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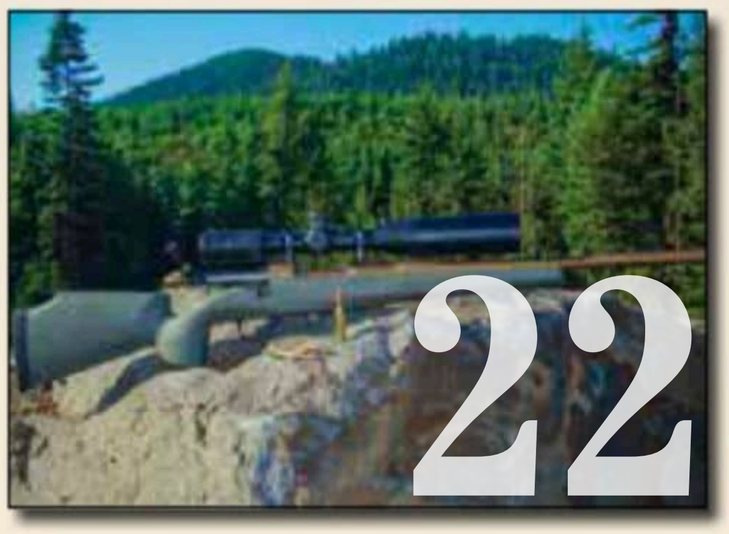

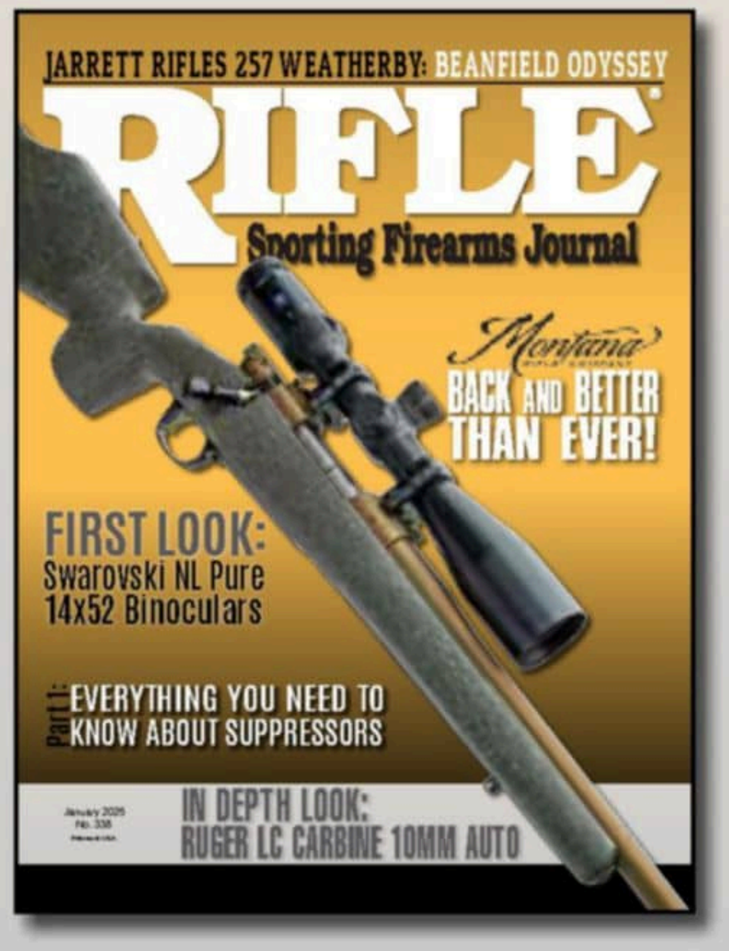

About the Cover: A Montana Rifle Company Highline rifle chambered in 6.5 PRC. It has a 24-inch barrel (1:8 twist) with a Zeiss Conquest V4 6-24x 50mm scope mounted in Warne Mountain Tech rings. Photo by Chris Downs.

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C. Sharps Arms Hartford Model 1874

Mostly Long Guns

Brian Pearce

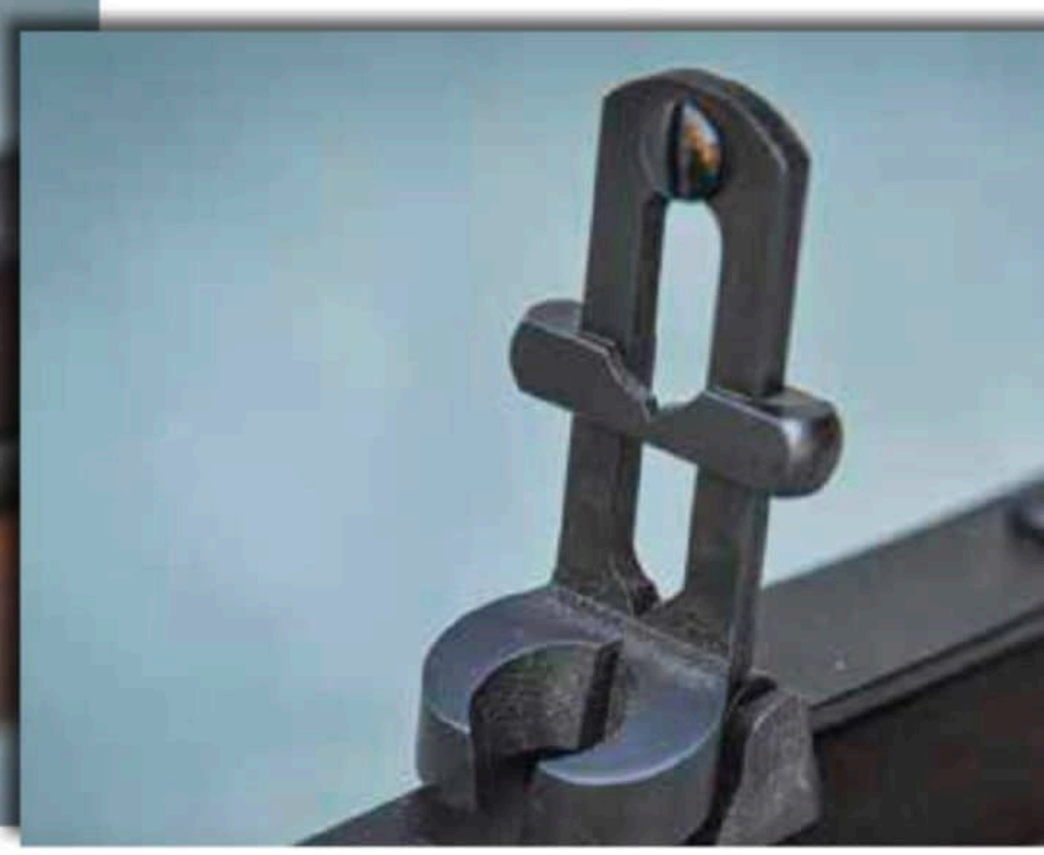
C. Sharps Arms Model 1874 Hartford Model chambered in 45-70 Government is a high quality, reliable and accurate rifle.

The name "Old Reliable" is intriguing, as it originated with hunters that used Sharps rifles in the field but is most associated with the Model 1874 cartridge rifle. After all, they proved reliable mechanically and were tough as nails under frontier conditions. They provided reliable power for hunting big game, especially in .44, .45 and big .50 calibers. And they provided reliable long-range accuracy. Clearly, the name was perfect for such an outstanding rifle! But what is also interesting is that the (Sharps Rifle Manufacturing Company, 1855-1874) or later the Sharps Rifle Company (1876-1881) Model 1874 was only produced for about 9 or 10 years from 1871 through 1880 or 1881. During those few short years, it earned legendary status among target shooters, military men, frontiersmen, and hunters and had a larger-than-life reputation.

Although Sharps made different rifles and handguns, their most famous and sought-after model is the Model 1874 cartridge rifle. First introduced in 1871, it was later named the Model 1874 and became widely popular with buffalo hunters or anyone who needed a powerful, long-range rifle.

Today, original rifles command a premium, especially high-condition examples that are suitable for accurate shooting. Reproductions are the obvious solution, with respectable examples being produced in Italy by David Pedersoli, A. Uberti and Armi Sport. However, there are two USA-based companies producing very, very high-quality reproductions that include Shiloh Manufacturing and C. Sharps Arms Company, which are both 100% manufactured in Big Timber, Montana. Both companies have been in business since around 1975 or 1976 (and that's a story for another day), and parts are fully interchangeable with the originals. I own rifles manufactured by both and highly recommend either, as they are extremely well-made, accurate and each gun is custom-made to customer specifications.

The Shiloh and C. Sharps rifles are not mass-produced; rather every gun is meticulously crafted and displays impeccable quality and workmanship. They are striking guns, as even an untrained eye will quickly recognize. They are special, with old fashioned walnut stock, perfectly machined and polished blue steel that is blended together with old world style hand craftsmanship, perfect



The rear sight is a Buckhorn, ladder type.

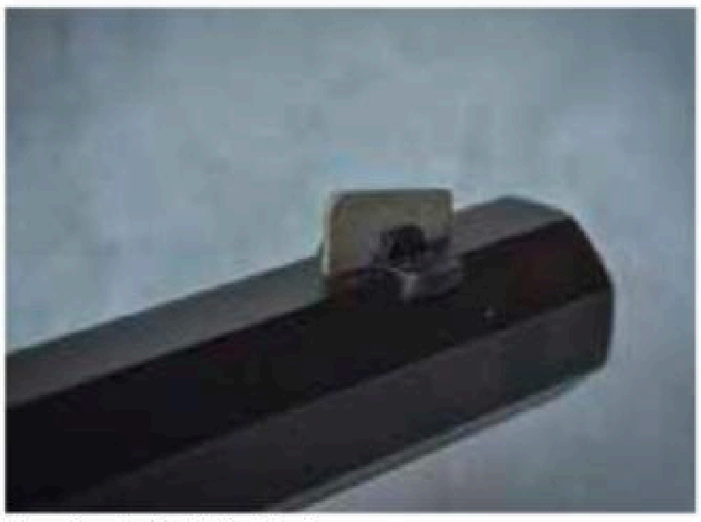
inletting, etc., which seems to be an art that is quickly disappearing from our modern world in favor of synthetics. But the demand remains very high for these fine rifles, as Shiloh currently has a waiting list of around 30 months, while C. Sharps is around 12 to 14 months.

For today's purposes, a C. Sharps Arms Model 1874 chambered in 45-70 Government (2.1-inch case) was selected. It is the Hartford Model fitted with a 30-inch No. 1 tapered heavy octagon barrel (1.120-inches at the breech and tapers to 1.00-inch at the muzzle) with Hartford collar, blade front sight, and Buckhorn rear (ladder style). The receiver and butt-plate are French gray, while the forearm features a German silver Nose Cap. The stock is a military pattern with a straight grip but without the patch box and semi-crescent butt-plate. The stock is constructed of extra fancy American walnut. In addition to the above options, it features double set triggers with the front trigger breaking without set at 7 pounds (but due to the weight of the rifle does not feel that heavy) and breaks clean at just 8 ounces in the set mode. It is a handsome rifle, a real eye-catching work of art that boasts of better tolerances than original Sharps rifles!

The receiver is constructed of 8620 steel, which, combined with the inherit strength of a falling block action, it's a strong rifle capable of handling all +P style 45-70 loads intended for modern Marlin Model 1895 rifles that is generally around 43,500 psi. In fact, C. Sharps Arms suggests that it is capable of handling "starting loads for the Ruger No. 1." As such, the gun is capable of pushing 400- and 405-grain JSP or 430-grain cast bullets to 2200 fps and is capable of taking all of North America's big game, but is also suitable for most African game.

For many years C. Sharps Arms used the highly respected Badger barrels; however, when that company sold several years ago, and soon thereafter, they discontinued supplying barrels for vintage style arms. Currently C. Sharps is using barrel stock from McGowen and Green Mountain – depending on caliber.

Before pulling the trigger, it should be mentioned that the ham-



The front sight is blade.

The forearm is beautifully fit with a German silver Nose Cap that offers virtually perfect inletting.

mer has three traditional positions. However, before opening the action to check to see if the gun is unloaded or to load a cartridge in the chamber, the hammer should be brought to the safety notch (the first click) to prevent damaging or possibly breaking the firing pin. And generally, it's best to pull the rear set trigger after the hammer is in the full cock position.

As can be seen in the accompanying chart, several factory loads were tried from Black Hills Ammunition, Buffalo Bore, Hornady, HSM, and Remington. From a bench with sandbag rest, some of the more accurate loads produced 4-shot groups from 1.1 to 1.25 inches at 100 yards. For example, the Hornady LEVERevolution 325-grain FTX load produced 2096 fps and grouped into 1.10 inches. The old Remington 405-grain JSP load produced an average group of 1.15 inches, while Black Hills 325-grain Honey-Badger grouped into 1.20 inches.

45-70 Government Factory Loads

load (*grains*)	stated velocity (*fps*)	actual velocity (*fps*)	100-yard group (*inches*)
325 Hornady LEVERevolution FTX	2,000	2,096	1.10
405 Black Hills Ammunition Cowboy FPL	1,250	1,218	1.50
405 Remington JSP SPCL	1,330	1,173	1.15

Notes: A C. Sharps Arms 1874 Hartford Model 45-70 Government with a 30-inch barrel was used to test all loads. Accuracy was the average of 2, 4-shot groups.

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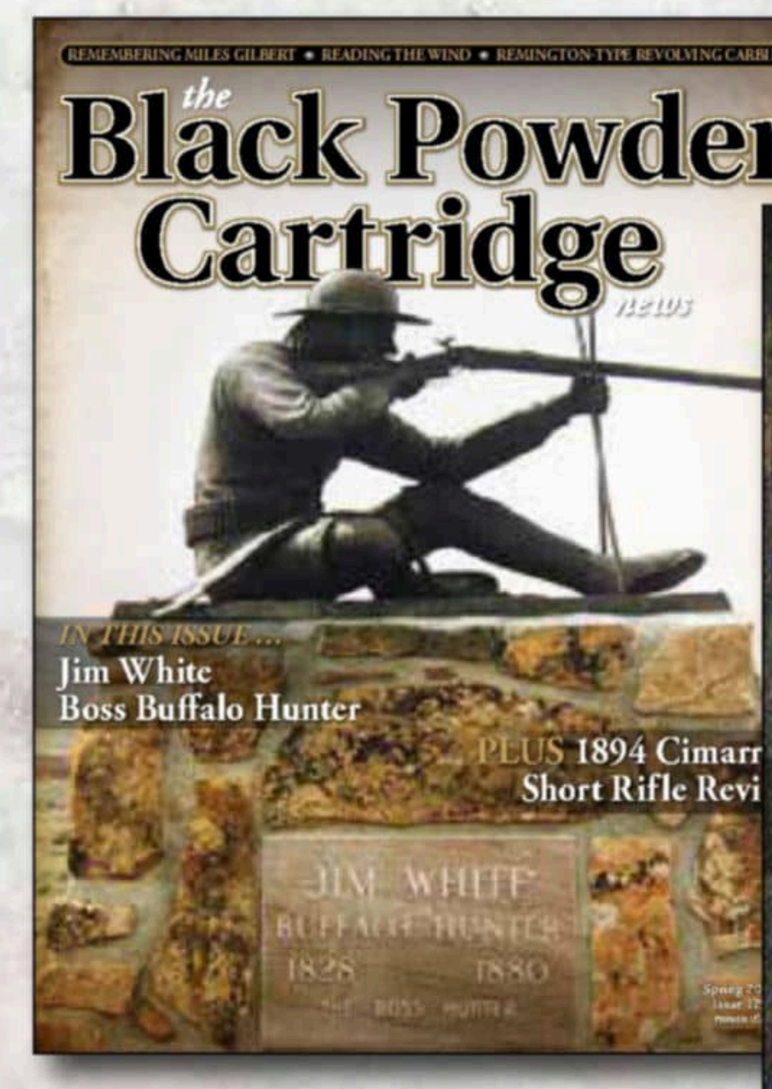

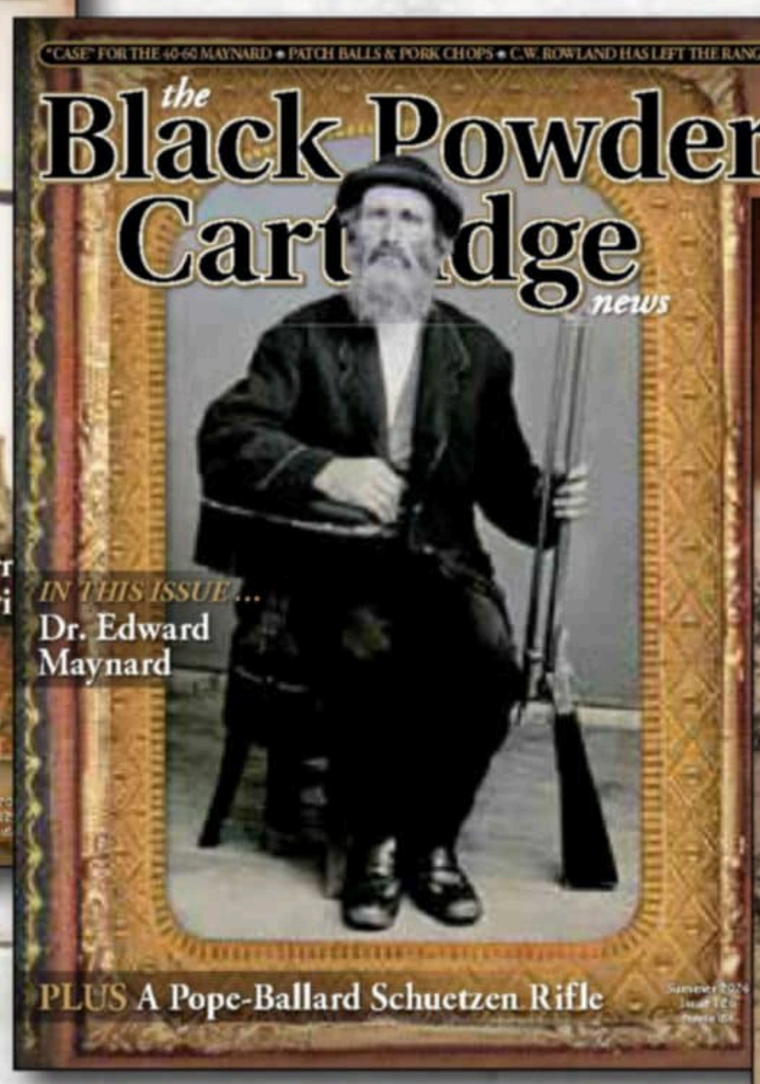

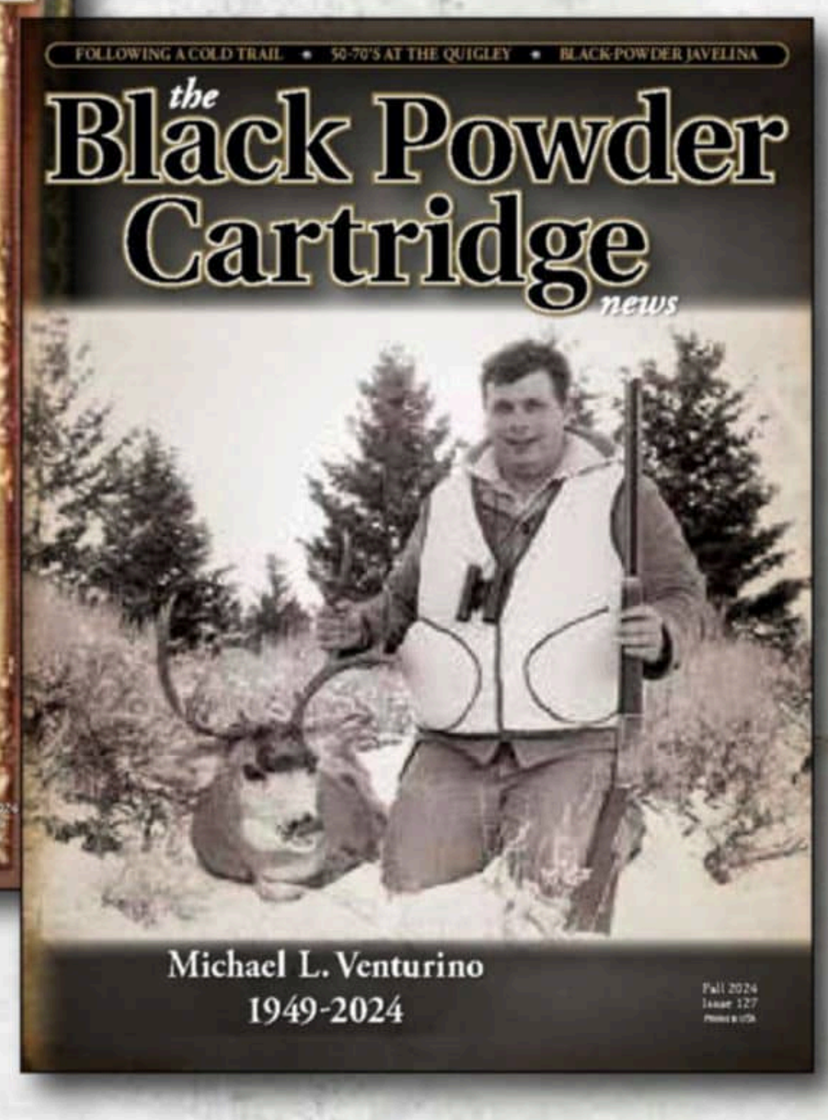

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The hammer has three positions, shown here in the down or fired position.

The hammer should be brought to the first click, or safety position, prior to opening the action to prevent damage to the firing pin.

Pushing the lever downward opens the breech for loading and unloading

With the weight of the C. Sharps rifle tipping the scales at 11.4 pounds, the recoil of standard pressure 45-70 loads is very mild, certainly pleasant enough that very few shooters will find it objectionable.

Moving on to handloads, naturally with cast bullets, one of my favorites in the 45-70 is from RCBS mould No. 45-405-FN that weighs around 415 grains with my alloy and features a gas check. Starting with new Starline cases capped with a CCI BR-2 primer, charged with 47.0 grains of Accurate A-2015 powder, velocity reached 1817 fps, and the extreme spread was just 12 fps for five shots. And the pressure is only 27,000 psi! Four shot groups hovered between .90 and 1.30 inches. The second load consisted of the Redding/Saeco No. 881 bullet that weighs 505 grains. Using 44.0 grains of Hodgdon Varget powder, velocity was 1511 fps. It did not fare as well at 100 yards as the lighter bullet, as groups hovered around 1.30 to 1.80 inches. However, in firing those same loads at targets 400 to 600 yards, the accuracy was good, and the bullet seemed to be fully stabilized, but that is a subject for another day.

It might be interesting to mention that C. Sharps Arms offers high-quality reproductions of other vintage single-shot rifles, including the 1875 and 1877 Sharps, 1879 Hepburn, 1885 Lowwall, 1885 Highwall, and the Hopkins & Allen.

