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CMG EPT ISSUE 51

ATAK DEFENSE ADER

WITH THE DEAD AIR NOMAD-TI

BUYER'S GUIDE

FIREARMS BRANDED KNIVES





DEAD AIR ODESSA	LIBERTY SOVEREIGN	SUREFIRE SOCOM556-RC2	DEAD AIR NOMAD	GEMTECH GMT-HALO	GEMTECH HALO	SILENCERCO CHIMERA	WITT MACHINE CANOOTER	GEMTECH ONE	DEAD AIR WOLVERINE	CRUX ARK NEO	GSL SWAT-5	GRIFFIN M4SDK	GEMTECH M4-02	AAC TI-RANT 9	DEAD AIR WOLF-SSD	DEAD AIR SANDMAN-L	DEAD AIR SANDMAN-S	Q LLC HALF NELSON	TBAC ULTRA 9	TBAC ULTRA 7	SILENT LEGION SL-MAG	SUREFIRE GENESIS 762	SUREFIRE SOCOM762- RC2	TDS BANTAM II	TDS STRIX II	SUREFIRE FA556-212
Make: Dead Air Model: Odessa-9 Weight: 8.75 ounces Length: 6.5 inches and shorter Diameter: 1.1 inches Caliber: 9mm URL: deadairsilencers.com	Make: Liberty Suppressors Model: Sovereign Weight: 12.7 ounces Length: 7.25 inches Diameter: 1.625 inches Caliber: .30 URL: libertycans.net	Make: SureFire Model: SOCOM556-RC2 Weight: 17 ounces Length: 6.4 inches Diameter: 1.5 inches Caliber: 5.56 URL: surefire.com	Make: Dead Air Model: Nomad-90 Weight: 14 ounces Length: 6.5 inches Diameter: 1.795 inches Caliber: .30 URL: deadairsilencers.com	Make: Gemtech Model: GMT-Halo Weight: 12.2 ounces Length: 6.9 inches Diameter: 1.5 inches Caliber: 5.56 URL: gemtech.com	Make: Gemtech Model: Halo Weight: 25 ounces Length: 7.75 inches Diameter: 1.5 inches Caliber: 5.56 URL: gemtech.com	Make: SilencerCo Model: Chimera 300 Weight: 20.1 ounces Length: 6.9 inches Diameter: 1.6 inches Caliber: .30 URL: silencerco.com	Make: Witt Machine Model: Canooter Valve Weight: 8.4 ounces Length: 3.9 inches Diameter: 0.25 inches Caliber: 5.56 URL: witmachine.net	Make: Gemtech Model: ONE Weight: 16.3 ounces Length: 7.5 inches Diameter: 1.625 inches Caliber: .30 URL: gemtech.com	Make: Dead Air Model: Wolverine Weight: 19.9 ounces Length: 7.4 inches Diameter: 1.5 inches (tube), 1.93 inches (base) Caliber: .30 URL: deadairsilencers.com	Make: CRUX Model: Ark Neo Weight: 12 ounces Length: 7.5 inches Diameter: 1.5 inches Caliber: .30 URL: n/a	Make: GSL Technology Inc. Model: SWAT-5 Weight: 13 ounces Length: 6.3 inches Diameter: 1.5 inches Caliber: 5.56 URL: gstechnology.com	Make: Griffin Armament Model: M4SDK Weight: 14.5 ounces Length: 5.75 inches Diameter: 1.5 inches Caliber: 5.56 URL: griffinarmament.com	Make: Gemtech Model: M4-02 Piranha Weight: 19 ounces Length: 6.25 inches Diameter: 1.375 inches Caliber: 5.56 URL: gemtech.com	Make: Advanced Armament Corporation Model: Ti-Rant 9 Weight: 8.8 ounces Length: 7.9 inches Diameter: 1.38 inches Caliber: 9mm URL: advanced-armament.com	Make: Dead Air Model: Wolf-SSD Weight: 14.7 ounces (full configuration) Length: 7.58(4.1) inches Diameter: 1.619 inches Caliber: 9mm URL: deadairsilencers.com	Make: Dead Air Model: Sandman-L Weight: 21.8 ounces Length: 6.9 inches Diameter: 1.5 inches Caliber: .30 URL: deadairsilencers.com	Make: Dead Air Model: Sandman-S Weight: 12.7 ounces Length: 6.8 inches Diameter: 1.5 inches Caliber: .30 URL: deadairsilencers.com	Make: Q LLC Model: Half Nelson Weight: 12.2 ounces Length: 6.85 inches Diameter: 1.75 inches Caliber: .20 URL: liveopdie.com	Make: Thunder Beast Arms Corporation Model: Ultra 9 Weight: 11.9 ounces Length: 9 inches Diameter: .300 RUM URL: thunderbeastarms.com	Make: Thunder Beast Arms Corporation Model: Ultra 7 Weight: 9.7 ounces Length: 7 inches Diameter: .300 RUM URL: thunderbeastarms.com	Make: Silent Legion Model: SL-MAG Weight: 15.1 ounces Length: 8.8 inches Diameter: 1.5 inches Caliber: 300 Win Mag URL: silentlegion.com	Make: SureFire Model: Genesis 762 Weight: 17.8 ounces Length: 8.1 inches Diameter: 1.5 inches Caliber: .30 URL: surefire.com	Make: SureFire Model: SOCOM762-RC2 Weight: 18.5 ounces Length: 8.4 inches Diameter: 1.5 inches Caliber: .30 URL: surefire.com	Make: Thermal Defense Solutions Model: Bantam II Weight: 8 ounces Length: 3.8 inches Diameter: 1.2 inches Caliber: 5.56 URL: thermaldefenseinc.com	Make: Thermal Defense Solutions Model: STRIX II Weight: 16 ounces Length: 8 inches Diameter: 1.68 inches Caliber: 300 Win Mag URL: thermaldefenseinc.com	Make: SureFire Model: FA556-212 Weight: 16 ounces Length: 6 inches Diameter: 1.5 inches Caliber: 5.56 URL: surefire.com

The Dead Air Odessa has numbered baffles for correct assembly, which is also handy for knowing which baffle is still rolling around the back of your safe.

The Sovereign was originally designed for hunters using bolt-action rifles but often finds a home on one of our 7.62N ARs.

When someone thinks about SureFire silencers, this is probably the one on their mind. There isn't another can more classic G.W.D.T. than the RC2.

Each baffle of the Nomad sports its own secondary chamber to store and then bleed gas after the projectile passes, effectively making this a silencer with multiple bore evacuators.

The Ti update to the classic Halo, the GMT-Halo is under half the weight of its heavy weight predecessor.

Originally designed for use with machine guns (which is why it's so hefty), the standout feature of the Halo has always been its ability to mount to any 22mm NATO muzzle device.

The Chimera is one of SilencerCo's best-kept secrets. SilencerCo challenged us to break it, and it's still ticking. This is an excellent choice for ARs in particular.

A kissing cousin to the original XM177 moderator, it takes some edge off and changes tone, but don't expect miracles with 5.56. We really liked it with 22WMR.

The Gemtech answer to a universal silencer, it was one of the first commercially available rifle silencers with a modular mounting base.

Specifically designed for ARs, the Wolverine uses a modified Sandman-S design but with classic styling and baffle apertures that get increasingly wider to make up for nonconcentric threading.

Though CRUX is no more, what impressed us about the Ark Neo was the repeatability of their factory Precision Mounting System (PMS).

Unless properly mounted and torqued, direct-fired silencers will sometimes get loose. GSL developed and patented a silencer retention system that makes mounting it both easy and idiot-proof.

The Griffin Armament M4SDK uses the SOCOM system, which accommodates A2 muzzle devices as well as Griffin's own M4SDII series mounts. It's fast on and fast off.

If you're paying attention, you'll notice a lot of companies using a variation of this baffle arrangement. The M4-02 Piranha proved that just adding more baffles wasn't always the answer.

While no longer a new (or available) product, the Ti-Rant 9 was the lightest silencer of its class in its heyday. Currently, a modular version (Ti-Rant 9M) is available.

The Wolf is fatter than your standard pistol can—because it's made for submachine guns. That doesn't mean you shouldn't try it on your pistol, but you'd better be running a red dot.

Dead Air's Sandman series of silencers have been their bread and butter right from the beginning. The L is probably the first introduction most had to their ratchet-on/ratchet-off Keymount locking system.

As you can see, the Sandman-S is simply a shorter version of the L. However, on gas-operated firearms, it's nearly as quiet as the shooter's ear due to reduced port noise.

Light weight, fully welded, tubeless, and all- titanium, the Q Half Nelson uses large, steep, and deeply nested baffles.

Go to any precision rifle match, and you'll see more Thunder Beast silencers than any other by a fair margin.

While louder than its bigger brother, the Thunder Beast Ultra 7 is the can for those who want to keep the overall length down on their already-long precision rig.

It's a 300 Winchester Magnum silencer that weighs under a pound. Though one of the longer silencers on this list, 300 Win Mag requires a helluva lot of space for gas expansion.

Unlike most SureFire rifle cans, the Genesis 762 is a direct-thread silencer. With a body made of stainless steel and an Inconel baffle stack, it's likely this silencer will outlast a barrel.

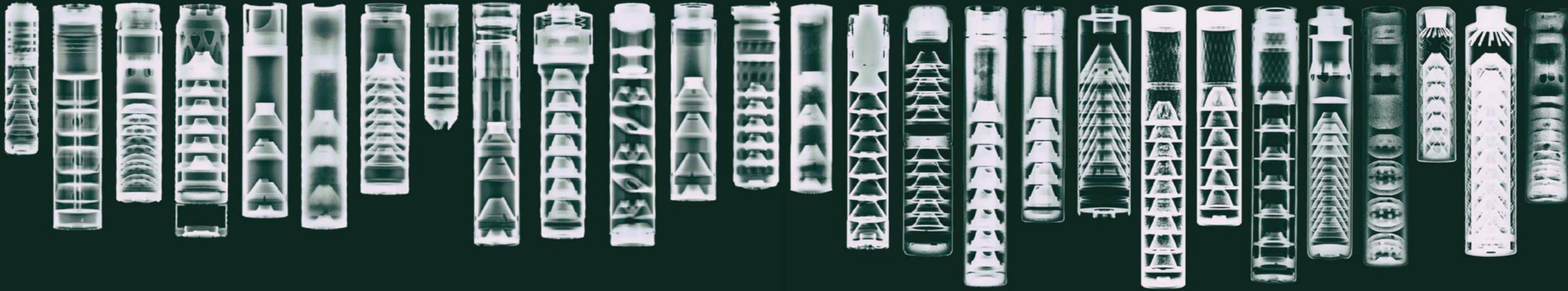
SureFire designed all of their SOCOM-series 762 silencers to attach both on 7.62 and 5.56 muzzle devices, but not the reverse. Do you want to push a .30-caliber projectile through your 5.56 can? Likely not.

TDS suppressors are not only 3D printed, their designs cannot be reproduced with standard machines. It's a very impressive silencer for the size.

The bigger brother to the Bantam, the STRIX is fatter in all dimensions but uses the same manufacturing and baffle technology.

Now a legacy silencer, the SureFire FA556-212 was originally named the FA556 because it's a shorter version of the SureFire FA556AR.





Dead Air Odessa

Liberty Sovereign

SureFire SOCOM556-RC2

Dead Air Nomad

Gemtech GMT-Halo

Gemtech Halo

SilencerCo Chimera

Witt Machine Canooter

Gemtech One

Dead Air Wolverine

Crux Ark Neo

GSL Swat-5

Griffin M4SDK

Gemtech M4-02

AAC Ti-Rant 9

Dead Air Wolf-9SD

Dead Air Sandman-L

Dead Air Sandman-S

Q LLC Half Nelson

TBAC Ultra 9

TBAC Ultra 7

Silent Legion SL-MAG

SureFire Genesis 762

SureFire SOCOM762-RC2

TDS Bantam II

TDS STRIX II

SureFire FA556-212

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FIREARM SAFETY IS TOP PRIORITY

RECOIL reminds you to be safe and:

1. Treat every gun as if it were loaded.
2. Always keep the gun pointed in a safe direction.
3. Keep your finger off the trigger until ready to fire.
4. Always be aware of your target, and what lies beyond it.

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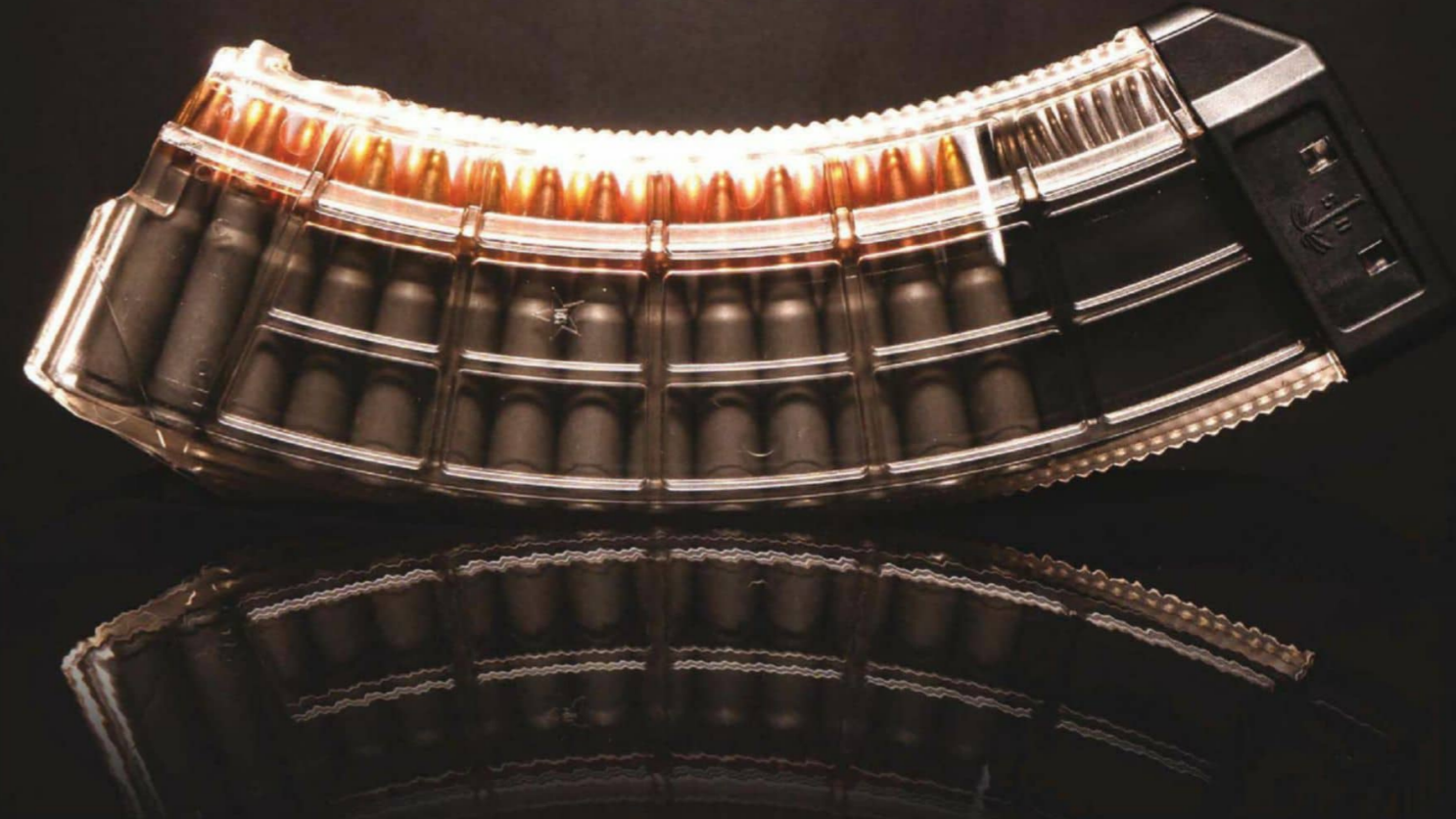
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Throughout this issue you will see certain images are labeled as being 1:1 Actual Size. This designation is for the print edition of this issue. Because of the various screen sizes on different tablets and computers, we cannot always provide actual life size images in digital versions. We apologize if this causes any confusion and thank you for your understanding.

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At RECOIL, we tend to stay out of politics as much as possible. Like Mencken, we're of the opinion that every decent man is ashamed of the government he lives under, and that a good politician is every bit as unthinkable as an honest burglar. Unfortunately, politicians don't have any reservations about trampling our fundamental human rights and inserting themselves into our chosen livelihood and lifestyle — were they to simply leave us the hell alone, life would be better for all concerned.

Every four years, we get the opportunity to participate in an advance auction for stolen goods, where the political parties lay out their plans to bribe us with our own money. It's worth pay-

ing close attention to this, as although politicians' promises are worth roughly the same as the steam from your piss, there's enough evidence laid out to get an idea of where their collective head is at. And there's an easy proctological joke there ...

