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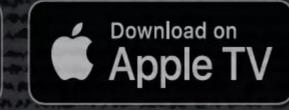


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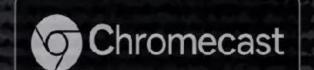












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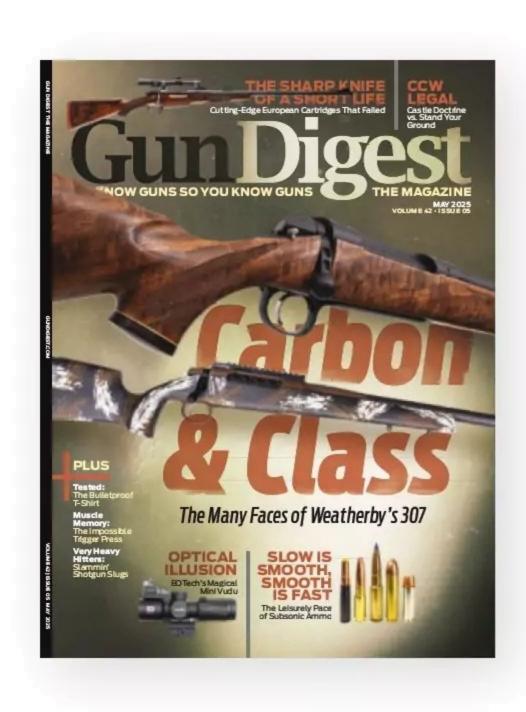
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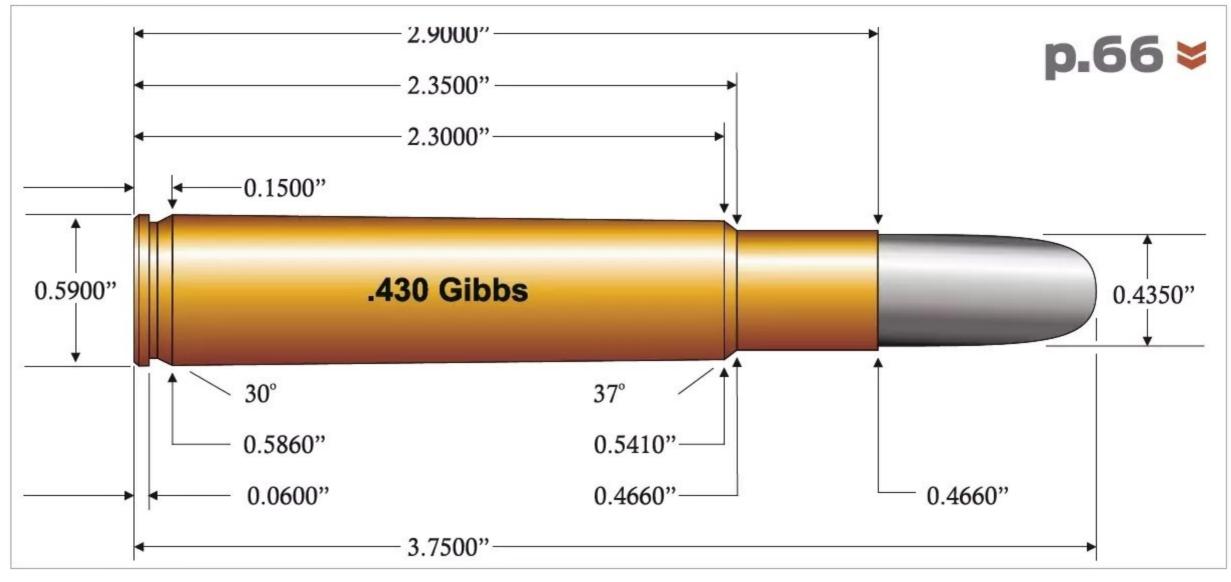












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ven as I type this, it's hard for me to believe that I'm going to tell this story publicly, because I'm not sure that I've ever admitted it to anyone. But, it's been a very long time, more than a few things have changed ... and this seems like the perfect spot to come clean.

So, aside from a little Daisy pellet gun my dad bought me when I was 7 years old or so, my early firearms education came from cutting my teeth on learning to accurately launch shotgun slugs from a Remington 870 Express. And I mean that literally: I don't recall ever cutting my forehead from getting scoped, but I certainly cut my teeth lobbing those 1-ounce slugs at local whitetails.

And I got pretty good at it: Growing up in a "slug zone," it's simply what I had to do if I wanted to hunt whitetails, and because no one else in my family hunted, that 870 was my only firearm ... aside from the aforementioned Daisy and later a .22 LR from my Grandma.

Fast-forward to age 13. Or maybe 14. After school at a friend's house. Definitely young enough that I remember getting

dropped off by my mom.

Now, I don't recall exactly how the situation progressed, but an after-school video game session somehow turned into a shooting session with my buddy and his .223 Remington on the range out behind his barn. Cool. And fun, right?

I was up first, and I remember being terrified—it was a "rifle" after all, and rifles kick. Or at least that's what I thought. I was so scared of the recoil that my first shot missed the basketball (I have no idea why we decided to execute a perfectly good basketball) off-hand from about 20 yards because I flinched ... well, aggressively. I had no idea what a kitten the .223 was because I had zero previous experience.

Yes, you're reading between the lines correctly: A kid who had killed deer with slugs was afraid to shoot a .223 Remington because "rifles kick."

The point of this story? There isn't one ... other than the fact that looking back at the situation is quite hilarious.

Shoot straight, shoot a lot, and enjoy this issue. **GDTM**



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PRECISION RIFLESCOPE









It's a bit moody.

HISTORICAL NOTES

The .17 Remington was introduced in 1971 as a new chambering for Remington's 700 series bolt-action rifles. The case is based on the .223 Remington necked-down to .17 caliber, with the shoulder moved back .087 inch to lengthen the neck while retaining the same shoulder angle. The .17 Remington is similar but not identical to the .17-223 wildcat developed about 1965.

Experiments with .17-caliber rifles go back to 1944, when P.O. Ackley, the well-known gunsmith and experimenter, developed the .17 Ackley Bee based on necking down the Improved .218 Bee case. There are a number of other .17-caliber wildcat cartridges made by necking down .22-caliber centerfire cases, such as the .221 Remington Fireball, .222 Remington and more. Remington, New Ultra Light Arms, Wichita and Sako offer rifles in this chambering.

GENERAL COMMENTS

The .17 Remington has had a steady, though unspectacular, sales record since its introduction. Its greatest

drawback is that it is a special-purpose cartridge suited almost exclusively for varmint shooting. For the sportsman who wants a rifle only for that purpose, this is not a disadvantage, but those requiring a rifle for both varmint and deer hunting would be better served with some other cartridge.

With the 25-grain hollow-point bullet loaded by Remington and similar bullets available for handloading by Hornady, the .17 Remington must be rated as a short-range varmint cartridge. On the other hand, it has cer-

tain advantages, such as minimal recoil and ricochet probability, and a very flat trajectory due to the high initial velocity of over 4,000 fps.

Disadvantages of the chambering include rapid barrel fouling, extreme sensitivity to slight charge weight variation and limited component availability. Factory-loaded ammunition is available from Remington and in the Nosler Varmageddon line. Moly-plated bullets and cleaner-burning powders can eliminate the rapid fouling problem. **GDTM**

.17 REMINGTON LOADING DATA AND FACTORY BALLISTICS

BULLET (GRAINS/TYPE)	POWDER	GRAINS	VELOCITY	ENERGY	SOURCE
25 HP	IMR4064	22.5	3,800	801	Hornady
25 HP	IMR4320	24.7	4,000	888	Hornady
25 HP	IMR4895	23.8	3,900	845	Hornady
25 HP	IMR3031	21.6	3,800	801	Hornady
25 HP	N135	22.8	4,040	906	Vihtavuori
20 AccuTip	FL	-	4,250	802	Remington 29162
25 HP	FL	-	4,040	906	Remington 28460

Note: Remington cases and Remington No. $7\frac{1}{2}$ primers used in all loads.



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MAKING YOUR MUSCLES REMEMBER

Why is pressing the trigger so difficult?

f you go to school to learn how to shoot a defensive handgun, you can pretty much bet the program of instruction will follow a set format. First, they'll teach you about the different kinds of handguns and the four rules of firearms safety. Then, before the shooting commences, you'll receive a lecture about sight alignment, sight picture and trigger control. The instructors will most likely summarize this segment with something like the secret to accurate

shooting is maintaining a proper sight picture while pressing the trigger.

This is indeed the secret to shooting. If you're a target shooter, this is how you do it successfully. If you're shooting to save your life, this is how you stay alive. No matter what you're shooting, maintaining the proper sight picture throughout the trigger press is the key to getting hits.

The problem with this

advice is that it suggests maintaining the sight picture and properly pressing the trigger are equally important. And, well, they are. However, it also *suggests* you need to *learn* them simultaneously. Let me see if I can explain this problem that's causing a conundrum.

Regardless of the type of sight your pistol has, if you cannot press the trigger without disturbing that sight picture you'll miss.



Sight alignment and sight picture are easy to learn. Even a novice can tell this front sight isn't centered in the rear notch of the rear sight on this pistol.



Understanding and learning proper sight alignment and the correct sight picture is the easiest part of shooting. I can demonstrate it to you one time, and you'll remember it for life. It's simple: Center the front sight in the rear sight notch so it's not above or below the top of the rear sight. With the sights so aligned, place the front sight on the spot on the target where you want your bullets to go. Granted, there are some variations, such as with XS Big Dot sights and with a dot in a reflex sight. But the point is, this isn't rocket science or something you need to study or practice. You see it once, and it's with you forever.

On the other hand, the proper trigger press—one that won't disturb the sight picture—is devilishly difficult to explain and even harder to execute. In fact, you'll spend the rest of your life trying to master the perfect trigger press, and it'll never

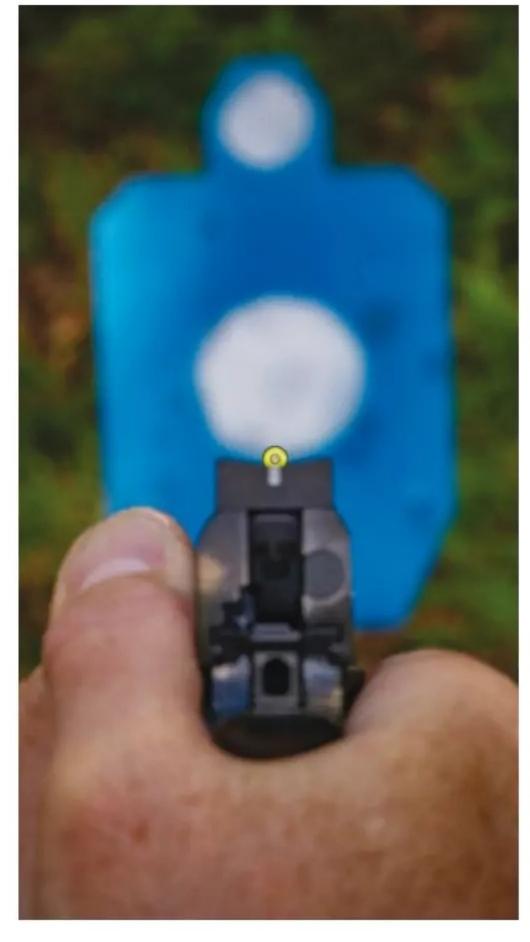
happen. You might get very good at pressing a trigger, but you'll never be good enough to do it perfectly every time. If complete mastery of the trigger was possible, we'd all be grand masters, deadeye Dicks and

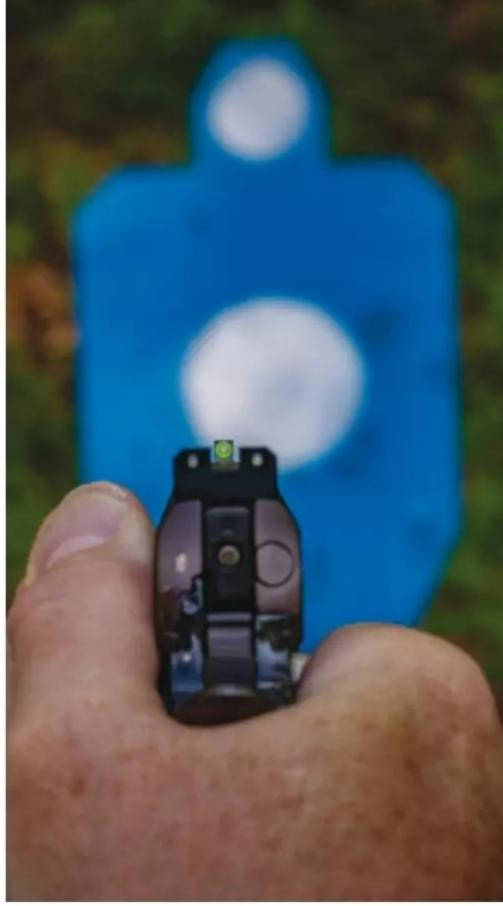
The shooter has properly aligned these sights, but it's easy to see the sight picture is too low.



One of the things that makes learning the proper trigger press so difficult is trying to learn how to do it while also not disturbing the sight picture. Oh, but you say that's what we're supposed to do, right? Ultimately, yes, that's the goal. The problem is trying to accomplish that twopronged goal before you know how to correctly execute both aspects of it. Let's use basketball as an analogy. One of the most important basic skills of basketball is being able to dribble down the court while walking, jogging and running. Walking, jogging and running are easy; dribbling is hard. What's even harder is dribbling while walking, jogging or running. You must learn to dribble effectively before ever attempting to do it while moving.

The same applies to shooting a handgun. Aligning the sights correctly, with the proper sight picture—just like walking, jogging or running—is easy. Conversely, properly pressing a trigger is difficult, and learning to do it without disturbing the sights is even more difficult—to the nth power more difficult. I've seen shooters struggle with only minimal improvement for years while trying to *learn* how to press the trigger and also keeping





the sights aligned and on target. So, what's the answer?

The answer is to practice pulling the trigger and get damned good at it before worrying about the sights. Pressing the trigger is a motor skill, and there are essentially three stages of motor learning. First you must identify and understand the skill you need to learn. Second, you must refine your movements and correct errors. And finally, you must work to make the movement automatic and consistent. Some call this process the establishment of muscle memory, but, of course, muscles don't have memories. What you're actually doing is conditioning your brain to drive physical activity without deliberate and conscious thought.

Let's use another analogy. Playing a song on a guitar is a very complex physical activity. It requires the combination of a variety of chords and notes, executed by various fingers on both hands, and done in rhythm. However, if you already know how to execute the chords, and if you have practiced transitioning between them enough, playing the song is much easier. Your brain says, "This chord now," and it happens, without the conscious thought of where to place your fingers, and without any consideration of how hard you need to press with each finger.

Experts on muscle learning sug-

COLT VIDER

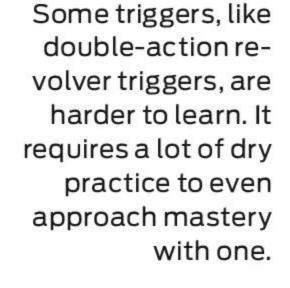
gest it takes anywhere from 3,000 to 50,000 repetitions to establish muscle memory. For the handgun shooter, this means you should conduct at least 3,000 trigger presses before you ever attempt to shoot. Of course, the number of repetitions required will be different for everyone. Fortunately, this is easy to do with dry-fire or dry practice. However, the mistake many make is combining the initial learning of the trigger press with sight alignment during dry practice. Isolating the trigger press and learning to do it, singularly—without moving the handgun—is key.

If you cannot press the trigger

correctly you cannot get your hits—period. Mastery of the trigger helps you avoid target panic, where you're hesitant to press the trigger for fear of moving the sights. It'll also help you avoid jerking the trigger at the instant you see the sight alignment and sight picture you desire.

You may be wondering why shooting schools don't teach this method of learning how to manipulate a trigger. The answer is very simple: They don't have time. Some shooting schools last only two days, and even the weeklong schools have a lot of other stuff they want to teach you, and that you want to learn. It's incumbent upon you to learn the trigger press beforehand, and with judicious dry practice it's something you can get very good at on your own.

I know this process works because it's the method I used to teach my kids to shoot. They all spent many hours pressing the trigger of a laser training gun like the SIRT from Next Level Training before they ever fired a shot. Then, they did the same with the handgun they were going to use. Eventually—just as they did—you must combine the trigger press with proper sight alignment, but it'll all be much easier if you know how to press a trigger correctly first. **GDTM**









Understanding Stand Your Ground laws.

ollowing last month's exploration of Castle Doctrine, which examined the right to defend yourself within the sanctity of your home, let's explore its broader and more controversial counterpart: Stand Your Ground.

UNDERSTANDING THE FOUNDA-TION

Castle Doctrine provides a clear foundation for self-defense within one's home. It removes the obligation to retreat when facing a threat inside your home. But what happens when that threat arises outside your home? This is where Stand Your Ground comes into play.

Stand Your Ground laws reinforce the recognition of the right to selfdefense to any place where a person is lawfully present. Under these laws, a person has no duty to retreat before using force—even deadly force—if they

prevent the imminent threat of death or grave bodily harm. Unlike Castle Doctrine, which is limited to the home, Stand Your Ground allows individuals to defend themselves in public spaces without first attempting to retreat.

THE LEGAL FRAMEWORK

The concept of Stand Your Ground isn't new, as many media outlets often portray. States like Indiana have had some version of Stand Your Ground since at least the late 1800s. In the 1877 case of Runyan v. State, the Indiana Supreme Court opined that, "The weight of modern authority, in our judgment, establishes the doctrine, that, when a person, being without fault and in a place where he has a right to be, is violently assaulted, he may, without retreating, repel force by force ..."

Today, over 30 states have adopted some form of Stand Your Ground.

reasonably believe it's necessary to Florida's statute is among the most well-known. It states that a person who is justified in using or threatening to use deadly force "does not have a duty to retreat and has the right to stand his or her ground if the person using or threatening to use the deadly force is not engaged in a criminal activity and is in a place where he or she has a right to be."

> Indiana's law similarly affirms that a person has no duty to retreat if they reasonably believe that force is necessary to prevent serious bodily injury or a forcible felony. Though, Indiana law does not explicitly use the "Stand Your Ground" terminology.

THE ZIMMERMAN TRIAL AND **MEDIA MISUNDERSTANDING**

Despite its long-standing presence in American legal tradition, Stand Your Ground became a media flashpoint during the 2012 trial of George Zimmerman for the shooting of Trayvon

"Understanding these laws and their limitations is crucial for responsible self-defense. The right to protect yourself is fundamental, but with that right comes the responsibility to use force wisely and within the bounds of the law."

Martin. Many media outlets framed the case as a test of Florida's Stand Your Ground law. However, Zimmerman's defense wasn't based on Stand Your Ground but on traditional self-defense principles.

Zimmerman claimed that Martin attacked him and pinned him to the ground, preventing any possibility of retreat. Since Stand Your Ground only applies when retreat is possible, it was legally irrelevant in that case. Nevertheless, the media portrayal of Stand Your Ground as a "license to kill" persisted, fueling heated political and racial debate.

THE RACIAL NARRATIVE AND STATISTICAL REALITY

A common criticism of Stand Your Ground is that it disproportionately benefits White defendants and harms minority victims. However, data from the *Tampa Bay Times* and the Crime Prevention Research Center challenge this assumption.

In Florida, Black defendants make up 34 percent of those who invoke Stand Your Ground, even though they account for only 16.7 percent of the state's population. Furthermore, Black defendants invoking Stand Your Ground are acquitted at a higher rate (by 4 percentage points) than defendants. Most cases where a Black defendant successfully invoked Stand Your Ground involved the killing of another Black person.

This data calls into question the racial narrative and suggests that Stand Your Ground isn't inherently biased—it provides legal protection to anyone, regardless of race, who faces an imminent threat of violence.

LEGAL PROTECTIONS AND LIMITS

Stand Your Ground, like Castle Doctrine, isn't an open-ended justification for the use of force. For a claim of self-defense under Stand Your Ground to succeed, the following conditions must typically be met:

The person using force must be lawfully present.

The person must not be the initial aggressor.

The use of force must be reasonable and proportional to the threat faced.

The threat must be immediate and unlawful.

If any of these elements are missing, a Stand Your Ground defense will likely fail.

THE PHILOSOPHICAL DEBATE

While Castle Doctrine is broadly accepted as reasonable, Stand Your Ground is more controversial because it recognizes the right to self-defense in public spaces. Critics argue that it escalates violence and undermines public safety. Supporters counter that it empowers potential victims by not placing the burden on them to retreat, allowing individuals to protect themselves without fear of legal repercussions for failing to escape an attack.

The value of Stand Your Ground is that it reduces the ability of overzeal-ous prosecutors from second-guessing split-second decisions made under life-or-death pressure, and it relieves the innocent potential victim of the burden of attempting to retreat. Jurors, sitting in the calm of a courtroom, might wonder why a defendant didn't

flee. Stand Your Ground removes that element of hindsight, allowing individuals to defend themselves without being punished for failing to find an escape route.

BALANCING FREEDOM AND RESPONSIBILITY

Stand Your Ground is a natural extension of Castle Doctrine, reinforcing the right to self-defense beyond the home. The principle reflects a fundamental belief in personal responsibility and individual autonomy, but it also demands that those who invoke it act reasonably and in accordance with the law.

Understanding these laws and their limitations is crucial for responsible self-defense. The right to protect yourself is fundamental, but with that right comes the responsibility to use force wisely and within the bounds of the law.

Stand Your Ground isn't a license to kill. It's a legal safeguard that allows individuals to defend themselves without the obligation to retreat—but only when the circumstances justify it. Like any tool of personal liberty, it must be wielded with care, understanding and respect for the law. Finally, even when the law doesn't mandate retreat, it's crucial to remember that the best course of action is to avoid a potentially fatal confrontation whenever it's possible to do so without endangering yourself. **GDTM**

About the Author

Alex Ooley is an affiliate attorney with the Armed Citizen's Legal Defense Network. The views and opinions expressed in this article are his own and do not necessarily reflect those of the Network. This article is for informational purposes only and should not be considered legal advice. For specific legal guidance regarding your situation, please consult with a qualified attorney.









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Light it up, subtly and safely.

The Strike Industries EMP with LED. Made of aluminum, it holds a battery and a LED light, and there's a switch to turn it off and on.



one any low-light training? Competed in a night match? I've done both—a bunch of times. Strike Industries now offers an LED-equipped baseplate for your Glock magazines: the EMP with LED. When I saw that, my reaction was, "I've gotta try one of those." Strike Industries was happy to send some and the rep mentioned offhand, "We've gotten some flak on these." I looked into it, and the flak can be summed up as: "Why would I give away my position with a light on my mag?"

I was stunned speechless—and those who know me know how rare that is. Really? Position? Were they not paying attention to the need for safety in training or competition? That's the intended use of the LED baseplate. Anyone who thinks it's a tactical tool needs someone

tripping over stuff and keeping the muzzle in a safe direction, I want the instructor and others to know where I am as I try to soak up the lesson. If that means wearing a set of glow-in-thedark Mickey Mouse ears, fine. I'm there to learn. The same goes with a competition. I want to win, but I want to go home in one piece, with no extra holes. So, again, knowing everyone knows where I am at all times matters to me.

And then there's the matter of magazines. Yes, Glock magazines (what Strike makes right now) are inexpensive, but they aren't quite disposable. Everyone at the match has spent time getting their eyes night-adjusted (or using NODs). At the end of each stage isn't the time to fire up a thousandlumen tactical light to find dropped magazines.

The Strike web page also mentions using the EMP with LED as a low-level light, navigation aid, finding things in the dark, etc. Me? Not so much. I have other lights—ones that don't have bullets attached to them—to use for searching or finding the keyhole in the lock. Just training and competition for the EMP with LED, thank you.

Simply swap your existing baseplate

for the Strike, and you're good to go.

battery only works one way.

Be sure and assemble properly, as the

Each EMP with LED adds length to the magazine, but doesn't add capacity. It holds a 2032 battery (included thank you Strike), and it's kinda sorta water-resistant. I take that to mean it'll stand up to the rain, at least as much as you'll put up with in training or competition. Don't expect to go swimming with it. Seawater is a specified no-no. The extra length makes it easier to pry a mag out of the pistol if it hesitates to drop, but the extra ounce and a half should induce most magazines to fall freely.

I'm knee-deep in snow right now, so I have no idea how well it holds up to being dropped on gravel. But the LED is recessed into the mag extension, so it looks pretty well protected. I suspect it'd take a peculiar set of circumstances to result in your LED getting whacked just right and thus quitting.

To repeat: This isn't the baseplate you'd select heading out the door to fight the good fight or whatever. It's what you select to train for the fight or the match you intend to win, in a safe and orderly fashion. **GDTM**



on its own, it wouldn't be worth a damn if it couldn't be comfortably concealed. The Everyday Armor T-Shirt accomplishes this handily.

The compression material of the shirt combined with what Premier Body Armor calls "concealment channels," the armor panels are hugged close to the body and don't droop or sag. That helps with both consistently protecting one's cardiac box as well as with preventing others from noticing it. Each armor panel's scant 0.8-pound weight helps with that as well.

The shirt is also light, breathable and soft, all excellent points since it's designed to be worn as an undershirt. One important note is that Premier Body Armor recommends ordering a size down from what you usually wear to ensure a snug fit. I did, and it fits perfectly.

Also, if this is something you intend on wearing often, Premier sells additional shirts separately so you can regularly wash and rotate them, as the armor inserts are very easy to take in and out of their internal pouches. The shirts are available in either white or black and in sizes ranging from extra small to 4XL.

My only minor complaint about the setup is the armor panels' ripstop edge sometimes snags on the material of the shirt, which makes some noise. It's not too loud or noticeable, and it only happens during certain movements, but it would be preferable if it was as quiet as wearing a normal piece of apparel.

THE ARMOR

The armor panels that come with Premier Body Armor's shirts are designed to protect the cardiac box while being as concealable as possible, so all have dimensions of 7.75 inches by 12.75 inches and a thickness of a mere 0.22 inch. They have American-made para-aramid ballistic cores, so they're somewhat flexible, and they feature a ripstop wrap to protect them from moisture. That last point is important since the armor has to sit against your potentially sweaty torso all day. If that fails to protect them, they feature a 5-year warranty, too.

It's important to note that while the Tshirt's armor panels are "tested to meet the







NIJ ballistic standards for Level IIIA', they are not officially rated by the NIJ.

That matters to some people more than others, but if you want to learn more about body armor and NIJ ratings you can read our level 4 plate buyer's guide.

That said, while I trust Premier Body Armor's own published testing data, I believe in "trust, but verify" even more so I hit the range to do some verifying.

THE SHOOTING TEST

The test was simple: The Everyday Armor T-Shirt strapped to a target and a spread of relatively common handgun rounds.

One important note is that Premier tested this armor to NIJ level IIIA





standards—meaning a distance of 5 meters—but I wanted to push the panels a bit harder than that. Most gunfights happen closer than 5 meters anyway, so I did my testing at about 3 meters, or 10 feet.