The C. Sharps 1874 Hartford has a base price of $2,999.00, with options adding to that figure. Considering the history, high quality, old-world style craftsmanship, accuracy, and tremendous fun that this unique rifle offers, it's a bargain! *R*

The hammer in the rear position is ready to fire. The rear set trigger should only be pulled once the hammer is cocked.

By pulling the rear set trigger, the front trigger pull is reduced to just 8 ounces.

When loading the Model 1874, the hammer should be placed in the safety position to prevent damage to the firing pin.

Fun Fact: It has been stated and repeated many times, even currently, that the term "sharpshooter" originated with a person shooting a Sharps rifle and known to be an outstanding shot. However, that is not correct! The earliest reference I could find for "sharpshooter" was during the Revolutionary War, roughly 75 years before Christian Sharps first produced firearms in 1851. In fact, during the battle of Saratoga in 1777, sharpshooter units were formally organized to destroy specific enemy officers and artillery units. They were an important part of the war. Sharpshooter units have been established many times since, but they have used a huge variety of firearms appropriate for the period.

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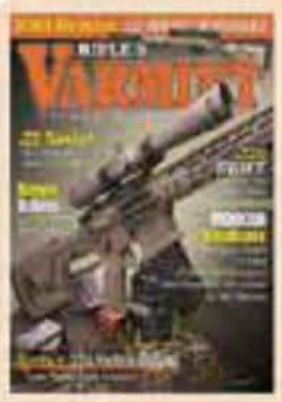

- .22 Nosler
- .17 Remington Fireball
- .222 Remington
- .223 Remington
- .220 Swift
- 6mm Remington International
- The .22 BenchRest Remington
- .300 AAC Blackout
- .218 Bee

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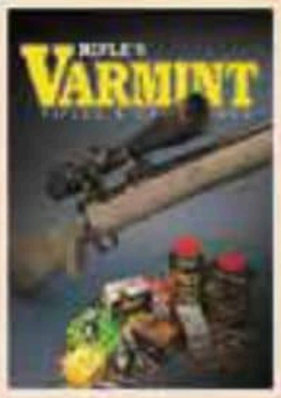

- Reloading the .24 Nosler
- .225 Winchester
- Coyote Rifles and Bullets
- .224 Valkyrie
- 6x45mm
- .19 Badger
- Mountain Snow Rifle
- Varmint Scope Reticles

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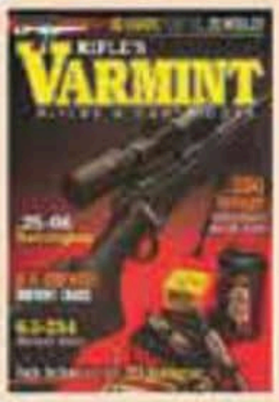

- .25-06 Remington
- .223 Remington Ackley Imp.
- 6.5 Grendel Varmint Loads
- Magnum Rimfire Cartridges
- .20 Nosler
- .250 Savage
- 6.5-284 Winchester
- Enduron Powders
- .243 WSSM

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- Cooper .22-250s
- Heavy Bullets and .220 Swift
- .22 Super Jet
- .22 Hornet Improved
- .218 Mashburn Bee
- Barnes Varmint Grenades
- .22 Winchester Magnum Rimfire
- .17-223 Remington

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- 6.5 Creedmoor
- Switch Barrel Sako Quad Rifle
- .221 Remington Fireball
- Tackling the .20 Practical
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- .250 Savage Ackley Improved
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- .17 Hornady Magnum Rimfire

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- Hunting with Suppressors
- .222 Super
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- Varmint Loads for the .30-06
- High Velocity .22 Long Rifles

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- .22 Hornet
- Favored Varmint Loads
- .221 Remington Fireball
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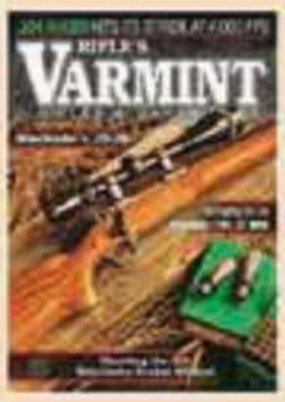

- Remington Scoremaster 511
- .220 Weatherby Rocket
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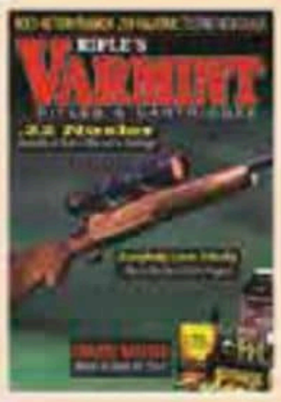

- .22 Nosler
- A Bolt-Action Franchi .224 Valkyrie
- Remington's 5mm Rimfire Mag.
- Coyote Bullets
- Loads for a .22 TCM
- Everybody Loves Velocity
- Winchester's New Wildcat
- .22 Winchester Mag. Rimfire

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- .222 Remington Magnum
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- Classic vs. Modern Varmint Bullets
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- Silent Varminting
- .22-284 Winchester
- Savage Mark II BRJ

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I'll Have A Marlin Ballard

Fouling Shots

Art Merrill

"Here," a lady friend said, waving at a stack of antique rifles leaning in a corner of her den. "Why don't you take one of these home?" I refrained from shrieking delightedly like a five-year-old at his biggest-ever birthday party and instead feigned nonchalance and only mild interest as I plucked the topmost rifle from the teepee of guns. More expensive original 1873 Winchesters and such were visible further in the stack, but I couldn't take such advantage of a widow. As a favor, for two years now, I've been disposing of her late husband's Western and Civil War collection; she was offering a thank-you gift, and it would have been unkind not to accept. My pluck rendered a Marlin Ballard in decent, shootable condition.

A "gun library" isn't just books – it's also guns. This Marlin Ballard is a recent addition.

Ballard rifles bear the name of the inventor of their actions, machinist Charles Ballard. About a half-dozen different companies, including Marlin, manufactured roughly 61,000 Ballard-action rifles during a 30-year run beginning with Ballard himself in 1861. The earliest models are retroactively designated Models 0 and 1, with 21 or so additional variant models reaching up to the Model 10 Schuetzen Junior. Some fractional designations, such as No. 1¾ Far West and No. 5½ Montana, flesh out the numbers.

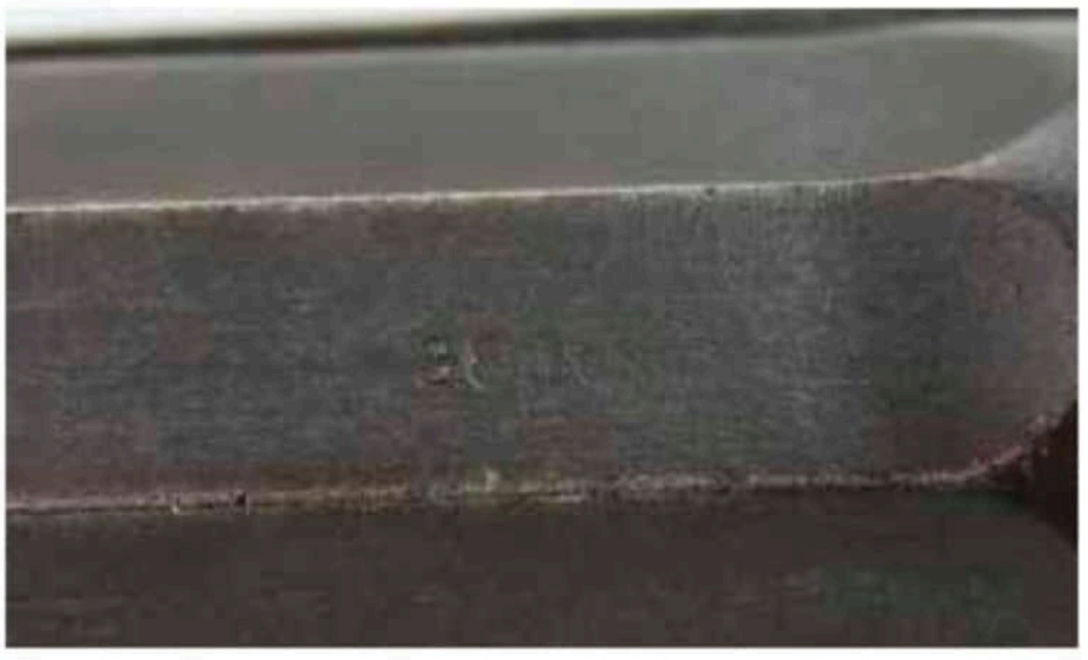
Marlin made about two-thirds of all Ballard-action rifles from about 1870 until repeating rifles killed the single shot somewhere around 1891. Marlin Ballard rifles were highly popular for competition shooting back in the late 1800s and into the early 20th Century. Schuetzen matches, fired offhand (standing) at 200 yards on 12-inch "German ring" targets that featured a 1½-inch center ring, demanded much from both shooter and rifle. For some years around the turn of the last century, rifle clubs across America held Election Day Matches, bringing out the best of the best shooters and rifles. National magazines like Shooting & Fishing posted scores and devoted space to lengthy write-ups of such matches. In perusing the results of the 1903 Election Day Match of the Zettler (NY) Rifle Club, I count 12 shooters using Ballard action rifles and seven using other makes.

A major reason for the Marlin Ballard's popularity with competitors was its reputation for possessing a fast lock time, especially compared to side-hammer actions like the Sharps and percussion muzzleloaders. It's likely that the earned reputation for accuracy prompted Marlin to coin the term "Ballard rifling" in its advertising and catalog literature selling other Marlin models. The rifling wasn't especially different from that used in other black powder rifles, featuring a comparatively slow twist and deep grooves to contain some powder fouling and maintain accuracy longer.

The rifle presented here is not, of course, of the highly refined Schuetzen style. Instead, all features point to this one being a No. 2 Sporting model except for its 28-inch barrel length, which supposedly should be 30 inches from the factory. The muzzle has not been "refreshed" by shortening, so the rifle falls under the "Never say, 'They never made one like that' rule". At first, I thought this rifle bore no mark indicating its chambering and would require me to make a chamber cast, but closer scrutiny showed a tiny "38 Lon" stamped above the chamber, the letter "g" in "Long" being struck so lightly it's nearly invisible.

Even at first glance, that long octagonal barrel, svelte forend, and deep crescent butt plate immediately date the rifle sure as a lady's Victorian dress. A not quite as obvious dating is the cast iron of the action. The general consensus is that Marlin Ballard rimfire actions are of cast iron and have rectangular firing pin noses, and actions intended for centerfire cartridges are of steel and have rounded firing pin noses. But refer-

Marlin made this Ballard rifle between 1875 and about 1891.



The caliber stamp on the barrel is tiny and lightly struck. The “reversible” firing pin allows shooting 38 Long Center Fire or 38 Long Rimfire.

ring to the above-mentioned rule, some Marlin Ballards, like this one, feature a “reversible” firing pin to accommodate both rimfire and centerfire cartridges. This rifle’s firing pin, incidentally, has a rectangular nose.

In the latter 1800s, larger caliber rimfire cartridges - which ran from about 32 up to 58 caliber - were falling out of favor, being replaced by “central fire” cartridges, the advantages of which include greater case strength and reloadability. During that transition, Marlin’s reversible firing pin allowed this rifle to digest both 38 Long rimfire and 38 Long centerfire cartridges.

Though both the iron and steel receivers were fully capable of containing the robust Sharps 45-100 cartridge, “Mr. Single Shot” Frank de Haas cautioned that the Marlin Ballard is not strong enough for modern smokeless powder rifle cartridges beyond a lightly loaded 32-40 or 38-55. Indeed, both these calibers, typically charged with black powder, were quite popular with Schuetzen competitors.

The 38 Long is long gone. To make this rifle go “bang” again, the good news is that 38 Special and 357 Magnum brass can stand in for 38 Long cases; the bad news is that the 38 Long mounted a pesky heel base bullet. Original 38 Long bullets measured .357 inch at the heel and .376 inch in diameter. Seen any of these lately? So, I’ve got a new handloading project.

A difficult decision after succeeding in coaxing an old rifle to shoot once again is, “Now what?” Neither this Marlin Ballard nor its extinct 38 Long cartridge are match-grade numbers in any competition conducted today that I can think of, and there’s a universe of far better choices for hunting. The rifle has no special value in an investment sense. It doesn’t have fancy engraving, a low serial number or anything exceptional. It has no provenance connecting it to some famous person. Instead, this Marlin Ballard’s value lies in being a piece of humble yet genuine Americana, the kind of value that remains unrecognized until much later, when someone wakes up and says, “Hey – where did they all go?”

The most generous course is to apply the catch-and-release trout fishing ethic and pass it along for continued enjoyment. Maybe the next guy can do more to recover or add to the sum of knowledge of the rifle and cartridge that may have been forgotten or enhanced by a hundred and forty years of evolving technology.

But my instinct is to keep it, to add the Marlin Ballard to my “reference library” racks of old guns. I may need it for some future article, to personally examine it in order to pass along some accurate bit of first-hand information. I may want to work with the 38 Long cartridge again. I suspect, however, my reason may really be that, like little boys who drag visiting friends straight to the toybox, I want the Marlin Ballard so that I can pull it out of the safe and show it off to an interested friend.

After all, rifles are just big toys for big boys. *R*

Got any .376-inch bullets with a .357-inch heel?

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"Easily the best rings I've ever used! ***You can feel the*** *build quality* as soon as you take them out of the box. I've ran them for about three months and have been very impressed. Zeroed the scope, removed the scope, put the scope back on, and checked zero again. ***I DID NOT HAVE A ZERO SHIFT.*** Only rings I've ever had that were able to do that." - *LaMar H.*

"This mount is great , *built like a tank* with very nice milling work. Scope fits in it like a glove and you don't have to lap the rings it's all done from Area419 for you." - *Kenneth*

"The mount is amazingly built and ***all accessories are built well.***" - *Justin M.*

"Great mount. I like that the rings are *precisely aligned* and lapped. ***Easy to mount*** to the picatinny rail and the top part of the rings are ***easy to line up*** and evenly tighten each screw for even pressure." - *Wayne L.*

"Excellent product, ***best mount/diving board combo*** I've ever used. Highly recommended." - Craig R.

"This was worth the wait. My favourite feature is the ***closer spacing of the pic rail clamps so there's*** *added flexibility* on where you can locate it." - *Ernest S.*

"This scope mount has exceeded my expectations, the fit and finish are superb, the packaging is top notch. I'm very impressed; from the ***blended edges***, ***machined contours***, the *excellent implementation* of the indexing pins and the ***raw but grippy finished aluminum bores***, this is truely an excellent product and will be my go to scope mount from now on." - *Vincent G.*

"Obvious ***pride*** *taken in a* ***quality finish.***" - *Robert K.*

"Beautiful and an absolute beast. ***Thing grips*** *like a monster.* I didn't even have the caps all the way finger tight and could barely move the scope. I used a badger dead level along with a send it level mounted to the 419 mount which ***both showed perfectly level.***" - *Drew D.*

"My new favorite scope rings. Fit, finish and quality are second to none. The ***dowel pins help minimize cap rotation*** while torquing screws so scope stays level." - *Ryan B.*

"The most solid lockup I have ever seen from a scope mount. The ***low profile diving board*** also makes it to where the Vortex Impact LRF isn't extremely high like it is on every other mount on the market. *Would recommend to anyone* who is serious in precision rifle shooting." - *James B.*

"Installed these on a .308 and they are awesome. Precise machining and they ***have*** *held up perfectly* ***to some abuse.***" - *Tim*

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Final Work on the Model 52C Winchester

Gil Sengel

Big centerfire rolling block (top) is basically scaled down to make the No. 4 (bottom).

Riflefolk who find the category of pre-World War II 22 rimfire rifles loosely termed boys' rifles to be irresistible are constantly searching for another unique example. Of course, when one is found, the new owner wants to shoot it, at least a little. Therein lies a problem.

A low selling price was always the main feature of these little rifles. Thus, costs were minimized to the extreme by ingeniously simple designs. However, this desire for ever simpler and cheaper manufacturing led to safety concerns that today would cause a company lawyer to abandon his practice and take up dog grooming.

Early 22 rimfire ammunition had cases drawn from copper. Copper is soft. Case rims often blew out at the point of impact with the firing pin tip. Some of the old single shots (that were not bolt actions) had chambers without rim recesses; the entire rim was exposed between the rear of the barrel and the breech face. Cost was the reason. It is far faster and cheaper to make a straight-sided reamer than one with a step up at the rear to cut a rim recess. While rim blow-outs are rare today in brass cased ammunition, they still occur. When shooting the old rifles eye protection is mandatory.

There is also another similar concern. If chambers that do have a rim recess experience a rim failure, the hot gas can›t blow out the side, so it takes the path of least resistance down the firing pinhole in the breechblock. The firing pin in virtually every one of these guns is straight-sided, held in place by a cross-pin in the breechblock. Hot gas is directed straight back into the shooter's face, blocked only by the hammer. No one seemed concerned at the time. This has happened to me three or four times but having worn glasses since grade school, no harm was done.

Underside view of the No. 4 without lower tang (top) and welded on lower tang (bottom).

Gap (arrow) between the rear of the breechblock and front of the hammer when cocked indicates no sear wear.

If the cleaning rod does rub the hammer nose a bit, a shim (arrow) between the breechblock and the hammer will push the hammer back far enough to miss the rod.

It is also sometimes written that boys' rifles are dangerous to fire with modern high-velocity cartridges. The inference is that these rounds are loaded to a higher pressure than others.

However, my latest data shows all long rifle cartridges (standard velocity, match, high velocity and hyper velocity) have the same Maximum Average Pressure (MAP) of 24,000 psi. This figure is not inconsequential as the MAP for the 38 Special is 17,000 psi and 45 ACP is 21,000 psi. Ammunition companies don't have to load up to the limit. Standard velocity and some match ammo are probably lower since it doesn't function in many autoloaders. Standard velocity rounds will often be the most accurate, anyway.

Moving on to rifles next up is probably the highest quality of any of the true boys' rifles. The guns are still sought after for the action to build custom rifles. Today we call it the Remington No. 4 rolling block, but the maker referred to it as the Remington System. The receiver is like the centerfire military rifles except scaled down to fit .22 and .32 caliber rimfires. The receiver and major parts are forged steel and case-hardened. Over 350,000 were made from 1890 to 1932.

Unfortunately, the No. 4 is not without its faults. The first is most important when buying one of the rifles. Pull the hammer back to full cock with the breechblock closed. There should be a gap of about .035-inch between the rear of the

If no sear wear is present, the cleaning rod should miss the hammer nose by the amount shown.

Cartridges shot in 22 rimfire boys' rifles include: (1)BB Cap, (2) CB Cap, (3)22 Short, (4) 22 Long, (5) 22 Long Rifle, (6) LR Shot, (7) and sometimes Extra Long.

breechblock and the front of the hammer. This gives enough clearance for the breechblock to roll open and expose the chamber for loading. If the space is not present the breechblock will move stiffly or even hang up as more force is needed for it to push the hammer back out of the way. The cause for this condition is wear on the sear nose, almost always caused by some "expert" grinding on it to improve trigger pull.

The fix is a new trigger since the trigger and sear are one piece. Given that the last No. 4 was made over ninety years ago, good luck with that. Such guns are best left for someone else to own.

A second item is also a major annoyance. About sixty percent of these rifles were takedowns of two types. Both used a tapered pin that fits a tapered groove cut into the bottom of the barrel. This pin had a flat milled on it that, when aligned with the barrel shank, allowed the barrel to slide out of the receiver. The joint became loose over time.

When a joint won't tighten up it's best to turn a new tapered pin on the lathe and cut a few threads to protrude from the receiver on the small end. Cut no takedown flat on the pin. Make a round nut with a screwdriver slot to fit the threads, tap in the pin, and pull the nut tight. Never touch it again!

The only reason to use a takedown feature today is because a cleaning rod contacts the hammer nose when cleaning from the breech. This will not happen if the gap between the hammer and breechblock mentioned a few paragraphs back exists. If not quite enough, pull the hammer back past full cock and insert a shim (See photo above), fit, and the breechblock to hold it there. It's not very elegant, but it prevents disturbing the takedown joint or cleaning from the muzzle.

Mainsprings are simple flat springs that should not break. A broken spring would probably indicate excessive dry firing so look carefully for abuse. A damaged firing pin is also easily replaced.

There remains one screaming defect affecting the Rem. No. 4 rifle: It has only one rear tang! Whoever approved this design must have never seen a human child, especially young boys for whom these rifles were purchased. They are

From left, Short, Long and Extra Long cartridges show why the shorter rounds didn't shoot well in an Extra Long chamber.

Head of solid takedown pin made to replace factory lever-type.

Unaltered Rem. No. 4 with no lower tang (top) and with added lower tang (bottom). Side view without stocks.

Opposite side of action showing round nut that pulls solid pin tight. It has a locking compound on it and won't come apart for the photo!

clumsy and run everywhere. They also fall down a lot. If carrying a rifle, the muzzle hits the ground first followed by the toe of the stock. The kid more or less lands on top, bending the tang upward and breaking the stock.

Receivers are forged steel so the tang can usually be bent back into place without breaking -- once! Then the metal cracks at the bend. Repairs have been seen in the form of gobs of brazing or silver solder alloy on the tang and even attempts with a common arc welder that melted much of the tang.

Proper repair is really quite simple, using a TIG welder or even a small wire welder with inert gas shielding.

Almost no gunshops have such equipment, but custom 'smiths do. If repairing a broken tang, I would definitely have a lower tang welded on since a new stock will be required anyway. This makes the stock/receiver joint feel more solid. Finding someone to do the welding should not be difficult.

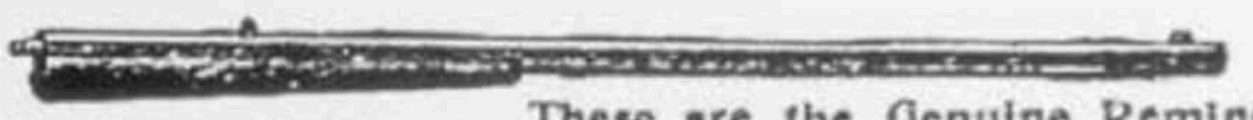
The gun in the photos was purchased as a well-worn rifle with a tang repaired by brazing, a broken stock and loose takedown joint. The top tang was replaced, a bottom tang was welded on, and a loose takedown joint was repaired using a solid pin. The rifle was then restocked and engraved. One does not mind spending a bit on an action like the Rem. No. 4. The same is true of the other No. 4 shown, which is an excellent example of 1960s custom work. It also had a takedown joint that required repair.

Today, kids have moved on from the little rifles to aluminum autoloaders featuring composite sights, Picatinny rails, M-LOK slots, and plastic stocks adjustable using metric wrenches. Nevertheless, there are still boys shooting boys' rifles – the boys are just a lot older now. *R*

Early ad for Rem. No. 4 takedown rifle.

