbage out" principle: It's not going to work correctly if you've input bad data or didn't get a precise zero. Similarly, it would be ideal to chronograph your chosen load through your rifle to double-check the velocity.

The reticle in my sample has been



The power knob has a Bluetooth setting that pairs the scope with the Burris Connect app, allowing you to upload scope settings and ballistic info—as well as zero the elevation turret.

discontinued, so I can't speak to the current reticle, but all Veracity PHs are first focal plane and feature index-matched, multicoated lenses.

They're built on 30mm main tubes. Overall length on this one is 13.8 inches, and weight is 29.1 ounces. That's heavier than I would prefer for hunting, but this particular model is a large-objective scope. The best apples-to-apples comp I can give you is the non-PH Veracity, which weighs 27.2 ounces—so the tech in the PH version is adding almost nothing to scope weight.

With the Veracity PH, you get what's basically a plug-and-play optic that, once properly set up, will simplify long-range shooting. It's a high-tech solution that will work great for even tech-challenged folks like me. ■

Real Avid Master Gun Workstation

For someone who cleans a lot of guns and mounts a lot of scopes, this work station (\$200) has proved a game changer—a big improvement over my old standard cradle. There are a ton of features you can read about on REALAVID.COM, but the two that stand out to me are the padded quick-clamp rear fork, which you can operate with one hand, and the light that's part of the Smart-Assist Essential 3-Pack (light, magnifying glass and phone holder; sold separately, \$100). I never realized how much easier a clamp would make typical chores, and being able to direct light where I need it is a huge help for detail-intensive tasks.

The work station has a leveling knob for scope mounting, and the adjustable shuttle easily positions the forks for the best stability. The metal base is oil-resistant, and there are plenty of storage nooks for all your little cleaning and maintenance stuff, as well as a handy magnetic tray for tiny screws.—JSR



CARTRIDGE CLASH » Brad Fitzpatrick

.303 British vs 8mm Mauser

In 1888, Wilhelm II was named emperor of Germany, and soon after that relations between Great Britain and Germany began to fracture. Wilhelm's desire to strengthen the German navy riled the world's great colonial superpower, and the same year Wilhelm became emperor, both nations would introduce modern repeating cartridges they would use to batter one another off and on for the next six decades. England's cartridge was the .303 British. For the Germans, it was the 8mm Mauser.

The .303 British was chambered in the Lee-Enfield Mk I rifle. Originally, the .303 fired a 215-grain .311-inch full-metal-jacket bullet over a charge of blackpowder, but by World War I the load was changed to a 174-grain bullet pushed to a velocity of 2,400 fps using Cordite. Eventually surplus Short Magazine Lee-Enfield (SMLE) rifles made their way into the hands of sportsmen, and the cartridge saw sporting use in colonial game fields the world over.

The 8mm Mauser was originally chambered in the Model 88 Mannlicher and used a 227-grain .318-inch bullet. It was the first smokeless rifle cartridge adopted by a major military power. By 1905 the recipe was revised and the new version—known as the 7.92x57 JS, 8x57 JS or simply 8mm JS—pushed a 150-grain .323-inch bullet close to 3,000 fps from stronger Mauser actions. Interestingly, the 8mm Mauser uses a 0.473-inch diameter rim, same as our .30-06 and .308 rifles.

History buffs have a special place in their heart for both cartridges, but how practical are these century-old rounds for modern shooters and hunters?

If you handload the .303, expect between 2,400 and 2,700 fps with 150-grain bullets and 2,300 to 2,400 fps with 180-grainers. The 8mm Mauser can push light 150-grain bullets close to 3,000 fps, but the more traditional

hunting weight bullets are substantially slower. Speer's reloading manual suggests roughly 2,500 to 2,700 fps for 170-grain bullets and roughly 2,400 fps for 200-grain bullets.

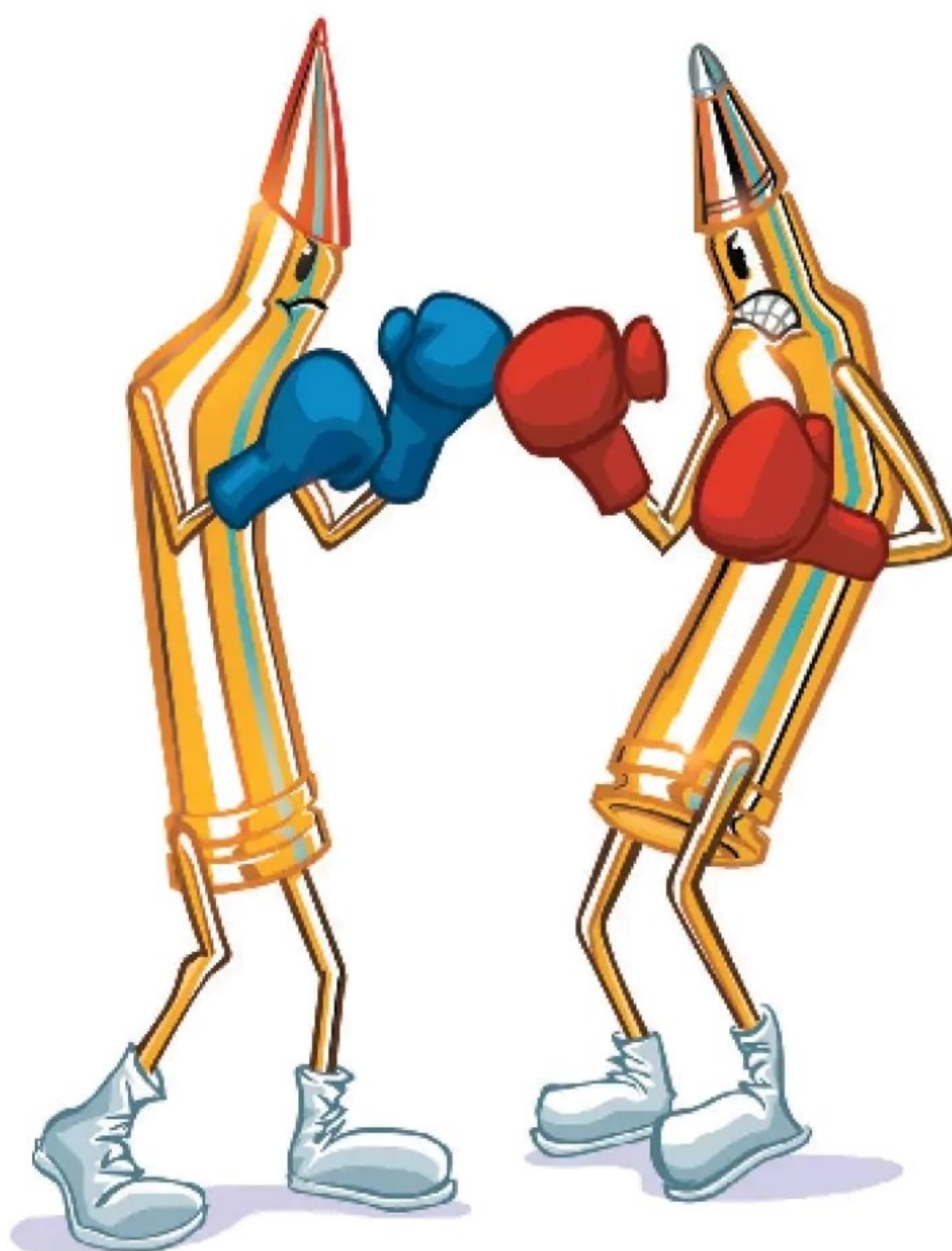
The 0.012-inch variation in bullet diameter doesn't amount to much, but the 8mm Mauser is on par with the .30-06 in terms of energy while the .303 Brit lags behind the .308 Win.

However, for deer-size game the .303 does fine and shoots flatter than the 8mm. Hornady's 150-grain Inter-Lock at 2,685 drops just 9.3 inches at 300 yards when zeroed at 200, which is a considerably flatter trajectory curve than Federal's 170-grain 8mm Power-Shok, which drops 14.3 inches at 300 yards when zeroed at 200. Despite a lighter bullet, the .303's energy is more than 300 ft.-lbs. higher than the 8mm's 170-grain load at 300 yards.

Component bullets are available for both cartridges from companies like Hornady, Sierra and Speer, and Nosler offers .323 bullets.

Factory loads in .303 are available from Hornady, Remington and Speer. Options for the 8mm can be had from Nosler, Norma, Federal, Winchester and Buffalo Bore. Note, though, that more than a couple of these loads are limited production and not always available.

Aside from the Winchester 54 there have been few factory 8mm Mauser rifles offered in the U.S., but there are



plenty of surplus 8mm Mauser 98-style rifles available.

Likewise, there are Enfield .303s available with prices ranging from a few hundred to several thousand dollars. Because the .303 case is rimmed it functions in double rifles and single-shots, too. Uberti recently introduced its 1885 Courteney Stalking Rifle, a single-shot, but for the most part, if you're looking for a .303 or 8mm you're going to find most of your rifle options on the surplus market.

Neither of these is a true long-range round, but both have their places in the field. In reality, the question is whether you prefer the German or British round and the rifles chambered for each.

.303 BRITISH

HITS

- Similar performance but with less recoil
- .311 diameter lives on thanks to 7.62x39
- New rifle option in Uberti Courteney Stalking

MISSSES

- Basically an anemic .308 but fewer options
- Bullet weights top out lighter than the 8mm
- Enfield lacks the cachet of the Mauser

8MM MAUSER

HITS

- Widely available and relatively cheap rifles
- Heavier bullets for bears and hogs
- Good number of component bullets for now

MISSSES

- No modern rifle options
- .303 is a better whitetail cartridge
- The Germans lost both world wars

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Tenmile



Tim Herald's safari hunt started when a gust of wind knocked his rifle and Trijicon Tenmile® optic off the roof rack of his safari truck. It ended when he took an East African defassa waterbuck bull with that same rifle and optic two days later, after confirming zero.

Read the full story at
[Trijicon.com/50mphDropTest](https://www.trijicon.com/50mphDropTest).





Ruger 60th Anniversary 10/22

It's not only Ruger's 75th birthday, it's also the 60th anniversary of the iconic 10/22 rimfire autoloader. The sixth edition of the rifle's Collector's Series, this one features an adjustable Magpul Hunter X-22 stock and red-accented charging handle and trigger. It ships in a Collector's Series box and comes with a metal street sign and pin. Other special features include the cold-hammer-forged barrel, which is threaded 1/2x28 and is tipped with a Ruger flash suppressor.

>>\$639, RUGER.COM

Hornady ELD-VT

The Extremely Low Drag-Varmint/Target combines ultimate accuracy with dramatic expansion, so whether your target is a piece of steel or paper or a prairie dog, this bullet will deliver. Featuring the company's AMP jacket and Heat Shield tip, the ELD-VT has a match-bullet profile and a reduced core-to-bullet-length ratio. This moves the bullet's center of gravity rearward for better aerodynamics while the high ballistic coefficient means optimum retained velocity downrange. The ELD-VT is available in .224 (62 grains, .395 G1 BC), 6mm (80, .410), 6.5 (100, .448) and .308 (174, .573).

>>\$28–\$48 (street), HORNADY.COM



Lyman Borecam 2.0

Being able to see what's going on inside a rifle's bore is key, and Lyman's new Borecam 2.0 not only lets you examine the bore but also sends detailed images to your phone—either iOS or Android. It will fit .22 and larger barrels and features a 26-inch rod to reach down into even the longest tubes. In addition to photos, it also takes video. Best of all, it's wireless so no hassles with cables or monitors. The Borecam 2.0 comes with rod with mounted camera, five interchangeable 90-degree mirrors to accommodate different calibers and a USB charging cord.

>>\$200, LYMANPRODUCTS.COM



Brownells Gunsmith Vise

Made in Germany, this heavy-duty vise is forged, not cast, for superior strength, and its precision-aligned jaws have hardened and textured faces. The jaws are also replaceable, and Brownells offers several options made of polyurethane, aluminum, fiber, rubber and felt. The spindle assembly is electro-galvanized for corrosion resistance and features a rolled trapezoidal thread for optimal clamping force. The spindle key has riveted safety rings and can be adjusted via a single screw.

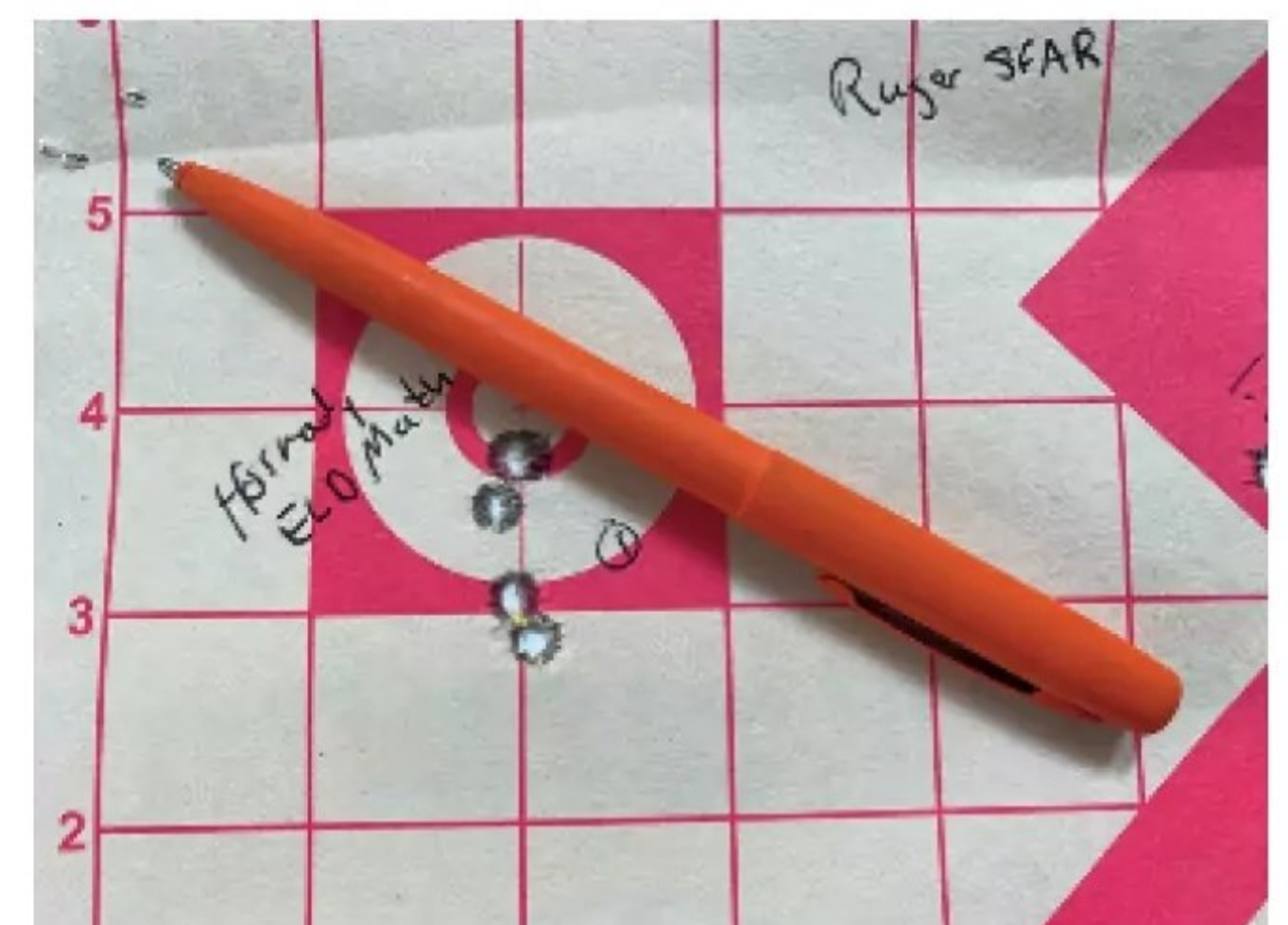
>>\$399, BROWNELLS.COM



Fisher Cap-O-Matic Space Pen

A dependable pen is a must for range record-keeping. Fisher Space Pens have pressurized cartridges so they can write at any angle, which is handy for labeling targets, and they work in extreme temperatures—important if, like me, you shoot whether it's 100 degrees or five. Hunters will find them great for filling out big game tags because they will write on almost any surface. The powder-coat orange model shown here—which I chose for its visibility since I'm prone to losing things—is no longer available, but a construction yellow one is, as are other colors and finishes.

>>\$30, SPACEPEN.COM



NEW LAPUA Cases for 2024



Lapua 300 WSM Cases

Spring of 2024, Lapua will showcase our legendary quality and consistency with the introduction of 300 WSM cartridge cases. Made of the finest materials and manufacturing processes, you can expect brass that offers exceptional longevity, even in the most demanding circumstances of hunting and competitive shooting.



Lapua 6mm GT Cases

Fall of 2024, Lapua will begin our support of the wildly popular 6mm GT cartridge. Optimized internal geometry based upon the 6.5x47 Lapua parent case will set our cases apart from the rest -- shooters will experience improved propellant efficiency and increased longevity along with the superb quality and consistency you would expect with a Lapua headstamp.



LAPUA

PASSION FOR PRECISION

A Special .22 Lever

WINCHESTER'S 9422 WAS HUGEY POPULAR AND ALSO AVAILABLE IN A FEW LIMITED EDITIONS.



The 9422 was available in a number of configurations, including some commemoratives like this LAPD special edition. The 9422 was typically an accurate lever action, suitable for small game or plinking.

For a lot of guys and gals, Winchester's 9422 (1972-2005) was pretty much the peak of lever-action rim-fires, and I must confess I agree with them. By 1991, more than 600,000 9422s had been produced. By the end of the run, that number is estimated to be around 850,000.

Later in the course of its production run, the 9422 was also offered in .22 Mag. (9422M), .17 HMR (9417) as well as the XTR upgrade with select walnut and nice checkering. In the mid-1980s the company introduced a 22.5-inch version featuring a pistol-grip configuration more in keeping with the centerfire Model 64 rifle rather than the Model 94 carbine.

There were also several other variants under the U.S. Repeating Arms banner including Big Loop, Trapper and laminate-stocked versions.

The .22 Mag. version was what an old Canadian hunting buddy of mine used for years as his truck gun. It was topped with low-end variable scope and accounted for all manner of critters up to coyote size out to 150 yards.

I recently had the opportunity to shoot a minty commemorative 9422. Winchester—and later U.S. Repeating Arms—made a few such limited-edition versions of the 9422 with varying



degrees of embellishment. The number of these is not as high as of the iconic centerfire Model 94, but it was enough to pay tribute to various entities and personalities. These covered the Boy Scouts of America, including the ultra-limited Eagle Scout issue; Annie Oakley; and this 1982-vintage specimen commemorating the Los Angeles Police Department, admittedly an organization not usually associated with .22 lever guns.

This upgraded version features a silver medallion in the stock with the LAPD's "To Protect and To Serve" motto, which has graced innumerable squad cars over the decades. There's also the inscription "Father-Son Special Issue" on the barrel just below the semi-buckhorn rear sight.

I shot this borrowed specimen with 29-grain Super-X .22 Shorts as well

as .22 Long Rifle Power Points. The Winchester ran like a champ with both the big ones and the little ones—for the most part. The only problem I experienced was with the Short brass clearing the ejection port when I got too gentle in throwing the lever. Loaded up with Shorts, it'd be tough to think of a better gallery-gun plinker.

The only real problem I had in shooting this LAPD 9422 lay in the fact that it took more commitment than I bargained on to overcome the "it's too pretty to shoot" instinct. However, the rifle's owner wanted to see how it shot, I was able to proceed with a clear conscience.