If you care to read it (and you should — don't take our word for it), the Democrat party lay out their plans for your gun rights on page 47 of the DNC platform. There, they assert that they will ban the manufacture and sale of nebulous and scary-sounding "assault weapons," prohibit you from selling a gun to a neighbor you've known for years without undergoing a background check, allow ambulance-chasing lawyers to sue gun companies out of existence

with frivolous lawsuits, and force you to lock up your firearms, presumably so that their allies and constituents can go about the serious business of rioting and looting without interference.

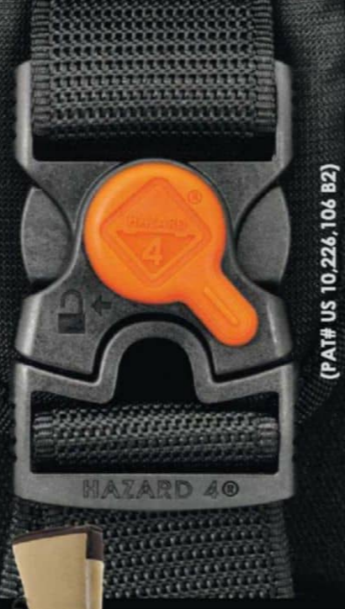
Given the number of new gun owners we've seen enter the market in the past six months, we can only wonder at just how tone-deaf you have to be to continue peddling this tripe. If we have to make a choice between a giant douche and a turd sandwich, then these policies ensure the decision-making process is pretty easy.



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VP, Group Publisher/ Mark Han
Financial Controller/ Jenni Sexstone
Circulation/ NPS Media Group
GWolfe@npsmediagroup.com

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01 COLUMBIA RIVER KNIFE & TOOL JENNY WREN COMPACT

MSRP: \$135

URL: crkt.com

RMJ Tactical makes some of the best tomahawks on the planet ... which is why you'll have to pay a pretty penny for them. Makes sense. So how can you get one without having to fork over five C-notes — short of, you know, robbing someone? Check out the Jenny Wren Compact from CRKT. It's a faithful production version of RMJ's Jenny Wren Spike, just an inch or so shorter at 10 inches — and about \$330 cheaper. Of course, the materials used aren't super steels, but the balance, three-edge head, and overall design are very similar. It's a short 'hawk with a lot of bite, making it ideal for a basecamp, a bug-out rig, or a range bag without breaking the bank.

02 BC BLADE WORKS CSAT SCALPEL

MSRP: \$425

URL: csattss.com

Paul Howe needs no introduction. He's a former U.S. Army Delta operator, trains and consults for police and troops all over the USA, and runs his own training company, Combat Shooting And Tactics. So, when he designs a knife, we perk up. His CSAT Scalpel is a mean-looking SOB and cuts like one, too. Made from AEB-L stainless steel with a Cerakote finish, this 8.88-inch handmade tool features a 4.38-inch blade, G10 handle scales, and a Kydex sheath. While the finger choil and the jimping on the spine are a bit too pronounced, it's beefy without being heavy and sharp yet incredibly strong. Overall, the CSAT Scalpel is a badass blade befitting its badass creator. Available in various blade and handle colors. Made in the USA.

03 SPARROWS LOCK PICKS THE DARK SHIFT

MSRP: \$40

URL: sparrowslockpicks.com

Covert entry skills aren't just for burglars; you can use them if you accidentally locked yourself out, to crack open an old file cabinet if you lost the key, or (more importantly) to strengthen your own physical security. After all, if you know how to break into something or some place, you'll have a better understanding of how to prevent others from doing the same to your property. To that end, the Dark Shift from Sparrows Lock Picks gives you the tools to work on high-security locks. It consists of eight picks, evenly balanced with modern rakes and hooks with cutout ports for a firmer grip. The Dark Shift also comes with five flat bars of mixed widths and a stone gray tuxedo case.

04 LOCKDOWN PUCK

MSRP: \$110

URL: www.lockdown.com

The Lockdown Puck is a nifty little monitoring device that can provide added security measures and, just as important, peace of mind. Thanks to sensors, a proprietary algorithm, and the Lockdown Logic App, you can track your safe's internal temperature and humidity, not to mention if it's been moved or open, and send yourself alerts via SMS, texts, or emails. It'll also emit a loud alarm when there's been unauthorized access. While not actually circular like a hockey puck, it stands at 3.25 by 3.25 by 1 inches and includes built-in Wi-Fi, a 9-foot micro USB cord, a magnetic door sensor, and mounting bracket and hardware. Now this is the kind of lockdown we can look forward to.

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05 ARCANÉ CONCERTED ARCBAND

MSRP: \$12
URL: arcaneconcerted.com

We've used a number of products to secure cables, wires, slings, and other accessories on rifles. These range from zip ties, rubber bands, so-called "Ranger bands" (elastic loops), and tape; the ARcband from Arcané Concerted is intended to replace all of those. Available in a wide variety of colors, the ARcband is essentially a 5.5-inch length of shock cord with a buckle fastener. Since it's shock cord, you get a total of around 9 inches of stretch to fit around even the widest-bodied handguard out there. You can see exactly what they look like mounted by checking out our 6ARC review as well as the Buildsheet column for this issue.

06 MOTOTECH ENGINEERING 3-SELECT REGULATOR

MSRP: \$150
URL: mototecheng.com

While the FN SCAR has a built-in gas regulator, there's only one gross adjustment you can make on the fly: normal and adverse. Mototech Engineering has been making parts to improve the SCAR for years, and they decided to take it one step further with their new 3-Select Regulator. This additional stop allows you to turn down your gas to accommodate both high- and low-pressure suppressors without having to physically swap out the gas jets on your barrel or break out any tools.

07 POSI-LUM FIRETAIL

MSRP: \$65
URL: fire-tail.com

The FireTail by POSI-Lum allows you to change the activation method of any 1-inch diameter flashlight with a push-button tail cap such as the SureFire 6P or Fury. The design is deceptively simple: The FireTail clamps down to the flashlight body with set screws, and the activation arm rests against the push button itself. We found it especially useful for mounting lights on rifles on the opposite side of our support hand without having to use a remote switch. The FireTail's activation arm can also be flipped out of the way for traditional use if need be.

08 BARNAUL .300 AAC BLACKOUT

MSRP: \$13 per 20-round box
URL: barnaulammo.com

Naturally, most of our long-guns eat 5.56mm by the crate full. But, we gotta admit, we have love for the .300 AAC Blackout round, too. Aside from just "feeling right," this intermediate cartridge achieves the performance levels of a larger caliber (though, not as effectively at longer ranges) while still using standard AR-15 magazines. Barnaul recently released its .300 AAC Blackout ammo in the USA, offering it in 145-grain FMJ with a 1,985 fps-rated muzzle velocity. Aimed (pun intended) at budget-conscious shooters, Barnaul offers affordable ammo by making each round in Russia using a high-temperature polymer coating on the steel cases and noncorrosive powder and primers. Most ideal for target practice.



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Home of Santa Anna's Leg and Much, Much More

By Peter Suci

The British Museum in London is home to the Rosetta Stone, while the Mona Lisa hangs on the walls of the Louvre in Paris, but on the outskirts of Springfield, Illinois, is an object that might almost seem at home in TV's *The Simpsons*' hometown of Springfield, State Unknown. It's an object that was actually fictionalized in another animated TV series, *King of the Hill*.

It's the prosthetic cork leg worn by Antonio de Padua María Severino López de Santa Anna y Pérez de Lebrón — more commonly known as Santa Anna, the Mexican politician and general who fought to defend royalists in New Spain and later for Mexican independence, before fighting against Texas Revolutionaries and then the French and finally the United States.

During the brief Pastry War with France in 1838, Santa Anna was hit in the left leg by cannon fire, and this required the amputation of much of his leg — which he ordered be buried with full military honors. He recovered from

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01

1. A diorama depicting Fort Dearborn, which would eventually grow into the city of Chicago, on July 4, 1812. It includes a full dress parade, militia training, and even the presentation of peace medals to Indian leaders; as well as hunting, fishing, farming, and trade.



02

2. An Australian uniform from the First World War, highlighting the close relationship between soldiers from Australia and Illinois, as it was Illinois units that were the first to fight in the trenches of France with those from the Australian Army.



03

3. A variety of items from the Vietnam War including a captured AK-47 are on display in the museum.

4. A number of World War I personal items on display to commemorate the 100th anniversary of the final year of the First World War.



04

the wounds and used the prosthetic cork leg during the Mexican-American War, when it was “captured” by members of the 4th Illinois Volunteer Infantry Regiment.

Santa Anna was eating lunch during a battle and members of the unit raided his camp and absconded with the leg. Another leg, which was only a peg, was also captured by the unit — and both returned to Illinois after the war. The peg leg is on display at the home of Illinois Governor Richard J. Oglesby, as he had served in the regiment; while the cork leg, which had been exhibited at state fairs, is now in the collection of the Illinois State Military Museum.

However, the leg is part of a collection of items that’s rotated regularly and may or may not be on display at a given time. The reason is much like the Rosetta Stone or Mona Lisa that many

tourists come to see just the most notable item and overlook so much more of what each museum has to offer.

“We do get a lot of people who ask about the leg, but our museum has so many other great treasures that we like to highlight those other items,” explains Colonel Paul Fanning, Illinois National Guard (Retired), who serves as the curator for the Illinois State Military Museum.

A CASTLE IN ILLINOIS

“Treasures” is an apt way to describe the collection, especially as the museum is now housed on the second floor of a building fittingly known as the Castle. It was constructed in 1903 as a commissary building, but for nearly the past two decades has served as the home for this impressive museum, which covers the sacrifice and service

of those early settlers in the Illinois Territory who volunteered in the American Revolution to those sons and daughters of the Land of Lincoln who are engaged in the ongoing Global War on Terror. The Castle is the oldest building remaining at Camp Lincoln, and it was added to the National Register of Historic Places on November 13, 1984.

However, the museum actually dates back to 1878 when it was established as Memorial Hall and was located in the Illinois State Capitol Building with a collection that consisted of military weapons, flags, photographs, and trophies of war brought home by veterans of the Mexican War and the Civil War.

In 1916, the flags and other artifacts were relocated to the then newly constructed Centennial Building and displayed in the Hall of Flags. The move to Camp Lincoln was considered in the

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early 1960s, and while site renovations began to the 9,000 square-foot, two-story structure, it took until 2003 for all of the artifacts to be moved to the Castle.

As with other state military museums, many of the objects in the collection have been donated from local veterans, and at any given time roughly just 5 percent of the artifacts housed in the Castle are on display. This is just one reason why Santa Anna's leg isn't on permanent display.

However, there are numerous other objects of note that are worth the visit. One in particular is a wooden target board that President Abraham Lincoln used to test fire the Spencer rifle in 1863.

"The president took a very hands-on approach to the war," says Colonel Fanning. "Christopher Spencer, inventor of the Spencer repeating rifle, went to the White House to show the president his rifles. Imagine doing that today."

Even approaching the White House with a firearm today would likely land someone in prison, but back on August 18, 1863, that's what supposedly occurred. This may be a mix of myth, legend, and fact. For one thing, the Spencer wasn't entirely new and the Army had already received some 7,500 Spencer rifles. It's also unlikely that the legend of Spencer walking up to the door of the White House occurred, but what is true is that after the Battle of Gettysburg,

Spencer most certainly was granted an audience with Lincoln, who invited the gun designer to a shooting match and demonstration of the weapon on the lawn of the White House.

Today, the museum has on display the target that our 16th President shot at with the Spencer rifle. What is an absolute fact is that clearly Honest Abe was quite the marksman.

Another piece of Civil War history at the museum is a tree trunk, but one that highlights the horror of war. This tree had stood at the site of the Battle of Chickamauga, and the wooden trunk is filled with ordnance from rifles and cannons. The battle, which was the last major Confederate victory of the Civil War cost both sides a total of 34,000 killed,

1. Among the most impressive small arms at the Illinois State Military Museum is the 1883 dated Gatling Gun. Weapons such as this one were used in the American West and later in the Spanish-American War.

2. A Civil War Spencer rifle is on display with the wooden target that was shot at by President Abraham Lincoln in August 1863. Honest Abe was apparently a very good shot!

3. This Civil War-era 12-pound mountain howitzer had been missing from the museum for close to 30 years but was returned in 2010 to the Illinois State Military Museum.

4. This life-size display recreates the Western Front of the First World War.

5. A World War I Model 1917 steel helmet that was worn by a soldier from Illinois.



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wounded, missing, and captured — and during the engagement Illinois volunteers fielded 32 infantry regiments, five artillery batteries, and a company of cavalry in Union Major General William S. Rosecrans' Army of the Cumberland.

After the war, a few of those Illinois veterans of the battle acquired the tree from the battlefield, and in 1922, Joseph O. Joy, who served as chief bugler of Company I, 73rd Illinois Volunteer Infantry, donated the tree to the state of Illinois. It's a fitting reminder of the sacrifices paid by those volunteers from the state.

SONS OF ILLINOIS

The museum honors the various sons of Illinois who fought during the First World War. This includes an exhibit dedicated to First Sergeant Johannes Seigfried Anderson, a Finnish-born U.S. Army soldier who won the Medal of Honor for his service in the First World War. He entered service in June 1916, and on October 8, 1918, while serving as a member of the 132nd Infantry Regiment, 33rd Infantry Division, he volunteered to flank an enemy machine gun emplacement, where he successfully silenced the gun after crossing open ground. He killed the machine

gun crew and returned with 23 German prisoners of war.

Another is devoted to the 370th Infantry Regiment, which had its roots in the 8th Infantry Regiment founded in the 1870s. The Eighth Regiment Armory, located in the Black Metropolis-Bronzeville District of Chicago, Illinois, built in 1914, became the first armory in the United States for an African-American military regiment.

During the war, the African-American 8th Infantry was redesignated the 370th Infantry and fought under the French. It was the only unit entirely commanded by black officers.

WEAPONS OF WAR

The museum houses an impressive collection of small arms, including a 12-pounder Mountain Howitzer, an 1883 dated Gatling Gun as well as displays devoted to weapons from the Civil War, World War I, World War II, and Vietnam.

Throughout 2018, the museum had on display numerous artifacts devoted to the First World War, including various weapons and other equipment.

"We have displayed an Australian uniform to highlight the respect that grew between soldiers from Australia and those from Illinois, which were the

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www.il.ngb.army.mil/Heritage/Museum.aspx

first to fight alongside the Aussies," explained Colonel Fanning.

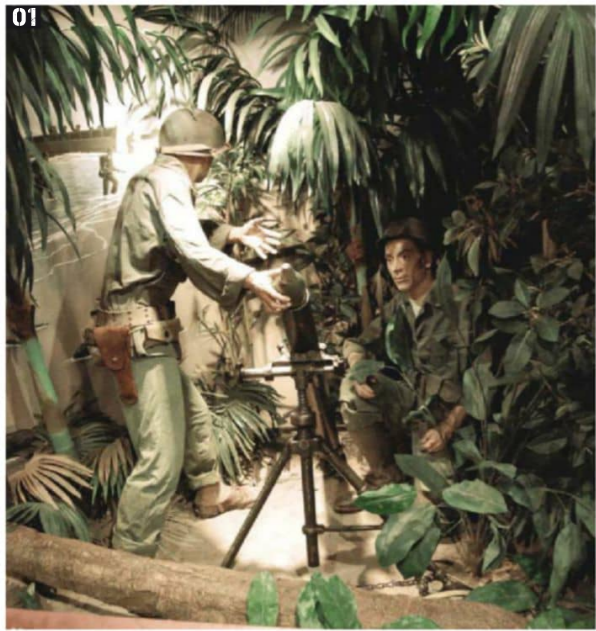
There are a few items that are on display that could be considered "controversial" given the current all too politically correct culture. This includes a Confederate battle flag as well as a few captured German WWII items.

"I tell people we're not supporting those causes, and we can't hide away the flag to make that part of history go away," added Colonel Fanning. "These were historic objects that are trophies of war, brought home by soldiers from Illinois."

1. A display showing members an Illinois National Guard mortar team serving in the Pacific during World War II.

2. The museum's collection of Japanese small arms from World War II include a Type 97 "Arisaka" rifle, a Type 89 grenade discharger (also known as a knee mortar), a Type 98 shin gunto ("samurai sword") officer's sword and a Type 99 light machine gun.

3. Gulf War-era small arms including an M-60 machine gun and AT-4 anti-tank weapon — the latter a cutaway model to show the rocket inside — are among the collection's modern weaponry.



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SURPLUS SPENDING

An Impulsive Auction Bid Led Jason Squires to Dive Headfirst into the Challenges of Owning a Military Surplus Humvee

By Patrick McCarthy

Even if you consider yourself a paragon of fiscal responsibility and level-headed decision-making, you've probably made at least a few impulse buys throughout your life. These might've been inexpensive items, such as a candy bar from the grocery store checkout line, or more substantial expenditures, such as a new gun you just couldn't resist. For Jason Squires, a spontaneous purchase led to a sudden feeling of buyer's remorse and an especially awkward conversation with his wife. "I said, 'I think I purchased a 1991 M998 HMMWV.' She thought I had a stroke."