The calibers used include .22 LR, .25 ACP, 9×18 Makarov, 9mm NATO, .45 ACP and 7.62 Tokarev, all FMJ loads. The 9×18 Makarov is standing in for .380 ACP since it's basically just a spicy .380. Also, while not a lot of criminals are running around with Tokarevs anymore, it used to be a common rumor that it could penetrate IIIA armor so I thought I'd throw it in to see how it fared against Premier's.

To cut to the chase, the armored shirt fared very well, stopping all projectiles sent its way. It obviously had no problem handling .22 LR or .25 ACP, and 9×18 Makarov barely even made a perceptible backface deformation. Slightly larger dents were produced by .38 Special, 9mm NATO and .45 ACP, but nothing one wouldn't be able to shake off if hit while wearing it.

As far as common handgun threats are concerned, the Everyday Armor T-Shirt beat all of them.

The only handgun bullet fired that I think the wearer really would have noticed is the 7.62 Tokarev. It did successfully stop it, but it left a pretty big impression on the other side. That's because the 7.62 Tokarev is really pushing the velocities that IIIA armor can handle, although it clearly can handle it. That's even when considering that my test shot was a borderline edge hit.



Finally, mostly for fun and to give an already shot-up armor panel a warrior's death, I finished it off with a round of 12-gauge 00 buckshot. While it was definitely toast after that, the armor successfully prevented the shot from penetrating, too. An impressive feat for a .22-inchthick panel. That said, given the backface deformation, I would highly recommend not taking a 12-gauge to the chest at 10 feet ... whether you're wearing this armor or not.

HOW DOES IT WEAR?

They call it the Everyday Armor T-Shirt, but let's be honest, you wouldn't actually want to wear it every day. It's very comfortable, about as comfortable as wearing any sort of armor can be in my estimation, but it's still wearing armor. In the end, not having armor panels strapped to you will always be more comfortable than the opposite.

The same thing can be said about car-



rying a gun, however, and it's up to you to decide how much physical comfort you're willing to sacrifice for protection and peace of mind. Myself? Enough to carry a gun every day, but not enough to wear body armor every day. That said, I live in Iowa, and circumstances around the country vary wildly.

Ultimately, however, I like having the Everyday Armor T-Shirt available to me as an option. One never knows when or how their circumstances regarding security might change, and having good IIIA armor that can easily be hidden under an overshirt might really come in handy someday. I have an old traditional-style IIIA vest as well, and it's far less comfortable to wear and much harder to casually conceal in everyday attire.

Whether concealable body armor is something that you think you'd wear every day or it's just something you'd like to have for just in case, the Everyday Armor T-Shirt is worth looking at. **GDTM**



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01 Stoeger P3000 Tactical Shotgun

Stoeger Industries expands its pump-action lineup with the new P3000 Tactical shotgun, designed for home defense and security. Chambered in 12-gauge, the P3000 Tactical handles both 2¾- and 3-inch shells, with a four-round magazine and an enlarged, beveled loading port for quick reloads. It features new hybrid polymer furniture blending a fixed stock and pistol grip, plus QD swivel studs and M-Lok slots for sling and accessory use. Optics-ready, the receiver sports a Picatinny rail and is cut for RMR and RMSc red-dot plates. Finished in OD Green Cerakote, the P3000 Tactical balances practicality, durability and affordability

02 C&H ERD-2 Red-Dot Optic

C&H Precision unveils the ERD-2, a rugged, enclosed-emitter 22mm red-dot sight built for shotguns, rifles and PCCs. Featuring a 3-MOA red dot, 50,000-hour battery life, and a front-facing sensor with auto-dimming technology, the ERD-2 adapts instantly to changing light conditions. Shooters can also manually select from 10 brightness levels, including two night-vision compatible settings. Its 7075 aluminum housing ensures durability, while waterproof construction allows submersion in up to 1 meter of water. The optic comes with a Picatinny-compatible pedestal mount and offers 45-MOA windage and elevation adjustments. Compact and dependable, the ERD-2 balances reliability and cutting-edge performance for any shooting environment.

03 New Federal 7mmBackcountry Loads

Featuring Peak Alloy cases that can withstand pressures up to 80,000 psi and send projectiles at a screaming 3,000 fps, Federal's new 7mm Backcountry certainly has potential. Big-game hunters should be pleased to hear the company has announced two new loads for it: Fusion Tipped 175-grain and LRX 168-grain. The Fusion Tipped load features a streamlined polymer tip that should be devastating on game, and the bullet has a G1 BC of .575 and a muzzle velocity of 2,975 fps from a 20-inch barrel. The LRX load features an all-copper Barnes projectile with a G1 BC of .513. With a 20-inch barrel, this round achieves 3,000 fps at the muzzle.

MSRP: Fusion Tipped \$63, LRX \$82



04 Mec-Gar Glock Magazines

Mec-Gar may be the world's number-one magazine manufacturer, and the company has finally added Glock mags to its catalog. The first two offerings are for the Glock 17 and the Glock 19, but both hold 18 rounds. By eliminating the plastic shell of factory Glock mags, Mec-Gar managed to squeeze an extra round in over the standard. The G17 mag is flush-fit while the G19 mag extends past the frame but has a baseplate to match the grip's diameter. Best of all, despite having steel bodies, you don't have to swap your factory polymer magazine catch to use them with your Glock 17 or 19 pistols.

MSRP: \$29 each

05 Fiocchi Covert X Ammunition

Fiocchi USA introduces its new Covert X line, defensive ammunition engineered specifically for today's micro and ultracompact carry guns. Designed for peak reliability and performance, Covert X ammo features optimized propellants and jacketed hollow-point bullets to ensure consistent expansion and reduced muzzle flash—even from short barrels. Available in 9mm, .380 ACP, .45 ACP, .38 Spl.+P and .357 Mag., the line covers popular models like the Sig Sauer P365, Glock G43 and Springfield Hellcat. Each load is packaged in 20-round boxes or 200-round cases. With minimized flash signature and controlled expansion, Covert X is tailored for concealed carriers demanding top-tier defensive performance.

MSRP: Starting at \$20, box of 20

06 Springfield Armory Saint Victor 9mm Pistol

Springfield Armory expands its Saint Victor line with the new Saint Victor 9mm Pistol. This compact AR-pattern pistol features dedicated forged 7075 T6 aluminum upper and lower receivers, a 5.5-inch Melonitecoated barrel and a reliable direct blowback system. It feeds from a Colt-pattern 32-round magazine and includes premium components like a B5 Systems P-Grip, ambidextrous safety and SB Tactical SBA3 pistol brace. The free-floated handguard sports M-Lok slots, an included handstop and SA Muzzle Drum recessed under the rail. Designed for performance and durability, the Saint Victor 9mm pistol offers shooters a lightweight, capable addition to their firearm lineup.

MSRP: \$1,099

07 Smith & Wesson M&P FPC in 10mm Auto

Smith & Wesson has just added a 10mm Auto variant to its M&P FPC line of pistol-caliber carbines. Like the 9mm M&P FPC, this new version features a blowback action, an integrated recoil buffer system and a horizontal folding mechanism that brings its overall length from 30 to 16 inches. It feeds from 15-round M&P 2.0 magazines and has space to store an additional two mags in its stock. Other features of the 10mm M&P FPC include a Picatinny rail on top for optics, an M-Lok handguard for accessories and a 9/16-24 threaded muzzle for suppressors. It all ships with three magazines and a carrying case.

MSRP: \$699







HELLO, MY NAME IS

Depending on the load, a .30-06 has a power factor of about 400. Shotgun slugs can reach the 700s with ease.

Accuracy? Is this, at 50 yards, with just a bead good enough?
Mount a scope and that third shot will join the other two.





We'll go into that in a bit.

The basic slug is called the "Foster" slug. Think of a lead shot glass with a round base.

Load the slug/shot glass base-down and fire it rounded-end forward. No, it doesn't act like a Minie ball. The open edges, or the skirt, can't expand to grip the (non-existent) rifling, because shot-

gun slugs of the Foster design are loaded with wads underneath them, ahead of the powder charge. There's often an assembly or stack of wads, with an overpowder card, then a cushioning and a slug base card. The slug and the wad assembly are pushed down the bore, and the slug continues while the wads drop off.

But the wads can be problematic. If you're hunting, no big deal. The cardboard, pasteboard or other wadding will simply decompose in the woods. And the wads don't go far enough to be a problem. But, in defense they might. Inside of, say, 15 yards, wads can hit hard enough to cause an injury ... especially now that they're all plastic, not card and



Both of these are slug loads. The right one is a factory shell, with roll crimp. The left is a Lyman, with a folded crimp. Once loaded, you can't tell the Lyman from a regular shotshell with pellets.

Slug loads use a roll crimp so you can see they are slugs, and to provide resistance for complete powder ignition.



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fiber. They can stray wide of your line of fire, so if you're using Foster slugs for defense, you have that to keep in mind.

How do we solve that problem?

Brenneke had a simple solution. Instead of the lead cup, the idea is to make a lead cylinder. Then, use a screw to attach the wadding column to the base of the cylinder. Fire the whole assembly, and voila, no wadding straying off your line of fire.

Typically, the Foster slug tends to be made of a soft lead alloy, so it can squeeze down if you happen to fire it through a barrel with some choke constriction or a choke tube installed. The Brennekes have the lead cylinder on the small size of bore diameter and use the wadding to keep it centered in the bore. So, it can pass through some chokes without damage.

But, after all, rifling was invented for a reason. Modern shotgun slugs are more accurate than the smoothbore muskets of yore for a couple of reasons.

One, they're machined to tighter tolerances than a Land Pattern musket. Two, the modern slug is a lot closer to bore diameter, so there's less "wandering" as it goes down the bore. The British soldier who was furiously loading his musket might be dropping a 0.680-inch ball down a .700 bore. The idea was speed of loading and volume of fire.

The dimensions don't vary nearly as much today. And then there's physics.

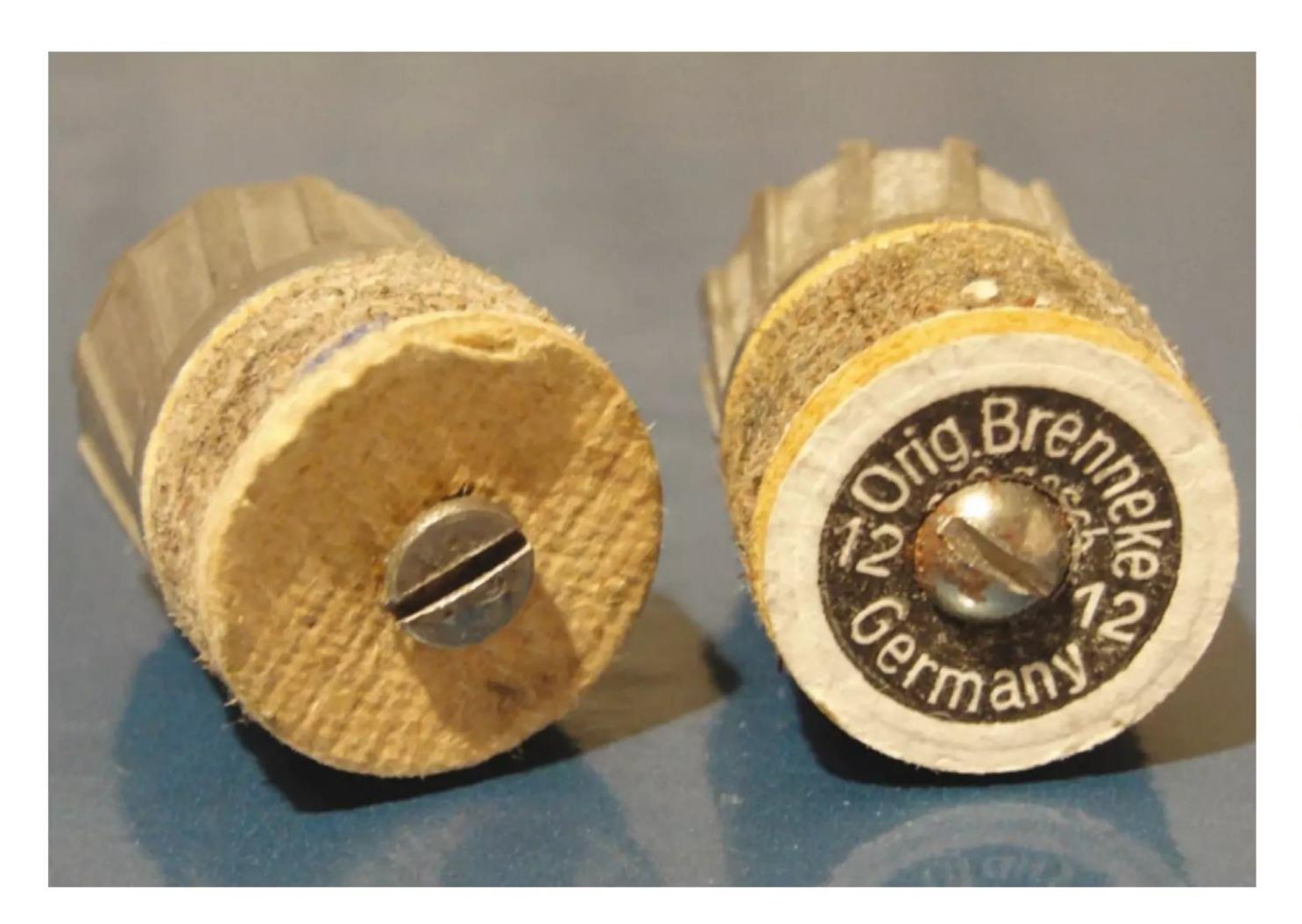
The best description of the stability methodology of a shotgun slug (so far) is "a rock in a sock." The Foster slug has its center of mass forward of its center of shape, and that keeps it more-or-less traveling in a straight line. The Brenneke has the attached wadding column to do the same thing, making the center of mass forward of the center of shape. And



You can see the round nose of the slug, and the ribs on it. Inside the slug, the base is hollow, so it stays noseforward in flight.

The Fiocchi Exacta Aero-slug uses the Brenneke approach but uses a plastic wad instead of one screwed onto the base of the slug.







A Brenneke slug, showing the wad base and the screw holding it to the slug.

Here you can see the Brenneke slug from the side, and the wad secured to the slug.

the air flow over the wadding adds to that. The ribs on the slug do nothing for accuracy or create spin. They are to reduce stress on your choke, if you forget.

When the dimensions all work out properly, the accuracy can be quite startling. I built a shotgun slug gun for use at the Second Chance combat shoot (now The Pin Shoot) way back when the elder Bush was president. That gun grouped Remington 7/8-ounce slugs into one ragged hole at 50 yards, all day long. (Of course, Remington stopped making that load.) But you can certainly get minute-of-whitetail out to 100 yards once you find the combo your shotgun likes.

THE SABOT

Another approach, one not so common

Sabot, from the French word "sabot" for a wooden shoe (and the root of "sabotage"), throwing a wooden shoe into the gears of a machine as the origin. The sabot is a pair of molded plastic sections that fit around the slug, which rides in the center. The sabot was made sort of waspshaped and smaller than the 12-gauge bore. So, a .500-inch slug with plastic sleeves. The sleeves, or sabot, would fall away once it left the muzzle, and the aerodynamic slug would continue on. This has the same wadding problem as the Foster slug.

The modern iteration of that is to use a jacketed 0.50-inch bullet, with a spire point inside of a sabot in a rifled-bore shotgun. The accuracy of this arrange-

ment can rival that of rifles. Why do this? Because some locations still require a shotgun, not a rifle, for hunting. And because the DNR would find keeping rifled-bore shotguns out of the hunting fields a herculean task, they approved them.

THE LYMAN

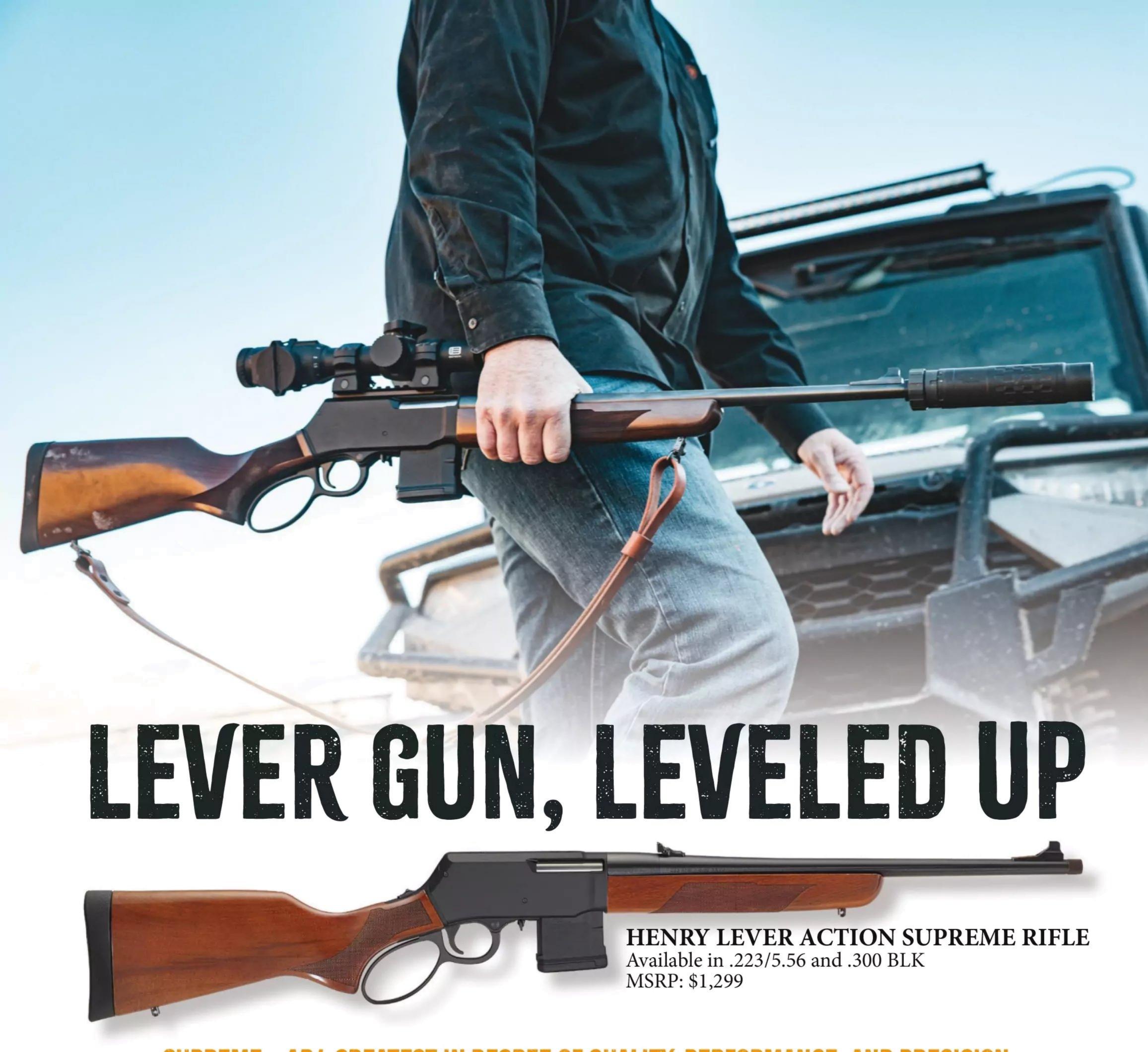
Now, in all these there's one more slug to consider: the Lyman. I view it as the "12-gauge airgun pellet" slug ... because that's what it looks like. It's cast (you must do the casting, no one I know of makes them, either for loading or as loaded ammunition) with a special mold that creates a hollow-base pellet, just like the airgun one but 12-gauge. It then gets loaded into a regular shotgun and into a shotgun hull. This leads me to the shotshell and its crimp.

THE SHOTSHELL

A regular shotshell uses a folded crimp of six or eight petals, and it seals the shot or buckshot in the shell. In the old days, when shells were paper, it was an overshot card, and the load data (shot size, weight, charge) was printed on the card.

Slugs were loaded with a roll crimp. This does two things. One, it makes the shot and slug loads instantly identifiable, even by touch. Two, the roll crimp resists unfolding more than a folded crimp, and this permits powder charges that create more velocity with slugs than birdshot. Where a fast load (in lead terms, steel shot is a lot zippier) of shot might be 1,350 fps, a slug can be made to produce 1,600 fps. And recoil to go with it.

The Lyman slug uses a regular folded crimp, with regular, if specific wads. So, in addition to needing to follow exactly the specific load data for the Lyman slug, you need to load it in hulls that you do not use for any other purpose. So, just as an example: If you use Winchester AA red hulls for your skeet and trap shooting, you cannot use them for the Lyman slug. Otherwise, someday you'll mix them up, go to shoot a round of skeet and be hurling 12-gauge slugs off into the distance. No, load those slugs in something not red at the very least.



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THE RECOIL

And that brings me to the last part: recoil. As in, shotgun slugs have it in spades.

You might've noticed that I used quotation marks when describing some shotgun slugs as low recoil. Well, let's take a common new one, the Federal Tru Ball, which is 438 grains of slug at 1,350 fps producing a power factor (PF) of 591. A .30-06 can tap in at "only" a 405-410 PF. Winchester matches that with their sabot and a 1-ounce slug at 1,350 but then ups the ante with a 1-ounce slug at 1,600 fps. That's a 700 PF. Ouch. Dialing the recoil back to a "low-recoil" load, of 1

ounce at a mere 1,150 or 1,200 fps, is still a 504 or 526 PF.

So, keep in mind that, whatever thumping you're doing on the other end, you're going to be receiving a thumping of your own on this end. However, if you want something light and handy, fast to use, and that hits hard, a shotgun (pump or auto) loaded with slugs can be a winner. There's a reason those who travel in bear country look favorably on a shotgun with slugs.

I don't do much of that traveling, and when I do, someone else is hauling the ordnance. But I do use shotgun slugs. In my case, it's with the Lyman slugs, loaded to tolerable velocities, in The Pin Shoot. There, the task is to knock over hinged steel plates and complete the array faster than anyone else does.

Now, this is a specialized competition and perhaps not for everyone. But it does serve another purpose. If you were planning on going, say, fly-fishing in bear country and wanted to take a shotgun for defense, practicing with factory "ohmyrecoil" slugs would be both expensive and painful. However, if you pored over the Lyman shotgun loading manual and found a load for your Lyman slug that wasn't painful to shoot, you could do a lot of practice without a lot of recoil.

And that's always good. GDTM



Slugs recoil with enthusiasm, so be prepared. And if you load your own you can practice up to full power over time.









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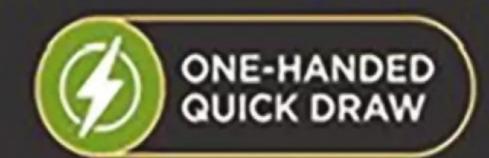
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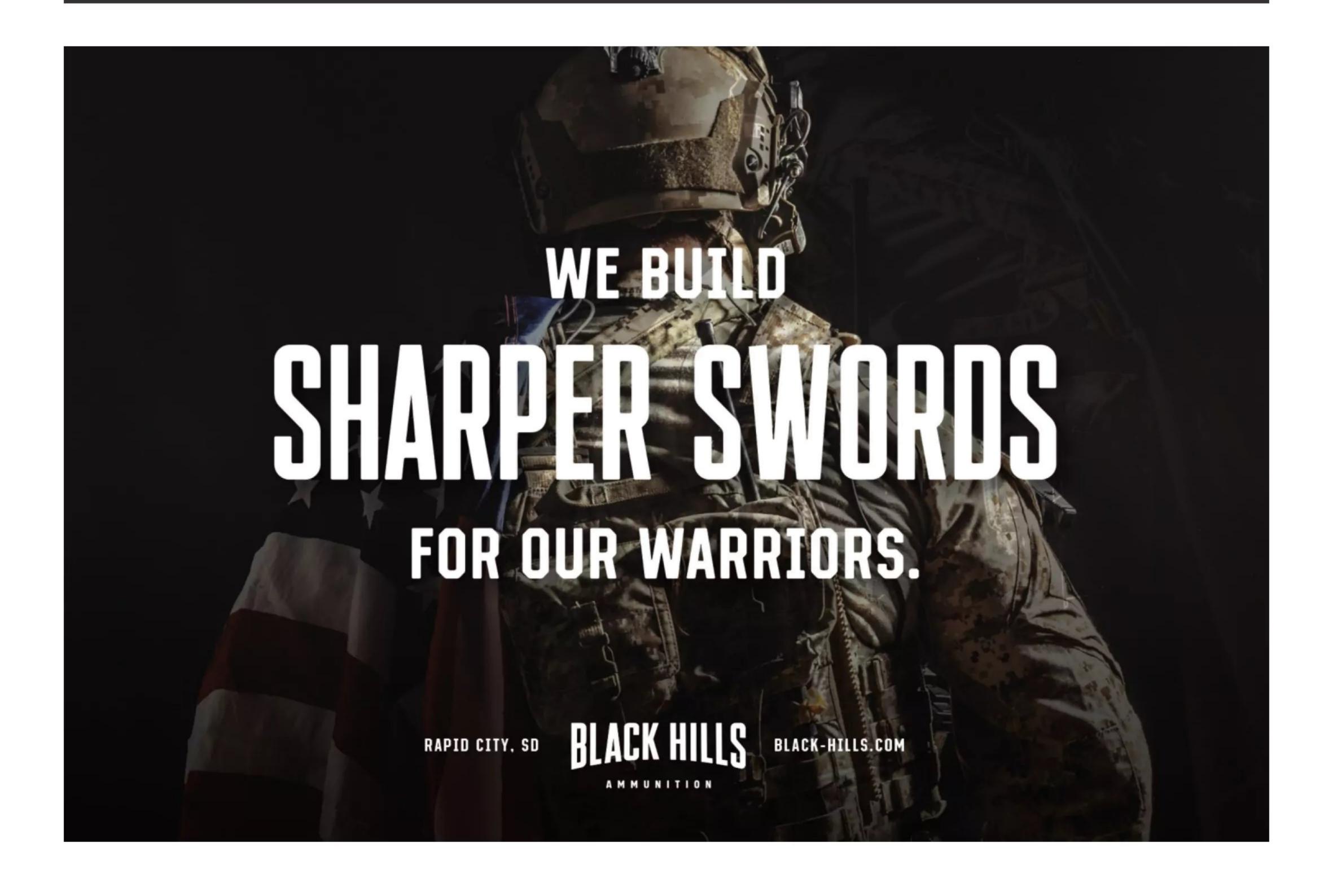
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SUBSORICS SUBSORIUS SUBSORIUS

Becoming comfortable with the pace.

lowing down isn't something that I am particularly good at. The nature of my life and work makes it fast-paced, often to the point of exhaustion, and the ability to take a minute isn't always available when I want it. See, slowing down means that some things don't get done, there is more room for error in the long-term schedule, and the cracks I left become more noticeable if I have a chance to look at them instead of just breeze past.

There's an art to taking it easy, and it involves being comfortable with the pace. Before I delve too far into my undiagnosed issues, I do want to draw the comparison between this outlook and the subject of subsonic ammunition. We're taking away the main benefit of bullets—speed—and deliberately seeking to reduce our range and power in the name of staying under the supersonic barrier.