The trigger pull was 2.5 pounds with only a hint of takeup. On paper, the rifle lived up to its reputation for accuracy from a sandbag rest. Using the issue open iron sights, the

Long Rifles shot consistently under an inch at 25 yards, and I managed a lone 1.5-inch five-shot cluster at 50. I could've improved on that—or at least equaled it on a consistent basis—with a scope, which is easily done thanks to the 9422's side-ejection design and grooved receiver. However, the rifle's owner was understandably less than enthusiastic over the prospect of defiling his nearly new-in-box treasure with tip-off mounts and glass.

Regardless, it didn't take long to appreciate the 9422's ergonomics. At six pounds, the "LAPD Special" exhibited the legendary handling characteristics of the .30-30 Model 94—and weighed a half-pound less. The tubular under-barrel magazine holds 15 Long Rifles or 21 Shorts—and 17 Longs if you can still find any. The 9422 features a nice short lever throw. If speed shooting is your thing, you can crank 'em out just as fast as you can reacquire the target.

Since the 9422 is so well suited to offhand plinking, we spent an enjoyable half hour or so busting clay birds on a sand berm at 60 yards or so. If I had a less collectible sample and wanted to hunt small game with it, I believe I'd want to hang a compact low-power scope on it.

While Winchester's .30-30 Model 94 met its demise in 2006, it later enjoyed a resurrection in several variants through Miroku as well as FN. Unfortunately for fans of the 9422 there has been—as of yet—no such second lease on life. But it's certainly worth hoping for, although it appears to be an unlikely prospect at this time.

The 9422 was never an inexpensive item. By 1982, 10 years into its production cycle, the base model retailed for \$276; that translates into a little over \$872 today. For now, finding a nice used one is well worth the hassle. It's a great .22, and I'm by no means in a minority by thinking so.

Unsurprisingly, commemoratives are more likely to be found in minty condition than standard models, but anything—commemorative or not—in nice shape can run from \$1,200 to \$2,000 and beyond at auction or in the used rack.

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Pondering Powders

A FASTER WAY OF DISCOVERING AN ACCURATE LOAD MAY BE TRYING A DIFFERENT GUN-POWDER.

Try Reloder 19," the ballistcian told the range tech who had just fired a 1.5-inch

100-yard group with my semi-custom 7mm WSM. Clearly, the initial charge of H4831sc didn't produce good accuracy with the Barnes 145-grain LRX, but switching powders after just one three-shot test group seemed a bit extreme to me.

The tech charged three of the short magnum cases with a starting load of Reloder 19. He fired a shot, then another. The second overlapped the first, and the third shot created a half-m.o.a. cloverleaf.

"Yep, it likes 19 better," the ballistcian said with a grin.

The range tech proceeded to find out whether the group was repeatable, and nine more rounds downrange created three more half-m.o.a. groups. I was convinced. If it had been me, I would've tried a bunch of different charge weights before switching, but the ballistcian said a particular rifle often won't like a certain type of powder—and you're betting off switching to another type instead of chasing charge weights.

This experience occurred a decade ago, and was eye-opening for me. For



Often, trying a different type of powder results in better accuracy than trying a bunch of different charge weights with one propellant. For instance, an extruded powder (l.) may prove to work better than a spherical one.

much of my life, I'd planned my handloads according to what powder I had on hand and what was readily available. My favorite .30-06 Springfield, .280 Ackley Improved and .270 Win. handloads all used H4831sc. My go-to propellant for 7mm Rem. Mag. and .300 Win. Mag. was H1000. For high-horsepower magnums such as the .300 Wby. Mag., Reloder 22 was a favorite. If it's not broke, don't fix it, right?

Not necessarily. Having a broad selection of propellants on hand can make handload development much easier, rather than complicating it. So why do rifles prefer some propellants over others? And how does one determine the best to use in a given barrel?

The answer to the first question is challenging to answer. There are trends, rules of thumb and some useful probabilities, but scientific predictions are elusive.

As Barnes' lead ballistcian Gregg

Sloane noted: "When comparing a selection of proper burn rate powders for a given cartridge and bullet weight, I can't really explain the 'why' behind a certain powder achieving better accuracy in a given gun over another. There are many factors to consider; slight changes of case fill, velocity consistency, and how the powder burns all play a role. Time to peak pressure, flame temperature, energy and pressure changes, and engraving force, among others.

"The effect of barrel harmonics and how one powder burns over another is an interesting thing," he added. "It's not easily measured and is hard to quantify."

Actually determining which propellant is best in a given rifle is easier than predicting it, although it requires legwork. It's all about testing. But first a little background on the powders themselves.

Generally speaking, extruded or

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“stick” propellants—meaning the granules are long and cylindrical—provide slightly better accuracy than spherical or “ball” powders—meaning the granules are round or flattened/round shapes. There are lots of exception to this generality, though, so never write off spherical powders in your search for accuracy.

Extruded powders also tend to provide more consistent velocities. This may be a function of their tendency to stack in a more open column, allowing the flame from the primer to penetrate and permeate more immediately and evenly, resulting in a more consistent ignition and burn. Spherical powders can clump up, and those clumps are slower to burn, introducing inconsistencies.

Burn rates play a role as well. Within the appropriate burn-rate spectrum suitable for a given cartridge, propellants on the slower-burning end generally provide the most velocity, particularly with heavy-for-caliber bullets. However, faster-burning powders often provide slightly better accuracy. This is one of those hard-to-explain characteristics of gunpowder.

The good news is we don’t have to understand it to benefit from it: If you have a rifle that’s proving stubborn about accuracy, try a faster-burning powder. You might be surprised.

The ideal powder charge is one that’s slightly compressed by the base of the

bullet. This ensures that the propellant won’t shift away from the blast of the primer, enabling instant and consistent ignition. It also prevents the powder from lying in various different positions inside the case from shot to shot—something common in handloads with a lot of air space inside.

Although this isn’t a direct predictor of accuracy, it is usually a predictor of velocity consistency. A full or nearly full handload typically provides tighter extreme spreads and standard deviations than one with a high percent of air inside.

Some reloading manuals, such as Nosler’s, provide case-fill density in percentage by volume with its data. This can be valuable information, but it does vary a bit depending on cartridge case brand. And it can vary a lot depending on how deeply you seat your bullets.

You can use those published case-fill density percentages to choose a propellant that should provide complete or nearly complete fill with your bullet. This is one scientific step that will provide predictable results.

Now, on to testing. When you begin load workup using a certain projectile in a certain rifle, be flexible in the powder you use. Pick a few propellants to start with, basing your decisions on case-fill density, burn rate and granule type. If you’re doing high-volume loading, pick spherical powders that meter

easily; if not, start with extruded-type powders likely to provide best possible accuracy.

If your first few groups aren’t promising, don’t be stubborn. Switch powders. Gun writer Wayne van Zwoll once told me that if a certain load shoots a bad group once, it’ll shoot a bad group again—maybe not every time, but even occasionally isn’t acceptable. “Why waste time trying to prove it won’t?” he said.

If accuracy proves elusive, try powders that are bulky but sorta fast-burning for the cartridge you’re working with. Keep switching until you find a propellant that produces significantly smaller groups than most. Optimally you’ll only go through two or three powder types before finding something your rifle responds well to. In extreme cases, you may need to try five or six. And yes, that can be a challenge in today’s era of starved supply lines.

On the plus side, you can do a lot of touch-and-go testing with one pound each of a handful of good propellants. Watch the shelves of local shops, and put together a collection of good powders suitable for the types of cartridges you usually load. I’ll wager you’ll use less powder, cause less barrel wear and achieve better accuracy by quickly trying a variety of powder types than you will by stubbornly working through a bunch of charge weight increments with just one type of propellant. ■

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Outdoors on Demand



These days, America's sportsmen and women are clamoring for more "content," as we call it in the media: more articles, more television shows, more website info. Outdoor Sportsman Group—which publishes this magazine as well as bringing you the Sportsman Channel and Outdoor Channel—has answered that call with the My Outdoor TV (MOTV) app.

It's a resource like no other, a curated treasure trove of outdoor-oriented television shows and videos. Think of it like your own personal Netflix, with episodes of "Gun Stories" with Joe Montegna, the gun restoration show "The Gunfather," "Guns & Ammo," "Shooting USA" and more. The universe of content is even bigger when it comes to hunting, and I know a lot if not most of you enjoy your time in

the field. Check out "Petersen's Hunting Adventures," shows by hunting legends Fred Eichler and Jim Shockey, "Meat Easter" and many, many more. Plus there is a ton of fishing as well, including live streams of various angling competitions.

MOTV is an incredibly deep library containing more than 20,000 episodes of outdoor television shows as well as short-form video encompassing how-to instructional and history topics you can watch anytime, anywhere.

In addition to the TV episodes, I think *RifleShooter* readers will really appreciate short-form videos such as "Gun Stories Tidbits" on iconic rifles as the M1 Garand, the Remington rolling block and the AK-47. And, again, it's all HD-quality video for the ultimate viewing experience.

Perhaps even better for shooters and hunters on the go, in addition to

streaming video, you can take this content with you via the "Take With Me" feature that allows you to download content for later viewing when you're without Internet access—say, at the range or in hunting camp.

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A New Conquest

ZEISS UPDATES ITS SENSIBLE CONQUEST 3-12X44MM WITH A HANDY NEW ELEVATION TURRET.

I'm a minimalist, and as such I don't want to complicate my life any more than necessary. I immediately deactivated the lane departure warning system in my truck, and I'm never going to download the app that my local grocery store keeps insisting I need. I suppose that's why I like the Zeiss Conquest V4.

In a world where popular hunting scopes weigh 30 ounces and offer Christmas tree reticles, Bluetooth connectivity, oversize main tubes and illumination, the svelte, simple-to-operate V4 3-12x44mm, is a delight. Weight is just 19.4 ounces, and it measures 13.8 inches long, making it compact and light enough for mountain rifles.

There's nothing complicated or intimidating about this scope. The Z-Plex No. 2 reticle offers a wide-open view of what's in front of the rifle, and there are no distracting stadia lines or dots to contend with. The reticle is non-illuminated, and parallax is fixed at 100 yards, so there are no controls on the left side of the scope body.

The Conquest V4 traditionally offered exposed elevation turrets on its 4-16X and 6-24X, but all 3-12X models came with capped windage and elevation turrets. The big news this year is the addition of 3-12x44mm and 3-12x56mm models with exposed elevation turrets and ballistic stops.



At 13.8 inches long and weighing under 20 ounces, the Zeiss is suitable for sporter-weight hunting rifles and delivers great long- and short-range performance.

Both new models feature elevation turrets that offer up to 70 m.o.a. of elevation adjustment and a capped windage turret.

This seemingly minor change has made one of the most versatile hunting scopes available today even better. The Conquest V4 is one of the best optics available under \$1,000, but some hunters shied away from the 3-12x44mm and 3-12x56mm because of the capped turrets.

While I am, as I said, a devout minimalist, exposed elevation turrets offer real-world benefits. Once upon a time the ritual of sighting in the scope on a hunting rifle involved zeroing the gun at the desired distance, recapping the elevation turret and only removing the cap when the gun wasn't shooting where it should or you needed to change point of impact when switching loads.

These days many new shooters have never seen a capped elevation turret,

SPECIFICATIONS	
ZEISS CONQUEST V4	
POWER x OBJ.	3-12x44mm (tested)
LENGTH, WEIGHT	13.8 in., 19.4 oz.
MAIN TUBE	30mm
RETICLE	Z-Plex, 2nd focal plane
ADJUSTMENTS	exposed elevation turret w/zero stop; 0.25 m.o.a.
PARALLAX	fixed, 100 yd.
EYE RELIEF	3.5 in.
PRICE	\$850
MANUFACTURER	Zeiss, ZEISS.COM

and hunter prep/long-range schools teach even beginning shooters and hunters to click for elevation in the field instead of holding over. Now, if I know my dope I can stretch my rifle out past 1,000 yards and don't need a big, bulky scope with a complex reticle to do so.

The Conquest V4 wouldn't be my

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first choice for a dedicated long-range rifle that I planned to take to the range and routinely shoot 1,000 yards and farther, but a 3-12x44mm with exposed elevation turret is certainly qualified to ring steel at 800 or more yards.

Magnification certainly isn't an issue. Some shooters think they need 20X magnification to shoot four-figure distances, but that isn't the case. I've been to two top shooting schools where the instructors made us shoot 1,000 yards on 10X, and it's simpler than you might imagine.

The lower magnification helps reduce "bounce" in the reticle, and a wider field of view allows you to call misses. If you're a hunter who likes to occasionally shoot long range to sharpen your skills, this optic will work just fine.

Zeiss Conquests are designed and engineered in Germany and built in Japan using premium components and superb glass. I haven't shot every riflescope in the Zeiss catalog, but the ones I've used all tracked as well as any precision scope, and the Conquest V4 is no exception. I did a box test on the Conquest, and the clicks shifted the point of impact the prescribed 0.25 m.o.a. per click and returned to zero as expected.

I also borrowed a trick I learned from gun writer and optic guru Tom Beckstrand and adjusted back and forth between zero and 25 m.o.a. of elevation (Tom recommends 50 m.o.a., but my targets weren't large enough). I fired the first shot at zero m.o.a., shifted to 25 m.o.a. and fired, then back to zero m.o.a., and continued that pattern until I had two three-shot groups.

I like Tom's test because big m.o.a. changes like this will reveal whether a scope tracks well across its adjustment range. At 50 yards the travel should be very close to 12 inches, and that's almost exactly what the Conquest did. In fact, the Zeiss Conquest is about as close to perfection as I've seen, and that ensures any misses at extended ranges aren't the result of a faulty scope.

Where this scope really shines is in the woods. Light transmission is 90

percent, and color fidelity and clarity remain excellent even in very low light conditions. My litmus test for this is how long I can see a reflective 6x6-inch square at 100 yards past the end of legal shooting light, which I set at a half-hour past sunset. It's late July as I write this, and a half-hour past sunset is 9:26 p.m. At that time I could clearly see the reflective box, and even 15 minutes later I could still see it clearly. Low-light performance from this scope is excellent.

Scopes with 3X magnification also allow for a wide field of view when hunting at close range. Despite what the internet seems to tell us, not all hunters are shooting game at over 500 yards, and anyone who has needed to make a quick shot in dense cover knows that high magnification is of no use when you need to make a snap shot at close range.

Zeiss scopes have a reputation for ruggedness, and the Conquest is durable enough to withstand years of hard use. Everything from the screw threads to the operation of the magnification ring is smooth and precise. To reset zero you must remove two screws in the elevation turret. With lower-quality imported scopes the set screws are made of soft metal and are prone to stripping, but that's not the case with the Zeiss.

I even subjected the scope to a "tip test," dropping it on the side to see if the objective lens shifted (scope manufacturers aren't happy to hear about this when things go badly). However, with the Zeiss everything stayed put. That's no surprise since the Conquest V4 undergoes the same brutal 90-minute continuous shock and saltwater exposure tests that the company's other, more expensive scopes endure.

Zeiss even guarantees that these scopes will survive being submerged in water to a depth of 13 feet for two hours, which is a testament to the Conquest's exceptional durability. Zeiss also includes a T* six-layer lens coating and Lotutec treatment to its lenses, which ensures these optics can survive the harshest conditions.

I tested the Conquest V4



The big addition to the Conquest V4 3-12X scopes is the addition of an exposed elevation turret with zero stop

3-12x44mm on a CZ-USA Model 600 rifle in 6.5 Creedmoor. The 30mm main tube and 44mm objective lens allowed me to mount the scope low on the gun, a benefit on sporter-style hunting rifles with fixed combs like this one. With 3.5 inches of eye relief there's no concern that the scope will make contact with the shooter's brow under normal conditions, even when shooting hard-kicking magnums.

I also like that the numbers etched on the elevation turret are easy to see even with my head on the stock. Click adjustments were crisp and precise, and there are visual indicators to identify number of revolutions: a solid white ring on the first revolution, two dashes on the second, three dots on the third. The resettable windage knob is small but easy to operate, and like the elevation knob the adjustments are precise.

The Conquest V4 is certainly austere, but for most hunters I think this 3-12x44mm will provide everything they need and nothing they don't—from long-range steel to reasonable shots on game—which should make every minimalist smile. Couple that with German engineering and absolute rock-solid build quality and a suggested retail price of \$850 and you'll see why the Zeiss Conquest V4 3-12x44mm might be the best new hunting riflescope to hit stores shelves this year.



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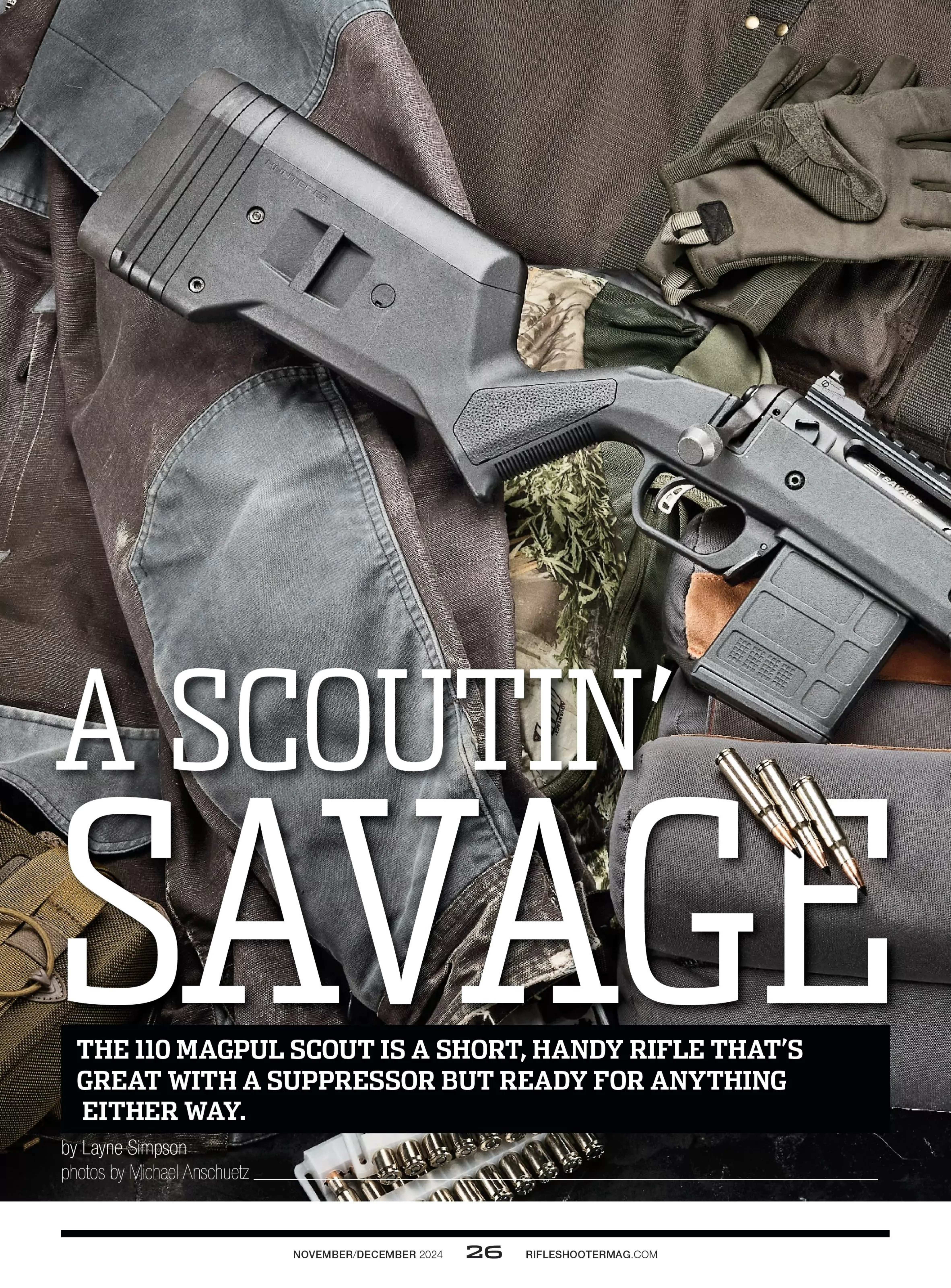


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A detailed photograph of a Magpul Scout rifle with a suppressor, resting on a pile of tactical gear including a vest, gloves, and a magazine. Several rounds of ammunition are scattered around the rifle. The title 'A SCOUTIN' SAVAGE' is overlaid in large white letters.

