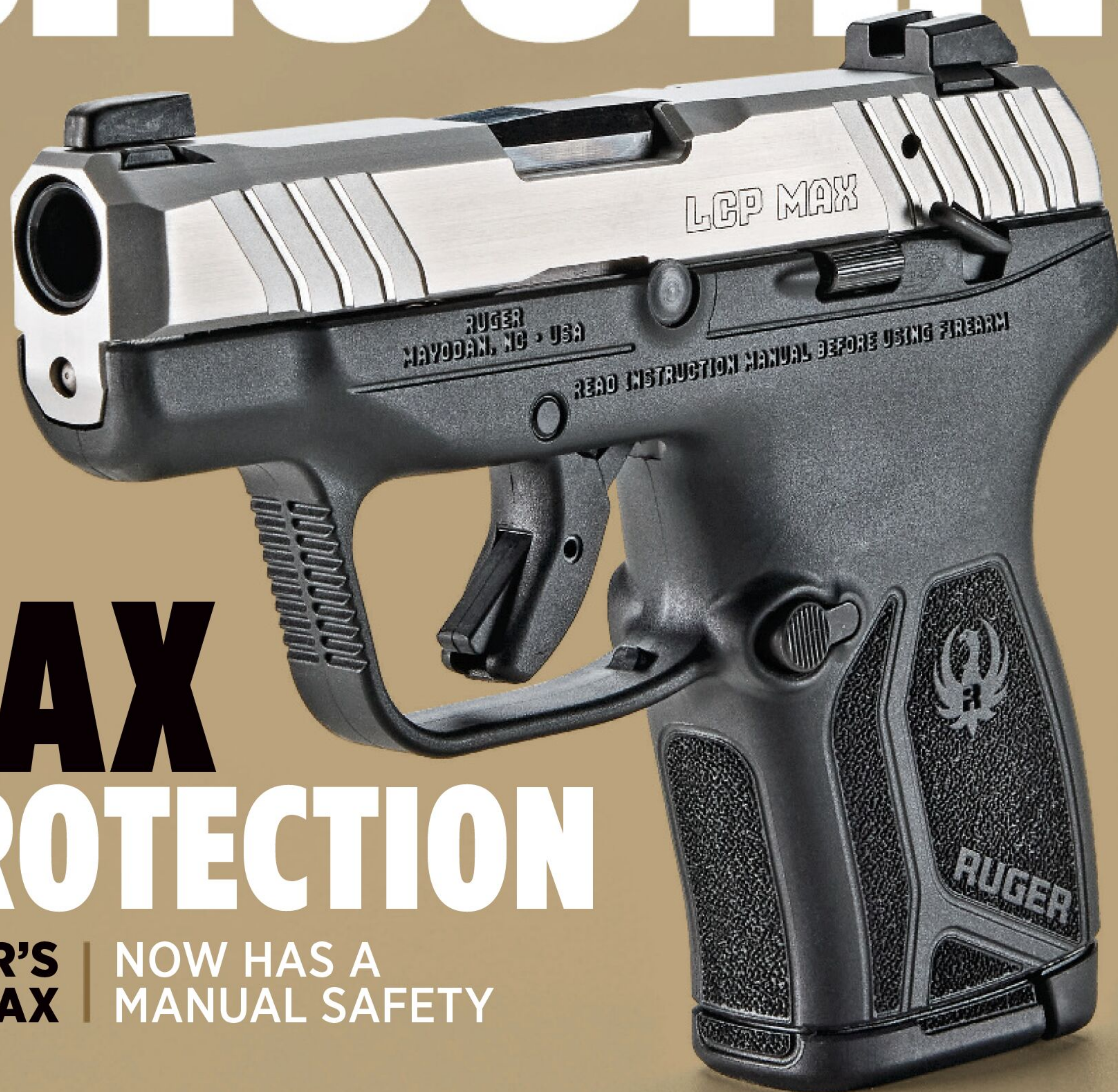


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TIMES

NOVEMBER 2025



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**HANDLOADING
FOR HUNTING**

DR. MILLER ON
**HORNADY'S HAP
BULLETS**

SIMPSON ON
**THE GRAND
OLD .45-70**



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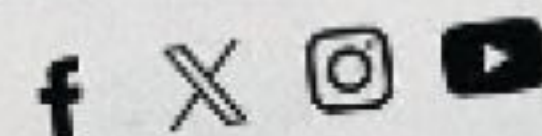




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SHOOTING TIMES FEATURES CONTENTS

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MAX Protection

Ruger's .380 ACP LCP MAX pocket pistol is now offered with a manual thumb safety.

By Sam Wolfenberger

The Grand Old .45-70

The .45-70 Government may be more than 150 years old, but it's still going strong. Here's a good look at the round and some fine rifles chambered for it.

By Layne Simpson

Hornady Action Pistol Bullets

Designed specifically for competitive shooters, Hornady's HAP bullets feed smoothly and achieve top-drawer accuracy.

By Brad Miller PhD

Hints on Handloading for Hunting

When it comes to building handloads specifically for hunting, reliability and terminal performance come first.

By Craig Boddington

Advanced Impact

The latest version of Benelli's innovative, rugged, and reliable Super Black Eagle inertia-driven semiautomatic shotgun flies high.

By Steve Gash

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PERFECTION MEETS TRUST

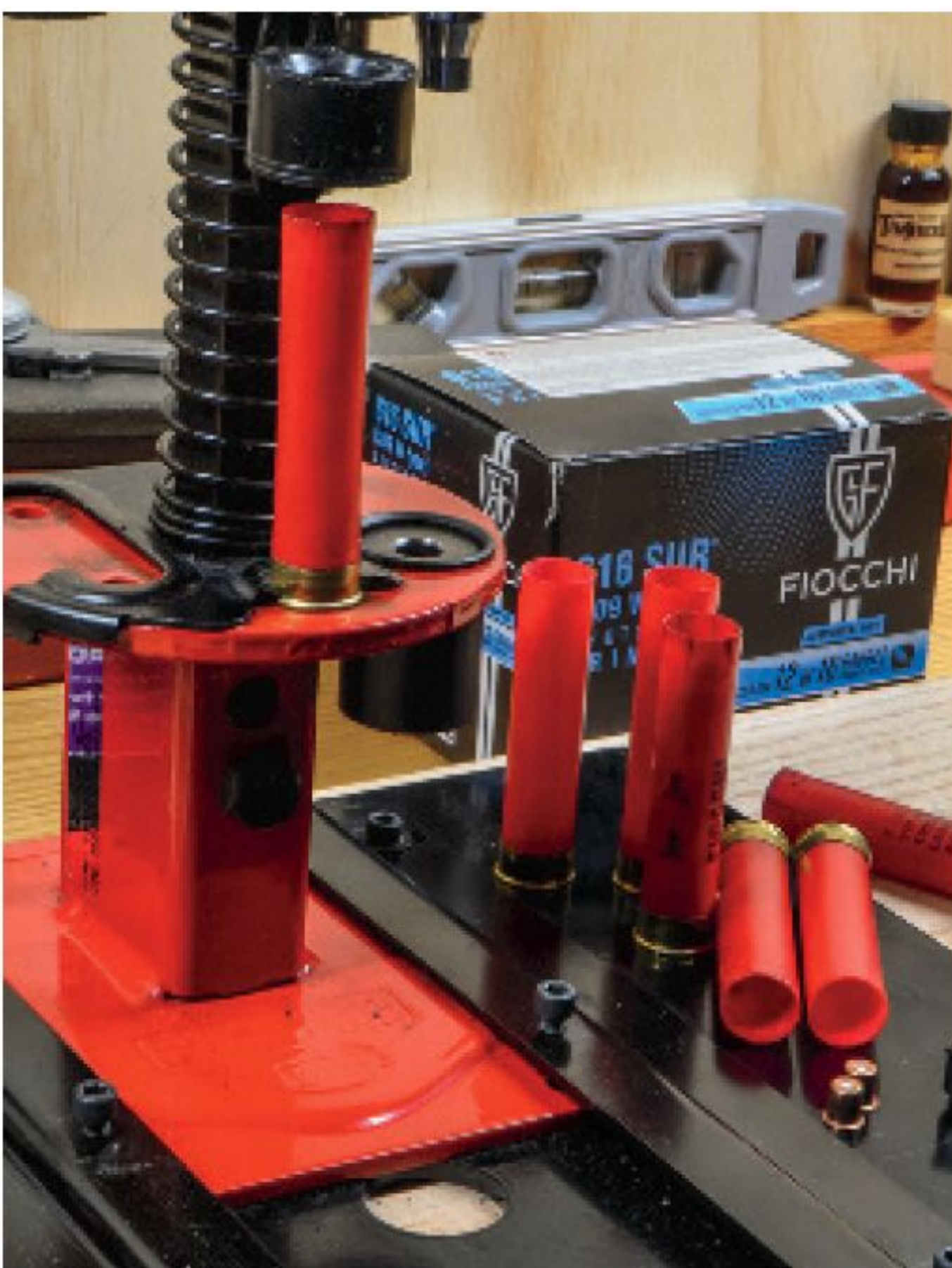
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Shooting Times (ISSN 0038-8084) is published monthly with a bimonthly issue in Dec/Jan by Outdoor Sportsman Group®, 2 News Plaza, 3rd Floor, Peoria, IL 61614-8001. Periodical postage paid at Peoria, IL, and at additional mailing offices. Frequency is subject to change without notice.

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

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Subscription rate for one year is \$28.94 (U.S., APO, FPO, and U.S. possessions). Canada add \$13 (U.S. funds) per year, includes sales tax and GST. Foreign add \$15 (U.S. funds) per year.

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CONTRIBUTIONS: Manuscripts, photographs and artwork must be submitted to the editorial department with a SASE. The Publisher assumes no responsibility for loss or damage to unsolicited material. Please send to: Shooting Times, Editor, 2 News Plaza, Peoria, IL 61614.

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SHOOTER'S UPDATE

READERS SPEAK OUT

NEW GUNS & GEAR

ASK THE EXPERTS



Mossberg Model 185

THE COLUMN BY JOSEPH VON BENEDIKT IN THE JULY 2025 ISSUE REVIEW-ing the Mossberg Model 185 bolt-action shotgun brought back vivid memories of mostly frustrating circumstances. When I was 12 years old and my oldest brother got out of the U.S. Navy in 1962, he went to the local sporting goods store and bought a Model 185 in 16 gauge to pursue squirrels and ruffed grouse near our home in northern Michigan, even though he had not hunted before.

He lost interest in the gun and hunting in general, and the shotgun came into my possession. The biggest, but not the only, problem I had with it was the shell feeding from the magazine would rise too far and jam against the chamber rim, so I used it as a single shot and eventually got rid of it. One upside of my experience was, when I was 16, buying a Lee Loader in 16 gauge, which I still have (I'm 74 now) and use to stoke my Savage-Fox 16-gauge side-by-side.

Barry Stephan
Byron Center, MI

.45-70 Reduced Handloads

I read your article about the case rupture in the .45-70. I've been shooting Long Range Cowboy Silhouette since I retired seven years ago. Some of the guys use blackpowder exclusively, and the rest of us use smokeless powder and try to duplicate blackpowder ballistics. I first tried to use 3031, but velocities were too high.

We shoot at seven different ranges, from less than 400 to 880 yards. We shoot five times at each target for a total of 35 shots. I switched to 5744 at the other shooters' suggestions. One other guy uses 4198. I used

5744 until I found Shooters World Buffalo Rifle Powder. It has an almost identical burn rate to 5744, and it meters better. I've used almost 16 pounds of those powders, combined; 27 grains gives me about 1,200 fps, and 29 grains gets about 1,300 fps with a 530-grain Postell bullet.

One shooter uses 26.5 grains of 5744 with a thin vegetable wad under the bullet. That is an extremely consistent load. I chronographed his load with a Garmin Doppler chronograph, so I don't doubt the data. No one has ever had any pressure excursions. I tried a 385-grain roundnose in a Uberti 1885 because it has a slower 1:20 twist and would not stabilize the 530-grain bullet beyond about 450 yards. I started with 29 grains of 5744. I never experienced any pressure excursions with any loads.

So I have to disagree with your theory about 27.5 grains of 5744 reduced loads. We have fired several thousand rounds with 5744 and Buffalo Rifle Powder. So to get that many pressure excursions in so few loads, I suspect a different reason, unless maybe he reduced powder much lower. I know that reduced loads of "slow" loads will cause pressure excursions. I know a guy who fired a .300 RUM with a reduced load of 7828. It completely destroyed the rifle and blew off most of his hand. We try to seat our bullets so that they have minimal clearance with the lands.

So 5744 is recommended for reduced loads. I'm not a ballistics expert, and I only speak from my experience. My guess is that it was not 5744, but maybe a much slower powder. If it was 5744, then maybe the powder had somehow spoiled.

Doran Archuleta
Via email

All load data should be used with caution. Since *Shooting Times* has no control over your choice of components, guns, or actual loadings, neither *Shooting Times* nor the various firearms and components manufacturers assumes any responsibility for the use of this data.



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More About Bob Munden Shooting Range

I just reread the letter I wrote about the shooting range dedicated to Bob Munden in Clarksville, Tennessee, and noticed I left out some information and credit to the owner.

The gunshop is Tennessee Gun Country located at 1435 Ft. Campbell Blvd. in Clarksville, Tennessee. The owner, David Bata, is one of the kindest, most helpful, and most professional people you want to meet. As a matter of fact, the personnel he hires have learned to treat their customers with respect and are very helpful. They offer discounts for active duty and retired military, law enforcement, and other specific customers.

They have handguns and rifles that you can rent to shoot on the basement range. This offers customers the opportunity to try different firearms when they are trying to determine what gun they want to buy. (If it's not comfortable or fun to shoot, it will wind up staying in the safe until it's sold or traded.) Note to husbands and boyfriends: Let your other half choose what they want to carry and shoot, or they might adopt your everyday carry and leave your choice in the box.

They also offer an assortment of classes for those wanting to learn to shoot, or shoot better.

I was there when the range was dedicated to Bob Munden. I even had the opportunity to shoot one of the pistols tuned by Bob Munden. (Courtesy of David Bata.) It was one of the most accurate single-action .45-caliber pistols I have ever fired.

The only advice I can add is that if you're in Clarksville, Tennessee, whether you are living there, stationed there, or just visiting, stop in. I have since relocated to Georgia, but I have my memories of the experiences there and enjoy passing them on to others who should have the opportunity to do the same.

Many thanks to David, Lisa, and all their employees at Tennessee Gun Country. You are all missed.

Frederick "Ski" Ludwikowski

Via email

Japanese Type 38 Arisaka

I really enjoyed reading the Japanese Type 38 Arisaka column by Joseph and William von Benedikt in the August issue as I have owned two of them that had intact "mums." I've read and collected similar articles for several decades, as well as several publications devoted to either this model or Japanese arms in general. I have yet to have one thing explained—the purpose of the dip carved in the stock on the right side of the receiver ring, behind the finger groove of the stock. Perhaps someone there knows or can investigate this and share the answer with readers.

Grant Geister

Sioux Falls, SD

An Important Design Detail

I enjoyed reading about the new Model 10 Classic that S&W has to offer, which was reviewed in the August issue of *Shooting Times*. The article made mention of the fact that the new revolver does not have the internal lock. Nobody wanted it or liked it anyway. However, the writer failed to mention another big change in the design of the new-for-2025 Classic. It does not have the firing pin in the hammer like older models did.

That is a big departure from the original Victory model (Military & Police Model 10 design).

Good shooting, stay safe.

Tom Homer

Via email

S&W Model 10 Is a Classic!

The cover photo of the subscriber version and feature article on the new Smith & Wesson Model 10 Classic in the August issue hit very close to home for this subscriber! I own a 1953-vintage Model 10 with the 5.0-inch barrel. To me, the simplicity, smoothness, and exquisite balance of my Model 10 are unequaled by other pistols and revolvers in my gun safe that possess far more features or round capacity than the Model 10 does.

I happened upon mine at a gun show years back, and it was complete with a shiny black duty belt and flap holster. I believe it was a former carry sidearm of a Cleveland, Ohio, mounted policeman. I sent it in to Smith & Wesson for a bright polish factory reblue and a trigger tune-up, and now the revolver is flawless. The sheer pleasure of shooting it makes sure it never misses an outing to the range.

Others can have their high-capacity plastic 9mms; I'll take my smooth classic any day!

Dan Zelna

Nampa, ID

Here's a Challenge

Good story about the new Smith & Wesson Model 10 .38 Special revolver in the August issue. Some may say the revolver is too retro compared to the new plastic 9mms. Here is the challenge: Two expert shooters with two unloaded pistols on the table before them, one a Smith & Wesson Model 10 and the other a Walther PDP, also advertised in that issue of *Shooting Times*. Targets 10 yards away. Twenty loose rounds on the table. The range is hot, fire when ready. The revolver shooter will be finished before the autoloader gets his first magazine filled.

Butch Gordo

Winnemucca, NV

Lehigh Defense Handload Data

Regarding Lane Pearce's answer to David Berry about the 10mm non-lead loading data, Lehigh Defense has complete loading data with a variety of powders for all of their bullets on their website. I use it, and it is right on.