Squires, who you may recognize from

his written contributions to RECOIL and its sister publications, is a lawyer by trade. Several years ago, he was speaking with a close friend who was going through law school, and who had previously deployed on combat tours to Iraq and Afghanistan. Squires recalls, "He bragged about the Humvee (HMMWV in official parlance) and said if I ever get the opportunity to purchase one, do it." This idea took hold, and he began casually browsing online listings, but was initially discouraged by the abundance of half-baked project vehicles on the secondhand market. "Most of the military Humvees for sale were obvious wrecks. Buyers would pick these trucks up at military salvage sales and then



1991 AM GENERAL M998 HMMWV

ENGINE: GM 6.5L diesel V-8 (originally built with a 6.2L V-8; records indicate the engine was replaced by the Army in 2003)

TRANSMISSION: Three-speed automatic

DRIVELINE: Full-time four-wheel-drive with two-speed locking transfer case and geared hubs

TIRES: 37x12.5x16.5 Goodyear Wrangler MT

EXTERIOR DIMENSIONS: 15 feet long, 7 feet wide, 6 feet tall

GROUND CLEARANCE: 16 inches

TOP SPEED: 55 mph (safe)/70 mph (at redline)

A .30-caliber machine gun attaches to a swingarm mount on the left corner of the bed. This weapon is fully functional.



attempt to perform simple restorations before selling them.”

Eventually, Squires came across GovPlanet, a website that auctions off military vehicles and other surplus equipment. Browsing these listings became a cathartic experience, especially during hard days in the courtroom. “I was representing a man on a complex felony trial, and I was really stressed out. My client was so guilty he fled the jurisdiction before trial. I had to sit there next to an empty chair and attempt to create reasonable doubt for the jury. I pictured myself in the Humvee having fun in the desert, not sitting in a courtroom. This fantasy created an impulsivity where I placed a \$6,100 bid on a HMMVW in Yermo, California. At the 2:15 break, I checked my emails, and saw ‘You won the auction!’ I was shocked.”

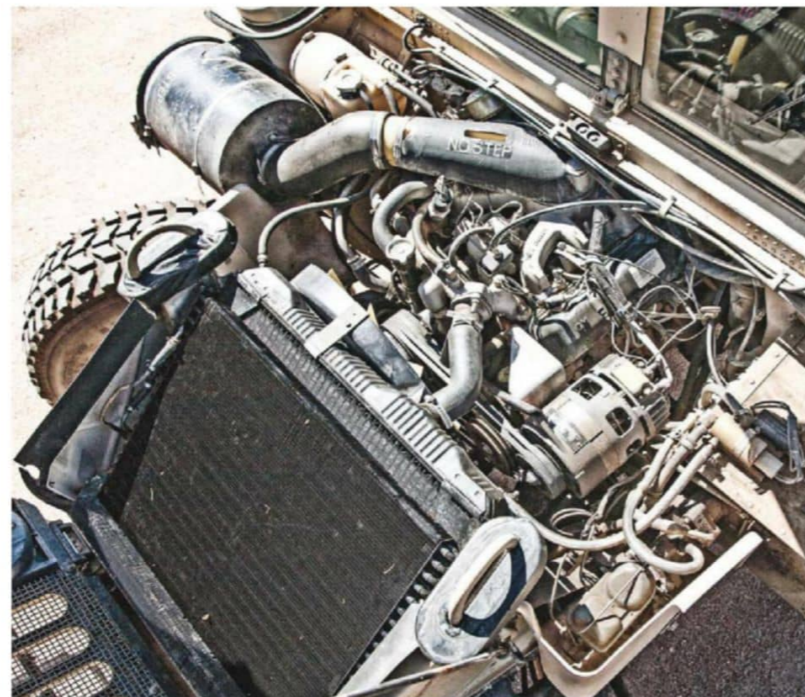
After sheepishly explaining the situation to his wife, Squires wired the money, filled out the requisite paperwork, and awaited its delivery with nervous excitement. “The auctions have dozens of pictures from all angles, and a video starting the vehicle. I knew it started and ran, but it’s a static inspection and I didn’t know if it even rolled.” Five months later, it arrived on a flatbed trailer, and he soon realized he was in over his head. “I didn’t even know how to

After purchasing the Humvee, Squires modified it based on USSOCOM GMV specs. This meant installing a .50-caliber gun turret on the roof with an integrated ballistic shield. The gun in this photo is an inert replica, but Squires owns a real one as well.



Swinging aside the spare tire and folding down the tailgate reveals a wide, flat cargo area with plenty of room for fuel, water, food, and other gear.

Under the forward-opening hood, you’ll find a General Motors 6.5L diesel engine. This naturally aspirated V-8 produces 160 horsepower and 290 ft-lb of torque — not exactly a recipe for speed, but it pairs well with the Humvee’s low gearing to overcome difficult terrain.



start the thing. There are no keys on military Humvees. You simply turn the switch, wait for the glow plugs, and then it fires right up.” However, this revealed yet another problem. “I was concerned about my new baby being stolen. I removed the batteries every night, which was a total pain. They’re under the passenger seat. I didn’t know any of this.” Later, he’d install a kill switch with a proximity transponder to prevent unauthorized joyrides.

First-time ownership of a military surplus vehicle came with many other challenges. “Licensing the truck was tricky. The paperwork that comes with it is just an invoice, really. I remember the GovPlanet rep saying, ‘The title costs an extra \$125.’ Instead, they should’ve said, ‘Do you want to drive the truck on real roads? If so, buy the title.’ I did not take the vehicle with me to register it. I simply handed [the Motor Vehicle Division] the documents and demanded a title. Gutsy, but it paid off. I didn’t want some MVD tire-kicker asking about a rearview mirror and airbags.”

With the new registration and license plate in hand, Squires began

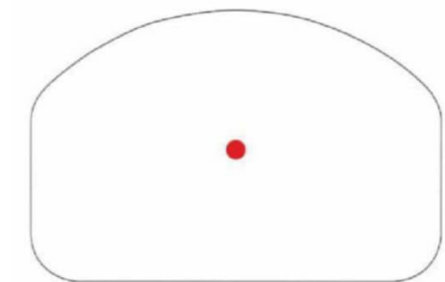
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driving the Humvee to the gun range, his kids' school, and most frequently, gas stations. "A Humvee has you at the gas station quite often. Mine gets 10 miles to the gallon." Despite its 55-mile-per-hour effective top speed, roaring mud tires, and lack of doors, he says he has taken it on several 600-mile road trips. He even drives it to court sometimes. "I don't go to trial; I go to war! You want an attorney saving you who drives a Humvee or a Prius? These are my jokes when I'm asked why the hell I'm in a military vehicle wearing a suit and tie."

Of all the hurdles Squires faced with the Humvee, maintaining it was the most formidable. Unlike the U.S. Department of Defense, he didn't have warehouses full of spare parts and fleet maintenance techs on retainer. "From very early on, I knew I needed a mechanic. I would talk to any Army guy who would listen. I got a lot of 'Hell yeah! I rocked a Humvee all the way across Iraq.' I would say, 'Great, what oil do you put in the gearbox?' Every single time, they would look at me quizzically and respond, 'Oh, I didn't mess with that stuff.'" Eventually, he found a qualified Army light-wheel mechanic, and began learning from the veteran's 17 years of experi-

ence wrenching on Humvees. "I was able to take apart every single thing and slowly rebuild or replace anything that needed servicing. That process took months, but I loved every second of it. I would come home, take off my suit, and dive in."

In addition to the basic maintenance, Squires also sourced some rare parts to convert his Humvee to Ground Mobility Vehicle (GMV) specifications. The GMV was a USSOCOM program that modified Humvees to meet the needs of U.S. Special-Operations Forces; upgrades included additional armor plating and a top-mounted gun turret with ballistic "chicken shield." Although the .50-caliber belt-fed in these photos is an inert replica, Squires also owns the real deal, which he mounts at the range for some full-auto fun. Another mount on the rear quarter panel holds a .30-caliber machine gun.

Squires says this vehicle has led to some unusual interactions. One person veered close enough to high-five him while cruising on the highway. A concerned neighbor came by and asked if he was joining a militia. His most memorable experience was with an agent at a U.S. Border Patrol check-



With two mounted machine guns, zero doors, and a payload of diesel fuel and survival gear, Jason Squires' HMMWV is anything but subtle.

point in southern Arizona. "I look like a military truck, but I'm clearly not military. He's looking at me the way the warden looked at Paul Newman in *Cool Hand Luke*, mirrored sunglasses and a what-in-the-hell-do-we-have-here look on his face. I'm slowly moving, clunking over these little speed bumps at 2 miles per hour, waiting for him to grab me and yank me out of the truck. As I passed him, he yelled 'Stop!' He walked around the vehicle looking at each thing and approached the driver's side, then said 'Go in style, brother. Go in style.'" ■



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KNIVES OF THE FIREARMS MANUFACTURERS

By Mike Searson

Guns and knives seem to go hand in hand, or one in each hand, if you prefer. Both can be viewed as tools as easily as they can be viewed as weapons. A hunter needs a good skinning or caping knife as much as an infantry man needs a good field knife in addition to their rifles. Most of us can't imagine leaving the house without a sharp blade in the pocket, and let's face it, you're more likely to use your pocketknife daily than your carry gun.

Some firearms manufacturers got hip to this connection and collaborated on efficient knife designs that represent their brands well. Others just had their name laser engraved on a piece of metal as they would any other tchotchke to use as a giveaway item at trade shows.

We aren't very interested in the latter. We put together a list of a few knives that stand out to us that may have a bit more than just mere branding. Each one is a performer and designed for a true purpose.

If you wish to carry a knife that represents your favorite firearm brand, you have a good mix to choose from here. We do regret leaving out one of our favorites: Glock's fixed blade series. Glock actually started out making bayonets and field knives for the Austrian military, and we'd have loved to have included one here, but the length is a little too long for our 1:1 imagery.

Another caveat is that over the years there have been other great collaborations between the firearm and knife industries. If your favorite one isn't here, it may be out of production. ■



1:1
ACTUAL SIZE

1
Browning 111
OAL: 7.75 inches
Blade Length: 3.25 inches
Blade Material: Sandvik 12C27
Weight: 9 ounces
MSRP: \$40
URL: www.browning.com

2
United Cutlery (Uzi) UZI Assisted-Open Tactical
OAL: 7.75 inches
Blade Length: 3.5 inches
Blade Material: Polyhedral Tungsten Carbide
Weight: 3.2 ounces
MSRP: \$49
URL: www.unitedcutlery.com

3
Sandrin Knives (Cabot Guns) TCK 2.0
OAL: 7.79 inches
Blade Length: 3.1 inches
Blade Material: Polyhedral Tungsten Carbide
Weight: 2.11 ounces
MSRP: \$249
URL: www.cabotguns.com

4
Böker (Kalashnikov) AK-19
OAL: 7.87 inches
Blade Length: 3.54 inches
Blade Material: 440C
Weight: 3.7 ounces
MSRP: \$50
URL: www.boker-usa.com

5
Buck (FN) FN Buck Knife (Bantam)
OAL: 8 inches
Blade Length: 3 1/8 inches
Blade Material: 420 HC
Weight: 2.4 ounces
MSRP: \$55
URL: www.fnestore.com

6
Hogue (SIG Sauer) SIG Ex-02 ASE Flipper
OAL: 8.76 inches
Blade Length: 3.75 inches
Blade Material: 154CM stainless steel
Weight: 7.08 ounces
MSRP: \$200
URL: www.hogueinc.com

7
Hogue (Heckler & Koch) Fray
OAL: 9.1 inches
Blade Length: 4.2 inches
Blade Material: 154CM stainless steel
Weight: 5.4 ounces
MSRP: \$149
URL: www.hogueinc.com



BROWNING 111

411: The Browning 111 is a traditional lock-back hunting knife with cocobolo scales and brass bolsters. When taking to the field with a Browning rifle or shotgun, it makes the perfect companion. Knives like this can be a bit heavy for plain pocket carry so a nylon sheath is included.

PROS:
 + Sandvik 12C27 is a Swedish-made steel very comparable to 440A stainless. It's rust resistant and holds a great edge.
 + Although finger-grooved handles can be hit or miss, this one fit my hand well.
 + The knife has a classic outdoorsman look and will work well for dressing game.

CONS:
 - The nylon sheath may be a deal breaker for some, a leather sheath would seem more fitting for this style of knife.
 - The factory edge could've been a bit sharper; we had to strop it a bit, but once we did it was shaving sharp.



UNITED CUTLERY UZI

411: Uzi may be the most widely recognized names in firearms. When we think of Uzis, we fondly remember subguns from the old days. They were reliable and brutally efficient. That's how we view this knife made with the Uzi name on it, except the emphasis is really on cheap with this one.

PROS:
 + The blade is made from 8Cr14MoV. Not our favorite steel, but it works with this particular knife.
 + The G10 handles are comfortable, being tough but not too aggressive and not too slick.
 + At this price point, the UZI AO Tactical makes for a nice covert EDC that falls into the disposable knife category.

CONS:
 - This is a right-handed-only knife, and the clip only allows for tip-down carry.
 - The lanyard hole is too small to be useful.
 - Despite the Uzi name on the blade, there are much better knives for the money.



SANDRIN KNIVES TCK 2.0

411: Cabot Guns is the collaborative partner exclusive distributor for Sandrin Knives. This gentleman's folder is a perfect pairing, as Cabot turns out some of the finest 1911 pistols we've seen. This blade is unique, as it's made from Tungsten Carbide and is black DLC'd for protection.

PROS:
 + The blade is made from Polyhedral Tungsten Carbide with a Rockwell Hardness of 71 HRC — that means it'll hold its edge longer than any blade steel.
 + It's extremely lightweight, and a true pocketknife if you wear business suits or dress pants.
 + The knife is well suited for delicate cutting.

CONS:
 - It's a slip-joint-style knife and requires two hands to open the blade.
 - This knife is no workhorse. You won't be batoning wood or hacking through the fuselage of a downed chopper with it.
 - This knife might be better served with a positive lock.



BÖKER AK-19

411: The AK-47 has a few terms associated with it: tough, simple, effective, and inexpensive. The tide may have turned on that last one a few years ago, but not in this case. Böker USA makes a licensed series of Kalashnikov-inspired knives with blessings from the arsenal in Russia. The knife has a very high-tech look to it but is completely grounded in being an excellent EDC knife.

PROS:
 + Very light and easy to carry — two important qualities in a carry knife.
 + For not having a flipper or bearings, this one flicks open quickly.
 + The aluminum handles are textured and surprisingly comfortable.

CONS:
 - This one could've been a bit sharper out of the box.
 - This is a right-handed-only knife.



BUCK FN BUCK KNIFE (BANTAM)

411: FN partnered with Buck Knives on this no-nonsense lock-back knife based on Buck's Bantam design. These were marketed as lightweight and inexpensive hunting knives by Buck, and when one looks at FN's pistol designs with lightweight polymer frames and a rather low street price the connection is easily seen.

PROS:
 + The blade is made from 420 HC, making it rust resistant and an easily maintainable edge.
 + The FRN (fiberglass-reinforced nylon) scales are contoured and textured well.
 + At 2.4 ounces, the knife is very light and easy to carry.

CONS:
 - There's a bit of side-to-side flex with the handle when working it hard.
 - The FN Buck carries a higher price tag than the basic Bantam knife from Buck.



HOGUE SIG EX-02 ASE FLIPPER

411: Hogue's SIG EX-02 ASE Flipper was made to pair up with SIG Sauer's P226 ASE (Alloy Stainless Elite), and this spearpoint flipper looks up to the job right down to its checkered hardwood scales. The wire clip is reversible for tip-up or tip-down carry. This was easily the nicest-looking knife of this lineup and was designed by custom knifemaker Allen Elishewitz.

PROS:
 + This is a very stout knife with a nice flipper action.
 + The blade steel is 154 CM, which is one of our personal favorites for sharpness, toughness, and corrosion resistance.
 + The butt of the knife makes for an excellent impact weapon.

CONS:
 - The checkered walnut scales make this knife almost too pretty to carry for fear of marring up the gorgeous checkering job.
 - This is a right-handed-only knife.



HOGUE FRAY

411: This is one of those fixed-blades I'd pick up even without HK's logo on it, because it's simply a rugged and fantastic knife that's sharp and ready to go out of the box.

PROS:
 + Blade steel is 154 CM, which is sharp, tough, and corrosion resistant.
 + Fits in the hand well. It indexes properly in both forward and reverse grips.
 + The blade is hand-ground for the final edge.

CONS:
 - While we find the paracord-wrapped handle comfortable, our experience tells us they take a beating after prolonged use. Replacement handle scales in G10 or even a hydro-dipped handle would make this knife a real winner.
 - While the sheath isn't bad, it's not great either. I understand the dynamics of keeping the cost down, but a real Kydex sheath would've been the perfect finishing touch to an otherwise great knife.

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We Make Short Things Shorter

By Dave Merrill

HACKSAW SPECIAL

The build for this issue is all about small. And if something wasn't small enough, we followed the best traditions of the Wile E. Coyote School of Gunsmithing and busted out the hacksaw and Dremel.