A SCOUTIN' SAVAGE

THE 110 MAGPUL SCOUT IS A SHORT, HANDY RIFLE THAT'S GREAT WITH A SUPPRESSOR BUT READY FOR ANYTHING EITHER WAY.

by Layne Simpson
photos by Michael Anschuetz



The gun club I shoot at has more than 1,000 members, and while weekends are crowded, on other days I can usually get my work done practically undisturbed. Only two of us were there while I was shooting the Savage Magpul Scout. The other fellow and I had hunted spring gobblers together a couple of times, so after the shooting was done we chatted for a while.

First thing out of his mouth was, “I know why so many gun companies are building short rifles like that Savage you were shooting.” Before I could reply, he followed with, “Everybody these days either has a suppressor or is in the process of getting one, and with a can hanging on the barrel of your rifle it is no longer than a with a 24-inch barrel.”

And he was right. For another assignment, I was also shooting a Savage 110 Klym with a 24-inch barrel that day, and with its muzzle brake removed it was a half-inch longer than the Magpul Scout wearing my Banish 30 suppressor, which is nine inches long.

Savage has been selling variations of the Model 110 rifles with the Scout moniker for more than 20 years, and the Model 110 Magpul Scout is the latest version to come down the pike.

It should have been called Model 110 Magpul Hunter because that’s the actual name of the component stock itself.

For the benefit of those who are interested in a bit of history, Magpul was founded in 1999 by former U.S. Marine Richard Fitzpatrick. His very first products, called MAGPULs, were rubber loops that attached to the bottoms of AR-15 magazines to allow them to be more quickly removed from carrying pouches during combat. He got the idea from fellow soldiers who often fashioned similar magazine pullers from paracord.

The Magpul Scout has a number of features often seen on synthetic stocks these days. Beginning at the south end, spacers included in the package allow length of pull to be adjusted from 13 to 15 inches. Simply remove the two retention screws from the recoil pad, pull

it off, add or remove spacers as needed and reattach the pad.

Unlike recoil pads on some rifles, the one on the Magpul Scout stock actually does work. Integral sling attachment points are on both sides of

the stock. Moving forward to the semi-vertical wrist with its non-slip gripping surface, shallow touch points on both sides are there for shooters who prefer a thumb-forward rather than a wrap-around grip.



The Magpul Scout uses a blueprinted 110 action, and a Picatinny rail extends well forward for optics versatility. A dished-out area behind the bolt is designed for thumb placement.



Three spacers included with the rifle allow you to adjust pull length from 13 to 15 inches. Slots on both sides of the stock permit the use of a strap-style sling.

Instead of a traditional sling swivel, the Magpul Scout's buttstock has slots in the side for a strap-type sling. On the fore-end, an abundance of M-Lok slots on its bottom and sides allows easy attachment of sling, bipod and other accessories. The wide fore-end has a flat bottom for resting on a sandbag or barricade while the rifle is seeing action in competition.

My scale indicated a weight of three pounds for the stock, which, if you're keeping score on the price, retails for \$300 on its own. Color options are black or flat dark earth, and as is to be expected from Savage, the rifle is available with right- or left-hand action.

A long aluminum bedding block in the stock has a mortise at the front for the recoil lug of the receiver, along with threaded attachment points that receive four bolts securing the receiver and bottom metal. This design detail allows a drop-in fit of the barreled action at the factory while delivering good accuracy.

Like the stock, the bottom assembly is black polymer. The trigger guard is roomy enough for three fingers, or one large finger clad in a very thick glove. A paddle-shaped ambidextrous magazine release at the front of the guard is within easy reach of an index finger, with a push forward dropping the empty AICS-style polymer magazine and making room for 10 more rounds

The Model 110

Now more than 60 years old, the Savage 110 is the oldest continuously manufactured bolt-action rifle in North America. The model designation came from its introductory price of \$109.95, and it was the first widely produced bolt action with versions for left-handed shooters.

The 110 has introduced groundbreaking designs like the much-copied AccuTrigger, as well as innovations like the AccuStock and AccuFit buttstock. The former practice of changing the model number designation based on configuration was discontinued, and they're all 110s now—a lineup that at last count includes nearly 50 models.—*J. Scott Rupp*

ACCURACY RESULTS

SAVAGE 110 MAGPUL SCOUT

.308 Win.	Bullet Weight (gr.)	Muzzle Velocity (fps)	Std. Dev. (fps)	Avg. Group (in.)
Lehigh Defense Tipped Max Expansion	155	2,639	24	0.79
Lehigh Defense Tipped Max Expansion	175	2,429	11	1.07
Lehigh Defense Controlled Chaos	152	2,608	9	1.24
Lehigh Defense Xtreme Chaos	160	2,505	12	1.38

Notes: Accuracy is the average of three three-shot groups fired at 100 yards from a sandbag rest. Velocity is the average of 10 shots clocked 12 feet from the muzzle with an Oehler chronograph. Temperature, 87 degrees; elevation 866 feet

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(four rounds for the .450 Bushmaster). With a bit of practice, loaded magazine insertion becomes quick and easy. Nothing feeds cartridges more smoothly than a good polymer magazine of single-stack design.

The receiver and bolt of the 110 action on this rifle are blueprinted. Bolt rotation, travel and lockup were a bit rough, but a thin coat of lube on the rear surfaces of the two locking lugs on

the bolt body and the firing pin cocking ramp worked wonders as usual. It will improve as the bolt wears in.

Short cartridges such as the 6.5 Creedmoor, .308 Win. and .450 Bushmaster were designed for a short action, and that's exactly what the Savage rifle has. It also has the old-style grooved barrel retention nut, and I am equally happy to see the exposed end of the sear at the right-hand side

of the receiver bridge serving as a bolt release. Just like on the original Model 110, holding it down with a thumb while holding back the trigger allows the bolt to be removed from the receiver.

The blued carbon steel barrel measures 16.5 inches from bolt face to muzzle, and close examination with my Lyman Borecam revealed fairly smooth lands and grooves with a few tool marks. Outside barrel diameters are 1.025 inches in front of the receiver ring and 0.700 inch at the muzzle, which is nicely crowned.

The barrel has the usual 5/8x24 threads, and it comes with the same muzzle brake as was on a Savage 110 Elite Precision I shot some time ago. The brake has left-hand exterior threads and attaches to a retention sleeve, which has internal right-hand 5/8x24 threads.

Here is how it works. With the sleeve snug against the brake, both are turned clockwise until they reach the limit of the threaded shank. At that point the four ports of the brake are not likely to be in their correct horizontal position. Through trial and error, readjust the two until the ports



M-Lok slots on the fore-end and the bottom make it quick and easy to add slings, bipods and other accessories.



A Scout rifle demands an aperture sight, and this one is a Williams that's adjustable for windage and elevation and also easily removed from the rail.

SPECIFICATIONS

SAVAGE MODEL 110 MAGPUL SCOUT

TYPE	two-lug centerfire
CALIBER	6.5 Creedmoor, .308 Win (tested), .450 Bushmaster
CAPACITY	10-round detachable magazine
BARREL	16.5 in., 1:10 twist
OVERALL LENGTH	36 $\frac{5}{8}$ in.
WEIGHT	8.5 lb.
STOCK	injection-molded polymer w/bedding block
TRIGGER	AccuTrigger adjustable; 3.75 lb. pull (measured)
SAFETY	3-position tang
SIGHTS	adjustable Williams aperture rear, AR-15-style front; Picatinny rail
PRICE	\$1,099
MANUFACTURER	Savage Arms, SAVAGEARMS.COM



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A SCOUTIN' SAVAGE

are properly aligned, with the sleeve pulling the brake hard against the muzzle of the barrel.

Attached to the receiver is a 24-slot Picatinny rail that reaches $5\frac{3}{8}$ inches beyond the front of the receiver. Sitting atop its aft end is a fully adjustable Williams rear sight with a 0.180-inch aperture. Up front, an elevation adjustable AR-15 style sight is protected from damage by sturdy steel ears that allow plenty of light to reach the sight.

I love iron sights and prior to attaching a scope to the rifle for accuracy testing, I found banging steel out to 300 yards to be both fun and easy. You will not find a better sight picture for both accuracy and quick target acquisition.

The tang safety slide blocks trigger movement in its rearward position, and pushing the slide to its middle position allows the bolt to be cycled for loading or unloading while the trigger is still blocked.

Pushing the slide all the way forward readies the rifle for firing.



The barrel is threaded 5/8x24 and comes with a brake, but its 18-inch length is also perfect for a can. The front sight is an AR-15 type protected by wings.

The safety is wide enough to be easily moved while wearing gloves, and deep horizontal grooves on its surface offer no-slip operation with the thumb.

Shooting the rifle reminded me once again of how good a mass-produced trigger can be. With no detectable trace of creep or overtravel, the AccuTrigger broke crisply at 3.75

pounds with a variation of only three ounces. According to the specs, I could have gone down to 1.5 pounds, and would have if I had been shooting a varmint rifle or a rifle used for precision shooting. However, since the Magpul Scout is for down and dirty use in a world of hard knocks, I left the trigger alone. ■



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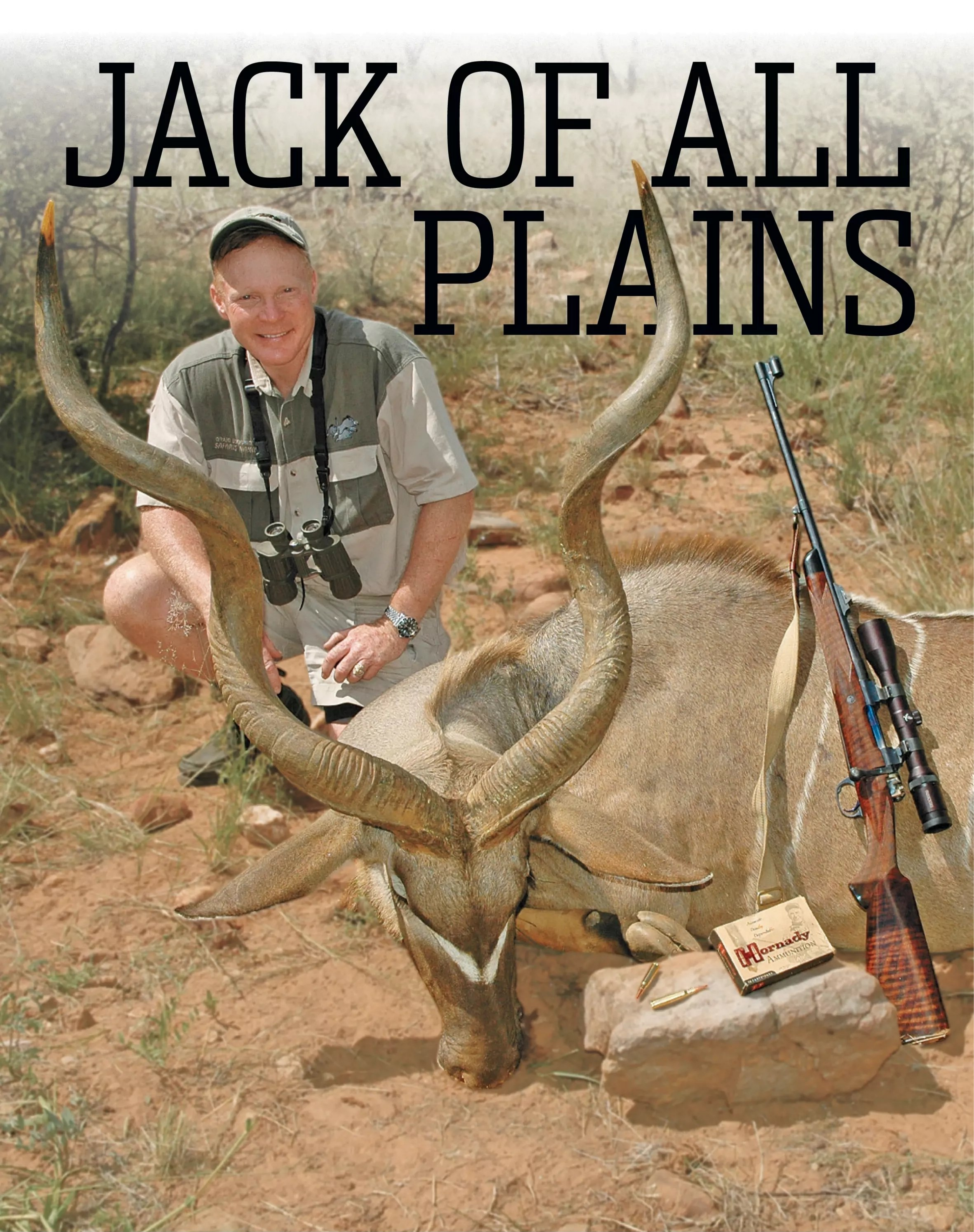


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HUNTING AFRICAN PLAINS GAME REQUIRES A UNIQUE LEVEL OF VERSATILITY. WHAT'S THE BEST CARTRIDGE CHOICE?

by Craig Boddington



In North America, we have the luxury of planning for a specific encounter. On the bottom end, it might be a Coues whitetail or pronghorn at longer range or a big, tough black bear at closer range. Shots at elk and moose are all over the map, but we know they're big, and we can plan accordingly.

You have no such luxury in Africa. There's no telling what a given day on safari might bring—from shooting conditions to species diversity. Including subspecies, there must be 150 varieties of African antelopes, from jackrabbit-size dik-diks and duikers to 2,000-pound elands. Then you have the pigs and the zebras. For this discussion, I'll ignore the Big Five but will include Africa's full suite of small predators.

Today, at least 75 percent of all African hunts are for non-dangerous game, and chances are one rifle is enough. And your favorite deer or elk rifle should suffice. The rifle must be adequate for the largest game you intend to shoot, at the farthest distances you are comfortable shooting. Even if you take more than one, when you start a stalk you will have just one rifle, so it should be versatile enough to handle anything you might encounter.

On my early safaris, I carried a few 180-grain full-metal-jacket match loads for my .30-06, shooting to same point of impact as my 180-grain Nosler Partitions, but I soon decided it was too complicated to switch loads on the fly. That's why today I believe the plains game rifle—and its one load—must be adequate for the largest game you intend to hunt.

I have no idea how many cartridges I've used, brought and borrowed on African hunts. Here are my thoughts on some of the best choices.

As to the low end, the .243 is nearly perfect for springbok up to impala, and the cartridge is just as popular over there as here. However, I just don't consider it versatile enough to be *the* plains game rifle. Similarly, I've used a .250 Savage for smaller antelopes and pigs, and if you have a pet .25 you're compelled to take, be my guest. But it should not be your only rifle.

To my thinking, the 6.5mms and .270s are sensible minimums. Here I'm assuming eland is not on the menu, and I will offer cautions. Older 6.5mms—

6.5x53R, 65x54 MS, 6.5x55—have a rich history in Africa. Such history was made with long, heavy 160-grain bullets, in a time before scopes were widespread, so ranges were short.

The 6.5x55 is still popular in Africa and, because of its huge popularity, 6.5 Creedmoors are often seen on safari. They are effective up close, even on larger antelopes, but have questionable energy at longer ranges.

If a 6.5mm is your thing, then I recommend stepping up to one of the faster cartridges. The 6.5-.284 Norma, .264 Win. Mag., 6.5 RPM and 6.5 PRC are ballistically much the same: 140-grain bullet at about 3,000 fps. Faster and with more energy than the Creedmoor and 6.5x55, there's a big difference in their effect on game.

Even so, I have not been impressed by either the .264 or 6.5 PRC on larger game

at longer distances, especially zebras. It seems to me that bullets in the 140-grain class are light for this, therefore I would assume even faster 6.5mms like the .26 Nosler and 6.5-.300 Wby. Mag. would suffer the same shortcoming.

This puts the traditional .270s—.270 Win., .270 WSM and .270 Wby. Mag.—in the same boat; their 1:10 twist barrels max out with 150-grain bullets. Yes, but most African shooting is within 300 yards. So as long as you aren't stretching the barrel—or shooting an eland—the “old” .270s are marvelous plains game cartridges.

My wife is more a .270 girl than I'm a .270 guy, but we've both taken a lot of plains game with various .270 Win. rifles. When using tough bullets—130 to 150 grains—I can't recall problems that couldn't be explained by imperfect shot placement. Both of us have taken African game with some extra-long shots with .270s, also with no problems. However, I can't recall combining extra-large with extra-long.

New .270s—6.8 Western and .27 Nosler—have faster twists and use heavier bullets. I used a 6.8 Western in a Legendary Arms Works Model 704 rifle in South Africa in 2022 with 162- and 175-grain bullets. Some of the shots were on the long side, and while one safari's bag proves nothing, it seemed to me performance was about the same as with a fast 7mm using like bullet

weights. That makes sense, because with these cartridges, bullet weight is now competitive with the 7mm, and velocity is similar. After all, there's only 0.007 inch difference in diameter between .277 and .284.

Speaking of the 7mm, there are 7mm fans and .30 caliber fans—and never the twain shall meet. Still, I think .284 and .308 are the two most ideal calibers for the full run of African plains game, and there are plenty of great cartridges in both diameters, at wide velocity ranges. It depends on how far you want to shoot and how much recoil you're willing to soak up.

I've done a lot of African hunting with the old 7x57 Mauser, and both my daughters have used the 7mm-08, its ballistic twin, almost exclusively. In these mild cartridges, we have usually used 140-grain bullets, and they've been awesome in performance on game up to zebra, but we don't stretch the range.

After decades of experience, I am convinced the mild 7mms are more effective on larger game than the mild 6.5mms, the primary difference being frontal area. The 7mm is 0.020 inch larger than the 6.5, and while that doesn't sound like much, I can't explain it any other way.

Back in the 1980s and '90s, I used the 7mm Rem. Mag. on several safaris. I never stepped up to 175-grain bullets—my rifle didn't like them—so I used 160- to 165-grain slugs. These are much different from 140-grainers, which means you can take the gloves off regarding distance.

There are several cartridges in similar velocity class with the 7mm Rem. Mag., which pushes a 160-grain bullet to almost 3,000 fps: 7mm WSM and Rem. Short Action Ultra Mag, .280 Ackley Improved and more. There's not much in Africa you can't do with them.

In 2023, hunting in the Eastern Cape with Fred Burchell, we were looking for a kudu near sunset. Three eland bulls stood on a ridge at 300 yards. I was using Fred's Model 700 Sendero 7mm Rem. Mag. with 150-grain Tipped GameKing. The Rem. Mag. is not an eland cartridge, and the GameKing is not an eland bullet, but the opportunity was now. I shot



(L.-r.): 7mm-08, 7x57, .280 Rem., 7mm Rem. Mag., .28 Nosler. The 7mms are all good plains game cartridges, and the ones that can handle the heaviest bullets might be the best choices of all.