Making things work at these slow

speeds is an art, and it comes with challenges that will make you see your cracks as a rifleman.

AN OBJECTIVE LOOK AT SUBSON-IC AMMUNITION

For the purposes of this article, we're going to be talking about rifles and rifle ammunition. Where handguns are concerned, there's perhaps only a relative discussion on suppressed hunting with larger-bore pistols, such as .45 ACP—arguably the only real choice for use suppressed in subsonic form for medium game. I've had great success with pistol hunting with .45 ACP at close range, say inside 40 yards, and the big, slow bullets easily punch through a deer while being paintball gun-like in noise level.

This is very specialized hunting, and most people would be trying to get a lot of speed from something in 10mm, .44 Mag, .357 Mag, .45 Colt and others. You can really crank a 270-grain hardcast

up in a Ruger-frame .45 Colt, but that's just not a suppressor proposition.

In general, when I'm talking about subsonic use, I'm talking about suppressed use. When it comes to subsonic loads without a suppressor, there is—at least to me—no real point unless you want the challenge.

The main issue surrounding this is that subsonic loads are still really loud without a suppressor. People get in their head that firing a subsonic .450 Bushmaster is going to be something like firing a subsonic .22 LR, but it's not even close ... or hearing safe at all. Ballistics with subsonics aren't great across the board, and there stands to reason that if you're firing without a suppressor, there's no actual reason to use subsonic ammunition considering you'll need ear protection.

Suppressors and subsonic ammo are a match made in heaven, but it isn't all roses. There are a good number of considerations to make, and picking



The 338 ARC (right) and 8.6 Blackout. These two rounds play in the same arena, but the .338 ARC launches a more commercially viable bullet in a gentler twist with a more efficient case design. For subsonic use, it's objectively superior to 8.6 Blackout.

180-grain .308 Win. round-nose subsonic, 168-grain Hornady Match and 150-grain Remington Tipped Core-Lokt. The .308 is a very versatile round but is a poor choice for subsonic use. the right combo of rifle, barrel length, cartridge, suppressor and ammo is important. You need to see subsonic ammunition in the modern sense as a part of a wider system.

It's only recently that we're seeing specialized ammunition emerge that's largely dedicated to subsonic use. These ideas have taken a while to enter the mainstream consciousness of American shooters and hunters, and there's still a great deal of misunderstanding involved that might trip people up.

For starters, every subsonic chambering I can think of still has a supersonic ability. For instance, you can shoot some really heavy .300 Blackout loads but still use the cartridge in 110-grain form supersonic. Bear in mind that many pistol-only suppressors can handle the mild .300 BLK subs but aren't to be used with supersonic versions. This has to do with the pressure that the suppressor can handle. Now, you can simply adapt many rifle-rated cans to pistol use, but the other way around isn't feasible unless you're absolutely sure an errant round won't make its way into your magazine, or your buddy wants to give it a go with his own ammo.

The next and more important point is that people tend to look at this type of ammunition as a function of the cartridge, not the bullet itself. Take for instance the .450 Bushmaster, a widely used straight-walled cartridge. In supersonic form, it's still of somewhat limited range, and I consider it to be good to around 200 meters from a 150-meter zero. Even with excellent ammo like Hornady and Remington, it still has a good amount of drop. In general, I am zeroed a mil high at 100 meters, right on at 150 meters, and 1 mil low at 200 meters.

That's easy math, but compared to something like a .308 Win., 6.5 Creedmoor or 6 ARC, this is abysmal.

However, at short range, the .450 is known to be an absolute hammer of a round out of compact guns. I see no reason to ever go over 16 inches in barrel length, and out of that length you get the best performance for both supersonic and subsonic loads. Of note, the 395-grain Hornady Sub-X is arguably the best option for this caliber in subsonic form, and it's quite different from its supersonic counterparts. The drop from zero is not just inches, but







Most subsonic cartridges also have supersonic abilities. Here's an assortment of supers, notable are rounds that have virtually no subsonic utility, such as 6.5 Creedmoor and 5.56 NATO. The BHA 77-grain OTM is pretty hard to beat. Don't handicap it to .22 LR levels.



The .450 Bushmaster is a great example of a round that benefits from mass in subsonic and supersonic form, but does neither all that great.

Subsonic loads will rarely, if ever, generate the "proper" number of footpounds for game. We're talking rifle bullets going slower than most common 9mm practice loads. The subsonic game in my view throws conventional rifle bullet ideas out the window; it's a somewhat new field all things considered. It's only because the system of rifles, cartridges, bullets, suppressors and optics exist on the same level of advancement that we can begin to explore their combined benefits.

What needs to be addressed about

An illustration of sectional density in .338 and .45 bore bullets. While the 45-cal bullet is 395 grains, it's categorically less efficient than the .338 bore at 307 grains, the latter being highly aerodynamic and energy-retentive.

entire mils. If you plan to shoot both supers and subs, you'll need an optic that can track this, such as the Leupold MK5 HD I use. It's very simple to dial up your subsonic zero off your super zero, but don't forget to pop it back down, otherwise you'll be firing quite high.

Of note is that all subsonic loads suffer thusly. The velocity is by necessity under the sound barrier, so most ammo is loaded just a touch north of 1,000 fps. Regardless of caliber, you'll need to compensate for some substantial drop off your zero. The issue here arises from the fact that gravity is utterly unforgiving, and even our most technologically advanced subsonic loads have essentially the same shortcoming.

Now, it's arguable how far of an effective range subs have. This is a pretty hotly debated topic, and I lean toward the more conservative side of the argument: Subs are a short-range proposition and should be treated as such. Flight time matters a lot, as does ammunition consistency. If you're following along, these are some of the cracks that appear as you slow down. Minor variations in distance to target and velocity can dramatically impact where your bullet ... well ... impacts. The longer the distance, say 100 to

200 meters, the more variables come into play that, with a supersonic rifle cartridge like .308 Win., you wouldn't begin to experience until ranges of 500 yards or more.

Subsonic loads past 100 yards will show you what kind of rifleman you are, just like shooting at 1,000 yards with a supersonic load will. Your mistakes and the faults in your ammo will be shown.

WHAT IS 'PROPER POWER?'

I've killed a fair amount of medium to large game animals with subsonic loads. In my experience with the topic, I've seen no real indicator that the game being hit knew if they were tagged by a bullet under the speed of sound compared with being hit with a supersonic load.

In my experience, if you can master the drop of a subsonic load, in general, you can kill anything. There's a notion that you need a certain number of footpounds to kill animals of a certain size. This is a great thing to consider as a baseline, and there are plenty of writers with decades of experience on me that can give insight. However, the writers of the era prior were racing to talk about speed and power—here I'm talking about deliberate handicaps.

Thirty-caliber subsonics are anemic compared to .338 bore. The .338 ARC is 50 percent heavier than .300 Blackout and .308 Win. subsonics.



Left to right, .45 Colt, .450 Bushmaster, 8.6 Blackout, .338 ARC and .300 Blackout. Each of these rounds is great for subsonic use in different base rifles



subsonic loads is that, in most cases, we are taking a bullet out of a conventional rifle that's simply slow. Take for instance the old 180-grain .308 Win. loads in the article photos: This was what we had before .300 Blackout, and it wasn't altogether great. There wasn't really a good way to stabilize heavy .30 bore loads in

a common 1:12 or 1:10 twist; all these barrels were made for supersonic loads. The disparity in technology wasn't a downside. Nobody was really serious about this type of load without suppressors in common usage. The thinking had to change, and as time wore on, it certainly did.

However, the ideas about the bullets

themselves would take time to evolve.

The only general ways to increase effective lethality in subsonic loads is to increase mass or experiment with bullet materials to get a desired result. In my view, .30-cal subsonics are anemic for game, even with bullets of high mass for the caliber. To be absolutely frank, a 300-grain class, .338 bore is about the current technological peak of subsonic development. That said, I have been working with the 8.6 (.338) Blackout since commercial barrels came out, and the .338 bore represents a sweet spot that can be defined by the concept of sectional density.

In layman's terms, sectional density is a very important aspect of bullet performance in flesh. Think of it like a train. For the given width of a train car, you're fixed. Now, keep adding train cars behind it, and you have more behind it in a linear fashion. The more cars you have, the harder you hit given the width of your initial car. This is a simple illustration, but it works.

Large-bore subsonics pack a lot of weight but are short in terms of sectional density. This is the difference between dedicated subsonic rifle bullets and slower bullets made for supersonic use. Thirty-cal subs lack enough mass to be firmly in that sweet spot, despite many



Case capacity is a thing to consider when looking at subsonic efficiency. Note the size of these bullets compared to their brass.

having great sectional density. Fortyfive-cal and 9mm-class rifle subs tend to be high mass, but short and fat, with wide frontal areas, making them less than ideal for penetration and velocity retention—not that you're losing much being under the speed of sound as it is.

The .338 ARC, with its 307-grain Sub-X bullets and highly efficient case



Subsonic pistol loads, especially old designs like these in .45 Colt and .44 Special, are known performers at close range, especially with Keith bullets.

design, makes for very little powder consumption and a very effective, highmass bullet that retains energy very well over the ranges subs are effective. Of note is the moderate twist rate it has as opposed to 8.6 Blackout, which itself has a super-fast 1:3 rate, making solid alloy bullets somewhat of a necessity to prevent jackets from stripping. The .338 ARC is, at least in my point of view, the superior cartridge in that it launches a more flexible bullet at the same speed with less powder in a smaller case. Larger bore subsonics take a lot more powder to push a less efficient bullet at the same speed.

There's a larger debate on the merits of .338 ARC against 8.6 Blackout, but the former is a SAAMI-approved design, whereas the 8.6 is still a wildcat. Wildcats, of course, have merit, but in terms of what generates commercial success, the 8.6 likely has a limited lifespan, all things considered. We see this happen in many arenas where competing companies developed similar rounds for similar platforms at the same general time.

The 8.6 is a nice round; make no mistake that wildcats have been the basis for many of our favorite rounds. The twist rate is just, well, a bummer. The .338 ARC has the potential to be "the" subsonic chambering with all its many substantial benefits for reloaders and hunters. Picking an area to win is paramount today as we stray from jack-ofall-trades cartridges. Trying to accomplish too much has become something of a death sentence for otherwise great designs.

THE FUTURE

I suspect the .338 ARC will continue to develop as the premier subsonic field round. The jury is still out, as it's very new—but the era of the dedicated subsonic cartridge is only beginning. In the realm we're operating, there's a lot being asked of a bullet, and, if the velocity is a fixed variable, the rest becomes subjective and open to experiments and trials.

We're realistically working inside a fixed set of dimensions: the AR-10 and AR-15 mags, long and short bolt actions, and commercially viable bore diameters. The spectrum of what we can accomplish in terms of commercial success is limited and, for as much thinking we do outside the box, we need to see that within the box is where we're innovating.

I look forward to seeing how these modern .338 bore rounds perform after several seasons and some more development by third party companies. I'm excited to slow down a bit and enjoy life inside 200 yards for a change. The fast stuff will always be getting faster, but there is a certain level of satisfaction that comes from waiting for something a bit closer and quieter. **GDTM**









Old-school subsonic loads are no

launching a massive bullet.

joke. Here we have an assortment of









THE 307 ACTION

This 307 is the first new action from Weatherby in a half-century. It consists of a fully cylindrical carbon steel receiver, purposely designed to accommodate the vast array of stocks, triggers, rails, mounts and magazines currently manufactured for compatibility with the Remington 700 action. But even though the 307 action shares this compatibility, it's not a Remington 700 action. There are several notable differences.

For starters, the bolt release on the 307 action is located just above the stock line on the left side of the action, and it's a toggling button. The bolt can also be

field stripped without any tools, and in place of the often-criticized Remington extractor, there's a M16-style extractor. The top of the receiver/action is drilled for scope base installation and utilizes 8x40 screws. All Model 307 rifles come with a TriggerTech trigger, with an extremely short over-travel that's user adjustable down to 2.5 pounds.

Other common features include a two-position safety, threaded muzzles that come with Weatherby's radially ported Accubrake, and the ability to work with various bottom metals and AICS detachable box magazines. Some Model 307 rifles come from the factory with

detachable magazines. Weatherby even offers the 307 action by itself (\$749) for those who want to build their own rifle. Currently, Weatherby is offering nine different rifles on the 307 action, and we examined two that were starkly different.

MODEL 307 ALPINE CT

With its 24-ounce Peak 44 Bastion stock and its BSF 416R stainless-steel, carbonfiber sleeved and tensioned barrel, the Alpine CT is a perfect example of the type of rifle modern hunters are screaming for.

The stock's comb is high, but with a negative drop it manages recoil very comfortably, and the nearly vertical



Though the Model 307 action is compatible with detachable magazines and matching bottom metal, the Alpine CT has a hinged floor plate, which makes it very comfortable to carry the rifle at the balance point.





The Alpine CT Weatherby 307 rifle was a tack-driver with the Federal Fusion 140-grain load.

Below: The vertical grip on the Model 307 Alpine CT is a precision longrange rifle feature of the Peak 44 Bastion stock.

pistol grip is very comfortable when shooting from a support like sandbags or a tripod or bipod. The muzzle is threaded at 5/8x24, and it comes with an Accubrake installed. Barrel length is cartridge dependent and ranges from 20 to 26 inches, with finished rifle weights coming in at between 6 to 6.3 pounds. A TriggerTech adjustable trigger is standard, as is a hinged floor plate.

Unlike many modern precision boltaction hunting rifles, the Alpine CT doesn't feed from a detachable magazine. This might be a detractor to some, but it makes carrying the rifle in the field with one hand at the balance point much easier.

This was a very precise shooting rifle that easily met Weatherby's Model 307 sub-MOA guarantee. I did most of the shooting with the suppressor, because

I don't like muzzle brakes, but the DST brake does have some notable features. It's a directional brake; it needs to fit the barrel in a certain way, so it comes with a lock ring. The brake is also flat-sided, which makes it easy to remove or install with a wrench.

You could argue that what's missing from the Alpine CT is length-of-pull and comb-height adjustability. While it's true both are features appreciated by precision long-range shooters, they add weight to a hunting rifle that's carried a lot more than it's shot. Other Weatherby Model 307 rifles do come with some stock adjustability, but they're all noticeably heavier. For the dedicated backcountry hunter, I think this is the best Model 307 rifle of the bunch.



WEATHERBY MODEL 307 ALPINE CT

LENGTH: 43.5 to 48 inches

WEIGHT: 6.0 to 6.3 pounds

BARREL: 22 inches, plus 2 inches with muzzle brake

ACTION: Weatherby 307

TRIGGER: TriggerTech Field Trigger

CAPACITY: 2+1, 3+1, or 4+1 depending on chambering

FINISH: Chocolate brown Cerakote

STOCK: Exposed carbon fiber with WYO brown and backpack brushed sponge pattern accents

AVAILABLE CHAMBERINGS: .240 Weatherby Magnum, .243 Winchester, .257 Weatherby Magnum, 6.5 Creedmoor, 6.5 PRC, 6.5-300 Weatherby Magnum, 6.5 Weatherby RPM, .280 Ackley Improved, 7mm Backcountry, 7mm PRC, Winchester, 7mm PRC, .308 Winchester, .300 Winchester Magnum, .300 PRC

PRICE: \$2,249

WEATHERBY MODEL 307 ADVENTURE SD

LENGTH: 44.25 inches

WEIGHT: 7.7 pounds

BARREL: 26 inches, plus 2 inches with muzzle brake

ACTION: Weatherby 307

TRIGGER: TriggerTech Field Trigger

CAPACITY: 3+1

FINISH: Graphite black Cerakote

STOCK: Fancy walnut with rosewood forend, grip cap and maple diamond inlay

AVAILABLE CHAMBERINGS: .240 Weatherby Magnum, .243 Winchester, .257 Weatherby Magnum, 6.5 Creedmoor, 6.5 PRC,270 Winchester, .270 Weatherby Magnum, 6.5-300 Weatherby Magnum, 6.5 Weatherby RPM, .270 Winchester, 7mm Backcountry, 7mm PRC, .30-30 Springfield, .300 Weatherby Magnum

PRICE: \$1,949



MODEL 307 ADVENTURE SD

This rifle is a throwback to the early Weatherby rifles with their distinctly exaggerated and beautifully figured wood stocks. The stock on the Adventure AD is crafted from fancy walnut and a rosewood forend and grip cap, with checkering at the wrist and along the forend. The stock has two traditional sling swivel studs in the common locations, it's fitted with a thick, red recoil pad and has a hinged floor plate.

All metal surfaces have a graphite black Cerakote finish, and the bolt handle knob is round. Barrel length is cartridge dependent and ranges from 22 to 28 inches, including the Accubrake, which can reduce felt recoil by as much as 53 percent. The barrels have fluting and are slim and trim, with ½x28 threading on the muzzle.

This rifle performed to perfection and balanced very nicely right between my hands. Admittedly, with its 6.5-300 Weatherby chambering and the muzzle brake installed, it was ear-splitting loud. With a suppressor installed, it was almost as long as a Kentucky rifle. However, it shot very well in both configurations from the bench and field positions.

A brand-new Weatherby Mark V has a suggested retail price of \$2,749. It'll transport you back to the 1960s when that rifle was what established the Weatherby brand. Granted, the Adventure SD might not be quite as elegant as a Mark V, but, without question, it's a great shooting, head-turning, gorgeous rendition of the classic Weatherby rifle. I appreciate the use of carbon fiber in modern rifle stocks and barrels, and the weight reduction aspect it brings. But it's difficult to hold and shoot a rifle like the Adventure SD and not imagine carrying it on a once-in-alifetime adventure for a Rocky Mountain elk or on an African safari.

PICKING A WINNER

It's difficult to compare two rifles that are so different when trying to select which one might be best. Left to shooting performance, the Alpine CT edged out the Adventure SD from the bench. However, just as the Adventure SD looks like a classic Weatherby rifle, it was chambered for







The Model 307 Adventure SD has a round bolt handle, and like all Model 307 rifles, it comes with a TriggerTech trigger and two-position safety.



Weatherby builds both the Adventure SD and Alpine CT rifles on the Model 307 action. Weatherby finishes the Adventure SD in graphite black, and the Alpine CT in chocolate brown Cerakote.

a high-performance magnum cartridge. The Adventure AD shot well from the bench too, but its magnum recoil couldn't be ignored. Had it also been a 6.5 Creedmoor, the results might've been closer.

As for field shooting, which matters more when it comes to a hunting rifle? I shot more consistently with better balanced Adventure AD from unsupported positions. However, when shooting from a tripod and a bipod, I found the Alpine CT more manageable.

I think what's more important than which rifle might be the "best" is that Weatherby is now offering a very diverse collection of rifles on a new action, and that you can expect them all to shoot very well. In the end, the question mostly comes down to whether you want a rifle that looks like it just crawled out of the 1960s or if you want a very evolved and modern bolt-action hunting rifle.

I'm a bit torn, but I think I'd have to go with the retro rifle, because there are just too few examples of great shooting rifles like this to choose from these days. **GDTM**

The Weatherby Adventure AD in 6.5-300 Weatherby Magnum shot the Weatherby factory 130-grain Swift Scirocco load very well.

Though the Model 307 Weatherby action is very similar to a Remington Model 700 action, the Model 307 bolt has an M16-style extractor.



MODEL 307 ALPINE CT SHOOTING RESULTS

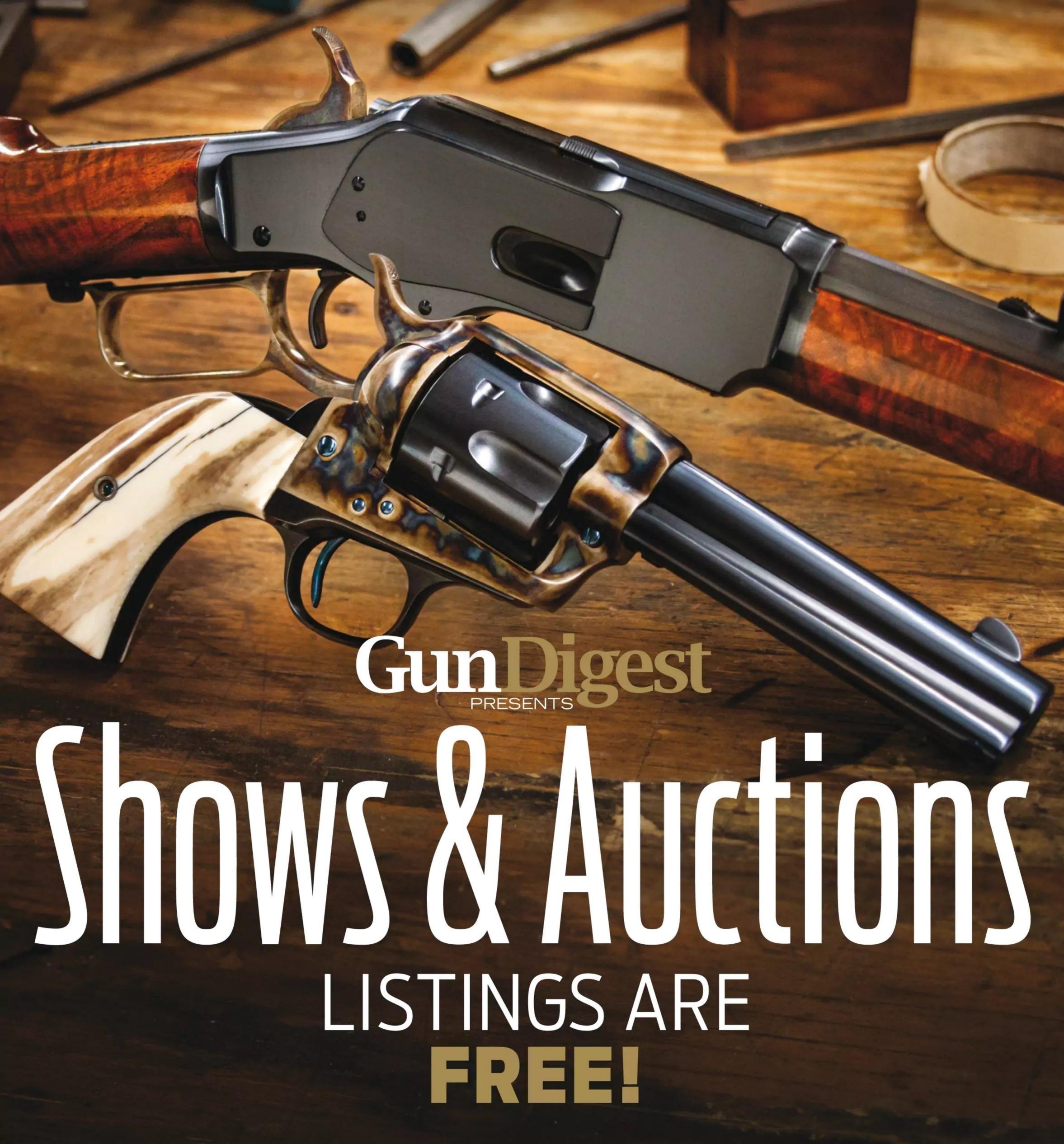
LOAD	VEL	SD	ENG	PRECISION
Hornady 120-grain CX Outfitter	2,922	14.1	2,275	1.01
Remington 129-grain Core-Lokt Tipped	2,880	12.2	2,376	1.08
Federal 140-grain Fusion	2,727	17.1	2,312	0.63
				AVERAGE: 0.91

NOTES: VEL= average muzzle velocity, SD=standard velocity deviation, ENG= average muzzle energy, PRECISION=average for three, five-shot groups fired from a sandbag rest at 100 yards, using a Swarovski Z8i 2-16x50P riflescope set at maximum magnification.

ADVENTURE SD SHOOTING RESULTS

LOAD	VEL	SD	ENG	PRECISION
Weatherby 127-grain Barnes LRX	3,459	11.6	3,374	1.35
Weatherby 130-grain Swift Scirocco	3,477	12.5	3,221	0.95
				AVERAGE: 1.15

NOTES: VEL=average muzzle velocity, SD=standard velocity deviation, ENG=average muzzle energy and PRECISION=average for three, five-shot groups fired from a sandbag rest at 100 yards, using a Swarovski Z8i 2-16x50P riflescope set at maximum magnification.