The center of this story revolves around an 8.5-inch Rainier Arms Ultramatch Mod2 barrel chambered in .223 Wylde. Most everything about this barrel is built to Rainier specs: Starting with a Melonited 416 stainless barrel with a 1:7.5 twist barrel, a TiN barrel extension is added, and the barrel is

atypically contoured and profiled. Instead of a standard 0.750, skinny 0.625, fatty 0.875, or 0.936-inch gas block seat, Rainier Arms determined 0.800 inch was ideal for their purposes. Therefore, a Rainier Arms gas block must be used, which they'll happily bundle for you. Unfortunately, we didn't end up with an adjustable block so we needed to ensure we used a lower-pressure silencer.

While a stubby barrel might seem contrary to the concept of "Ultramatch," mostly what you lose with a short barrel is velocity and not accuracy. You do need to be more

choosy with ammunition, though.

The trigger follows the same match theme. The Hiperfire X2S Mod-1 is a two-stage trigger with a slightly longer first stage for those who like to pull up some slack before a crisp 3-pound break. If you've never installed a Hiperfire before, we suggest you watch one of their videos on the subject because it's significantly different than a standard trigger.

To keep everything short and tight, we dropped on the spring-loaded Strike Industries PDW stock, and it's also fun to deploy.

We had a 15-inch Bootleg Inc CamLock

M-LOK handguard, which we initially thought we would dock a silencer inside since the rail is quick-disconnect. However, with an internal diameter of under 1.4 inches, virtually no 5.56 suppressor would fit. Plus, it makes everything hot and horrible. A hacksaw gave us a custom size, and a Dremel and Alumablack cleaned up some of our rough work.

The upper receiver is also by Bootleg Inc, and we popped in a complete Ballistic Advantage bolt carrier group. The lower receiver was robbed from an already-registered SBR because the ATF was taking their sweet time as this was being put together. The charging handle is the Battle Arms Development RACK, which is a totally different approach to an ambidextrous handle. Left side, right side, weird angles — it doesn't matter. The RACK is a smooth operator.

Most all of the small parts and pieces also came from Battle Arms Development. We combined their enhanced magazine release with their enhanced modular magazine button.

For the selector, we rolled with the BAD-ASS PRO ambidextrous safety selector. It doesn't have any pins or screws to lose, and it can be configured for either a 60- or 90-degree throw. This was the second part that got the chop to for reasons very specific to me. Since I use a very high hold on the pistol grip and have what have been described as child's hands, even short throw ambi safeties can dig into my trigger finger when moving to the firing position. A little shortening and now all is well.

The G10 grip is a VZ Operator II Gen 2. Out of the box, these are extremely aggressive, so a little sandpaper softened it a scotch, and once again a hacksaw made it into a stubby Kurz grip.

For a silencer, we initially thought a Dead Air Nomad-Ti (see page 150) would make for a lightweight warrior, even though a shorty 5.56 barrel would eat it in short order. But unlike other Dead Air cans, there are barrel restrictions with the Nomad-Ti (no shorter than 12.5 inches with 5.56). We decided instead on a SilencerCo Chimera, which has no such restrictions. We added a Dead Air Saker KeyMo adapter and flash hider to round out the package.

We pondered the optic configuration for a considerable period. While purportedly this could fill a more precise role in a pinch, we decided on a magnifier setup instead of a low-powered variable optic for this little guy for best use in close quarters. A tan Eotech EXPS3-0 was installed, and the latest flipside 3x EO magnifier, the G43, was placed behind it.

For a weapon light setup, we scoured the box of lights in the shop and chose an older Streamlight ProTac Rail Mount 2 on an Arisaka Defense in-line mount with a Cloud Defensive LCSmk2k mount for easy use on the 12 o'clock rail.

Because this is a hacked-down handguard complete with a pistol-length system, the forend can get super hot. To negate this, we enlisted the help of Arcane Concerted and their T.A.R. grip rail covers. Available in several colors and lengths, these protect your

hands from heat while leaving the top rail open and can be customized for cutouts such as VFGs or other accessories.

Recoil is robust for a 5.56, so we'll be addressing that in the near future with some form of gas regulation. In the end, we ended up with a relatively lightweight, certainly small, fast, and accurate rifle. And that's something we can all get behind. ■

PARTS	MSRP
8.5-inch Rainier Arms Ultramatch Mod2 barrel	\$270
Bootleg Inc upper receiver	\$180
Noreen Firearms billet lower	\$100
Bootleg Inc CamLock Handguard	\$160
Strike Industries PDW stock	\$275
Hiperfire X2S Mod-1 trigger	\$200
Ballistic Advantage BCG	\$125
BAD-ASS-PRO selector	\$45
BAD enhanced mag catch	\$9
BAD-EMMR mag release	\$24
Battle Arms enhanced bolt catch	\$15
Battle Arms RACK charging handle	\$125
VZ Operator II grip	\$85
SilencerCo Chimera	\$1,030
Dead Air Saker KeyMo	\$249
Dead Air flash hider	\$89
Arcane Concerted T.A.R. grip	\$90
Streamlight ProTac RM2	\$132
Arisaka Defense inLine Scout mount	\$40
Cloud Defensive LCSmk2k	\$70
Eotech EXPS3-0	\$725
Eotech G43 magnifier	\$629
My Southern Tactical Crayon PMag	\$28
Total	\$4,695

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Interested?
We Thought
You Might Be

By Iain Harrison
Photos by Kenda Lenseigne

Way back in January this year, we wandered by the Hatsan USA booth at SHOT 2020 to check in with Blaine Manifold, its jovial owner and airgun guru. We came away with a smirk on our faces. We've always been suckers for high-powered airguns, as they're a fun way for gun owners to thumb our collective noses at idiotic regulations. Hatsan's newest addition to their lineup was very much a continuation of this theme.

According to Manifold, the company was about to import a model equipped with a happy switch, so we signed up to put it through its paces.

YOU'LL SHOOT YOUR EYE OUT

The new Blitz is available in .22, .25, and .30 calibers, and naturally we opted for the biggest of the three. In terms of efficiency, the middle one is probably the wisest choice, but the opportunity to brag about shooting a 7.62 full auto in the backyard was too much to pass up, even if we did have to skip over the bit about it being air, rather than powder, powered.

SELECT FIRE, 7.62, SUPPRESSED, AND DELIVERED TO YOUR DOOR



to swap out the air cylinder, so if you want to recharge the rifle in the field, you'll have to carry an air pump. With around 100 shots on tap before pressure drops below 85 percent of its max, this isn't too much of an arse-ache, but should you venture much beyond the confines of your backyard, it's worth being aware of. Especially as the 100-shot limit arrives pretty quickly when you flip the switch to its rock-'n'-roll setting.

To top off the tank, there's a conveniently located port on the right side just forward of the action, into which the probe from either an electric or manual pump fits. Most of the time, we used a high-pressure manual pump and were pleasantly surprised at how efficiently the Blitz metered its air supply — after a couple of mags, it took fewer than 100 strokes of the pump to bring pressure back up to the upper limit. Bear in mind, air from the tank is used not only to propel pellets down the bore, but also to cycle the action and strip them from the magazine, so by rights it should be an air hog. To get the party started, pull the bolt handle to the rear and lock it into

It duly arrived in the back of a big brown truck of joy, with no background check, waiting period, or mother-may-I permission slip needed. The only thing left to do was charge up the 580cc carbon-fiber air tank, stuff magazines with 43-grain pellets, and mount up a scope.

FIRST IMPRESSIONS

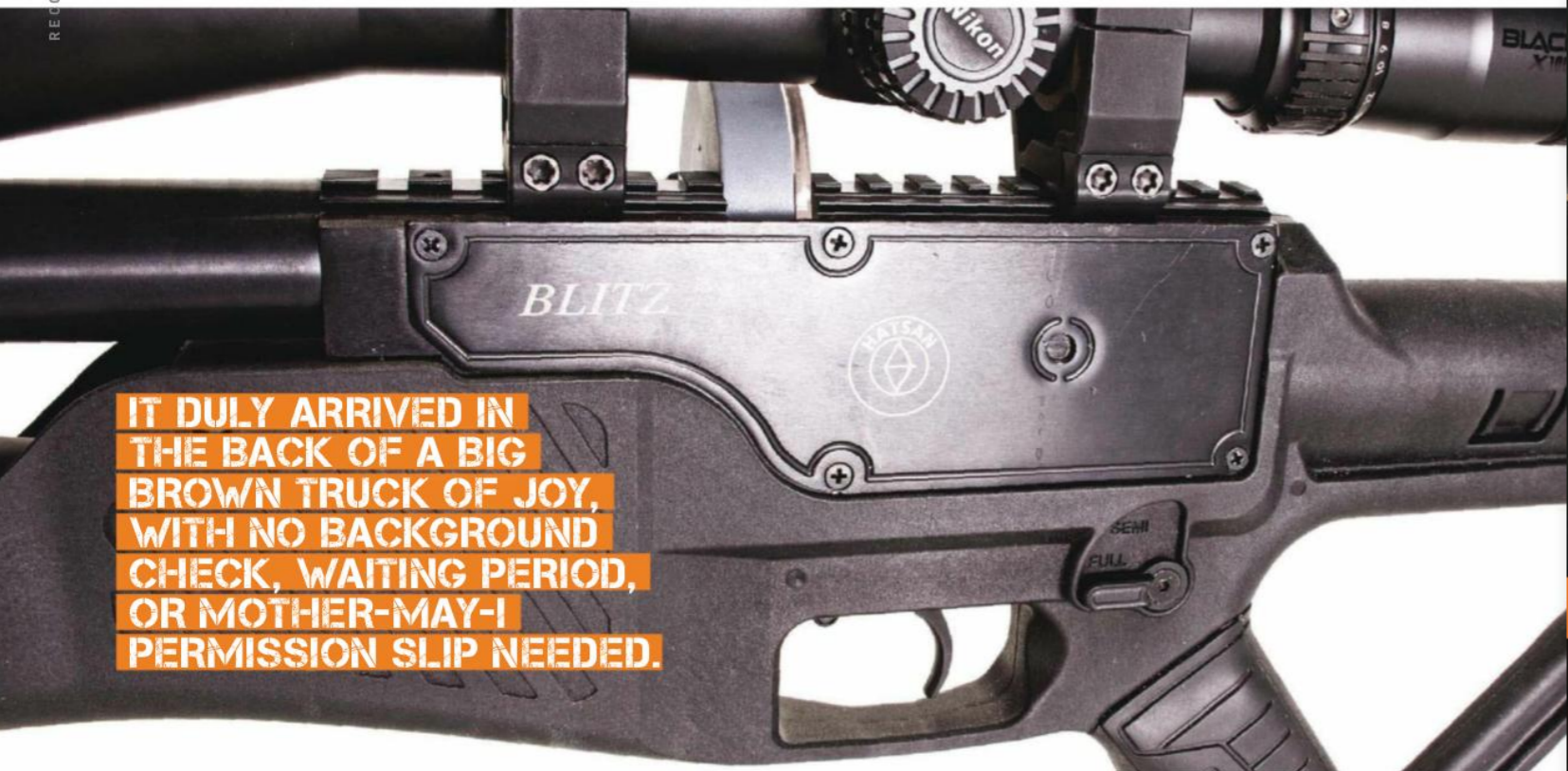
A Red Ryder this ain't. Tipping the scales at 13.2 pounds fully equipped

with 4-15x42 optic, magazine, and bipod, the Blitz feels like a centerfire rifle, once you get past the plastic furniture, which has a distinctive Turkish design aesthetic. There's no reason we can fathom for the '90s-style butthole stock, but it does offer the user adjustability for comb height and length of pull, along with storage for a spare magazine. Unlike some other pre-charged pneumatic (PCP) airguns, there's no easy way

Stock is adjustable for LOP (via spacers) and comb height, and is adult-sized.

See that little lever just above the pistol grip? It's worth two hundred bucks ...

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the HK-style retaining slot, insert a full mag into the receiver, then run the bolt home to chamber the first round. There's a safety à la Garand, located inside the trigger guard, with an AR-type selector switch on the left side. The switch itself operates in the opposite direction you'd expect and isn't

all that easy to get to, unless you're a lefty — most of the time we operated it with our support hand, and it's easy to forget to flip it back to semi. One evening, this resulted in a rabbit we were stalking winding up with five holes in its carcass instead of one. Oopsie.

Like most other repeating airguns, Blitz magazines are of a rotary design. Unlike most others, they're spring loaded, in order to keep up with the 1,000-rpm rate of fire. Holding a maximum of 16 rounds in 30 cal, it's tough to get more than four bursts on the full auto setting due to the high rate of fire and a trigger that feels heavy, stagey, and not too predictable. We've



Cocking lever is locked to the rear in order to swap the rotary mags. Note size difference between 22- and 30-cal pellets.

shot other Hatsan PCPs in the past (see RECOIL Issue 14) and they usually come with sweet, fully adjustable triggers that can be tuned to break just how you like it, but this one's the exception to that rule. Then again, full



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auto ARs, MP5s, and belt-feds aren't exactly known for their glass-rod triggers, either.

We, likewise, were expecting tight groups from its shrouded, integrally suppressed barrel, but were initially disappointed. Normally, German H&N pellets are our go-to for accuracy testing, but in this case they threw puzzling fliers that opened up our groups to around 3 inches at 50 yards. While smaller calibers have a ton of choices when it comes to ammo, the number of options available for the big bores is inversely proportional to their diameter. We did, however, have a few Hatsan-branded pellets left over from a previous project, and they tightened

The Blitz is remarkably stable in full auto fire and allows the user to see targets in half — due to its shrouded, integrally suppressed barrel, pellet impacts and action noise are louder than the shot.

things up nicely, proving that airguns, like 22s, can be picky when it comes to projectiles. An even-inch at 50 yards was possible on semi, but due to the heavy trigger we had to concentrate really hard to achieve it. Off a bipod on full auto it's possible to dump a burst of four or five rounds into less than 4 inches at that distance, which anyone who's humped a 240 will attest is a pretty remarkable feat. Although the Blitz delivers only around 50 ft-lb of energy at the muzzle per shot, having eight of them arrive in a half second somewhat changes the dynamic.

With yet another ammo shortage in full swing, there aren't too many downsides to having an airgun in the arse-



nal. They're quiet, powerful enough to be worthwhile, and completely immune to kinks in the supply chain when it comes to primers, powder, and brass. It's even possible to cast your own pellets from scrap lead, and so long as you're capable of pumping air, you can send them on their merry way without reliance on another soul. Plus, in the case of the Blitz, there's the satisfaction of owning a full auto without the government sticking its nose in, which for some people is priceless. ■



HATSAN BLITZ

CALIBER: .30 (.22 and .25 available)

MAGAZINE CAPACITY: 16 (in .30)

BARREL LENGTH: 23 inches

OVERALL LENGTH: 45 inches

WEIGHT: 8.8 pounds

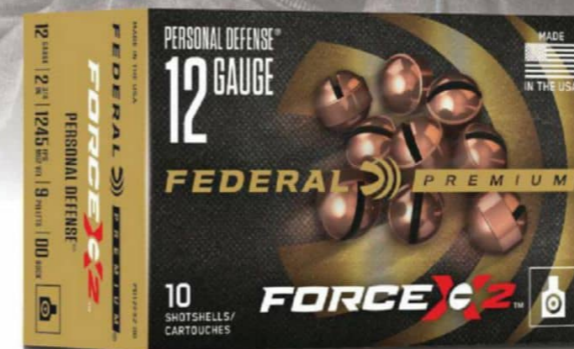
MSRP: \$1,000

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EVERYTHING WRONG WITH THE LPVO

Addressing the Issues of Low-Power Variable Optics

By Alex Hartmann

These days, carbines equipped with low-power variable optics have become very popular. A good way to characterize these LPVO-equipped carbines is “Cooper Scout Rifle meets modern 21st century warfare.” It’s important to remember that

the origin of this system has martial intent — there has been a disconnect among many shooters, as the original inception of the optically sighted carbine is a little dark and grim. Even from the early proliferation of optics on the battlefield, the purpose was simple — to enhance the capabilities of the basic rifleman in his/her task:

THE FUTURE IS NOW, OLD MAN

Up until the last 20 years, the progression of the modern carbine hadn’t pushed much beyond World War II concepts. Sure, we did some stuff with polymers and aircraft-grade aluminum for that Indo-China thing, but let’s face it, the Cold War was arguably lame with respect to what actually

got fielded in terms of small arms. Until recently, we’ve gone to war with the same sighting concepts our grandfathers did.

The strategic execution of the global war on terror is up for historians to debate, but what’s undeniable is that it has allowed for nearly 19 years (and counting) of non-stop warfighting research and development. The conflict has ranged from peer/near peer engagements to countless ongoing counterinsurgencies. Necessity is the mother of innovation, but a solid nod needs to go to the father, which is foresight. This unholy union provided us with what is arguably the most paramount of small arms innovation: the proliferation of optically sighted service rifles and carbines at a mass level. Enter the Trijicon Advanced Combat Optical Gunsight (ACOG).

[THE ACOG] WAS THE BIGGEST IMPROVEMENT IN LETHALITY FOR THE MARINE INFANTRYMAN SINCE THE INTRODUCTION OF THE M1 GARAND IN WWII. —JAMES MATTIS





The crux of the problem is that modern gunfights are increasingly complicated. Most targets in combat-like engagements are often presented for limited time and/or size exposure. Additionally, targets are increasingly being presented in less than optimal light conditions. Moreover, the emphasized need to properly identify combatants versus non-combatants makes the phrase “complicated” sound like an understatement.