With the new heavy bullets, Boddington believes performance with .277 caliber cartridges like the 6.8 Western is much the same as with a fast 7mm with like bullet weights.

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carefully low in the shoulder crease. The bull swapped ends, so I used the same hold and shot again. The bull dropped.

Now the 7mms have a new dimension. Remington used a 1:9.25 twist for its Big Seven, so bullet weight maxed out at about 175 grains. In 2022 I was

part of a group at Carl Van Zyl's John X Safaris. I brought a rifle, but most of our six-man group hadn't brought rifles, so Carl "issued" them Gunwerks rifles in 7mm LRM, a Gunwerks proprietary cartridge that is nearly identical to the new 7mm PRC. Ammo was 180 grains,

the heaviest 7mm bullet I've seen used. Performance astonished me on all sizes of game at all ranges.

I have mostly been a .30 caliber guy for African plains game. I started in Kenya in 1977 with a Ruger Model 77 in .30-06, and its performance was so good that, to this day, I recommend the .30-06 as one of the all-around best for plains game. Back then, I was shooting 180-grain Partitions. In the early 2000s, doing a lot of African filming, I used Hornady factory loads with 180-grain InterLock bullets.

There's little you can't do with a 180-grain bullet in the .30-06, provided you aren't inclined to stretch the range. On that 2022 hunt, I brought a Gunwerks .300 Win. Mag., firing Hornady's also-new 190-grain CX. On the first day, I shot a fine kudu bull at 540 yards. It was the longest shot I'd taken in Africa, and while it could have been done with an '06, I doubt I would have tried.

Various fast .30s from .300 H&H to .300 Rem. Ultra Mag. with 180- or 200-grain bullets are hard to beat. However, I am so impressed by the new heavy 7mm bullets that I've ordered a 7mm PRC from Flat Creek Precision, and I hope to carry it in Africa.

If eland is on the menu, there's an argument for a medium magnum, and they do work. I took my 8mm Rem. Mag. on several safaris, and .338 Win. Mag. and .340 Wby. Mag. as well. The latter cartridge finally convinced me of the error of my ways. The thing about the plains game rifle is that—unlike anywhere else—in Africa you might shoot it several times daily. Therefore you must be comfortable with it.

We all have a recoil threshold. In Ethiopia in '93, I took only a .340 Wby. Mag. It had a good run of success, and I shot it a lot, but it wasn't fun. That same argument applies to the awesome .375 H&H. The .375s and 9.3mms are versatile and good choices for a one-rifle safari. You can, and will, get by, but they are not plains game rifles.

The plains game rifle must be accurate, should be reasonably flat-shooting and must give you confidence. Also, it must be shootable—because you're going to shoot it a lot. ■



Eland is the big wild card—emphasis on big—and can call for larger calibers than other species. But remember that if it's a one-gun deal, you'll have to shoot that one gun a lot, so you have to be comfortable with it.

Sticks and Scopes

Most shooting is off sticks in Africa. It's traditional and effective because, historically, shots are not long. African PHs have seen so much awful shooting by the likes of you and me that they are terrified of long-range shooting. Also, there's the African Rule: One drop of blood equals license filled and fees payable. I admire that rule because it makes you careful.

The African Rule isn't changing, but tastes are. Some PHs are embracing the new long-range culture, and average shots are lengthening in open country. I've seen an increasing use of bipods. And rather than the traditional, fast-to-use, three-legged African shooting sticks, there's a significant shift to more complicated fore-and-aft sticks, which support butt and fore-end.



These increase stability and effective range once you get the hang of them. There's the rub. What I call "stickology" is key to African shooting. Everything has thorns, and a standing rest gets you above thorns, over low vegetation, and above creepy-crawlies. It takes practice, which is best done long before you leave home.

The plains game rifle will be scoped. I have often said that a good old American 3-9X is plenty of scope for Africa. This is still true, but with large objectives and higher magnification, we are seeing bigger scopes in Africa.

In 2022 and '23, hunting plains game in South Africa's Eastern Cape, I used modern "big" scopes, and I fought them every step of the way. It was partly my fault because I rarely use big scopes. But African habitat played a role. You may be set up for a long shot, but you're just as likely to get a close shot through a window in brush.

So I repeat my mantra: Riflescopes for Africa don't need to be huge. For the longer shots, 9X, 10X or maybe 12X is enough. If you are accustomed to today's larger long-range scopes, fine. Just keep them turned down until you want more magnification.—CB

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PUSHING BOUNDARIES

by Keith Wood

SPRINGFIELD ARMORY'S LATEST 2020, THE BOUNDARY, IS A TRADITIONAL SPORTER—BUT ONE THAT KEEPS A LOT OF THE ORIGINAL'S HIGH TECH.





When Springfield Armory released the 2020 series of rifles, I was impressed with what I saw.

I've tested a couple over the years and found them to be well-designed and well-executed rifles available at attractive prices. The only elements I was not a fan of were the vertical grip and detachable magazine which, for a hunting rifle, are not my favorite features.

The new 2020 Boundary does away with those—harnessing the elements of the 2020 Waypoint that make it such a great rifle but in a more traditional hunting configuration.

The 2020 Boundary uses the same push-feed action as the other center-fire models in the 2020 series. It bears noting that, unlike many other designs on the market, the 2020 action is not a pure 700 clone. It uses a cone breech, which means the rear of the barrel effectively serves as a funnel to guide cartridges into the chamber; there are no step cuts or corners for a cartridge to hang up on.

Cone breeches are most commonly associated with 1903 Springfield rifles and pre-'64 Winchester Model 70s, both of which are well-regarded for their reliability. The cone breech is especially valuable when a cartridge is dropped into the action rather than fed via the magazine since it could take an unorthodox path on its way into the chamber.

All 2020 actions are heat-treated first and then machined. This process adds cost and is tough on tooling, but it eliminates the potential for warpage. The receiver itself is machined from stainless steel and has a cylindrical profile. The action raceways are wire EDM cut so they are both straight and smooth. This method is slow and expensive compared to broaching, but the outcome is superior.

The action uses an integral recoil lug and a low-profile bolt stop at the nine o'clock position. The receiver is drilled and tapped on the Remington 700 mounting pattern and comes equipped with a Picatinny rail. In addition to the four screws holding the rail in place, there are also two steel dowel pins that

lock into recesses in the action and rail for added strength.

The bolt is made from 4140 chrome-moly steel and nitrided. Despite the cone breech, the 2020's bolt face is counterbored into the bolt body, providing a margin of safety in the event of a case-head separation.

The extractor is a sliding-plate style, somewhat similar to those found on the Savage 110. The ejector is a spring-loaded plunger-type, inset into the bolt face and held in place by a roll pin.

The steel bolt body is spiral fluted with wide cuts. The bolt handle protrudes through the entire diameter of

the bolt body rather than being brazed or welded on, making it extremely strong. Thanks to the different steels, finishes and hardness levels between the receiver and the bolt, there is no risk of galling, and the action cycles extremely smoothly.

Rifle customers focus a great deal on accuracy but often pay little attention to reliability, almost assuming that a gun will function as it was intended. This isn't always a safe bet, and readers would be surprised at how many bolt-action repeaters I see that have issues when it comes to feeding, especially with short-action cartridges. This can become a real problem in the field.

The fact is that I would rather hunt with a 1.5 m.o.a. rifle that is reliable than a 0.25 m.o.a. rifle that is finicky. Springfield Armory's engineers obviously spent time considering reliability when they designed this rifle, and it shows. My example fed, fired, extracted and ejected without a single hiccup.

The 2020 Boundary is offered with two barrel options: a fluted stainless steel barrel, and a carbon-fiber BSF barrel. My test rifle was equipped with the fluted stainless option and was chambered in 6.5 Creedmoor, which meant that the barrel is 22 inches. Rifles chambered in .308 Win. get 20-inch barrels, and rifles chambered for magnum cartridges come with 24-inch barrels.

The barrel is threaded 5/8x24 at the muzzle and includes both a multi-port brake and a smooth thread protector. A direct-thread suppressor can be easily mounted. One option that Springfield Armory may want to consider in this lineup is producing Boundaries with shorter barrels intended for dedicated suppressor use—as the company did with the Redline version.

The 2020 Boundary uses a TriggerTech trigger that is adjustable from 2.5 to five pounds without disassembling the rifle. There is a single hex screw forward of the trigger bow that is used to adjust the pull weight. Mine came from the factory set at 3.5 pounds. TriggerTech has quickly built a reputation for producing triggers with excellent pulls thanks to its roller



While it has a traditionally styled sporter stock, albeit a carbon-fiber one, the 2020 Boundary retains the high-end design details and production techniques that are the hallmarks of Springfield's 2020 action.



Hunters who prefer internal magazines and hinged floorplates over detachable box mags will love the new Boundary's setup.

ACCURACY RESULTS

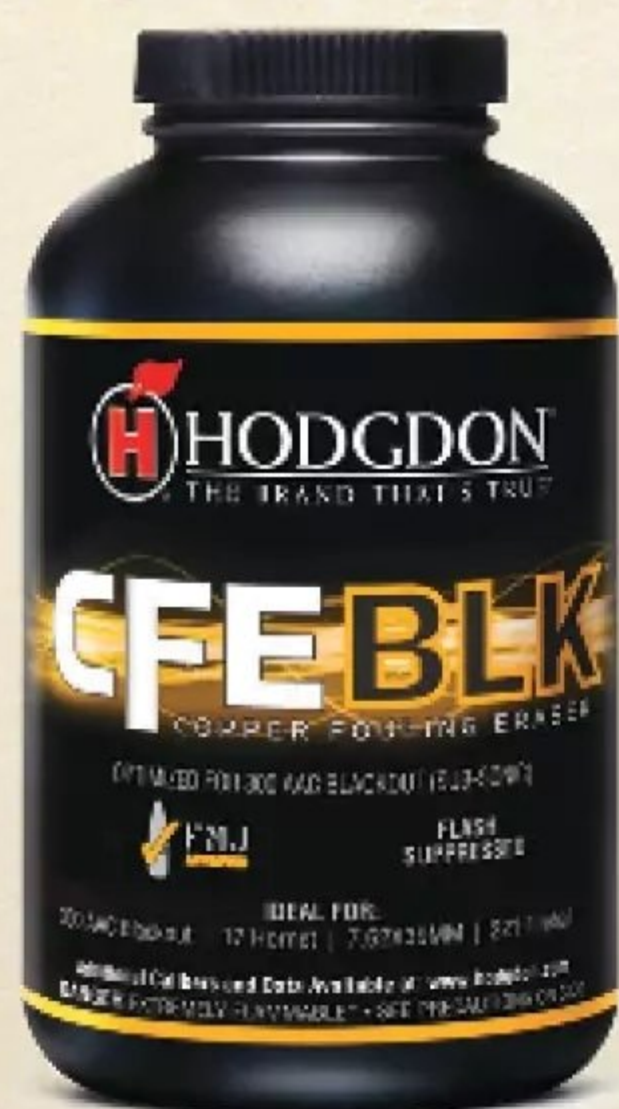
SPRINGFIELD ARMORY 2020 BOUNDARY

6.5 Creedmoor	Bullet Weight (gr.)	Muzzle Velocity (fps)	Std. Dev. (fps)	Avg. Group (in.)
Nosler Trophy Grade ABLR	142	2,603	21	0.50
Federal Terminal Ascent	130	2,929	11	0.90
Norma Whitetail SP	140	2,626	13	1.00

Notes: Accuracy results are averages of three three-shot groups at 100 yards from a benchrest. Velocities are averages of 10 shots recorded on a Garmin Xero C1 chronograph placed adjacent to the muzzle. Temperature, 89 degrees; elevation, 194 feet. Abbreviations: ABLR, AccuBond Long Range; SP, softpoint

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system, which eliminates creep. The trigger on this rifle was no exception.

Others undoubtedly disagree but I am not a fan of detachable magazines on big game rifles. First of all, the fact that they are not bolted on means that they can get lost in the field. Also, since they often protrude from the belly of the rifle, they also make a gun less handy and comfortable to carry in one

hand and can dig into your back when slung. I was never able to completely warm up to the 2020 Waypoint as a hunting rifle for this reason, which is why I was so pleasantly surprised when the Boundary was announced.

Unlike the other rifles in the 2020 lineup, the Boundary feeds from an internal magazine. In the case of my 6.5 Creedmoor, the magazine has a capacity of four rounds. Instead of a magazine protruding from the belly of the stock, the Boundary uses sporter-style bottom metal with a trigger guard and hinged magazine floorplate. The floorplate release is located inside the trigger guard.

Like the magazine assembly, the stock on the Boundary also fits the traditional sporter theme. Springfield Armory chose the Sportsman carbon-fiber stock from Alabama-based AG Composites. The Sportsman has a 0.625-inch drop at the comb and 0.375 inch at the heel with a 13.5-inch length of pull. There is no cheekpiece, and there is a one-inch recoil pad at the butt. The stock is 1.5 inches wide at the butt and 1.75 inches through the fore-end. The stock itself weighs 27 ounces.

Unlike many sporting rifles available on the market today, the stock on the 2020 Boundary is rigid enough for serious use, and the barrel is completely free-floated. Under the carbon-fiber shell on the fore-end is an aluminum block that not only provides structural integrity but allows the owner or a

gunsmith to drill and tap into the block to secure a rail or other accessory.

There is also an M-Lok compatible attachment point on the fore-end of the Boundary. I installed a magnetic adapter that allowed me to add either a bipod or a tripod, two accessories I commonly use in the field while hunting. The stock also has four attachment points for QD-style sling swivels, one on either side of the fore-end and one on each side of the butt.

I have used a couple of AG Composites stocks on my own custom builds, and I am confident in their quality construction. Internally, the stock has two aluminum pillars that act as bedding points for the action. If this rifle were mine, I would take a few hours to glass-bed it, since I've never seen a rifle that didn't benefit from bedding when done correctly. That said, there was no indication that there was a bedding issue with this rifle: no double groups, crazy fliers or vertical stringing.

The stock was hand-sponge-painted with a green, gray and tan Rogue camo pattern that complemented the carbon-fiber pattern partially visible underneath. The major metal components, other than the black nitrided bolt, were coated with gray Cerakote. Overall, this is an attractive rifle with the modern custom look that is common with many premium factory offerings.

The 2020 Boundary arrived with a Leupold VX-6HD 3-18x44mm scope mounted in Leupold Backcountry mounts and, much to my delight, had already been zeroed. I headed to the range on a hot, still morning and tested the Boundary's 100-yard accuracy with three types of ammunition. Though it was tempting to see how this rifle would shoot with match loads, I felt it would be more relevant to test it with hunting ammo designed for use in the field.

I used the factory-installed muzzle brake during testing, so recoil was extremely mild. I found the sporter-style stock to be very comfortable, and the quality trigger helped when it came to shooting good groups. All in all, I loved the way this rifle handled and shot.

SPECIFICATIONS	
SPRINGFIELD ARMORY 2020 BOUNDARY	
TYPE	bolt-action centerfire
CALIBER	6.5 Creedmoor (tested), 6.5 PRC, 7mm Rem. Mag., 7mm PRC, .308 Win., .300 Win. Mag., .300 PRC
CAPACITY	4+1
BARREL	22 in., 1:8 twist, threaded 5/8x24
OVERALL LENGTH	43 in.
WEIGHT	7 lb., 10 oz.
FINISH	gray Cerakote/black nitride
STOCK	AG Composites Sportsman carbon fiber
SIGHTS	none; drilled and tapped; Picatinny rail installed
SAFETY	two-position rocker
TRIGGER	TriggerTech single-stage; 3.5 lb. pull (measured)
PRICE	\$2,173
MANUFACTURER	Springfield Armory, SPRINGFIELD-ARMORY.COM



The 2020 Boundary's AG Composites stock has two M-Lok attachment points and QD sling swivel cups in the fore-end, along with cups on either side of the buttstock.

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All three loads grouped well, but my best accuracy came from Nosler's Trophy Grade 142-grain AccuBond Long Range ammunition. As you can see, the average of three, three-shot groups was 0.56 inch. I fiddled around with the group analysis tool in Hornady's 4DOF ballistic app and was able to measure a composite of all three groups. I used this system to overlay the impacts into a single nine-round group, which measured just 0.81 inch. That's impressive accuracy from a sub-seven-pound factory rifle with off-the-shelf ammunition.

Suggested retail on the steel-barreled 2020 Boundary is \$2,173, and \$2,599 for the BSF-equipped barrel. If that sounds pricey, get out your calculator. The AG Composites Sportsman retails for \$689, and the TriggerTech primary goes for \$180. Add about \$300 for a premium barrel and \$150 for bottom metal and you're up over \$1,300 without an action, gunsmithing or finishing. The truth is you would have

a hard time building a rifle with these components for the price Springfield Armory is charging.

And it gets better. From now until December 31, 2024, if you buy a 2020 Boundary—or any other 2020 center-fire, including the Waypoint and the Redline—you will get a Model 2020 Rimfire Black Target rifle for free. Details for this are handled through Springfield's website following your purchase.

I am often asked what my favorite hunting rifle is. The only way to credibly answer that question is to break things down by price point. Going forward, when that question is framed around a \$2,000 price tag, my answer will likely be the 2020 Boundary. For a company that began marketing bolt-action rifles only a handful of years ago, Springfield Armory has quickly risen to the top tier.