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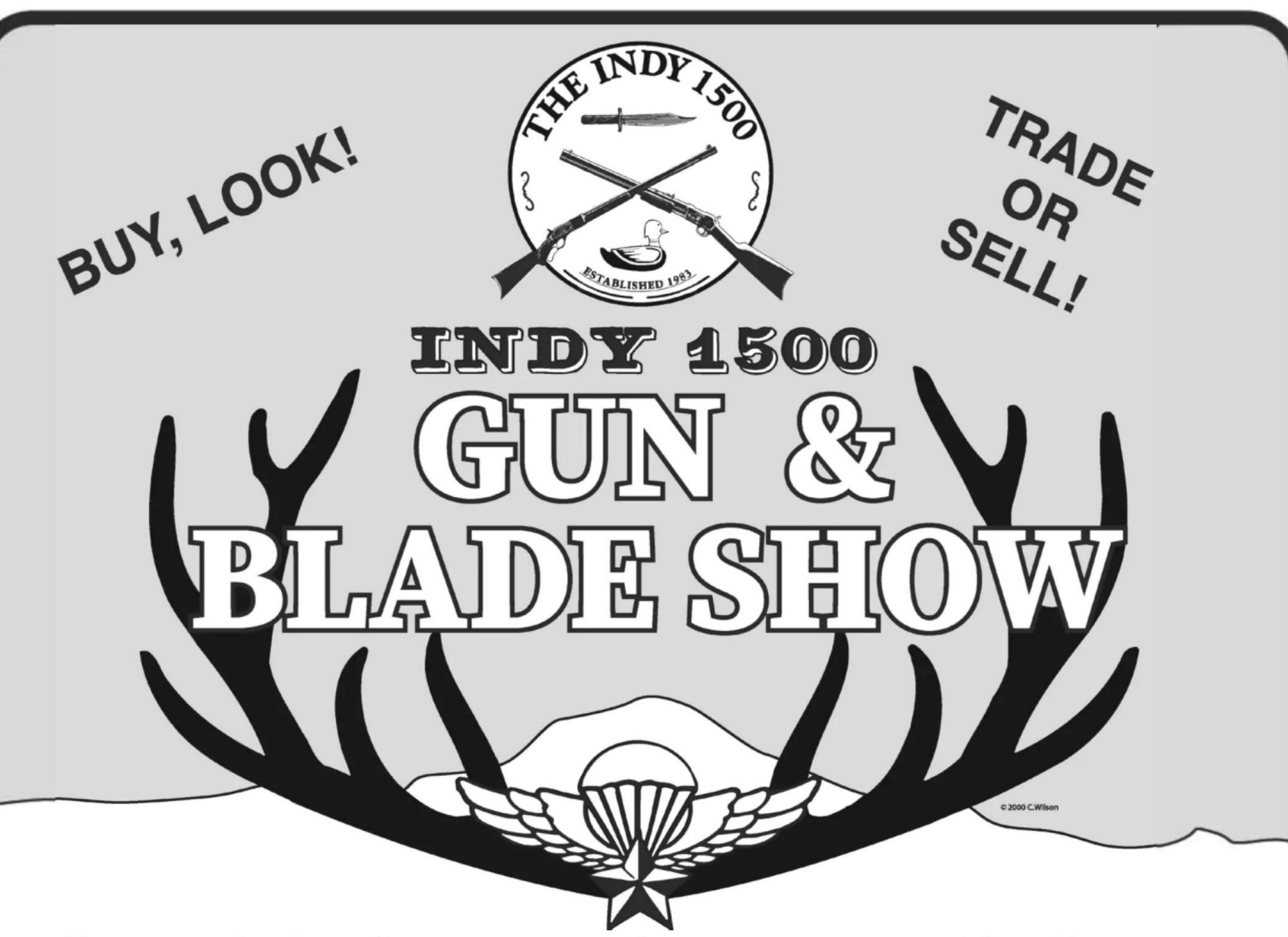
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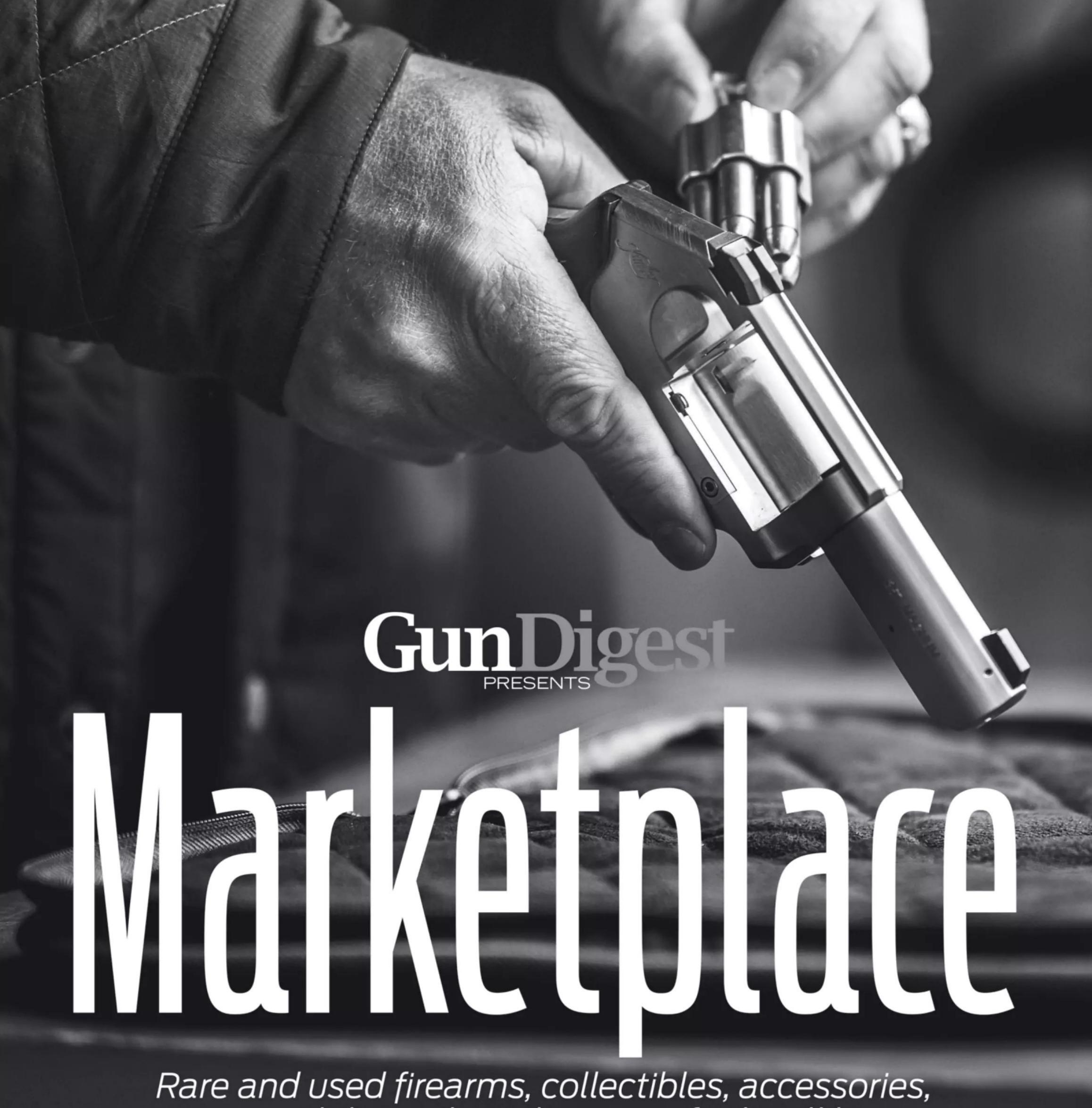
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- 17-V Harrington & Richardson .32 S&W Short "Model 1905" Double Action Pull Pin Solid Frame Revolver 2 ½" octagon barrel with fair pitted bore, 90% original nickel and blue, good "target logo" hard rubber grips with small chipout at locating pin on right grip (C&R) ... \$85

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- 27-V Llama .22 LR "Model XV" Pocket Auto Pistol 3 ½" barrel with mint bore, 99 ½% original bright blue, vent rib on slide with blade front and windage adjustable rear sights, grip safety, loaded chamber indicator, (7) shot mint original blue magazine, mint checkered black plastic thumbrest grips with Llama logos, as new in original flip top plastic case with matching label, original manual and new spare firing pin sharp looker, excellent function, collector quality ...\$525
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- 29-V Llama .380 ACP "Model III-A" Pocket Auto Pistol 3 ½" barrel with excellent bright bore, 98% original blue with a little sharp edge silvering on vent rib style slide, missing front sight and loaded chamber indicator, windage adjustable rear sight, excellent checkered brown plastic thumbrest grips with Llama logos, will work fine without missing parts (C&R) ... \$325
- **30-V Japanese 8mm Nambu "Nambu Manufacturing Co. / Chou Kogyo" Made "Type 14" Small Trigger Guard Auto Pistol** 4 3/4" barrel with bright good bore showing scattered pitting, 95%+ arsenal blue finish with scattered pin prick pitting, front and back strap shows light blue to gray tones, left side of frame shows usual scratch mark from safety, shows nice straw color on trigger and safety, comes with one aluminum base nickel magazine that shows matching serial number along with other matching numbers to pistol, grooved mahogany 25 serration grips rate excellent, "13.4" dating this to 1938, excellent function (C&R)\$865

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- 37-V Ruger .38 Special "Police Service Six" Double Action Revolver 4" barrel with bright excellent bore, fixed sights, 98% original blue with light muzzle wear and noticeable drag line on the (6) round fluted cylinder, checkered hammer and serrated trigger, checkered Walnut "magna style" grips with silver medallions, excellent function, manufactured 1975 \$495
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- 48-V Smith & Wesson .357 Magnum "Model 27-2" Double Action Revolver 3 ½" pinned barrel with mint bore and dark case colors, target sights, standard hammer and trigger, excellent "Magna" style standard checkered Walnut square butt grips with silver S&W medallions, 98%+ original bright blue, excellent function, made around 1971 (C&R) ... \$775
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- 55-V Walther .32 ACP "Model 4" Pocket Auto Pistol (For Parts Only) 3 ½" barrel with very good strong bore, original slide recoil spring and extractor showing with shroud over barrel and top grooved sight, slide is all gray with some mild peppery pitting, frame shows about 40% original blue trigger and most internal parts still present, left "FW" logo hard rubber grip is very good, right grip has been cut in half, missing its safety, good blued magazine may be a replacement, lots of good parts here but not safe to shoot without repair (C&R) \$125

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- 67-V Mauser 7.62 NATO "Model 1916 Short Rifle" Bolt Rifle 21 ¾" barrel with excellent bright bore, 98% original blue, tangent style rear sight graduated to 2000 meters, inverted "V" front sight with protective ears, matching numbers on bolt and small parts, minty Walnut straight grip stock with left side mount swivels and sling bar, smooth steel buttplate, bayonet fixture and wiping rod, these were originally 7mm Mauser but converted sometime in the late 50's or early 60's to 7.62 Nato (.308 Winchester), nice "Falangist" crest on receiver, new caliber lightly stamped on left receiver rail and on import marked barrel, collector quality (C&R)\$595

- 70-V Mauser 7.65 Argentine "Model 1909 DWM Made Argentine" Bolt Rifle 29 ½" barrel with mint bore, 99% original bright and fire blue, all matching numbers including, stock, bolt, hinged floorplate, receiver, wiping rod and muzzle cover, tangent sight graduated to 2000 meters, inverted "V" front sight, in the white receiver with Argentine national crest, minty Walnut pistol grip stock with steel buttplate, factory swivels, bayonet fixture and small Argentine arsenal cartouche on right cheek face, new overall with small "DWM" hangtag instruction tag by Interarms, collector quality, wood shows a couple dings (C&R) \$1025

- 74-V Mauser 8mm Mauser "Model 98/22 Turkish" Bolt Rifle 29 ¼" barrel with excellent bright bore, "BRNO" and "Czech State Armament Works" on receiver bridge, 80% original faded blue, tangent rear sight marked in Turkish numerals with 2000 meter max range, good solid pistol grip stock with front and "shackle" type rear sling swivels, smooth steel buttplate, bayonet fixture, unmarked bolt and only a few "CZ" markings on small parts, missing wiping rod, excellent function, an early "BRNO" made 98/22 for the Turkish government (C&R) \$595

- **78-V Mauser 8mm Mauser "Model K98/DOU/42" (BRNO) Code Dated Nazi Era Lightly Sporterized Bolt Rifle** 23 ½" barrel with excellent bright bore, 96% original blue, tangent rear sight (matching) and hooded inverted "V" front original sight, all matching numbers including whole bolt assembly and floorplate/triggerguard, the safety shows some added specks of red paint but is matching, correct original extractor has been "jeweled" so Waffen stamp is gone, stock is a commercial Walnut pistol grip with cut checkering, cheek piece, contrasting wood forend tip, sling swivels and a vent rubber recoil pad, easily converted back to original with the addition of correct stock and extractor, a real jewel of a K-98 lightly sporterized (C&R) \$2175

- 82-V Springfield 30/06 "Model M-1 Garand" Auto Rifle 24" barrel with excellent bright bore and marked "SA/3-53", 95% very nice arsenal parkerized, "SA" marked bolt, new style stamped trigger housing group marked "SA", birch stock of the early 50's shows added finish and crossed cannons cartouche and very faint boxed "P" firing proof, all swivels are present along with a "trap" style buttplate, a late issue rebuild Garand that should shoot fine (C&R) \$1295

- 85-V Winchester 30/30 "Model 94AE" "Friends of the NRA" Lever Carbine 20" barrel with mint bore, 99% original blue, hooded front raised sight with adjustable sporting rear sight, 99% brushed engraved nickel receiver featuring foliate scroll engraving with gold color scenes of people and a banner "friends/of NRA/Celebrating 10 years" in center on left side, rifle features large loop lever, mint smooth Walnut straight grip stock and forend, cross bolt safety, comes in its original cardboard box with correct matching end label, inside box is hammer extension and original hanging tag and cable lock, as new, manufactured 1992-2004 \$795

RIMFIRE RIFLES

- 89-V Glenfield / Marlin .22 S, L, & LR "Model 20" Clip Feed Bolt Rifle 22" barrel with mint bore, 97%+ original blue showing scattered pin prick pitting, factory open sights, grooved receiver with a Glenfield 4x15 scope mounted, scope has plain crosshairs clean clear optics, Walnut Monte Carlo pistol grip stock with a gopher design pressed into pistol grip, black plastic buttplate, comes with one 5 round magazine, manufactured in 1960's (C&R) \$125
- 90-V Hamilton Rifling Co. .22 Rimfire "Model 027" Bolt Opening / Tipping Barrel Rifle 15" barrel with poor worn bore (original brass liner), simple open sights, 80% original blue, good board stock with some cracks and refinish all sheet metal construction, works fine, look good (C&R) \$245

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- 99-V Remington .22 S, L & LR "Model 581" Clip Feed Bolt Rifle 24" barrel with mint bore, 98% original blue, factory open sights plus grooved receiver mounting a "BSA Huntsman" 3-9x40mm "TV view" scope with duplex reticule, clean crisp clear optics, smooth Walnut Monte Carlo pistol grip stock with original buttplate, wood shows some normal handling wear dings, scratches and dents, comes with one plastic magazine, manufactured 1972 (C&R)\$265

- 102-V Tactical Solutions .22 LR "X-Ring" Clip Feed Auto Rifle 16 ½" aluminum fluted steel lined barrel with excellent bore, milled receiver with integrated scope rail, 98% brushed aluminum finish showing light handling marks, blue anodized extended magazine release, blue and gray laminated thumbhole target stock with sling studs, showing very little marks, 98% overall, very nice extra light target rifle, one Ruger 10/22 magazine included \$575
- 103-V Ted Williams / Sears .22 S, L, & LR "Model 3T" (Winchester Model 190) Tube Feed Auto Rifle 20 ½" barrel with excellent bright bore, blade front sight, ramp aperture rear sight, 98% original blue, grooved receiver with a "Ted Williams" 4x20mm scope installed, smooth birch stock in excellent shape with black plastic buttplate, manufactured 1967-1980 ... \$185

- 106-V Winchester .22 LR "Model 74" Butt Tube Feed "Pre War" Auto Rifle 24" barrel with bright excellent bore, 90%+ thinning finish showing scattered pin prick pitting, fixed sights, smooth Walnut stock showing normal use dings and dents, toeline shows seventeen notches (small vermin are still looking for the former owner), triggerguard and steel checkered buttplate show mostly gray patina, excellent function, manufactured 1940 (C&R) \$245

SHOTGUNS

- 115-V Browning 16 Gauge "Model A-5 / Sweet 16" Auto Shotgun (Parts Only) a 1955 made A-5 "sweet sixteen" with no barrel, forend wood, locking screws or buttplate, receiver shows an old refinish blue with heavy buffing on left side, bolt, lifter, trigger and most internal small parts are present along with a magazine tube, recoil spring, friction ring, recoil spacer and forend cap, nice dark Walnut lightly figured pistol grip stock has a round butt grip, cut checkering L.O.P. of 14" but no buttplate, parts or restore, no returns on parts guns (C&R)\$695

- 120-V Mossberg .410 Gauge "Model 183-KC" Bolt Shotgun 22" barrel with mint bore, 3" chamber, factory attached "multi choke" with silver bead sight, 98% original blue, smooth Walnut pistol grip stock showing some scattered dents along forend and light spots of white paint on butt, black plastic serrated buttplate with white line spacer and plastic finger groove triggerguard, both red and green safety buttons are still present, 13 5/8" L.O.P. (C&R) ..\$285

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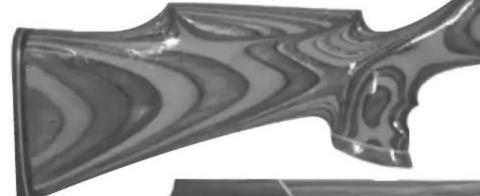
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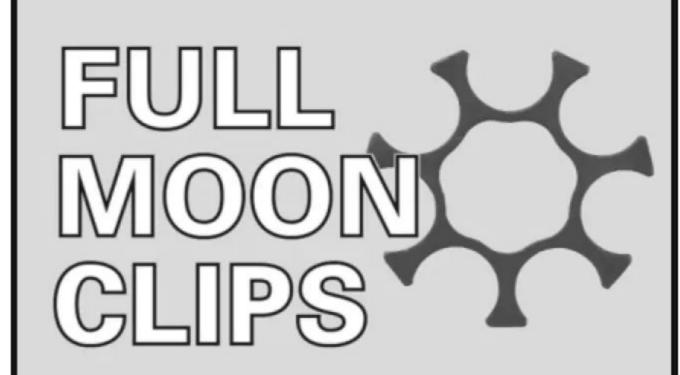
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Continued from page 50

JULY

Jul 20 TN, Lenoir City. Knoxville TN: Smoky Mountain Gun Collectors Association Gun Show. The Venue at Lenoir City, 7690 Creekwood Park Blvd. SH: Sun. 9am-3pm. A: \$10.00 each day. T: 120. F: \$50.00. Smoky Mountain Gun Collectors Association, Inc. . P.O.Box 9251, Knoxville, TN 37940. PH: 865-333-4970. www. smokymountainguncollectorsassociation.org.

Jul 26-27 MO, Kansas City. The M.V.A.C.A. 54th Annual National Summer Arms Show. KCI EXPO Center, 11730 N. Ambassador. SH: Sat. 9am-5pm, Sun. 9am-3pm. A: Adults: \$15 A Day / \$20 Weekend Pass Children under 15: Free - must be accompanied by adult. T: 800. F: \$135 Sales Table / \$35 Display Table. Missouri Valley Arms Collectors Association. PO Box 6013, Leawood, KS 66206. PH: 816-559-7469. http://www. mvaca.org.

AUGUST

Aug 2-3 TN, crossville. Cumberland County Gun & Knife Show. Cumberland County Community Complex, 1398 Livingston Road. SH: Sat. 9am-5pm, Sun. 9am-3pm. A: Saturday: Adult \$5.00, Youth (under 16) FREE Sunday: FREE admission. T: 200. F: \$40 for 6' table with multi table discounts. Cumberland County, TN, contact: Donnie Moody, Phone (931) 250-1981, email: gkshow@charter.net. 1398 Livingdston Road, Crossville, TN 38571. PH: 931-484-5028. www.gkshow.org.

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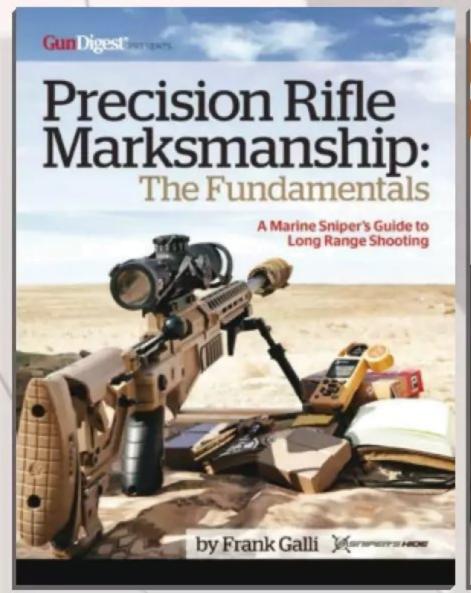
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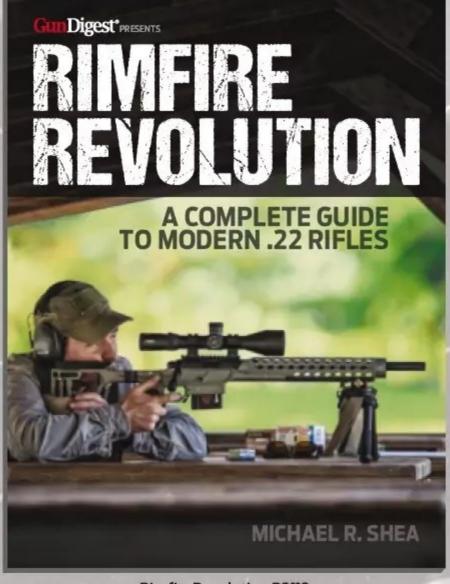
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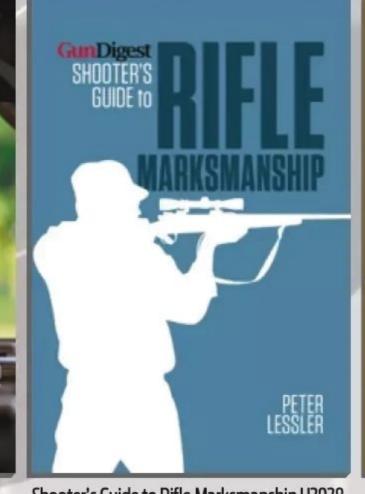
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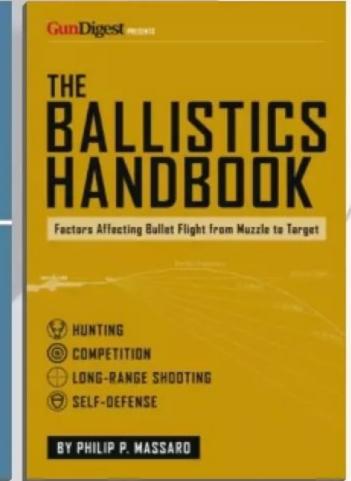
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very few years we see a technological leap in optics, even though these feats aren't always immediately obvious to the non-nerds among us. Sometimes these take place in the form of advanced coatings or novel approaches to increasing contrast or reducing optic aberrations, but occasionally it's much more conspicuous ... or maybe not so much. In fact, if you don't know what you're looking at here you might mistake it for a large dot optic or perhaps a prismatic. But no, there's a whole 3 to 9 power variable optic under that hood. Let's talk about this new Vudu.

The range and ratio aren't going to bust down doors; 3x9 might be the most

classic variable scope range ever. It's not the 1:3 magnification ratio either. Hell, EOTech themselves manufactures a scope with a 1:10 scale, and we've seen glass go even higher than that. The big news here is the smallest thing. Namely, the whole hog is only 6.8 inches long. For comparison's sake, an equivalent optic could easily approach twice that length. Hell, it's a similar size to a 4x Trijicon ACOG with a kill flash.

EOTech has squeezed advanced capability into small packages in the past, like with their 5-25x Super Short and the latest batch of stubby magnifiers, but not anything like this—they are the first to pull off this level of optical magic.

MPVO

We've previously discussed the need for a new kind of optic, the MPVO (Medium Powered Variable Optic). The MPVO wasn't going to be anything groundbreaking in terms of magnification range, but instead in form factor. It would need to be smaller, more like an LPVO (or less) instead of a large objective bell and the rail-eating body of traditional optics, and importantly, also be designed to accommodate dots-on-top from the beginning instead of pretending that looking at a simulated 1x image through a tube was the same thing.

Essentially, we define an MPVO as a midrange variable stuffed into an LPVO



shell, while addressing the downsides of each. There's more nuance, but that's the broad shape of it. While this isn't exactly what we envisioned, EOTech managed to exceed our imagination regarding size; it's clearly where the river is flowing.

DETAILS & CONTROLS

The build quality is exactly what you've come to expect from EOTech, with the body formed from a single piece of deeply anodized aluminum. No cheap Chinesium feel here.

In terms of controls, it's fairly straightforward. The windage and elevation turrets have 1/4 MOA adjustments and are protected by caps; this is a set-it-and-forget-it optic, not one you'll be dialing-in on the fly. The adjustments are chunky, and you can feel them even with winter gloves on.

There are 10 illumination settings with offs between each, so you can set it to your environment and turn it off with a short click in either direction. A single CR2032 battery will run the Vudu MPVO for about 300 hours. For one reason or another, the years-long battery life of dot sights hasn't made it to other optics, but it's also less of a problem because this'll run without a battery regardless.

In addition to the shorter length, the front objective lens is only 32mm, which only adds to the magic trick. With tradi-

tional 3x9 designs and in addition to the much longer overall length, you'd expect to see 40mm or even 50mm glass and perhaps a sunshade to boot. This Vudu 3-9x32 does have a tube somewhere under there, but you're not going to use it for scope rings because it's compatible with mini ACOG mounts. What little actual tube there is accommodates an optional EFLX dot sight, and you'll save yourself a few bucks if you bundle them together.

The eye relief stays very consistent between the highest and lowest magnification levels, slicing off just 0.2 inch when maxed out. The color rendition of the Japanese glass is excellent, and the



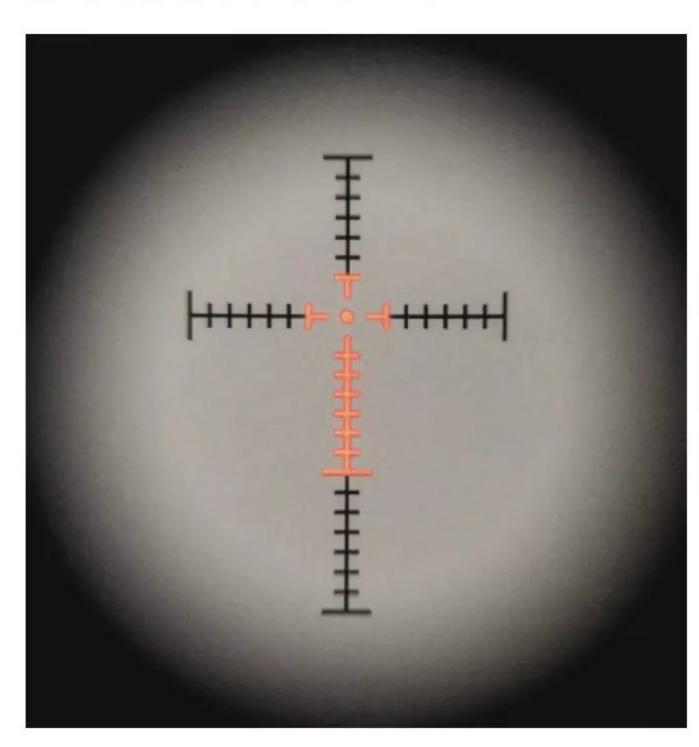
There's space under for irons, though they're not much good unless you're using a quick-release mount.

only real aberrations occur at the edges of the glass.

RETICLE

This new Vudu is a second focal plane (SFP) optic, meaning that the reticle remains static regardless of the magnification level. Though broadly speaking this is a less complex optical arrangement than a first focal plane (FFP) reticle that scales as you zoom, it also allows for easier "daylight bright" illumination.

On this first model EOTech features their HC1 reticle, which is shaped like a cross with a center dot complete with MOA stadia lines. Only a smaller inner No, the HC1 reticle isn't reminiscent of EOTech's circle-dot like their SR5. Spend a little time with a ballistic calculator to maximize it.



portion is illuminated in red, and we have to admit it looks a bit like a Greek Orthodox cross at first blush. Even though the reticle doesn't scale, EOTech went through the trouble of including a diagram displaying what each measurement means at both 3x and 9x. It's nice of them to include the 3x scale, but max magnification is what we concern ourselves with.

Our recommendation is to bust out a ballistic calculator and figure out the major lines for your chosen rifle, zero, and caliber. For instance, with one of our 5.56mm rifles with 77-grain ammunition, the first major stadia line represents the drop at 312 yards, and the bottom 410 (needless to say, functionally it's just 300 and 400 yards).

LOOSE ROUNDS

Even though you can immediately put a dot on top for close encounters, you can also shoot the Vudu with both eyes open à la Bindon Aiming Concept (BAC) just like with a Trijicon ACOG. It isn't a problem or, rather, is no more a problem than regular BAC shooting. You might even find it easier with the Vudu because of the longer eye relief.

Speaking of military optics, perhaps due to the combination of the shape and reticle design, running around the range with the Vudu MPVO we couldn't help but be reminded of the old 4x Colt carry handle scopes.