Dave Schmidt
Butler, PA

Speed of Sound

Please note that the speed of sound is dependent on just temperature and not on altitude and temperature. (As Casey Stengel would have said, "You can look it up.") Yes, the speed of sound is slower at higher altitudes, but only because it's colder up there.

William Pinkney
Flagler Beach, FL

Keep Publishing Revolver Articles

I love revolvers, especially Colts. Semiautos don't interest me. Please keep publishing revolver articles.

Al Hanson
Winnebago, IL

.270 Winchester

I really enjoyed Layne Simpson's well-researched article on the .270 Winchester in the August 2025 issue, tempered with a modicum of Jack O'Connor history. The extensive use of the .270 Win. over the last three decades firms my belief concerning the full capabilities in taking moose and elk with the .270 Win., when mated with strongly constructed bullets and appropriate shot placement.

That being said, I would never hunt alone in grizzly country with the .270 Win. or any comparable cartridge. Personal experience of living and hunting in Alaska for a decade, coupled with having to deal with adrenaline-stoked brownies more than once, strongly solidify that position.

Randy Biggerstaff
Kannapolis, NC

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RELOADING HUB

ALL THE INFORM

RCBS Reloading Hub

RCBS HAS JUST LAUNCHED ITS NEW, COMPREHENSIVE, ONLINE RELOADING Hub. The Hub's purpose is to educate and empower reloaders of all experience levels. Whether you're a first-time handloader or a seasoned reloader, the RCBS Reloading Hub is intended to be your go-to resource for reliable, expert-driven content.

With a growing library of how-to articles, videos, and tips, the Reloading Hub covers the entire handloading process—from getting started with the right press and die setup procedure to topics like case prep, trimming, and bulletcasting. The website gives a breakdown of the essential gear needed to begin reloading, making it easy for newcomers to confidently step into the world of handloading. According to RCBS Marketing Director Joel Hodgdon, "The RCBS Reloading Hub was created to make handloading more accessible, understandable, and enjoyable for everyone, from beginners to seasoned pros." He says it will be continually updated with new content, including detailed walkthroughs, educational videos, FAQs, gear recommendations, and more.

rcbs.com/reloading-hub

Lapua TrueRange Expanding Bullets

Lapua has released its new TrueRange Expanding (TRX) bullet, which is designed for hunters and precision shooters. The TRX, initially offered in 6.5mm and .30 caliber, is a solid copper projectile with a polymer tip. It delivers deep penetration, controlled mushrooming, and nearly 100 percent weight retention. And, according to the company, it boasts the highest ballistic coefficient values in its class. The 6.5mm TRX weighs 120 grains and has a G1 BC of .428. The .30-caliber TRXs weigh 150 and 165 grains, and their G1 BCs are .384 and .490, respectively. TRX component bullets are packaged 50 bullets per box.

MSRP: \$85.97 (6.5mm 120 grains), \$94.51 (.30 cal. 150 grains), \$97.04 (.30 cal. 165 grains)

lapua.com



Hornady One Shot Spray Bar

Hornady's new One Shot Spray Bar offers a fast, clean, and efficient way to lubricate your cases with the company's One Shot Case Lube.

Designed with reloaders in mind, the One Shot Spray Bar features 25 staggered holes that optimize spray angles and ensure thorough lubrication across case bodies and necks. The angled layout maximizes surface exposure for more effective case lube application. The bottom-drilled holes prevent lubricant pooling and buildup, and each hole includes an internal step to accommodate a broader range of case sizes.

MSRP: \$43.08

hornady.com

Lyman 1500 Turbo Tumbler

Lyman has a new electronic case tumbler. The new 1500 Turbo Tumbler offers 25 percent greater capacity than the 1200 Turbo Tumbler. The company says the 1500 Turbo Tumbler will clean up to 500 9mm Luger cases or 200 .223 Remington cases. The tumbler's bowl features spiral agitators, which are said to cause an aggressive tumbling action. The tumbler also features a transparent polycarbonate lid, an in-line on/off switch (on the 110V model), and a wide base with rubber feet. The 220V model has a standard power cord with the on/off switch located on the tumbler's motor base.

MSRP: \$89.95

lymanproducts.com



Berry's .45-Caliber Flat Point Bullets

Among new component bullets from Berry's are three .45-caliber Flat Point offerings. They include a 185-grain Flat Point (shown), a 200-grain Flat Point, and a 200-grain Hollow Base Flat Point. All three new bullets are 0.452 inch in diameter, and according to the company, the new flatpoint profiles allow for easier seating to overall length and better feeding in firearms.

Berry's Superior Plated Bullets feature swaged lead cores, and they are electroplated with copper to their final weight, leaving no lead exposed. They are then re-struck to precise specifications, ensuring a solid bond and providing consistency with every round.

MSRP: \$48.99 to \$95.99 depending on configuration and quantity
berrysmfg.com

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I 'Bearly' Made It Out Alive

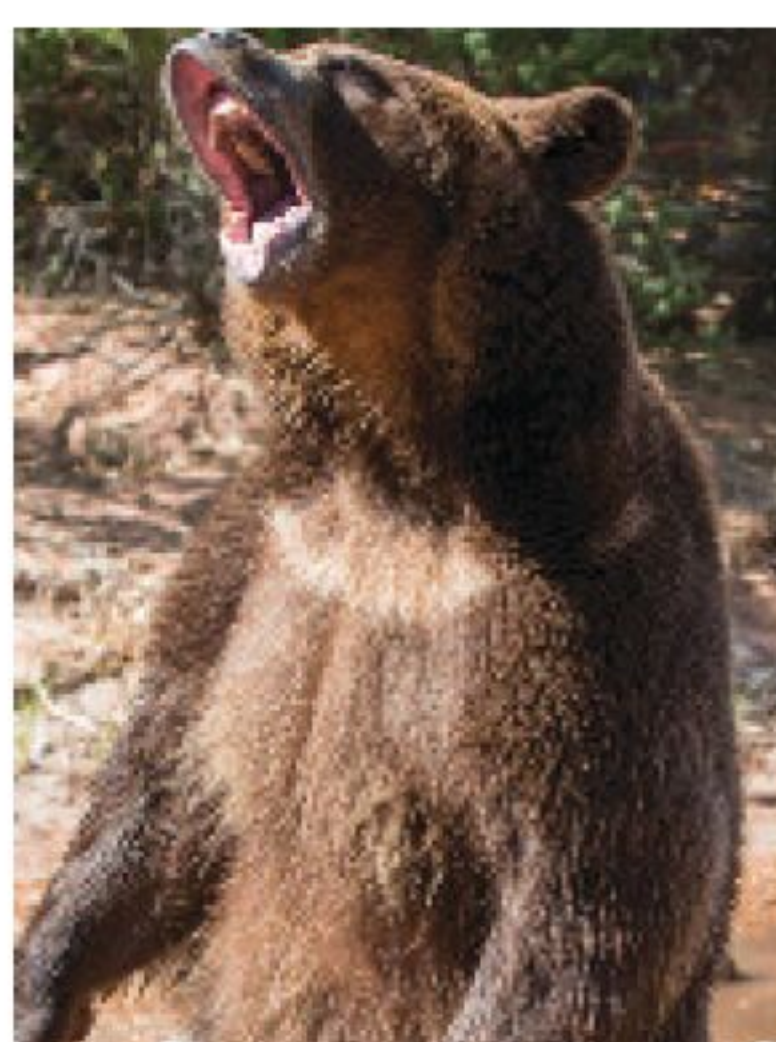
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"The feel of this knife is unbelievable... this is an incredibly fine instrument."
— H., Arvada, CO



It was a perfect late autumn day in the northern Rockies. Not a cloud in the sky, and just enough cool in the air to stir up nostalgic memories of my trip into the backwoods. This year, though, was different. I was going it solo. My two buddies, pleading work responsibilities, backed out at the last minute. So, armed with my trusty knife, I set out for adventure.

certain to give it a great price. After all, you should be able to get your point across without getting stuck with a high price.

But we don't stop there. While supplies last, we'll include a pair of \$99 30x60 power pocket binoculars **FREE** when you purchase the Grizzly Hunting Knife.



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Well, what I found was a whole lot of trouble. As in 8 feet and 800-pounds of trouble in the form of a grizzly bear. Seems this grumpy fella was out looking for some adventure too. Mr. Grizzly saw me, stood up to his entire 8 feet of ferocity and let out a roar that made my blood turn to ice and my hair stand up. Unsnapping my leather sheath, I felt for my hefty, trusty knife and felt emboldened. I then showed the massive grizzly over 6 inches of 420 surgical grade stainless steel, raised my hands and yelled, "Whoa bear! Whoa bear!" I must have made my point, as he turned tail and headed back into the woods.

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SHOOTER'S UPDATE

READERS SPEAK OUT

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Alternate 12-Gauge Handloading Powders?

Q. I'M WRITING TO ASK FOR RECOMMENDATIONS ON POWDERS FOR reloading 12-gauge shotgun hulls for a modern semiautomatic shotgun. I have tried to find Alliant Unique, Green Dot, and Blue Dot powders to no avail. It seems that these powders are no longer manufactured. So, what are the best alternatives and how do I use them?

James Devillier

Via email

A. You sure hit the nail on the head with your question. Powders come and go, but fortunately, there are plenty of good replacements out there.

My first suggestion is to get a copy of the 2025 edition of the *Hodgdon Annual Manual*. It's sold on newsstands throughout the nation and also through our online newsstand (osgnewsstand.com). It contains 20 pages of literally hundreds of 12-gauge loads with virtually all of the available cases, primers, and wads; several weights of shot charges; and with many powder choices listed.

Let's assume that you want a good load for clay targets or maybe some quail or other game birds for use in your modern gas-operated 12-gauge gun. That would call for a 1-ounce or 1½-ounce load at a velocity of around 1,200 fps. Just check the *Annual Manual* for the components you have and let the testing begin.

You mentioned that Unique is not available. Not a problem. Just rustle up some Hodgdon Universal, and you're all set. Ballistically, it is very similar to Unique, and Universal is excellent in many loads. However, do not substitute Unique powder charge data. Look up the appropriate load data specifically for Universal powder.

A couple new powders from Hodgdon also work well. Perfect Pattern and High Gun can be used for both 1-ounce and 1½-ounce loads in Winchester and Federal cases with the proper wads. Both powders can be used in a multitude of 12-gauge handloads, and all should cycle a modern 12-gauge semiautomatic shotgun.

Remember to double-check your load data for safety and test-fire a few sample rounds in your gun to check for functioning.

The "how to use them" part of your question is easy. Just stick to the published load data and be safe.

Steve Gash

How to Tame Recoil?

Q. I really don't care for recoil when shooting my favorite rifles and shotguns. What are some easy ways for me to tame it?

Shep Stafford

Via email

A. I know what you mean, Shep. I don't care for recoil either. There are several accepted methods for taming recoil, and over the years *Shooting Times* has reported on them in more detail that we have space for here. That said, here's a quick list of ways to mitigate recoil. On a personal note, I've tried them all.

One sure-fire way to reduce recoil is to shoot lighter loads. That doesn't necessarily mean you have to handload—although most of the major reloading manuals have plenty of reduced-recoil load recipes for most common rifle cartridges—because some of the major ammomakers offer reduced-recoil factory-loaded ammunition in popular chamberings. If that's not to your fancy, you can increase the weight of your gun by having a heavier stock and/or barrel installed. Speaking of stocks, a lot of technology has been developed over the last couple decades, and some high-tech stocks have recoil-absorbing technology built right into them. And if you don't want to totally replace your gun's barrel, you could have it ported or have a muzzle brake installed. An easier option is to have a more effective recoil pad installed. And even easier options include wearing a padded shooting coat or vest or trying a strap-on shoulder pad when you shoot. For shooting a rifle from the bench, perhaps the easiest method is to place a bag filled with sand or lead shot between your rifle's butt and your shoulder. Like I said, I've tried all of these methods, and they have worked to some degree. Some worked better than others for me personally, so you'll just have to try them for yourself.

Joel J. Hutchcroft

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Left-Handed Winchester Model 70 .375 H&H

The rare left-handed Winchester Model 70s built in the late 1990s are the best of the breed. **BY JOSEPH VON BENEDIKT**

WINCHESTER DID NOT MAKE A LOT OF MODEL 70 rifles for left-handed shooters. Production started in 1997, shortly after the controlled-feed “Classic” Model 70 with Mauser-type claw extractor was reintroduced. From what I’ve been able to determine, left-handed Model 70s were discontinued in 2005, when Winchester closed its New Haven doors and took a two-year manufacturing hiatus. Unlike many left-handed firearms, which can be hard to move on the used market, left-handed Model 70s generally sell easily and for a premium.

Mechanicals

There’s no room here to detail all the small refinements drawn from the Mauser 98 and Springfield 1903 and Winchester’s own Model 54 and all the other great designs that played a part in the evolution of the un-chokable controlled-feed action. Suffice to say the Pre-’64 Model 70 was the pinnacle of the type.

Many Model 70 savants believe the recreated Pre-’64-type “Classic” Model 70s built in New Haven from 1997 to the early 2000s were actually the best-built Model 70s ever. The metallurgy was better, machining was more precise, and finishes were surprisingly

good during the late 1990s. Unfortunately, during the last couple years of New Haven production—let’s say 2002 to 2005—quality control took a nosedive.

The rifle showcased here is a unique left-handed Model 70 with a full magnum-length action that’s been beautifully customized. Chambered in .375 H&H, it has a 22.5-inch barrel. That barrel was either an original that was turned down in diameter until the Winchester rollmarks are gone or is an aftermarket barrel. It wears a tasteful barrel-mounted sling-swivel stud, what looks like an NECG Masterpiece adjustable rear sight, and an NECG Classic ramp front sight with folding hood.

Extensive stock work was also performed, though by whom I can’t discern. Close examination indicates that the original stock was reshaped, the action and barrel were full-length glass bedded, and the dual crossbolts were replaced with tasteful flush-fitting iron versions rather than the countersunk, dome-headed crossbolts commonly used on production-grade big-bore Model 70s.

The fore-end was cut down considerably and shaped along the classic trim lines made legendary by Rigby. The pistol grip was hewed to a slender, open

This fine left-handed Model 70 in .375 H&H has been customized into a superbly configured dangerous-game rifle. It features express-type sights, lovely crossbolts, and refined stock contours.

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profile and rounded in the Prince of Wales style. Fine 22-lines-per-inch checkering was hand-cut. The rear sling-swivel stud is a Winchester Super Grade type. A high-end red Pachmayr recoil pad with leather texture was installed.

Judging by how smooth the action is, and by the crisp 1.5-pound trigger pull, an action job and trigger tune were done as well.

The custom work is excellent, if not world class, and the resulting rifle feels wonderful in the hands. It leaps to the shoulder as if alive and points like a part of the body. Balance is superb.

When Winchester brought back the controlled-feed Pre-'64-type Model 70 action, the company retained the anti-bind slot in the inside bolt locking lug (which was designed to make the push-feed Model 70 smoother), along with the rail it rides on inside the action. As a result, post-1997 controlled-feed bolt actions are some of the smoothest Model 70s ever made.

The three-position, wing-type safety located on the bolt shroud is probably my personal favorite of all the types I've used. When fully engaged in the rearmost position, this safety blocks the trigger and locks the firing pin, so even if the trigger sear somehow releases the firing pin, it still can't move forward and detonate the primer. In the middle position the safety blocks the trigger but unlocks the bolt so that the chamber can be cleared without disengaging the safety. Fully forward, the safety is disengaged.

Provenance

Clearly, this was a well-thought-out customized Model 70 commissioned by someone who knew exactly how they wanted it configured. Unfortunately, we've been unable to find any maker's mark or other indication of who did the work. Please, if anyone recognizes the rifle or the workmanship of the hands that did it, write to us and let us know.

A listener of my Backcountry Hunting Podcast shares an affinity for left-handed, controlled-feed rifles with my son William, as they both shoot left-handed and both love dangerous-game rifles. He's become a good friend, and last year he told us

CUSTOM LEFT-HANDED MODEL 70 CLASSIC	
MANUFACTURER	Winchester Repeating Arms
TYPE	Bolt-action repeater
CALIBER	.375 H&H
MAGAZINE CAPACITY	3 rounds
BARREL	22.5 in.
OVERALL LENGTH	43.5 in.
WEIGHT, EMPTY	8.4 lbs.
STOCK	Walnut
LENGTH OF PULL	13.75 in.
FINISH	Polished bluing
SIGHTS	NECG express rear, NECG classic ramp front with folding hood
TRIGGER	1.5-lb. pull (as tested)
SAFETY	Three-position wing type

about this rifle and offered to sell it to us for a price we couldn't pass up. It's valued at between \$2,000 and \$3,000. William has dreams of doing an internship in Africa and earning his Professional Hunter license in South Africa, and this rifle will be an absolutely perfect companion for him while doing so.