OUR NEW NO. 4 REMINGTON TAKE DOWN RIFLE, $5.00.

21 CENTS PER 100 FOR 22-CALIBER SHORT CARTRIDGES. SEE PAGE 738.



These are the Genuine Remington Take Down Rifles. Don't buy imitations offered by many houses. They are worthless. All Remingtons have walnut stock, case hardened frame and mountings, open front and rear sights. As finely rifled as any rifle in the market, and made of the very best rifle material. Perfectly accurate and every one warranted as represented. Weight, about 4½ and 5½ pounds. 22 and 32-caliber. RIM FIRE.

Cat. No.	Caliber	Barrel	Shoots Cartridge	Good for	Price
6K678	22 Short or Long Rim Fire	22½ in.	No. 6K2336 No. 6K2340	35 to 100 yards	$5.00
6K680	32 Short or Long.....	24 in.	No. 6K2352 No. 6K2353	100 to 125 yards	5.00

Weight, packed for shipment, about 8 pounds.
Notice our prices on Rifle Rods. It saves the rifle to keep it clean.
No. 6K4716 Cover fits this rifle. See page 743.

Swarovski NL Pure 14x52 Binoculars

A Rifleman's Optics

Patrick Meitin

Swarovski's 14x52mm NL Pure binoculars were introduced in July, providing serious hunters with an excellent compromise between everyday-carry optics and a heavier/higher-magnification option to run off a tripod.

While still living in New Mexico's Gila region, guiding Coues whitetail hunters in New Mexico, Arizona and Sonora, Mexico, I spent an inordinate amount of time behind tripod-mounted binoculars. High-end 15x56mm glass was standard issue. West German-made, rubber-armored Zeiss dominated, with a few aus Jena Doctor Optics scattered in there. Swarovski Optik arrived with their 15x56 SLC in 1999, making those early Zeiss (which had been used hard since the early '80s) look clunky by comparison. We equipped those powerful binos with screw-on tripod mounts and used them to dissect distant ridgelines and probe for bedded bucks. We carried them in our packs to deploy after reaching a commanding vantage while standard 10x40s hung around our necks.

Swarovski's first 15x56 SLC showed us how streamlined such powerful glass could be while providing the optical excellence that has always accompanied the Austrian brand. The company has conducted several optical upgrades since 1999, so hanging out with serious Coues hunters and guides revealed more Swarovski's than other brands in time.

Swarovski had already introduced the 12x50 EL, more recently the 12x42 NL Pure, but they didn't really live up to the expectation established by those earlier "15s." For those hunters who wanted more, Swarovski introduced the 14x52 NL Pure – the newest addition to the company's flagship series.

I suppose Swarovski could have called these 15s, and no one would have been the wiser, but it's not really their style. In reality the 14x52 NL Pure provides magnification closer to 14.5 power than 14, so no one is complaining… The NL Pure lineup also includes a 10x52mm option by the way, for those looking for unsurpassed low-light viewing but not in the habit of mounting binoculars on tripods in search of elusive game situated thousands of yards away.

Swarovski's 14x52mm NL Pure won't need to be carried in packs where our big glass once rode. Measuring about 6.9-by-5.2-by-3 inches and weighing just 36 ounces/2.25 pounds, they can be comfortably carried on a chest harness or the provided neoprene neck/shoulder strap. They easily fit in most chest pouch systems. Mounting them on a tripod, in my opinion, is still the best way to get the most out of them while addressing vast country. Their light weight makes hand-holding them feasible, making a one-optic system viable while hunting Coues, mountain sheep or mule deer.

The eyecups of Swarovski's 14x52 NL Pure binoculars include a twist-up/down design with click stops. They can be fully retracted for use with eyeglasses or adjusted out fully to provide 17mm of eye relief.

The diopter adjustment of the 14x52 NL Pure binoculars from Swarovski—allowing both eyes to obtain a sharp focus—is located on a rear ring with a raised tab. Hash marks and +4 to -4 indicators can be found on the inside of the binocular frame.

The new 14x52 NL Pure provides a 93-meter/279-foot field of view at 1,000 yards and superior edge-to-edge clarity. This provides a marked improvement over the viewing we received from our old 15x systems. Continued optical refinements provide brighter viewing in poor light and sharper resolution in high-contrast situations, such as probing deep shadows during bright days. Swarovski's new tripod adapter system makes them easier to deploy, including a unique front-locking design that is stronger and more solid than past systems. The adapter includes an Arca-Swiss base and is threaded to accommodate a tripod plate.

This is a serious optic for serious hunting - but it also comes with a serious price of $3,499.00.

The slightly smaller 52mm objective lenses, to my eyes at least, seem to do the job that once required 56mm front windows and offer a noticeable light-gathering edge over the original 42mm NL Pure objective lenses in this series. Swarovski Optik, of course, uses

Swarovski's objective lens covers snap into the end of the binocular barrels to keep them clear of moisture or dust. They are tethered to the bottom of the binocular barrels to prevent loss but can be removed if desired.

The ocular lens cover, which is part of Swarovski's included neck strap, comes in handy in wet weather or dusty conditions, keeping lenses dry and clean and views unobscured.

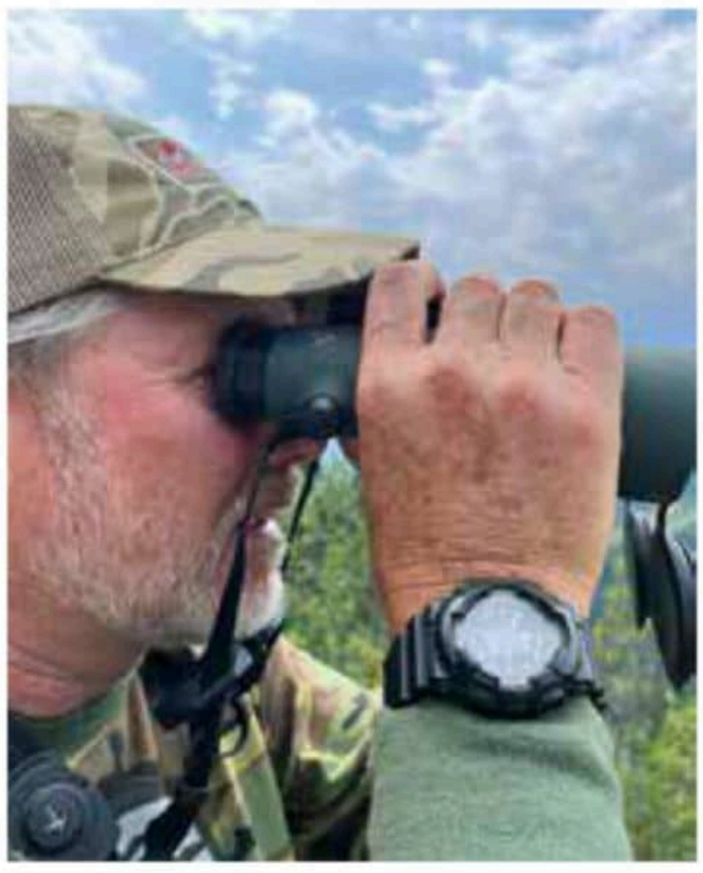
some of the best glass in the industry and advanced Swarobright lens coatings to further accentuate light transmission (91 percent in this case), twilight factor (27) and image quality. Compared to the massive (and heavy) 56mm objective lenses of the past, 52mm seems a good compromise between exceptional light-gathering abilities and a lighter, more portable design. The 52mm lenses translate to a generous exit pupil (3.6mm), providing an edge in low-light situations, allowing more light to reach the eye and resulting in brighter, clearer images.

Swarovski's NL Pure series all provide exceptional edge-to-edge clarity, and adding more magnification did not change that. This allows holding the optic still and moving the eyes about the field of view, covering more ground faster and more thoroughly. NL Pure design is all about ergonomics; their unique body geometry and compact single-bridge hinge provide superior feel, balance, and control, which also leads to more productive glassing. The twist-down eye cups include click stops, twisted in fully for use with eyeglasses, the outermost position providing 17mm of eye relief.

NL Pure controls are straightforward and efficient. The diopter adjustment allowing both eyes to obtain simultaneous sharp focus is found on a thin rearward ring with a raised tab and white hash marks with +4 to -4 notations found inside the binocular hinge. The main focus knob is large and well-knurled and turns smoothly while allowing focusing down to 3.8 meters/12.5 feet. The objective lenses are covered by snap-in covers, tethered to the bottom of the barrels, and a one-piece ocular lens cover that tethers to the neck strap to prevent loss. A top-quality, contoured neoprene neck strap is provided, as well as a zippered storage/protective pouch with an adjustable shoulder strap. The binocular neck strap includes locking-lever adjustments between the wider neoprene and narrower nylon webbing connection straps and Swarovski's streamlined twist-and-lock carry-strap sockets remain – all overengineered in classic Austrian fashion.

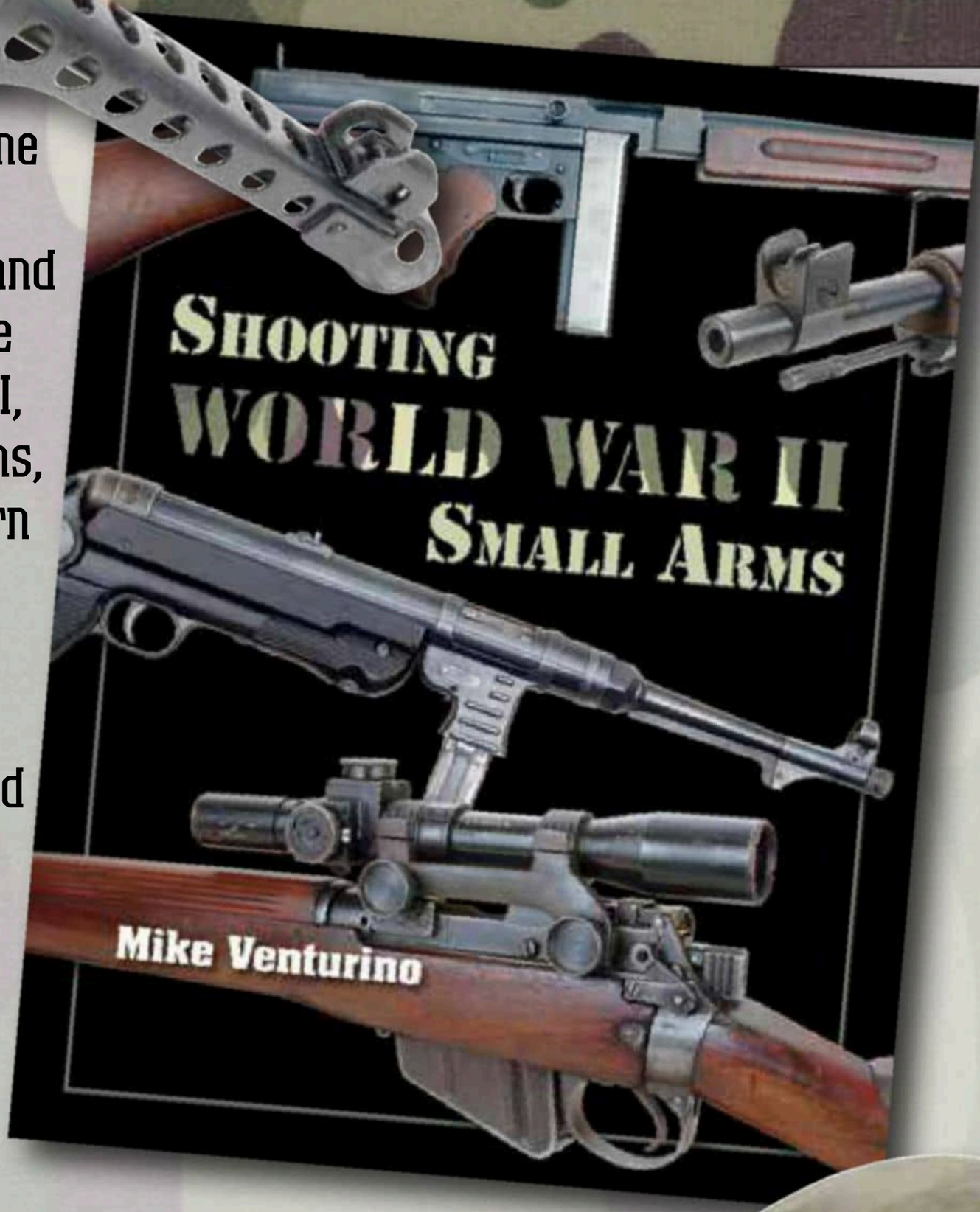
Swarovski Optik's new 14x52 NL Pure binoculars represent a substantial investment, obviously. Still, they should prove ideal for hunters who pursue low-density game in very large habitats – Coues whitetails, mountain sheep, timberline mule deer and the like – or for shooters who want something handier than a bulky spotting scope. Swarovski's best-in-class optical performance and thoughtful ergonomics make them an easy choice for serious hunters looking to lighten their load this season. Adopting a one-binocular system that can be easily hand-held or mounted on a tripod for a longer look. *R*

Patrick found the new Swarovski 14x52mm NL Pure binoculars viable as a handheld binocular, though they are just as useful when mounted on a tripod for longer glassing sessions at greater distances.



Swarovski provides a padded and zippered storage/carry bag with their new 14x52 NL Pure binoculars, which includes an adjustable shoulder strap.

Shooting World War II Small Arms



This extensively researched volume contains over 400 full-color and archival black-and-white photos and covers the small arms used by the major combatants in World War II, including rifles, carbines, handguns, submachine guns and their modern reproductions and replicas.

The focus of this publication is shooting these important and historical firearms. Mike's detailed information on available factory ammunition and handloading data enables owners and potential owners to truly enjoy these collectible guns.

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The Montana Rifle Company Highline rifle is a handsome, trim and accurate hunting rifle based on the new MRC 2022 milled 416 stainless steel action and includes a hand-lapped, button-pulled barrel.

Montana Rifle Company Highline Rifle in 6.5 PRC

Montana Rifle Company is back in business!

Patrick Meitin

For a hunting rifle including a controlled-feed, fully blueprinted action milled from a single piece of 416 billet stainless steel, McMillan carbon fiber stock, hand-lapped, button pulled barrel, precision user-adjustable trigger, ½-MOA accuracy promise, and more, Montana Rifle Company's Highline rifle's $2,595 MSRP seems pretty reasonable. Not that nearly $2,600 is inconsequential, but in today's precision rifle world, that constitutes a serious bargain.

Grace Engineering in Memphis, Michigan resurrected the Montana Rifle Company (MRC), which had sadly been shuttered in 2020 and has been shipping rifles for about a year. Bowhunters might find the Grace name vaguely familiar, as G5 Outdoors and Prime Archery also operate under the company umbrella, archery companies renowned for manufacturing widely popular broadheads, archery accessories and compound bows. Grace Engineering, a third-generation precision machining manufacturer, has been in business for 50 years, including

The Montana Rifle Company MRC 2022 action is milled from a single 10-pound block of 416 stainless steel, a huge improvement over the original cast receivers of the former MRC 1999 cast actions.

The new Montana Rifle Company Highline rifle includes a hinged floor plate, which is released via a simple button in front of the trigger guard. Chambered in 6.5 PRC, the magazine holds three rounds.

The refined MRC 2022 action by the new Montana Rifle Company includes dual three-slot Picatinny rails that are milled integral to the action. The Highline action has a Burnt Bronze Cerakote finish.

a good number of years producing components for several leading firearms companies.

Grace Engineering resuscitated the iconic MRC brand with assistance from several longtime industry leaders, including Ronald Petty, MRC's former CEO. Grace Engineering is a company tenanted by a bevy of precision-minded engineers, while also owning the type of modern machining equipment once lacking at MRC, preventing the original company from meeting overwhelming customer demand. Grace Engineering also has the pull to ensure uninterrupted raw material delivery, another failing of the original company and what eventually led to its demise during the supply-chain difficulties resulting from the COVID pandemic.

Grace Engineering has already used its storied talents to enhance the performance, quality, reliability and accuracy of the original Kalispell, Montana, Montana Rifle. The new MRC 2022 receiver is a refinement of the original Keith Sipe MRC 1999 design, now including tighter tolerances and greater consistency when compared to the cast receivers the company utilized before the acquisition. Everything on these new rifles is manufactured in-house except the stocks.

MRC enters a highly competitive marketplace, but the company's engineering and manufacturing depth promise rifles that are innovative, aesthetically pleasing and consistently accurate. For example, while the rifle market increasingly embraces synthetics and aluminum chassis systems, one of MRC's new rifles – the 7.5-pound Junction rifle – is based on a gorgeous high-grade walnut stock with graceful Monte Carlo geometry and includes the company's distinctive integral M-LOK rail. While

Table I

6.5 PRC Factory Loads

load (*grains*)	stated velocity (*fps*)	actual velocity (*fps*)	extreme spread (*fps*)	100-yard group (*inches*)
130 Federal Custom Shop Terminal Ascent	3,025	3,019	25	1.11
140 Berger Elite Hunter	3,109	2,805	16	.55
147 Hornady ELD Match	2,910	2,823	31	.93

Notes: A Montana Rifle Company Highline rifle with a 24-inch barrel (1:8 twist) was used to test all loads. Velocities were established with a Garmin Xero C1 Pro Chronograph unit. Accuracy was established by a single, three-shot group.

The safety of the MRC 2022 action is a three-position, wing-tab system reminiscent of the pre-'64 Winchester Model 70. That said, this version operated much more smoothly than similar versions Patrick has run.

The Montana Rifle Company Highline rifle is shown broken down to its basic parts assemblies. Most of the design concepts are borrowed from the Winchester pre-'64 Model 70.

The trigger of the Highline rifle by Montana Rifle Company mirrors the geometry of pre-'64 Model 70 Winchesters. It comes out of the box with a 3-pound pull but is user-adjustable down to 2 pounds.

The MRC 2022 action's "Z-shaped" recoil lug fits into a slot in the action bottom, the front action bolt threading through the flat plate. This reduces material consumption and milling time, saving about $500 while proving effective.

The Montana Rifle Company uses a straight-forward radial muzzle brake on its threaded sporter-weight barrel. The brake was effective at taming recoil and muzzle jump, but proved utterly obnoxious to the ears.

left-handed rifles are currently unavailable, the company promises they will be offered in the near future.

The topic of discussion here is the MRC Highline rifle, a contemporary version of the Junction. Instead of classic walnut, the Highline is bedded in McMillan's lightweight and highly ergonomic Game Hunter carbon fiber stock, sporting the same integral M-LOK rail and including a Burnt Bronze Cerakote metal finish to protect against wear and corrosion in the harshest conditions.

Highly refined, Mauser-style controlled feed systems have remained the centerpiece of MRC bolt action designs, the enhanced MRC 2022 design providing increased reliability and slimmer dimensions. This newer version includes the upgraded Adaptive Control Round Feed, which combines the attributes of both controlled and push feed systems. The design allows drop-in/single-round cartridge feeding (with just the slightest resistance while turning the bolt into battery) and complete round control when fed from the top-load magazine. It does this while retaining the stout and reliable claw extraction system of the original. The Mauser-style claw extractor is made from tool steel, and the extractor provides consistent, forward round ejection and smooth cartridge feeding. One thing was certain throughout testing: loading the magazine, feeding rounds into the chamber, working the bolt and ejecting spent cases all occurred without undue resistance or difficulties. This action is truly silky smooth and ultra-reliable.

Grace Engineering manufactures MRC 2022 receivers in-house, drawing from both MRC original and classic Winchester pre-'64 Model 70 design features. Receivers start as a 10-pound block of 416 stainless steel, which is rendered into a sub-1-pound receiver with precision tolerances that produce factory blueprinted rifles. These actions are made in short (which the 6.5 PRC tested here used) and long versions. While some of MRC's original machinery is still in use, a larger percentage has been replaced or updated to ensure tighter tolerances and consistency. MRC still utilizes a Mauser '98-style barrel ring and feed cone, but the new 2022 receivers ensure parts remain 100 percent interchangeable, unlike past cast receivers that required hand fitting.

The milled MRC 2022 receiver includes integral Picatinny rail scope-ring mounting and three slots provided to each end of the ejection port. MRC says their controlled feed receiver is one of only a few that is machined from a 416 stainless steel blank. The 416 stainless material is stronger than standard stainless steel, the chromoly makeup providing an exceptionally high strength-to-weight ratio. The chromoly also provides slicker surfaces, which allows for smoother bolt cycling. The tool-steel recoil lug slots into the receiver at one end, includes a flat plate that the front action screw threads through, and the lug proper at the other end. This design saves material, milling time and money yet proves exceptionally effective.

I'm a huge fan of McMillan stock ergonomics, and the Game Hunter found on the Highline reinforces that loyalty. Length of pull (LOP), as measured, was 13½ inches, but despite my 6-foot, 5-inch frame, the rifle felt quite comfortable. The Game Hunter includes a vertical grip

Table II

6.5 PRC Handloads

bullet (*grains*)	powder	charge (*grains*)	overall loaded length (*inches*)	velocity (*fps*)	100-yard group (*inches*)
124 Hammer Hunter	Grand	62.5	2.880	3,114*	.75
130 Federal Premium Terminal Ascent	VV-N565	56.5	2.841	2,951*	1.01
135 Berger Classic Hunter	RL-26	56.5	2.921	3,012*	.91
143 Hornady ELD-X	StaBALL HD	59.5	2.990	2,719	1.10

* Single-digit extreme velocity spread

Notes: A Montana Rifle Company Highline rifle with a 24-inch barrel (1:8 twist) holding a Zeiss Conquest V4 6-24x 50mm scope set in medium-height Warne Mountain Tech rings was used to test all loads. Lapua cases and CCI BR-2 large rifle primers were used throughout. Velocities were established with a Garmin Xero C1 Pro chronograph. Accuracy was established by a single, three-shot group.

For more data on this cartridge please visit LoadData.com.

Be Alert – Publisher cannot accept responsibility for errors in published load data. Listed loads are only valid in the test barrels/firearms used. Use extreme caution and watch for signs of excessive pressure when using these loads.

All Montana Rifle Company rifles include a patent-pending M-LOK rail inset into the stock forearm. This allows seamless integration of Picatinny rail sections, properly-equipped bipods and similar accessories.

Montana Rifle Company's 2024 Highline rifle is bedded into an ergonomic McMillan Game Hunter carbon fiber stock. The butt holds a pronounced Monte Carlo-style comb ideal for today's tactical optics.

with a pronounced palm swell and deep thumb trough that fit my XL mitts like a glove. The pronounced Monte Carlo-style comb is ideal for today's more substantial modern riflescopes. The butt holds a Pachmayr Decelerator recoil pad, which performed as advertised. The grip and forend areas are subtly textured and the overall speckled finish provides a sure grip when wet or while wearing gloves.