Are there some warts? Eh, not really more like preferential differences, some





that are likely to be addressed by future models. It would be great to see a higher top-end magnification somewhere down the line, but the present levels are just fine—especially in a world full of longer 1-8x LPVOs, fixed prismatics, and dot sights married to magnifiers. Similarly, SFP isn't my preference but the small size makes up for a lot.

As to what it's for—while the obvious answer to that question is anything you'd want a 3x9 on, the form factor really opens up a whole new world. Had this been inhand in RECOIL's last issue, it would've gone on our M16A5 build because it has versatile combat optic written all over it. As it stands, this one almost immediately found a home on an FN SCAR-H.

EOTech—keep it up! Other optic manufacturers—catch up! **GDTM**



The Vudu 3x9 (top) is roughly the same size as a Trijicon ACOG with a killflash (bottom).



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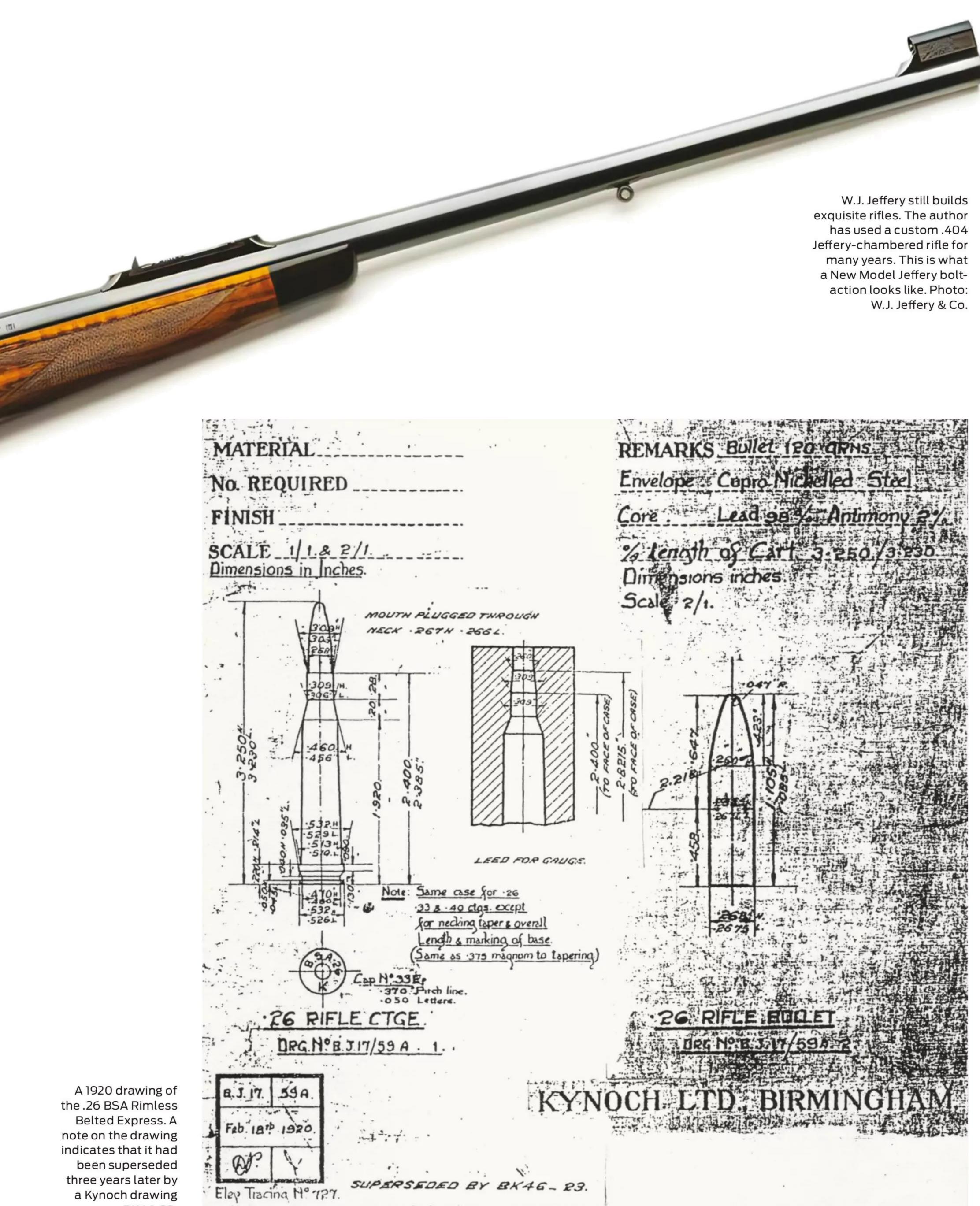
British and European cartridges that were years ahead of their time ... yet still failed.

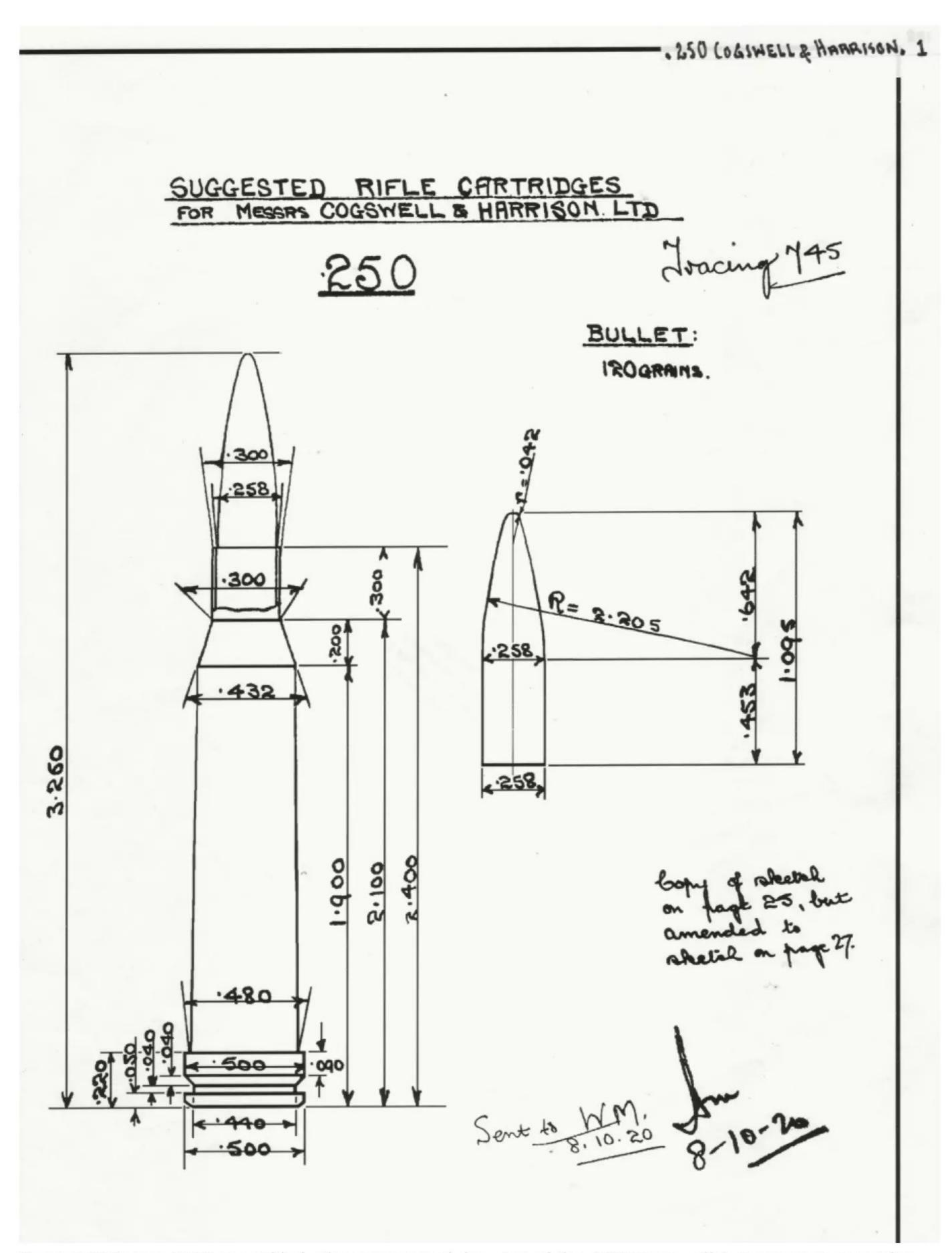
t should not be news to any reader that the British and European gun trades were highly active in cartridge conceptualization and design from the advent of the 20th century to the outbreak of World War II. Cartridge designs rode a near-permanent wave during this period, but not all progressed beyond the experimental or proposition stage. This article is about a few of those obscure bolt-action cartridge concepts of which we are aware. There are many more that are not covered here and even more that have disappeared in the fog of time, about which we will probably never know anything. An entire book could be written about them.

If I were a man of means, I would, just

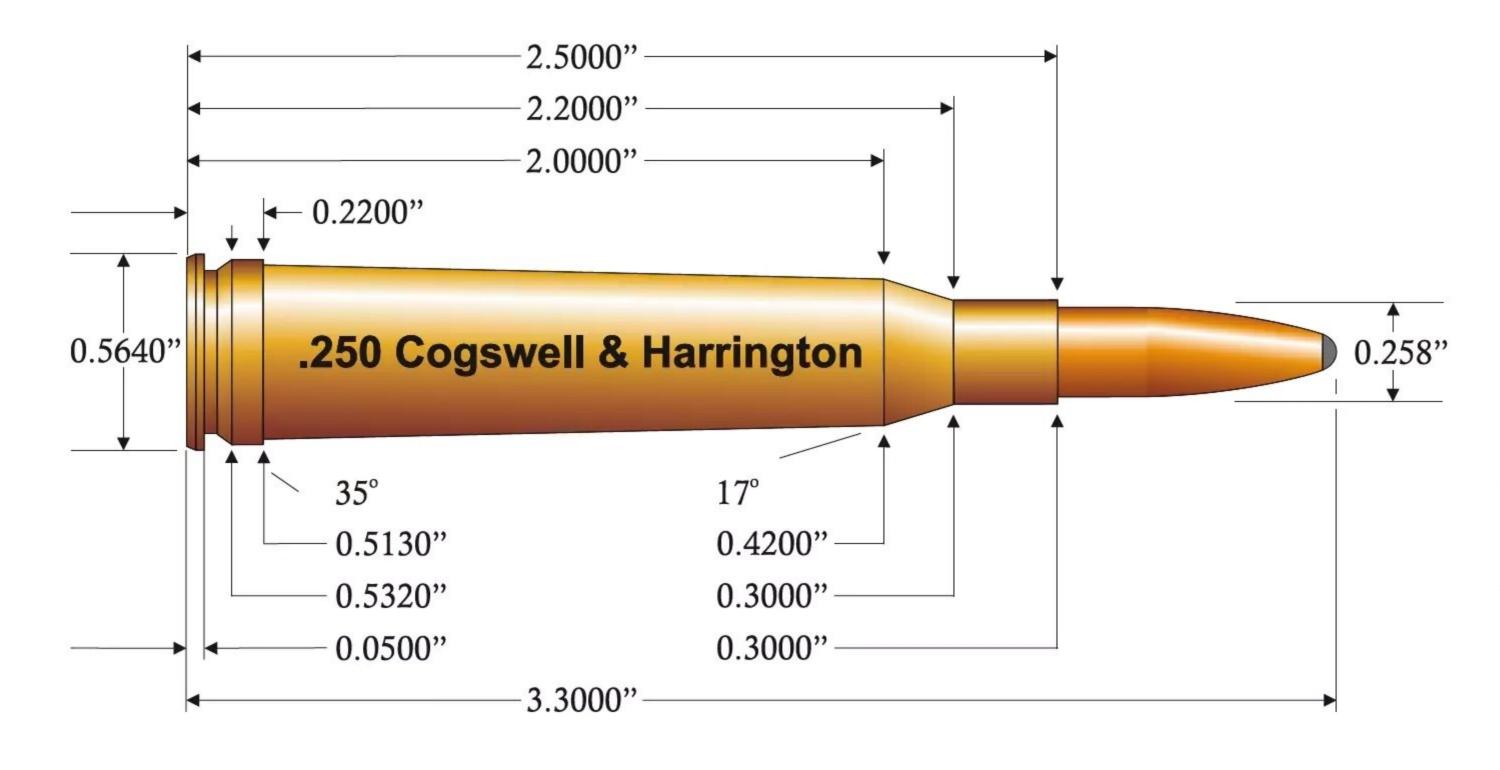
for the hell of it, have built a collection of British-style rifles chambered for some of these "never" cartridges on modern Granite Mountain Arms (GMA) or Prechtl custom Mauser 98 actions.

The disappearance or destruction of many European cartridge records during WWII and the recent closure of the historic Birmingham Proof House in the United Kingdom, followed by the sale of its records to an undisclosed collector, makes original research near impossible. I therefore relied on whatever sources of existing research I could find, sometimes almost verbatim. Sources will be acknowledged as best as possible, and where I omitted recognition, it is accidental, not intentional.





Tracing 745 circa 1920, most likely the conceptual drawing of the .250 Cogswell & Harrington cartridge. It was superseded in 1923.



.250 COGSWELL & HARRINGTON SUPER HIGH VELOCITY

The .250 C&H cartridge was conceived around 1920. Two drawings exist: one from Eley dated October 8, 1920, and another from Kynoch (BJ17-71) of July 18, 1922. They differ materially. The cartridge color sketch image follows the Kynoch dimensions as it is the most recent, and even the 1920 sketch already notes modifications and refers to earlier drawings. Although I have never seen a .250 C&H cartridge, Fleming¹ speculates that it may have seen limited production by Kynoch as the primer was revised in 1928.

The Eley drawing² stipulates the case at 2.400 inches (60.96mm), while the Kynoch drawing³ lists it as 2.500 inches (63.5mm). The Eley drawing shows a maximum commercial cartridge length of 3.26 inches (82.80mm) and the Kynoch 3.30 inches (83.82mm). The bullet diameter is given as 0.258 inch (6.55mm) and not the present-day 0.257 inch (6.53mm). For all practical purposes, we can use the same barrel specifications as the .250-3000 Savage: a groove diameter of 0.257 inch (6.53mm) and a caliber of 0.250 inch (6.35mm).

The .250 Cogswell & Harrison design is typically British period-related, but the final version's body taper was an excessive 2.991 degrees. The original drawing with the lesser body taper was the better of the two versions in my book, even with its odd belt diameter. Its neck measures 0.300 inch (7.62mm), constituting 120 percent of the caliber. The shoulder angle is a shallow, Corditecharging-compatible 17 degrees. The case capacity is in the region of 62 to 65 grains of water.

I could not find a definitive pressure specification for the .250 Cogswell & Harrison. QuickLoad lists it as 50,763 psi, but obviously without substantiation, and I have no idea where that specification was sourced. The .240 H&H Apex, which hails from the same year, has a maximum average pressure limit of 60,191 psi. The .250-3000 Savage of 1914, a lever-action cartridge, has a Sporting Arms & Ammunition Manu-

.250 COGSWELL & HARRINGTON DRAWING DIFFERENCES

IDENTIFICATION DATE	RIM Ø (R1) DIAMETER (IN.)	BELT Ø (R3) DIAMETER (IN.)	BASE Ø (P1) DIAMETER (IN.)	SHOULDER (P2) DIAMETER (IN.)	CASE (L3) LENGTH (IN.)	COAL (L6) (IN.)
1920	.500	.500	.480	.432	2.400	3.250
1923 (Kynoch)	.564	.532	.513	.420	2.500	3.300

The cartridge is quite interesting because it is belted but semi-rimmed with a rim diameter of .564 inch (14.33mm).

facturers' Institute (SAAMI) maximum average pressure limit of 45,000 CUP (Copper Units Pressure), while the *Commission internationale permanente pour l'épreuve des armes à feu portatives* (CIP) limits it to 52,939 psi. Given that it is a post-WWI bolt-action cartridge design, I can see no reason the .250 Cogswell & Harrison cannot be loaded to .240 Apex levels. Thus, it compares to contemporary 0.257-inch rounds as detailed in the .250 C&H Performance Comparison Table.

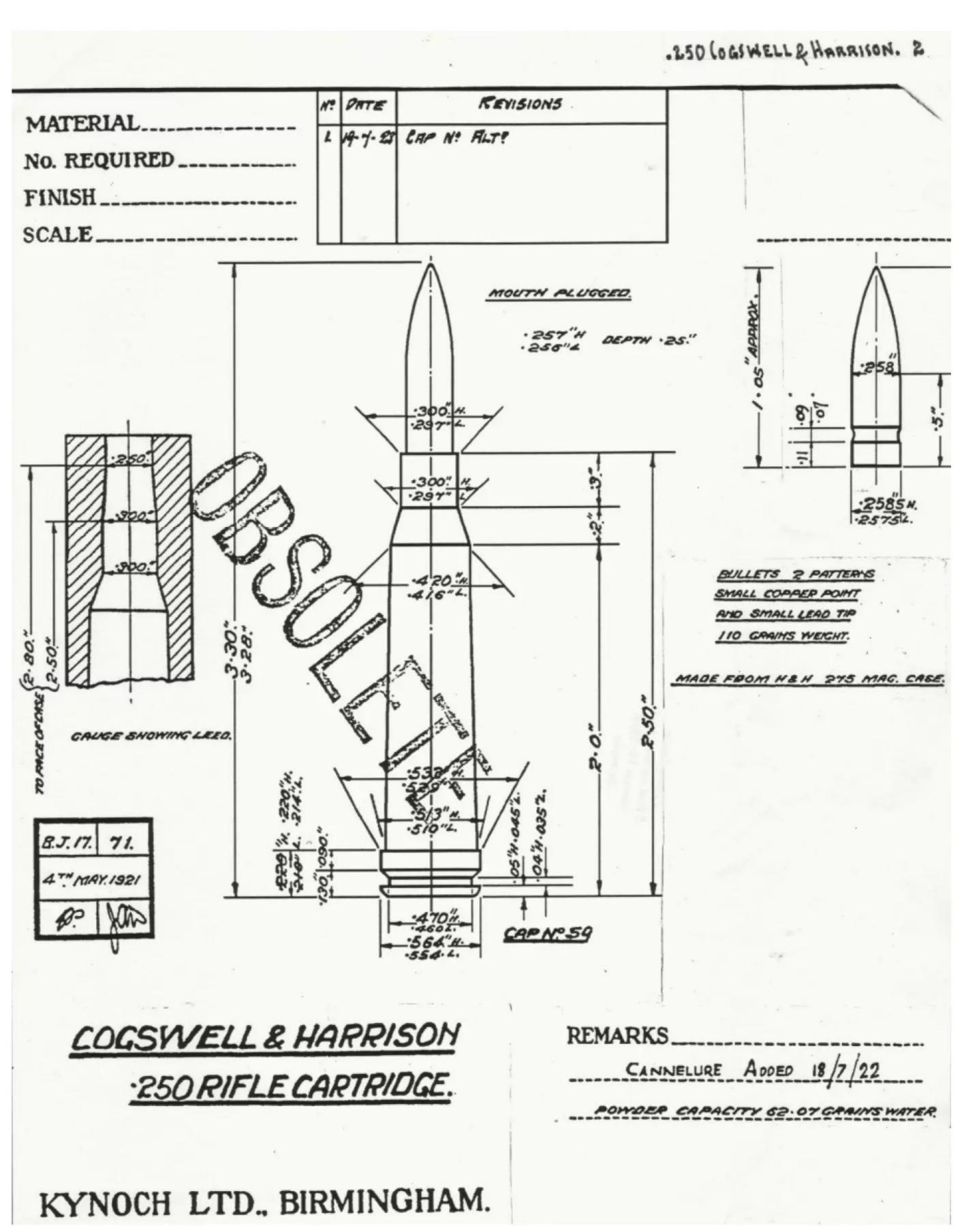
In practical terms, the .250 Cogswell & Harrington would have performed somewhere between the rimless .25-'06 Remington and the .257 Weatherby Magnum. It was hailed as an excellent option for "Hill-Shooting in India, or for Deer-Stalking in Scotland.4"

In the 1924 Cogswell & Harrison brochure, the cartridge was offered in a Mauser 98 action, and the Cordite ballistics listed it as 3,000 fps with a 110-grain bullet, which would have been achieved at pressures around 45,000 psi.

Drawings of two other belted Cogswell & Harrington cartridges also exist but have not been included here due to space restrictions; that of the .370 (Kynoch BJ17—71.4 dated May 5, 1921) and of a .380 (Eley 137.24 dated June 13, 1920) neither of which made it.

.26 BSA RIMLESS BELTED EXPRESS

BSA (Birmingham Small Arms Company, Ltd.) was established around 1861. It played a significant role in British small arms manufacture until about 1973, when it closed. It offered airguns, rifles and cartridges of its own design, amongst which were the .26 and .40 BSA Rimless Belted Express. The earliest blueprint of the .26 BSA I have is Kynoch's drawing numbered BJ17-55A, dated February 18, 1920. It was superseded by Kynoch drawing BK46-

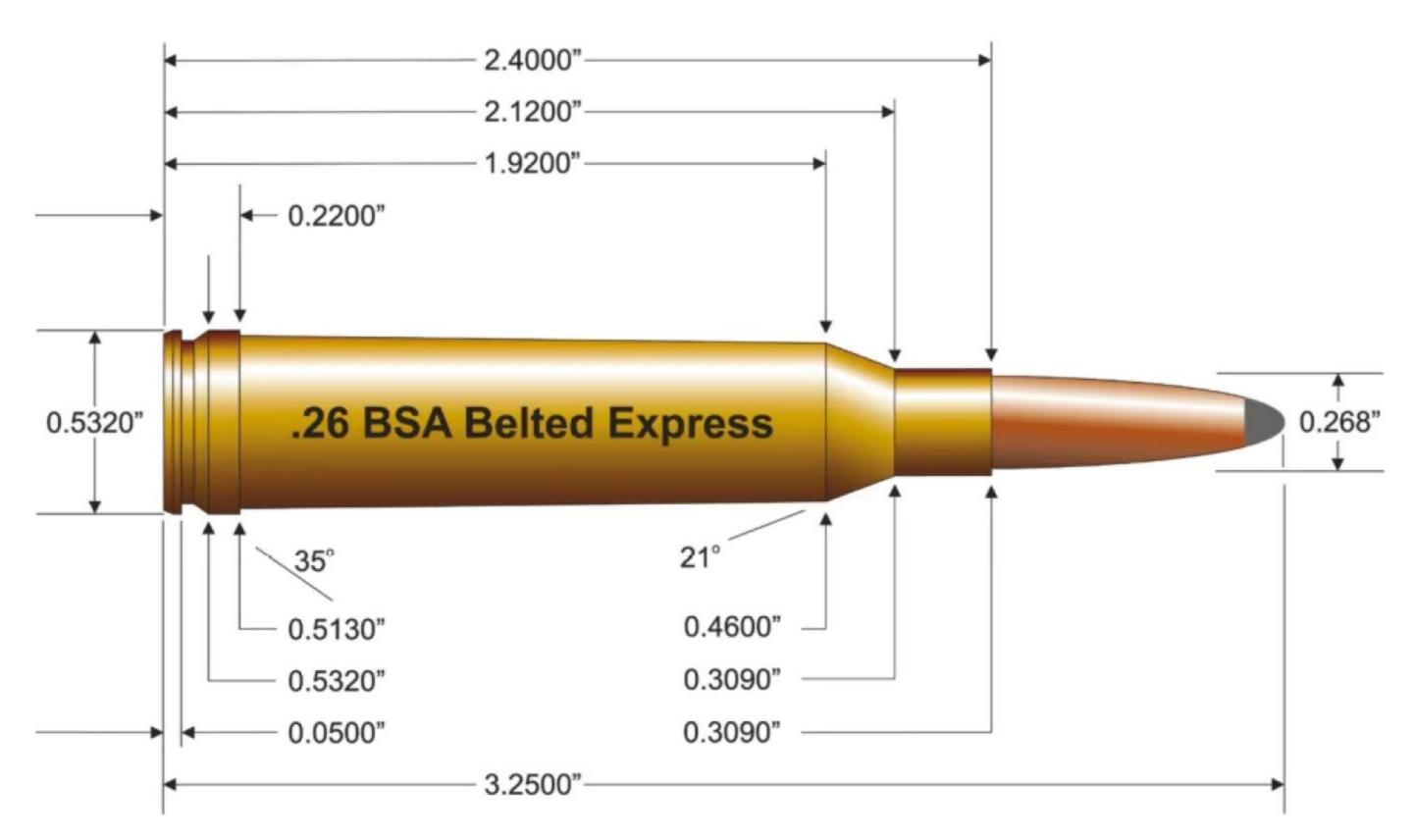


This Kynoch drawing seems to be a late rendition of the 1921 revision of the .250 Cogswell & Harrison cartridge since the notes and remarks date 1922 and 1928, respectively.

23, which I am still trying to find. At the time of the .26 BSA's introduction, the company built its rifles on modified Enfield Pattern-14 bolt-action systems, not Mauser or Mannlicher actions common to other British gunmakers.

The .26 BSA Cartridge Comparison Table shows its closest ballistic rivals. The .264 Winchester Magnum could also have been included, but it is more powerful than the cartridges in the comparison. The .26 BSA's rivals are the 6.5 Remington Magnum and the recent 6.5 PRC. That is quite a revelation, given that this cartridge is over a century old.

Theoretically, the .26 BSA equals or marginally outperforms the highly touted 6.5 PRC cartridge if loaded to the



.26 BSA Rimless Belted Express.

.250 C&H PERFORMANCE COMPARISON TABLE (26-INCH BARREL)

CARTRIDGE	BULLET (GR.)	MAP (PSI)	VELOCITY (FPS)
.257 Roberts	120	58,000	2,800
.25-'06 Remington	120	63,000	3,100
.250 Cogswell & Harrison	120	55,000	3,125
.257 Weatherby Magnum	120	53,500	3,300



The famous logo of the BSA company during its heyday. Photo: BSA

same pressure levels. In practice, the 6.5 PRC is technically a much more sophisticated cartridge with better cartridge-to-chamber interface and combustion characteristics. (Not that the .260 BSA cartridge is the potentially better one; it already equaled the PRC's ballistic potential a century ago.)

The .260 BSA has a 2.400-inch (60,96mm) long case with a 107.69 percent long neck, which conforms to contemporary criteria. The shallow shoulder angle of 21 degrees is high for a British cartridge. British rounds were loaded with Cordite strings as the propellant, which were inserted into the cases before the shoulder and neck were swaged into final shape during production. A shallow shoulder angle was consequently preferred as the most processcompatible. On the Kynoch drawing, the rim and belt diameters are the same as those of the .375 H&H Magnum and typical American belted cartridges.

The .26 BSA belt and the unnecessarily sharp tapered body (1.786 degrees) are not as efficient and enduring as the shorter body, sharper shoulder and lesser body taper of the contemporary 6.5 PRC and similar high-precision designs. Unless you are a handloader, those benefits do not necessarily manifest in ballistic or precision superiority. It also shows that Britain was at least 39 years ahead of the USA in terms of the 0.260-inch caliber cartridge design because

the U.S. only introduced the belted .264 Winchester Magnum in 1959 and the 6.5mm Remington Magnum in 1966. The rimless 6.5 PRC wouldn't see the light of day until 2018—98 years later!