With the release of the 2020 series four years ago, Springfield Armory made a strong showing with a modern



The barrel is threaded 5/8x24 and comes equipped with a multi-port muzzle brake as well as a plain thread protector.

rifle built with high-quality components. The rifle's tactical-style stock and detachable magazine weren't ideal for everyone, though. Those of us who prefer a more traditional sporter-style stock and internal magazine had to wait our turn and, with the release of the 2020 Boundary, our time has come. ■



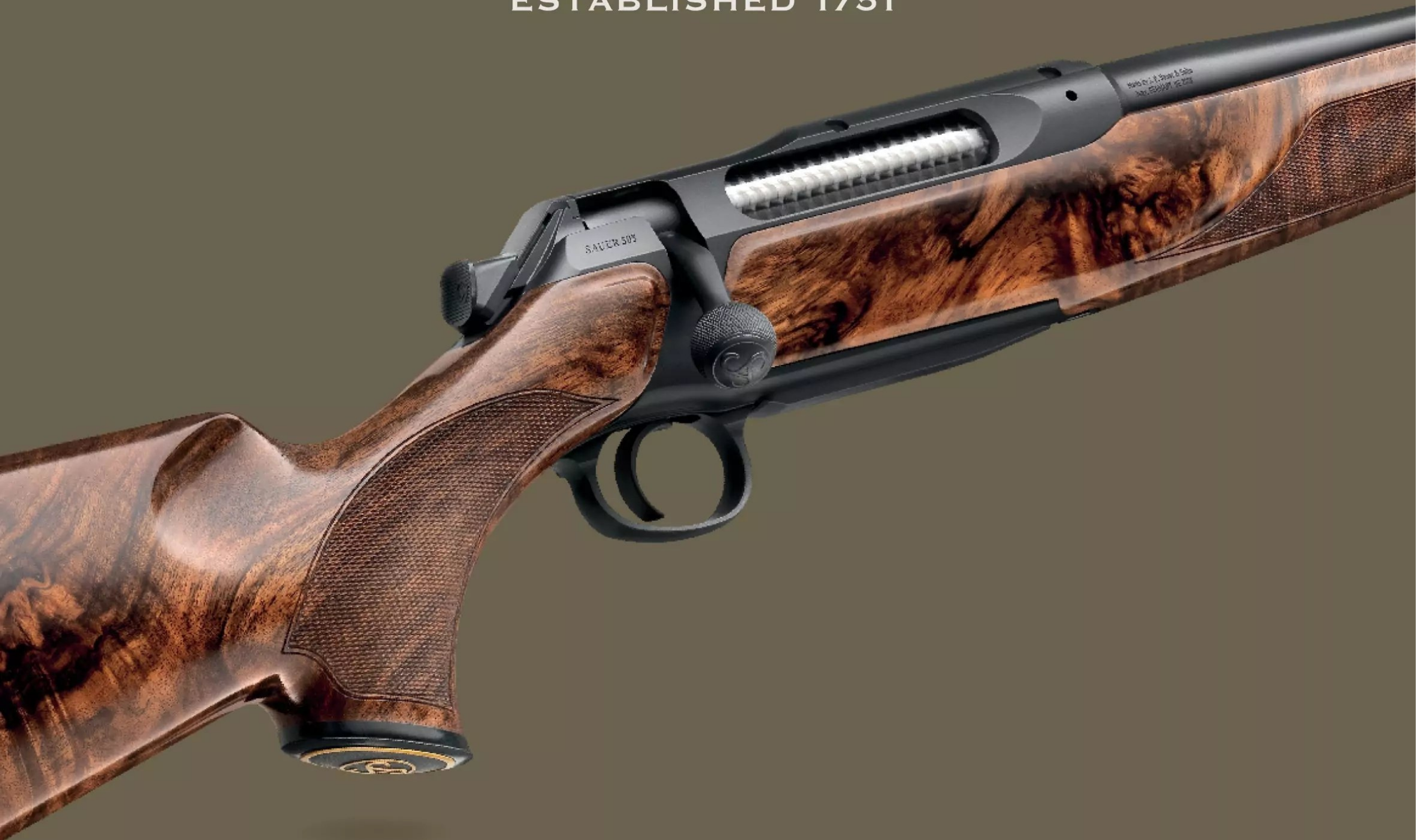
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EXPEDITIONARY FORCE

TAURUS EMBARKS ON A NEW JOURNEY WITH ITS FIRST BOLT-ACTION RIFLE, THE EXPEDITION.

by Frank Melloni

Nothing generates a buzz like a manufacturer working outside its realm and creating a product that not only shows it's capable at something new but is pretty darn good, too. When Taurus introduced its Expedition hunting rifle at SHOT Show, I walked briskly to the booth to check it out. Not sure what to expect, I was not only delighted but impressed with what the company had put together. The design was fresh, smooth and, above all, handy.

Taurus's new bolt-action rifle marks a few key shifts in the company's direc-

tion, starting with one that began in 2019 with the Raging Hunter revolver line. Taurus is making strides to reach beyond the self-defense market and accommodate outdoors folk.

Second, we see the higher-end flavor that was introduced with the Executive Grade series. Shouldering the rifle and dry firing at the ceiling, I immediately knew that I wanted some more time with it.

The best place to start with a new bolt-action rifle is logically the bolt itself. Two-lug designs are beginning to show their age, as the bolt lift is typically long and the cost savings are becom-

ing negligible thanks to modern CNC processes. Therefore, Taurus added that third lug, dropping the lift to just 60 degrees and further securing the lock-up.

The configuration of these lugs also creates a self-centering effect that aids in chamber alignment, accurizing the entire package. It operates on a simple push-feed system, which does deeply cut manufacturing costs while increasing reliability.

As for removing brass, the Expedition's bolt is built with an external AR-15-style extractor backed up by dual plunger ejectors. The duo ensures that the fired case is forcefully ripped from



the chamber before being aggressively kicked out of the action. When the chips are down, and you need a rapid follow-up shot, this makes all the difference.

The bolt head connects to a spiral fluted body, which cuts down weight while adding a touch of flair to the package, particularly since it matches the barrel, which I'll discuss later. The same holds true for the skeletonized handle. This is threaded to accept its minimalist knob, which can be swapped with a number of aftermarket options if you prefer something girthier.

Moving on to the receiver, Taurus made this its own in a way that didn't reinvent the wheel. Yes, it's Remington 700-ish, but because today's rifle owners like to customize their guns, show me another action that can even come to close in aftermarket support.

Aside from that, its tubular nature means it can be cut from a single piece of bar stock, bringing us back to that intersection of simplicity and durability. The Expedition uses a typical 700-style

enclosed trigger built with a two-position rocker-type safety.

It is non-adjustable, and my sample had a measured pull weight of 5.2 pounds. Although the trigger's a little stiff for a target rifle, I thought this was consistent with the hunting theme, since buck fever has a way of ruining trigger-finger discipline. During dry-fire, I checked it for slack, creep and overtravel, which it was impressively devoid of. The trigger is more of a switch than a dial, which I absolutely adore on any firearm.

As for the rest of the controls, there is a bolt release on the left-hand side and a push-button magazine catch on the stock that I'll get to in a bit.

Taurus settled on an 18-inch barrel, making this one compact rifle. The barrel is hammer forged with 1:10 rifling and secured to the action with a barrel nut. While this is indeed short for the .308 Win. it is chambered to, when you consider that most hunting shots are going to take place inside of 300 yards,

it starts to make more sense. Moreover, many of those shots may be taken from a tight ground blind, so being able to swing the rifle inside those confines is more advantageous than slightly better long-range accuracy and energy.

Shorter barrels are becoming more prevalent because we're finding out that their reduced length also reduces their harmonics, making them less finicky with respect to ammo. They also respond better to suppressors, as they reduce the can's leverage and mitigate their point-of-impact shift when installed.

The medium-contour barrel has what I would describe as a linear taper, following the same angle from the bolt face to the muzzle. At the tip, there is a half inch of 5/8x24 threading, making it easy to mount a suppressor or muzzle brake.

The inletting and action screw pattern of the Expedition follows the typical 700 footprint. Taurus could have grabbed any of the many capable after-

market stocks out there and called it a day, but it didn't. Instead, the company started from scratch and built precisely what it thought the gun needed to optimize its use, adding plenty of modern features along the way.

It's an injection-molded polymer stock with a unique contour. The most obvious is the relief found halfway up the fore-end. This attribute is intended to make the rifle more conducive to use with a tripod, which is becoming more popular in hunting circles.

The pistol grip is straighter than those on most hunting rifles, allowing for a better trigger finger position—encouraging a rearward press as opposed to one that sweeps upward. It's also enlarged to fill the hand and accommodate the newer thumb-forward style of firing-hand placement.

As hunting scopes grow in size, cheek placements need to be higher, and Taurus is paying attention here with a raised cheekpiece that helps align your optic to your eye. The bottom of

the stock is extended to meet the support hand, which will either be balled up or squeezing a rear bag. When you're firing from a benchrest or in the prone position, closing this gap connects the rifle to the ground, providing exponentially greater stability.

The injection molding process is friendly to additions, so Taurus went crazy with it. Rather than choosing one connectivity solution for slings and bipods, the Expedition has three. Up front, you'll find a classic sling stud, and slightly behind it you'll find a Spartan Precision adapter. You can quickly add a QD bipod built to these socket dimensions or even a sling wearing the appropriate hardware.

There are two metallic M-Lok slots that are essentially catch-alls for anything else you might wish to add. All these are paired with a single sling stud in the back, keeping things streamlined.

As for bottom metal, it's more like bottom plastic, which I know will elicit a few groans. I'll admit I used to be part of

that camp, too, until I realized that neither my students using my loaner rifles nor I has ever broken one made of this material. Regardless where you sit on the topic, everybody should be glad to hear that it consists of an oversize trigger guard and an ambidextrous magazine catch. Metal is prevalent where it is most important, though, namely in the bedding blocks found on each end of the receiver.

Since the scope-mount geometry is Remington 700, adding a scope is relatively easy. I went with a Warne Vapor zero m.o.a. rail and mounted a Sightmark Core 2.0 TX 4-16x44mm optic. This scope's relatively small objective allows it to sit tight to the rifle, and it features an illuminated mil-dot reticle set in the second focal plane.

Considering that most hunting shots take place during the early morning or evening hours, being able to light up the crosshairs makes a big difference. Furthermore, since it remains fine throughout the power range, it won't widen with magnification and eclipse important target details, like shoulders.

The complete package weighed 8.9 pounds but was exceptionally well bal-



The Expedition is built along the lines of a Remington 700 action, and it feeds from AICS-type detachable magazines.



There are plenty of options on the fore-end, including M-Lok slots, a Spartan Precision QD mount and a standard sling-swivel stud.

SPECIFICATIONS

TAURUS EXPEDITION

TYPE	three-lug bolt-action centerfire
CALIBER	6.5 Creedmoor, .308 Win. (tested)
CAPACITY	5+1, detachable box magazine
BARREL	18 in., 1:10 twist, threaded 5/8x24
OVERALL LENGTH	37.9 in.
WEIGHT	7.1 lb.
FINISH	DLC
STOCK	gray synthetic
TRIGGER	single-stage non-adjustable; 5.2 lb. pull (measured)
SIGHTS	none; drilled and tapped
SAFETY	two-position rocker
PRICE	\$985
MANUFACTURER	Taurus USA, TAURUSUSA.COM



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anced. This is undoubtedly a product of the shorter barrel paired with the widened buttstock.

With the rifle ready to fire, I took a trip to the range to see if it met its sub-

m.o.a. guarantee. Results are shown in the accompanying table. The Expedition feeds off an AICS-pattern magazine, so fitting the long-ogive ammunition wasn't a problem, nor was sliding

the rounds off into the action. However, I noticed it was a little tough to close the bolt on the Remington fodder, but that's likely just a case of Remington using the high side of the SAAMI specs and Taurus using the low side.

The Remington ammo did shoot well, though, with its smallest group measuring just 0.96 inch. Hornady bested it by a few tenths, with its best group coming in at 0.67. The Federal Berger load showed me that stability with heavier bullets isn't a problem, as it also shot several sub-m.o.a. groups with the tightest measuring a scant 0.781 inch. Altogether, it was impressive to see how well the Expedition liked the first three loads I grabbed off the shelf, which is seldom the case.

Shooting a light .308 off a bench without a muzzle device isn't exactly fun for the shoulder, so I decided to stretch things out with a tripod (see sidebar). Running the gun left-handed, I found it advantageous to keep my firing hand in position while using my right hand to work the bolt.

Once I figured DOPE, I had no trouble putting five consecutive rounds on a 12-inch gong at 500 yards. In this configuration, much of the recoil was transferred throughout the tripod, making the experience much more pleasurable and allowing me to watch my bullets arrive through the scope.

I fired a total of nine boxes of ammunition without a single failure. Aside from the fact that it ran well, I enjoyed the compact nature of the Expedition, the cleverly designed stock and the unbelievably crisp trigger. I believe the gun would be better served with a muzzle brake, but that is trivial.

My only other gripe is the rifle being limited to the .308 Win. and 6.5 Creedmoor, as the action is perfectly suitable for many of the short-action magnums out there. Additionally, it would make one handy rifle in some of the brush busters, like .450 Bushmaster.

Overall, I think Taurus has made an excellent entry into the bolt-action space with a firearm that is unique and purely its own, and it wouldn't shock me one bit if I'm reviewing additional chamberings next year. ■



The three-lug bolt is fluted and incorporates an AR-15-style extractor, along with twin plunger ejectors.

ACCURACY RESULTS

TAURUS EXPEDITION

.308 Win.	Bullet Weight (gr.)	Muzzle Velocity (fps)	Std. Dev. (fps)	Avg. Group (in.)
Hornady Precision Hunter	175	2,421	19	1.11
Federal Gold Medal Berger	185	2,504	18	1.28
Remington Core-Lokt Copper	150	2,677	7	1.45

Notes: Accuracy results are averages of three-shot groups at 100 yards from a Caldwell Rock Rest. Velocities are averages of 10 shots recorded 10 feet from the muzzle with a Caldwell G2 chronograph. Temperature, 65 degrees; elevation, 700 feet

Kopfjäger K800 Tripod with Reaper Grip

The funny thing about shooting from a bench is that you rarely find one in the field. As rifles become more capable, portable means to stabilize them have become prevalent. Going prone or kneeling isn't always an option when tall vegetation is involved, so tripods have recently come into their own.

Composed mainly of carbon fiber, at just 3.85 pounds the Kopfjäger K800 with Reaper grip (\$600, KJRESTS.COM) is light enough to tote, yet strong enough to handle load weights up to 20 pounds. Dimensions are 19 inches folded to 64 inches fully extended. The Reaper Grip provides

360-degree pan and a tilt range of 109 degrees. It can hold nearly any firearm on the market, regardless of whether it offers any sort of underside connectivity.

I used this setup extensively throughout the Taurus Expedition test and found it to be quickly deployable, sturdy and reliable. Consider taking one on your next hunt to up your odds without dropping to your knees.—*FM*



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	350L1563.A (.350)	16" STAINLESS STEEL, 1:16 TWIST	9.1 LBS	36.125" RETRACTED

PERFORMANCE COUNTS
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FORCE PLAY

THE NEW HAMMERLI ARMS FORCE B1 STRAIGHT-PULL .22 IS A RIMFIRE THAT CAN DO IT ALL.

by Keith Wood



The new Force B1 from Hammerli Arms is a high-quality, legal-in-50-states takedown .22 Long Rifle built to be the ultimate in versatility. Whether you call it a prepper rifle, a truck gun or just a good, solid .22, it's definitely a useful and practical rifle.

If you are familiar with the Hammerli Arms name, it is likely due to the company's history as a maker of target pistols for Olympics-style competitions.

Founded in 1863 to manufacture barrels for military use, this Swiss gun making firm has established a long tradition of quality. In 2006 Hammerli Arms was acquired by Carl Walther GmbH and it is now part of the PW Group. U.S. operations are located in Fort Smith, Arkansas, alongside those of Walther USA and Umarex.

The Hammerli Arms Force B1 is a toggle-style, straight-pull repeating rim-fire rifle made in Germany. Although the Force B1 is not a Ruger 10/22 clone,

it is designed to share many of that rifle's components—therefore a wide variety of aftermarket accessories are available.

Why the straight-pull rather than a semiautomatic? There are a couple of reasons. The first is reliability. The Force B1 was designed to function with the full variety of .22 loads available. Additionally, the rifle was engineered to be multi-caliber so, for example, you could install a .22 WMR barrel when one becomes an option. Due to differences in chamber pressure and bolt velocity, making a semi-auto action cycle both cartridges would be nearly impossible.

With the straight-pull system, we get the utmost in versatility and flexibility but with a speed that rivals that of a semiauto. Finally, there are places in the world where semiautos are not legal to own, and the Force B1 avoids that trap altogether.

The Force B1's receiver is machined from a block of 7075 aluminum with an integral Picatinny rail. There is a toggle assembly on the right side of the bolt that actuates the movement of the bolt/breechblock. From the user's perspective, this is facilitated with an oversize polymer lever that is simply moved rearward and forward. The action is easily cycled using the right hand and just one finger.

There is a red dot on the top of the toggle lever that indicates whether or not the bolt is fully in battery. If you can see the dot, the bolt is not fully closed. Despite my lack of familiarity with the system, running the bolt became second nature almost immediately, and I found I could do this without losing the target in the scope.

Like other elements of the design, the bolt cycle is long enough to allow for future compatibility with cartridges including the .22 WMR. The ejection port is also sufficiently large to allow for the longer cases to eject properly. The bolt is fitted with a spring-loaded extractor, and a fixed ejector projects through a slot cut in the underside of the bolt body.

If there is one truly unique element of the Force B1's design, it is the method by which the barrel attaches. Instead of using threads or fasteners, the barrel is held in place by the same style of spring-loaded coupler used to attach air hose accessories.

There is a knurled collar on the front of the receiver. Retracting that collar, which can be accomplished with mere thumb pressure, releases the barrel. Removing and replacing the barrel takes roughly five seconds to accomplish. The barrel is held in place with eight spherical bushings, aka ball bearings.

The system is lightning fast, secure and repeatable. The company doesn't promise that the system will return pre-

cisely to zero when the barrel is removed and replaced, but in my experience it will be very close. A notch cut into the barrel's six o'clock position ensures the barrel will not lock into place unless it is properly positioned, so there's no risk of installing it incorrectly.

The quick-change barrel removal feature provides three tangible benefits. The first is it makes the rifle easy to clean from the chamber end, something that

is impossible with many non-turnbolt rimfires on the market. Second, it allows the rifle to be stored or transported in a smaller container, reducing the overall length by 6.5 inches in the case of the standard 16.1-inch barrel. Finally, the system will allow for a rapid cartridge conversion once a .22 WMR or other barrel becomes available.

The 16.1-inch barrel has six-groove rifling and a twist rate of 1:16.5. The muzzle is threaded 1/2x28 and covered with a knurled thread protector. I mounted a rimfire suppressor to the rifle, but found that it shifted the point of impact outside of the scope's adjustment range, so I removed it. I'm not sure if the issue was with this particular suppressor or if there was something else going on.

If there was one thing that I didn't love about the Force B1, it was the trigger. It wasn't the pull weight, although at nearly six pounds it wasn't light; it was the safety lever embedded into the trigger's face. After a few magazines, it hurt my finger. Perhaps I'm a sissy, but I had a rough and tough former Marine on the range with me, and he had the same complaint.



The Force B1 features a straight-pull action that uses a toggle to operate the locking mechanism, but the basic footprint is the Ruger 10/22, and the Force B1 takes some of the same accessories in case you want to customize.



The Force B1's quick-change barrel system is unique. Retracting the spring-loaded collar at the receiver releases the barrel, which then slides forward. Swapping barrels takes only seconds, and more rimfire chamberings such as .22 WMR are anticipated.

SPECIFICATIONS

HAMMERLI FORCE B1

TYPE	straight-pull rimfire
CALIBER	.22 Long Rifle
CAPACITY	10+1 10/22 detachable rotary magazine
BARREL	16.1 in., 1:16.5 twist, threaded 1/2x28
OVERALL LENGTH	35.5–37.5 in.
WEIGHT	5 lb., 12 oz.
FINISH	hard-coat anodized, black oxide
STOCK	adjustable composite
TRIGGER	single-stage, 5.9 lb. pull (measured)
SIGHTS	none; integral Picatinny rail
SAFETIES	two-position crossbolt, trigger lever
PRICE	\$649
MANUFACTURER	Hammerli Arms, HAMMERLIARMS.COM

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The good news is that the trigger unit is compatible with those intended for the 10/22, so there are plenty of aftermarket options available. The crossbolt manual safety is inset into the trigger guard and can be disengaged using the trigger finger.

Like the trigger assembly, the magazine is compatible with the 10/22. As a matter of fact, my Force B1 shipped with a Ruger-branded 10-round rotary magazine. Because the magazine well is sized to accept .22 WMR magazines, Hammerli Arms includes a removable polymer adapter that snaps onto a .22 Long Rifle mag to ensure it locks into the rifle properly. The magazine release is an ambidextrous lever contoured along the leading edge of the trigger guard.

The stock on the Force B1 is molded polymer and is somewhat ingenious. The stock has modern lines with a vertical pistol grip that positions the hand so the toggle is easily within reach. The stock is also user-adaptable without tools. Length of pull can be adjusted to six different positions by pressing a button inset into the recoil pad at the rear of the stock. The overall length-of-pull adjustment is from 14.63 to 16.63 inches. Additionally, the soft rubber comb can be removed and flipped upside down to add 0.75 inch of height.

There is a rigid metal plate screwed into the underside of the stock's fore-end that provides four M-Lok attachment points. This system allows for the easy installation of a bipod, sling swivel stud or other accessories. There is a single female QD sling attachment point at the toe of the stock.