While the optically sighted carbine with a fixed 3x or 4x is very effective at intermediate ranges, it’s less than ideal when you’re cohabitating rooms with the opposition. Thus, the birth of the LPVO into modern warfare.

HOW MUCH MAGNIFICATION?

The old sniper rule of thumb you often hear regurgitated is “1x for every 100 yards/meters.” But remember this old-school mindset comes from the dog days of the Cold War; in reality, the opposition tends to reduce their visual signature by using camouflage or concealment. So there’s a new rule: You’ll probably need to go with at least 2x for every 100 yards/meters in the real world.

At this point, we can safely say 1-6x suffices out to 300 yards, 1-8x is good for 400 yards, and 1-10x buys us real estate all the way out to 500 yards. Before you start furiously posting on the in-

ternet about this, yes, these magnification ranges can be effectively stretched much further under ideal conditions, but in the complicated nature of gunfighting, conditions never seem to be ideal.

TOO CLOSE FOR MISSILES

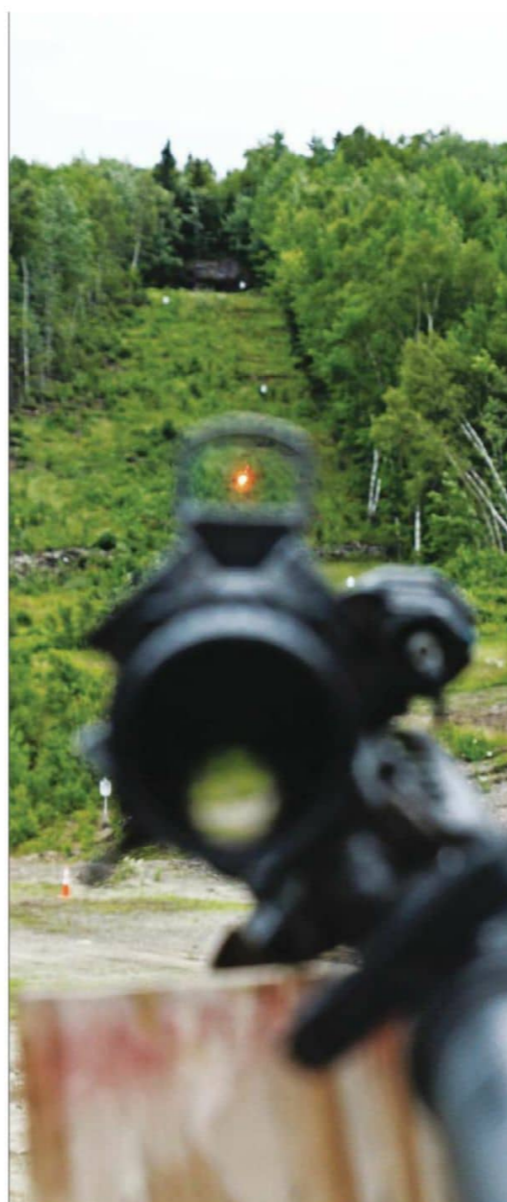
The first consideration is fairly straightforward, and some might assume that simply grabbing the latest and greatest 1-10x is the answer (see page 146 for a breakdown of the Vortex 1-10x). Unfortunately, we have few a more points of review that aren’t so readily apparent. While shooters demand a 1x that’s as fast as a red dot and a 10x that would put Carlos Hathcock to shame, there are some real limitations to what can be done and for how much money.

We need an effective power range from the outer limits all the way back into “bad breath distance.” Building an optic with a magnification power ratio that can handle that range demands a lot from the engineering perspective. Beyond power ranges, the LPVO riddle muddies quickly into a quagmire of factors, including eye box dimensions, focal planes, and reticle selection.

SORTING IT OUT

This messy trifecta of eye box dimensions, focal plane, and reticle choice dictates the optic’s usability.

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The “eye box” represents how much you can move your eye laterally and axially behind the optic while still maintaining correct sight alignment and picture. This three-dimensional space is dependent on the optic’s exit pupil diameter, the diameter of the eye pupil, and eye relief. Of course, there are no free lunches — generally speaking the higher the power ratio, the more restrictive the eye box becomes at the top end. A power ratio of 6x will be much more forgiving than 10x.

What does a smaller eye box mean in the real world? The issue you’ll most likely see is that moving the optic and rifle while transitioning or tracking targets at the higher end will become more difficult. Secondly, when engaging from alternate, less stable firing positions, your cheek weld will need to be more consistent and recoil might shift the eye box out of alignment. This compromises sight alignment and makes that extra magnification of the 1-10x something of a liability in a gunfight.

Moving onto focal plane selection, the plot thickens. For those unacquainted, here’s a two-sentence explanation: With a first focal plane (FFP) scope, the reticle scales up and down in size with the magnification level, while a second focal plane (SFP) reticle looks the same regardless of magnification.

SFP optics may be championed by manufacturers because they’re generally cheaper to make. SFP is nice in quick, close-range engagements at the lower end of the magnification ranges. However, it’s a double-edge sword. While SFP reticles stand out better at the low end, in order to use the reticle for elevation or windage holds, the optic must be at maximum magnification or the subtensions of the reticle (the distance represented by the marks in the reticle) won’t be correct.

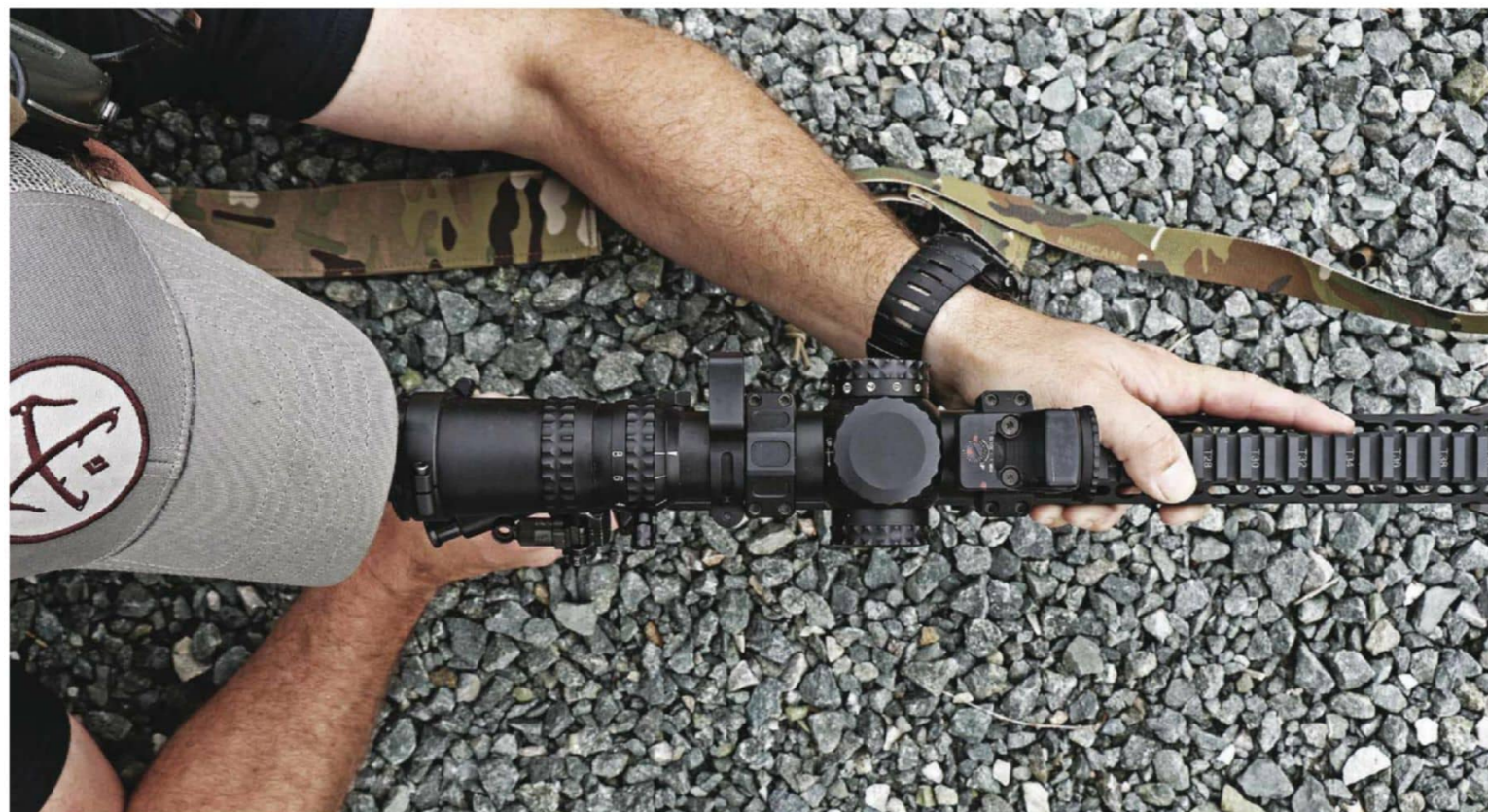
Given the higher power ranges of the 1-8x and 1-10x, it’s likely that a shooter may not always need or want to use the maximum magnification, which can limit the field of view and the eye box. An

EVERYTHING WRONG WITH THE LPVO



Your optic mount absolutely isn’t a place to pinch pennies.

FFP reticle eliminates the possibility of a mishap with holdovers, as its subtensions are always accurate no matter the magnification. The downside is that while some reticles work great at 8x or 10x, if they’re too fine, they may become very hard to see at 1x since they change in size. With an FFP scope, you must be careful to select a reticle that’s both fine enough for precision work but bold enough to find quickly when zoomed out.



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Additionally, if you choose an FFP optic, suitable daylight-visible illumination will greatly aid close-range performance.

The caveat to all this focal plane complexity is that LPVOs with power ranges of 1-6x tend to spend 99.99 percent of their operational life at either 1x or 6x and hardly ever in between. In this case, an SFP can be a fine choice. When considering LPVOs in the 1-8x or 1-10x range, FFP designs have some distinct advantages out at distance.

CAVEAT TO THE CAVEAT

The second caveat regarding focal planes: As awesome as LPVOs are at the low end, red-dots optics are almost always faster — so why not just use both. Thankfully, we live in the golden age of firearm accessories, and you can attach an offset mini red-dot sight as your CQC sighting system. There's a real smorgasbord selection of rugged MRDS to choose from these days.

Off-axis MRDSs are not only fast and forgiving, but they have the added benefit of always being ready for action. All LPVOs, whether a 1-6x or 1-10x, require you to take a moment and an extra hand to find the magnification ring and rotate it. Even with a throw lever, nothing beats the speed of a slight lift and tilt of the head.

PARALLAX

Parallax is an effect that occurs within all optics to varying degrees. Parallax within the context of optical sights is seen as the apparent shifting of the reticle in relation to the target, in conjunction with movement of the eye. In laymen's terms, excessive parallax creates error in a shooter's sight picture. How much parallax is presented and the resulting error induced depends on several factors, such as optic magnification and objective distances.

Optics with more magnification generally present more parallax error. This is why most high-power optics have a manual adjustment to eliminate parallax. LPVOs almost all come from the factory with the parallax fixed at a set distance, such as 150 yards. While this compromise isn't normally a big deal in the context of how they're used, LPVOs that reach out to 8x and 10x with parallax set at 150 yards may exhibit a good deal (1 to 2 MOA) of parallax at closer ranges. Again, 1 to 2 MOA at 50 yards isn't a big deal on anatomically correct targets; however, a 1 to 2 MOA error while zeroing your rifle (some BDC reticles are calibrated for a 50-yard zero) will have pronounced effects when you shoot at extended distances.

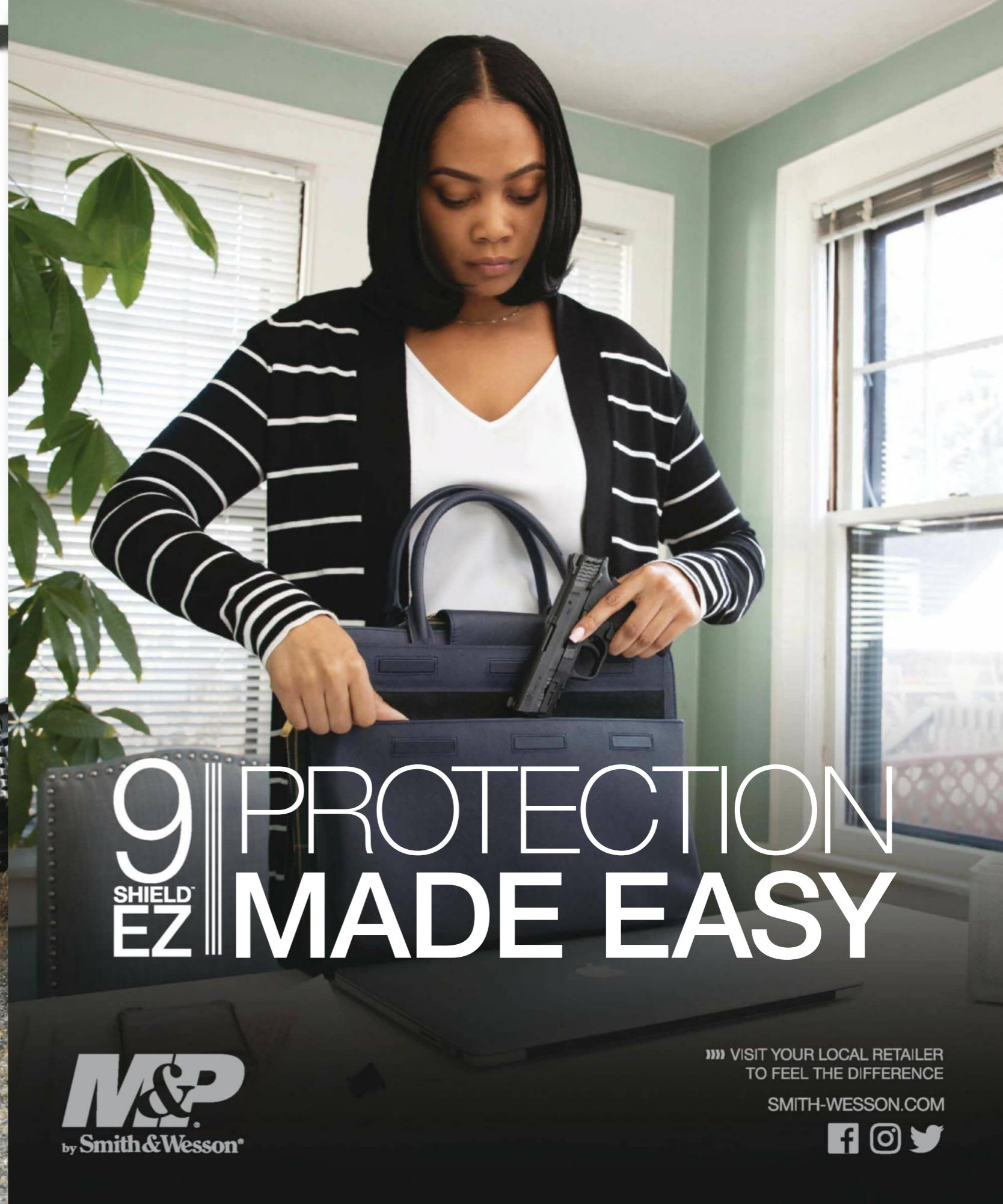
MOUNTS

Many folks don't take the subject of mounting their optics seriously enough. The optic mount is an absolutely critical component and not a place to pinch your pennies.

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ONE PIECE OR TWO?

We've learned a simple truth over the years: When an AR pattern rifle is properly fitted to a shooter's correct length of pull, almost everyone will need a single-piece mount with a cantilever to position the optic further forward on the rifle. Many folks try to make a traditional two-piece ring setup fit on the AR receiver, but more often than not it won't work.

The main body housing of most optics ends up forcing it to be mounted too far back for proper eye relief. In turn, this causes the shooter to compromise their body position. And in case you forgot, proper body position is a fundamental pillar of marksmanship.

Worse yet, some intrepid souls will refuse to admit defeat and attempt to bridge the receiver and the handguard or stack rings on top of risers. While you might be able to shoot some reasonably sized groups with these

setups, when it comes to maintaining accuracy you're fighting an uphill battle against physics if you do this.

TO QD OR NOT TO QD

Whether or not you should run quick-detach mounts is entirely subjective to your situation. If, for some reason, you're feeling extra ninja and need your optic to mount and dismount without tools, in less than 10 seconds, then go for it. If you're willing to haul around a beastly half-inch wrench that weighs a whopping 6 to 8 ounces and are patient enough to take an additional 20 seconds to fish it out of your kit, then the more traditional method of securing cross bolts is perfectly fine. Many people get hung up on how well the two types of mounts return to zero. Here's the practical truth:

▶ A quality fixed mount (like Badger, Geissele, Knights, Leupold, or Nightforce) using ½-inch cross

LPVOs have come a long way and can greatly enhance a shooter's capability in the types of engagements we now face.

bolts will almost always return to zero within a half MOA — if you re-torque it to the manufacturer's specification.