Of course, what truly sets this stock apart is the aforementioned patent-pending inset M-LOK rail. The licensed M-LOK interface includes both a traditional sling stud and QD socket and is milled from thick anodized aircraft-grade aluminum. This allows attaching streamlined M-LOK Pic rails, bipods or tripod-adaption systems. The test rifle also included a traditional sling stud in the butt. The stock holds an embedded aluminum block behind the recoil lug and the action is bedded front and rear using Devcon, a steel-impregnated epoxy that provides extremely high compression values. Aluminum pillars are incorporated.

The trigger guard and bottom metal are just that, metal. These parts are milled from lightweight aluminum, including a hinged floor plate to allow instant mag dumps. This is a four-piece system (aside from the release mechanism and mounting bolts), including the trigger guard, magazine well frame, hinged floor plate and extended M-LOK rail. The hinged floor plate is released via a simple, non-knurled button found in front of the trigger guard. The trigger guard is anchored to the floor plate with two internal stainless steel screws and the front of the rail is held in place by the sling stud. The two action screws include deep hex heads for positive engagement to prevent buggering. In the fat 6.5 PRC cartridge, the top-load magazine accepts three rounds.

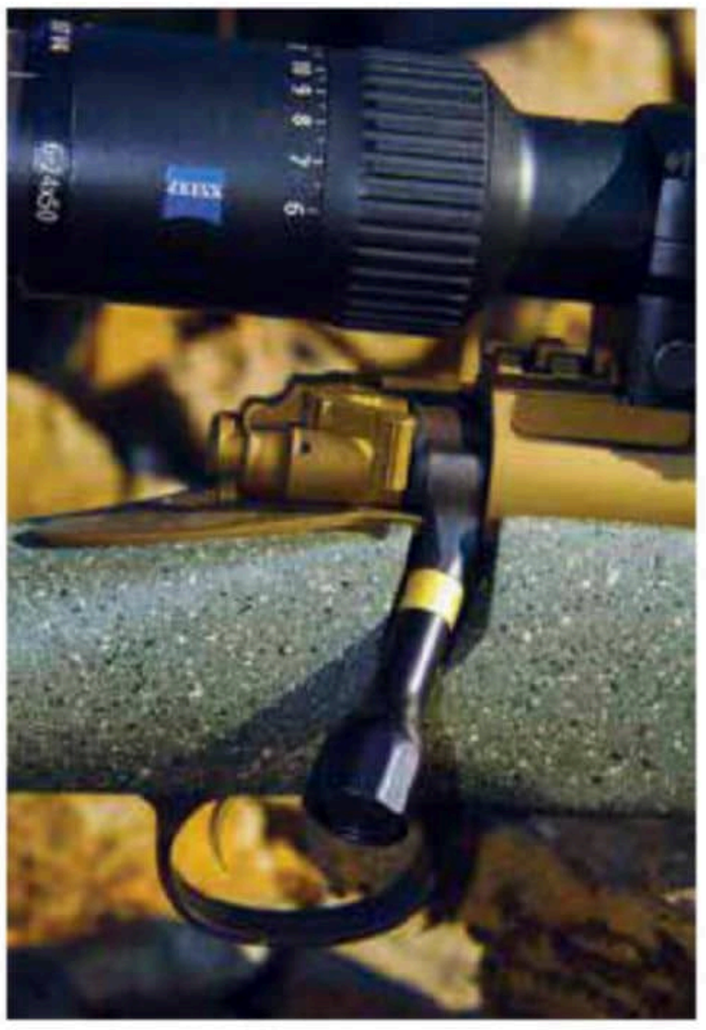
A left-side rocker tab releases the bolt for withdrawal. Point the muzzle upward, depress the vertically knurled tab and the bolt drops right out. Returning the bolt doesn't require depressing this tab. The bolt includes twin lugs and the claw extractor already described. Fired rounds were tossed about 25 degrees forward of the shooter.

The bolt head resembles neither a Mauser '98 or a Ruger M77, the claw extractor and a rotating bolt stop/gas stop rotating into the 12 and 6 o'clock positions, respectively, when the bolt is turned into battery. The top of the bolt head is enclosed, with a vent cut into the lower bolt face to accept the ejector blade. The bolt handle stem includes a band of brass, a unique MRC aesthetic, and the bolt handle includes flat facets and a slightly recessed cap.

The bolt-shroud safety is a three-position system based on a swinging

McMillan's Game Hunter carbon fiber stock was fitted with a Pachmayr Decelerator recoil pad. Between this pad, the provided break and McMillan ergonomics, the recoil was quite tame while shooting the 6.5 PRC cartridge.

The bolt handle of new Montana Rifle Company rifles like this Highline includes a distinctive band of brass encircling the bolt stem, an aesthetically pleasing and distinctive touch.



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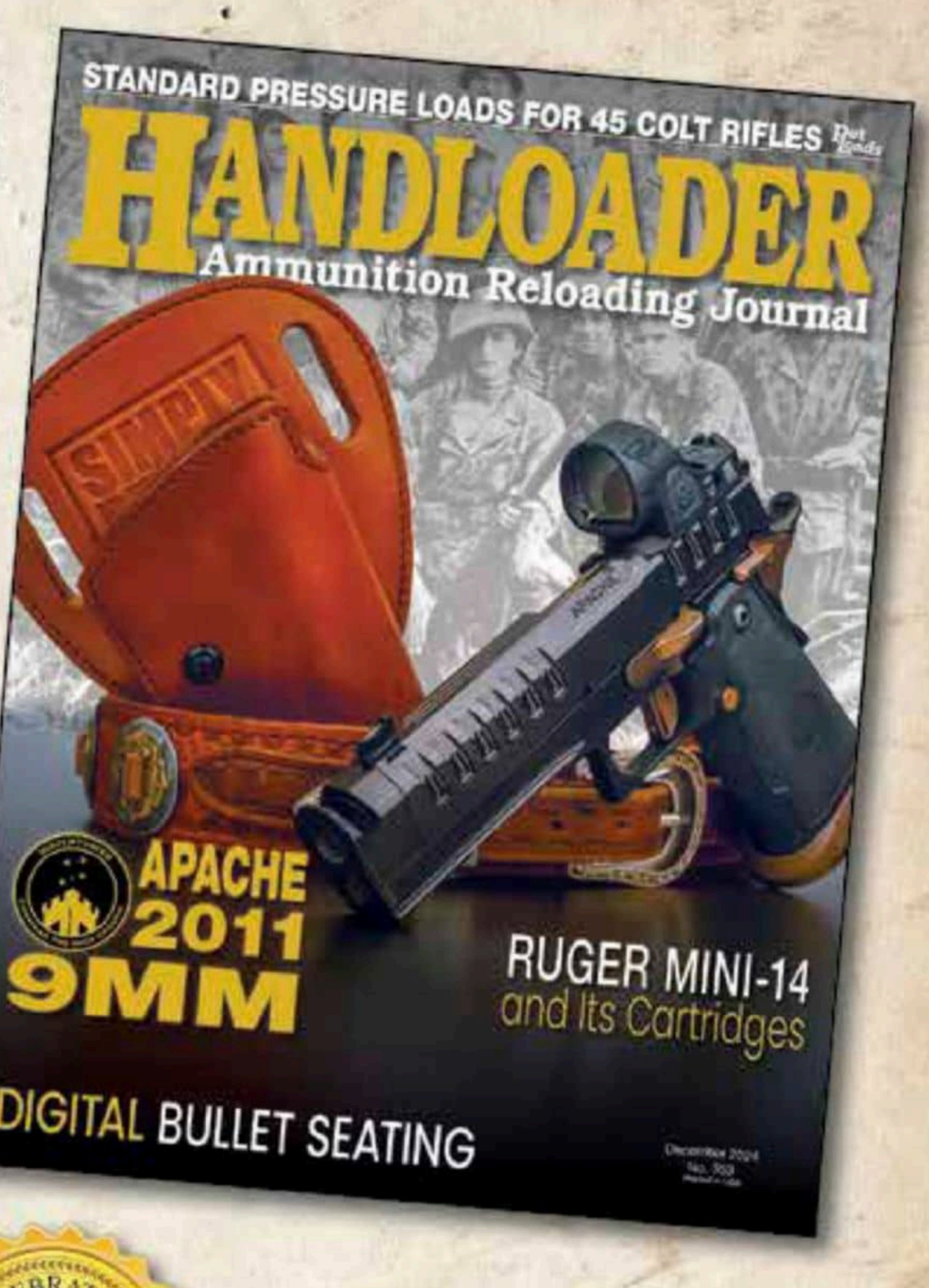

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knurled tab, reminiscent of the '98 Mauser or early Winchester Model 70s. This is an arrangement I'm normally not overly fond of, as those I've used were sticky and/or ratchety. That said, I experienced no problems with this buttery-smooth version. Grace engineers put some work into this safety, something a new MRC shooter is sure to notice when comparing it to an older model. The safety blocks the firing pin and allows the opening of the bolt with the safety engaged. Pulled completely rearward, both the firing pin and bolt are locked. Moving the tab to the middle position locks the firing pin but allows the bolt to be worked for safe unloading. The tab is pushed completely forward to fire.

MRC made its reputation on hand-lapped, button-pulled barrels, which are touted to provide faster break-in and good accuracy. All new MRC barrels are 24 inches long, of sporter weight and threaded to accept a brake/suppressor. These barrels are manufactured in-house using the same equipment and methods as the original Montana Rifle Company. In the 6.5 PRC tested, the rifling twist was 1:8, stabilizing any 6.5mm bullet offered today, including long-for-caliber VLD/ELD-style projectiles. A threaded radial muzzle brake and thread protector are supplied. The brake includes abbreviated flats holding alternating/wrap-around two- and three-hole ports. In all honestly, in the high-pressure 6.5 PRC chambering tested, this brake proved pretty damned obnoxious – my only real complaint while shooting this rifle. Only a couple of shots were required to send me digging for foam earplugs to wear beneath my muffs.

But then, between the brake, Decelerator recoil pad and McMillan stock ergonomics, shooting the 6.5 PRC from the Highline proved quite pleasant recoil-wise. Add a suppressor and this rifle would prove a pussycat.

MRC's trigger was inspired by Winchester's pre-'64 Model 70. The Highline's trigger is straight forward and easy to adjust, created from quality tool steel using precision wire EDM cutting techniques. The rifle arrived from the factory with a 3-pound trigger pull – ideal for a hunting rifle, in my estimation - but can be dialed down to 2 pounds if desired.

The 45.25-inch Highline rifle chambered in 6.5 PRC, hit the scales at 6.8 pounds out of the box. After mounting a Zeiss Conquest V4 6-24x 50mm scope in Warne Mountain Tech medium-height rings, the finished weight came to a mountain-ready 8.97 pounds – and again, without kicking the snot out of me. More weight savings yet could be realized by adding a more streamlined optic, say something with 16- to 18-power top-end magnification.

MRC says they won't ship a rifle unless it is capable of grouping three shots inside ½ MOA from a cold barrel using premium ammunition. I usually view these claims as little more than advertising hype, as not every shooter is capable of producing such groups, but as someone reviewing a rifle for publication, they certainly serve as a challenge. I put this claim to the test with a variety of factory and handloaded ammunition. The handloads (based on Lapua brass) were a mix of recipes proven in other 6.5 PRC rifles and experiments using some up-to-date powder releases.

Berger's 140-grain Elite Hunter proved the best of the factory loads, printing three shots into .55-inch at 2,805 fps and including an extreme velocity spread in the teens. The best handload involved Hornady's 153-grain A-Tip Match seated over 58.5 grains of Hodgdon Retumbo. That three-shot, 100-yard group, measured .42-inch at 2,896 fps. Hornady's 143-grain ELD Match factory load, handloads made from Hammer Bullets' 124-grain Hammer Hunter over 62.5 grains of Ramshot Grade and Berger's 135-grain Classic Hunter over 56.5 grains of Alliant Reloder 26, produced sub-MOA groups.

The Grace family are passionate hunters who deeply cherish hunting traditions, including rifles. This inspired their Legacy Warranty Transfer program, enabling Montana Rifle Company owners to complete a simple form to transfer ownership – and full warranty protection – to a new owner.

It's nice to see Montana Rifle Company rise from the ashes. The company is undoubtedly in good hands with Grace Engineering, which will ensure it not only survives, but also thrives through precision engineering, manufacturing and continual upgrades. R

The MRC 2022 action of the Montana Rifle Company Highline rifle is bedded front and rear using high-compression-strength Devcon material. The stock also includes an embedded aluminum block behind the recoil lug.

The best group of the entire test included a handloaded Hornady 153-grain A-Tip Match bullet seated over 58.5 grains of Hodgdon Retumbo. That .42-inch group included a muzzle velocity of 2,896 fps.

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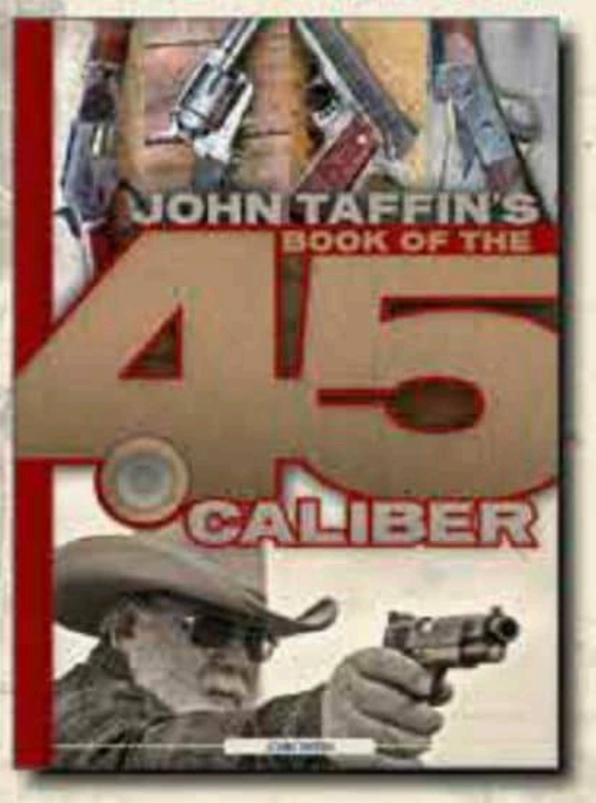

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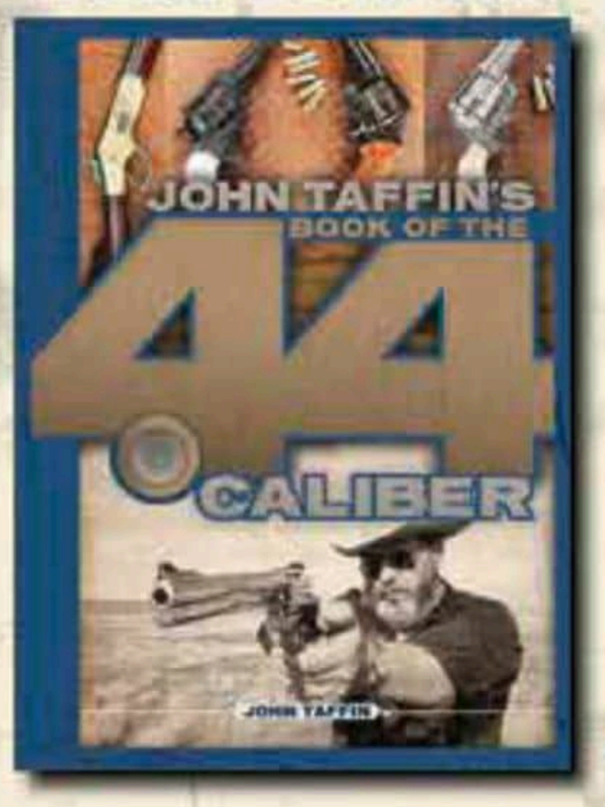

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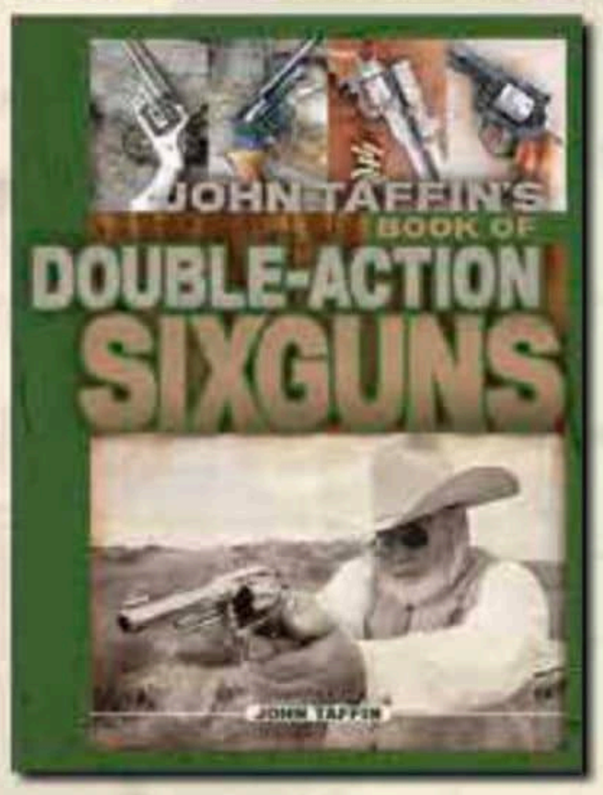

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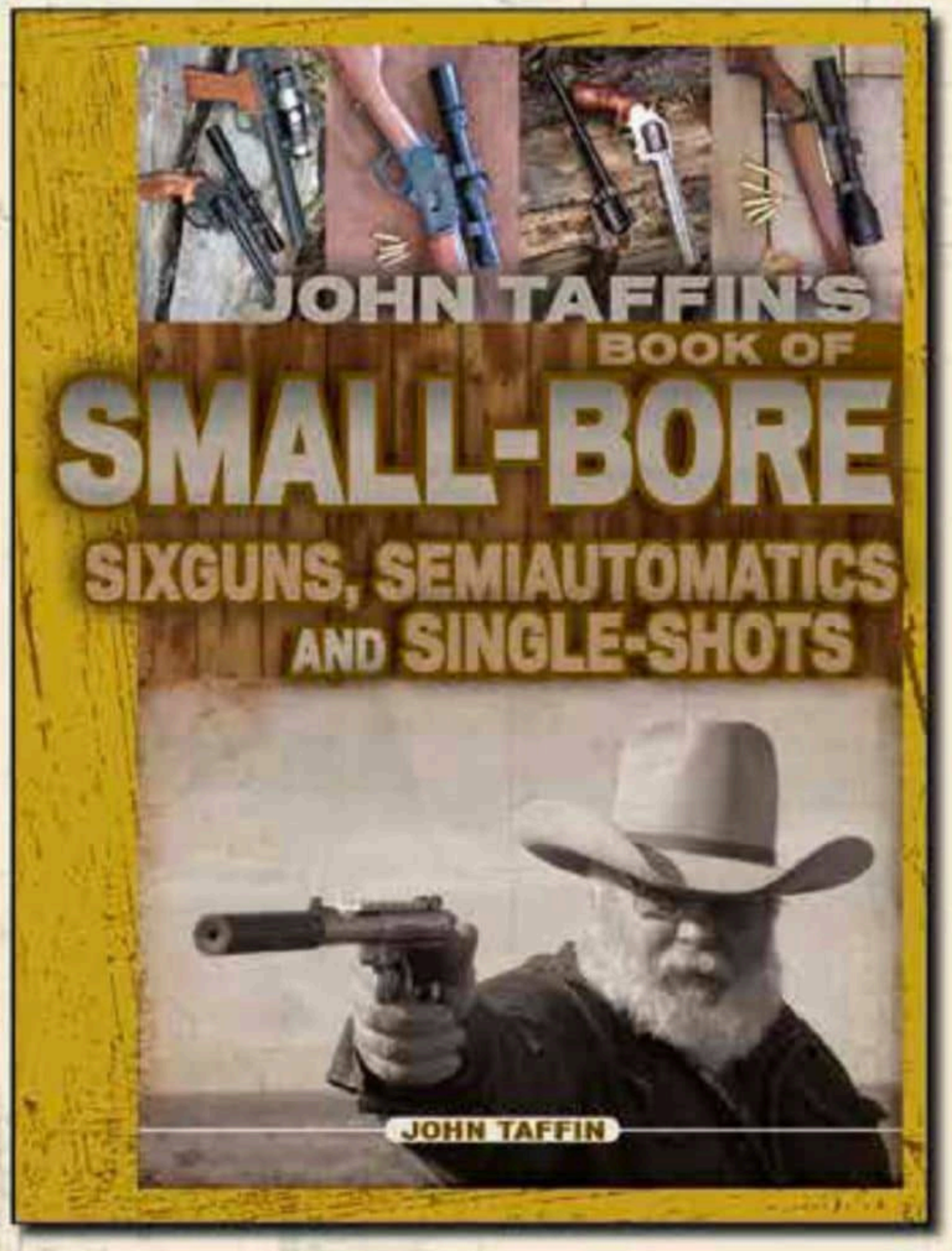

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A suppressor adds length to a rifle so choosing a shorter rifle is a popular fix. Wearing a suppressor measuring seven inches long, a Howa Model 1500 Superlite with a 20-inch barrel in 7mm-08 Remington (right) alongside a Remington Model 700 SS with a 26-inch barrel in 300 Ultra Magnum with no suppressor (left).

Notes on Rifle Suppressors (Part One)

Layne Simpson

Born in America in 1840, Sir Hiram Stevens Maxim became famous for developing a machine gun, described by him as so terrible and frightening it would surely prevent any country in the world from declaring war on another. His son, Hiram Percy Maxim, mechanical engineer and inventor, later silenced that gun and others like it. In 1899, Percy won the first-closed circuit race driving an automobile with a noisy internal combustion engine. He silenced it, too, and received a patent for his automotive muffling device.

While the U.S. Army and various other military powers became interested in Maxim's sound suppressor, he had actually designed it to be used by hunters and recreational shooters. In his booklet, "Experiences with the Maxim Silencer," published in 1915, he mentions his love of shooting various firearms and a personal desire to do so without disturbing his neighbors. Far more important than eliminating neighborhood complaints was the fact that his silencers greatly reduced shooter hearing loss. The book also contains testimonials from hunters and other sportsmen who were using his invention with great satisfaction. Perhaps his most famous customer was Teddy Roosevelt, whose Winchester 94 in 30-30, or "little 30" as he called it, wore a Maxim silencer. Advertisements in *Sporting Goods Journal* and various other publications informed one and all that a shop in Hartford, Connecticut. owned by Maxim sold his silencers by mail order. Prices were $7.50 for the 22 Rimfire version and $10.50 for one promoted as "For the Savage 22 Hi-Power and other rifles up to .32 caliber." Removing a threaded end cap from the tube of the silencer allowed its baffles to be removed for cleaning.