Rangetime

With a lovely little Leupold Vari-X III 1.5-5X scope mounted in steel Talley quick-detach rings, I benchrested the left-handed Model 70 over sandbags and fired three-shot groups for average at 100 yards. Because it's a big-bore with reasonably stout recoil, and because .375 H&H ammo is expensive, I

opted to fire just two groups for average with each of the four different ammo types I had. The details are listed in the accompanying chart.

I was interested to note that when groups opened up with the less-accurate ammo, most of the dispersion was vertical. Presumably, the stringing is caused by the full-length bedding of the barrel in the fore-end. Free-floating it would likely eliminate the stringing and make the rifle shoot even better.

Function throughout testing was stellar. Thanks to the excellent stock shaping, the rifle's handling characteristics are a cut above. Recoil in benchrest position is brisk but not brutal; when shooting offhand or from African-style shooting sticks recoil is quite comfortable.

Left-handed rifles are largely ignored because a massive portion of the shooting populace has no need for them. However, among those who do shoot left-handed, fine left-handed rifles are treasured. The left-handed Model 70s this rifle represents are among the very best of the breed.

ST

CUSTOM LEFT-HANDED MODEL 70 CLASSIC ACCURACY & VELOCITY				
AMMUNITION	VEL. (FPS)	E.S. (FPS)	S.D. (FPS)	100-YD. ACC. (IN.)
.375 H&H 22.5-in. Barrel, 1:12 Twist				
Hornady 250-gr. GMX	2820	12	4	1.71
Hornady 270-gr. SP	2770	44	13	1.86
Barnes 300-gr. TSX	2441	15	5	0.85
Swift 300-gr. A-Frame	2507	20	7	1.31
NOTES: Accuracy is the average of two, three-shot groups fired from a sandbag benchrest. Velocity is the average of six rounds measured with a Garmin Xero C1 Pro Doppler chronograph adjacent to the gun's muzzle. Ambient temperature: 75 degrees Fahrenheit. Elevation: 4,600 feet.				

A black and white photograph of a man with a full beard and sunglasses, wearing a leather jacket. He is looking off to the side with a serious expression. The background is a blurred city street.

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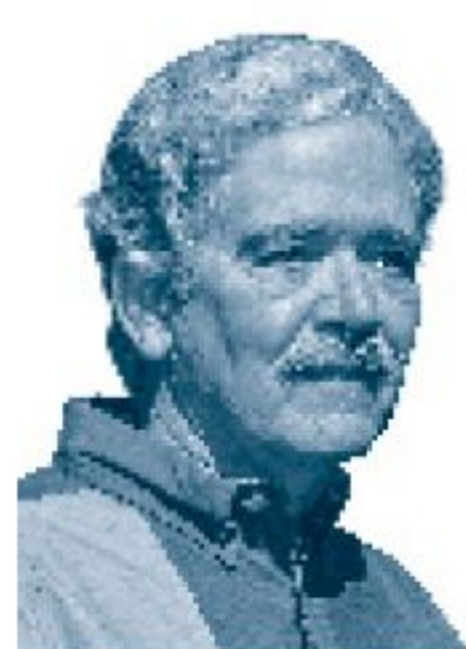


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A Tale of Two .30-Caliber 19th-Century Pistol Cartridges

In the earliest days of semiautomatic handgun development, cartridges with bottleneck cases were common. **BY ALLAN JONES**

THE EARLIEST CARTRIDGES FOR THE BUD-ding semiautomatic pistols that were being developed in the 19th century were usually about .30 caliber. The caliber is predictable. Then-new semiautomatics being adopted by 1890s military and police (mainly in Europe) were largely .32 caliber, but those cartridges were not bottlenecked.

Bottlenecking allows greater propellant capacity for a given case length and bullet diameter. Some pre-1900 pistols were robust designs, quite capable of managing higher firing pressures. Inventors took advantage of strong actions and higher case capacity to greatly increase muzzle energy.

.30 Mauser (7.63x25mm Mauser)

The .30 Mauser (1896) evolved from an earlier cartridge credited to German-born American inventor Hugo Borchardt. The bottleneck 7.65x25mm Borchardt cartridge (1893) had a muzzle velocity of

1,260 to 1,300 fps with an 85-grain bullet, obviously helped by the Borchardt pistol's 7.7-inch barrel.

An estimated 3,100 pistols, also known as the C93, were made by Ludwig Loewe and DWM in Germany. In spite of impressive engineering, its anticipated military appeal was scuppered by an awkward grip and a 14-inch overall length.

Three years later the Mauser C96 pistol—the famous Broomhandle Mauser—fired virtually the same 25mm cartridge, but it was loaded to higher pressure than the Borchardt ammo. The .30 Mauser produced an impressive 1,400 fps with an 86-grain bullet from a modest 5.5-inch barrel, which was a remarkable feat for that period.

Being a Mauser, its fixed box magazine was filled using a 10-round stripper clip. Mauser made over a million C96 pistols in Germany, and an unknown number of copycats were made in Spain and China.

The now nearly forgotten .30 Luger (left) and .30 Mauser (center) bottleneck semiautomatic pistol cartridges left a lasting legacy—the 9mm Luger (right).

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“First, remember, you are likely shooting a desirable collector’s item, so be nice. A few modern pistols have been chambered for .30 Luger, but they are not common.”

We can’t discuss the .30 Mauser without briefly mentioning the 7.62x25 Tokarev cartridge. It was a Soviet development from 1930 with only minor case dimension changes from the Mauser version but higher pressure. More later.

.30 Luger (7.65x21mm Parabellum)

The .30 Luger (1898) cartridge was a reaction to failure. Borchardt’s awkward C93 pistol was rejected by the Swiss military in 1897. DWM asked a chap named Georg Luger to help Borchardt create a more compact pistol.

Luger retained the C93’s toggle-lock mechanism but streamlined it to manageable proportions. Size reduction required a more compact cartridge. By reducing the .30 Mauser case length from 25 to 21 mm, Luger had the right cartridge for his then-new pistol, the Pistole Modell 1900 Parabellum—the elegant “Swiss Luger.” It had a 4.7-inch barrel compared to the later German Pistole 1908’s 3.9 inches.

SAAMI guidelines show a 93-grain bullet at 1,190 fps from a 4.5-inch test barrel. Midway USA catalogs Prvi Partizan ammo rated at 1,280 fps.

Pressures

The 7.63 Borchardt cartridge’s pressure standards are lost to time. SAAMI still shows the .30 Luger as current with a maximum average pressure (MAP) of 28,000 CUP or psi. SAAMI’s Alan Serven kindly dived into the archives for me to find their last pressure assignment for the now-inactive .30 Mauser. It also was 28,000 CUP, predating transducer testing.

CIP in Europe shows the .30 Luger’s MAP at 2,350 bar, slightly higher than the .30 Mauser at 2,250 bar. As I’ve previously explained, ballistically there is no direct correlation between CIP pressure readings in bar and SAAMI readings in psi. Conventional pressure conversion factors are for static pressure in large pressure vessels; ballisticians need to read events lasting micro-seconds in tiny containers. Differences in sensor types and position also complicate conversion.

Why did these two high-velocity cartridges have military appeal? Back then, handgun cartridge performance was expressed by penetration in 7/8-inch-thick pine boards. We know today that velocity is a first-order factor in penetrating rigid materials. Advantage—the .30 Luger and .30 Mauser. However, only if you are afraid of marauding lumber should penetration of boards be a concern today.

Shooting and Reloading

First, remember, you are likely shooting a desirable collector’s item, so be nice. A few modern pistols

have been chambered for .30 Luger, but they are not common. Today, no major U.S. ammomaker shows either cartridge. However, Fiocchi and Prvi Partizan still offer both chamberings.

Do not fire 7.62x25mm Tokarev ammo in any vintage Mauser C96 pistol. The Russian’s slight dimensional differences may not prevent chambering in a Mauser, not to mention manufacturing variances, tolerance stacking, and wear factors. The Tokarev’s CIP pressure assignment is about 11 percent higher than the .30 Mauser’s, but my big concern is bullet velocity.

In semiautomatics, slide/bolt velocity is proportional to bullet velocity. Some “Toke” ammo is advertised as exceeding 1,600 fps, a 200 fps or more increase that will increase the Mauser’s bolt velocity. Battering or metal failure could result.

Difficulty in finding factory ammo means reloading, but I found neither cartridge offered any challenges—other than finding data. Hodgdon’s 2025 *Annual Manual* has .30 Luger data. For .30 Mauser, you can *only* use Tokarev data if you consider any load with a muzzle velocity over about 1,350 fps to be the C96 Mauser cutoff.

Starline has excellent .30 Luger and .30 Mauser unprimed cases. SAAMI’s max bullet diameter for both chamberings is 0.3095 inch. I’ve used bullets between 0.308 to 0.310 inch without issue. Hornady catalogs a 0.309-inch, 90-grain XTP component bullet. It sounds perfect.

I handloaded the Luger and Mauser cartridges in my youth and found, as rumored, feeding bottleneck cases seem forgiving of oddball bullet shapes and materials. I had some old 0.310-inch Remington 100-grain FNSPs for .32-20 with a lot of exposed lead, and they worked.

Crimp or no crimp? Chamber drawings for both cartridges clearly show the case shoulder as the head-space reference, but I crimp. I had some uncannelured 0.308-inch bullets set back during feeding. If a bullet has a crimp groove, use it.

I’ve used several RN and FN hard-cast bullets designed for .32-caliber revolvers, and I take advantage of their generous crimp grooves. The Hornady 90-grainer is not cannellured but is 0.309 inch in diameter. Lightly roll-crimping removes any remaining case mouth flare; its larger diameter should overcome the issues I had with uncannelured 0.308-inch bullets.

Did the .30 Mauser and .30 Luger leave a “legacy?” Yes, and it is a big one. The significant cartridge that evolved from those .30-caliber trailblazers in 1901 was the 9mm Luger.

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Reloading Mentors Are Priceless

Lane says he's extremely lucky to have had the great reloading mentors who have guided him through this rewarding hobby. **BY LANE PEARCE**

ACCORDING TO MERRIAM-WEBSTER A MENTOR is "a trusted counselor or guide, or a tutor, coach." I think of a mentor as one who provides positive assistance to another person, and I think that's the best way to be trained as a hobbyist reloader. I consider myself very lucky to have had the reloading mentors who have guided me. As I've said before, I'm still learning—and relearning—things about this rewarding endeavor.

Sixty years ago, I paid \$10 for a 12-gauge Lee Loader kit. That was all the tooling needed (except for a hammer and a bathroom scale) to become a novice handloader. After acquiring a bag of No. 7½ lead shot, plastic wads with integral shot sleeves, an 8-ounce can of Alcan AL-5 powder, and a 100-pack tray of Winchester 209 primers, I was all set. I didn't know anyone who reloaded, so the illustrated Lee instruction sheet was my only guide.

A few short years later, I started reloading for my .270 Winchester rifle and a .45 ACP pistol after I finished college, married, and had my first job. That's

when I met my first two mentors. A.J. Wallace worked on our Skylab design team. He was an avid hunter and reloaded for a .30-06 Remington Model 742. He introduced me to Jesse Kelly, who worked at Wiley's Outdoors. Jesse was one of those fellows who likely had forgotten more about reloading than most gun folks would ever know.

I bought an RCBS Jr. press and other tooling to reload for my rifle and pistol. Between A.J. and Jesse I got off to a safe and responsible start reloading metallic cartridges. The proof of that situation was A.J. and I would routinely test-fire each other's handloads at a local public range. (I know, I know, today we preach about not shooting someone else's reloads, but in this case I knew who did the reloading and trusted him.) I soon added a .357 Magnum revolver to my inventory and acquired the additional die set, shellholder, and components needed to reload for it.

A couple years later, I met Fred Roe at a church social event held at his home. A mutual friend suggested that I might be interested in his reloading setup. That

One of the many reloading mentors who has helped Lane is Fred Roe. His reloading knowledge and mechanical skills have been a godsend.

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first visit initiated an ongoing 50-plus-year friendship. It also resulted in a now humorous tale about a reloading tool mounted on Fred's bench. I immediately oohed and aahed about his RCBS A2 single-stage press. I excitedly told him that was the model I'd wanted to buy, but it had been discontinued a few years earlier. I must've examined it too covetously because when I dropped by a few days later, I noticed "F.D. Roe" steel-stamped on the top flat in relatively bold scrip. (Fred, the press, and the marking are shown in the photographs here.)

I didn't say anything at the time, but later after we'd gotten to know each other better, I asked about the marking. He chuckled and said that he hadn't realized how desirable the vintage A2 model was until I had shown such an interest in it. (I acquired my own A2 press several years later.)

During these many years since my wife and I moved to north Alabama, A.J. and Jesse have both passed on, but Fred and I visit regularly, sharing tips, asking and answering questions, etc. In addition to his shooting and handloading expertise, his mechanical gunsmithing skills are often a benefit to me, despite him being an electrical engineering graduate of Vanderbilt University. (I am a proud aerospace engineering graduate of NC State University.)

My first article for *Shooting Times* was nearly 37 years ago (I've been penning this reloading column for nearly 20 years now!), and during all that time I've met many industry people, a few of whom I also consider mentors. Allan Jones and David Emary retired from Speer and Hornady, respectively, and now write for *Shooting Times* and *Guns & Ammo*. There's no telling how many times I've called both of them to get reliable insight into whatever topic has me stumped.

Ron Reiber, who was chief ballistician at Hodgdon for decades, is another fellow I consider an esteemed mentor. He's helped me many, many times over the years, and he's helped lots of other industry writers, many of whom have referred to him as "Mr. Wizard."

Today, Justin Schrader does what Reiber used to do at Hodgdon, and Jayden Quinlan does what Emary did at Hornady. Both of them have helped me with recent projects. I consider them to be valuable mentors, too.

As you can see, I've had many master handloaders to mentor me along the way. Trusted mentors can add to your quest for safe and reliable performance by sharing their experiences, and I thank all the people I've mentioned here for their invaluable support. **ST**



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MAX PROTECTION

RUGER'S .380 ACP LCP MAX POCKET PISTOL IS NOW
OFFERED WITH A MANUAL THUMB SAFETY.

BY SAM WOLFENBERGER

EXACTLY FOUR YEARS AGO, I WROTE ABOUT some updates and modifications to the Ruger LCP MAX semiautomatic pistol that were new that year. Well, there has been another newsworthy change to the little personal-protection pistol's design since then, and it deserves your attention. Let's take a good look at the little pocket pistol.

The New Development

The big news this year for Ruger's LCP MAX .380 ACP pocket pistol is that it provides maximum protection by now being available with a manual thumb safety. Located on the left side of the pistol, the new thumb safety has two positions. Up engages the safety, and in this position, it locks the slide shut, and it also blocks the sear, which prevents full travel of the trigger. Down puts the pistol in "Fire" mode, and in this position, a red dot is visible. The thumb safety is easy to engage and disengage, and distinct clicks can be heard when operating it. Note that the hammer must be cocked and the slide must be all the way forward in order to engage the safety.

Except for the new manual thumb safety, the basic description of the LCP MAX is very much like what I wrote in that 2021 review, so if this sounds familiar, I apologize. The LCP MAX's slide has grasping grooves up front and at the rear, and it has an external extractor. The top edges and the muzzle end of the slide are beveled for concealment and a smooth draw.

The LCP MAX's alloy steel 2.75-inch barrel is finished in black oxide, and the muzzle is crowned. The chamber has view ports on both sides that serve as loaded-chamber indicators. They are not on top of the chamber like on many other pistols. (With that said, another new-for-2025 version of the LCP MAX does have a loaded-chamber-indicator port on top of the chamber and a magazine disconnect safety, but that gun does not have the new manual thumb safety.)

The LCP MAX is a recoil-operated autoloader, and it utilizes a full-length guide rod and dual recoil springs. It is a tilting-breech design, meaning that when a cartridge is fired, the steel barrel and steel slide remain locked together for a short distance of slide travel, after which the breech end of the barrel cams down, out of engagement with the slide. The slide then moves fully rearward, extracting and ejecting the fired case. Then the dual recoil springs return the slide to its forward position, picking up a cartridge from the magazine and chambering it. As the cycle is completed, the breech end of the barrel cams up and locks into the slide.

The LCP MAX uses Ruger's Secure Action fire-control system. When the slide cycles, the recessed hammer is cocked fully. Squeezing the trigger (which involves pressing the built-in trigger safety lever to allow the trigger to move fully to the rear) releases the hammer to strike the firing pin. The slide automatically locks back on an empty magazine.

Speaking of magazines, the double-stack 10-round magazine that comes standard with the LCP MAX comes with an interchangeable finger-extension baseplate. It doesn't increase the magazine capacity, but it offers a bit more to grab onto. I used it for my shooting session, but I really didn't need to because I had a secure purchase with the flush-fitting magazine baseplate in place, and I have medium-size hands.

Switching the baseplates is easy. Just push a pin punch or similar tool into the magazine seat where it protrudes into the hole on the baseplate. Slide the baseplate forward toward the front of the magazine. Use caution because the magazine spring is under heavy tension and can cause the forcible ejection of the magazine spring seat and the spring. The magazine spring seat, the spring, and the follower can be removed for cleaning at this juncture. Then just reassemble the parts, switching the baseplates.