There are no iron sights, but the integral rail makes securing an optic a straightforward task. I mounted an SWFA fixed 16X scope of known reliability in a set of Nightforce lightweight rings and headed to the range. I tested the Force B1 with three loads ranging from a high velocity small game load to slower match ammo.

Since this is a rimfire, my groups were fired at 50 rather than 100 yards. As with most .22 rifles, the standard velocity ammunition produced better groups, but the beauty of the toggle system was that all three fed, fired, extracted and

ejected with 100 percent reliability. Accuracy was very impressive, particularly with CCI's Standard Velocity load. Experience tells me that, with a better trigger, this could have been a one-ragged-hole rifle with the CCI ammunition.

At this point, the Force B1 is available only in .22 LR, but clearly the Hammerli Arms engineering team has its eye on expanding that lineup. Hopefully we will see barrels available in additional chamberings soon. The .22 WMR is certainly in the cards, and I don't see why a .17 HMR would not be an option.

I envision the Force B1 in a nylon takedown case with multiple barrels and magazines available for different uses. Plinking? Grab the .22 LR barrel. Coyote in the chicken coop? Get the .22 WMR. Prairie dogs? Hand me the .17 HMR. The possibilities aren't endless, but they are many.

To be honest I didn't "get" the Force B1 at first glance. But since I've learned about the rifle's versatility, the multi-cartridge capability and the various unique features, my opinion has changed dramatically.

This is a well-thought-out rifle that is truly one of a kind in many ways. Its cross-compatibility with the 10/22 opens up myriad accessories for shooters to choose from. The quality of the construction is evident throughout the rifle and is indicative of its German origin.

Any rifle of this type begs for comparison with the Ruger 10/22. With dozens of available models, it is tough to compare apples to apples, but a few points bear consideration. The Ruger can't touch the Force B1 when it comes to multi-cartridge capability; the realities of a blowback semiauto



With the push of a button on the buttpad, shooters can adjust the stock's length of pull to six different positions. The soft rubber comb can also be reversed, raising the height by 0.75 inch.

ACCURACY RESULTS

HAMMERLI FORCE B1

.22 Long Rifle	Bullet Weight (gr.)	Muzzle Velocity (fps)	Std. Dev. (fps)	Avg. Group (in.)
CCI Standard Velocity LRN	40	1,026	17	0.5
Norma Match-22 LRN	40	1,000	14	0.9
Winchester Super Speed CPRN	40	1,261	25	1.2

Notes: Accuracy results are averages of three three-shot groups at 50 yards from a benchrest. Velocities are averages of 10 shots recorded on a Garmin Xero C1 chronograph placed adjacent to the muzzle. Temperature, 81 degrees; elevation, 194 feet. Abbreviations: LRN, lead roundnose; CPRN, copper-plated roundnose



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system simply don't allow for that level of flexibility. The takedown Ruger versions win in terms of portability since their stock fore-ends separate with the barrel, creating a shorter overall length when disassembled.

But the Hammerli gets the nod when it comes to the number of innovative features packed within. Price is really a wash since the takedown 10/22s (\$559 to \$799) hover around the same \$649 suggested retail price as the Force B1.

The Force B1 is a fun gun to spend time on the range with. The deeper I read into the owner's manual, the more hidden features I realize are included. It is my belief that this rifle will be the first in a very successful series. Hammerli has not been a household name in the United States but, with the introduction of such an innovative rifle, I believe it will be soon.

The company's marketing materials for the Force B1 revolve around a fictional post-apocalyptic landscape.



The Force B1 ships with a 10-round Ruger 10/22 rotary magazine that has a snap-on spacer, allowing the mag to fit in the .22 WMR-size magazine well.

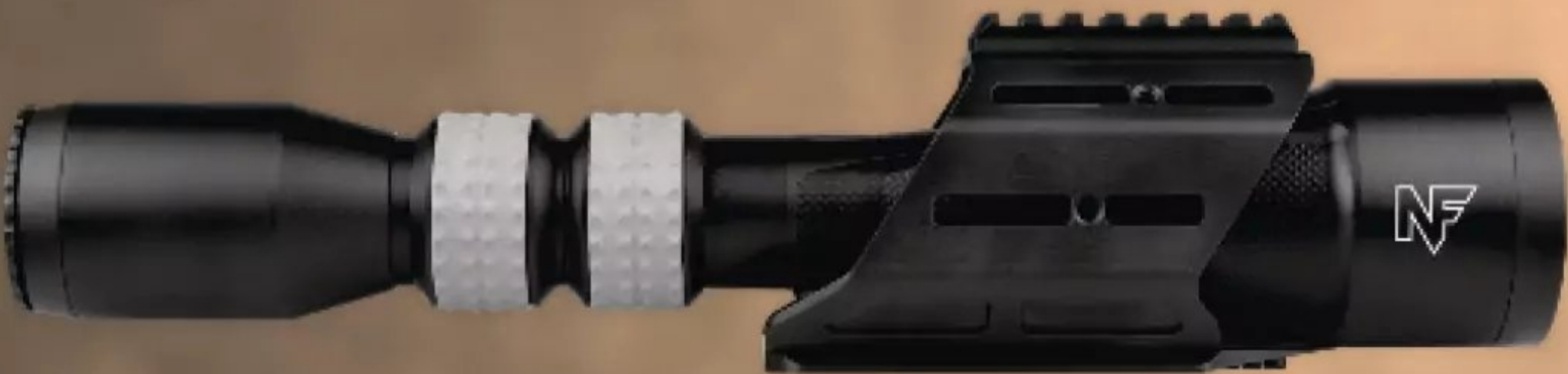
While I don't consider myself a hardcore prepper, I can definitely see the utility of a rimfire rifle in a scenario where supplies are limited. For such a rifle to be capable of digesting multiple

cartridges with the swap of a magazine and a barrel takes that versatility to another level. The accuracy, reliability and ability to accessorize the Force B1 only add to its attractiveness. ■

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ROCKING A NEW BOLT

by Joseph von Benedikt



KNOWN FOR ITS AR RIFLES, ROCK RIVER STEPS OUT WITH THE XM24 TACTICAL BOLT ACTION.



Rock River Arms announced its move into the bolt-action rifle world at the 2024 SHOT show. Long a potent force in the

AR-15 and AR-10 semiautomatic market, Rock River earned its reputation by building super-accurate rifles and best-value National Match two-stage trigger groups for ARs.

The new XM24 bolt action carries on the accuracy legacy. The .308 Win. version sent to *RifleShooter* for testing shot absurdly well.

The XM24 is fed by a detachable box magazine. The barrel-to-action interface is basically a Remage-type (a hybrid between a Remington 700 and a Savage 110), so the model has switch-barrel compatibility. Rock River touts it as a mission-ready, tactical-grade tool swappable between .308 Win. and .338 Lapua. Barrel and action are bolted into an MDT ESS chassis.

The advertised weight is 13.2 pounds bare, although when I put the rifle on a scale with the steel magazine installed (more on this magazine in a bit) it weighed 13.5 pounds.

Rock River commissioned a proprietary bolt-action receiver by Pacific Tool & Gauge. Fundamentally it's a Model 700-type action, with customized ejection port, the Remage barrel attachment system I mentioned, and the addition of a bolt-release button on the left side of the receiver and a Sako-type extractor.

The action footprint is pure Remington 700, enabling it to interface with the vast selection of aftermarket Model 700 stocks and triggers on the market. However, the action top is parallel, rather than stepped like the Model 700, and it takes Savage 110 scope bases instead of 700 bases. However, the XM24 comes factory-fitted with a 20 m.o.a. scope rail.

Square-bottomed spiral fluting gives the bolt body a racy look, and an oversize bolt knob provides a sure grasp and extra leverage for easy functioning. Serial number and cartridge compatibility are laser etched into the bolt handle, to help the shooter choose the correct bolt for whatever barrel is currently installed. The bolt shroud and safety positioning and function are

pure Model 700. The trigger is the TriggerTech Primary trigger.

A heavy-contour, straight-taper barrel is attached by a barrel nut, and XM24s come with a “crow-foot” wrench for barrel removal and installation. Barrel diameter is robust, measuring 0.94 inch at the muzzle and about 1.2 inches at the breech. Chambering and twist are engraved into the barrel breech and visible through the cutout in the top of the MDT chassis.

Barrels are made of stainless steel. They’re air-gauged to ensure precision, then cryogenically treated. This treatment, which involves freezing the barrel in liquid nitrogen, relieves stresses within the metal, and Rock River says the process results in more predictable harmonics. Metal finish is matte black nitride. Up front, muzzles are threaded and an aggressive side-ported brake is installed and oriented via crush washers.

Action and barrel are married with an MDT ESS (for Elite Sniper System) chassis. It’s a robust, heavy-duty chassis made of machined aluminum. MDT’s design focus for the ESS was ultimate precision, configurability and modularity. It does not fold, which is actually a good thing with this rifle because it eliminates the hinge and ensures there’s no flex between the action bed and the stock portion of the chassis.

As with most chassis, the ESS is compatible with various AR-type grips, and MDT’s own Elite pistol grip comes on the XM24. It’s a nice rubberized grip with palm swells.

Aft, the buttstock area is skeletonized and features excellent configurability in length of pull, recoil pad positioning and cheek rest height. To adjust, loosen the appropriate four-winged polymer locking nuts and spin the adjustment wheel to attain the desired length of pull or cheekpiece height. You can even slide the rubber buttpad up and down in a vertical dovetail track until it’s positioned perfectly against your shoulder.

For those who want to run a bag rider or a monopod on the toe of the buttstock, there’s a single M-Lok slot



In order to be able to accommodate both the .338 Lapua and the .308, the XM24 is mated with a magnum-length action and chassis.

machined there. And for guys who need to carry the rifle with a sling, there are multiple QD attachment points.

MDT builds the ESS to accept AICS-type magazines. To accommodate both the .308 and the .338 Lapua, Rock River chose the ESS that’s set up for long-action magazines. There’s a dual-winged mag release lever positioned at the front of the trigger guard. It’s easily activated with the tip of the trigger finger whether shooting right- or left-handed.

Generous internal beveling on the magazine well helps guide the magazine into place, making the process of seating a freshly loaded mag in a hurry quite easy.

Forward of the magazine the chassis forms a sturdy, serrated wall to serve as a barrier stop for shooting from improvised positions. A short section of a composite material is installed there, and this provides a warm-to-the-touch place at the balance point of the rifle to hold and carry it. The machined aluminum fore-end/handguard is octagonal in shape, rich with M-Lok slots, and it has a large cutout in its top to allow the use of big tactical scopes with massive objective housings.

Before heading to the range to wring

SPECIFICATIONS

ROCK RIVER XM24 TACTICAL

TYPE	bolt-action centerfire
CALIBER	.308 Win. (tested), .338 Lapua
CAPACITY	single-stack MDT; 10 rounds in .308, 5 in .338
BARREL	heavy contour 26 in., 1:10 twist, stainless steel, threaded 5/8x24
OVERALL LENGTH	48–49 in.
WEIGHT	13.2 lbs.
STOCK	machined aluminum, non-folding adjustable MDT ESS chassis
FINISH	matte black
TRIGGER	TriggerTech Primary adjustable, 3 lb. pull (measured, as received)
SAFETY	two-position rocker-type
SIGHTS	Picatinny optic rail
PRICE	\$5,275
MANUFACTURER	Rock River Arms, ROCKRIVERARMS.COM

out the XM24 Tactical, I attached an Atlas bipod to a section of rail M-Lok’d to the bottom of the fore-end tip. Atop the receiver I mounted a terrific 7-35x56

Leupold Mark 5 scope in a one-piece IMS mount.

Scrounging up five different .308 target loads, I was off to the range. It was a balmy spring day but cold enough that the barrel would cool quickly. Because of the massive barrel and the rifle's intended tactical/precision purpose, I fired three consecutive three-shot groups without allowing the barrel to cool, with each type of ammo. This test protocol enables me to determine whether accuracy degrades or point of impact shifts as the barrel heats. Neither occurred. No surprise there. Owing to the sizable diameter of the barrel I was pretty sure the rifle was going to shoot consistently well.

I first ran a series of groups with Hornady's Steel Match ammo topped with 155-grain hollowpoint boat-tail bullets. Even though it's an older "budget" target load, three consecutive three-shot groups averaged just 0.56 inch. The XM24 was off to a great start.

SIG's 175-grain OTM load took top honors for the day, posting an average of just 0.40 inch. Next came Hornady's TAP load with 168-grain A-Max bullets; they stretched the caliper to 0.52 inch.

Four of the five loads tested averaged less than an inch at 100 yards, and three of the five averaged 0.56 inch or less. That's excellent accuracy and consistency.

Recoil, thanks to the muzzle brake and to the rifle's massive weight—I estimate it was around 18 pounds with the scope and bipod—was mild. Ergonomics were very good thanks to the outstanding configurability of the chassis.

The feel of the TriggerTech Primary was nice and crisp, and it released at precisely three pounds with less than an ounce of variation, as tested with my Lyman digital trigger gauge.

Any downsides? Yes. For starters, the bolt was a little sticky in operation. I get the sense this is due to the very snug tolerances of the bolt in the race-ways. There's very little play between bolt and action. Even a generous application of fine gun oil didn't eliminate the slightly sticky feel.

Unfortunately, Rock River sent me



MDT's ESS stock is configurable for length of pull, cheek rest height and recoil pad position.



M-Lok slots in the fore-end provide plenty of places to add accessories, and the fore-end features a composite insert as well as a serrated barrier stop.

the wrong magazine by mistake, one for the .300 Win. Mag. The XM24 in .308/.338 comes with a single-stack MDT that holds 10 rounds in .308 and five in .338 Lapua. Function was 100 percent reliable, though, when rounds were fed through that mag—even if the cartridge-to-follower fit was sloppy. Most of the cartridges I single-loaded into the side of the action fed fine too, but occasionally one would hang up, with the tip caught somewhere around the barrel breech.

However, I don't think the action has the proper dimensions for the

short-action .308 Win. cartridge, and I think the rifle would be better as a .338 Lapua than as the .308 I tested.

Also, the 26-inch .308 barrel on the XM24 may have been en vogue with SWAT snipers in the 1990s, but it's completely out of date on a modern rifle likely to be equipped with a suppressor. Today's shooters—both civilian and military—are trending to shorter barrels.

The weight of the rifle and the length of the action and barrel would have been justifiable with the heavy-kicking .338 Lapua cartridge. To be

perfectly candid, I found the XM24 mildly ridiculous when paired with the .308 Win.

While Rock River touts the ability to change between the two cartridges, it's not a quick-change barrel system. You'll need to remove the barreled action from the chassis, and you'll certainly need a vise to hold the barreled action securely while using the crow-foot wrench to break the barrel nut free.

After changing barrels you'll also need headspace gauges to set headspacing before torquing the barrel nut back to spec. You'll need an entirely different bolt assembly for each barrel as well. In other words, it's not as if you can pop a locking bolt loose, yank

one barrel out and snap the other into place during the heat of battle.

Plus, with all due respect, the .308 Win. and .338 Lapua are no longer "...leading long-range cartridges," as Rock River calls them. I shoot on a weekly basis at a range where competitors in PRS, NRL Hunter and ELR disciplines regularly gather, and none—I repeat, none—of them are using the .308 Win. or the .338 Lapua.

Attaching the name "Tactical" to the XM24 and using descriptive terms such as "mission deployable" may offer the platform some saving grace, as certain specialized branches of the military still do use the .308 Win. and .338 Lapua. However, savvy shooters on the cutting edge of the long-range

disciplines are opting for newer, more efficient cartridges.

Allow me one other gripe. The rear of the muzzle brake is smaller in diameter than the 0.94-inch barrel, leaving the sharp-edged shoulder of the barrel vulnerable to dings. Even a tiny ding can cause a suppressor to spin out of square, risking at worst a baffle strike when the rifle's fired and at best compromised accuracy. Also, there's a sizable channel created by the smaller-diameter crush washers between the muzzle brake and the barrel shoulder, which will collect dirt and crud. Neither is acceptable in a \$5,275 rifle.

Okay, I've whined enough. Let's look at the really impressive characteristics of the XM24. First, it was not only accurate, but it held its accuracy and point of impact when the barrel got plenty hot.

Also nice: Point of impact at 100 yards was nearly the same across four of the five different types of ammo tested. That speaks to the quality of the barrel and how true it's mounted to the action, as well as how securely and consistently it's mated to the chassis.

Here's another positive thing: Once you're in shooting position, stability and feel of the XM24 are outstanding. The mass of the rifle tames tremors, and the configurability of the chassis makes it both super comfortable and easy to shoot consistently.

Again, if the test rifle were in .338 Lapua I would have a hard time finding a single adverse element to point out. It would make much more sense. And if the .338 Lapua version shoots as well as the .308 barrel does—oh boy!

My advice to Rock River Arms would be to either shelve the .308 Win. version of the XM24, or to make a short-action version properly scaled for and chambered in modern short-action long-range cartridges.

However, the .338 Lapua version may be just the ticket for Extreme Long Range competitive shooters who want readily available ammo rather than hard-to-source hot-rod cartridges such as the .375 CheyTac or .416 Barrett. In .338 Lapua, the XM24 would be a practical, useful tool. ■



A nice side-ported brake tames what little recoil the .308 XM24 has, but von Benedikt has a beef with the fact that the back of the brake has a smaller diameter than the barrel.

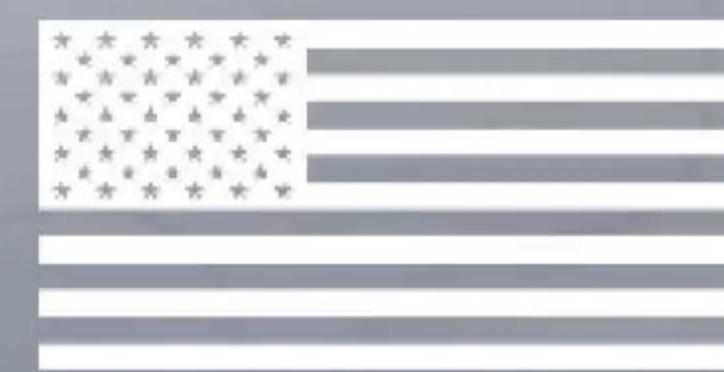
ACCURACY RESULTS

ROCK RIVER XM24 TACTICAL

.308 Win.	Bullet Weight (gr.)	Muzzle Velocity (fps)	Std. Dev. (fps)	Avg. Group (in.)
SIG Match OTM	175	2,681	14	0.40
Hornady TAP A-Max	168	2,846	14	0.52
Hornady Steel Match HPBT	155	2,644	25	0.56
Federal Gold Medal/ Sierra MatchKing	168	2,687	12	0.60
Black Hills Gold/ Sierra Tipped MatchKing	175	2,688	15	1.11

Notes: Accuracy figures are the averages of three consecutive three-shot groups fired from a bipod at 100 yards. Velocities are averages of nine rounds measured at 10 feet with a LabRadar. Temperature, 45 degrees; elevation, 4,700 feet. Abbreviations: HPBT, hollowpoint boattail; OTM, open-tip match

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THE WILD(CAT) .22S

IF YOU'RE LOOKING FOR A .22 CENTERFIRE
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FOUR WILDCAT CARTRIDGES.

by Stan Trzoniec



If you're familiar with the golden age of cartridge developments, it doesn't take long to notice that for, the most part, the .22 caliber was an important cartridge of choice. Good rifles were starting to appear, there was an upsurge in varmint hunting, and on top of all this, powders and bullets were making great headway.