.280 JEFFERY (.33/.280 JEFFERY)

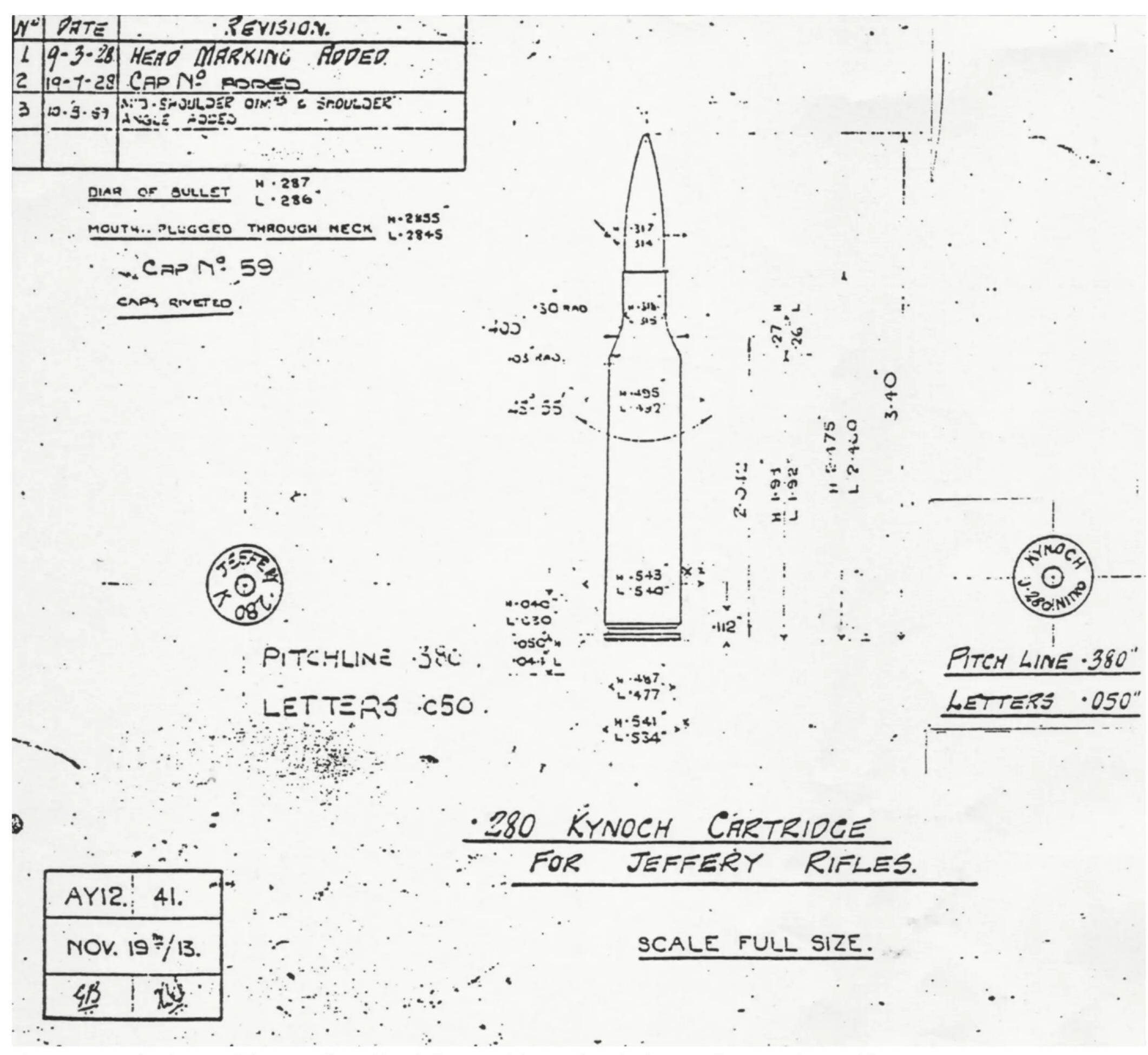
The .280 Jeffery originated with Kynoch drawing AY12-41 of November 19, 2013. It is a .333 Jeffery necked down to 0.287 inch (7.29mm), not the 0.284 inch (7.21mm) that later became the 7mm standard. W.J. Jeffery offered it in his Mauser 98 rifles. Most sources claim that it only went into production in 1915, but 1914 is more likely. As with the 7mm WSM and Remington's UltraMag cartridges, its parent case was the .404 Jeffery, except the British took this approach 88 years before the Americans did. Loaded with 57 grains of Cordite, it launched a 140-grain bullet at 3,000 fps.^{5,6} Remember that the velocities listed for British cartridges were derived from 28-inch (711mm) proof barrels.

The .280 Jeffery is a forerunner of the modern 7mm Blaser Magnum, circa 2009. The Blaser, designed by my friend Christer Larsson, former head of ballistics at Norma Precision, has a marginally shorter case body (L1) and case length (L3) but less body taper and a sharper shoulder. These two cartridges have the same case water capacity and ballistics at identical pressure levels for all practical purposes.

Apart from bullet diameter, the minor dimensional differences are detailed in the accompanying .280 Jeffery Cartridge Comparison Table. Although the .280 was loaded hot in its day, modern propellants enable it to exceed original ballistics in 24-inch (610mm) barrels.

Loaded with modern propellants to contemporary pressure levels, the .280 Jeffery trades punches with the .280 Remington, 7x64mm Brenneke, 7mm WSM, 7mm Remington Magnum and the 7mm Blaser without ever taking to the canvas.

From a design perspective, its neck is a surprise for a British cartridge preceding WWI: It is short—around 98.2 percent of caliber. Even the .276 Enfield

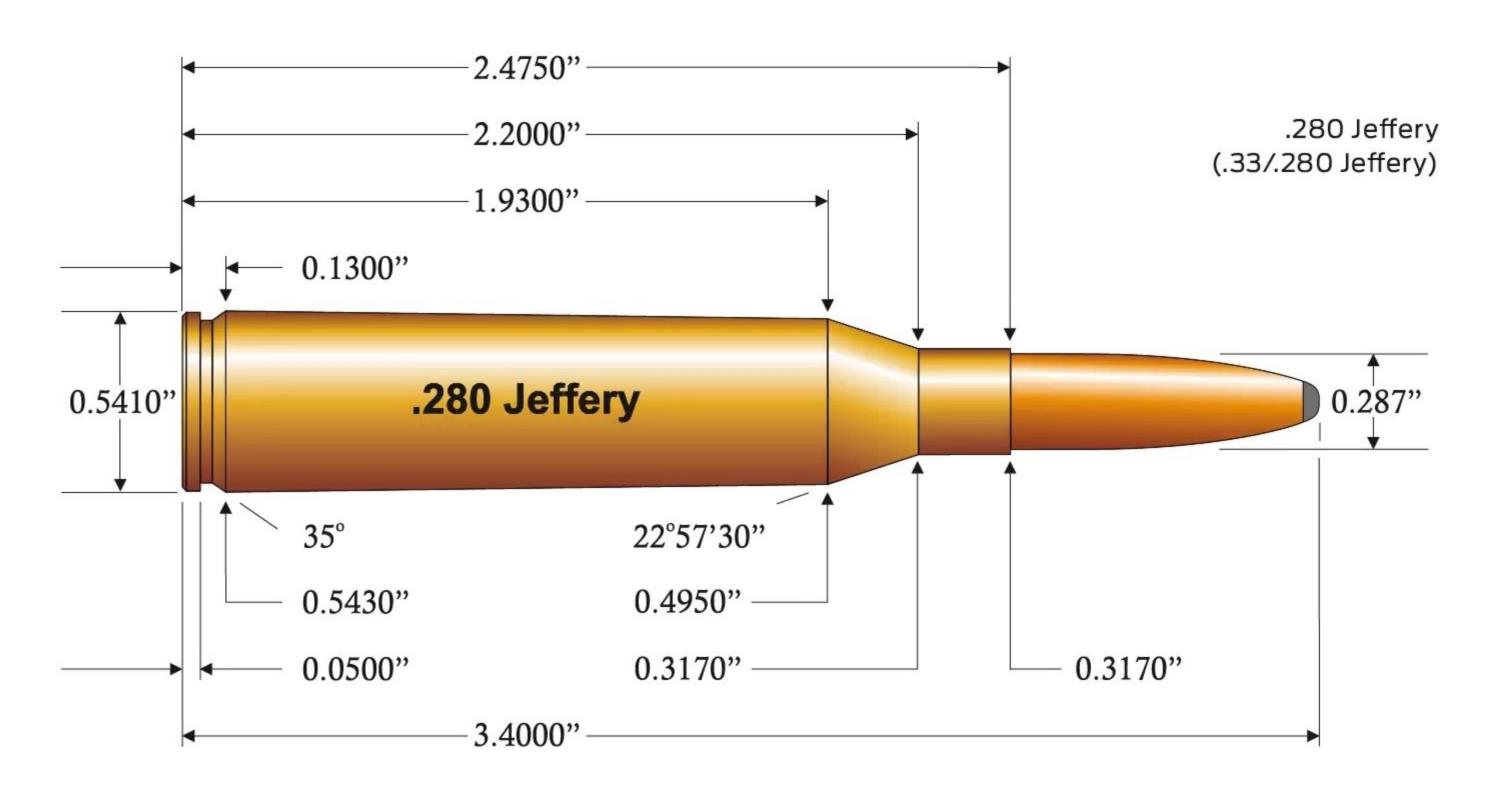


This is a poor-quality drawing of the .280 Jeffery. Although the original drawing dates back to 1913, this version lists modifications up to 1959.

with which the British military experimented had a longer neck. The 22°57'30" shoulder was also rather sharp for a pre-WWI British round. The body taper is era-typical at a rather pronounced 1.687 degrees. It's interesting that a cartridge would fall by the wayside, only to essentially be revived 96 years later as a solution to real or perceived needs⁷. But that is the world of cartridges for you.

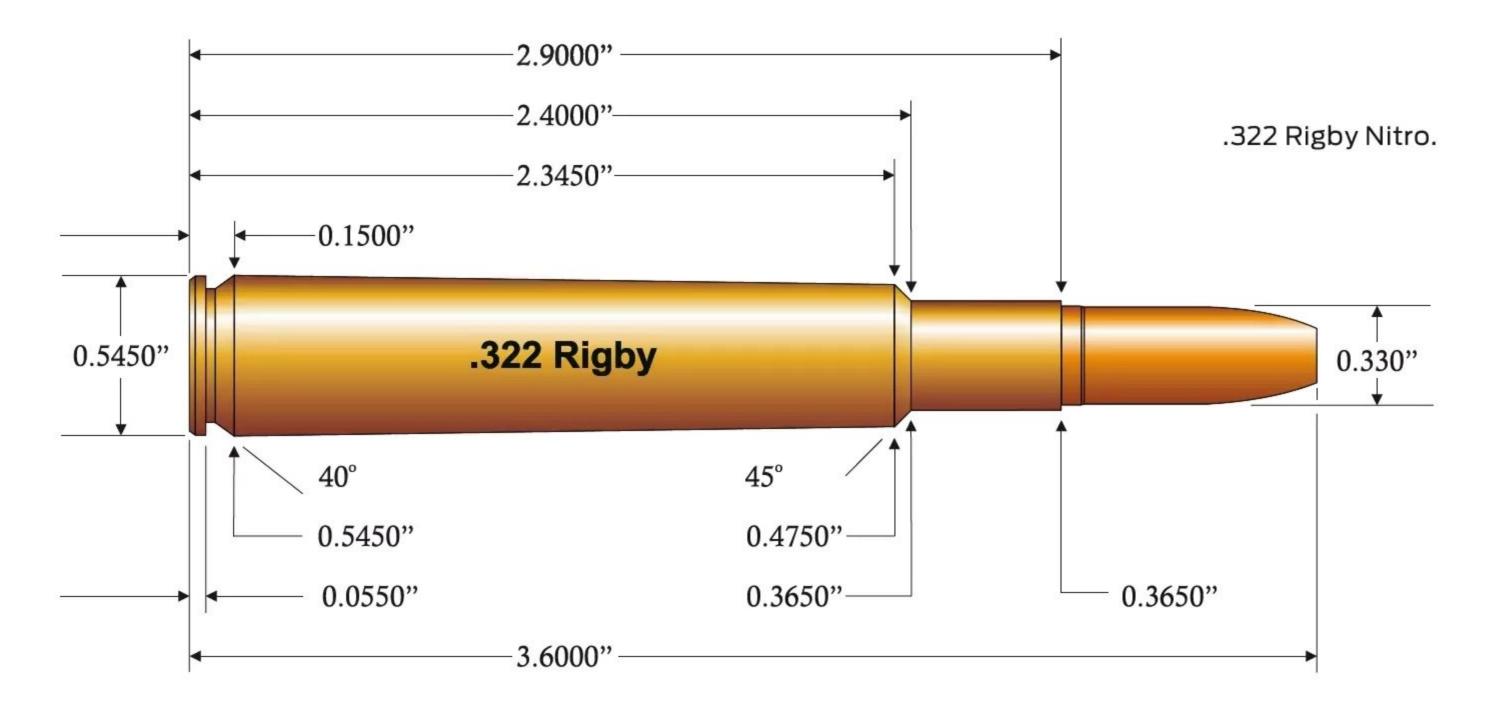
.322 RIGBY NITRO

In the 1914 history section of the famous John Rigby & Co. website, there is a



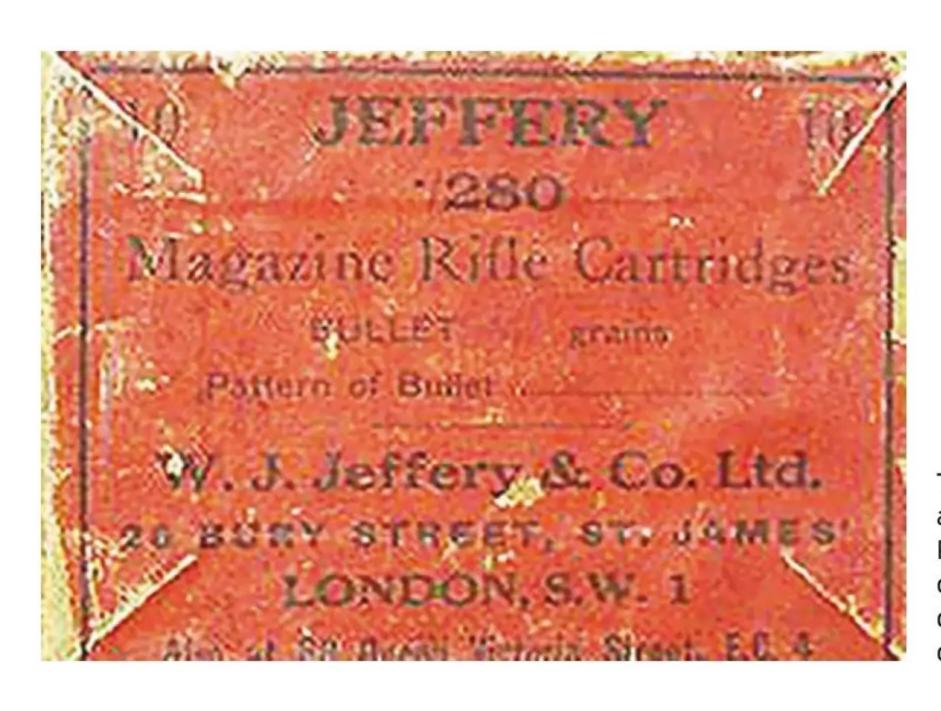
.26 BSA CARTRIDGE COMPARISON TABLE (26-INCH BARREL)

CARTRIDGE	YEAR	CAPACITY (GR.)	MAP (PSI)	BULLET (GR.)	VELOCITY (FPS)
.26 BSA	1920	69.0	50,763 (QL)	120	3,150
.26 BSA	1920	69.0	62,500 (CIP)	120	3,250
6.5 Remington Mag.	1966	68.0	63,901	120	3,000
6.5 PRC (Hornady)	2018	68.0	65,000	120	3,250



.280 JEFFERY CARTRIDGE COMPARISON TABLE (24-INCH BARREL)

CARTRIDGE	BULLET (GR.)	90% MAP (PSI)	CAPACITY (GR.)	VELOCITY (FPS)
.280 (.33/.280) Jeffery	140	54,825	82.5	3,350
7mm Blaser Magnum	140	54,825	82.5	3,350



This worn box of .280 Jeffery ammunition in the collection of Paul Strydom invokes a sense of nostalgia to accompany a discussion of these forgotten old cartridges. Photo: Paul Strydom

sentence that reads: "John Rigby had further plans for his .416 cartridge case. When World War I began in June 1914, he was working with Kynoch to develop the Rigby .322 Nitro cartridge. They intended to use a .330 diameter bullet weighing 250 grains. The velocity should have been about 3,000 feet per second, which would have produced more than 5,000 foot pounds of energy at the muzzle. Completion of the project was

delayed until after the war, but with John Rigby's death in 1916 all development ceased."

The .322 Rigby died with its conceiver and was never commercially produced. A few cartridges must have been made for experimental purposes because there are a few specimens in collectors' hands. The 250-grain 0.330-inch bullet made the .318 Westley Richards (circa 1910) famous. Many years ago, I wrote:

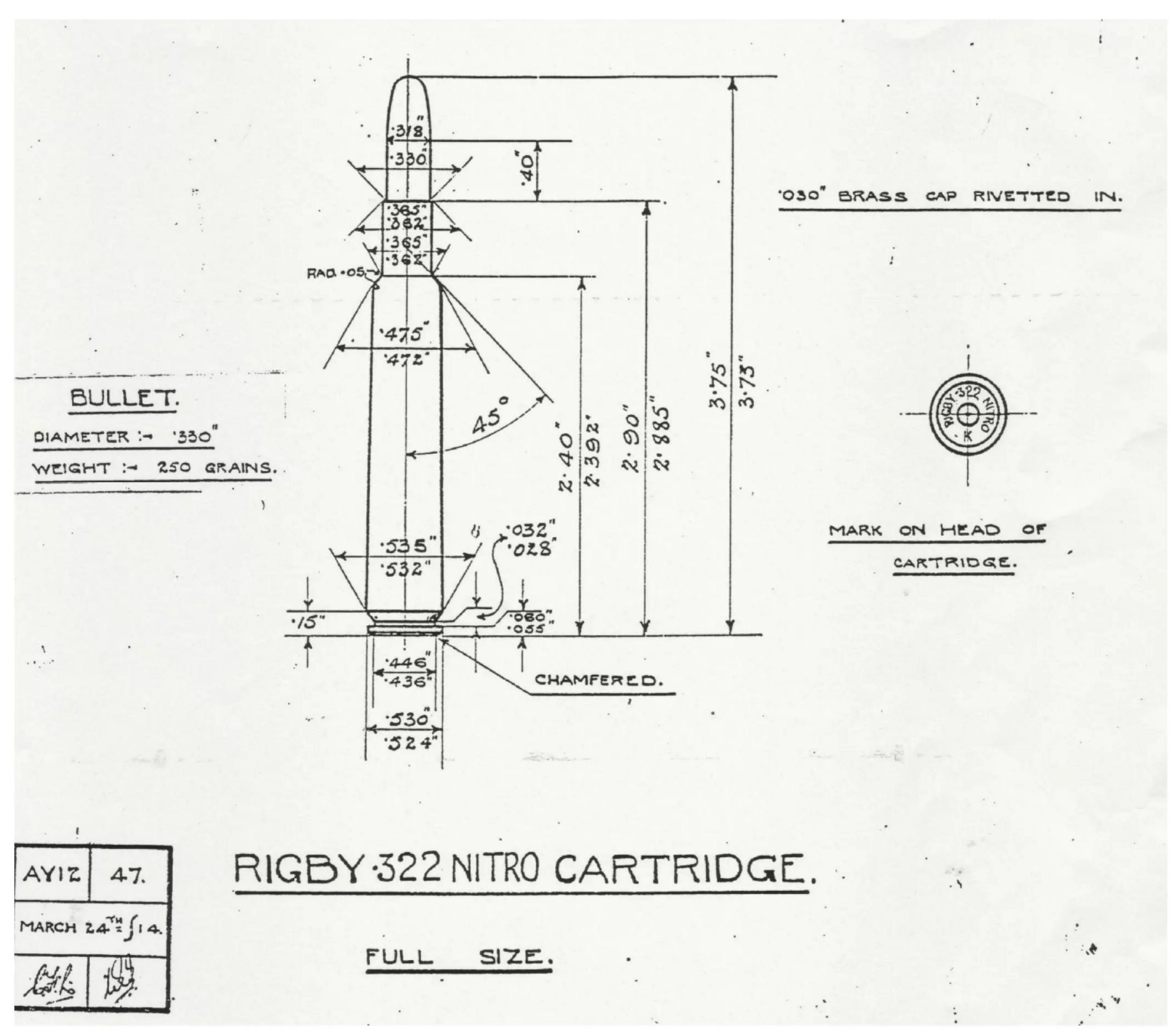
"The .322 Rigby was not conceived as a .350 Rigby Magnum necked down, but an original design. The various sources list slightly differing dimensions for the cartridge, but performance levels hovered around 2,500 fps with 275-grain bullets from 24-inch (610mm) barrels."

However, John Rigby used the .404
Jeffery case as the basis for the .322,
not his .416 case. That is abundantly
clear from the March 17, 1914, letter
posted on the Rigby website and the
Kynoch drawing AY12-47 dated March
24, 1914. It is understandable because,
as I explained in *African Dangerous Game Cartridges* (p. 277), he indirectly
contributed to the creation of the .404
Jeffery.

Drawing AY12-47 shows the cartridge as having the same cartridge overall length of 3.75 inches (95.25mm) as the .416 Rigby (Mauser magnumlength action) rather than the 3.53 inches (89.66mm) of the .404 Jeffery. The latter can be fitted into a standardlength Mauser action with a stretched magazine box, as is commonly done to accommodate the .375 H&H Magnum (COAL 3.6 inches). Interestingly, this drawing does not specify the case body length (L1), but Ken Howell⁸ determined it by using CAD software to "reverse engineer" the dimension as 2.345 inches (59.56mm). Body taper has thus been calculated as 1.566 degrees.

The case water capacity of the .322 Rigby Nitro is in the region of 102 to 103 grains. Rigby specified the muzzle velocity at 3,000 fps with a 250-grain bullet using Cordite. I can only presume that this performance was to be derived from the typical 28-inch (711mm) test barrels standard in the British trade. Using QuickLoad and a British-style Woodleigh 250-grain 0.330-inch bullet, I derived an approximate pressure level of 62,500 psi, which is way above what would have been acceptable in 1914. I submit that Rigby's velocity expectation for the 250-grain bullet was optimistic.

If, however, I use a 275-grain bullet with a length of 1.34 inches (34mm), I can simulate 2,500 fps from a 24-inch (610mm) barrel at a mere 47,137 psi—



The available drawing of the .322 Rigby Nitro cartridge dated March 24, 1914.

identical to the pressure specification of the .416 Rigby.

The accompanying comparison table details the contemporary cartridges most comparable to the .322 Rigby Nitro. Since the .322's modern adversaries are all loaded to maximum average pressures (MAP) exceeding 60,000 psi, I settled on the pressure level for the .322 Rigby for comparison in QuickLoad using a 24-inch (610mm) barrel. The average of five top-performing loads at 90 percent of maximum average pressure was used.