Then, in 1934, the U.S. Government made the decision to treat millions of honest, law-abiding citizens the same as professional gangsters such as John Dillinger and Clyde Barrow by introducing the National Firearms Act. It did not actually ban ownership of silencers and fully-automatic firearms. The required $200 tax stamp was not a problem for good old John, Clyde, Baby Face and others of their ilk – they either ignored the law entirely or just went out and robbed another bank to get the money. At the time, the cost of the tax stamp represented about 11 weeks of pay for most working citizens. That, along with the mountain

A rifle kept on hand for home defense is an excellent candidate for suppressor wear. This Ruger Mini-30 in 300 BLK with its magazine filled with Hornady or Lehigh Defense Sub-X subsonic ammunition is an example. It also works nicely for taking coyotes called in close in settled areas where muzzle blast can be objectionable to residents.

Hiram P. Maxim firing a Hotchkiss M1909 Benet-Mercie machine rifle with his silencer attached to its barrel. The gun was briefly adopted by a number of countries, including the United States, where they were built in 30-06 at Springfield Armory and Colt's Manufacturing Coompany. (Photo courtesy of Small Arms Review.)

In addition to advertising in various American hunting and shooting publications, a shop in Hartford, Connecticut owned by Maxim, sold his silencers by mail order. Prices were $7.50 for the 22 Rimfire version and $10.50 for one promoted as "Ideal for the Savage 22 Hi-Power and other rifles up to .32 caliber."

A Winchester Model 94 in 30-30, fondly described by Teddy Roosevelt as "little 30," wore a Maxim silencer.

of required paperwork, pretty much doomed the use of silencers by all but a few Americans.

The tax stamp is still $200, but today, it represents the cost of four boxes of Berger 6.5 Creedmoor ammo. The devices can now be legally purchased by American citizens residing in 42 states and hunters in all but two of those states are allowed to use them for taking game. Getting the wheels of progress rolling toward eventually owning a suppressor is easily accomplished by visiting a firearms dealer who has the appropriate licenses. Those who sell suppressors used to be few and far between, but the demand is so great today that there are probably far more gun stores across the country that do sell them than do not. Eight stores within a 25-mile drive of our home not only sell suppressors, but each has a variety of brands and models in stock. Like firearms, each suppressor is serial numbered by the company that made it.

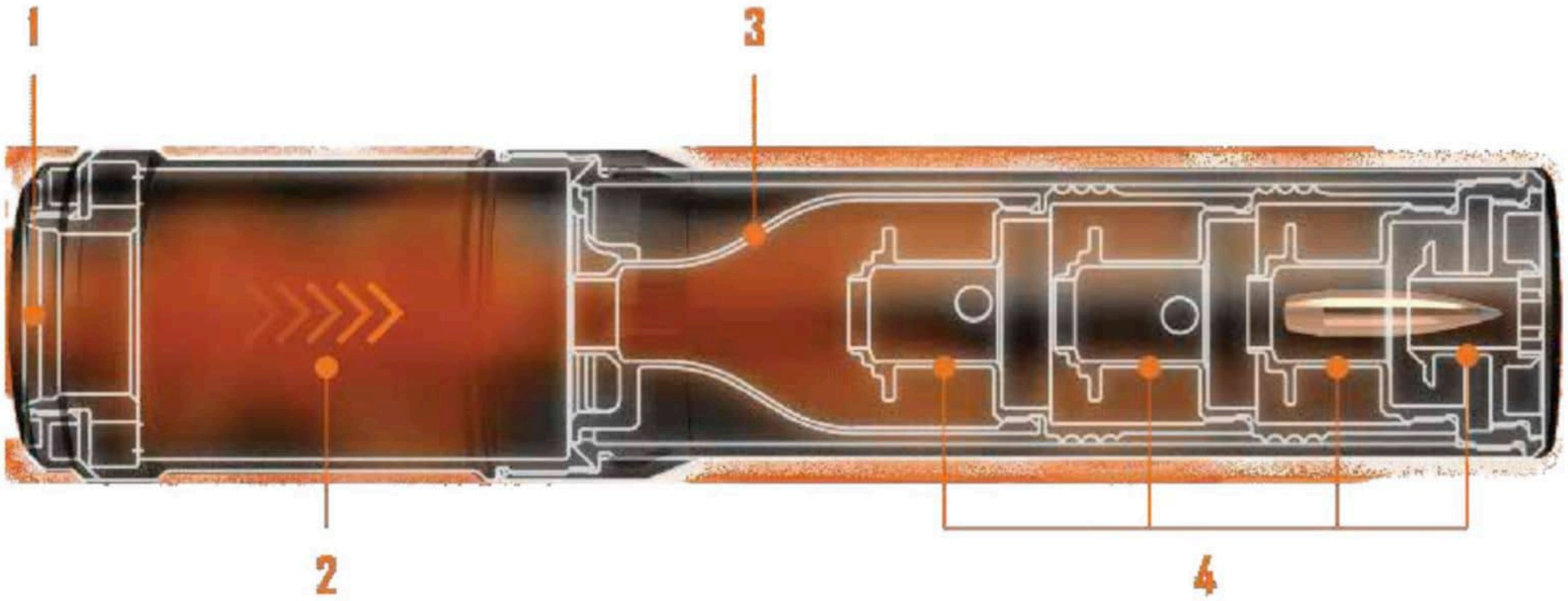
Services offered can vary among gun stores. My Nosler suppressors were acquired from a local dealer who stored them in his safe while I awaited ATF approval. On that first visit, the dealer took a digital passport-size photo of me and followed with two sets of fingerprints. We then sat before his computer and digitally sent the photo, my credit card info (for the $200 tax stamp) and all other required personal information to the ATF (he mailed the two fingerprint cards). The entire approval application process took about 45 minutes, and I was on my way. Rather than doing the fingerprinting, some dealers speed up the process by sending them digitally. Another sends his customers to the local law enforcement center where the charge is $12 for the required two sets of prints. As I said, services rendered by various dealers can vary.

There was a time when it was not uncommon for people to grow old between deciding to get a suppressor and actually owning one but due to e-Form application acceptance and other streamlining at ATF, the wait time can now be less than a lifetime,

sometimes considerably less. My tax stamps arrived via e-mail 54 days after my applications were filed and I immediately made a second trip to the dealer to pick up my two suppressors. It is important to add that each suppressor purchased requires filing an application for approval by the ATF. The local gun dealer route has advantages, one being the fact that all in my area have various brands and models of suppressors in stock. Hands-on comparison and examination prior to taking the plunge can be important, not to mention the personal side if you know the dealer. Some dealers offer a no-fee payment plan during the ATF approval period.

Purchasing a suppressor online from Silencer Central is another popular option. With the exception of receiving a fingerprinting kit in the mail and returning the two cards the same way, the entire process is done digitally. A friend who lovingly describes his computer as a Fred Flintstone Signature Model found several such tasks to be beyond its capabilities. The machine allowed him to fill out various documents digitally, but it refused to allow him to sign them in that manner. With the assistance of a couple of customer service representatives, Mr. Flintstone managed to overcome those obstacles, and the road eventually became less bumpy. A suppressor was eventually delivered to his door by a Fed-X guy who, coincidentally, had purchased his suppressor from the same company. All things considered, he rates his experience with Silencer Central as a pleasant one and the smile rate among those who have more modern computers is probably even higher. Silencer Central is especially good news for those who live in the remote areas of Alaska and other places that do not have a nearby firearms dealer. Unlike most devices and other stuff we buy, a good suppressor is both trouble-free and virtually impossible to wear out.

While Hiram Percy Maxim described his wonderful invention as a silencer and the word is often used rather loosely today, his device only reduced or suppressed the level of



This cutaway rendering of a Nosler suppressor illustrates how it works and consists of the following parts: (1) Rear cap, (2) Blast (expansion) chamber, (3) Blast baffle and (4) Three secondary baffles. Super-heated propellant gas begins to cool and slow as it flows in and around the baffles. This cooling effect is illustrated by the fading of the red coloration (which represents propellant gas) as it nears the muzzle of the suppressor. A bullet is shown just prior to its exit from the suppressor. The suppressor can be attached directly to the barrel of a rifle or over a Nosler titanium muzzle brake attached to the barrel. Interior designs vary considerably among the various manufacturers of suppressors, but the concept remains the same.

sound and did not silence it entirely. (For a reason obvious to anyone who has held one in their hand, it has also long been referred to by many as a can). The basic designs of suppressors made today differ very little from those built by the Maxim Silencer Company 115 years ago and the concept is the same. As super-heated propellant gas enters the unit, baffles disrupt its flow, causing the gas to expand, cool and slow a bit prior to entering the atmosphere. All of this has no effect on bullet travel because it has already exited the suppressor and is on its way.

As one information source aptly puts it, the decibel (dB) serves as a universal yardstick for measuring sound intensity and it captures the range of audible sound the human ear can detect. From the whisper-quiet rustle of leaves on an autumn day to the roaring blast of a jet engine during take-off, the logarithmic scale provides a nuanced way to comprehend levels of sound. Barrel length, propellant gas volume and muzzle pressure greatly influence the level of muzzle blast but as an example, let us say that the typical factory 30-06 deer load fired in a rifle with a 22-inch barrel delivers 160 dB to the shooter's ear. Top-quality, properly fitting muff-style protectors usually have a maximum sound reduction rating of around 25 dB which would reduce the level of sound received by the ear to 135 dB or so. As another example, the Nosler SR-30ALTi suppressor also has a sound reduction rating of 25 dB, so the two

The fact that the suppressor and muffs shown here have the same sound reduction rating is deceiving. The suppressor never changes while age and wear along with how the muff is worn can drastically reduce its level of hearing protection.

The all-titanium Banish 30 suppressor from Silencer Central is shown here disassembled to illustrate its various parts. It is nine inches long, it has eight baffles and it weighs 14.3 ounces. When easily shortened to seven inches, as some owners do when attaching it to a hunting rifle, its weight is reduced to 11.2 ounces. Doing so reduces the number of baffles from eight to six and reduces sound mitigation rating by around 5 dB. The suppressor retains its maker's "hearing safe" rating for a single exposure of brief duration.

Attaching a suppressor to a rifle increases its weight by how much depending on which model is used. This Nosler SR-30K weighs 7 ounces, about as much as eight 308 Winchester cartridges.

The scenic heather-covered hills of northern Scotland have excellent populations of red stags and feral goats. This goat was the very first game animal taken by Layne with a suppressed rifle. The rifle and the Hornady ammunition loaded with the 150-grain SST bullet belonged to his guide.

are even-Steven in the level of hearing protection they offer, right? Well, not necessarily. Whereas the sound reduction level of the suppressor never changes, aging of the muff and how it is worn can drastically reduce its effectiveness. Soft padding enclosing the ear can deteriorate with age and reduce actual sound reduction. The temples of protective eyewear as well as long hair can compromise its ability to seal off the noise.

Everything, including design, remains the same; the longer the suppressor, the more effective it is at sound reduction, and my Banish 30 from Silencer Central does a good job of illustrating that. Nine inches long, it contains eight sound-reduction baffles. Some hunters consider that to be a bit much for their rifles, so the Banish 30 is designed to be easily shortened to seven inches, during which two of its baffles are left out. Doing so reduces the sound reduction rating of the suppressor by about 10 dB although it still retains its "hearing safe" company rating for a single exposure of brief duration.

A suppressor does not mitigate the sonic boom made by a bullet as it exceeds the speed of sound but it is a small factor when compared to muzzle blast. It is also less noticeable to a shooter behind the rifle than to someone who is standing off to the side. Slowing the bullet down to subsonic velocity (usually around 1,100 fps) eliminates that sound. The ping of a bullet striking a distant steel target is much louder, as is the cycling of an AR-15. Respective velocity ratings for Hornady's subsonic loading of the 300 Blackout with a 190-grain SUB-X bullet is 1,050, and for the 45-70 loaded with a 410-grain SUB-X, it is 1,075 fps. Lehigh Defense ammunition loaded with a-198 grain Controlled Fracturing bullet has a 1,050 fps rating from a 16-inch barrel. Those three bullets are designed to expand at impact velocity as low as 900 fps.

I first used a suppressed rifle while hunting red stag and feral goat among the scenic hills of northern Scotland. The rifle in 308 Winchester belonged to my guide and his Hornady ammunition was loaded with the 150-grain SST at 2,800 fps. As I was into a pre-hunt zero check with the rifle resting on my daypack, he tapped me on the shoulder and suggested that I remove my muffs and try a shot at paper. I was absolutely amazed at the light report and left the muffs in my daypack while taking my stag and goat with one shot each. As we chatted over cups of hot tea after the hunt, Malcolm remarked about the United States being advanced enough technologically to send men to the moon and back while still remaining in the Stone Age when it comes to suppressor ownership. He went on to add that he could go to the village market and buy a can of beans for dinner and a can for his rifle with no paperwork required for either. Simply pick both off the shelf, pay the clerk and take them home.

Hunters are at great risk because many don't wear hearing protection in the field. Taking along muffs or earplugs is an effective solution if there is time to put them in place prior to taking the shot. But some shots at game come quick and there is not enough time. This is when a suppressor capable of greatly reducing the blast is worth far more than its cost. A suppressor can also open the door to some hunting opportunities where the blast of a non-suppressed rifle would not be accepted. In my part of the Deep South, calling in coyotes during daylight hours is a wasted effort, but with a bit of luck, they can be taken at night. Farms are fairly small and while most stock owners absolutely hate coyotes, they do not appreciate being disturbed by gunfire at night. A suppressed 223 will get you invited back time and again. The Hornady and Lehigh Defense subsonic loadings of the 300 BLK mentioned earlier are as quiet as a mouse scampering across a carpet and are deadly on coyotes called in close. High-volume prairie dog shooting with the 223 Remington or other high-velocity cartridge is where a suppressed rifle really pays off, and when doing so, I double-up by also wearing muffs. In fact, the only time I do not wear muffs when shooting a suppressed rifle is when hunting big game with only a shot or two anticipated. Such a pity that suppressors were not as easy to own while I was growing up. If they had been, I might still be able to enjoy the chirp of a cricket.

I will close by mentioning that a short rifle kept on hand for repelling castle invaders should wear a suppressor. A suppressed Ruger Mini-14 in 300 Blackout with its magazines filled with subsonic ammo is our favorite behind-the-door, permanent house guest. *R*

THE NEW RUGER LC CARBINE 10MM AUTO

The new Ruger LC Carbine 10mm Auto was tested with factory loads and handloads.

Brian Pearce

Ruger has introduced a new compact, fast-handling carbine chambered in 10mm Auto that is very long overdue. The LC Carbine boasts robust, reliable mechanical engineering but also offers controls and ergonomics that are natural and easy to operate and comes standard with a 30-round magazine. In addition to accuracy, the 10mm offers greater power and range than other popular auto-loading pistol cartridges and is a capable deer cartridge. After the news release, Ruger and its distributors experienced a huge surge in orders, so it appears that the LC Carbine is already well received by shooters or anyone needing an auto-loading carbine chambered for a potent self-defense pistol cartridge. The LC Carbine is also offered in 5.7x28mm and 45 ACP cartridges.

A Fast-Handling Carbine

The 10mm Auto offers a notable velocity improvement when fired from a carbine versus pistols.

Before discussing details of the LC Carbine and how it performs, let's look at the 10mm Auto cartridge. While Jeff Cooper is often credited for its development, it seems that his role was more of a consultant at first, but then later, he played a significant role in popularizing it after it was developed. Cooper generally credits Whit Collins for actually designing it during the 1960s. It was created by cutting off 30 Remington cases to .990 inch (which is a different case than the 30 Remington AR or the 35 Remington case). Collins used 38-40 Winchester and .401 Herters .400/.401-inch bullets and loaded his wildcat with Hercules (now Alliant) Unique powder. His custom Model 1911 and Browning Hi-Power pistols were referred to as ".40 Super," ".40 Auto" and "10mm Auto." Cooper was a combat veteran and savvy handgunner that had huge respect for the 45 ACP. However, his thoughts regarding this potentially new pistol cartridge was to increase the effective range (as compared to the 45 ACP) by offering higher velocity and better penetration on vehicles and obstacles. It would still be of large-enough caliber to not compromise terminal performance, while maintaining controllable recoil. It had to be compatible with pistols that are of practical weight and size, such as the 1911.

Factory 10mm Auto ammunition is offered by most companies and is hugely popular with modern shooters.

Collins .40 Super remained a wildcat until 1983, when Mike Dixon and Tom Dornaus finalized cartridge dimensions and worked with Norma to introduce a commercial 10mm Auto factory load that pushed a 200-grain jacketed bullet at 1,200 feet per second (fps). This team soon introduced the Bren 10 auto-loading pistol, but unfortunately, problems plagued that gun, and the company went bankrupt in 1986. Soon thereafter, Smith & Wesson and Colt began offering pistols. When the FBI discovered the 10mm's many virtues, they officially adopted it in 1989, and its popularity surged with shooters and handgunners. For several reasons, the FBI soon expressed the need for lighter

The charging handle is factory installed on the left side, which is ideal for right-hand shooters; however, it can be reversed to accommodate left-hand shooters.

The 16.25-inch hammer-forged barrel is threaded .578x28 and comes standard with a protector.

loads and requested a reduced load that became commonly known as the "FBI Lite," which pushed 180-grain bullets from 980 to 1,030 fps. Smith & Wesson decided that they could shorten the case to .850 inch, switch to a small pistol primer and get the above ballistics from a cartridge that could be housed in many 9mm pistols. This became the 40 S&W in 1990 and was a huge success. It would seem that the 10mm's power was no longer appreciated and it quickly fell from popularity. In fact, many predicted that it would soon become obsolete. While its popularity almost hit rock bottom, some of us still loved its many virtues, and eventually, it made a huge comeback. Currently, dozens of pistols are offered, and it has become one of the best-selling auto-loading pistol cartridges, even surpassing the 40 S&W.

While carbines in 9mm Luger and 45 ACP are popular, neither cartridge has the gas volume to increase the velocities by large margins when fired from the longer barrels. The 10mm Auto makes a comparatively larger velocity gain, especially when fired with loads that approach the SAAMI maximum pressure guidelines that are established at 37,500 psi. (Please note that very few factory loads are loaded to maximum pressures.) For example, when comparing velocities obtained from a Kimber Model 1911 with a 5-inch barrel to the velocities produced from the Ruger LC Carbine with 16.25-inch barrel, there is usually a 250 to 300 fps velocity increase with 150-, 165- and 180-grain loads. (More in a moment regarding velocity and performance.)

The LC Carbine receiver is alloy aluminum; the grip assembly and buttstock are polymer, while the bolt and barrel are constructed of steel, with the entire package being a flat black. The 16.25-inch barrel is hammer-forged, threaded .578x28 for accessories and comes with a protector. The weight is 7.4 pounds.

The LC accepts full-size Glock 10mm magazines and comes from the factory with a 30-round version. It should be noted that early Glock magazines that only feature one magazine latch slot can also be used; however, if these older magazines are used, the magazine release button cannot be reversed. The magazine is contained within the pistol grip, which is similar to the famous Uzi sub machine gun. This is a significant design feature as the shooter does not have to look at the gun to insert the new magazine when reloading; rather, the focus can stay on the surroundings. In essence, the magazine can be inserted into the bottom of the pistol grip by instinct or feel, which is a huge advantage if the gun is to be used in a defensive situation.

Ruger refers to the bolt design as the "Ruger Secure Action" and with a "bolt over barrel design." But those familiar with the famous Uzi will refer to this as a "telescoping bolt" or "overhung bolt." Basically, the bolt wraps around and past the breech end of the barrel. The bottom line is that it results in a

Ruger LC Carbine 10mm Auto Specifications, Model No. 19307

Manufactured: Ruger, USA
Action: Semi-Auto, Ruger Secure Action, bolt over barrel design
Receiver: Alloy aluminum
Magazine: Accepts all Glock 10mm Auto (30-round supplied with rifle)
Magazine Release: Reversible
Caliber: 10mm Auto (optional 5.7x28mm and 45 ACP)
Barrel: Hammer Forged
Barrel Length: 16.25-inches
Barrel Twist Rate: 1:16 Right Hand
Handguard: CNC milled Type III, anodized aluminum with 7-sided M-Lok
Rail: Full-length top-mounted, two-piece Picatinny and lower Picatinny
Charge Handle: Reversible
Slide Release: Push button, right side
Threaded: .578"x28
Stock: Folding and reversible
LOP: 12.60 inches to 14.60 inches
Capacity: 30+1
Safety: Bladed Safety trigger and manual ambidextrous
Trigger: Bladed
SA Trigger Pull: 5.5 pounds
Hammer: Protected internal
Rear Sight: Folding, windage adjustable, aperture, Ruger Rapid Deploy
Front Sight: Folding post, elevation adjustable
Weight: 7.4 pounds
Overall Length: 30.60-inches
Folded Length: 22⅝-inches
MSRP: $1,049.00

Table I

10mm Auto Factory Loads

load (*grains*)	stated velocity (*fps*)	actual velocity (*fps*)	50-yard group (*inches*)
200 Speer Personal Protection Gold Dot HP	N/A	1,223	1.35

Notes: A Ruger LC Carbine chambered in 10mm Auto with a 16.25-inch barrel was used to test all loads. Accuracy was established by a single, five-shot group.
For more data on this cartridge please visit LoadData.com.

shorter overall design, allows for a very compact assembly and shorter firearm length. It's a truly great design for pistol cartridges such as the 10mm Auto when housed in short sub-machine guns or carbines such as the LC. It is also noteworthy that the bore axis is very low. In fact, it is well below the center pivot point of the folding stock (a blueprint would be necessary to give an exact figure, but it's around ½-inch lower). This results in very little muzzle rise during recoil; rather, recoil is mostly straight back, allowing rapid-fire bursts while keeping the gun on target.

As indicated, the LC Carbine is ergonomically designed to allow easy, natural operation, and the controls accommodate both right and left-hand shooters. For example, as the Carbine comes from the factory, the charging handle is on the left side. It's natural to keep the gun at the shoulder while inserting a magazine and working the charging handle (or bolt) with the left hand. However, the charging handle is also reversible for left-hand shooters. There is a fingertip push style slide release button (also known as bolt release) located just above the trigger and forward about 1 inch that allows the trigger finger to readily push to release the slide – a great option to drop the bolt in a hurry. There are two 1911-style safety levers for ambidextrous operation. There is a familiar blade safety located inside the trigger, similar to so many striker-fired pistols. With this combination of safety features, I would give it an A+ grade, especially considering how this type of firearm might be used. The magazine release is also reversible. The buttstock is a folding-style and can be reversed for right- or left-side folding. It offers an adjustable length of pull from 12.60 to 14.60 inches. The overall length is 30.6 inches with the stock length-of-pull fully extended; however, with the stock folded, it measures 22⅝ inches, allowing storage in small places.

The front sight is adjustable for elevation and can be folded down.

The rear sight is a Ruger Rapid Deploy that folds down and is adjustable for windage.

"LC Carbine" is engraved on the side.


The thumb safety is a 1911 pattern and ambidextrous. The magazine release and slide release are likewise positioned for natural operation.