▶ A quality QD scope mount will almost always return to zero within a half MOA — if you read the manufacturer's instructions and properly set the levers to the correct specification.

Read that last part again; it's important to understand where most QD mounts get a bad rap.

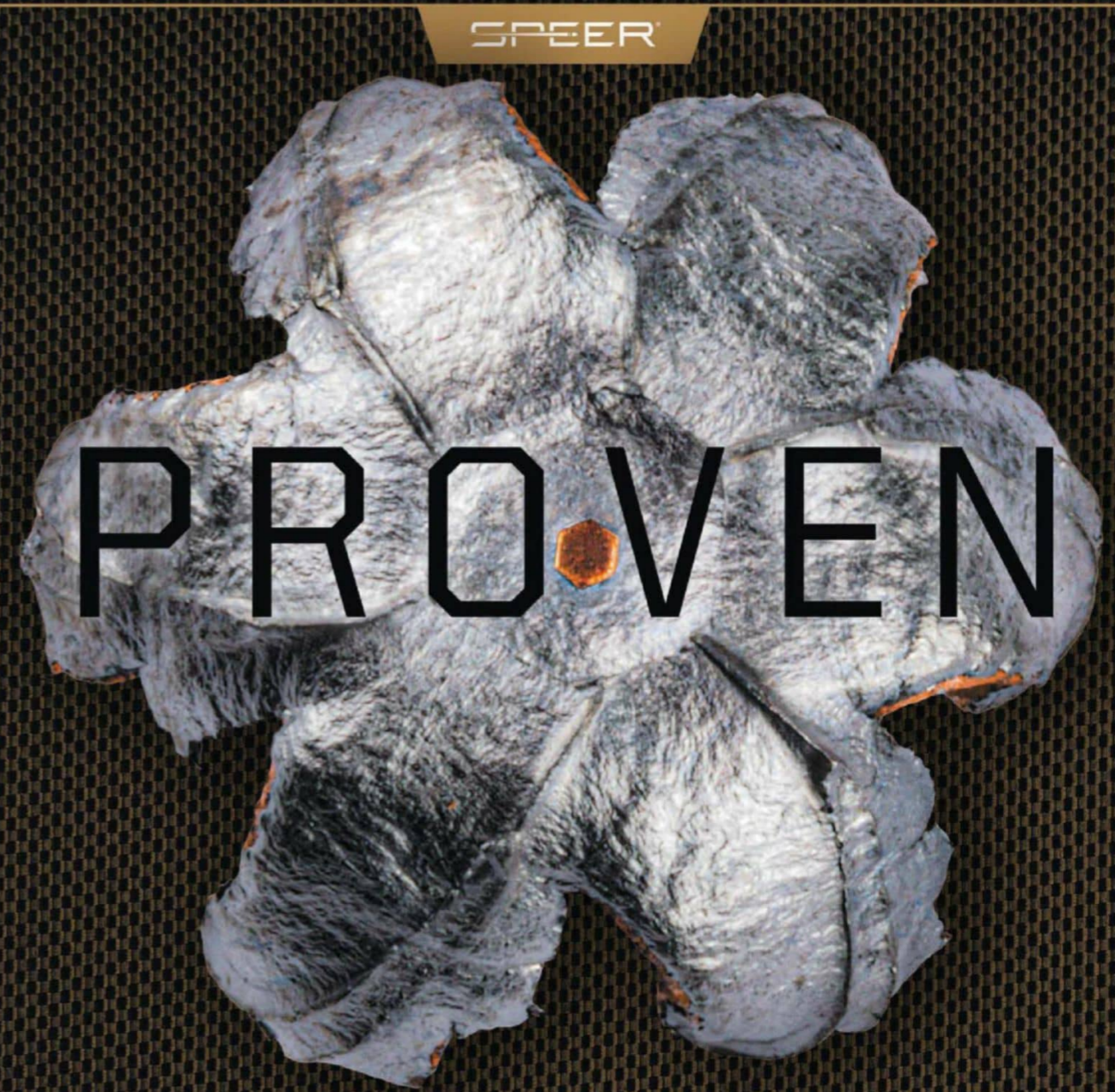
ARE HIGH MOUNTS BETTER?

Everyone jumping on this whole "high mount" concept with mounts floating 1.93, 2.04, 2.4, and 4.08 inches above the bore needs to stop and take a chill pill. You're late to the game, as the mechanics of higher optical planes on an AR platform has been understood since the mid 2000s.

Sure, faster presentations and situational awareness are great — but there's an important thing called proper cheek weld. Once you leave the 25-yard flat range, you'll remember why. The real beef is not the height of the optic, but the fact that many seem to forget that if you raise the mount, the height of the stock's comb needs to go up with it. All the potential issues associated with LPVOs, like tighter eye boxes and parallax, can become exacerbated without a solid cheek weld.

CONCLUSION

Low-power variable optics have come a long way and can greatly enhance a shooter's capability in the types of engagements we now face. However, it's important to understand their strengths and weaknesses and how best to select an optic and configure it for your needs. Take an honest look at the situations and threats that you expect to encounter, examine the considerations we've outlined here, and you'll be able to dial in your modern-day Cooper Scout Rifle. ■

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MODERN-DAY DE LISLE CARBINE

The Curtis Tactical CT700P Integral 9mm

By Dave Merrill

It started on a whim while in a rural town in Ohio looking for a local gun shop to peruse for a little bit of business and mostly grins. The Google map highlighted “Curtis Tactical Suppressors,” and the journey began. While driving down a dusty country road, the realization hit that this may either be an incorrect address or a small backyard shop, but plenty of damned good work takes place in garages and sheds

across the great American nation. There was no hesitation.

Mowing the lawn in front of his house, the location of his former backyard shop, was Joe Jones. Jones is the founder and owner of Curtis Tactical, and by mere happenstance he happened to take a day off to perform yardwork on his large property. Introductions were made, and soon we were firing machine guns behind his house and learning details of his wares.

It was totally random and awesome. We blame a glitch in the Matrix. Or Elon Musk. Same/same.

Though Jones has been designing and building silencers for nearly a decade, it wasn't until mid-2019 Curtis Tactical was officially formed. Curtis Tactical made a name for themselves by re-coring and otherwise upgrading silencers of all types (if you have a now-defunct Hometown Arms silencer, give them a ring). Jones pulled nearly endless examples of upgraded

suppressors from his safe from names both big and small. Like us, the more purpose-driven the suppressor, the more he liked them. And nothing is more purpose-driven than an integrally suppressed weapon (see RECOIL Issue 44 for a full breakdown on integrals). He had modernized interpretations of older guns: Integral 9mm MPXs replaced the vaunted MP5SD. Nazi-killing OSS High Standard HDMs were present but with 2020 baffle designs. And what really caught our eye? A rifle that got weirder and more astonishing the more we learned about it: the CT700P.

The CT700P is a Remington 700, integrally suppressed, chambered in 9mm, and converted to controlled feed, that eats ammunition from Glock mags.

The CT700P immediately brought forth images of the De Lisle. The De Lisle carbine (sometimes called the De Lisle Commando) was bizarre British invention, which was essentially

a Lee-Enfield MkIII converted to .45 ACP using a Thompson submachine-gun barrel and integrally suppressed — furthermore, it ate from modified 1911 magazines. The De Lisle saw use among British commandos and SOE for the purposes of silent Nazi-zapping. And let's be real: Any gun used to covertly kill Nazis will always be among the coolest guns on earth.

A rifle we didn't even know we wanted, which we instantly knew we'd have to get our hot little hands on.

Keep in mind that the rifle you see on these pages is a preproduction model, and we'll note potential changes to full production models as we come across them.

ACTION AND OPERATION

Bolt actions make for the quietest possible silencer hosts. Ejection port noise is nonexistent, since the bolt is

opened only well after the projectile and all gases leave the barrel. The CT700P is a single-stamper, because the barrel is technically 20 inches long with an 8-inch silencer popped on the end of the 12-inch rifled portion.

Each CT700P rocks a receiver machined from 6AL-4V titanium and is DLC (Diamond-Like Carbon) coated. The bolts themselves are machined from 17-4 stainless bar stock, feature threaded handles if you want to swap, and are UltraOX nitride.

The briefest explanation possible of controlled feed versus push feed is that a push-feed action has an extractor that snaps over the rim of a cartridge only when fully chambered (like an AR-15), whereas a controlled-feed mechanism has control of the cartridge with the extractor through the entire cycle of operation like a Mauser model 98. Jones contends that there's

It looks like a normal bolt gun — until you get to the magazine.



no other way to feed a pistol round with a front-lug bolt action than a controlled feed system, and he's also spent an awful lot of time developing this system expressly for that purpose.

Jones further explains, "The bolt face is where design is critical to get the pistol rounds to feed in a front lug action. Our patent-pending angled T-slot machined into the face of the bolt makes this a true controlled round feed and is necessary to feed the pistol cases. As the round exits the magazine, the T-slot on the front of the bolt captures the case rim; it's machined to the perfect profile to

allow a smooth feed up the feed ramp into the chamber while being retained the whole time. The side-mounted bolt stop also plays a big role in the ejection; as the bolt is moved rearward the bolt stop actuates the ejector, which is spring loaded to the rear."

The first CT700P we shot required a rather aggressive operation of the bolt in order to fully seat each round, but this problem nearly disappeared on our example due to a slight extractor tweak and shouldn't be present on production models.

Instead of a modified Accuracy International magazine (see page 104 for

The baffles are held in place with both an endcap and a locking nut.

The extremely short action threw us off the first time we shot it.

an example of a sub-caliber magazine conversion) inserted into the KRG chassis there's an adapter for Glock magazines. Our preproduction sample can seat Glock 19 magazines and longer with ease, but the diminutive Glock 26 mags are too short to fully seat.

The silencer portion of the CT700P is easily removed for maintenance with the included 7/16-inch hex key. First, the endcap is unscrewed followed by a secondary locking nut with the same hex key. After that, the snap-together core slides out. The tube remains permanently attached to the rifled portion of the barrel, giving us that legal length of beyond 16 inches.

Each baffle features symmetrical clips and each subsequent baffle should be 90 degrees offset from the previous for best consistency.

QUIRKS & WEIRDNESS

The magazine adapter itself can be removed like any other detachable magazine, necessitating the removal of the enlarged KRG release lest we inadvertently pop it out on the range. A new lever release on the physical adapter itself allows for the 9mm Glock magazines to be removed and inserted. At least with our preproduction, it's best to load a filled magazine on an open bolt to ensure proper seating. Along similar lines, the current adapter allows the magazine to over



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penetrate slightly, so after it clicks in, give it a little tug downward.

VARIANTS

Though you're seeing an integral 9mm on these pages, Curtis Tactical has several pistol-caliber models available for purchase. All models ship with 20-MOA scope bases, medium-contour threaded barrels, Trigger Tech triggers, the appropriate magwell adapter, and a magazine.

You can get a CT700P chambered in .40 S&W that uses small-frame Glock magazines, and also .45 ACP with the choice of either G36 mags (weird) or full-on De Lisle with 1911 mags. Rifle configurations have either 16- or 20-inch barrels and custom "Pork Swords" pistols (see RECOIL 50 for an example) with barrel lengths between 3 and 12 inches.

While any Remington 700 short-action stock or chassis can be used, standard options are KRG (shown) and Masterpiece Arms. This preproduction CT700P was put together with a Green Mountain 1/10 twist barrel; Douglas and Krieger precision barrels will be available with an upcharge.

MAD SCIENTIST

Seeing as how the 350 Legend uses the same projectile diameter of a stan-

The angled T-slot allows for a true controlled round feed.

ard 9mm, RECOIL Editor-in-Chief Iain Harrison loaded up some Hornady 170-grain FTX and Spire Point 350 projectiles in 9mm cases using 3.0 grains of WSF powder. While the results won't directly feed from Glock magazines, they will from modified 1911 mags — and it just so happens that Curtis Tactical makes one. We don't have full load development, yet these are quieter than pissing in the snow. Expect to see more of our 355 Whisper in the near future.

OUTFITTING

While this is a 9mm rifle, it's also a precision rifle. Extreme Long Range shooters have been known to push calibers traditionally considered short-range to the distance (1K yard shots with .22LR is increasingly more common these days among the ELR crowd) — we didn't push the capability envelope too far. Magnified optics were a no-brainer, but we decided an LPVO would make for the best-case use for our imaginary Nazi-snuffing scenario. After much studying of ballistic calculators, we settled on a 1-6x24mm Vortex Viper

PST in a set of Precision Reflex Inc rings for the optic.

While we knew that standard Glock magazines would be fine, we threw the original game plan entirely out the window and threw a generally garbage stolen KCI 50-round drum magazine into the mix. No, these magazines aren't recommended for semi or automatic use, but they were perfectly fine for the slower bolt-action CT700P, though they certainly added onto the weight.

The KRG Bravo chassis allows for easy attachment of a sling and bipod, so we rolled with an Accu-Tac bipod and a legacy-padded QD Ares Armor Husky sling.

AT THE RANGE

Shooting 9mm not from a pistol or even a carbine changes a lot of metrics. As you extend your range, you'll quickly find that the ballistic coefficient of your load matters far more with the CT700P than your pocket pistol. Our suggestion is to take several different types of ammunition to the range and see what she likes.

Using a MagnetoSpeed and an Applied Ballistics calculator, we



The baffles can be snapped apart for maintenance.



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determined our best zero using Israeli 158-grain ammunition would be at 15 yards. This gave us pointy-clicky to 120 yards and easy holds for an additional 50 yards beyond.

For testing accuracy, we replaced the lower-power 1-6x Vortex with a 6.5-20x Leupold VX-3I LRP to get our eyeballs closer to the target.

Using IWI 158-grain FMJ 9mm, the average five-shot group was 1.15 inches at 100 yards. Curtis Tactical tells us their Kreiger and Douglas barrels are sub-MOA, provided you're using match 9mm.

Swapping grain weights of ammunition became troublesome, because cheap 115-grain Walmart Winchester white box has significant ballistic deviation at range when compared to their heavier (and quieter!) subsonic brethren. Our take is that the best practice is to stick to a single grain weight and brand of ammunition lest you either have to constantly re-zero or guess at projectile drops at range.

Given the longer barrel, baffle stack, and bolt-action, it should come as no surprise that the CT700P is less than handclap-quiet when loaded up with subsonics.

LOOSE ROUNDS

Coming across Curtis Tactical through random happenstance and being extroverted enough to walk up to a random house was the first of many new surprises. Sometimes backyard shops grow into sustainable businesses, and that nearly always happens when someone brings a new idea to fruition or takes an old idea and puts a new spin on it.

Sure, there are a few things that have to be worked out, but that's the nature of R&D for preproduction guns. Just while writing this article, the bolt and extractor design was tweaked twice — Jones is quick to make changes, and shifting gears quickly is something a small, custom shop can do.

Some would argue that the CT700P should accept Sig Sauer M17/18 magazines to be a true successor to the De Lisle, and to those folks we'd point out the bevvvy of 9mm Glocks currently in USSOCOM inventory. We don't know what Curtis Tactical will cook up next, but we're for damned sure watching and waiting. ■

MODERN-DAY DE LISLE CARBINE



CURTIS TACTICAL INTEGRAL CT700P

CARTRIDGE:
9MM LUGER

OVERALL LENGTH:
39 INCHES

WEIGHT UNLOADED:
9 POUNDS, 6 OUNCES

BARREL LENGTH:
20 INCHES

MSRP: \$2,075

MAGAZINE CAPACITY:
10, 15, 17

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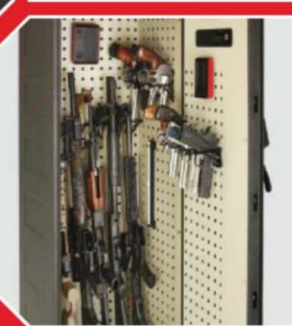
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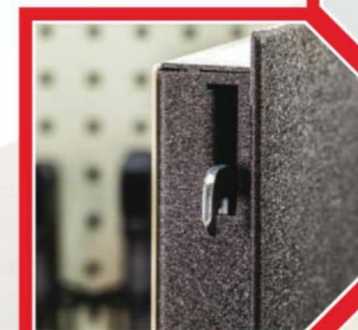
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Grudge Match Between Low-Power Variable Optics and Red Dots With Magnifiers

By Dave Merrill

Lately, low-power variable optics dominate the CQB optic market, but magnifiers for red-dot sights have graced many a rifle for more than 15 years. To be fair, the popularity of magnifiers has waned, but we're beginning to see more of them on rifles again.

The purpose of this article is to give you a clear pro/con of each setup so

you can make the decision of what's best for your needs. Understand that since we're discussing these products in general and not each and every SKU out there, there'll be some outliers. So if something doesn't apply to your favorite pet LPVO or RDS, that's 100-percent A-OK. Think about each use case, and compare and contrast with your own anticipated uses.