QuickLoad is not gospel, but it pro-

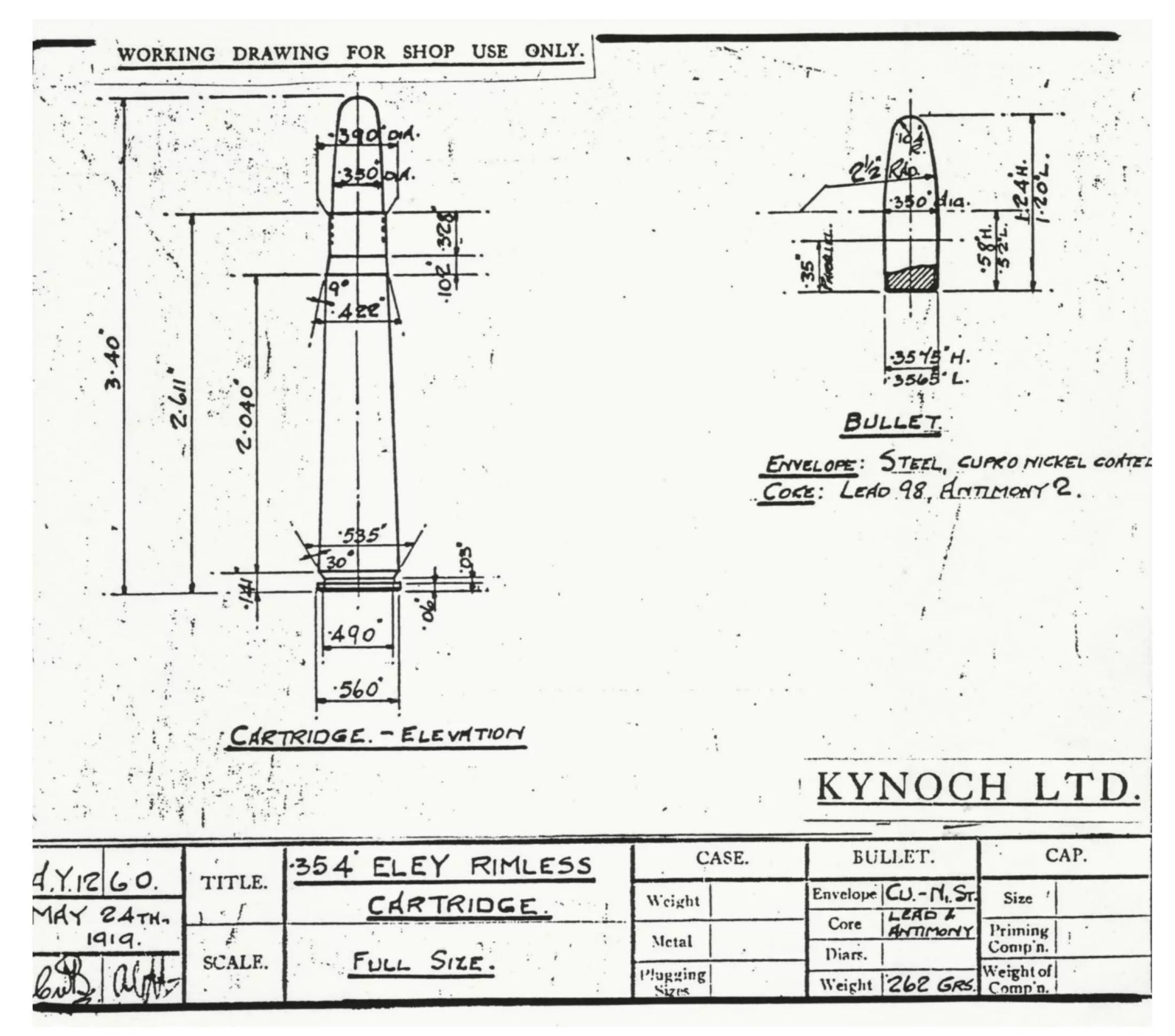
.322 RIGBY CARTRIDGE COMPARISON TABLE (26-INCH BARREL)

CARTRIDGE	BULLET (GR.)	90% MAP (PSI)	CAPACITY (GR.)	VELOCITY (FPS)
.318 Westley Richards	250	43,075	69.0	2,385
.322 Rigby Nitro	250	54,000	103.0	2,760
.338 Norma Magnum	250	57,436	105.5	2,864
.338 Lapua Magnum	250	54,824	118.0	2,864
.338 Remington UltraMag	250	57,435	110.0	2,807

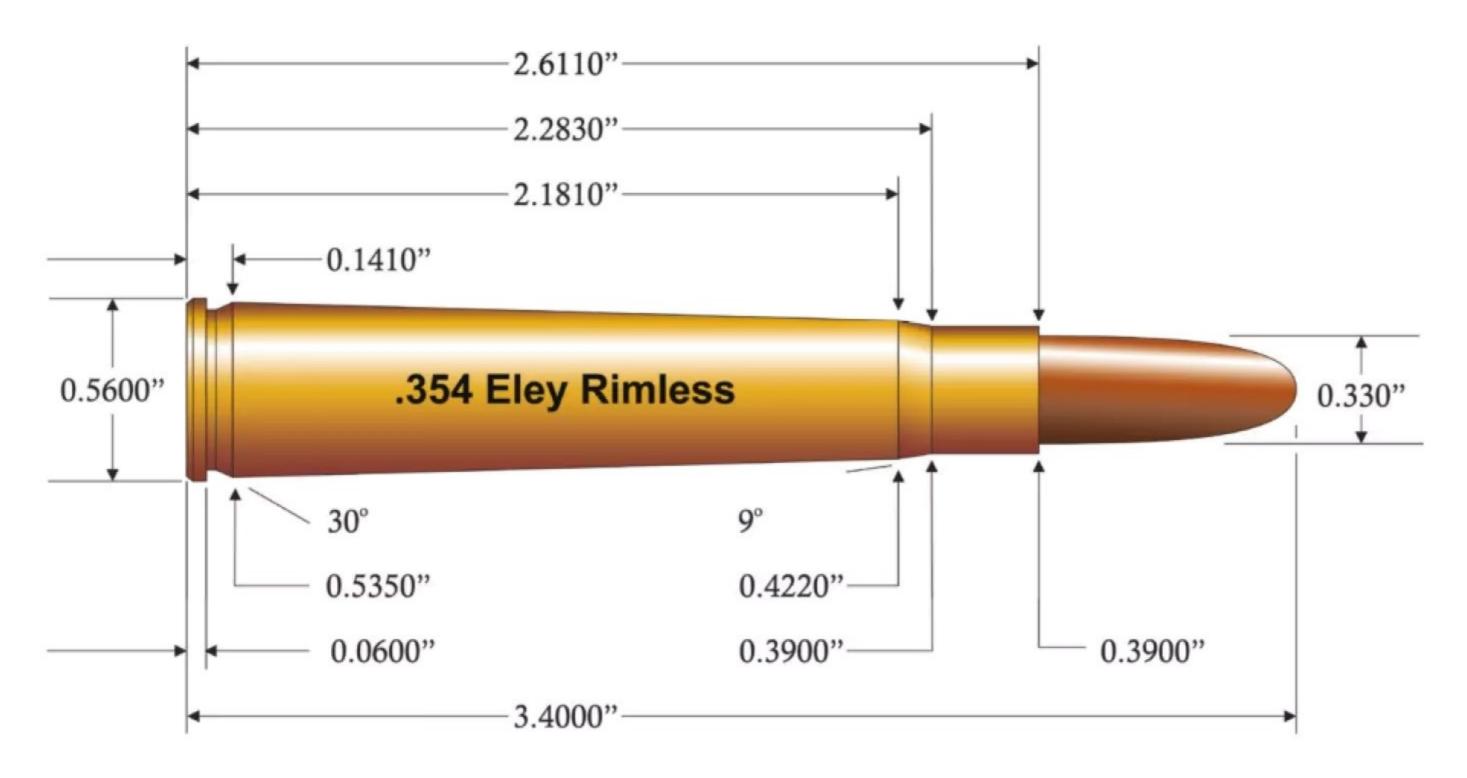
vides a solid comparative base for calculation. The 'wonder kid' .338 Lapua and Norma Magnums were essentially conceived 99 years ago! Reinventing the wheel seems to be the current pastime.

.354 ELEY RIMLESS

The .354 Eley Rimless is a particularly obscure concept that never progressed beyond the drawing board. The drawing number, dY12-60, is especially



Kynoch drawing AY12-60, dated 1919, shows the planned .354 Eley Rimless cartridge. It was based on the influential .280 Ross cartridge Eley also designed.



odd. Even stranger is that it is a Kynoch drawing of an Eley cartridge marked "Working Drawing for Shop Use Only." Its date is May 24, 1919, just more than six months after the end of WWI. I could not find any other reference to it except in Harding, but the timeframe Harding records raises more questions than answers.

He may be referring to yet another cartridge when he writes: "In 1906 Eley were to start the manufacture of cartridges for rifles designed by Sir Charles Ross, a Scotsman who had emigrated to Canada." At least three variants were made by Eley, including two distinctly different versions of the .280-inch rimless, together with the rimless 0.354 inch. Alternatively, an Eley drawing, which I have not been privy to, dating back to 1906, may exist.

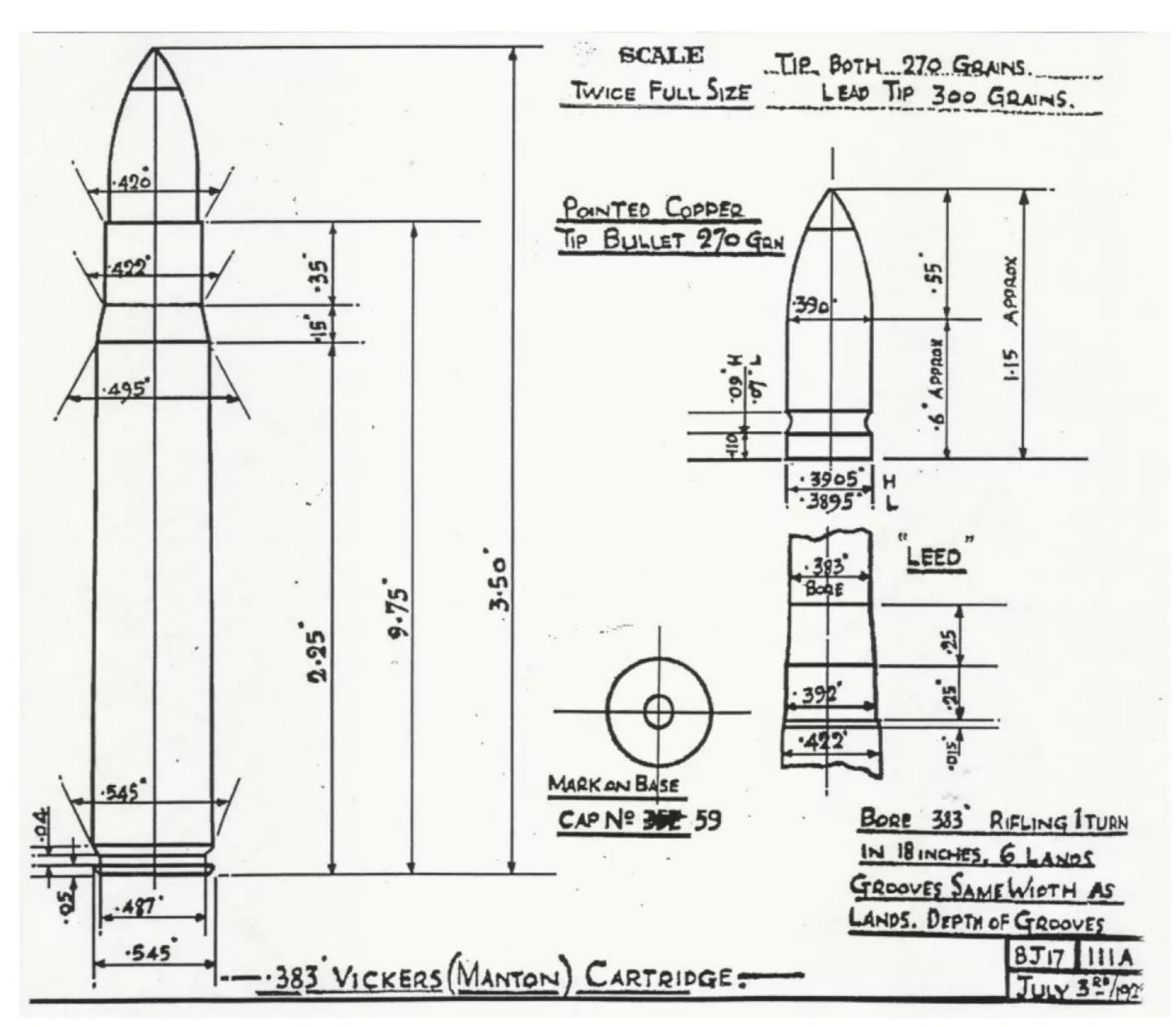
The 0.354-inch Eley essentially is a .280 Rimless Nitro Express Ross necked up. Both cartridges share the .404 Jeffery parent case with the rim (R1) and base (P1) measuring 0.535 inch (13.59mm) and a common shoulder (P2) of 0.422 inch (10.72mm). The shoulder angle of the .354 Eley is much shallower than that of the Ross, a meager 9 degrees rather than 26°33'63", and it also reduces the body length (L1) by 0.141 inch (3.58mm) to a length of 2.040 inches (51.82mm). The water capacity of the .354 Eley case is in the region of 88 to 90 grains.

The .354 Eley's bullet diameter would have been 0.350 inch (8.89mm) rather than the 0.358 inch (9.09mm) that eventually became popular. Body taper would have been excessive, as on the .280 Ross, around 3.405 degrees. Such a sharp body taper will make it prone to case-head separation when reloading the case repeatedly and inhibits case water capacity. With less body taper, the .354 Eley would easily have outperformed the .358 Norma Magnum and the 9.3x64mm Brenneke cartridges.

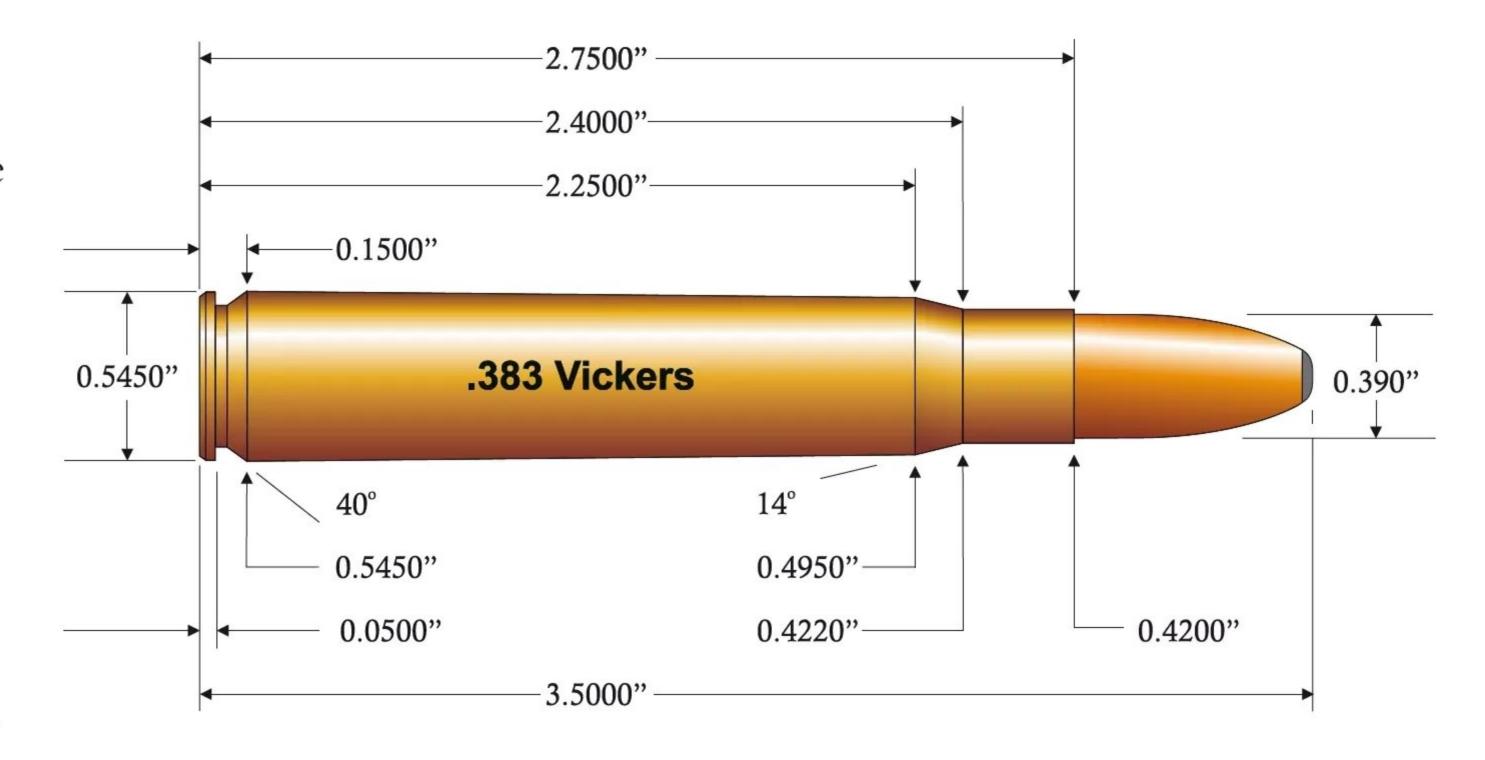
Assuming it was intended for the same straight-pull design as the .280 Ross, ballistic calculations were based on the identical maximum average pressure specification of 47,137 psi. For its projected ballistics, refer to the .354 Eley Cartridge Comparison Table. The bullet specified for the .354 Eley weighed 262 grains.

.383 VICKERS

Who does not remember the images of the water-cooled Vickers machine gun hammering away at the German lines during WWI? Vickers Limited, which produced that machine gun, also created several cartridges. An exciting one that never saw the light of day was the .383 Vickers. Harding⁹ covers it as follows: "This is yet another experimental calibre



The drawing on which the .383 Vickers hunting cartridge was to be based. No information indicating that it progressed beyond this drawing seems to exist.



produced by Kynoch Ltd, in 1927, presumably for Manton & Co. of Calcutta who must have rejected it, given their name is crossed out. To date I have yet to find a specimen of this calibre."

If Bill Harding has not seen a specimen, none probably exist because he was the historian and archivist to the Birmingham Proof House (among many other related positions), and he has most probably seen it all.

According to the cartridge drawing

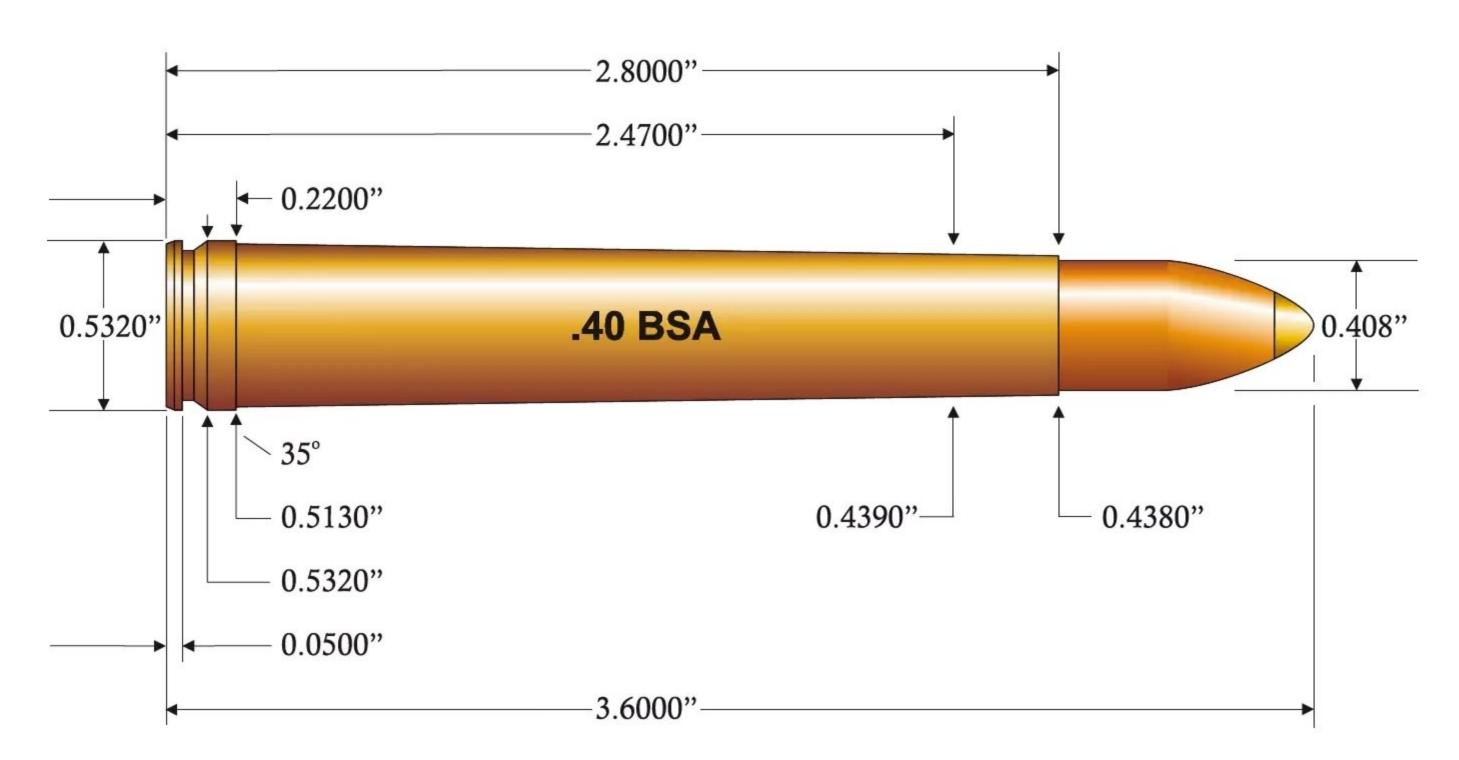
BJ17-11A of July 3, 1929, the .383 Vickers would have been based on a slightly shortened (2.75 inches, 69.85mm) .404 Jeffery case given a 14-degree shallow angle and a short-for-the-era 91.38 percent of caliber neck. Bullets (270 and 300 grains) and groove diameters were to have been 0.390 inch (9.91mm), and the bore/caliber to measure 0.383 inch (9.73mm). The body taper was 1.35 degrees. The case water volume would have been around 103.5 grains.

.383 VICKERS COMPARISON TABLE (300 GRAINS)

CARTRIDGE	BULLET (GR.)	90% MAP (PSI)	VELOCITY (FPS)
.375 H&H Magnum	300	54,000	2,610
.383 Vickers	300	54,000	2,650
.400 H&H Magnum	300	54,000	2,775

.354 ELEY CARTRIDGE COMPARISON TABLE (24-INCH BARREL)

CARTRIDGE	BULLET (GR.)	PRESSURE (PSI)	VELOCITY (FPS)
.354 Eley Rimless	262	47,137	2,575
.354 Eley Rimless	262	57,435	2,710
.358 Norma Magnum	262	57,435	2,715
9,3x64mm Brenneke	262	57,435	2,692



.40 BSA PERFORMANCE TABLE (24-INCH BARREL)

CARTRIDGE	BULLET (GR.)	90% MAP (PSI)	CAPACITY (GR.)	VELOCITY (FPS)
.40 BSA	260	57,435	104	2,925
.40 BSA	400	57,435	104	2,375

This oddball caliber was most likely designed to compete with the .375 H&H Magnum, any bolt-action .40 prospects, and the venerable .450/400 in double rifles. The .400 H&H Rimless only came about 80 years later, but its groove diameter is 0.410 inch. I own both the .375 and .400 H&H cartridges, so I have a reasonable understanding of cartridges in the caliber bracket. To make a reasonable comparison, I used the SAAMI maximum average pressure specification of the .375 H&H Magnum of 62,000 psi (427 Mpa) as a baseline in the accompanying .383 Vickers Comparison Table from 24-inch (610mm) barrels.

The unusual bullet diameter could have been why Manton & Co. rejected the cartridge. It would have been a more

capable design if Vickers had maintained the .404 Jeffery case length of 2.875 inches (73.02mm) and extended the cartridge length to equal that of the .375 H&H Magnum at 3.6 inches (91.44mm) and mated it to a .400–.410-inch bullet. Bear in mind that both the .404 Jeffery (1904) and the .416 Rigby (1911) had already established their reputations for the better part of 20 and 18 years, respectively. The .383 cartridge would not have brought anything new to the table.

.40 BSA

Although the .41 Roper (designed by Sylvester Howard Roper, the American inventor of the motorcycle), was the first belted cartridge, Holland & Holland

in the UK cemented the concept with its .400/375 H&H in 1905, which the great .375 H&H Magnum later superseded. [Editor's note: In all my years of research, I had always understood the .400/375 H&H, or Velopex, to be the first belted cartridge. This shows that you never stop learning.]

In the world of double and top-break rifles, cartridges in the .400-.411-inch bracket have been very popular since about 1884. The .450/400 Nitro Express 3", introduced by Jeffery in 1902, is still highly regarded in Africa. This popularity has never migrated to bolt-action rifles and cartridges, but it is not for lack of trying. In America, Charles Newton, Kleinguenther, Townsend Whelen and Art Alphin tried it and failed. British Sporting Arms (BSA) and Holland & Holland also tried and failed in the UK. It is just not a caliber that grips the imagination of the hunting public in the face of competition from the .375 H&H Magnum and the .416 Rigby.

BSA made one such UK attempt. Kynoch drawing BJ17-59, dated February 16, 1921, depicts the .40 BSA cartridge for which a light, copper-point .250-grain bullet of 0.408-inch (10.36mm) diameter was inexplicably specified. Bullets in the 400-grain class are preferred for cartridges in this performance bracket. The load was 69 grains of Cordite. It was a belted, stretched-length (2.8 inches, 71.12mm) straight-tapered wall cartridge geometrically comparable to the .458 Lott. BSA offered Enfield P14 rifles chambered for it.

Had the .40 BSA survived, its closest modern rivals would have been the .400 H&H Belted Magnum of 2002 and the .400 Pondoro. The BSA and H&H's case capacities are virtually identical, while the Pondoro has about 2 percent more capacity. Capacity differences are negligible.

.430 GIBBS NITRO

Although the .430 Gibbs Nitro, based on Kynoch drawing AY12-24 dated January 4, 1913, never went into production, a few specimens were specially created by my friend Otto Planyavski and are float-

ing around collections. Planyavski even recreated the typical Gibbs .430 Nitro headstamp with the Kynoch K at the six o'clock position.

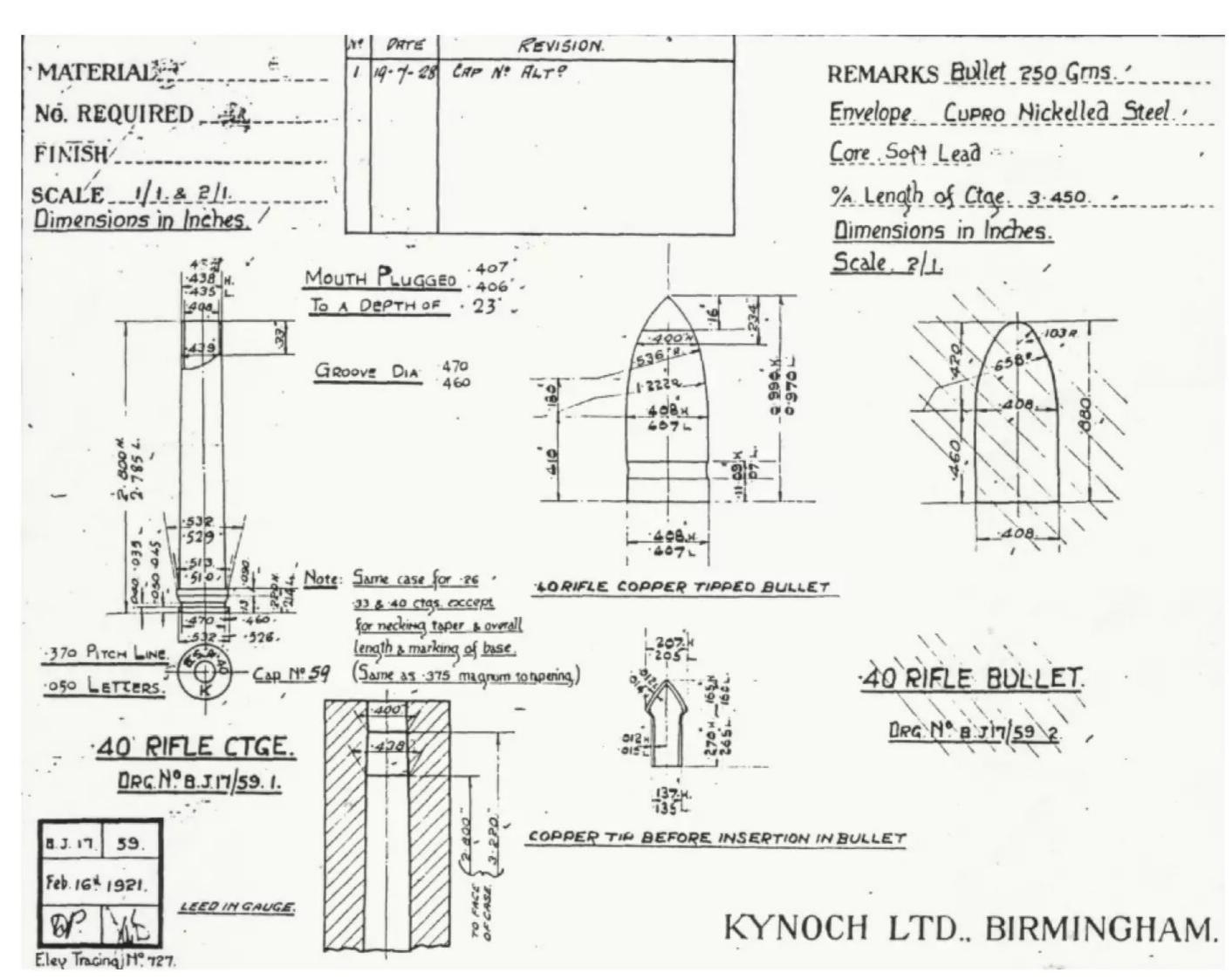
The .430 Gibbs Nitro was based on the full-length .416 Rigby case with a marginally shallower 37-degree shoulder and about 128 to 129 grains of water capacity. Its neck length is 129.4 percent of caliber, and its body taper is 1.2 degrees. The cartridge's overall length (L6) was 3.750 inches (95.25mm). Therefore, the .430 Gibbs would have required a Mauser magnum-length action.