The magazine's metal tube has two witness holes on the right side; one has the number 5 near it, and the other has the

MAX PROTECTION



The big news this year for Ruger's LCP MAX .380 ACP pocket pistol is that it is now available with a manual thumb safety, which is located on the left side.

number 10, indicating the round counts. The LCP MAX does not have a magazine disconnect safety (except as noted earlier), so that means it will fire with the magazine removed.

The magazine release on the pistol's frame can be switched from the left-hand side to the right-hand side. This procedure is a bit more complicated but still fairly user-friendly. The pistol needs to be disassembled, so let's go through those steps first.

Once you're certain the pistol is not loaded and the magazine has been ejected, make sure the manual thumb safety is in the down "Fire" position, pull the slide fully to the rear, and engage the slide stop. Visually check the chamber one more time to be sure it is empty. Retract the slide and release it. Pry loose the takedown pin with a flat-head screwdriver or other blunt tool, then remove the takedown pin entirely with your fingers. Move the slide assembly forward and off the frame. The recoil spring guide rod assembly and barrel can then be removed from the slide.

To switch the magazine latch, first look down into the front of the magazine well and locate the magazine latch. A wire coming up from the lower part of the magazine well engages the magazine latch, and it serves as the magazine latch spring and retainer. Use a pointed steel rod, such as

a scribe, to approach the spring from the bottom of the magazine well. Push the wire to the side it is bent towards while prying it towards the rear of the magazine well until the wire comes free of the latch. The spring does not need to be removed.

Remove the magazine latch by pushing on the serrated button side and pushing it all the way through the grip frame. Rotate the serrated edge up to get around the end of the magazine latch spring and then down again to remove it from the frame.

Reinstall the magazine latch by starting the serrated end into the opposite side of the grip frame. When the latch reaches the spring, rotate it past the spring and then rotate it back to reach the opposite side of the frame. The spring should lie against the flat on the magazine latch.

Use the pointed scribe to manipulate the wire magazine latch spring sideways, away from the serrated button, until it locks itself into the magazine latch.

Reassemble the barrel and recoil spring guide rod assembly in the slide and install



In addition to the manual thumb safety, the LCP MAX features a trigger safety lever and an internal firing pin block. Because there is no magazine disconnect, the pistol will fire with the magazine removed.

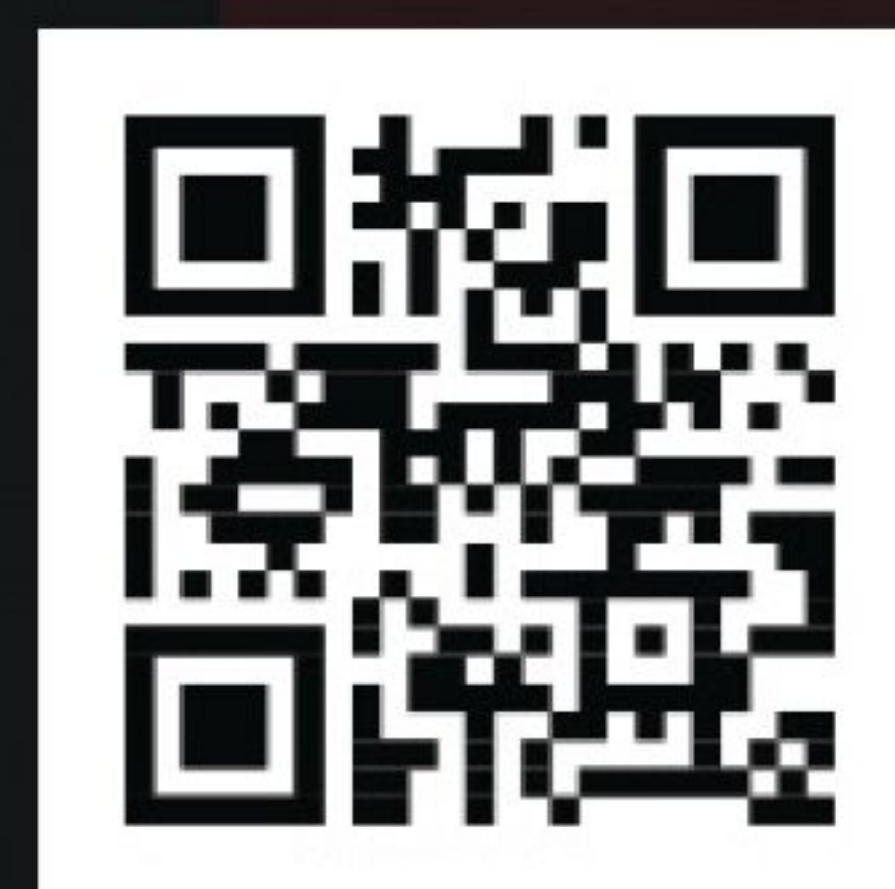
kurz *adj.* Deutsch. 1a. A comparatively short length.
1b. **Kompakt.**



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MAX PROTECTION

LCP MAX	
MANUFACTURER	Sturm, Ruger & Co. ruger.com
TYPE	Recoil-operated, hammer-fired autoloader
CALIBER	.380 ACP
MAGAZINE CAPACITY	10 rounds
BARREL	2.75 in.
OVERALL LENGTH	5.17 in.
WIDTH	0.94 in. (slide is 0.76 in.)
HEIGHT	4.12 in.
WEIGHT, EMPTY	10.6 oz.
GRIPS	Integral to polymer frame
FINISH	Matte stainless-steel slide, black oxide alloy-steel barrel, black frame
SIGHTS	U-notch, drift-adjustable rear; tritium/white-outline front
TRIGGER	7.0-lb. pull (as tested)
SAFETY	Manual thumb safety, safety lever trigger, internal firing pin block
MSRP	\$379



The new LCP MAX with manual thumb safety is offered with a matte stainless-steel slide and black polymer frame.



The magazine capacity of the LCP MAX is 10 rounds, and the pistol comes with one magazine. Included are an interchangeable finger extension baseplate for the magazine and a magazine loader.

the slide onto the frame. Always check for proper function after reassembly before firing live ammunition. By the way, the company states it is safe to dry-fire an empty LCP MAX in moderation without damaging the firing pin or other components, but using a snap cap is recommended for continued dry-firing.

Now back to the pistol's features. The rear sight is all black with horizontal striations on the face and a U-shaped notch. The front sight has a green tritium dot with a white-outline ring around it. It and the rear sight are dovetailed into the slide. If windage adjustment is desired, drift the rear sight in the direction you want to move the point of impact on the target.

The high-performance glass-filled nylon frame has an aluminum insert and a rounded trigger guard that has coarse horizontal texturing on the front. The grip portion has fine texturing on the sides, the frontstrap, and the backstrap.

At the time of this writing, the manual safety version of the LCP MAX is only available with a matte stainless-steel slide and a black frame. However, I will mention here that the standard LCP MAX without the manual thumb safety is available in a bunch of color schemes. You can have it all black. You can have it with matte stainless slide and black frame. You can have it all Rose Gold Cerakote. You can have it with polished black PVD slide and black frame. You can have it with purple PVD slide and black frame. You can have it with Sapphire PVD slide and black frame. You can have it with Rose Gold PVD slide and black frame. And you can have it with a red, white, and blue American Flag Cerakote slide and a black frame.

The LCP MAX with manual safety comes with a pocket holster, a padlock-style gun lock, and a polymer magazine loader. Its MSRP is a very affordable \$379. It measures 5.17 inches long,

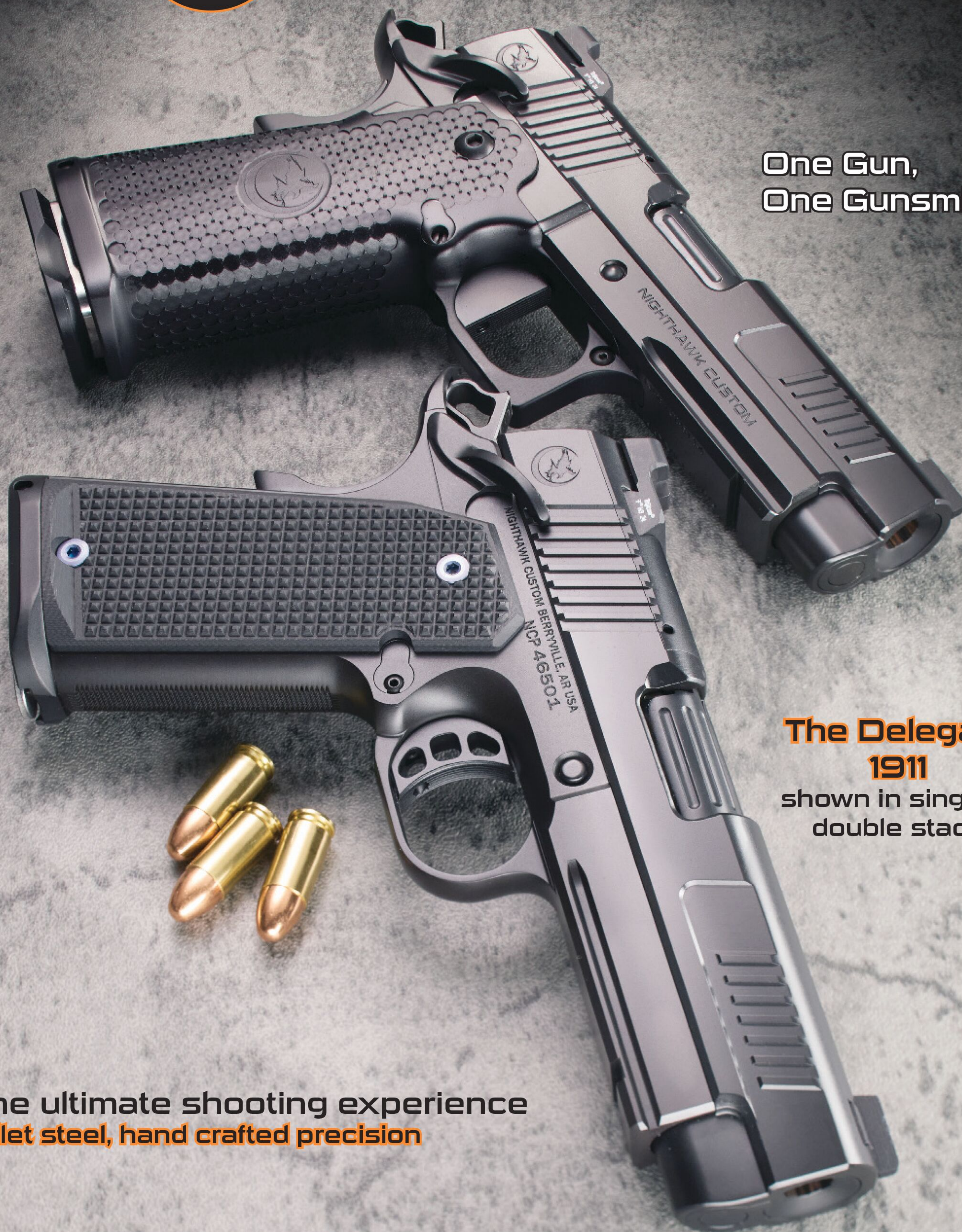


With the LCP MAX disassembled, the magazine release can be switched from the left side to the right side.



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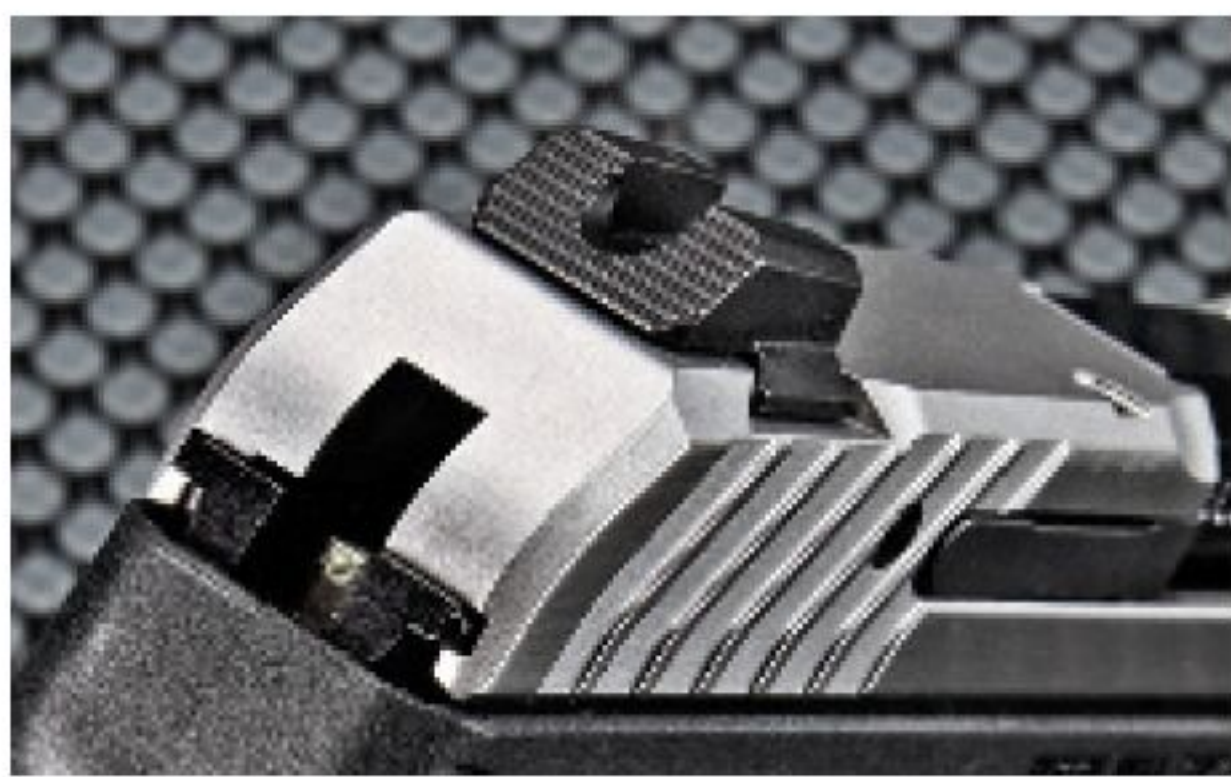
MAX PROTECTION

4.12 inches tall, and 0.94 inch thick. The grip circumference is 4.88 inches. It weighs just 10.6 ounces. The sight radius is 3.9 inches.

At the Range

I test-fired the LCP MAX with manual safety with 10 .380 ACP factory loads ranging in bullet weight from 56 to 102 grains. Seven out of the 10 were different than the eight loadings I fired in the 2021 pistol, and the details are listed in the accompanying chart. The pistol functioned perfectly with all loads, ejecting fired cases approximately four feet to the right of my shooting position. Overall average accuracy for three, five-shot groups with each load at 25 yards was 4.23 inches. The best single five-shot group measured 2.50 inches, and it came with Remington 88-grain JHP ammunition. That load’s average accuracy was 3.50 inches.

The LCP MAX weighs just 10.6 ounces, so some recoil is expected even with the low-recoiling .380 ACP round. Some



The all-black rear sight has a U-shaped notch, and the front sight has a green tritium dot surrounded by a white ring. Both sights are dovetailed into the top of the slide.



The LCP MAX is a true pocket pistol and fits in the palm of a hand. It is 5.17 inches long, 4.12 inches tall, and 0.94 inch thick. And it weighs just 10.6 ounces.

loads were pretty snappy in terms of felt recoil, but none were uncomfortable. The softest-shooting load was the NovX ammo with its 56-grain copper-polymer bullet, but that was to be expected.

The pistol’s trigger pull averaged 7 pounds for a series of measurements with an RCBS trigger pull scale, which is somewhat heavy. For those who care, racking the slide required 15 pounds of force, according to my improvised gauge.

Some of you reading this might ask, “Why would I want a small .380 ACP pistol when I can have a slightly larger 9mm?” *Shooting Times* writer Layne Simpson wrote an entire article on that back in 2018. I encourage you to look up that report because it’s full of very good information, but I’ll condense it for you here. Size and weight, as in the size and weight

of the gun. A .380 ACP pocket pistol is just about the smallest and lightest handgun that still shoots an acceptably potent round for self-defense. Some .22 LR pocket pistols may be

smaller and lighter, and some folks may promote them for self-defense use, but I say the rimfire round just isn’t what I want to depend on in a life-threatening situation. In recent years, .380 ACP ammo has seen technological advancements that make many of the personal-protection loadings much more capable. Likewise, the Ruger LCP MAX has proved itself capable of saving the day in up close and personal confrontations. And now you can have it with the added feature of a manual thumb safety.