EYE RELIEF / OFF-ANGLE VIEWING **WINNER: RDS + MAG**

Eye relief varies greatly amongst LPVOs depending on brand and model, but the eye box in any of them is smaller than that of the most basic RDS. While on the bench or flat range it may not seem to be an issue, once you start getting weird and shooting from unconventional positions,

Consumers certainly don't suffer from lack of options in either category.

the need for eye relief really rears its head. The maximum viewing angle of a RDS is invariably larger simply due to the design of the scope body itself. The larger the window and shorter the body, the better the maximum off-axis viewing angle.

Of course, this only applies while a RDS doesn't have a magnifier behind it. Once you add a magnifier, you'll run into similar issues as with LPVOs. But,

when both are used at 1x power, the difference is obvious. There are some ways around this with an LPVO, namely using a piggybacked MRDS or offset irons, at the expense of additional gear hanging on your rifle.

BATTERIES **WINNER: LPVO**

Most modern LPVOs use a common watch battery for reticle illumination.

LPVO VS. MAGNIFIER



When an LPVO battery dies, it's very irritating, but the optic still works fine since the etched or wire reticle remains. With most RDS, a completely dead battery means a dead optic. We say most because there are some older designs that use self-powering tritium or fiber optics to light their reticle. But contemporary RDS largely rely on a battery-powered LED or laser to project their reticle. We've yet to see an LPVO with the battery life of an Aimpoint Comp M4, though, but auxiliary reticle illumination isn't necessary for the optic's basic functionality.

DAYLIGHT BRIGHTNESS
WINNER: RDS + MAG

While everyone's eyes are different, the search for "daylight bright" LPVOs is coming to an end, but it still remains an issue. While an LPVO works without illumination, at lower magnification settings, a bright reticle brings a significant speed advantage, especially on targets without high contrast. Second focal plane LPVOs with fixed reticles have an easier time in this respect compared to first focal plane scopes with reticles that

LPVOs usually have toolless windage and elevation adjustments allowing one to dial on the fly, if need be.

Throw levers make a world of difference in speed of magnification adjustment.

change size according to the optic's magnification level, but even a \$50 RDS beats the pants off of anything but the most expensive LPVO.

PASSIVE NVG USE
WINNER: RDS + MAG

Passive night vision means using a viewer that doesn't project lasers or illuminators for aiming or shot spotting. The advent of inexpensive IR cameras and night vision devices marked a new chapter of night fighting. At one time, soldiers only worried about near-peer forces matching their nighttime combat capabilities. But these days, anyone with a \$25 cell phone with the IR filter removed can see where an IR laser is coming from. Thus, we've seen many tactics shift toward the use of passive night vision devices. A RDS with a night vision mode is easier to view while wearing NODs than an LPVO, and the same maximum viewing angle limitations also apply. Further, it's rare to see an LPVO with a night vision setting, so using one risks serious bloom in your tubes, even at lower brightness settings.

PRECISION
WINNER: LPVO

The clear winner in this category is the LPVO simply because a wire or etched reticle can be made infinitely more complex than an LED-reflected or hologram-projected red-dot



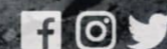
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LPVO VS. MAGNIFIER



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sight. Some companies like Eotech made some models with bullet drop compensating reticles built-in, but they're hard-coded for a narrow range of rifle and ammunition combinations ... and the aiming point looks like a big mess without the magnifier at 1x. Additionally, some people, especially with astigmatism, will see smearing or artifacts in an RDS' reticle, making them less precise than LPVO etchings. Many will find magnifiers help mitigate this.

Also, even if you don't have a Christmas Tree Tremor3 reticle, LPVOs usually have toolless windage and elevation adjustments allowing one to dial on the fly, if need be.

RANGING

WINNER: LPVO

The LPVO wins the ranging fight for the same reason it cleanly rules the precision category: the reticle design. Both MIL and MOA reticles can easily range objects of known sizes,

Modern magnifier mounts allow you to just pop them out of the way when not in use.

along with a little math, but ranging becomes much harder with a red dot. The Eotech and similar reticles have a bit of an edge here compared to a plain dot because the 65MOA circle in the reticle can be used as a rudimentary ranging device to calculate distance and holdovers, but it can't offer the precision that a dedicated LPVO ranging reticle is capable of.

SPEED

WINNER: DRAW

Both the LPVO and RDS + mag have positive

points in their favor regarding speed. The common knowledge is that at 1x a RDS has the edge, but 3-gun shooters have effectively demonstrated that with training there's no significant difference between the two in terms of shots on target unless you're in a situation where you cannot achieve a good cheekweld.



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LPVO VS. M

In terms of speed of changing magnification, engaging a modern magnifier in a flip mount, such as the Eotech G43 and G45, takes only a smack and a split second. Even with a cattail installed on an LPVO, the nature of gas-purged optics makes them slower to rotate and adjust.

MAGNIFICATION
WINNER: LPVO

LPVOs have the edge on the higher ends of magnification, though it's less significant for older 1-4x or newer 1-6x LPVOs. At 6x and under, you'll typically dial your magnification all the way up or all the way down, but at 8x and above, you may find yourself using mid-power levels; twist a bit for target identification and ranging and then back down, if desired or required.

COST
WINNER: RDS + MAG

The middle market of optics has come a long way in the last five years, but you still end up paying significantly more for a top-of-the-line LPVO when compared to a RDS and magnifier. And that cost cuts in even more ways. With an LPVO in addition to a mount for the optic itself, you have to eat all of that cost all at once in order to have something usable. A RDS can be purchased separately than a magnifier, and they both typically come with mounts. Provided they have the same height mounts, a given RDS or magnifier has cross-brand compatibility and either or both can be updated at your leisure.

PARALLAX
WINNER: RDS + MAG

Despite what marketing departments will tell you, there's no such thing as a parallax-free optic — it's just that with a RDS, parallax is usually too small to make much of a difference in many situations. Variable-power optics typically won't have a

parallax adjustment or a so-called "side focus" knob unless they're above 10x, because the effect exacerbates with magnification. As Alex Hartmann discusses on page 62, taller mounts on an LPVO can cause more shooter-induced parallax.

DURABILITY
WINNER: RDS + MAG

Even inexpensive red dots are increasingly durable. Hell, we set a Vortex Sparc II on fire in RECOIL Issue 19, and it still worked. The number of glass elements that need to be held in place in an LPVO makes it inherently less durable, but companies have made huge strides in recent years with new materials. Some have even been experimenting with things like synthetic polymer lenses and optic bodies made of exotic materials. As the U.S. military increasingly implements the use of LPVOs, it's inevitable they'll bridge the gap.

WEIGHT
WINNER: DRAW

While anything less than a COM-BLOC RDS will certainly weigh less than an LPVO, once you add on a magnifier and mount you begin to see diminishing returns. Every new generation of LPVO seems to weigh less than the last, but we haven't seen a generational reduction in weight in RDS magnifiers.

LOOSE ROUNDS

If we simply compare the number or wins for each category, you may get the impression we're bigger fans of the RDS + magnifier than the LPVO. But that's not the case; both are excellent tools when used properly. The LPVO allows for engagement at greater distances with greater precision, while the RDS is better for close range, funny angles, and NVG use. As manufacturing technology increases, gaps between these systems will continue to diminish — and that's a good thing. ■

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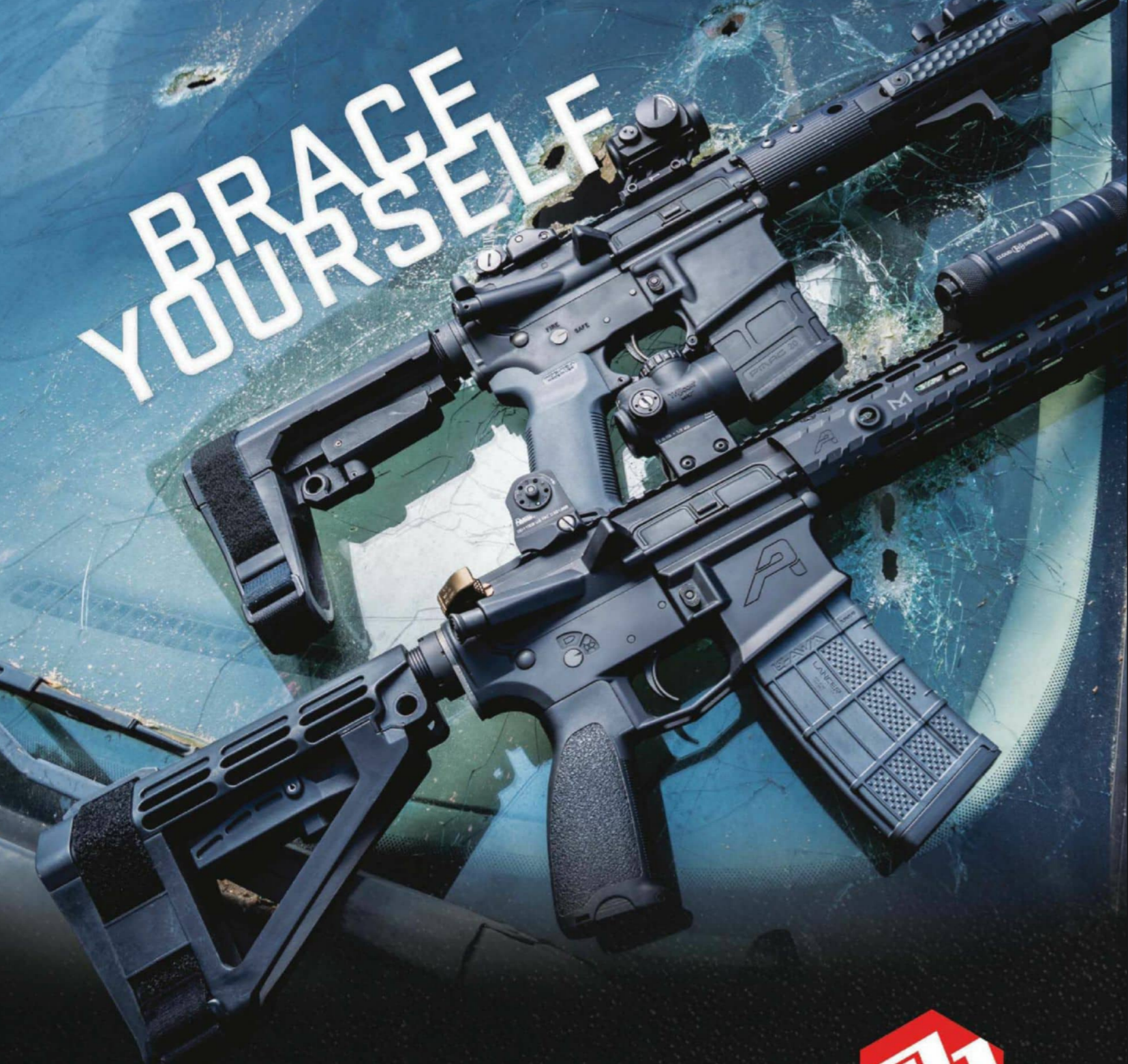
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FROM AMERICA WITH LOVE

Kalashnikov USA's KP-9 Vityaz

By Mike Searson

Until recently, American-built AK pattern firearms weren't economically viable. The extreme high end of the market was dominated by rifles that worked wonderfully, but priced out of the reach of most shooters — diametrically opposed to the low end, where spurious materials and methodologies were the order of the day and still priced higher than imported variants. It seemed like your average shooter and AK fan couldn't catch a break.

Fortunately, Kalashnikov USA has done quite a bit to change that business model by producing a quality firearm with the Kalashnikov name right here in America, and they're keeping the retail price at around \$1,000.

It probably doesn't hurt that they have all the right specs and all the proper tooling. You could say, "They know a guy."

Let's look at their KP-9, a 9mm AK that'll give any 9mm carbine a run for its money.

THE KP-9 IS BASED ON THE RUSSIAN VITYAZ-SN SUBMACHINE GUN, DEVELOPED FOR THE 1ST SPECIAL PURPOSE UNIT OF THE INTERNAL FORCES.

HISTORY

The KP-9 is based on the Russian Vityaz-SN submachine gun, developed for the 1st Special Purpose Unit of the Internal Forces "Vityaz" in 2004. This was a high-speed tactical unit in the Independent Operative Purpose Division of the Ministry of Internal Affairs for the Russian Federation. Vityaz, by the way, is Russian for "knight."

Vityaz wanted a close-range subgun for CQB. The forerunner to the Vityaz was the Bizon, which was chambered in 9x18 Makarov and used an unusual helical magazine that ran parallel to the barrel. Due to numerous reliability issues with that system, Iz mash designed the Vityaz-SN to work with a curved, double-feed magazine similar to those for firearms like the CZ Scorpion and HK MP5.

Although that unit was disbanded in 2008, the Vityaz-SN lives on in semi-automatic mode as the Kalashnikov USA KP-9. It has a 9.25-inch barrel and is a pound or two heavier than the Heckler & Koch MP5, but lacks the German styling.

SON OF THE SUKA

Kalashnikov USA tells us there are a lot of parts that interchange between the KP-9 and the AK-74U, and a casual glance will bear this out. One of these parts happened to be a Franklin Armory BFS III AK-C1 binary trigger.

Another part that was changed out was the factory flash suppressor. Anticipating the foreign 16x1RH of the original Vityaz or another unusual pattern, it was nice to find an all-American 1/2x28mm thread, concentric to the bore. This allows the shooter to mount any muzzle device of his or her choosing in a readily available pattern instead of prowling the web for thread adapters at 3 a.m.

One of the weak spots on the AK platform has always been mounting an optic. The side rail is usually the go-to mount, as the AK top cover doesn't make for the most secure solution. Steps in the past taken to address this oftentimes result in the loss of zero. Kalashnikov USA has addressed this on the KP-9 by going with a Picatinny rail-style mount with a hinge in the front that's pinned in place.

A Crimson Trace CTS-1000 red-dot sight was mounted on a mini riser and worked well. This compact sight has a 2-MOA dot with 10 brightness settings, and the mount allows complete co-witness of the existing iron sights.

Despite repeated field stripping and multiple occasions of opening



and closing the cover, there was no detectable loss in zero. Then again, a red-dot sight is much more forgiving than a magnified optic.

Perhaps the biggest surprise was that the KP-9 was a simple, blowback-operated system. The outward appearance suggests a gas block and a piston system of some type. When you realize that it's just a 9mm, it makes a lot of sense from a design and manufacturing perspective.

The KP-9 can be purchased either as a rifle or a pistol — so naturally we rolled with the shorty.

We used a brace, which is a great option for shooters who want to go the Form 1 route (see RECOIL Issue 44 for detailed instructions) with an SBR (short-barreled rifle) and a dedicated stock but want to enjoy shooting it until the tax stamp arrives. It's a whole lot easier to attach a real buttstock than to chop down a barrel. It's also

The KP-9 has a hinged top cover just like the Vityaz and AKSU-74.

handy for shooters who don't want to be bothered with the NFA process and remain legal.

The magazines are proprietary and made by Kalashnikov USA. There were internet rumors of the KP-9 being able to run Scorpion magazines, but no such luck. Factory 10- and 30-round magazines are available at \$46 a pop, and 50-round drums are also available for \$129. While the mags aren't AR-cheap, once you step outside the Glock/AR realm these mag prices are rather typical.

SHOOTING BINARY

In the past, we've tried numerous binary triggers from Franklin Armory but were a bit skeptical on the AK-type triggers, because there are so many differences between rifles and pistols based on that platform. The Franklin Armory BFS III AK-C1 will put your mind at ease if you run it in the KP-9.

First, there's very little to no recoil with the KP-9, and if you learn how to run the AK-C1 trigger properly, you can shoot it pretty fast. The trigger's

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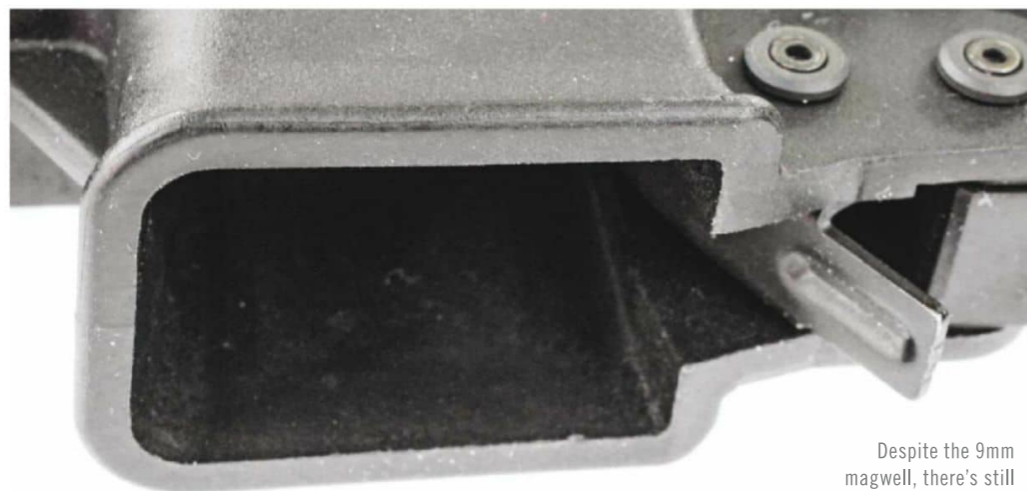
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Despite the 9mm magwell, there's still an AK-style paddle release.

safety has three settings: safe, semi, and binary. Binary is in the third position, and fires one shot with each pull of the trigger and a second shot when the trigger returns to the forward position.