The Kynoch drawing specifies a 0.435inch (11.05mm) bullet weighing 410 grains. Its bullet diameter is identical to that of the .425 Westley Richards. The .425 Westley Richards, introduced in 1909, uses a 347-grain 0.435-inch (11.05mm) bullet and is based on the .404 Jeffery case shortened and modified to a rebated rim configuration. Its case's water capacity generally hovers in the region of 107 grains.¹⁰ The .430 Gibbs concept had obviously been intended to compete with the .416 Rigby, the .404 Jeffery, and the 11.2x72mm Schüler rather than the more compact and sedate .425 Westley Richards.

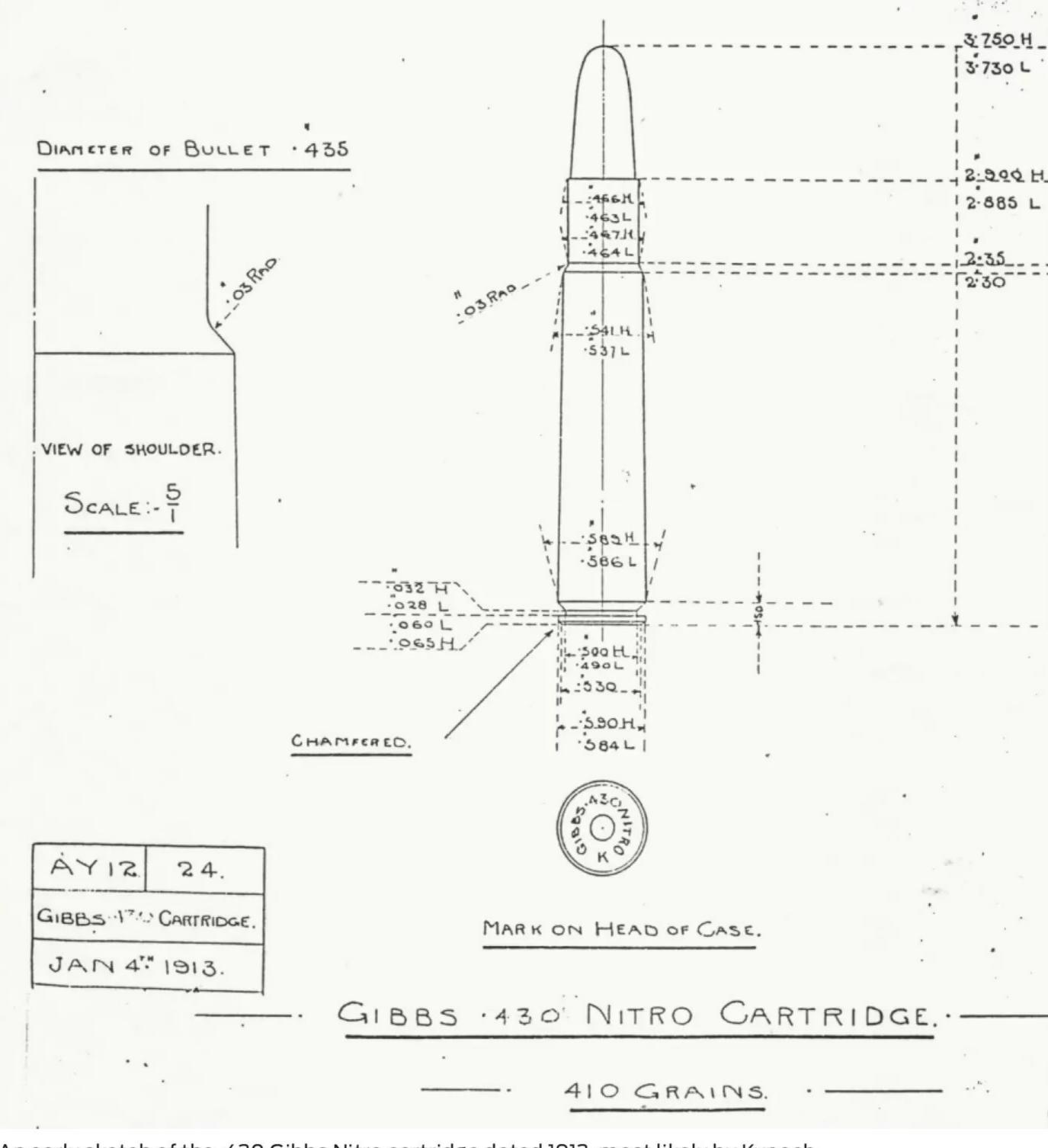
The case water capacity of the .430 Gibbs Nitro is almost identical to the brand-dependent average of the .416. Gibbs had specified a maximum average pressure of just 39,160 psi for its even bigger .505 Magnum Gibbs introduced in 1911. Given a difference of only two years between the introduction of the .416 Rigby and the .430 Gibbs and sharing the same case, it is reasonable to assume that the .430 Gibbs would have had a similar maximum average pressure specification to the .416 Rigby, namely 47,138 psi.

Using the .425 Westley Richards barrel specifications, the .430 Gibbs can be recreated in QuickLoad to approximate its ballistic potential. Due to the low pressures of the group of cartridges, 95 percent of the specified maximum average pressure was used for the QuickLoad calculations.

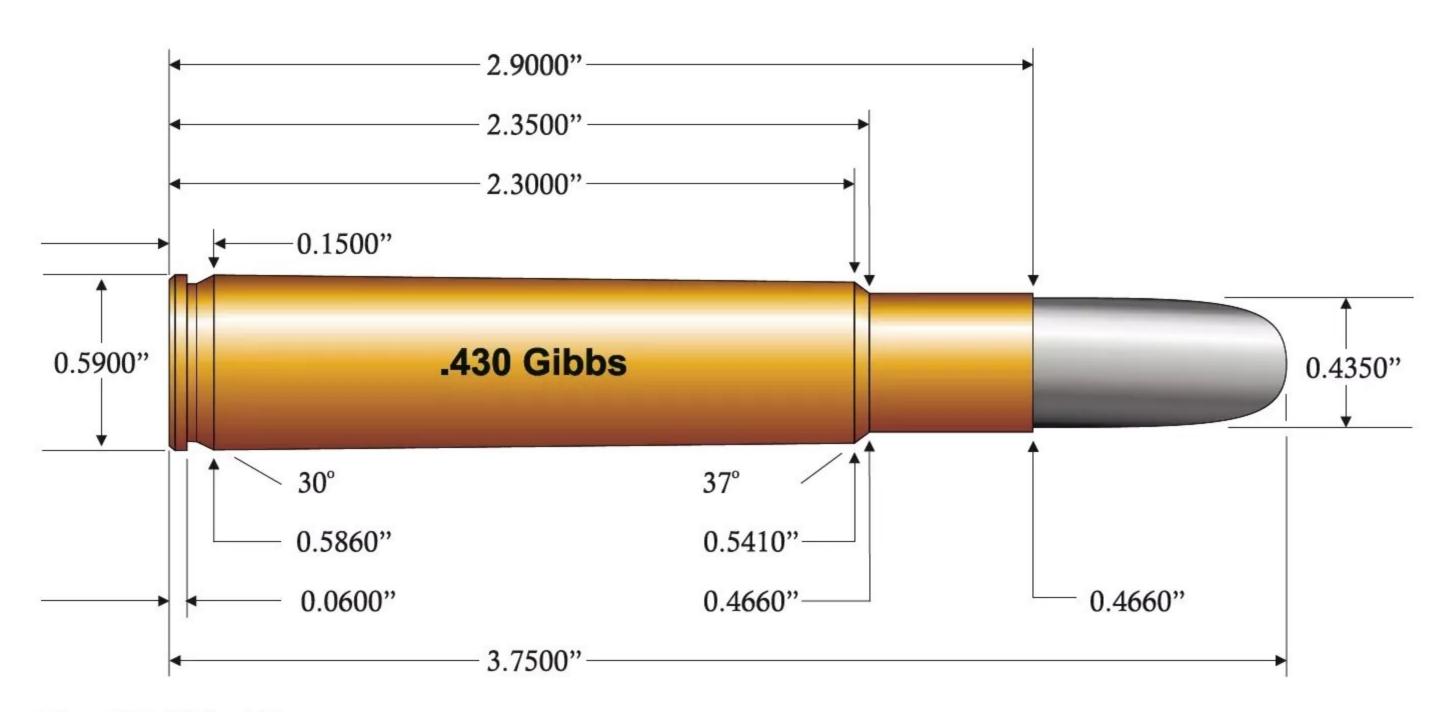
The .430 Gibbs Nitro would have been a formidable cartridge. However,



This cartridge, the .40 BSA, is highly sought after among collectors, and a premium specimen can easily cost \$1,500!



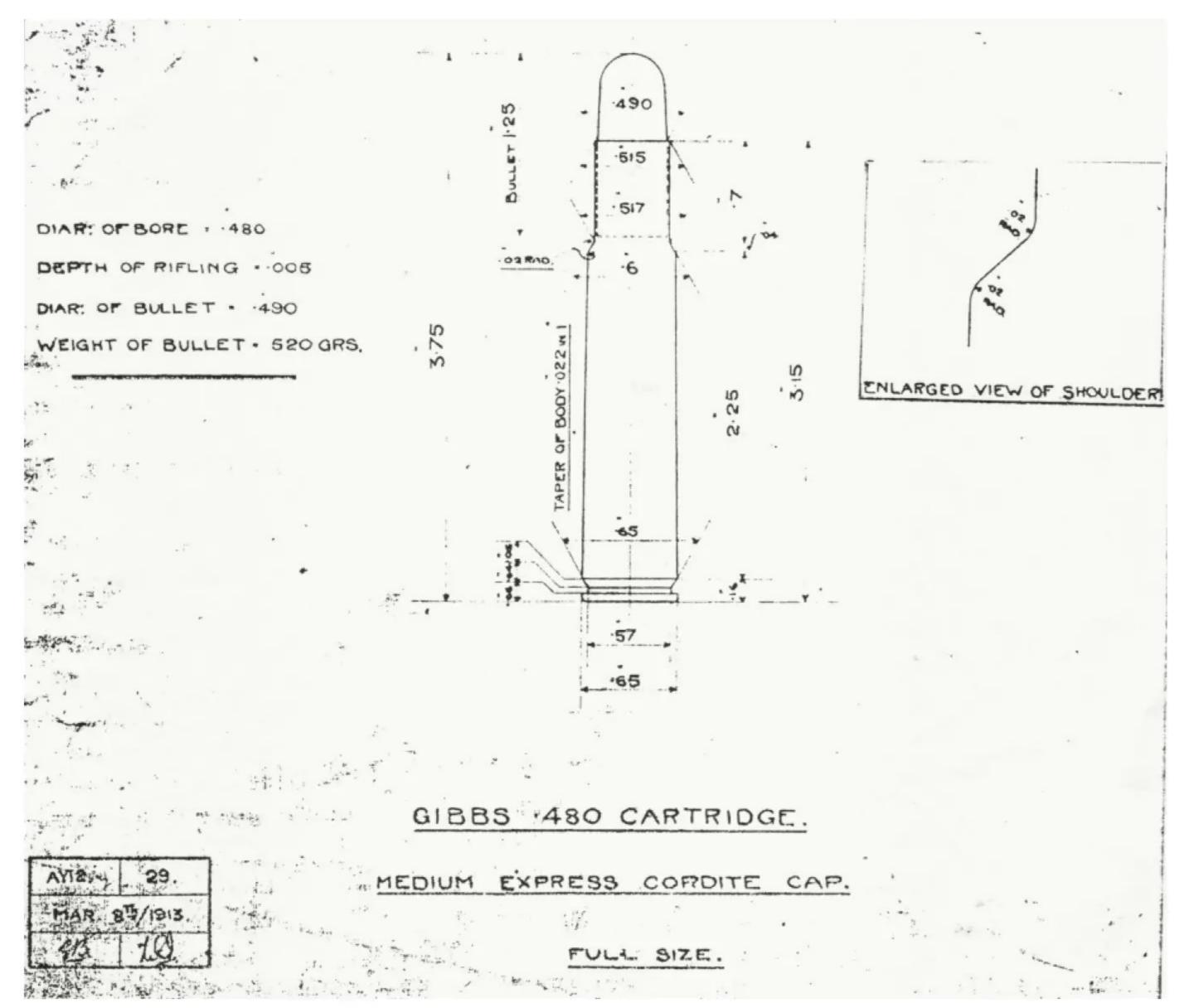
An early sketch of the .430 Gibbs Nitro cartridge dated 1913, most likely by Kynoch.



The .430 Gibbs Nitro.

.430 GIBBS NITRO COMPARISON TABLE (410 GRAINS, 24-INCH BARREL)

				· · · · · · · · · · · · · · · · · · ·
CARTRIDGE	BULLET (IN.)	95% MAP (PSI)	CAPACITY (GR.)	VELOCITY (FPS)
.416 Rigby	.416	44,781	127.5	2,425
.404 Jeffery	.423	50,291	113.3	2,400
.425 Westley Richards	.435	41,335	107.0	2,255
.430 Gibbs Nitro	.435	44,781	128.2	2,480
11.2x7mm Schüler	.440	45,469	113.0	2,485



A Kynoch drawing of the .480 Gibbs cartridge dated March 8, 1913, designated AY12-29.

the outbreak of WWI in 1914 and the likelihood that Rigby would not have considered parting with irreplaceable Magnum Mauser actions in hand during hostilities most likely scuttled

the concept. Its only bullet diameter competitor would have been the less powerful .425 Westley Richards and the oddball Schüler, which never made it to the big time.

.480 GIBBS

The .480 Gibbs was conceived shortly after the .430 Gibbs because the only drawing (Kynoch AY12-35) is dated July 29, 1913. Unlike the .430, it was based on Gibbs' massive proprietary case, the .505 Magnum Gibbs. Both cartridges require a magnum-length Mauser action and magazine box. The .505 Magnum Gibbs cartridge succeeded and is even more popular in Africa than in its heyday. However, the .480 Gibbs never made it out of the starting blocks.

Although the .480 Gibbs may be considered a .505 Magnum Gibbs necked down to fire a 520-grain bullet of 0.491-inch (12.47mm) diameter, the .480's case body length (L1) is 0.0498 inch (1.265mm) shorter. It shares the same 45-degree shoulder and case head configuration, but its body taper is .764 degrees, whereas the .505's is between .988 and 1.002 degrees, depending on whether CIP or Birmingham Proof House dimensions are used. Its neck length is 144 percent of caliber.

The water capacity of the .480 Gibbs case would have been around 168.2 grains. For practical purposes, and in the absence of data, the maximum average pressure of the .480 should be identical to that of the .505 Gibbs: 39,160 psi.

We will never know why Gibbs considered a cartridge so close to his existing .505 Magnum Gibbs and used an odd bullet diameter. He probably realized it was a bad idea from a commercial perspective and abandoned the design. The closest rivals to the .480 Gibbs Nitro would have been the more compact .500 Jeffery and the in-house .505 Magnum Gibbs. The .480 Gibbs Nitro Comparison Table shows how these three would have stacked up against each other.

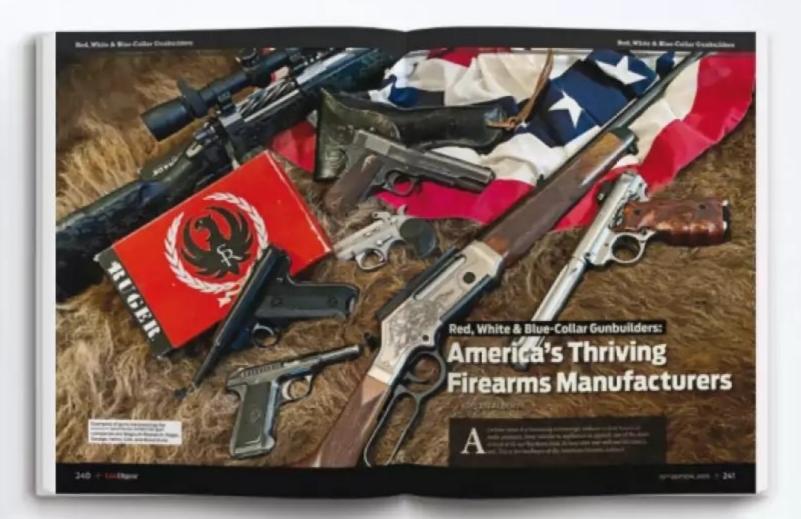
SUMMARY

Countless other fascinating British and European cartridge designs never made it beyond the conceptual, experimental or limited-production phases. Books could be written about them. The golden thread that runs through them all is that almost everything lately introduced as innovative or pioneering is nothing

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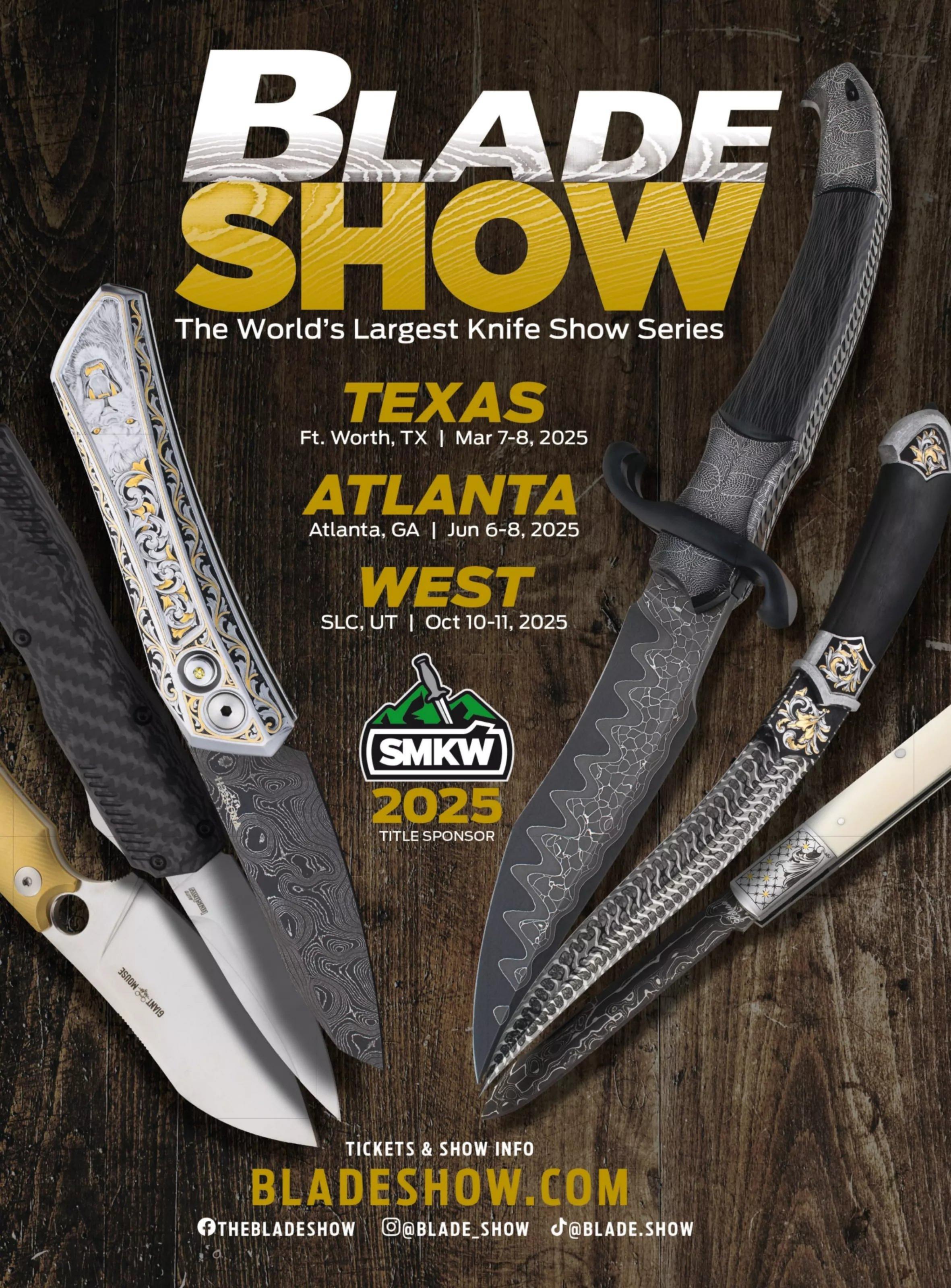


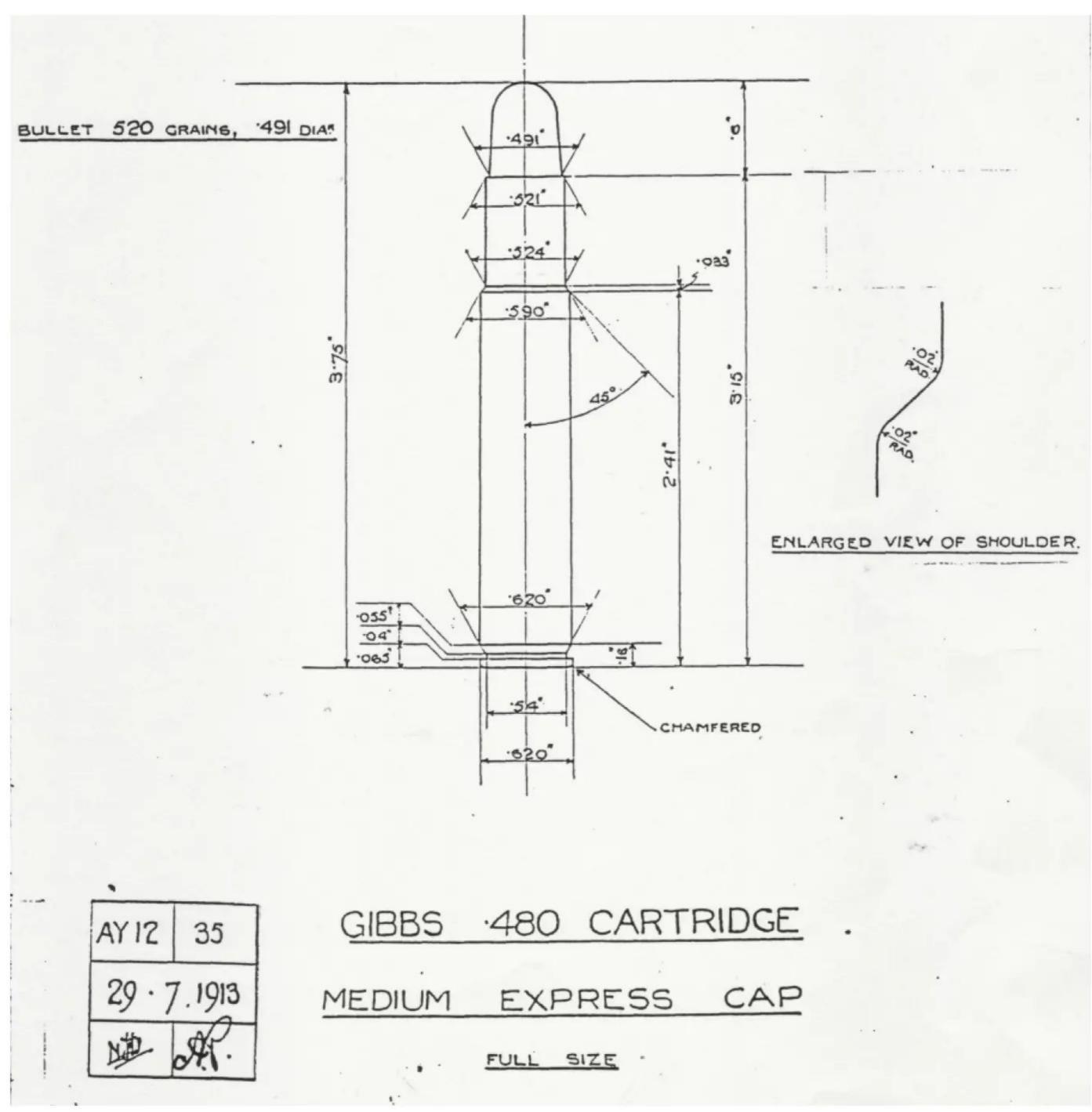


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but a rehash of these abandoned old cartridges.

The most significant advance in cartridges, in my view, is not the changes in dimensions that turn obsolete designs into the modern counterparts lately hailed as the be-all and end-all. It's the American awakening to rim and base diameter dimensions for rounds above and beyond the .223 Remington, .30-'06 Springfield, and .300 Winchester Magnum that hampered American cartridges for a century. Now that the Americans have accepted the .404 Jeffery and .416 Rigby as parent cases and introduced the rimless .375 Ruger base and head geometry, a new world has opened up for cartridge design. Weatherby also recently contributed by stretching the .284 Winchester case. The only outstanding awakening still required for America is the 8x68mmS case head, once pursued by Charles Newton. **GDTM**

Another Kynoch drawing of the .480 Gibbs. This time dated July 29, 1913, and designated AY12-35.

.480 GIBBS NITRO COMPARISON TABLE

CARTRIDGE	BULLET (IN.)	87.5% MAP (PSI)	CAPACITY (GR.)	VELOCITY (FPS)
.480 Gibbs Nitro	520	34,265	168.2	2,340
.505 Magnum Gibbs	525	34,265	178.4	2,300
.500 Jeffery/12.7x70 Schüler	535	41,879	154.2	2,450

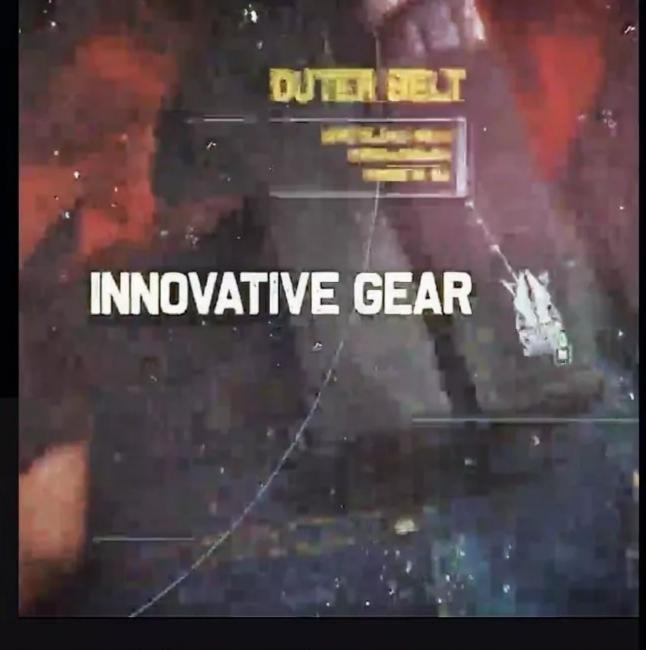
I must thank and acknowledge the assistance of my friends Casey Lewis, Will Reuter, Paul Strydom and Nico Swart with material for this article.

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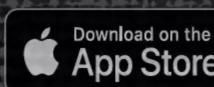




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