Defining the pace for all this, men like Harvey Donaldson, A.E. Mashburn, Lysle Kilbourn and Roy Weatherby set the

tone for small game cartridges here in the United States. They started the trend for some of the very best .22 centerfire cartridges we have today, many of which have been formally commercialized by Remington, Winchester and others.

While most present-day small game cartridges are readily available in off-the-shelf rifles, for those willing to spend a modest amount of cash to rechamber or rebarrel a rifle for a touch of nostalgia and the pleasure of shooting a vintage cartridge, these four are a great place to

start. Most can be fire-formed right in the chamber, neck sized and then reloaded. Others need a bit more work, although in a few cases you can find sources of commercial brass along with dies.

.218 Mashburn Bee

The .218 Mashburn Bee is nothing more than an improved .218 Bee, so this is an easy one to work with. In years past, it grew from the Gibson Improved, then the Ackley Improved, finally to emerge as A.E. Mashburn's version in 1941. The Bee's parent case is the .32-20 Win., with a rim diameter of 0.408 inch. The Mashburn version features a shoulder angle of 17 degrees—two degrees sharper than the original Bee. Case overall length is 1.345 inches, the same as the standard Bee.

To create cases for the .218 Mashburn Bee, simply take factory-loaded .218 Bee ammunition, place it into a .218 Mashburn Bee chamber and fire-form it. This will move the shoulder forward quite a bit, but in forming more than 200 cases, I've had few that split at the neck or case mouth.

RCBS formerly offered die set No. 56030 as part of its G group, but no longer does. However, Graf & Sons currently sells custom Redding dies for the cartridge.

The difficult part with the .218 Mashburn is finding loads. Older reference books from Charles Landis, F.C. Ness and P.O. Ackley have some data, but if you don't have or can't find any of these, basic .218 Bee data will fill the bill handily and will yield good results. Keep in mind that this is a small cartridge, so any minor deviation in a powder charge will certainly show up in both the rifle and loaded components.

I used Small Rifle primers like the CCI BR-4 or Remington 7½. Good powder choices range from common Alliant 2400 to IMR 4227 and H4198. A.E. Mashburn would certainly be proud of his contribution to varmint hunters, even in these modern times.

WARNING: The loads shown here are safe only in the guns for which they were developed. Neither the author nor Outdoor Sportsman Group assumes any liability for accidents or injury resulting from the use or misuse of this data. Shooting reloads may void any warranty on your firearm.



.219 Donaldson Wasp

When I was a boy growing up in New York, the .219 Donaldson was already 20 years old, having been developed by Harvey Donaldson in the same state in 1937. It's a blown-out .219 Zipper case, with a 28-degree shoulder instead of the Zipper's 12-degree shoulder. Overall case length is 1.7150 inches.

I purchased a Ruger No. 1 in .218 Bee, then sent it to the Bullberry Barrel Works to be chambered for the .219 Donaldson

Wasp. Since the .218 Bee had the correct barrel twist, all Bullberry had to do was to recut the chamber for the new round, then alter the extractor slightly for the larger diameter case.

The cases can be formed from .30-30 Win. brass—if you have or can find an RCBS custom shop die set No. 58024, which is no longer available. This three-die set included a pair of forming dies and one forming/trim die.

Fortunately, there are commercial

sources of brass. Buffalo Arms sells re-formed brass cases in the .219 Donaldson Wasp. E. Arthur Brown does as well, although they're currently out of stock.

Also fortunately, Redding offers .219 Donaldson Wasp dies in its D series, so whether you're forming your own brass or working with commercial stuff, you can order full-length or neck-size die sets from Redding.

If you are lucky enough to dig up the RCBS forming set to turn .30-30 brass into Donaldson brass, the first die pushes the shoulder back while retaining the .30 caliber neck. The second die takes the outside diameter of the neck from 0.325 inch to 0.290 inch. The last die completes the operation by reducing the outside diameter of the neck to 0.255 inch and the inside neck diameter to 0.227 inch.

After completing these steps, remove the excess length of the neck, chamfer it, and then run it through a full-length die for the proper inside diameter and general cleanup of the parent case.

If you're fortunate to still have the seventh edition of Hornady's reloading manual, you can find more details on loads and powders for the .219 Donaldson. An internet search also turned up some downloadable PDF pages from that manual.

Bullet weights from 50 to 55 grains have worked best for me. Historically good powders include IMR 3031, IMR 4064 and IMR 4320, and to them I would add Hodgdon H4895, which has proved

ACCURACY RESULTS					
SELECTED .22 WILDCAT LOADS					
Cartridge, Bullet	Bullet Weight (gr.)	Powder Type	Charge Weight (gr.)	Muzzle Velocity (fps)	Avg. Group (in.)
.218 Mashburn Bee					
Hornady V-Max	50	H4198	17.5	2,956	0.25
Winchester HP	46	IMR 4227	16.0	3,144	0.50
Nosler Ballistic Tip	55	H4198	17.0	2,788	0.75
Winchester HP	46	IMR 4227	16.5	3,233	0.75
Nosler Ballistic Tip	40	2400	14.0	3,147	0.85
Nosler Ballistic Tip	40	H4198	17.0	2,944	1.00
.219 Donaldson Wasp					
Speer FMJ	55	IMR 4064	28.0	3,094	0.75
Speer HPBT	52	IMR 4064	28.0	3,160	0.75
Berger HP	52	H4895	29.0	3,443	0.88
Barnes VLC	50	H4895	28.0	3,386	1.00
Hornady V-Max	50	IMR 3031	27.0	3,202	1.00
Hornady V-Max	55	IMR 3031	27.0	3,175	1.00
.22 K-Hornet					
Hornady Hornet	45	WW 680	11.5	2,725	0.34
Speer TNT	50	AA 1680	12.0	2,438	0.75
Speer TNT	50	AA 1680	12.5	2,504	0.75
Hornady V-Max	40	2400	12.0	3,092	0.88
Speer Spire Point	40	IMR 4227	11.5	2,694	0.88
Sierra Spitzer	45	H110	11.5	2,829	1.00
.220 Wby. Rocket					
Sierra BT	55	IMR 4320	44.0	4,235	0.50
Speer SP	55	IMR 4350	45.0	3,851	0.63
Barnes X	53	H380	43.0	3,885	0.75
Sierra HP	53	H380	43.0	3,814	0.75
Speer TNT	50	H380	44.0	3,913	0.75
Hornady V-Max	50	H4895	40.4	4,086	1.00
Notes: All groups are three-shot groups at 100 yards. Powder key: AA, Accurate Arms; H, Hodgdon, IMR (Hodgdon product); WW, Winchester (Hodgdon product). Abbreviations: BT, boattail, HPBT, hollowpoint boattail; HP, hollowpoint; SP, softpoint					



Rounds like the .218 Mashburn Bee are easily fire-formed. (From l.): Fired factory case, loaded factory ammunition, fire-formed case and a loaded Mashburn Bee round.



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to be a good shooter for me—printing three-shot groups of an inch or better.

I found the .219 Donaldson a great vintage cartridge to shoot, and I always enjoyed using it for woodchucks.

.22 K-Hornet

Starting out with a basic .22 Hornet case, Lysle Kilbourn modified this case for more velocity. The most significant difference is the shoulder angle. While the original Hornet has a long, almost taper-like five-degree shoulder, the K-Hornet has a 0.286-inch, 40-degree taper—resulting in more case capacity and about 16 percent more velocity. Other than that and a shorter neck (0.243 inch for the K-Hornet versus 0.386 for the Hornet), the cases are the same: a rim diameter of 0.350 and overall case length of 1.403 inches.

Older Hornet data show that when using a 45-grain bullet and 9.7 grains of Alliant 2400 powder, velocities ran at about 2,600 fps. With the K version, you can raise the payload safely to 11.5 grains of the same powder for 3,000 fps plus.

Keep in mind that the K-Hornet is still a small case—only 13.0 grains of water in my particular cases—so the foregoing advice on adhering to published loads applies. K-Hornet data are not hard to find. Hornady's 11th edition reloading manual, for example, has plenty of recipes.

For a vehicle to launch this cartridge, by sheer luck I found a 24-inch T/C Contender barrel chambered to the K-Hornet. Brass isn't commercially available for the K-Hornet, so fire-forming is the way to go. I fired round after round of Winchester .22 Hornet ammo through the Contender K-Hornet barrel. My efforts resulted more than 200 well-defined cases and just one split case.

RCBS makes dies (No. 26201) for the K-Hornet. I wanted to neck-size-only my fire-formed cases, and here patience pays off.

What I like to do is smoke these formed cases with the soot of a candle, then run them up and into the die until the base of this die just kisses the top of the shoulder. With the black soot disappearing as you keep advancing up and into the die, this is an easy way to track



(From l.): .218 Mashburn Bee, .22 K-Hornet, .219 Donaldson Wasp, .220 Wby. Rocket. These .22s are great performers and fun to work with for vintage cartridge buffs.



Forming the .219 Donaldson Wasp from .30-30 Win. cases is a multi-step process requiring a set of forming dies. (From l., beginning with .30-30 case) The shoulder gets pushed back, then the neck diameter is reduced. The long neck is trimmed, sized and cleaned up.

the progress of resizing only the neck of the case.

I tried a variety of powders, with the best group going to Winchester's 296 and 680 and Accurate Arms 1680. These groups were all under an inch, perfect for small varmints and all within safe operating pressures.



Firing .22 Hornet factory brass (l.) is the quick, easy—and pretty much only—way to create K-Hornet brass. Once it's formed, RCBS offers dies for working with K-Hornet

.220 Wby. Rocket

Weatherby cartridges have always held a fascination for me, and that includes one of Roy Weatherby's first: the .220 Wby. Rocket. Today you can have it chambered in just about any rifle that was made for the .220 Swift.

Weatherby worked on the Rocket for

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a couple years before placing it on the market in 1945. It was a good move because the .220 Swift was starting to wane in popularity.

To improve the Swift, Weatherby moved up the shoulder about 0.075 inch for the Rocket, and this new offering held 50.0 grains of water—slightly more than the Swift's 48.0 grains. It's not much of a difference for sure, but those who knew Roy Weatherby knew that one-upmanship was his game. And for those who wanted a rifle with a Weatherby cartridge designation engraved on the barrel, any rifle chambered for the .30-06 or the Swift was a strong contender for the Rocket.

I got a Ruger Model 77 II Target chambered in .220 Swift and shipped it to High Tech Custom Rifles to transform it into the .220 Wby. Rocket. There's no commercially available brass, so I shot more than 100 rounds of Remington 50-grain .220 Swift to fire-form the cases.

I wanted to neck-size the cartridge and used an RCBS custom die, No. 55010, to accomplish this. That die is no

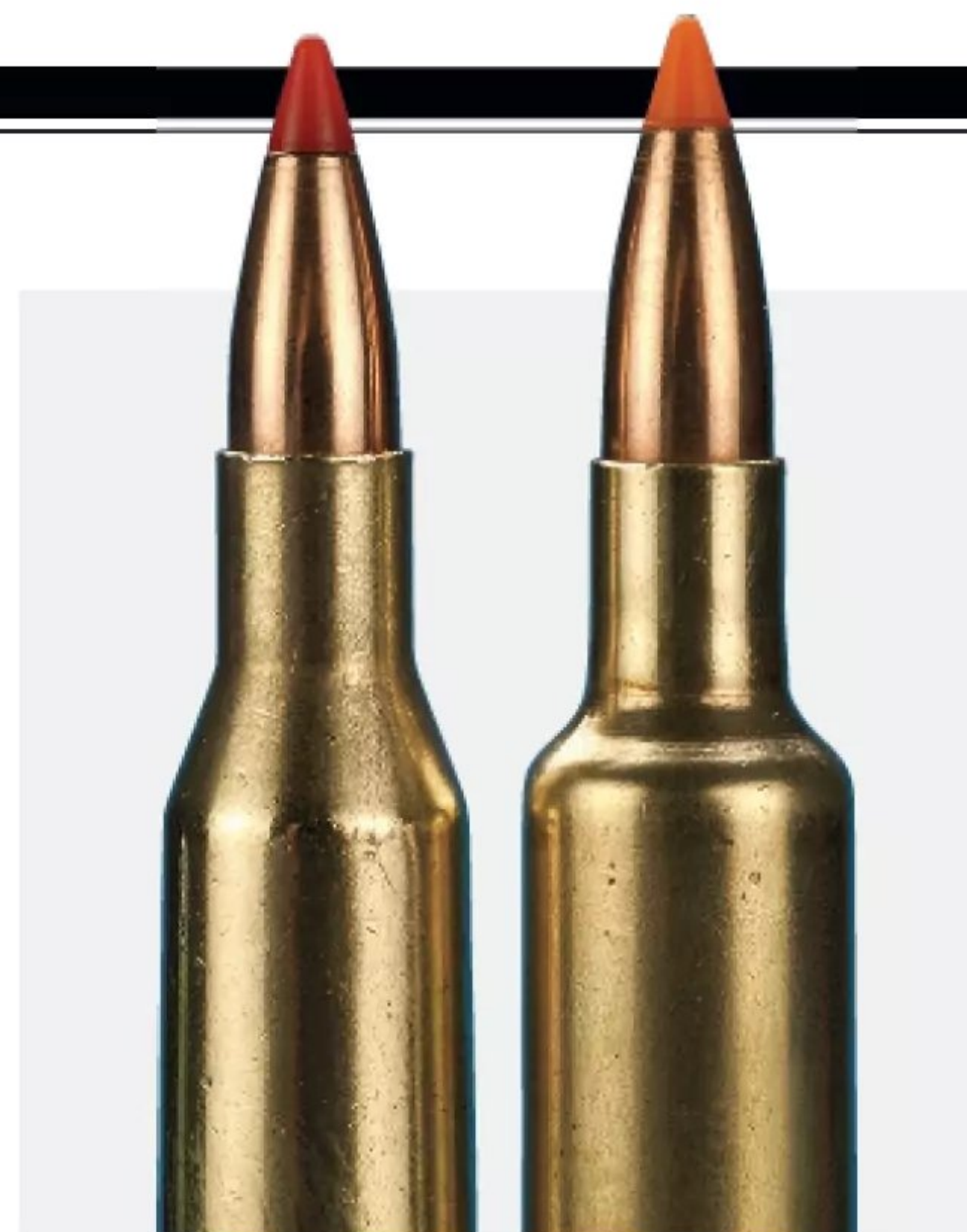
longer available, but Redding offers dies for the Rocket.

Data on the Rocket are not easy to find, and a call to Weatherby produced one page of loading data from a vintage edition of *Tomorrow's Rifles Today*—a promotional book Weatherby published years ago.

The Rocket is a pleasant cartridge to load and shoot, but handloaders should be cautious on some of the older, more out-of-date loading data. Bullets listed were Barnes, Hornady, Speer, Nosler and Sierra—with some Remington 55-grain bullets thrown into the mix. Hodgdon's H4831sc was the propellant of choice.

My best-shooting load is the Sierra 55-grain boattail over 44.0 grains of IMR 4320. Velocities averaged 4,235 fps in the Ruger's 26-inch barrel, with groups within 0.5 m.o.a. and no pressure signs. Impressive to say the least.

The .220 Wby. Rocket teamed with the Ruger Target rifle is an interesting combination and certainly within the reach of all. While it will never replace the Swift, it does offer an alternative for



It's easy to see how Roy Weatherby changed the .220 Swift cartridge (l.) to increase capacity and create his Rocket.

those of us who want something different for long-range varmint shooting.

Wildcat .22 centerfires can be fun, adding another dimension to your shooting. They're a great project that may require a commitment to tasks like fire-forming, and they allow you to go deeper into the science of ballistics as well as the history of U.S. cartridges. See you on the North Forty. ■

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Ruger SFAR 6.5 Creedmoor

Ruger's Small Frame Autoloading Rifle puts AR-10 capability into an AR-15 size package. Originally introduced in 7.62/.308, it's now available in 6.5 Creedmoor. I was able to shoot this one extensively out to 600 yards at an introductory event at FTW Ranch in Texas (FTWSAAM.COM) and came away impressed.

The SFAR uses a rifle-length direct-gas system, and the 6.5 Creedmoor version sports a 20-inch barrel and either a Magpul MOE SL or Magpul PRS Lite stock. It ships with a single 10- or 20-round Magpul PMag on the SR25/AR-10 pattern. My sample came with the MOE stock and 10-round mag.

The barrel is cold hammer forged and features 5R rifling. This style of rifling reduces bullet-jacket stripping, and that produces better accuracy and reduces copper fouling. The barrel is threaded 5/8x24 and is tipped with Ruger's two-port Boomer brake.

The upper receiver is forged 7075-T6 aluminum with a hard-coat finish. It incorporates a brass deflector and forward assist, and a full-length optics rail sits on top. The aluminum hand-

guard is 15 inches long, with M-Lok slots at three, six and nine o'clock, along with two sockets for QD sling swivels.

The bolt carrier is chrome-lined 8620 steel and features a nitride-processed staked gas key. The firing pin is DLC-coated titanium, and the bolt head boasts twin ejectors, which when paired with the enlarged ejection port ensure reliability.

The trigger is Ruger's Elite 452, and it's a winner. It's a two stage, the second stage breaking at a clean, crisp 3.5 pounds on average on my sample.

The Magpul MOE SL stock has ambidextrous levers for quick length adjustment, and there are QD sockets on either side. The grip has a storage compartment, and inside you'll find a wrench for adjusting the SFAR's gas regulator.

For accuracy testing I mounted a Leupold VX-5 HD 3-15x44mm, a perfect companion for a rifle capable of long range. The pairing resulted in a total weight of just shy of nine pounds, which is pretty darned good for a rifle of this type.

I consider the SFAR 6.5 an all-around hybrid rifle, and for accuracy

SPECIFICATIONS

RUGER SFAR

TYPE	AR-10
CALIBER	6.5 Creedmoor (tested), 7.62/.308
CAPACITY	10- or 20-round AR-10/SR25-type Magpul
BARREL	20 in., 4140 chrome-moly; 5R rifling, 1:8 twist; threaded 5/8x24; Ruger Boomer brake installed
OVERALL LENGTH	38–41 in.
WEIGHT	7.2 lb.
CONSTRUCTION	Type III hard-coat anodized 7075-T6 upper, 15 in. aluminum handguard w/M-Lok slots
STOCK	Magpul MOE SL adjustable
TRIGGER	Ruger Elite 452; 3.5 lb. pull (measured)
SAFETY	single-side selector
SIGHTS	none; full-length optics rail
PRICE	\$1,329
MANUFACTURER	Ruger, RUGER.COM

testing I opted for our tactical SOP: five-shot groups instead of three. I did let the barrel cool between groups, but I fired the five shots fast enough to get

some decent heat in the barrel in order to see if groups would open up.

They didn't. The SFAR 6.5 exhibited no stringing and no major fliers. For the final group of the day I removed the muzzle brake and threaded on my Banish 30 suppressor. Groups grew just a bit, but I ran too short on ammo to determine whether this was the ammo or the suppressor/ammo combo.

The Boomer brake is secured by a jam nut that has to be rotated clockwise with a 7/8-inch wrench, and I ended up having to soak it with Kroil and let it set overnight before I could break it free the first time. I mention this because it may be something you want to do at home the first time and not on the range.

But if you're not going to go the suppressor route, I'd leave the brake where it is. It does a great job of reducing recoil, making the rifle easy-shooting from the bench and from field positions.

The SFAR has a four-position gas regulator that's accessed through the front of the handguard and adjusted with the supplied 3/16 ball-end wrench. Setting 0 is no gas and 3 is full gas. I failed to take note of the position when I first fired it, and a previous tester had set it on 3, which over-gassed the rifle with the loads I was shooting.