ST

RUGER LCP MAX ACCURACY & VELOCITY					
AMMUNITION	VEL. (FPS)	E.S. (FPS)	S.D. (FPS)	ENERGY (FT-LBS)	25-YD. ACC. (IN.)
.380 ACP, 2.75-in. Barrel					
NovX 56-gr. Copper Polymer	1197	38	14	178	4.75
Federal PUNCH 85-gr. JHP	917	17	5	159	4.00
Remington 88-gr. JHP	881	16	6	152	3.50
Fiocchi Hyperformance 90-gr. XTP	869	16	5	151	4.25
Hornady American Handgunner 90-gr. XTP	848	25	8	144	4.00
Hornady Critical Defense 90-gr. FTX	874	29	11	153	3.75
Winchester Defender 95-gr. BJHP	941	99	35	187	4.50
Federal 99-gr. HST	868	28	11	166	4.75
Federal 99-gr. Hydra-Shok Deep	830	31	11	151	4.25
Remington 102-gr. Golden Saber	887	11	4	178	4.50
NOTES: Accuracy is the average of three, five-shot groups fired from a sandbag benchrest. Velocity is the average of five rounds measured 12 feet from the gun’s muzzle.					

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THE GRAND OLD .45-70

THE .45-70 GOVERNMENT MAY BE MORE THAN 150 YEARS OLD, BUT IT'S STILL GOING STRONG. HERE'S A GOOD LOOK AT THE ROUND AND SOME FINE RIFLES CHAMBERED FOR IT.

BY LAYNE SIMPSON

THE END OF THE AMERICAN CIVIL WAR IN 1865 found the U.S. government holding a few Henry and Spencer repeating rifles along with many thousands of Springfield .58-caliber muzzleloading muskets. With the age of rifles commonly firing self-contained metallic cartridges just around the corner, Erskine S. Allin, who was the chief engineer at Springfield Armory, came up with an economical way of converting those muskets for firing the .58 Berdan cartridge. He did so by machining away the top of the barrel at the receiver and installing a forward-hinging breechbolt that contained a firing pin, an extractor, an ejector, and its own locking mechanism. Officially known as the Model 1865 Springfield rifle, that breech-locking concept originated with Hiram Berdan and would eventually be commonly referred to by those who used it as the Trapdoor. When the Berdan cartridge proved to be less than satisfactory, Allin reamed out the .58-caliber musket barrels to accept a .50-caliber rifled sleeve held in place by brazing. The .50-70 Government cartridge, for which the Model 1870 Springfield was chambered, proved to be an

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THE GRAND OLD .45-70

Two of the five current variations of the Ruger-made Marlin 1895 Layne shot for this report are shown here with a pair of custom rifles in .45-70 that he has enjoyed using on hunts since the 1970s. From left to right, they are Marlin Model 1895 Dark Series, Marlin SBL, custom Marlin 1895, and custom Ruger No. 1.

improvement. When the designation of the rifle was eventually changed to 1873 Springfield, the .50-70 was replaced by the .45-70 Government during that year.

The standard loading for the .45-70 rifle was 70 grains of blackpowder behind a 405-grain bullet for a velocity of 1,350 fps. Recoil proved to be a bit much in the lighter carbine carried by mounted troops, so the powder charge for it was reduced to 55 grains. Machine rest tests of several rifles resulted in four-inch group averages at 100 yards, 11 inches at 200 yards, and 27 inches at 300 yards. Before you laugh, keep in mind the fact that this was done with open sights over 150 years ago.

The .45-70 was also loaded with a 500-grain bullet at a velocity of 1,150 fps for a maximum chamber pressure of 25,000 psi. A paper filed by the Secretary of War in 1880 reported that during tests at Sandy Hook, New Jersey, marksman R. T. Hare fired 70 rounds from an 1873 Springfield rifle, and seven bullets struck a wooden target measuring 12 feet square at 2,500 yards. Time of flight of the 500-grain bullet was said to be around 11 seconds. After zipping through three inches of wood, the bullets penetrated eight inches of sandy soil before coming to rest.

The .45-70 became quite popular among hunters, and a number of sporting rifles of single shot and repeating designs were eventually chambered for it. The first repeaters—the Winchester Hotchkiss and the Remington Keene, both bolt actions—became available in 1878. Another turnbolt rifle, the Remington Lee, came two years later. While Oliver F. Winchester napped, John M. Marlin introduced the first lever-action repeater in .45-70 in 1881; it was called the Model 1881. After tossing and turning for five years, Winchester finally returned fire with the Model 1886. Nine years later, the Marlin Model 1881 was replaced by an improved rifle called the 1895. Long term, the Winchester guy won the race. Whereas production of the Marlin 1895 ceased in 1906, the Winchester 1886 lasted until it was replaced by the Model 71 in .348 Winchester in 1935. While the grand old .45-70 cartridge was down, it was not entirely out.

Bill Ruger introduced his No. 1 single-shot rifle in 1967, and the .458 Winchester Magnum was among its first chamberings.



Pertinent to this report, the .45-70 was offered on a special-order basis in 1969 and on a permanent basis during the following year. The barreled action also was available, and after buying one, I had it stocked in nicely figured American walnut by Bob Cassidy. (My rifle is shown in an accompanying photograph.) When Ruger introduced his No. 3 single shot rifle in 1973, the .45-70 was one of its six initial caliber options.

During that same year Marlin added the .45-70 to a slightly modified Model 336 rifle, and to differentiate it from the original Model 1895, it was introduced as the New Model 1895. My rifle, restocked by Cassidy during the 1970s, is easily identified as first-year production by its straight grip, front sight dovetailed to the barrel, and eight-groove rifling. It will always be my favorite rifle of this caliber.

Moving to the present, the Ruger-made Marlin 1895 has become a huge hit, as it should, and is presently available in Classic, Trapper, Guide Gun, SBL, and Dark configurations. During a conversation with Anthony Imperato of Henry Repeating Arms, he mentioned that the relatively new Sidegate lever-action rifle in .45-70 was among his top sellers. And Rossi has a .45-70 lever gun called the R95.

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THE GRAND OLD .45-70



Various factory offerings of the .45-70 range from mild-recoiling loads ideal for taking whitetail deer through those better suited for use on elk and moose in the timber to those capable of stopping a big grizzly in an Alaskan alder thicket. There are even subsonic factory-loaded choices.

Factory Ammo & Handloads

There is no scarcity of ammunition for those and other rifles. Companies that spring to mind are Barnes, Black Hills, Federal, Garrett, Hornady, HSM, Nosler, Remington, and Winchester. Cartridges of various calibers are commonly loaded to subsonic velocities these days, and I consider Hornady ammunition with the quick-expanding 410-grain Sub-X bullet at 1,075 fps to be the best of the lot for use on deer-size game. But due to a rainbow trajectory, 125 yards is a long shot. Texas-based Garrett Cartridges offers seven different .45-70 loadings, three with 420-grain super-hard-cast flatnose Hammerhead bullets at different velocities. While the 1,350-fps load is intended for the 1873 Springfield in good condition, mild recoil also makes it an excellent choice for modern rifles light in weight, with the Marlin 1895 Dark featured in this report a good example. The other two loads with the same bullet at 1,650 fps and 1,850 fps are for strong rifles like the Marlin 1895, the Henry, the Winchester 1886 reproductions, and Ruger No. 1 and Browning B78 single shots.

The .45-70 is an excellent candidate for handloading, and Starline cases are a good place to start. When loading for the Remington Rolling Block and 1873 Springfield through the years, I have used IMR 3031 more than any other powder, although more modern propellants, such as Benchmark, Varget, and Reloder 7, work equally well. For a low-cost, paper-punching load, try 37.0 grains of Reloder 7 or 42.0 grains of Varget behind the Rim Rock 405-grain cast bullet or a bullet of about the same weight cast with a Lyman No. 457643 or No. 457193 mold. Recoil is light, and accuracy is good. For higher velocities with jacketed bullets in stronger rifles, my money has long been on H322, but I would not complain if only LT-32, Accurate 2230, H335, or IMR 4198 was sitting on the shelf. The .45-70 began life with blackpowder, but due to less fouling yet still plenty of smoke-filled fun, my Henry

enjoys Blackhorn 209 behind the 405-grain and 500-grain Rim Rock bullets.

The woods are filled with excellent deer bullets waiting patiently to be used in handloads. Oldies like the Hornady 300-grain HP and Speer 400-grain SP are as deadly today as they were when I first tried them many hunting seasons ago. That said, the Hornady 325-grain FTX is the most accurate bullet I have shot in my custom Marlin 1895, and it also proved to be quite deadly on deer. Moving up to moose, elk, and the coastal grizzly, bonded-core bullets like the Swift 350-grain A-Frame and the 400-grain Guide Bullet made by Northern Precision would be my choices today. William Noody, who owns Northern Precision, introduced his 400-grain bullet in response to guides who carry Marlin 1895 rifles for backing up hunters while pursuing brown bears in the thickets of coastal Alaska.

Due to the large diameter of the .45-70 bullet, so-called Trapdoor Springfield loadings can be quite effective on game. During my youth I used a carbine version of that rifle belonging to a neighboring farmer to take a few deer and more than a few feral pigs, most well inside 100 of my paces. That was the old fellow's rabbit gun, and he fed it a steady diet of .410 shotshells. For harvesting venison and bacon, I used Remington Kleanbore Hi-Speed ammo loaded with a 405-grain Core-Lokt bullet purchased from a local farm supply store.

Moving the calendar forward to the 1990s, I carried a Rolling Block rifle in .45-70 built by craftsmen in the Remington Custom Shop while hunting woodland caribou in Newfoundland. The rifle had a Soule micrometer-adjustable aperture sight on its tang and a globe-style front sight with interchangeable inserts. I used Remington ammunition loaded with the 405-grain Core-Lokt bullet on that hunt as well. Elevation graduations on the rear sight of the rifle were clearly marked, and after noting which mark to use for a 100-yard zero, I shot groups on paper at 150, 175, 200, and 225 yards and noted the



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THE GRAND OLD .45-70

.45-70 ACCURACY & VELOCITY						
BULLET	POWDER		COL (IN.)	VEL. (FPS)	ENERGY (FT-LBS)	100-YD. ACC. (IN.)
	(TYPE)	(GRS.)				
Marlin 1895 Dark, 16.17-in. Barrel, 1:20 Twist (subsonic)						
Hornady 410-gr. Sub-X	H4895	34.5	2.490	1079	1060	1.33
Hornady 410-gr. Sub-X	IMR 4064	34.0	2.490	1004	918	1.24
Hornady Subsonic 410-gr. Sub-X	Factory load		2.490	961	841	1.75
Marlin 1895 Dark, 16.17-in. Barrel, 1:20 Twist (supersonic)						
Speer 350-gr. SPFNHC	H4198	48.0	2.545	1851	2663	1.55
Northern Precision 400-gr BCFN	H4198	50.5	2.575	1944	3357	1.74
Federal HammerDown 300-gr. MBHP	Factory load		2.535	1742	2021	1.10
Black Hills Gold 325-gr. HB	Factory load		2.450	1734	2170	1.28
Hornady LEVERevolution 325-gr. FTX	Factory load		2.585	1906	2621	1.22
Remington Express Core-Lokt 405-gr. C-LFN	Factory load		2.460	1477	1962	2.18
Garrett 1873 Springfield 420-gr. SHCFNGC	Factory load		2.535	1241	1436	1.69
Garrett 420-gr. SHCFNGC +P	Factory load		2.535	1794	3002	1.73
Marlin 1895 SBL, 19-in. Barrel, 1:20 Twist						
Hornady 250-gr. MonoFlex*	H4198	51.0	2.587	2115	2483	1.42
Barnes 300-gr. TSXFN	Accurate 1680	50.0	2.515	2152	3086	1.64
Hornady 325-gr. FTX*	IMR 4198	47.0	2.590	1978	2823	1.35
Swift 350-gr. A-Frame	Benchmark	59.5	2.515	2016	3158	1.78
Northern Precision 400-gr BCFN	H4198	50.5	2.575	1968	3441	1.40
Rim Rock 405-gr. RNFPGC	LT-32	46.0	2.550	1811	2949	2.20
Hornady 410-gr. Sub-X	2200	42.0	2.490	1566	2232	1.86
Rim Rock 500-gr. RNFPGC	LT-32	37.0	2.545	1421	2242	1.65
Federal HammerDown 300-gr. MBHP	Factory load		2.535	1770	2087	1.22
Nosler Whitetail Country 300-gr. SN	Factory load		2.530	1893	2387	1.56
Black Hills Gold 325-gr. HP	Factory load		2.450	1722	2266	1.37
Hornady LEVERevolution 325-gr. FTX	Factory load		2.585	1956	2761	1.19
Swift High Grade (1770) 350-gr. A-Frame	Factory load		2.515	1734	2337	1.77
Remington Express Core-Lokt 405-gr. C-LFN	Factory load		2.460	1511	2054	2.11
Custom Marlin 1895, 22-in. Barrel, 1:20 Twist						
Hornady 250-gr. MonoFlex*	H4198	52.0	2.590	2268	2806	1.35
Hornady 300-gr. HP	LT-32	57.5	2.550	2124	3005	1.26
Hornady 325-gr. FTX*	VV N120	49.0	2.590	2175	3414	1.14
Speer 400-gr. FNSP	H335	56.5	2.550	1922	3282	1.33
Henry .45-70, 22-in. Barrel, 1:20 Twist						
Rim Rock 405-gr. RNFPGC	Blackhorn 209	38.0	2.550	1452	1896	3.47
Rim Rock 500-gr. RNFPGC	Blackhorn 209	33.0	2.545	1239	1704	2.95
Custom Ruger No. 1, 22-in. Barrel, 1:20 Twist						
Barnes 300-gr. TSXFB**	H4198	57.5	2.550	2574	4414	1.53
Hornady 325-gr. FTX	H322	63.0	2.650	2419	4223	1.11
Swift 350-gr. A-Frame	H4198	56.0	2.520	2321	4296	1.30
Northern Precision 400-gr. BCFN	H4198	53.0	2.610	2144	4083	1.44
Rim Rock 500-gr. HCFNGC	LT-32	46.5	2.710	1787	3546	1.67
*Trim case to 2.040 inches for this bullet in this rifle.						
**This bullet is for single-shot rifles only and not for rifles with tubular magazines.						
NOTES: Accuracy is the average of two, three-shot groups fired from a Caldwell Lead Sled DFT-2. Velocities are averages of six rounds measured by a Garmin Xero CI Pro Doppler chronograph. Starline cases and Federal GM 210M primers were used for the handloads. The Ruger-made Marlin 1895 Dark and SBL were suppressed. Average ambient temperature was 83 degrees Fahrenheit. Powder charges with supersonic loads were maximum or close to it in the test rifles and should be reduced by 10 percent for starting loads in other rifles. All load data should be used with caution. Always start with reduced loads first and make sure they are safe in each of your guns before proceeding to the high test loads listed. Since <i>Shooting Times</i> has no control over your choice of components, guns, or actual loadings, neither <i>Shooting Times</i> nor the various firearms and components manufacturers assumes any responsibility for the use of this data.						



A few of the many bullets suitable for handloading in the .45-70 include (left to right) Hornady 250-grain MonoFlex, Barnes 300-grain TSXFN, Hornady 325-grain FTX, Swift 350-grain A-Frame, Speer 350-grain FNSP, Northern Precision 400-grain BCFN, Speer 400-grain FNSP, Rim Rock 405-grain HCFNGC, Hornady 410-grain Sub-X, Rim Rock 430-grain HCFNGC, and Rim Rock 500-grain HCFNGC.

sight settings required for dead-on holds at those distances. I must confess to using a laser rangefinder, and when the animal I wanted was at 177 yards, I rested the rifle on my daypack, quickly adjusted the sight for 175 yards, and squeezed the trigger. The bull took only three steps before piling up. We recovered the bullet against the offside hide, and while it had only barely expanded, there were no complaints from me.

I shot the Dark and SBL versions of the Ruger-made Marlin Model 1895 for this report, and when comparing the two, it quickly became obvious to me that they were designed to serve different roles. With its tactical rifle styling, its half-pound lighter weight, and its magazine filled with subsonic loads, the Dark rifle would be a better choice for repelling life-threatening castle invaders. And with the gun wearing a suppressor, its shorter overall length makes it a bit easier to maneuver in tight places. The Dark version could also be an effective hunting rifle, although due to its lighter weight along with a thinner and rather narrow recoil pad, it is quite a bit more uncomfortable to shoot than the Model 1895 SBL. Also on the negative side, all that bare

metal would be quite uncomfortable to carry on an extremely cold day in the field.

Boiling it on down between the two, I consider the Dark rifle better suited for personal defense, but it can be used for hunting, whereas the SBL is not quite as suitable for personal defense but is a much better choice for hunting. With that said, I can see an Alaskan bear guide who only shoots a rifle when backing up a client carrying the lighter and more compact Dark rifle with its magazine filled with Garrett ammunition loaded with a 420-grain super-hard-cast bullet at a velocity of 1,800 fps. In moments like that, recoil at its highest level goes unnoticed. **ST**

Layne took this woodland caribou in Newfoundland with a Remington Rolling Block rifle built by craftsmen in the Remington Custom Shop while it was at the Ilion, New York, factory. The fact that he used Remington Express ammo loaded with a 405-grain softnose bullet at just over 1,300 fps serves as proof that a mild, easy-on-the-shoulder loading of the .45-70 can work quite well on some game.