The trigger features a blade that adds to the overall safety of the LC Carbine.

Other features include a full-length Picatinny top rail, a lower Picatinny rail located just forward of the trigger guard, an aluminum anodized hand guard featuring a 7 sided M-Lok – all of which accommodates a variety of mounting options for accessories. The front and rear sights are Ruger's folding Rapid Deploy that offer adjustments for elevation (front sight) and windage (rear sight). The trigger pull breaks at 5.5 pounds.

I don't want to get too bogged down in the technical side of the mechanics and engineering, however, suffice to say that the LC is built like a tank, but still offers enough refinement to allow accurate shooting. For example, some of my testing was at 200 yards, and it was surprisingly accurate. In fact, it was easy to keep shots on a target similar in size to a deer's vitals while shooting offhand.

As of this writing, around 700 rounds have been fired through the Ruger LC Carbine. It has fired at least seven different handload recipes that included 150 and 180-grain bullets and five different factory loads with bullet weights of 180, 200 and 220 grains. It has fed, fired and functioned with outstanding reliability. The only small occurrence happened with a comparatively low-pressure factory load (this brand was not included in the accompanying table) that failed to keep the bolt open on the last shot, but that was literally the only hiccup.

Approximately 200 rounds of my handloads were fired before checking factory loads for function and accuracy. Using Hornady's Custom 180-grain XTP load, velocity was 1,446 fps, and 50-yard groups averaged 1.10 inches using the factory aperture sights. The Speer 200-grain Personal Defense Gold

With the stock folded, the LC Carbine only measures 22 5/8 inches long.

The LC Carbine readily accepts all full-size Glock 10mm Auto magazines, with a factory-supplied, 30-round magazine.

Table II

10mm Auto Handloads

bullet (*grains*)	powder	charge (*grains*)	overall loaded length (*inches*)	velocity (*fps*)	50-yard group (*inches*)
180 Hornady XTP	A-7	12.2	1.260	1,481	.90

Notes: A Ruger LC Carbine chambered in 10mm Auto with a 16.25-inch barrel was used to test all loads. Loads were assembled in new Winchester cases. Jacketed bullet diameter is .400-inch. CCI #300 Large Pistol primers were used throughout. Maximum case length is .992-inch, while suggested trim to length is .982-inch. SAAMI maximum overall cartridge length is 1.260 inches. A taper crimp was applied that measures .421-inch. All loads are within SAAMI pressure limits established at 37,500 psi, but are considered maximum. These loads were safe in the Ruger LC Carbine; however, they may not be suitable for some pistols with excess barrel throating. Accuracy was established by a single, five-shot group.

For more data on this cartridge please visit LoadData.com.

Be Alert – Publisher cannot accept responsibility for errors in published load data. Listed loads are only valid in the test barrels/firearms used. Use extreme caution and watch for signs of excessive pressure when using these loads.

Brian obtained good accuracy with the LC Carbine at 50-yards using handloads containing the 180-grain Hornady XTP bullets.

In addition to a top-mounted Picatinny rail, a Picatinny rail is located just forward of the trigger guard.

Dot HP reached 1,223 fps and grouped into 1.35 inches. Lastly, the Buffalo Bore Outdoorsman 220-grain Cast FN load reached 1,320 fps, and three 5-shot groups averaged 1.60 inches.

Before proceeding to handloads, it seems prudent to mention that industry maximum pressure guidelines for the 10mm Auto is established at 37,500 psi. However, very few companies actually load their ammo to this level due to some pistols that are throated excessively. In other words, they are concerned with the bottom of the case blowing out when the action begins to unlock. This is unfortunate, as 10mm performance potential is often left on the table, so to speak.

Moving on to handloads, which are all within SAAMI pressure guidelines, the Nosler Sporting Handgun 150-grain JHP bullet was tried with four powders. The highest velocity load consisted of 16.0 grains of Accurate No. 9 powder, capped with CCI No. 300 primer for 1,749 fps. Groups averaged 1.00 inch. However, switching to 12.9-grains of Accurate No. 7 powder velocity dropped to 1,653 fps, but groups tightened slightly at .95 inch. Switching to the Hornady 180-grain XTP bullet pushed to 1,481 fps using 12.2-grains of Accurate No. 7 powder, the group average was .90 inch. Again, I was pleasantly surprised by the accuracy that the LC Carbine delivered.

The 10mm Auto is a great cartridge for pistols and carbines. However, it has enough merit in a carbine that it's not necessary to have a pistol of the same caliber to be interesting, although having one might be a good enough reason to consider a pistol too! In addition to respectable power and modest recoil, muzzle report and flash are notably lower than most bottleneck rifle cartridges with a 16.25-inch barrel. The Ruger LC Carbine offers outstanding ergonomics, reliability, accuracy and is designed to accommodate right- and left-hand shooters. And it readily accepts about any accessory that might be needed. Private prices are notably less than the $1,049 MSRP. Regardless, considering the design and quality, it's a bargain! *R*

ONE GOOD SHOT

With over 3 million made, Model 1871 Mausers are still around today. The action is not strong and ignition is weak.

Mauser's Model 1871

Art Merrill

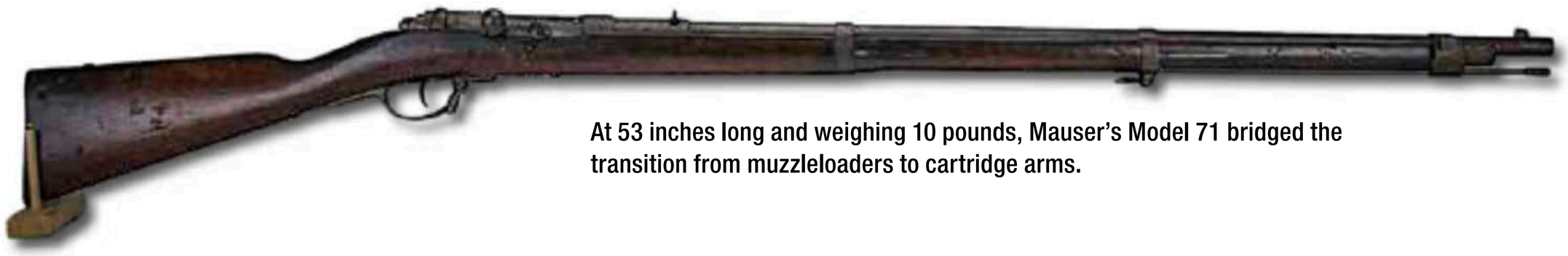
Peter Paul and Wilhelm Mauser's Infantry Rifle of 1871 was the Mauser brothers' first big financial break. The rifle itself became the first bolt-action rifle to see wide-scale adoption, first by multiple German states and then by other countries. Sure, other bolt-action designs – many of them needle guns – preceded the Model 71, but none came close to matching Mauser's success.

That success began rather inauspiciously, as it turned out. About 1866, the Mausers failed to garner any interest in their first rifle, a needle gun based on the design of American Eduard Lindner. In a world still dabbling with the final incarnation of the self-contained metallic cartridge, their next design, chambering a new black powder 11.15x60Rmm metallic cartridge, caught the attention of Prussia. Though the Prussian Rifle Testing Commission adopted the Mauser design after trials in 1871, Prussia built the rifles in their own arsenals and paid Peter Paul and Wilhelm Mauser 8,000 Thalers – about $6,000 – for

the rights. For the time being, the Mausers had to make do with manufacturing only sights for the rifles. Their luck changed when the German state of Wuerttemberg contracted Mauser to manufacture 100,000 Model 71s, which it did from 1874 to 1878. The company also made 26,000 export rifles for China. Though the fortune of Mauser Brothers and Co. continued to rise and fall, the bolt-action, cartridge rifle was here to stay.

What avid rifleman wouldn't want a specimen of the world's first successful bolt-action rifle? Model 71s were made in such numbers (approximately 3,000,000) by Mauser and the government arsenals at Amberg, Danzig, Erfurt, Spandau and by Steyr in Austria (Austrian Arms Co.) that many survive. According to Ludwig Olson (Mauser Bolt Rifles, F. Brownell & Son, 1976), other manufacturers include cooperatives Spangenberg & Sauer, Schilling, and Haenel in Germany, and English companies Greenwood & Batley, Ltd and National Arms & Ammunition Company. Model 71 buyers included China, Honduras, Japan, Transvaal and Uruguay. Model 71s served in combat, reserve and paramilitary capacities around the world at least as late as 1918, and milsurps converted into 12 guage and 16 guage shotguns were still being sold in the 1930s.

The 43 Mauser dies from Lee Precision are inexpensive, include a shell holder and Lee's signature yellow powder dipper.


At 53 inches long and weighing 10 pounds, Mauser's Model 71 bridged the transition from muzzleloaders to cartridge arms.

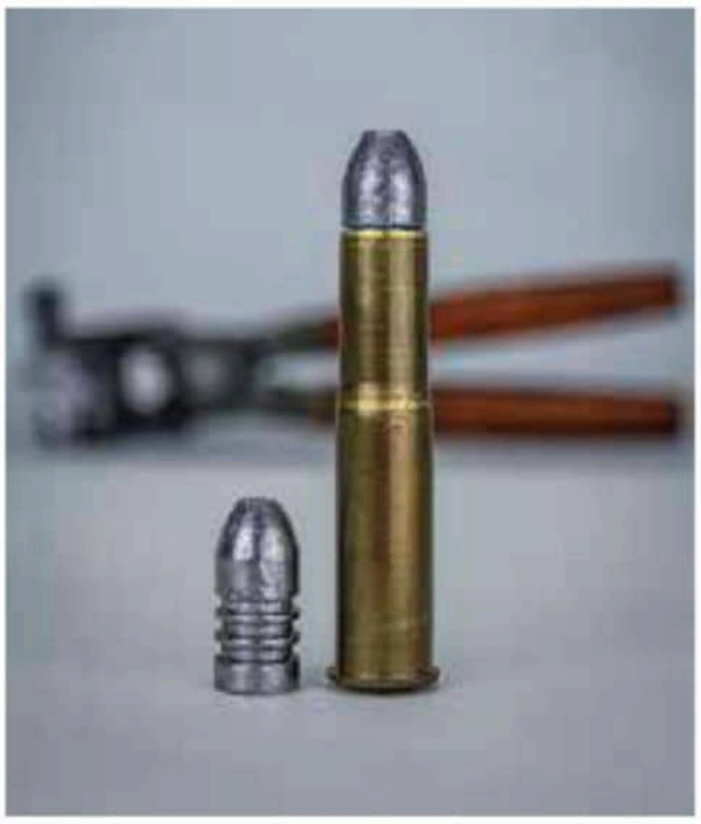
I found the M71 presented here some years ago in the corner of a disinterested friend's arid Arizona garage. After disassembly, cleaning and a careful inspection, it appeared to be a safe "shooter," though ammunition is, to understate it, no longer on dealer shelves.

The M71 is not a strong action, though strong enough for its black powder loadings. Made of "wrought steel," the metal lacks nickel to strengthen it; nickel steel didn't appear in small arms until about 1895. The back of the M71's bolt guide rib serves as the only locking lug as it braces against the right receiver wall on closing the bolt; it bears virtually all the force of the backward thrust of the cartridge on a single surface area half the size of your thumbnail. The bolt head and bolt body are separate pieces. There is no provision to vent gasses in case of a ruptured primer or case failure. A slot cut in the left receiver wall accommodates the extractor as it moves with the bolt, and gasses escaping along this slot might be partially deflected away from the shooter's face by a small shield on the left side of the back of the bolt – a forerunner of the shield found on the Model 1898 Mauser. The "wing" safety also carried over onto the Model 98. There is no ejector, ejection being accomplished by tipping the rifle to the right and allowing the case to fall out from under the extractor.

Peter Paul's Model 1871 trigger is remarkably simple, the entire mechanism composed of only two parts and a screw; the trigger return spring, a long leaf-type, doubles as the sear. Trigger pull is surprisingly light for a period battle rifle, about 6.5 pounds, and also, surprisingly, has no creep or overtravel. Sights are for young men with young eyes, the front an inverted V way out at the end of the 33.5-inch barrel, and the rear an equally minuscule V notch. The rear sight on this specimen is a rudimentary, nonadjustable fixed blade, though others had rear sights adjustable for elevation.

The trigger guard is brass; the barrel and receiver have such patina as to appear to have been browned, making reading the ciphers and acceptance marks a challenge. The one-piece wooden stock has enough dings to account for at least one war but happily exhibits no cracks, splits, or deep gouges. The receiver serial number is stamped into the barrel channel, and "No. 2" cartouches appear on the stock in two places.

Related or coincidental to the stock cartouches, a large numeral "2" surmounts two asterisks on the receiver. Ciphers in Fraktur – old German font – identify who manufactured or inspected any particular M71 in Imperial Germany, but I have yet to find an English language resource that matches Fraktur ciphers to specific manufacturing facilities or inspectors. I had better luck deciphering the "B11RE338" stamped into the butt plate, which apparently translates as, "Bavarian 11th Ersatz [Replacement or Reserve] Infantry Battalion, Company 3, rifle number 38."



Lyman mould No. 446110 casts .446-inch bullets for the 11.15x60R/43 Mauser cartridge, but the bullet is intended for the later Model 71/84 with deeper rifling.

Fraktur – old German script – adorns the 19th Century Model 1871s.

The "2" on the receiver may or may not be related to the "No.2" stamped into the stock.

"Bavarian 11th Ersatz [Replacement or Reserve] Infantry Battalion, Company 3, rifle number 38" appears on the butt plate, which is missing a screw.

Manufacture date on the receiver is 1877. Serial numbers match on stock, receiver, bolt, barrel, barrel bands, butt plate and screw heads, showing the rifle is original insofar as not being cobbled together from several "parts guns," and offering some additional confidence in being a safe shooter.

A bore light and exploration with Lyman's Bore Cam showed the M71's bore to be quite pitted (no surprise, given mercuric primers and the hygroscopic nature of black powder fouling) but with hopefully enough rifling remaining. Slugging the four-groove barrel revealed bore and groove diameters of .4365 inch (11.08mm) and .4565 inch (11.59mm), respectively. The "11.15" in the 11.15x60Rmm cartridge designation is not bullet diameter; rather, it refers to the bore diameter across the rifling lands. Converting metric to Imperial renders 11.15mm as .438 inch (hence "43 Mauser" for we Imperialists). Imperial-based references give bullet diameter as .466 inch, which converts to 11.83mm.

The "10,95" stamped on the barrel indicates the measured width across the bore lands at the time of the stamping, so the bore is apparently considerably eroded. Still, it's worth the experiment to see if the old war horse can still shoot. Now, what about some ammunition for this great-great-grandpa?

I acquired a box of 20 43 Mauser handloads built on properly headstamped Bertram brass and broke them down to use the brass for my own loads. For load data, Olson and several other sources list a black powder charge of 77 grains with bullets weighing 370 to 386 grains.

The first incarnation of the 11.15x60Rmm cartridge featured a roundnose bullet, paper patched to help prevent leading. When the rifle morphed into the M71/84 repeating rifle five years later with the addition of a tubular magazine, the bul-

11.15x60R/43 Mauser Handloads

bullet (*grains*)	powder	charge (*grains*)	overall loaded length (*inches*)	25-yard group (*inches*)
340 Lyman 446110 FN	KIK 3F	72.0	2.870	6.75
|	Pyrodex RS	|	|	6.25

Notes: An original Mauser Model 1871 manufactured in 1877 and chambered in 11.15x60Rmm/43 Mauser with a 33.5-inch barrel (1:21.65 twist) was used to test loads. Powder charges are volume, not weight. Bertram brass. Winchester Large Pistol Primers for standard and magnum loads. Accuracy is the average of two, five-shot groups. Doppler radar was unable to record velocities.

For more data on this cartridge please visit LoadData.com.

Be Alert – Publisher cannot accept responsibility for errors in published load data. Listed loads are only valid in the test barrels/firearms used. Use extreme caution and watch for signs of excessive pressure when using these loads.

Screws, including the bolt stop screw, bear numbers matching the rifle's serial number.

The manufacture date is "1887". Visible to the right, the bolt's only locking lug, the bolt guide, bears against the receiver.

let changed to a lubricated flatnose (FN) type. Lyman still makes mould No. 446110 for casting .446-inch, 340-grain FN bullets for the .43 Mauser cartridge. Though the cartridge's overall length (COL) is given as an even three inches, crimping in the bullet's groove shortened COL to 2.87 inches. Here, I utilized SPG lubricant with the Lyman bullet.

The first problem with this particular M71 evidenced itself when test firing a primed, empty case: it didn't happen, the firing pin only leaving a very slight dent in the primer. One well-known fault with Peter Paul's M71 design was its weak ignition, which Mauser resolved by loading softer primers in the ammunition. The problem here is perhaps exacerbated by a 150-year-old firing pin spring further weakened with age.

My modern solution was to substitute Large Pistol primers for the Large Rifle primers. I must emphasize here for the neophyte that in general practice, handloaders should not use pistol primers in cartridges intended to be fired in rifles, as pistol primer cups are thinner than rifle primers. Rifle firing pins typically strike with more force than do handgun strikers and hammers, and they could pierce a pistol primer. In the case of this specific M71, however, we already know of its weak ignition proclivity, and my solution worked.

The "10,95"on the barrel indicates the bore diameter in millimeters across the lands (not groove diameter) at the time it was struck. The bore today measures 11.08mm.

Cases held 72 grains by volume of black powder or Pyrodex RS, with bullet seating compressing the charge about 1/16 inch. I added a pea-size ball of SPG lubricant under the bullet, with a piece of parchment paper between the lube and powder charge. The first shot at 25 yards was very gratifying, punching the center out of the target at point-of-hold, but subsequent shots scattered, though they held "minute of man" on a larger police silhouette target.

The lack of accuracy may be due to a mismatch between rifling and bullet. Recall that the original Model 71 cartridge utilized a roundnose, paper patched bullet, and so it had comparatively shallow rifling to accommodate. The .466-inch FN bullet here is intended instead for the rifling in the later Model 71/84 repeating rifle shooting "naked" lubricated bullets. For more on this subject, see *The Paper Jacket* by Paul Matthews, available from Wolfe Publishing (WolfeOutdoorSports.com).

More load development and custom bullets for paper patching would likely shrink groups, but further pursuit of the matter is a subject more appropriate for *Handloader* magazine. Here, we conclude with this example of the world's first truly successful bolt action rifle that can at least produce a single accurate cold-bore shot. **R**

43 Mauser vs 44-77 Sharps

While Peter Paul Mauser is often credited with designing the cartridge for his Model 1871, there is room for conjecture on that point. Mauser's 11.15x60Rmm cartridge is practically identical to the Sharps .44-77 cartridge chambered in Sharps' New Model 1869, and for Remington No. 3 Rolling Block rifles of the same period. To wit:

	44-77 Sharps	43 Mauser
Bullet diameter	.446	.446
Case type	Bottleneck	Bottleneck
Case length	2.25 in.	2.36 in.
Powder charge	75gr	77gr
Bullet weight	297-470gr	386gr

Cartridge development occurring independently an ocean apart has sometimes resulted in very similar design concepts, but it seems reasonable that Mauser borrowed from the Sharps .44-77 – or perhaps it was vice-versa.

A significant difference between them is that the base of Mauser's cartridge has a thick rim/head raised in the center. Known, unsurprisingly, as a Mauser base or sometimes Mauser A-base, the thickened base apparently works in concert with the bolt face design to seal the back of the chamber, as there are no forward locking lugs to do so. A corresponding raised center on the bolt face contacts the cartridge case head, ensuring the cartridge is seated deeply in the chamber until a flange just behind the bolt face stops against the breech face when the bolt handle is turned down, sealing the back of the chamber.

A raised center on the bolt face engages a raised center of the cartridge case head to aid fully chambering the cartridge…

…followed by a flange on the bolt head pressing flat against the chamber face to seal the chamber.

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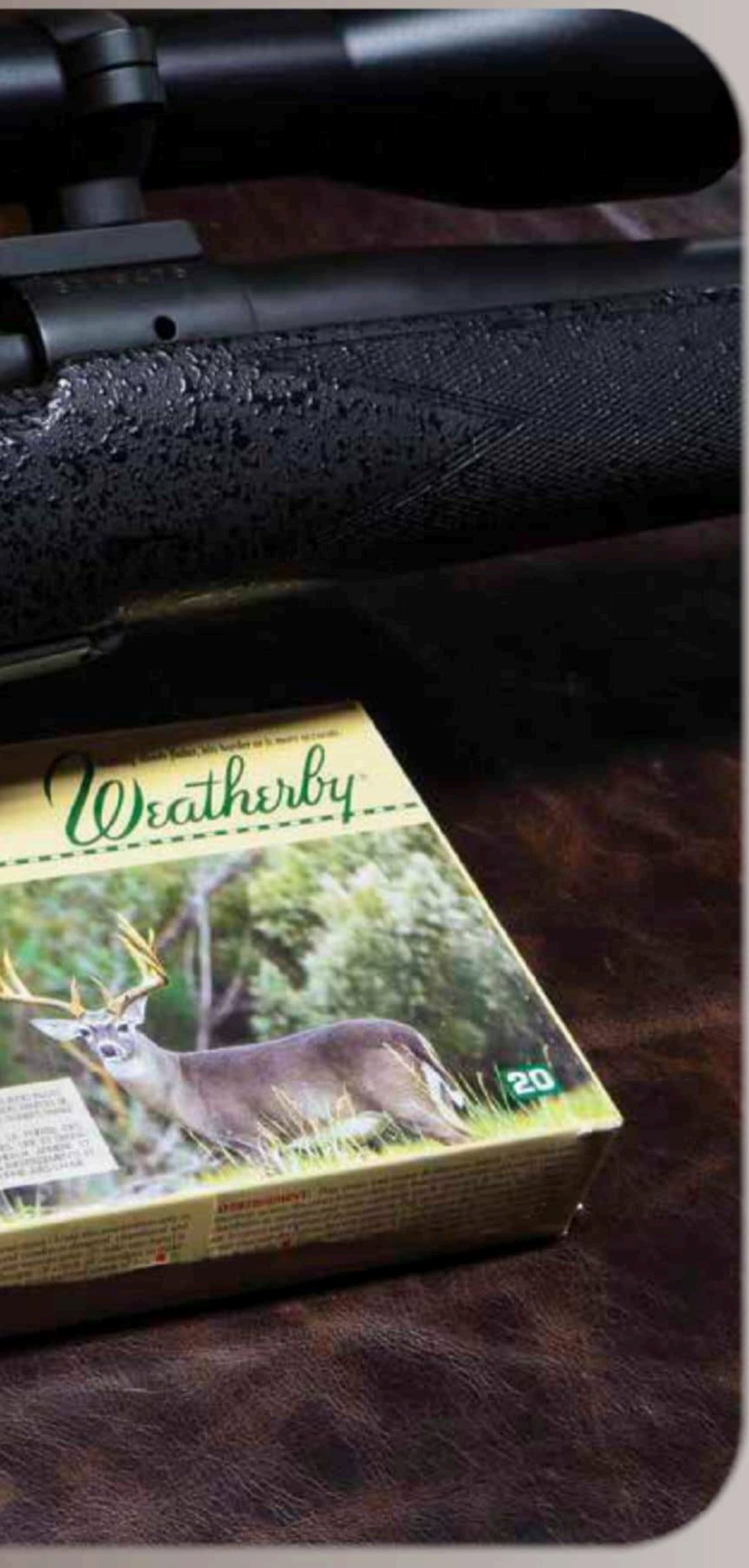
Kenny Jarrett 257 Weatherby



A Kenny Jarrett built "beanfield rifle" in 257 Weatherby on a Winchester Model 70 (post-'93, pre-'64) action.