Ruger says setting 2 will work with most ammo. The company also indicates that setting 1 is best for suppressors. In this rifle, firing Hornady 140-grain American Gunner I used for function testing—both with and without the can—I found that fine-tuning just off these numbers produced the consistent, reliable four o'clock ejection I was looking for.

Ruger recommends cleaning the rifle completely before evaluating the regulator. You should periodically verify the setting—especially when changing ammo or adding a can.

Early on I had two plastic-tip bullets fail to feed, the tips getting mangled in the process. After that I made sure I was tapping the magazines to park the cartridges against the back of the PMag—like they taught us in Army basic—and had no further problems.

Up until this point I've owned only



The Magpul MOE SL stock is simple but functional, with an ambidextrous lever for adjusting length. The grip features a storage compartment, and the gas regulator wrench is stashed inside.



The two-port Boomer brake does an excellent job of taming recoil, and the gas regulator is easily adjusted through the front of the handguard.



The upper receiver incorporates a forward assist and brass deflector, and a full-length optics rail sits on top. The Elite 452 trigger is fantastic, with a clean, 3.5-pound pull.

ACCURACY RESULTS				
RUGER SFAR				
6.5 Creedmoor	Bullet Weight (gr.)	Muzzle Velocity (fps)	Std. Dev. (fps)	Avg. Group (in.)
Hornady ELD Match	140	2,550	18	1.09
Federal Gold Medal/ Berger OTM Hybrid	130	2,750	23	1.31
Remington Core-Lokt Tipped	129	2,773	12	1.36
Fiocchi Hyperformance/ Hornady SST*	129	2,709	16	1.49
Notes: (With Banish 30 suppressor attached.) Accuracy results are averages of three five-shot groups at 100 yards from a Caldwell Fire Control rest. Velocities are averages of 10 shots recorded 10 feet from the muzzle with a ProChrono DLX. Temperature, 80 degrees; elevation, 4,900 feet				

one AR, and it's a gun I won in a drawing. I never had the urge to actually buy one. Until now. I sent a check to Ruger for the SFAR 6.5 Creedmoor. It's a versatile rifle I can hunt with if I choose, and if there was ever a "head for the hills" rifle, this is it. Or,

most likely, I'll simply take it to the range and ring long-range steel just for fun—much more fun than a .308 semiauto due to the lower recoil level while providing superior long-range performance. That's what I call a win-win-win. ■



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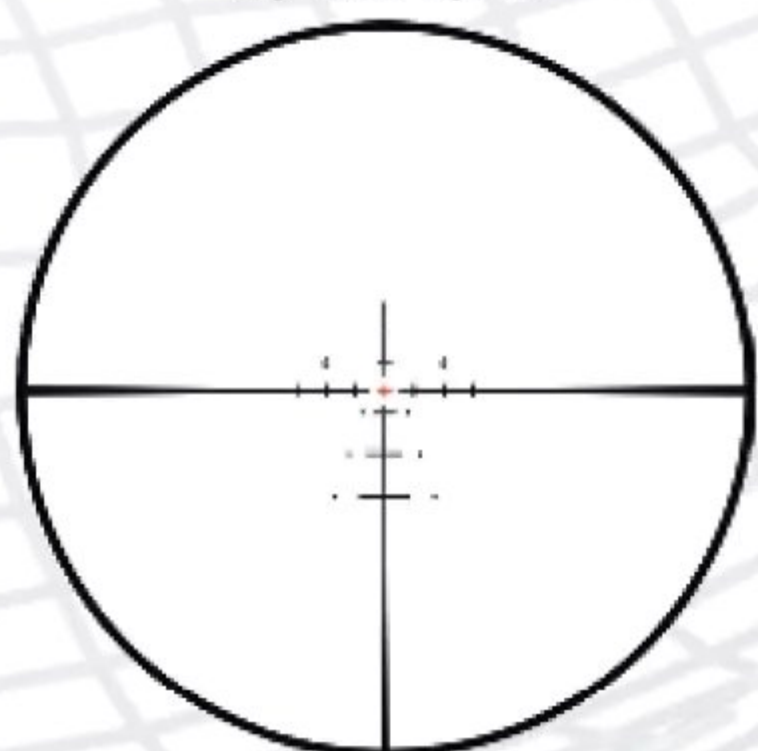
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THE LAST WORD

Continued from page 80

be hard-pressed to get by with fewer than three rifles. And I'm still missing something not just important, but fundamental: a good .22 rimfire. In 1979 I interviewed with Howard French for a job at *Guns & Ammo*. His first question: Did I own a .22? At the time, I had a Ruger 10/22. I got the job.

I can't imagine a serious American rifleshooter's battery that doesn't include a good .22 rimfire. That's the cartridge we start with and stay with. We may drift away from time to time, but we'll always circle back. It's the great teacher and ideal for plinking, position practice, small game and pests. And the great therapist. Ever get flinchy from shooting too many cannons? Lots of shooting with a good .22 is the best cure.

Depends on your purposes. Some of us could get by without as many, but I'm hard-pressed to figure out how I could be confident with fewer than four rifles. I'm happy I'm an American rifleshooter and don't have to make such compromises. ■

The Editor's Two Cents

In terms of hunting rifles, I have it a lot easier than Craig in terms of a three-gun battery. While I might go to Africa again, I've already killed buffalo and likely won't get to do that again. Similarly, brown bears aren't on my list anymore. But Shiras moose is, so for a big gun my .444 Marlin fills the bill.

For all-around big game I would like to go with my beloved .280 Rem. But the cartridge is fading too fast in terms of ammo availability. For me it's now the .308 Win. It's plenty capable for African plains game, deer, elk, pronghorn, caribou and sheep—without the recoil of my .300 Win. Mag.

And, like Craig, I'd never forgo owning a .22 rimfire. So that's my three. What are yours? Email us at RIFLES@OUTDOORSG.COM. —JSR



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The Limited List

Like many of us reading this magazine, I have more rifles than I absolutely need. None of mine are “new in the box.” All have been to the range, the majority taken afield. I cherish each one, but some haven’t been fired in years. That suggests I could live without them. Fortunately, thanks to our blessed Second Amendment, I don’t have to. There are no restrictions on having guns I’m not using and don’t need.

What if you could have just one rifle? How about just two or three? For us fortunate Americans, this is purely theoretical, but elsewhere in the world, many shooters are sharply limited in the firearms they can own.

I was just in South Africa, hunting with a friend from Australia, and we had this favorite campfire discussion. In both Australia and South Africa, multiple firearms are allowed, but the time and bureaucratic hassle involved in getting permits are onerous enough to make one think hard: How bad do you really need it?

What if you could have just one rifle? First, you must think about what your purposes is. Home defense, target shooting, hunting? For defense, I’d default to a short-barreled AR or other semiauto, probably in .223 for sheer availability. In areas where semiautos like this aren’t legal, perhaps a short-barreled, fast-handling lever-action in a pistol cartridge—probably .357, with the option to use .38 Special ammo for practice.

For target shooting, whether punching holes in paper or ringing steel, the obvious answer also comes easy: the best and most accurate 6.5 Creedmoor bolt action I could afford. It’s no secret I’m not a big 6.5 Creedmoor fan as a hunting cartridge, but

as a target round it delivers long-range performance with minimal recoil.

But when it comes to hunting, picking just one is more complicated, and it depends on what you hunt and under what conditions. For most whitetail hunting, the 6.5 Creedmoor remains one of dozens of sound choices. Like most Americans, I’m first and foremost a deer hunter, but I’ve climbed high for sheep and goats, tackled Alaskan brown bears, hunt Africa most years and have an elk hunt planned this fall.

For me, the choice is limited but also obvious. It must be a well-scoped .375. For nostalgia, tradition and greater availability, I’d probably go with a .375 H&H, but I could live happily with a .375 Ruger. The faster .375s have too much recoil for my taste, even

ger probably make more sense because their rifles are lighter and cheaper, and their ammo is more compact.

The second rifle could be chambered to a wide variety of cartridges, from 6.5mm to .270 to 7mm and on up to at least .30. I have pet rifles in all four bullet diameters that I’d be loath to give up, but at heart I’m a .30 caliber guy and can’t imagine not owning a .30-30 or a .30-06.

I’ve taken most of my mountain game with a .300 Wby. Mag., and I’m impressed by the .300 PRC with faster twist and heavier bullets. I’d be tempted to start over with a .300 PRC, but I’d probably keep my .300 Win. Mag., which is still the world’s most popular magnum.

Both my one- and two-rifle batter-

IF I WERE ALLOWED THREE RIFLES, I’D KEEP BOTH MY FAST .30 AND MY .416. THEN I’D ADD A .22 CENTERFIRE.

if they’re more ideal in open country. I’d be embarrassingly overgunned for deer and downright nervous on serious mountain hunts, but with careful bullet choices, I could hunt anything in the world with a .375 if I had to.

Even if I expanded this to two rifles I’m still kind of stuck: I need a big gun for the largest game and would like something that shoots flat for mountains and plains.

With a two-rifle battery I’d probably trade the .375 in for a .416 Rigby, Remington or Ruger, or a .404 Jeffery. Collectively, with their heavier bullets, all are better for the largest game than any .375, and they shoot flat enough to be almost as versatile.

But which one? I love both the .404 Jeffery and .416 Rigby for their tradition, but the .416 Rem. Mag. or .416 Ru-

ies have an inherent problem: nothing light in recoil that’s fun to shoot. If I were allowed three rifles, I’d keep both my fast .30 and my .416. Then I’d add a .22 centerfire for coyotes, prairie dog, and less costly, low-recoil practice.

I thought about a super-accurate .22-250—which I don’t currently own—but I’d hate to give up my .204 Ruger. Instead, I’d probably keep my Kansas ranch rifle, a plain-Jane Rock River AR, rare left-hand action in .223. It’s accurate enough for prairie dogs, and although I rarely use it for buck hunting, it’s useful for filling doe tags. Also, it doubles as a sound home-defense platform.

Depending on your needs, you might be able trim your battery. I’d

Continued on page 79



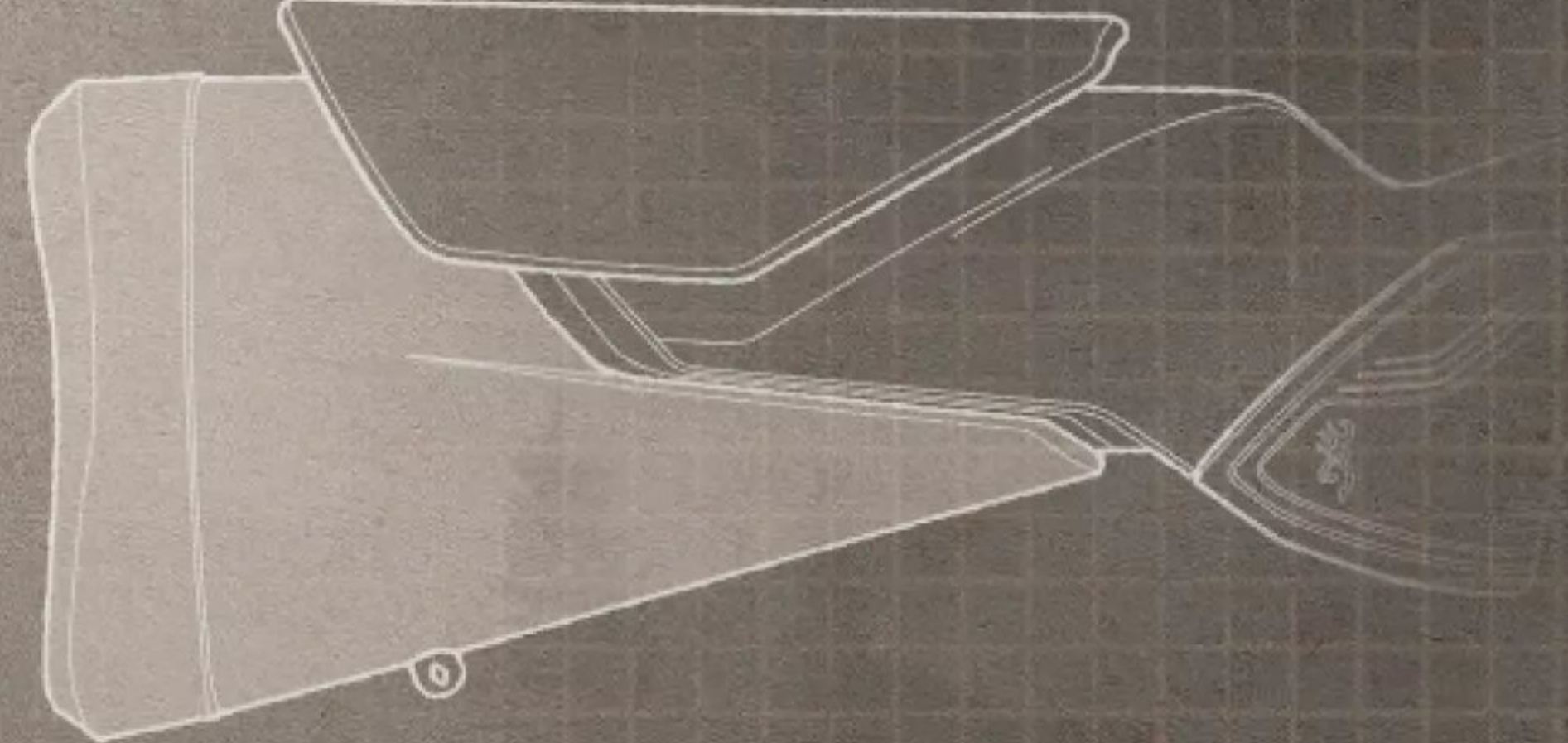
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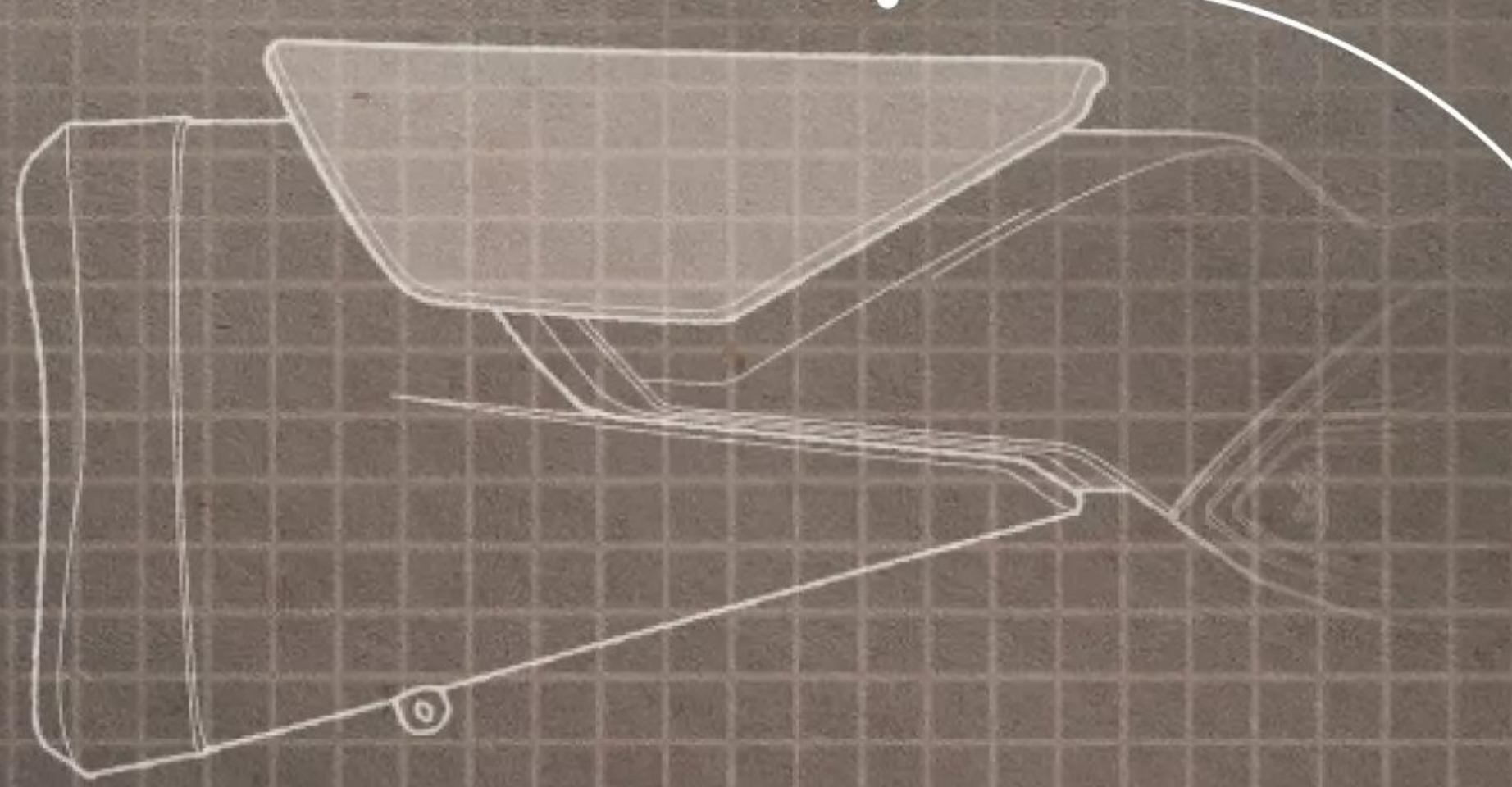
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COMB HEIGHT

Achieve consistent eye-to-scope alignment and a rock-solid cheek weld even with large objective lens optics. Six height positions offer 1" of height adjustment.



SCAN TO SEE
IT IN ACTION
AND FOR
MORE INFO



X-BOLT 2
**TOTAL ACCURACY.
REDEFINED.**

browning.com

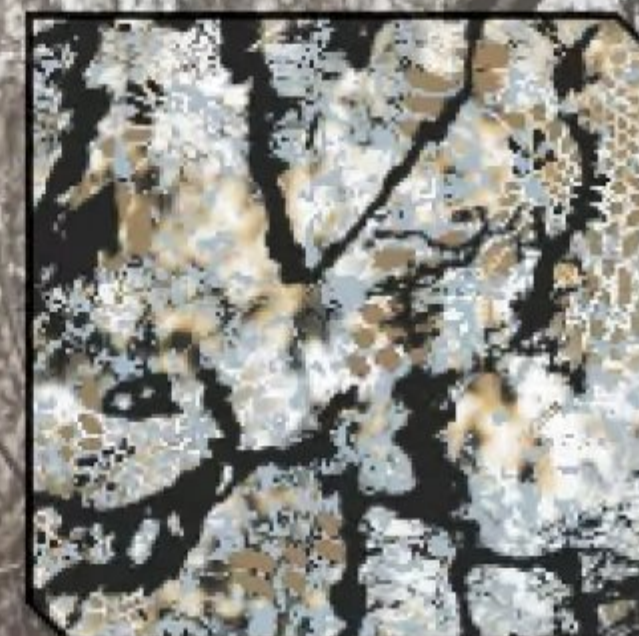
MOUNTAIN ASCENT™ SKYFALL

LEGENDARY

FEATURES



SUB-MOA
ACCURACY GUARANTEE



KRYPTEK® SKYFALL™
COMPOSITE STOCK



FULL-LENGTH MAUSER
CLAW EXTRACTOR

CALIBERS AVAILABLE: .308 WIN. | .280 ACK. IMP. | .300 WIN. MAG.

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