PHOTO COURTESY OF HORNADY.

HORNADY ACTION PISTOL BULLETS

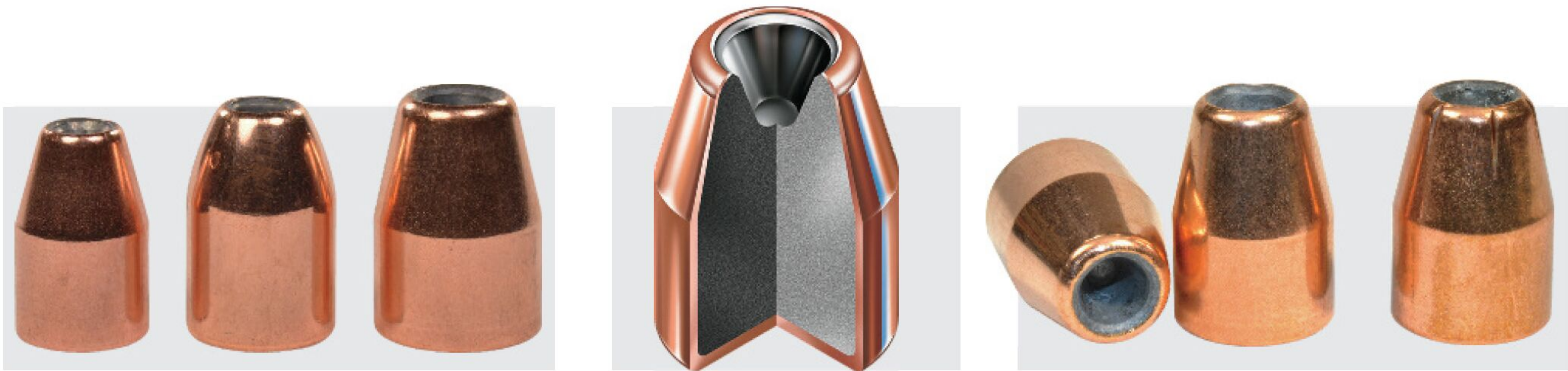
DESIGNED SPECIFICALLY
FOR COMPETITIVE
SHOOTERS, HORNADY'S
HAP BULLETS FEED
SMOOTHLY AND
ACHIEVE TOP-DRAWER
ACCURACY.

BY BRAD MILLER PHD

HORNADY HAS ONE ENTIRE LINE OF JACKETED semiautomatic handgun bullets designed for competitive shooting. They call them Hornady Action Pistol (HAP) bullets. These bullets come in three calibers: 9mm, .40/10mm, and .45. As the name implies, they are designed for competitive shooters in action pistol sports like USPSA, IPSC, and IDPA.

HAP bullets are designed for reliable feeding in semiautomatic pistols and have a gilding metal copper jacket that extends the full length of the nose up to a hollowpoint so that no lead is exposed that might hang up on the feedramp. They have a pure lead swaged core for consistency to maintain balance and stability in flight.

At present, Hornady offers seven HAP bullets: a 9mm 0.355-inch 115-grain bullet and a 0.356-inch 125-grain bullet; 0.400-inch 180- and 200-grain bullets for the .40 S&W and 10mm Auto; 0.451-inch 185-, 200-, and 230-grain bullets for the .45 ACP. The 115-grain and 125-grain HAPs can be used in either the 9mm Luger or the .38 Super because those calibers share the same SAAMI (Sporting Arms and Ammunition Manufacturers' Institute) barrel groove diameter specification of 0.355 + 0.004-inch.



Hornady HAP bullets share the characteristic shape of a truncated cone, the exception being the 180-grain .40-caliber bullet that has a slightly curved ogive. (From left: 125-grain 9mm, 180-grain .40, and 230-grain .45.)

The HAP bullets have a gilding metal copper jacket that extends the full length of the nose and a pure lead swaged core. Photo courtesy of Hornady.

HAP bullets (left and center) have the same shape as Hornady’s well-known XTP JHP (right), but they lack the XTP’s nose skives.

HORNADY HAP BULLETS VELOCITY & ACCURACY									
BULLET	POWDER		CASE	PRIMER	COL (IN.)	VEL. (FPS)	S.D. (FPS)	ROUNDS FIRED	25-YD. ACC. (IN.)
	(TYPE)	(GRS.)							
9mm Luger, 5.0-in. Kart Barrel									
Hornady 115-gr. HAP	CFE Pistol	5.0	Mixed	CCI 500	1.100	1156	9	10	1.52
Hornady 115-gr. HAP	Silhouette	5.0	Mixed	CCI 500	1.100	1091	11	15	1.51
Hornady 125-gr. HAP	Accurate No. 7	7.5	Mixed	CCI 500	1.095	1282	11	15	1.06
Hornady 125-gr. HAP	Power Pistol	5.6	Mixed	CCI 500	1.080	1274	10	15	1.45
.38 Super, 5.0-in. Kart Barrel									
Hornady 115-gr. HAP	VV N105	9.0	Mixed	CCI 500	1.240	1310	17	15	1.19
Hornady 125-gr. HAP	W572	5.5	Starline	CCI 500	1.240	1087	13	15	0.81
.40 S&W, 5.0-in. Ed Brown Barrel									
Hornady 180-gr. HAP	VV N105	7.5	Mixed	CCI 500	1.135	959	14	15	2.24
.45 ACP, 5.0-in. Kart Barrel									
Hornady 185-gr. HAP	VV N310	4.2	Win.	CCI 350	1.200	831	12	10	1.76
Hornady 185-gr. HAP	WST	4.5	Starline	WLP	1.240	717	14	15	2.20
Hornady 200-gr. HAP	Titegroup	4.5	Mixed	CCI 500	1.250	786	13	10	1.52
Hornady 230-gr. HAP	Silhouette	7.3	Starline	Rem. 2½	1.230	888	15	15	2.26
NOTES: Accuracy is for one 15-round or 10-round group (as indicated) with the gun mounted in a Ransom Rest. Velocity is the average of the same number of rounds for the accuracy measure eight feet from the guns' muzzles.									
All load data should be used with caution. Always start with reduced loads first and make sure they are safe in each of your guns. Since <i>Shooting Times</i> has no control over your choice of components, guns, or actual loadings, neither <i>Shooting Times</i> nor the various firearms and components manufacturers assumes any responsibility for the use of this data.									

HAPs have the same shape as Hornady’s well-known XTP bullet line but lack the cuts in the jacket nose that promote expansion. Target bullets don’t need to expand. The HAPs are less costly than the XTPs, a big plus when you shoot large volumes of ammo, as many competitors do.

Wilson Combat uses HAP bullets in their Signature Match ammunition, and they claim they are guaranteed to shoot under 0.5 inch for 10 shots at 25 yards from a barrel fixture. Their Signature Match line includes loads in 9mm Luger, .38 Super, and .45 ACP.

HAPs are some of the most accurate bullets I’ve fired in my guns, and some good loads are listed in the accompanying chart. You don’t need to be a competitive shooter to use them. They’re available to anyone who wants a high-quality, accurate bullet at a modest price.

ST



The author has fired a lot of HAP bullets in various pistols, including this 9mm Model 1911 with a Para Ordnance wide-body frame, a Caspian slide, and a Kart 5.0-inch barrel. The bullets are some of the most accurate he has shot.





HINTS ON HANDLOADING FOR HUNTING

WHEN IT COMES TO BUILDING HANDLOADS SPECIFICALLY FOR HUNTING, RELIABILITY AND TERMINAL PERFORMANCE COME FIRST.

BY CRAIG BODDINGTON

A LOT OF HUNTERS BELIEVE USING FACTORY-LOADED ammo is perhaps the surest way to avoid an ammunition-related mishap when the time comes to squeeze the trigger on a once-in-a-lifetime trophy buck or some dangerous game that can bite, buck, claw, or maul you. I'm not here to persuade anyone against that, but I will say that since I learned to handload 60 years ago, my ratio of hunting with handloads versus hunting with factory-loaded ammo is probably 60–40, and that includes all the years I was doing TV, during which I politely used factory-loaded ammo produced by the many sponsors of those shows. My point is that one can hunt successfully with handloads. Of course, I wouldn't hunt with anyone else's handloads, but I'm happy to hunt any game on the globe with my own handloaded ammunition, and that includes big and dangerous game. This report is about what I think are the most important aspects of handloading for hunting.

Reliability Is the Name of the Game

I started hunting dangerous game with a .470 before modern factory loads existed. Same story years later with .416s, first a wildcat .416 Hoffman, later a .416 Rigby. One of the only misfires I've had in the field was with a .416 Rigby factory load (on a lion). That was exciting! It was the loudest "click" I've ever heard.

Lately, all my hunting with my .470, and much with the .450/.400-3", has been with handloads. I've had no problems. Although factory ammunition is wonderfully reliable, there's no reason why handloads aren't at least equally reliable. This is largely up to you, the handloader. Part of the charm of handloading is the satisfaction of doing it yourself and doing it right.

HINTS ON HANDLOADING FOR HUNTING

There are lots of ways to skin the cat, so to speak, but Boddington likes to use a hand-priming tool for loading his hunting ammo. He can feel the primer seating and immediately check visually for seating depth and to make sure he hasn't seated one upside down.

The primer is the most sensitive component. Ammo manufacturers do get bad primers, one out of millions. Handloaders could get one bad one out of thousands, but I've never had a bad one. I store primers carefully—clean and dry. During the COVID-19 primer shortage, I used primers I'd had on the shelf for 25 years, with zero misfires.

Before priming, I wash my hands, dry them carefully, and handle the primers as little as possible. For hunting ammo, I hand prime, shaking them out onto the tray of a Lee or Hornady hand primer. Oh sure, I've seated primers upside down. Who hasn't? To err is human, so the real key to reliability is to inspect, reinspect, and keep checking.

This applies to every step along the way. I inspect brass, looking for the telltale line for incipient head separation. While big-bore ammo is a personal passion, I'm also a classic lever-action guy. Rear-locking actions, such as Marlin's, most Winchesters, and the Savage 99, stretch brass. Recently, I had my 1950s Model 99 .300 Savage on the range with handloads, planning on taking it on a hunt. On about the third shot I got a case-head separation. That rifle didn't go on that hunt.

That case looked good, with no visible warning line. At the time, I hadn't had that rifle long. I now know that, in that rifle, case life is zilch. Especially with older or uncommon cartridges, cases are precious, but that's not a problem you want to encounter in the field. For hunting ammo, use cases that have been fired only once, at the most. New, unfired brass is even better.

Every step in the reloading process is subject to human error. What's important is to establish your routine and hold to it. I have a dose of attention deficit disorder (ADD), so I silence my cell phone and have no TV or music while I'm handloading. More importantly, I have just one set of dies and components and just one propellant on the bench at a time.

Modern powder dispensers are probably accurate enough for hunting ammo; a deer is unlikely to notice a half-grain one way or the other. That doesn't matter to me. I weigh all my charges to a tenth of a grain and trickle in the last little bit.

I charge cases in a loading block, usually five cases at a time. A consistent sequence avoids errors, but the real secret is to catch the inevitable mistake. Although my loading room is well-lit, my eyes aren't what they once were. After charging, I grab a big



flashlight and inspect powder levels. Mostly, I'm loading centerfire rifle ammo. If I lose my place and double-charge, I have powder spilling everywhere. With more volatile pistol powders, the risk is greater but is easily caught by essential visual inspection.

Performance Comes Before Accuracy

With popular cartridges that offer a wide selection of factory loads, you're likely to find factory ammunition that groups really well, but with precise handloading techniques they probably can be beaten. However, unless you're an extreme-range shooter, utmost accuracy is not your greatest concern with hunting handloads and striving for it can be counterproductive. Even for quarter-mile hunting shots, 1.5 MOA is good enough. Absolute reliability of feeding, firing, extracting, and ejecting comes first, followed by bullet performance on game. Both often require compromises.

It's not a handloading secret that neck-sized cases, fired once and expanded to exactly fit your rifle's chamber, are likely to be more accurate than either factory-loaded cartridges or full-length-sized cases. Except, in the field, you want cartridges that slam into the chamber easily. For hunting ammo, I use only full-length-sized cases. I might be sacrificing a few thousandths in group size, but that's better than struggling to chamber a cartridge when a big buck is about to bolt.

Handloaders and benchresters know that optimal bulletseating depth is critical to accuracy. Usually, seating a bullet just off the lands makes for tighter groups. This is stuff we play with on the range. In the field, we don't want close tolerances. Years

ago, on a mountain in New Zealand, I chambered a handloaded Sierra 200-grain GameKing in my .300 H&H rifle. That load combination usually produced quarter-inch groups. The opportunity passed, so I opened the bolt and had an empty, primed case; a magazine box full of propellant granules; and a bullet stuck in the rifling. And I didn't have a ramrod in my pack. I cast around; found a thin, straight tree branch; trimmed it; and managed to dislodge the bullet with it. It would have been simpler to seat the bullet a bit deeper, sacrifice a few thousandths in group size, and maintain reliability.

All the reloading manuals list a maximum cartridge overall length (COL) from SAAMI specifications for that cartridge. When loaded, today's long, heavy-for-caliber, "low drag" bullets often exceed that important specification. This is not necessarily a problem, but it's essential to be certain your load fits your magazine length and chambers properly with no risk of sticking the bullet in the rifling.

Despite the great variety in current factory-loaded ammunition, not all bullets are loaded by any ammo manufacturer, let alone offered in multiple brands. Perhaps the greatest advantage to handloading is that we can pick any bullet we want and work up a load for it. The ibex shown in the opening photograph for this article is proof. I took it in Tajikistan in 2022 with a handload propelling Hornady's then-new CX component bullet. One quartering-to-shot at 300 yards was all I needed. And doing it with a handload was tremendously satisfying, to say the least.

This applies universally but is especially true with the many cartridges available from just one source or relatively unavailable. It's not just my beloved big bores that are a problem; dozens of less popular and older cartridges have been left behind. During the pandemic, I received—and still get—numerous emails from folks searching for ammo for .30-40 Krag, .303 British, .35 Remington, .250 and .300 Savage, and many more. Handloading is the simplest answer. Sometimes it's almost the only answer. Friend Paul Cestoni, hunting deer in thick Eastern woods, is probably the only fan of the .375 Winchester who I personally know. He tells me he's never even seen a box of factory ammo. Not a problem. He's a handloader.

Like I said, bullet selection is a great advantage to loading your own. Also, sometimes, factory velocities can be improved upon. Here, I urge caution. The first thing I do when working up a load is break out the manuals and check the recommended propellants against

what I have on hand for the bullet weight I intend to use. Barrels and chambers vary, so I start slow and work up, usually handloading five cartridges, then another five, up a couple grains, and so forth. This allows me to check for signs of high pressure and group size. If primers start to flatten or extraction gets sticky, I'm done. I pull the bullets and harvest the propellant.

For hunting ammo, I rarely approach maximum—because of reliability. Our California coast zone deer season is August, often over 100 degrees Fahrenheit. Southern Africa can be that hot in October, and Central Africa is always that hot. Loads that are just fine at home in January can get sticky when it's 60 degrees warmer.

However, real velocity improvements are possible with some cartridges, especially in strong modern rifle actions, because



Although modern powder dispensers are wonderfully accurate, Boddington loads hunting ammo as he always has by dispensing low and then trickling in the last few grains to the tenth.



After charging cases with powder, Boddington uses a strong light to visually inspect the powder level in each and every case.

HINTS ON HANDLOADING FOR HUNTING



Because reliability is the name of the game for handloading hunting ammo, part of the loading routine must be continually checking case length and cartridge overall length with a caliper.

older cartridges are often held to different standards, both in factory loads and in reloading manuals. Good examples are 6.5x55 and 7x57 Mauser. The SAAMI pressure specification for both is 51,000 psi. The respectively similar and more recent 6.5 Creedmoor and 7mm-08 are specified at 61,000 psi. Despite greater case capacity, the older cartridges can't keep up. Even so, modern loading manuals suggest significant improvement in velocity over most current factory loads.

Also, for reasons unknown to me, some cartridges seem to be loaded slow. The .375 H&H is a lifetime favorite of mine, and it's specified at 2,530 fps for a 300-grain bullet in a 24-inch barrel. Lately, I've chronographed several production loads and found many down in the low 2,400s. I doubt any buffalo will know the difference, but it bothers me that I'm getting five percent less velocity than I'm supposed to have. It's no great trick to handload the .375 H&H up to where it's supposed to be.

For obvious reasons, I do not recommend exceeding published load data. And for hunting ammo, I also don't recommend pushing max loads. It's not worth the risk for a couple dozen extra feet per second. When I was young, I pushed it farther than I do today. In 1981 I took a Savage 99 in .308 to South Africa. With, well, *warm* handloads. It was winter there, cooler than at home. Even so, I got a fired case stuck tight in the chamber and flew home with it that way. I couldn't do that today and don't know what I'd do. For hunting, keep your loads conservative!