Beanfield Odyssey

Terry Wieland

A vast field of soybeans, stretching away under the southern sun, may seem a strange image to attach to an ultra-accurate rifle, but 40 years ago, it was about the highest accolade one could bestow.

A "beanfield rifle," specifically one made by Kenny Jarrett, was the ultimate, the *ne plus ultra* of precision hunting implements, designed for one purpose and one purpose only: Dispatching big whitetail bucks on the far edge of a soybean field – 300, 350, even 400 yards out.

Compared to today's long-range rifles - or at least the claims made for them - this may seem modest. But in 1990, the whole idea was outlandish. Shooting and hunting editors demanded proof, and Kenny Jarrett, a denizen of Jackson, South Carolina, who lived and worked on a huge farm with both soybeans and whitetails, was happy to oblige.

Kenny - no one ever calls him anything but Kenny – may exude good ol' boy manners and down-home vibes, but he is many things in the rifle world, all of them good. He's a deer hunter, handloader, benchrest shooter, and rifle maker, all rolled into one. He put all that experience into refining custom rifles that would, above all else, deliver the goods way over yonder where the big bucks lurked.

A typical Jarrett beanfield rifle started with a reworked Remington Model 700 action, rebarreled in Kenny's shop, polished and tuned and bedded until it would put three shots into half an inch or less – a half inch, guaranteed, with sample targets to prove it. It had a fiberglass stock, which was radical at the time, fitted with a piece of German glass to rival an astral telescope.

Jarrett's rifles were not pretty. In fact, some of them were downright homely since fiberglass stocks in those early days almost took pride in their own ugliness, and mounts for 30mm tubes – again, radical back then - looked like a fitting of a farm tractor. The thing is, they worked.

Kenny Jarrett's accuracy guarantees were airtight, but they came with some caveats. The main one was that they would only fulfill the guarantee using the handload developed for that specific rifle in Kenny's shop. If you weren't a handloader yourself, Kenny would then supply you with custom ammunition.

A Jarrett rifle, built in 1996, fitted with a Leica ER 3.5-14x 42mm scope.

In fact, he preferred it that way because, as he once told me, "a lot of guys just don't know how to handload."

He might have added that a lot of guys don't shoot well enough to take full advantage of such accuracy, either, and years later he admitted he was sorry he ever established that benchmark, what with the headaches that ensued. Regardless, the half-inch guarantee lives on, 35 years later, with a lot of other makers now claiming it – again, with many provisos.

The 257 Weatherby, old and new. The 117-grain roundnose (left) was an original Weatherby loading, owing its origins to loads for the 257 Roberts. It has since been discontinued. The 100-grain Hornady (center) was the bullet with which the 257 Weatherby made its reputation. Modern loadings, like the Federal cartridge (right), use heavier bullets – in this case, the 115-grain Nosler Partition.

Kenny's preferred bullet was the Nosler Ballistic Tip, new at the time but gaining a reputation as one of the most accurate hunting bullets around, even if it was not the most dependable when it came to penetration. However, a whitetail does not demand all that much in the way of penetration. It's not a Cape buffalo.

That, then, was the formula for a Jarrett beanfield rifle, and there was a photograph that appeared just about everywhere showing Kenny, grinning through his unruly beard, holding out two halves of a rifle he'd built and later sawn in two because it obstinately refused to shoot to his standards. His message to his own rifles: Perform or die.

At the SHOT Show in 1996, a mutual friend told me Kenny wanted me to come over and see his rifles, and maybe make one for me to hunt with and, hopefully, write about. As shooting editor of *Gray's Sporting Journal*, Kenny figured our readers, with the highest average income in the magazine world, were the types who could afford his masterpieces, which then cost several thousand dollars.

I was more than happy to oblige but had a few conditions of my own. After all, he'd come to me.

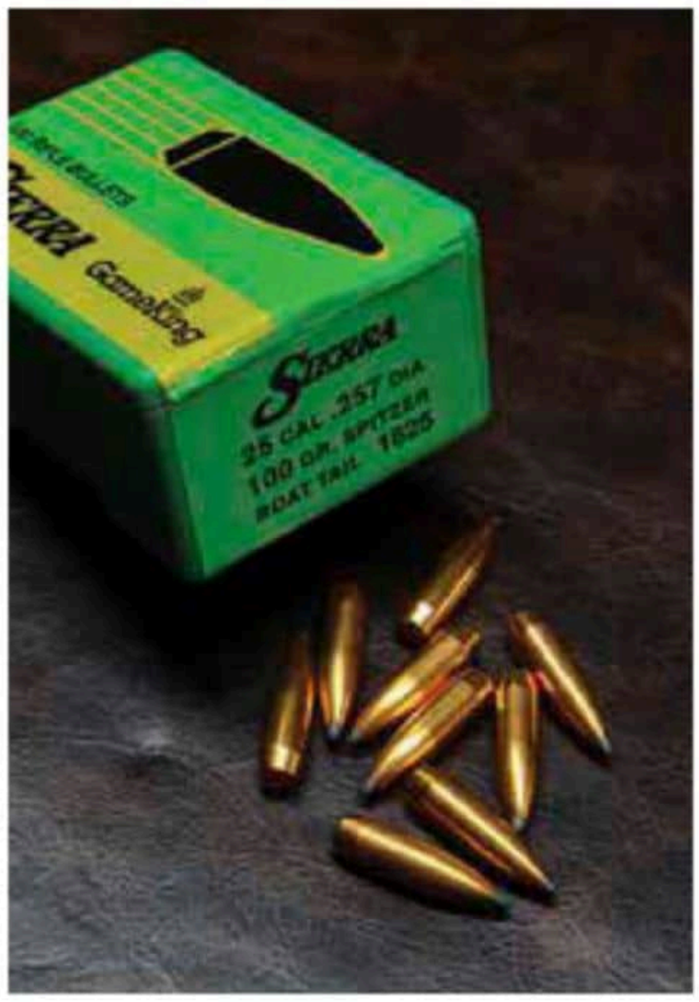
First of all, I did not want a Model 700 action. This was partly because of its safety mechanism and partly its lack of controlled feed. There is no way to feed a cartridge silently into the chamber with a push-feed action such as the 700 or the Weatherby Mark V, and that mattered in my kind of hunting. The second and more important reason was that I insist on a three-position safety that locks the striker as well as the bolt, not just blocks the trigger.

Winchester had recently come out with the reincarnation of the pre-'64 Model 70 – what I referred to as the "post-'93 pre-'64" – and I wanted Kenny to use one of these. If he was as good as they said, I argued, he should be able to true one up as well as a 700. He gulped but agreed.

Then there was the matter of the chambering. His 300 Jarrett, a belted wildcat that's nothing more nor less than a 300 Weatherby minus the double radiused shoulder, was his preference. I'm a great admirer of the 300 Weatherby – I think it's Roy Weatherby's finest creation – and Kenny's 300 Jarrett would have been equally good, but what I wanted was a 257 Weatherby.

Then as now, I think the 257 was Roy Weatherby's second-best creation. I used a safari-grade custom 257 Weatherby in Africa six years earlier, shooting prototype 115-grain Trophy Bonded Bear Claws, and it performed superbly.

Traditional .250s: (1) 250-3000, (2) 257 Roberts, (3) 25-06 and (4) 257 Weatherby. Everyone is a great cartridge, but the Weatherby is the king.



The Sierra 100-grain spitzer boat-tail is one of the all-time great hunting bullets in .257 caliber, and the Jarrett 257 Weatherby loves them.

However, later that same year, pursuing mule deer in Montana, the rifle fired as I closed the bolt, instilling a distrust I was never able to overcome.

We later figured its sojourns in such arid spots as Botswana and Montana had caused the wood to shrink so that, when the rear guard screw was tightened, it protruded just enough to cause the striker to ride over the sear. Lovely as the rifle was, I was not heart-broken when it fell victim to a divorce. Still, I loved the 257 Weatherby cartridge, wanted another, and here was the chance to get one.

Another gulp from Kenny, another rueful nod. He drew the line at using Bear Claws, though; how about Sierra GameKings? As it turned out, this was a fortunate decision. Federal abandoned the .257-calibre Bear Claw shortly after it acquired Trophy Bonded a couple of years later. This is not to say it would not have shot beautifully with any number of other accurate bullets. It has and does.

Assembling the wherewithal took a little doing. New Winchester actions were not available to just anybody, and we had to buy a factory rifle to obtain one. I organized a scope from Swarovski. Kenny would make the barrel, of course, and a functional black fiberglass stock from Bell & Carlson completed the outfit.

Six months later, in the heat of summer, I drove down to South Carolina to try it out.

At first glance, it was hard to tell if Jarrett's place was a working farm that happened to have a large population

Targets sent with the Kenny Jarrett rifle. Three groups averaging .507 inches, shot with his tailored handload using 100-grain Sierra GameKing spitzer boattails.

of whitetails or one that just operated as a vast deer feeder. Everywhere you looked, it seemed there was a deer stand and dusty roads wound through the woods that flanked the crops.

At the end of one such road was Kenny's elaborate 1,000-yard range with concrete benches, chronographs and a separate building filled with the loading equipment.

The temperature was nudging a hundred when I arrived and heat waves shimmered the length of the range. Because the rifle was chambered for a factory cartridge, and the barrel was so marked, I wanted to see what it would do with Weatherby's own ammunition, which I knew to be both hot and very accurate. I set up a chronograph and target and went to work.

The 87-grain stuff planted little cloverleaves in the paper, but the chronograph read something over 4,000 feet per second (fps). Huh? There must be something wrong. The 100-grain, rated at 3,500 fps, recorded a velocity of more than 3,800. More cloverleaves. Finally, the 115-grain roundnose stuff. One shot, then two, then three. All of them blew their primers and left the primer pockets as gaping chasms.

To compress the next few hours into a paragraph, it turned out that Kenny always bored his barrels two or three thousandths under standard specs, finding that this made for better accuracy. Of course, it also pushed up both velocity and pressure, and with the long, heavy 115-grain bullets, pressures went way over the top.

Kenny's handload for the rifle was perfectly good, of course, and met his accuracy criteria perfectly. The problem was, as we discussed, the rifle said it was a 257 Weatherby. Eventually it would pass from my hands to another's, as guns inevitably do. It simply had to shoot factory ammunition safely. He removed the barrel, expanded the freebore in the chamber, and started over, testing everything.

What with one thing and another, I did not see the rifle again for close on two years. (I was living in Canada, and even before 9/11, import/export regulations were changing.)

Anyway, I finally got it, complete with three targets with three tight cloverleaf groups, load data and a long, detailed letter of explanation. To be on the safe side, I tried factory ammunition. The 115-grain roundnose didn't blow every primer but still left most primer pockets enlarged. Oh, well.

Kenny also made early use of muzzle brakes, and the rifle came equipped with one which was detachable, as well as a cap to protect the threads. I put the cap on and, somewhere along the line, misplaced the brake. Another "oh, well." I have a profound mistrust of brakes anyway, the 257 Weatherby does not have enough recoil to warrant one, and I value my hearing.

The big question, of course, is will it shoot to Kenny Jarrett's accuracy guarantee? The short answer is 'yes,' and the longer answer is 'but not with everything.'

We have a policy at Wolfe Publishing that we do not publish loads that are not within the pressure limits as published in recognized loading manuals or has been pressure tested, which means I can't tell you what every load was. Nor can I tell you how the rifle performed with my carefully constructed handload for the original safari-grade Weatherby, nor any subsequent loads that, shall we say, pushed the envelope?

The load Kenny developed is

257 Weatherby

load number	bullet (*grains*)	powder	overall loaded charge (*grains*)	length (*inches*)	extreme velocity (*fps*)	100-yard spread (*fps*)	group (*inches*)
1	100 Sierra GameKing	R-19	67.0	3.145	3,478	46	.507
2	100 Sierra MatchKing	IMR-4350	61.0	3.170	3,327	N/A	.683
3	100 Nosler Ballistic Tip	RL-22	68.0	3.348	3,403	39	.421
4	115 Federal Trophy Bonded Bear Claw	RL-22	64.0	3.372	3,258	57	1.224
5	117 Sierra GameKing	RL-22	64.5	3.250	3,170	16	.228

Notes: Load No. 1 was developed specifically for the rifle by Kenny Jarrett and handily fulfills his guarantee of three shots into a half inch. In this case, two more shots expanded the group ever so slightly. **Load No. 2** was a pressure series ranging from 58 to 61 grains; the maximum velocity was reached, but all 12 shots went into one group measuring .683 inches! **Load No. 3** Accuracy was from a single, three-shot group. **Load No. 4** was to see what the rifle would do with Wieland's diminishing supply of original Federal Trophy Bonded Bear Claws. Accuracy was from a single, three-shot group. **Load No. 5** was the single best group shot with the rifle. Accuracy was from a single, three-shot group. All testing was done in a Kenny Jarrett custom rifle with a 26-inch barrel and a 1:9 twist. Federal Gold Medal GM215M primers and Weatherby (Norma) cases were used throughout.

For more data on this cartridge please visit LoadData.com.

The beautifully distinctive Weatherby box for its smaller calibers, way back when. They had style!

shown first in the accompanying table. It exceeds the maximum in some manuals but not in others, so it's within safe limits.

The good news, however, is that the rifle will outperform just about anything, and it will do so with some mild loads - if any 257 Weatherby load can be called mild - from any number of manuals. Some of my favorites are in the accompanying chart. In fact, I have yet to find a load it won't shoot; not all will be three shots into a half inch, but most will plant five shots into an inch without breathing hard.

As I've gotten older, I have become less eager to find loads that are really fast, really loud, or which pop primers left and right. Fortunately, the rifle likes modest loads as well as it does hot ones, and no deer is going to tell the difference between 3,500 fps and 3,350 fps.

Much water has flowed under the bridge since Kenny made that rifle. As the quality of Model 700 actions deteriorated, he designed his own action and invested heavily in CNC machinery to make it; he expanded his models to include some with walnut stocks and some - stalking rifles - using the post-'93 pre-'64 Model 70. Kenny has since handed the business on to his children.

Jarrett Rifles now has a website promoting a range of products (JarrettRifles.com), but it's still in Jackson, South Carolina, and the Jarrett name is still synonymous with accuracy - the originator of the "beanfield rifle." My Jarrett 257 Weatherby's main role now is a yardstick against which to measure new products, including the super-accurate ones. And guess what? It seldom loses. R

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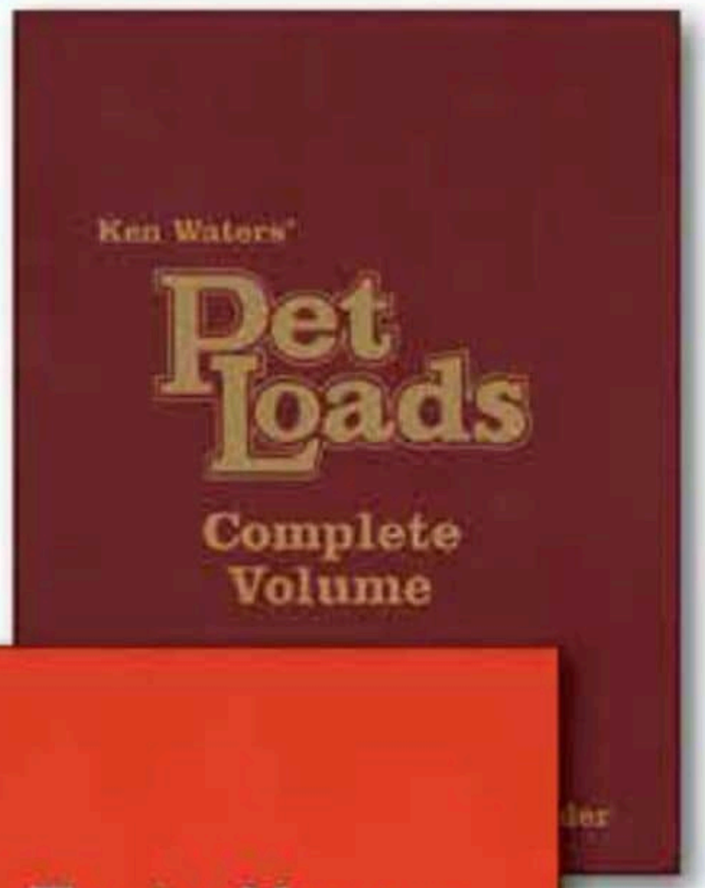

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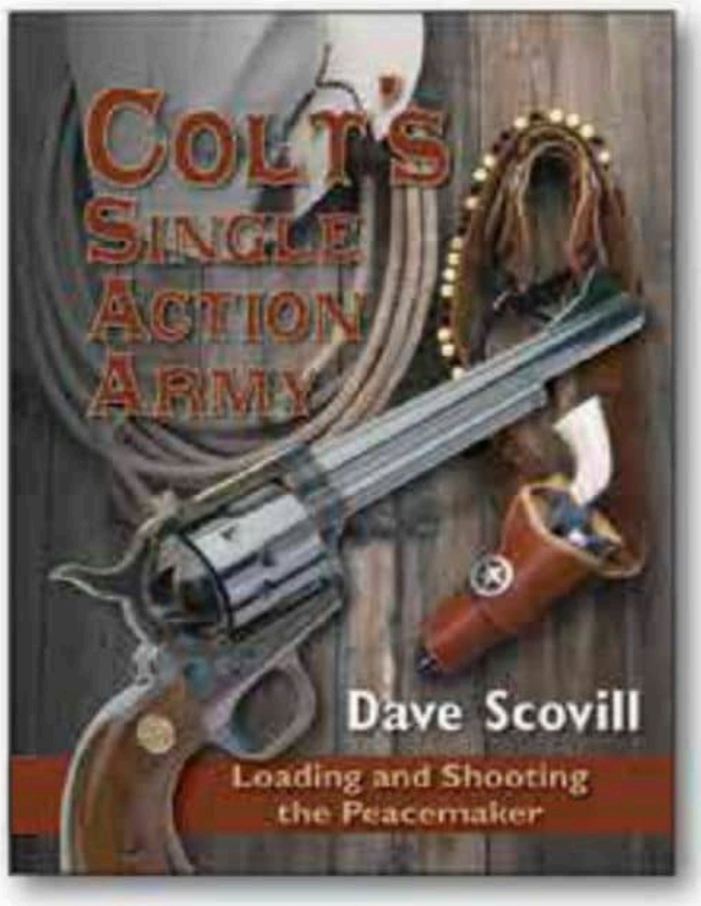

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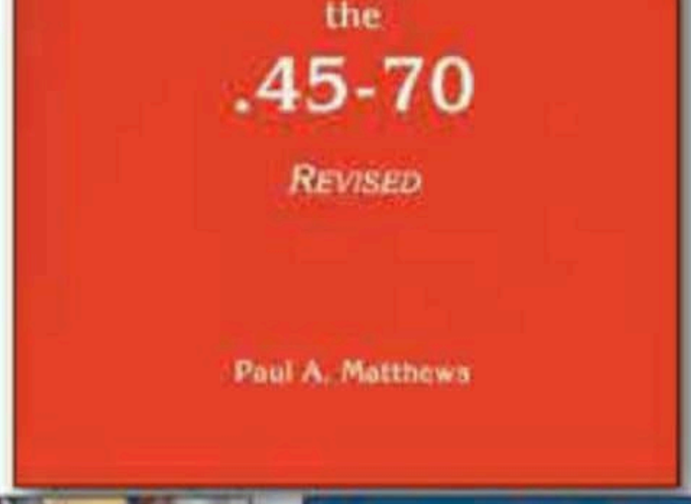

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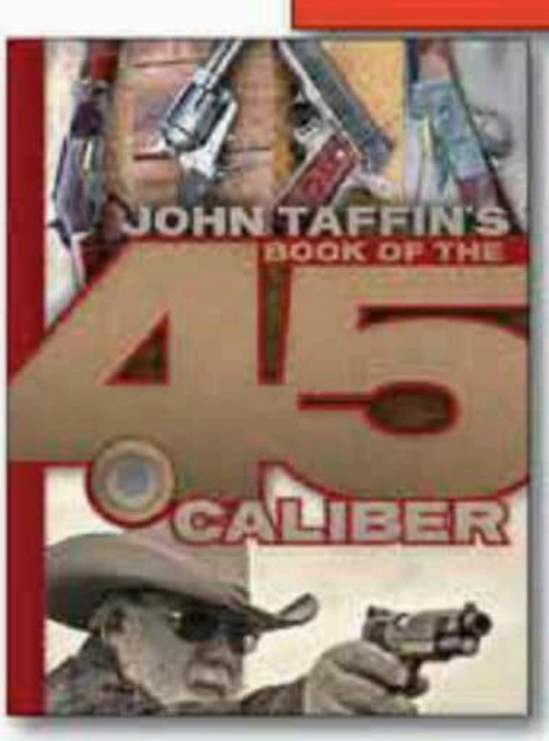