In handloading, the world is your oyster. There are innumerable options for varying all the components to find the perfect combination for your rifle. For me, handloading is soothing because I must shut everything else out and focus on what I'm doing. You'll establish your own sequence, and as you do that, you'll establish your own routine for checking and inspecting every step along the way. After sizing, I wipe off the case lube, then I use a dial caliper to check case length, trimming when needed. Then I chamfer and deburr, reinspecting the cases as I handle them. Priming follows. I like to hand prime because I can feel the primer seat, and I inspect the primer as I remove the case from the tool. Then I weigh the powder charges, inspecting as described. For hunting ammo, I prefer to crimp the case to the bullet, so the bullet won't work in or out in the magazine, or inside a pocket. For me, getting a crimp just right is the touchiest process. It's easy to go too far and mess up the case mouth or shoulder. I reset the caliper to the desired COL, checking each cartridge after seating the bullet.

Theoretically, it's tough to go wrong, provided you don't get distracted. However, there is one more thing you really must do. Purely as a matter of safety, this is best done at the range, during your final sight-in session. Run every cartridge you intend to take on a hunt through your magazine and into and out of your rifle's chamber. (It's a good idea to do this with factory-loaded ammo, too.) Like I said at the beginning of this report, reliability is the name of the game in handloading for hunting.

ST



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PHOTOS BY MICHAEL ANSCHUETZ



THE LATEST VERSION OF BENELLI'S INNOVATIVE, RUGGED, AND RELIABLE SUPER BLACK EAGLE INERTIA-DRIVEN SEMIAUTOMATIC SHOTGUN FLIES HIGH.

BY STEVE GASH

BENELLI SUPER BLACK EAGLE shotguns have earned a record of performance and durability in the field that is seldom rivaled and is based on a solid line of succession. The original Super Black Eagle (SBE) debuted in 1991 and was made through 2005. It featured a 3.5-inch chamber and is said to be based on an “updated” previous model called the Montefeltro. The SBE took the duck-hunting crowd by storm, to the dismay of webfoots everywhere.

In 2004 the SBE II arrived, and it had its own complement of add-on features, one of which is the high-tech synthetic ComforTech stock. It was also offered with a walnut stock. The SBE II was available in various special versions for turkeys, waterfowl, and upland game, and it introduced Benelli's cryogenic barrel treatment.

ADVANCED IMPACT

Benelli’s ComforTech stock system makes the entire buttstock a “recoil pad.” The soft cheekpiece can be replaced with different sizes to suit the user’s face and shooting style.



Advancements

Innovation in the SBE line continued in 2017 with the introduction of the SBE 3, which is widely lauded as the pinnacle of rugged shotgun design and performance. New for 2025 is the SBE 3 A.I. “A.I.” stands for Advanced Impact. This is an interesting feature that involves the barrel and choke system, and it continues the Benelli tradition of technological improvements in comfort and performance.

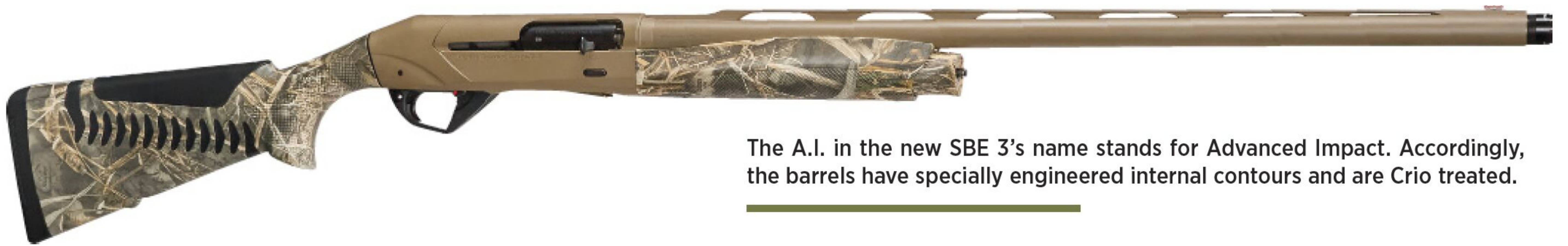
The A.I. system is composed of what Benelli describes as an innovative barrel bore contour and the new Advanced Impact Crio choke tubes. Together, these features are said to provide greater downrange velocity and, consequently, greater energy of the pellets upon impact than standard shotgun barrels. This, Benelli says, provides up to 50 percent greater penetration on the target. Patterns are said to be enhanced because the pellets are more uniformly distributed, with fewer “holes” through which a bird or clay pigeon can escape. Benelli provides more details of the A.I. system on their website: benelliusa.com/advanced-impact.

Four new SBE 3 models are available for 2025 in 12- and 20-gauge versions. All have 28-inch vent-rib barrels. The 12 gauges have 3.5-inch chambers, and the 20s have 3-inch chambers. Both versions shoot all manner of the appropriate gauge without any adjustment by the user. The guns feature a durable gray Benelli Surface

SUPER BLACK EAGLE 3 A.I.	
MANUFACTURER	Benelli benelliusa.com
TYPE	Inertia-operated autoloader
GAUGE	12 (3.5-in. chamber)
MAGAZINE CAPACITY	3 rounds
BARREL	28 in.
OVERALL LENGTH	50 in.
WEIGHT, EMPTY	7.31 lbs.
STOCK	Synthetic ComforTech
LENGTH OF PULL	14.13 in.
FINISH	Flat Dark Earth Cera- kote receiver and barrel, Realtree Max-7 stock
SIGHTS	Red bar front
TRIGGER	5.37-lb. pull (as tested)
SAFETY	Crossbolt
MSRP	\$2,849



The SBE 3 A.I. comes with five extended choke tubes and a tube wrench. The tubes are part of Benelli’s A.I. system and receive Crio treatment. Note: The fifth tube (not shown) is installed in the gun’s barrel.



The A.I. in the new SBE 3's name stands for Advanced Impact. Accordingly, the barrels have specially engineered internal contours and are Crio treated.

Treatment (BE.S.T.) or Cerakote in Flat Dark Earth or Patriot Brown, paired with Realtree Max-7 or Mossy Oak Bottomland camo, depending on the model. A larger bolt handle and bolt release make operation easier when wearing gloves.

The stock has Benelli's ComfortTech system. The stock is "split" diagonally, and it has shock-absorbing chevrons that make the entire buttstock a "recoil pad." It sounds weird, but it works. The cheek pads, called Combtech, reduce facial impact. Supplied shims allow adjustment for drop and/or pitch, and of course there are detailed instructions on how to make the adjustments in the owner's manual.

The stock fit me right out of the box; I was looking right down the rib when shooting. Since the shooter's eye is essentially the rear sight, this is an important attribute to check out on a new scattergun. I am delighted to report that the SBE 3 A.I. seemed to hit right where I was aiming. However, as I just pointed out, if the stock doesn't fit you, the gun comes with a passel of shims that let the user adjust the stock to the proper drop.

The SBE 3's action uses Benelli's Inertia Driven System, which in itself is an engineering delight. It has few moving parts. Upon firing, the gun moves rearward, and this compresses a small spring on the bolthead, and the bolthead rotates slightly. This unlocks the lugs, and the bolt goes rearward, the fired shell is ejected, and a fresh round is released from the magazine. The recoil spring moves the bolt forward, picks up the fresh shell, and delivers it into the chamber. The Inertia Drive Action has

an easy-locking bolt that functions with most all loads, from light target loads (with limitations) to the strongest magnums.

Benelli's Inertia Driven System never needs adjusting and will cycle with virtually any load of the appropriate gauge. Benelli says that some inertia-drive shotguns have fired more than 500,000 rounds and are still functioning. That ought to take care of the most ardent hunters and clay-bird shooters. Since powder gases exit through the barrel, rather than through a gas system, it is no secret that the inertia action of the SBE 3 stays cleaner longer, plus there are no gas ports or O-rings to clean.

A nice touch is that the top of the receiver is drilled and tapped so the user can add a red-dot optic or other sight for specialized purposes.

Benelli's Crio treatment freezes the barrel and choke tubes to -300 degrees Fahrenheit. The question arises, why freeze barrels? There are several good reasons. This treatment relieves internal stresses in the barrel caused by its hammer-forging. It also creates a super-slick, even-grained surface, and that smoothness produces less resistance to the wads and shot, resulting in more uniform patterns. A big plus, at least in my opinion, is that it also means that the bore is easier to clean.

The A.I. choke tubes are a story in themselves. Remember, they are frozen, too. Five tubes are provided with the SBE 3, in the usual persuasions: Improved Cylinder, Modified, Improved Modified, Full, and Straight Cylinder. As a certified skeet addict, I'm most intrigued by that fifth tube. This has



The SBE 3 A.I. utilizes Benelli's proven Inertia Driven System. The top of the receiver is drilled and tapped, which makes installing a red-dot optic easy.



ADVANCED IMPACT

precedent, as Winchester’s choke called “WS1” is reported to be Straight Cylinder.

Benelli’s tubes are 4.7 inches long, and the knurled 0.75-inch portion extends from the muzzle. The muzzle diameters of the choke tubes are 0.729 inch for Full, 0.743 inch for Improved Modified, 0.765 inch for Modified, 0.774 inch for Improved Cylinder, and 0.777 inch for Cylinder.

I was unable to mike the bore diameter of the SBE 3 A.I. I received for this report, but if we assume that it is the same as the Cylinder tube, this is quite a step up from the standard 12-gauge bore of 0.729 inch. In fact, it is similar to the 10-gauge bore diameter of 0.775 inch. This is reminiscent of the new pump-action shotguns of about 1988 chambered for the then-new 3.5-inch ammo, which launched up to 2.25 ounces of shot through grossly oversized bores. It was essentially shooting 10-gauge ammo in a 12-gauge gun, but it worked.

Performance

After I received a new SBE 3 A.I. (Model No. 12351) for this review, I quickly found out that it certainly lived up to its billing. My test gun has the Flat Dark Earth Cerakote on the receiver and the 28-inch barrel and the Realtree Max-7 camo on the stock. (Mossy Oak Bottomland camo is also available on the stock.)

I checked the velocities of typical 12-gauge loads in the new gun. Benelli says that the velocities from the SBE 3 A.I. are higher than with “standard shotgun barrels.” I used 3-inch shells (factory loads and handloads), and the gun functioned 100 percent as long as I used a load powerful enough to cycle the shotgun’s action.



The review sample’s trigger pull averaged 5.37 pounds over a series of multiple measurements with a trigger pull gauge.

I used my Oehler Model 35P chronograph and the most open choke tube to gather the velocity results. A baffle was used to protect the chronograph sky screens from wad pieces and stray shot pellets. The results are shown in the accompanying chart.

In my considerable experience, there is usually a lot of apparent variation in shotshell velocities, so I was impressed with the uniformity of the results in the SBE 3 A.I. The standard deviations (SD) were quite low as shotgun shells go. Plus, the coefficient of variations (COV, which is the SD expressed as a percent of the average velocity) were also quite low. The COVs for all loads tested were under 2 percent. That, my friends, is a rare occurrence in the scattergun world.

My handloads with 7/8 and 1 ounce of shot were developed for break-action guns, and as expected, they were too light to cycle the SBE 3’s action. Fiocchi factory loads with 1, 1 1/16, and 1 1/8 ounces of shot ran through the SBE 3’s action as slick as can be. I tried to chronograph some 3-inch steel shot duck loads, but I was unable to get any credible velocities for them. This, I surmise, is due to the result of muzzle blast error—a common malady in chronographing shotshells.

I also fired a few target and field rounds at my 4-foot square steel “pattern plate,” and the pock marks looked evenly spaced.

Overall, the SBE 3 with the A.I. system shot well, and the recoil was very tolerable. I like it a lot. The price (MSRP: \$2,849) is a bit steep, but as the saying goes, it always costs a little more to go first class.

ST



SUPER BLACK EAGLE 3 A.I. VELOCITY

CASE	PRIMER	POWDER (TYPE)	(GRS.)	WAD	SHOT (OZ.)	SIZE	VEL. (FPS)	S.D. (FPS)	COV (PERCENT)
12-Gauge, 28-in. Barrel, Cylinder Choke									
Federal	Fed. 209A	High Gun	17.1	WAA1	1	8	1247	13.0	1.0
Federal	Fed. 209A	High Gun	18.0	WAA1	1	7½	1299	14.0	1.1
Federal	Fed. 209A	Red Dot	19.0	WAA1	1	7½	1205	19.0	1.6
Fiocchi		Factory Load			1	7½	1194	15.0	1.3
Fiocchi		Factory Load			1 1/16	7½	1135	16.0	1.4
Fiocchi		Factory Load			1 1/8	9	1205	17.0	1.4
NOTES: Velocity is the average of five rounds, with the midpoint of the chronograph screens 18 inches from the gun’s muzzle. All rounds were fired through a 3-inch hole in a baffle about 6 inches in front of the gun’s muzzle. Range temperatures were 65 to 78 degrees Fahrenheit.									
All load data should be used with caution. Since <i>Shooting Times</i> has no control over your choice of components, guns, or actual loadings, neither <i>Shooting Times</i> nor the various firearms and components manufacturers assumes any responsibility for the use of this data.									

Steve says the new Benelli SBE 3 A.I. turned out first-class performance. He likes the gun a lot.



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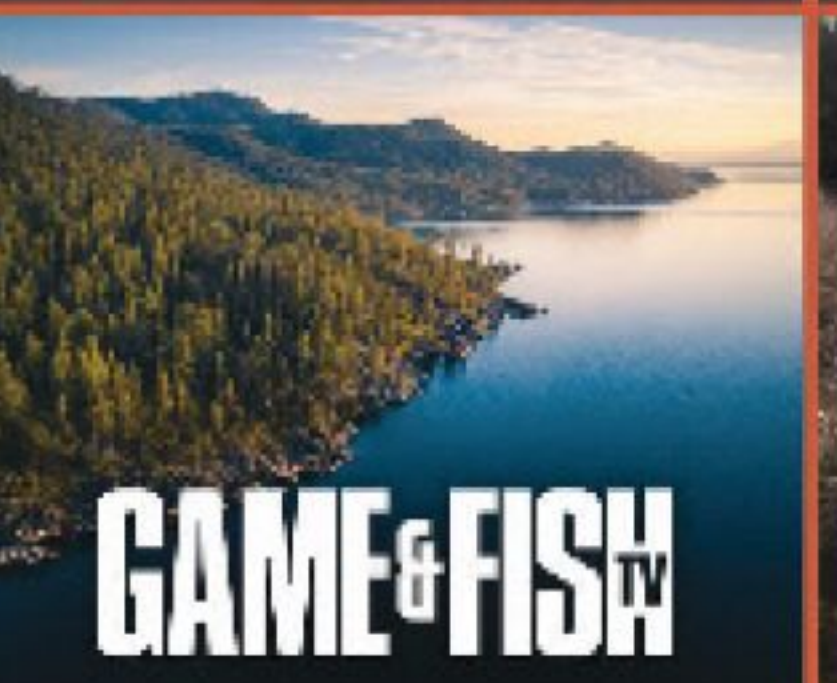
GUNSMOKE

HIPSHOTS

Fishing Shows by Category



Live Channels



MOTV

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BECAUSE OF THE NATURE AND PRODUCTION SCHEDULE OF PREparing a print magazine, you are reading this November 2025 issue in or around the month of September. That means you are probably enjoying the great outdoors in a lot of ways, including heading to the shooting range for some quality practice and fun shooting as well as getting ready for the upcoming hunting season. And you also may be getting in a little fishing at your favorite fishin' hole. If that's the case, and you haven't already discovered it, MyOutdoorTV has a ton of fishing content.

For a limited time, use the promo code SHOOTING30 and get a 30-day free trial of MyOutdoorTV. Cannot be combined with other offers. You can watch all the shows you want during your 30-day free trial, and you can cancel at any time. You can sign up at MyOutdoorTV.com or use the QR code embedded here.

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Will This Strange Antarctic Squid Solve America's Memory Crisis?

New Deep Sea Discovery Proven to Be The #1 Natural Enhancer of Memory and Focus

Half a mile beneath the icy waters off the coast of Argentina lives one of the most remarkable creatures in the world.

Fully grown, they're less than 2 feet long and weigh under 10 pounds...

But despite their small size, this strange little squid can have a bigger positive impact on your brain health than any other species on the planet.

They are the single richest source of a vital "brain food" that 250 million Americans are starving for, according to a study published in the British Medical Journal.

It's a safe, natural compound called DHA – one of the building blocks of your brain. It helps children grow their brains significantly bigger during development. And in adults, it protects brain cells from dying as they get older.

Because DHA is so important, lacking enough of it is not only dangerous to your overall health but could be directly related to your brain shrinking with age.

With more than 16 million Americans suffering from age-associated cognitive impairment, it's clear to a top US doctor that's where the problem lies.

Regenerative medicine specialist Dr. Al Sears, says thankfully, "there's still hope for seniors. Getting more of this vital brain food can make a life changing difference for your mental clarity, focus, and memory."

Dr. Sears, a highly-acclaimed, board-certified doctor— who has published more than 500 studies and written 4 bestselling books — says we should be able to get enough DHA in our diets... but we don't anymore.

"For thousands of years, fish were a great natural source of DHA. But due to industrial fish farming practices, the fish we eat and the fish oils you see at the store are no longer as nutrient-dense as they once were," he explains.

DHA is backed by hundreds of studies for supporting razor sharp focus, extraordinary mental clarity, and a lightning quick memory... especially in seniors.

So, if you're struggling with focus, mental clarity, or memory as you get older...

Dr. Sears recommends a different approach.

THE SECRET TO A LASTING MEMORY

Research has shown that our paleo ancestors were able to grow bigger and smarter brains by eating foods rich in one ingredient — DHA.

"Our hippocampus thrives off DHA and grows because of it," explains Dr. Sears. "Without DHA, our brains would shrink, and our memories would quickly fade."

A groundbreaking study from the University of Alberta confirmed this. Animals given a diet rich in DHA saw a 29% boost in their hippocampus — the part of the brain responsible for learning and memory. As a result, these animals became smarter.

Another study on more than 1,500 seniors found that those whose brains were deficient in DHA had significantly smaller brains — a characteristic of accelerated aging and weakened memory.

PEOPLE'S BRAINS ARE SHRINKING AND THEY DON'T EVEN KNOW IT

Dr. Sears uncovered that sometime during the 1990s, fish farmers stopped giving their animals a natural, DHA-rich diet and began feeding them a diet that was 70% vegetarian.

"It became expensive for farmers to feed fish what they'd eat in the wild," explains Dr. Sears. "But in order to produce DHA, fish need to eat a natural, marine diet, like the one they'd eat in the wild."

"Since fish farmers are depriving these animals of their natural diet, DHA is almost nonexistent in the oils they produce."

"And since more than 80% of fish oil comes from farms, it's no wonder the country is experiencing a memory crisis. Most people's brains are shrinking and they don't even know it."

So, what can people do to improve their memory and brain function in the most effective way possible?



MEMORY-RESTORING SENSATION: The memory-saving oil in this Antarctic squid restores decades of lost brain power starting in just 24 hours.

Dr. Sears says, "Find a quality DHA supplement that doesn't come from a farmed source. That will protect your brain cells and the functions they serve well into old age."

Dr. Sears and his team worked tirelessly for over 2 years developing a unique brain-boosting formula called **Omega Rejuvenol**.

It's made from the most powerful source of DHA in the ocean, squid and krill — two species that cannot be farmed.

According to Dr. Sears, these are the purest and most potent sources of DHA in the world, because they haven't been tampered with. "**Omega Rejuvenol** is sourced from the most sustainable fishery in Antarctica. You won't find this oil in any stores."

MORE IMPRESSIVE RESULTS

Already, the formula has sold more than 850,000 bottles. And for a good reason, too. Satisfied customers can't stop raving about the memory-boosting benefits of quality-sourced DHA oil.

"The first time I took it, I was amazed. The brain fog I struggled with for years was gone within 24 hours. The next day, I woke up with the energy and mental clarity of a new man," says Owen R.

"I remember what it was like before I started taking **Omega Rejuvenol**... the lack of focus... the dull moods... the slippery memory... but now my mind is as clear as it's ever been," says Estelle H.

"My mood and focus are at an all-

time high. I've always had trouble concentrating, and now I think I know why," raves Bernice J. "The difference that **Omega Rejuvenol** makes couldn't be more noticeable."

And 70-year-old Mark K. says, "My focus and memory are back to age-30 levels."

These are just a handful of the thousands of reviews Dr. Sears regularly receives thanks to his breakthrough memory formula, **Omega Rejuvenol**.

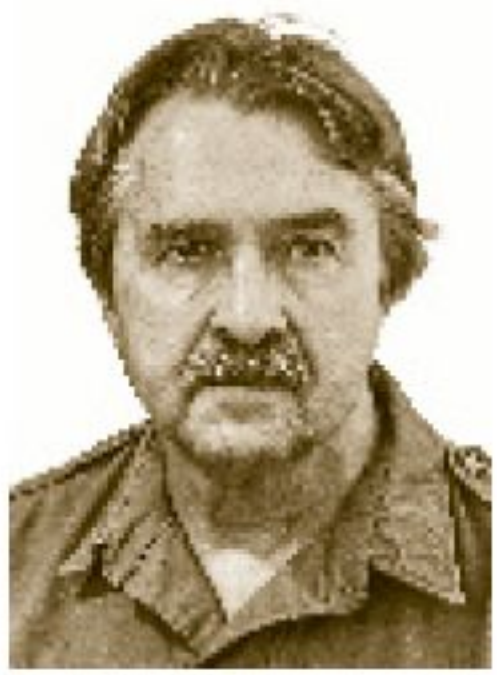
WHERE TO FIND OMEGA REJUVENOL

To secure bottles of this brain-booster, buyers should contact the Sears Health Hotline at **1-888-358-8046**. "It takes time to manufacture these bottles," says Dr. Sears. "The Hotline allows us to ship the product directly to customers who need it most."

Dr. Sears feels so strongly about this product, he is offering a 100%, money-back guarantee on every order. "Send back any used or unused bottles within 90 days and I'll rush you a refund," says Dr. Sears.

The Hotline is taking orders for the next 48 hours. After that, the phone number may be shut down to allow for inventory restocking.

Call **1-888-358-8046** to secure your limited supply of **Omega Rejuvenol**. Readers of this newspaper immediately qualify for a steep discount, but supplies are limited. To take advantage of this great offer use Promo Code **STOM925** when you call.



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Be Your Own Supply Chain

We find ourselves in the strange position that some components in great demand are once again in great supply, while others are gone, possibly for good. **BY TERRY WIELAND**

FOUR YEARS AGO, AS THE LOCKDOWN BIT AND near-panic ensued and gun sales took off and ammunition was nowhere to be found, the handloader was, if not king, at least the bemused possessor of friends he never suspected he had.

As ammunition shelves went bare, so did many handloading components. Primers were, as usual, the big problem, there being no substitute, but we ran out of powders, too. Since many powders for sale in this country are imported, first the supply chain broke down (COVID-19) and then Russia invaded Ukraine. Suddenly, powder mills near and far were being diverted to military production.

No sooner had supply chains reconnected than they were broken again as tariff wars broke out, causing confusion up and down the line. This was closely followed by NATO members agreeing to spend more on defense, with the subsequent fallout.

Today, we find ourselves in the strange position that some things in great demand are once again in

great supply, while others are gone and, to all appearances, possibly gone for good.

In the case of the former, this morning (a Saturday in June) I received emails from four different online ammunition suppliers offering me great deals on 9mm and .22 LR, among others, with free shipping, range bags, and other inducements. We seem to be awash in 9mm ammo. As for the latter, old standby powders like Bullseye and Unique may well be gone for good as Northrup Grumman, owner of the mills, concentrates on military production.

In the modern age of manufacturing, supply chains have become the watchword for both good and evil. When they work, they're great, keeping supplies up and prices down. When they're bad, suddenly you find the shelves bare and the stuff you need locked in a shipping container, floating in endless circles somewhere off San Diego.

As handloaders, we find ourselves in need of things—sometimes unexpectedly—and a dearth of any one of them can grind production to a halt. For

For handloading shotshells, everything needs to be exact, and there are a lot of things! Find anything from primers to powder bushings to the press itself out of stock, and production grinds to a halt.

example, I've just arranged to get a .410 shotgun to try out. Knowing I'll need a loading press, I checked Ballistic Products for a MEC 600 Jr. and found the .410 model out of stock. According to the MEC website, delivery time is three to five weeks. As for .410 hulls, primed or otherwise, best of luck.

Shotshell reloading can be especially bad in this regard, partly because of the volumes involved if you shoot skeet or trap on a regular basis and partly because of the complexity of both components and production parts. With the smaller gauges, data is sparse compared to the 12 gauge, and each shell requires the precise hull, primer, powder, wad, and shot charge. Shotshells don't have the interchangeability we find with metallic cases, where if you don't have this primer, you can substitute that one.

Then you need the right press (it's easier to have one press for each gauge), with the correct charge bar for shot load, and the precise bushing for powder charge.

Loading 28 gauge last year, of several dozen recipes offered in Ballistic Products's small-gauge manual, I found exactly one (1) load that would provide the performance I wanted with the components I could

get. *One!* And the bushing for the right amount of the powder in question? Out of stock.

I don't shoot competitive skeet or trap to the extent that I need car loads of identical shotshells, so complex progressive presses are less useful than a flock of single-stage MECs. Therefore, I acquired as many charge bars as they make, covering loads from ½ ounce to 1¼ ounces, and a complete set of powder bushings—or as many as were available, and I'm working on getting the others. Before you howl, yes, I have a couple universal charge bars, but they can be more trouble than they're worth.

I haven't done the exact arithmetic, but given the low price of powder bushings, buying them all at once is more economical than one or two at a time. One large purchase often gets you free shipping, too. Figure that in, and you're probably saving money. For sure, you are saving frustration and teeth-gnashing.

As for the requisite hulls, wads, and primers, the lesson is obvious. Am I advocating hoarding? Maybe. But I prefer to think of it as creating my own supply chain, which allows me to be out shooting when others are not.

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WATCH THE ACTION



Frank R. Brownell III (1939–2025)

Frank Royce Brownell III was born on June 24, 1939, in Montezuma, Iowa, the second child and only son of Brownells founder Bob Brownell and wife Lois. Frank grew up in Iowa and became involved in both the family business and the American gun industry at an early age. He graduated magna cum laude with a degree in advertising from the School of Journalism at the University of Iowa in 1961 before serving aboard the *USS Caliente* (AO-53) as a U.S. Navy reservist.

In 1965 Frank joined Brownells full-time, laying out *Big Book Catalog #18* and soon helped publish the first *Gunsmith Kinks* book in 1969 under the name F. Brownell and Son. Frank became President of the company in 1983, CEO in 2007, and Chairman of the Board in 2012. He guided Brownells for decades. From marketing the now-iconic Latigo Sling at the 1964 NRA convention to elevating gunsmithing as a respected profession, his influence can be seen in countless shops, ranges, and workbenches across America. He helped establish Brownells as a nationwide legacy retailer in the gunsmithing, gun parts,

and firearms space. He helped advance the best model for working with and developing endemic industry media. He believed that gunsmithing was an underappreciated craft and created new ways to support and develop the growth of gunsmithing, gun ownership, and gun culture. He is remembered for his kindness, integrity, and infectious enthusiasm and as a stalwart supporter of our unique American rights guaranteed by the Second Amendment.

Frank believed in giving back to the community and served on the Montezuma, Iowa, City Council for over 50 years and was Mayor Pro Tem for much of his tenure. He provided leadership on several boards, including the Grinnell hospital board, the Wittington Center, the School of Journalism at the University of Iowa, and many firearms industry-related organizations. He was a 50-plus-year Mason and a member of York Rite, Scottish Rite, and Za Ga Zig Shrine.

Frank passed away on June 18, 2025, after a lengthy illness. He was six days shy of his 86th birthday. He is survived by a sister, three sons and their wives, and six grandchildren.

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It's no wonder collectors and history buffs alike clamor to get their hands on them. That is, if they can get their hands on them.

Prized Last-Year Coins

Collectors love "lasts" as no collection is complete without the last coin struck. Last year coins are often hard to find and always in demand. Little did master engraver George T. Morgan know the legacy he was creating when he designed what has become known as "The King of Silver Dollars" but it came to an end 104 years ago with the last-year 1921 Morgan Silver Dollar, the most beloved coin in American history.

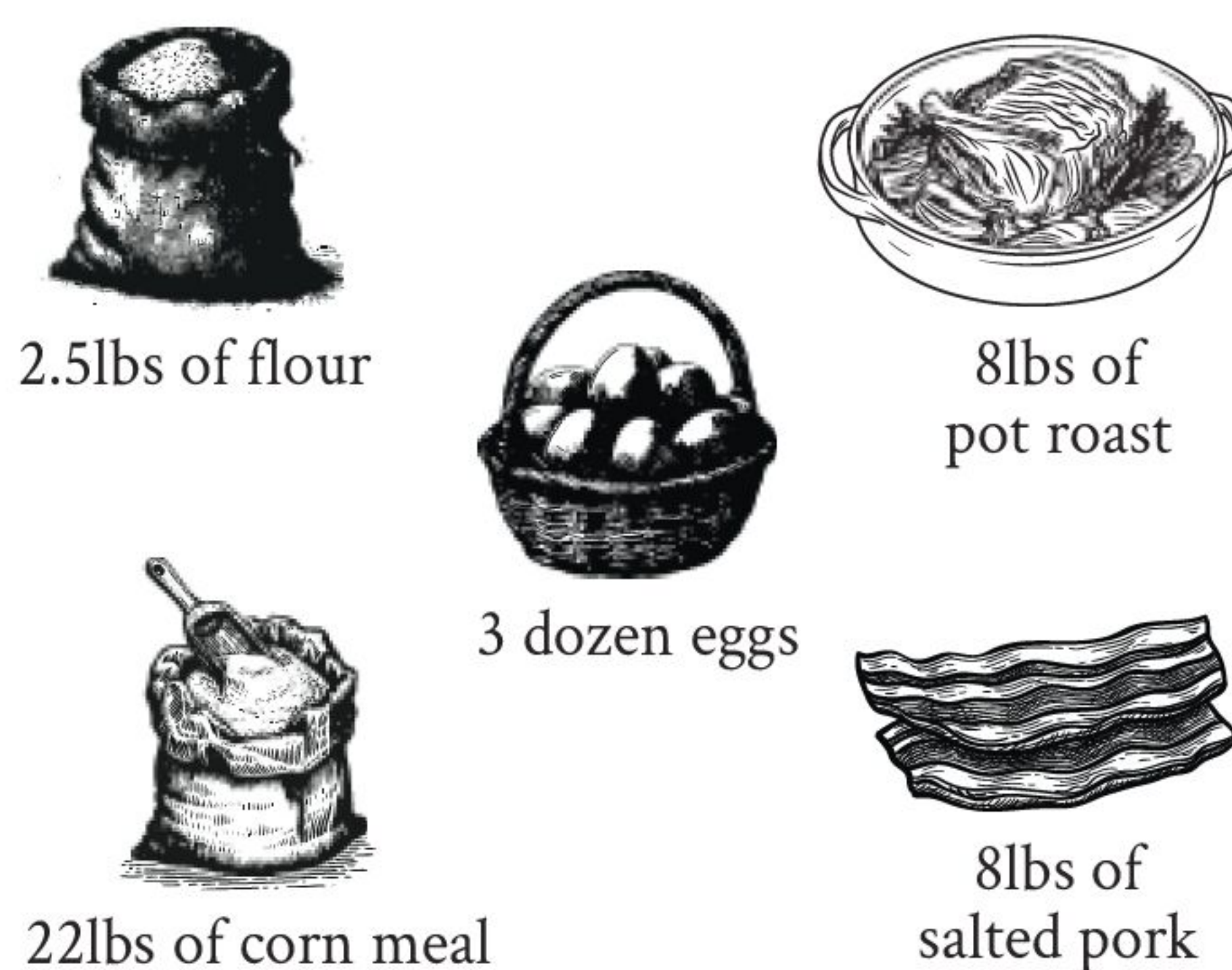
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JB Hodgdon (1936–2025)



Frank R. Brownell III (1939–2025)

In Memoriam

Sadly, two more longtime friends of *Shooting Times* have passed away. **BY JOEL J. HUTCHCROFT**

READERS OBVIOUSLY KNOW THAT THE TITLE OF this column is “Hipshots,” but this month it might better be called “Parting Shots” because two more longtime friends of *Shooting Times* and the gun industry have passed on. They are JB Hodgdon and Frank Brownell.

JB Hodgdon (1936–2025)

A lifelong resident of Kansas, John Brewster “JB” Hodgdon was born on October 16, 1936, to Bruce and Amy Hodgdon. JB grew up in suburban Kansas City and was extremely active in his hometown community with first responders, Scouting America (formerly the Boy Scouts of America), and the classic car community. He graduated from the University of Kansas in 1959 with a degree in business.

JB held many roles at the Hodgdon Powder Company. In the early days, he packaged powder at the family dining room table. Later he led international sales and served as the face of Hodgdon

at industry trade shows. He served on the Hodgdon board in various roles, including Board Chair, for many years and was named Chairman Emeritus in 2025.

JB was passionate about hunting and shooting and was a devoted annual supporter of the National Shooting Sports Foundation; a lifetime benefactor member of the NRA; a life member of the Kansas State Rifle Association; and a member of the Safari Club International, Pheasants Forever, Ducks Unlimited, and National 4-H Shooting Sports. He was inducted into the National Shooting Sports Foundation Hall of Fame (2020) and was a co-recipient of the NRA’s Golden Bullseye Pioneer Award (2009). He also received the Shooting Industry Academy of Excellence Award (2009).

JB passed away on June 13, 2025, at the age of 88. He is survived by his beloved wife of 28 years, Anne, four sons, two stepchildren, four grandchildren, and seven great-grandchildren.

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