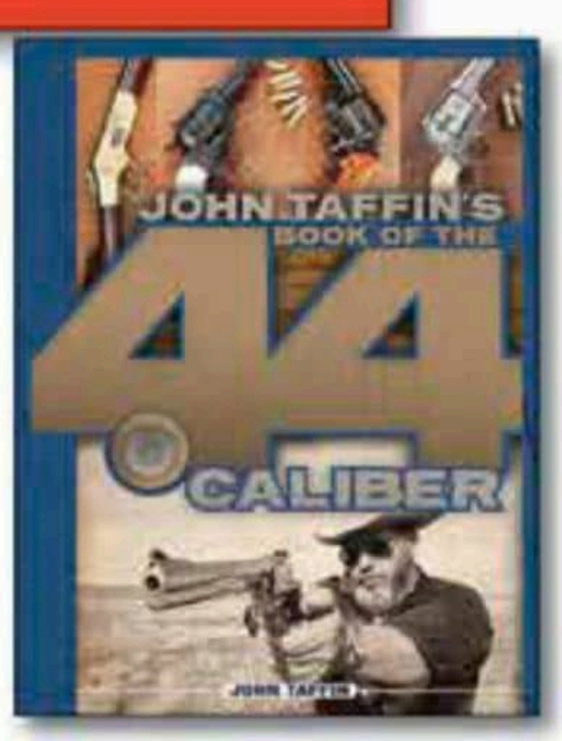

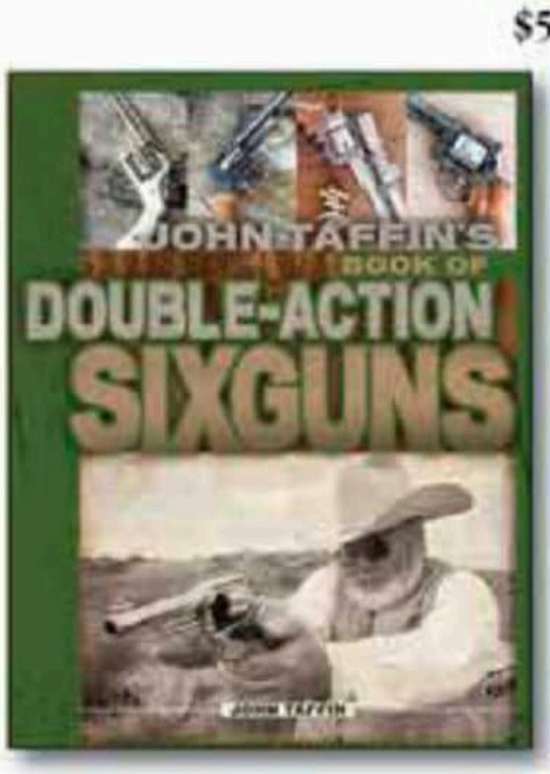

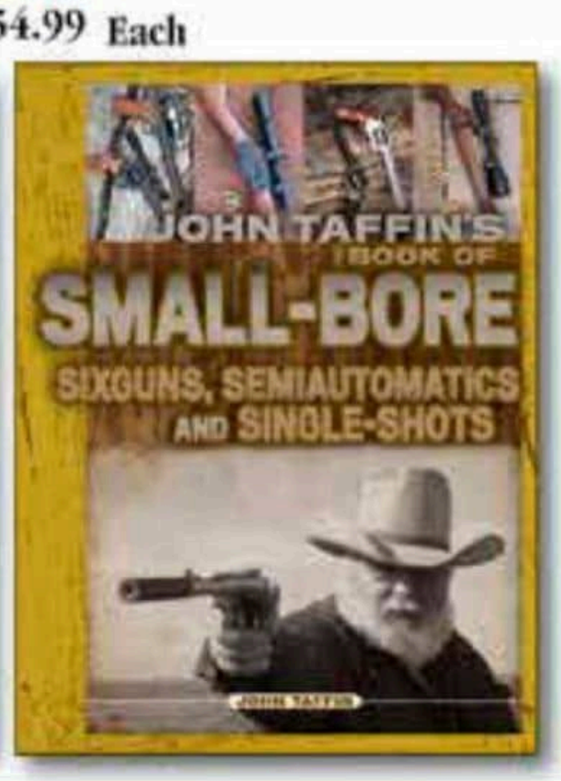

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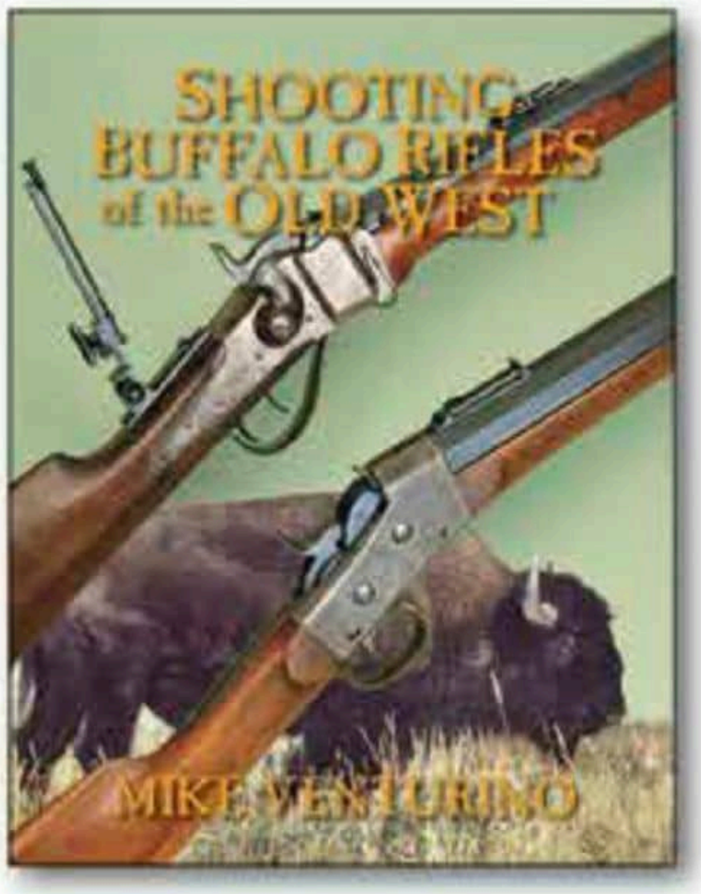

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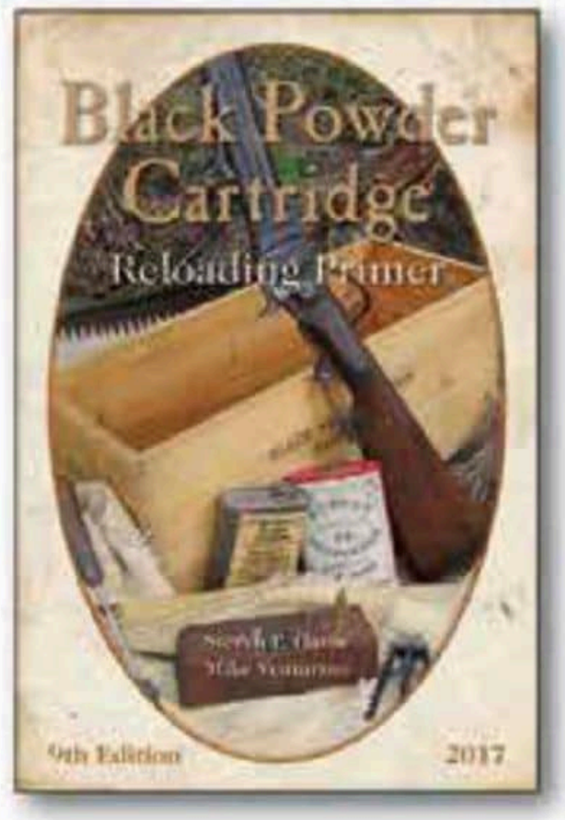

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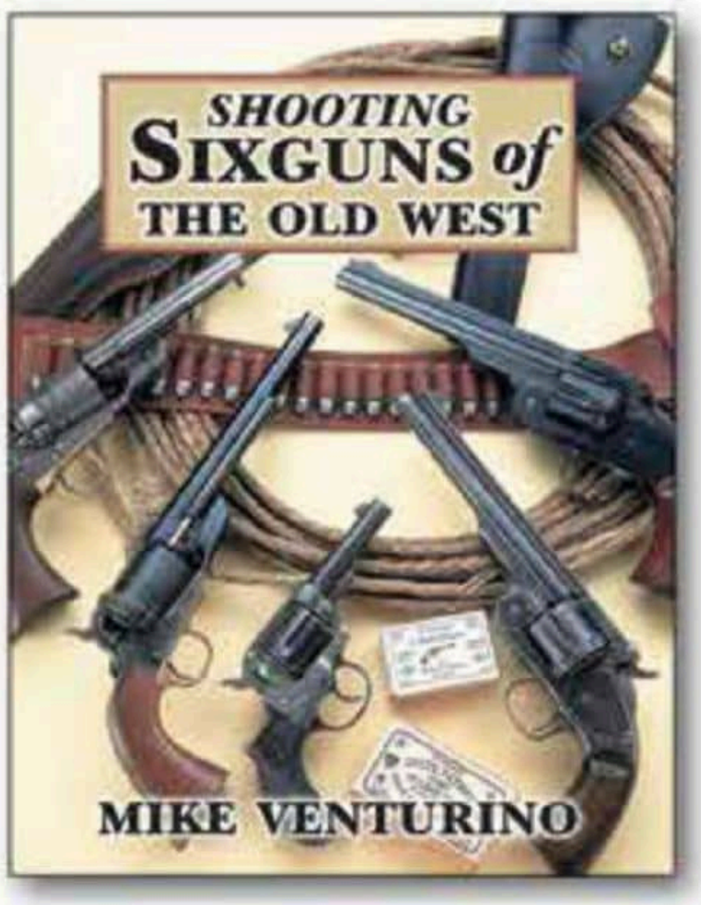

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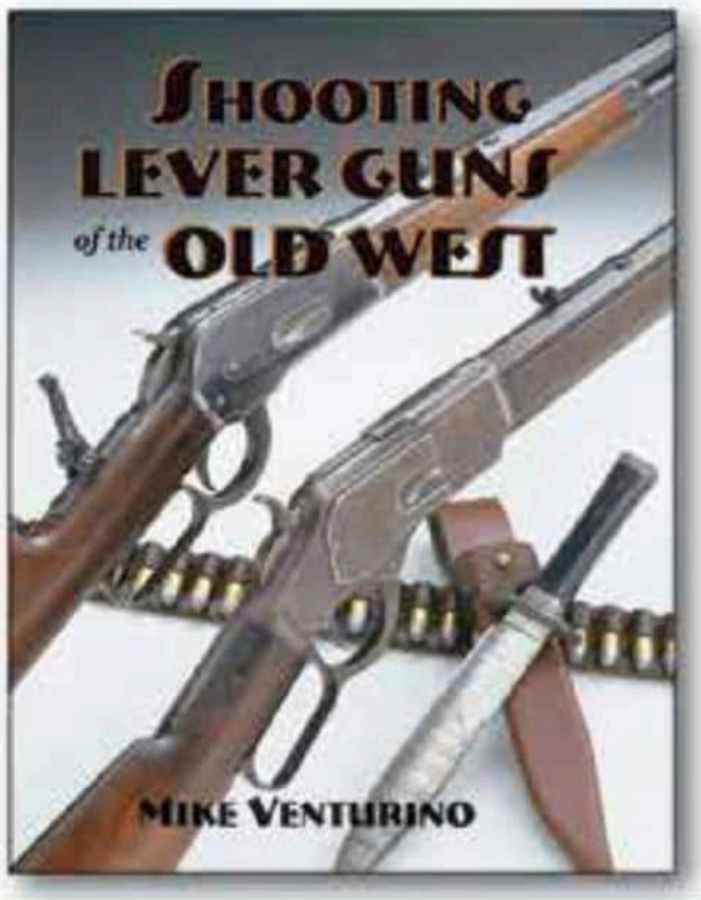

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Walnut Hill

(Continued from page 62)

Over the next few years, as the Model 70 was researched into oblivion by writers, dealers, and collectors, certain models became especially desirable. During its lifetime, the Model 70 was produced in something like three dozen different chamberings, with the 30-06 and 270 Winchester the most numerous. Others, like the 250-3000, 300 Savage, and 35 Remington, were rare, numbering in the hundreds out of a total production of almost 600,000 pre-'64s.

Although not the rarest, rifles chambered for the 220 Swift were a special case. About 20,000 Swifts were made, many of which were produced during the absolute sweet spot of Model 70 production – roughly 1946 to 1953. Because it was a hotshot (!) varmint caliber demanding the utmost in performance, Winchester seems to have put some special effort into its Swifts.

These are desirable as much for the overall quality as for the caliber. When the chambering was abandoned, aficionados swooped on gun shops and bought up every one they could find. Many were tucked away and never fired; others were carefully looked after and handed down as heirlooms. As a result, every so often a very special Model 70 Swift comes along, and jaws drop.

Lot No. 1427 in Rock Island's August, 2024, premier auction was one such rifle. Manufactured in 1946, the rifle was one of five ordered by Dr. Russell C. Smith, each depicting a different class of game animal.

It was factory engraved by Alden George Ulrich, last of the famous Ulrich family, whose engraving careers began with Winchester in the 1800s. The early Ulrichs studied with L.D. Nimschke, which puts them among the aristocracy of American engravers. Alden George Ulrich died in 1949, and this was one of his last and greatest projects for Winchester.

The rifle has several features found on later "Deluxe" rifles, such as quick-detachable sling swivels (suitably engraved), ebony forend tip, a highly figured walnut stock with a cheekpiece, and elaborate fleur-de-lis-pattern hand checkering. Suitable for its time, the rifle is fitted with a Lyman Alaskan 2½x scope in a Griffin & Howe detachable mount.

All of this is not unusual for a rifle from the 1940s, but being factory engraved, and in near-pristine condition with rock-solid provenance, it was expected to sell for a high price, even for a pre-64. The auction-house estimate was $60,000-$90,000.

Maybe it was something in the air, but when the bidding started, it passed the high estimate in a matter of seconds and climbed…and climbed…and climbed. I was sitting with an acquaintance, an evaluator and proxy bidder for several wealthy clients, who routinely spends hundreds of thousands at Rock Island and is a shrewd judge of value. I asked him what he thought it would go for, and he suggested somewhat more than $100,000.

Winchester Model 70, manufactured in 1946 and factory engraved to special order by Alden George Ulrich. Photo Courtesy Rock Island Auction

And in the end?

The final bid was a cool quarter-million dollars which, with buyer's premium added, came to a net $293,000. Almost $300,000 for a pre-64 Model 70! If that's not a record, none of us could remember one selling for more.

There was another Ulrich-engraved rifle in that auction – this one by John Ulrich, and therefore much earlier than the Model 70. It was a Winchester High Wall Schützen, and it hammered at $180,000 ($211,500 with premium).

Both of these rifles featured prominently in books about Winchester, which certainly could not have hurt, but hardly accounts for these sky-high prices. Historically, prices for collectible firearms, especially high-end rarities such as these, have been driven by either extraordinary prosperity or fear of money losing its value through inflation, thereby making investments in solid assets more desirable.

Either way, magazine articles have appeared regularly since the 1950s proclaiming that prices can't go any higher, that the best time for investing in guns has passed, that soon the bottom will fall out of the market.

Eventually, presumably, like predictions of the end of the world, one of these doom-sayings will prove to be accurate. But, apparently, not this year. *R*

RIFLE Sporting Firearms Journal

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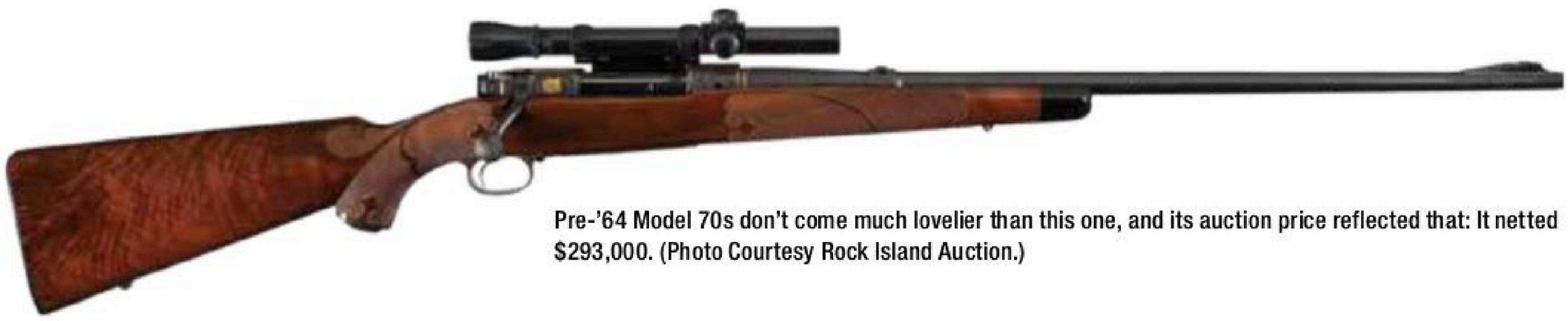
AD INDEX

Alive and Well

Terry Wieland



Pre-'64 Model 70s don't come much lovelier than this one, and its auction price reflected that: It netted $293,000. (Photo Courtesy Rock Island Auction.)

For the last 60 years, Winchester Model 70 rifles manufactured before 1963 have been collectors' items. The "pre-64," as it is generally known, has been studied, written about, applauded, mourned, and used as the yardstick against which all new bolt-action rifles have been measured.

The "pre-'64" designation can be applied to other Winchester guns that were redesigned during the infamous retooling of the New Haven factory that took place under its new, Ford Motor Company-trained upper management in the early '60s. But when you say "pre-'64," most expect you're referring to the Model 70. It was, and is, the icon.

The Model 70 grew out of the earlier Model 54 bolt action, which was very obviously derived from the Mauser '98. It has dual opposing locking lugs, a claw extractor, controlled feeding from a box magazine, and a unique three-position wing safety that allows low scope mounting.

No one ever claimed the Model 70 was the most accurate rifle ever to come along, but it was accurate enough for most, and could be made more so for the cognoscenti. You can wriggle and squirm and cavil about this action or that being intrinsically more accurate for this purpose or that, but the pre-'64 Model 70 had other virtues that tipped the balance.

First, it was made from excellent steel, carefully machined and fitted. Its parts could be honed and polished by a good gunsmith to function like buttered silk. Its stocks were walnut, and while generally not extravagant, had good color and grain structure.

The Model 70's second virtue was that it was tasteful and stylish. Whoever did the final design had an eye for grace and line, from the arc of the pistol grip through the trigger guard and floorplate, to the taper of the barrel. The pre-64 was not the father of the style that later became known as "American classic," but it certainly embodied those principles of understated elegance.

Somewhere along the line it was dubbed "the rifleman's rifle." How much that added to the mystique, who knows? But the name stuck and was used as the clinching argument in hunting-camp debates. (Don't laugh. I've heard it myself.)

The replacement in 1964 was also called the Model 70, and was referred to as "post-64." Broadly speaking, it simplified manufacturing by cutting corners and eliminating certain features. Most notably, it did away with the claw extractor and controlled-round feeding, and redesigned the barrel-breech arrangement. In the 1965 Gun Digest, writer and big-game guide Bob Hagel did a "Test-fire" piece in which he compared the performance of Model 70s old and new, and determined that the post-'64 was both stronger and more accurate.

Maybe so. But all the strength and accuracy in the world could not make up for its short-comings, most of which had to do with style. Those who were there remember that the 1960s were not exactly a high-water mark of good taste, and the new Model 70 displayed all the lamentable hallmarks of Beatles-era gundom: stocks with white-line spacers, Monte Carlo combs, and high-gloss finishes, combined with metal parts, such as the bolt shaft, machine-turned (jeweled) or high-gloss blue. Flashy? Yes. Tasteful? No.

In fairness, all of this was in line with what others were doing, and what the marketing guys thought the rifle-buying public would go for, and that is, after all, the nature of the business. On the otne hand, we had Roy Weatherby and the "California" look; on the other, the then-new Remington Model 700, destined to be applauded for its strength and accuracy for the next 40 years.

Almost immediately, the pre-'64 was in demand. Knowing they would not be available long, stocks on dealers' shelves disappeared; used rifles were snapped up and their actions cannibalized to make into custom rifles; finally, anything that could be described as "factory original," or like new, or with the original box, became prey for Winchester collectors.

(Continued on page 56)

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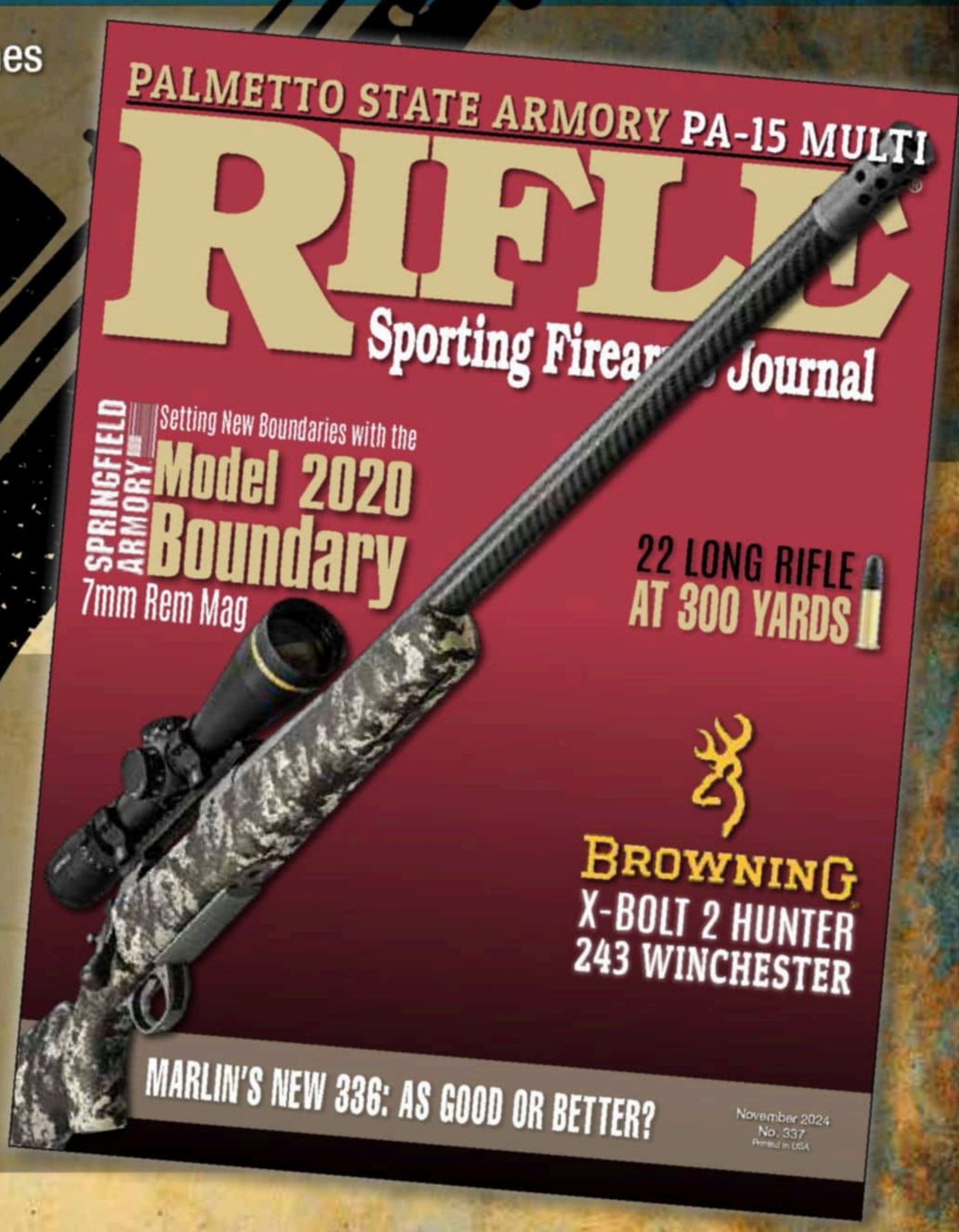

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