That's not too practical in a tactical, life-or-death situation, but it's a whole lot of fun on the range.

ON THE RANGE

We would've liked to have had a more diverse assortment of ammunition for testing, but when there's supply chain issues due to panic buy-

ing, you have to use what you have on hand. That said, we had previously run several hundred rounds of Freedom Munitions Hush 165-grain subsonics through it while testing a Bowers K-9 Wardog suppressor without a hitch.

Using Federal 115-grain FMJ, we put the KP-9 through its paces in rapid fire as well as binary modes. Out of all the different firearms that we've tried with a binary trigger, we find those in 9mm the most satisfying. The low recoil of a 9mm from a firearm such as this and the shorter length of the round when compared to a true

rifle caliber allows the binary trigger to run slightly faster without the risk of outrunning the bolt.

The Crimson Trace sight sat high enough to allow use of the existing sights; after firing less than a mag with irons, it became clear that a red dot is the way to go with a setup like this. Some folks might like the fact that the KP-9 is ready to go "out of the box" (and it truly is), but it's worth the extra bucks for a quality red dot and mount. We averaged 1.5-inch groups at 75 yards.

Another thing to note was the ease of loading the KP-9 magazines. The rounds showed very little resistance to the magazine spring even when they were almost full.

At times, the brace had a bit too much flex in it. This particular pistol is a great candidate for an SBR conversion — it'd perform even better with a true stock.

While the binary trigger from Franklin Armory may not provide a true full-auto experience, it still packs a lot of fun into the whole package.

We may not have gone through a 7,000-round evaluation, but 800

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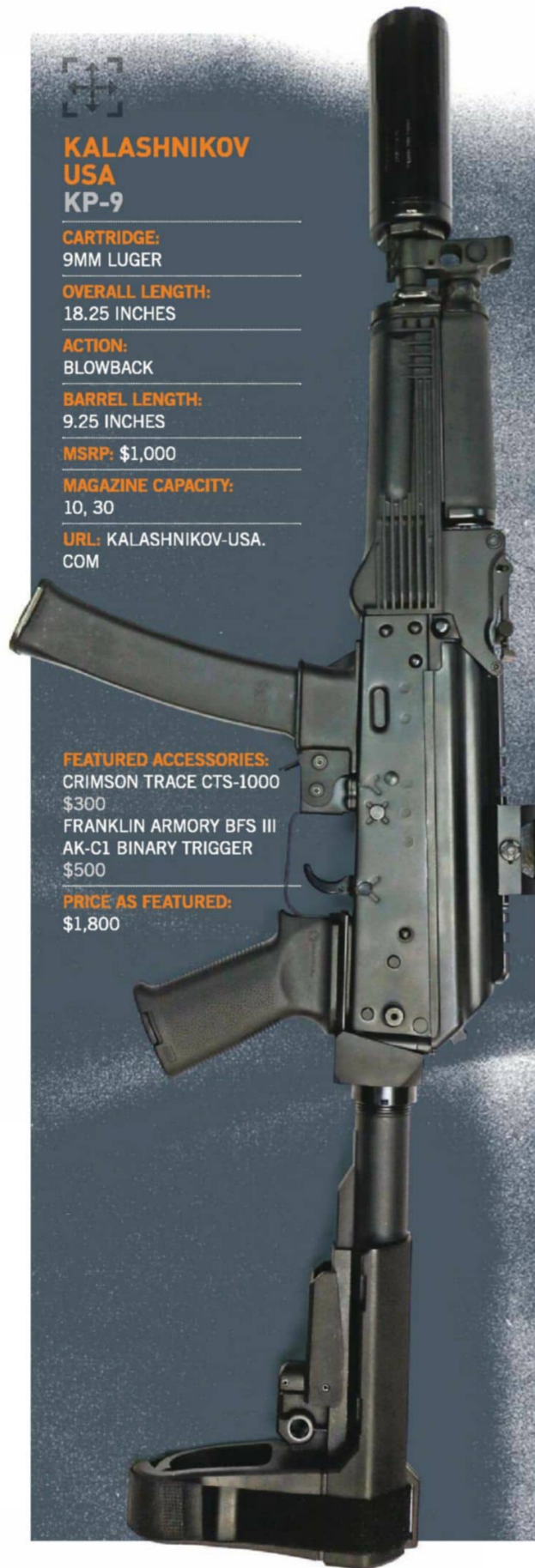
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**KALASHNIKOV
USA
KP-9**

- CARTRIDGE:**
9MM LUGER
- OVERALL LENGTH:**
18.25 INCHES
- ACTION:**
BLOWBACK
- BARREL LENGTH:**
9.25 INCHES
- MSRP:** \$1,000
- MAGAZINE CAPACITY:**
10, 30
- URL:** KALASHNIKOV-USA.COM

- FEATURED ACCESSORIES:**
- CRIMSON TRACE CTS-1000
\$300
 - FRANKLIN ARMORY BFS III
AK-C1 BINARY TRIGGER
\$500
 - PRICE AS FEATURED:**
\$1,800



FROM AMERICA WITH LOVE

rounds is a solid test. There wasn't a single malfunction — but would you even expect one with the name Kalashnikov on the side of the gun?

LOOSE ROUNDS

Some shooters have little practical use for a pistol-caliber carbine. However, that doesn't mean they're entirely useless. For indoor ranges or small range bays that don't allow full-sized rifle cartridges, the 9mm PCC is a great alternative. There are competitive shooting divisions dedicated to PCCs. For some shooters, it comes down to simply using cheaper ammunition or looking for less recoil than a rifle caliber.

It does have great potential as a personal defense weapon inside of 50 yards. That was really the nature of the KP-9's origin as the Vityaz-SN. From all of our research, this is as close to the original design as you can get.

The KP-9 fits the bill for all of these needs, especially for shooters entrenched in the AK family of firearms who want a similar manual of arms as their AK-47/74 type rifles. It's also one of the growing numbers of firearms laying waste to the myth that U.S.-produced AKs are inferior to their overseas counterparts.

Kalashnikov USA is definitely doing something right. ■



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THIS AIN'T YOUR

The Vudoo 22 Magnum Pulls
Out All the Stops

Story by Lynsey Davis
Photos by Rob Curtis and Lynsey Davis

PAWPAW'S 22 MAGNUM

Over the past several years, interest in rimfire shooting has soared, especially in the precision rifle world. With the evolution of the NRL22 series, and now with the Precision Rifle Series introducing its own precision rimfire series, the demand for top-tier rimfire rifles is growing. But not just in the competition world — the 22 Magnum was introduced by Winchester in 1959, and for many years, the 22 Magnum cartridge has remained a favorite of sportsmen. This cartridge is similar to the 22

ASIDE FROM BEING VERY QUIET AND HAVING NO RECOIL ... NOTHING ABOUT THIS RIFLE FEELS LIKE A RIMFIRE PLATFORM.

Until you see the magazine, you'd assume this was a full-size caliber.

LR, but has a longer case and more propellant, meaning it hits with more "oomph" than its little brother. This makes the cartridge perfect for hunting all sorts of small game, even coyotes, at shorter ranges. The 22 Magnum is even used by some for self- and home-defense, so it's a bit more versatile than you might think.

The Vudoo Gun Works V-22M is more than your typical 22 Magnum bolt-action rifle. Most 22s are on the cheaper end of the spectrum; rifles that were pulled out of the closet, loaded

with whatever ammo was laying around, and taken on a walk through the woods to shoot random sh*t. The Vudoo Gun Works rifles absolutely break that mold.

In 2018, at the Precision Rifle Expo at Arena Training Facility in Georgia, Vudoo rifles were on display for folks to get their grubbies on. Vudoo brought several rifles for expo goers to try out at various ranges out to 200 yards, setting up a little side competition where spectators could shoot at a KYL (Know Your Limits) target rack placed at 50 yards for the chance to win a Vudoo rifle. Not one to say no to a little friendly competition (or a free rifle), I gave it a shot and was blown away.

THIS AIN'T YOUR PAWPAW'S 22 MAGNUM



For those who don't know, a KYL rack is set up to be shot beginning with the largest target first and then moving on to the next gradually smaller target until you miss. One miss and you're out of the game, losing all previous points. In this case, the smallest target was .22 inch in diameter — the same size as the bullet we were shooting. That was the first indicator that the Vudoo isn't a typical .22; these rifles are leveled up so far that they might as well be in a class of their own. We had to take a closer look at this gun.

Nothing out of the ordinary so far as the breakdown.

ALL IN THE DETAILS

Vudoo paid attention to every detail of this rifle. The Gen 2 V-22M action

is smooth and effortless, but what's really interesting is the unique engineering and design. First, in order to make the action compatible with the 22 Magnum cartridge, Vudoo redesigned its side bolt release, a small but important change. Next, and maybe the most notable feature, is the way that the bolt locks into the receiver. It ensures concentric alignment between the shroud, bolt body, and bolt nose, including the new crescent firing pin tip in the design and achieving optimal performance from the bolt assembly. The receiver includes an anti-rotation feature, a simple device that maintains axial alignment of the bolt nose. So, as the bolt handle is lifted and rotated, there's no rotation in the bolt, maintaining the bolt nose's position as the bolt is opened and closed.

22 WMR isn't permitted in PRS, but it makes for a good trainer.

Most manufacturers rely on the use of lugs for this, but the V22M has no lug ways in its receiver forward of the locking abutments.

Another important role is played by the clever magazine design. The 10-round magazine has the outer form of an AICS mag, but the inside is adapted for the 22 Magnum cartridge. The mags are easy to take apart, easy to load, and feed every round. As a bonus, the AICS form factor is familiar to shooters and allows the mags to fit in standard soft-shell mag carriers, eliminating the need for a special pouch to tote a spare V22 mag.

The rifle features a Timney Hit trigger, which pairs with the V-22M action perfectly. The Timney trigger is single-stage with an adjustable pull weight of 8 ounces to 2 pounds. Set at around 1 pound, the trigger had a crisp break and zero creep.

The barrel is a 20-inch Vudoo Gun Works Ace barrel, with a unique twist rate. When Vudoo was designing the barrel, they did a lot of research and development, ultimately landing on a 12:1 twist rate. Mike Bush, the rifle's lead designer, said, "I've done a lot of



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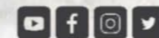


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THIS AIN'T YOUR PAWPAW'S 22 MAGNUM

testing and built a number of really fast twist rifles in 22 LR. After looking at the 22 LR results, I dug more deeply into the accuracy issues with 22 WMR and found that the typical 16:1 twist rate was part of the problem. So, I built rifles with faster twist rates until I eventually landed on the 12 twist. Accuracy improved considerably with the various ammo brands and bullet types.”

Spinning the bullet faster improves stabilization, leading to improved accuracy. As size goes, the barrel was just heavy enough to add a little stability but still light enough to tote around in the field and short enough to easily carry in a backpack or under the seat of a pickup truck. It's set in a Foundation Revelation stock. Voodoo took a “no shortcuts” approach to the design of this rifle, and it shows — both in the gun and the price tag. Our additions were a Harris bipod

and a Tangent Theta TT525P scope. This isn't your pawpaw's 22 Mag.

HOW DOES IT HANDLE?

Currently, no match-grade ammunition is available in 22 WMR or 17 HMR, but there's still a good selection of quality ammo out there. Here's what was available for us to test — 45-grain Hornady Critical Defense FTX, 40-grain Maxi-Mag HP, 30-grain CCI 22 VNT Polymer Tip, 30-grain CCI V-Max, and 40-grain Aguila Silver Eagle. After zeroing at 100 yards, we shot 5-round groups with each type of ammo and used the Ballistic-X app to map impacts. While the rifle clearly loved the V-Max bullets, with the exception of the heavier Critical Defense bullets, it shot all of the ammo well.

When shooting this rifle, you immediately notice how easily the bolt cycles



The Gen 2 V-22M action is smooth and effortless.

— it's very smooth. The same goes for the way the magazine feeds rounds into the chamber. 22 Magnum rifles have a reputation for being finicky about what type of ammo they'll cycle, but this rifle ate all the ammo we fed it, which can be attributed to the chamber design. The chamber is pure SAAMI (Sporting Arms and Ammunition Manufacturers' Institute, Inc.) spec, specifically designed to function with all of the different ammo on the market.

AMMO	BULLET WEIGHT	GROUP SIZE
Hornady Critical Defense FTX	45-grain	2.1-inch (2.01 MOA)
CCI Maxi-Mag HP	40-grain	1.15-inch (1.10 MOA)
CCI 22 VNT	30-grain	1.70-inch (1.63 MOA)
CCI V-Max	30-grain	0.67-inch (0.64 MOA)
Aguila Silver Eagle	40-grain	0.66-inch (0.63 MOA)
Hornady V-Max Varmint Express	30-grain	0.57-inch (0.54 MOA)



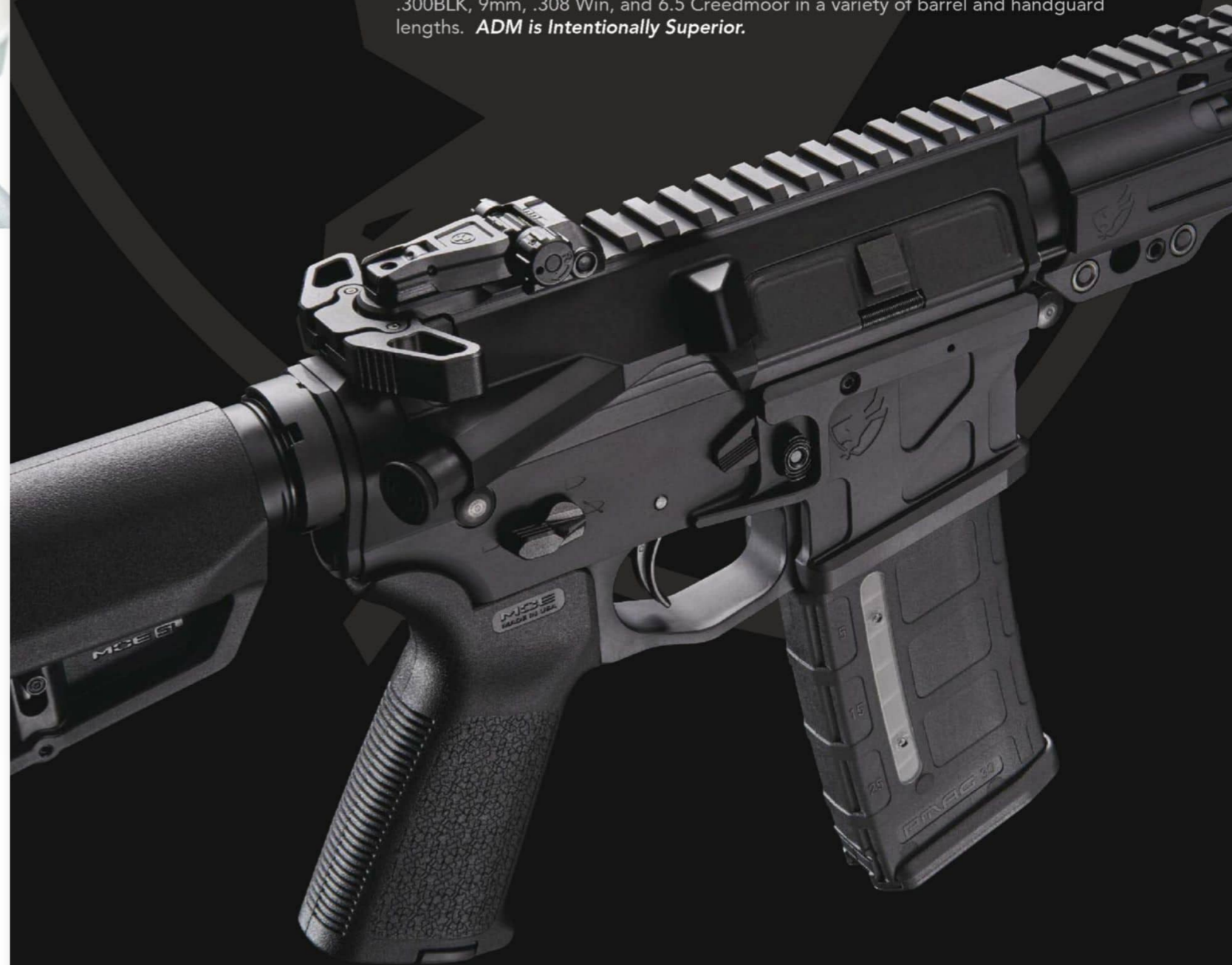
The barrel is a 20-inch Voodoo Gun Works Ace barrel, with a unique twist rate.



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AT THE RANGE

Though the 22 Magnum isn't currently permitted for use in precision rimfire competition, putting a rifle through the paces on a few props is a great way to test its performance and

balance. We set up a barricade, along with a 4-inch popper target at 50 yards and a 6-inch disc at 100 yards. Using different levels of the barricade for support, multiple impacts were made on both targets. Next, using a 55-gallon drum flipped onto its side and a rusty tractor wheel that had no

The V-22M looks and handles as well as a high-end, custom-built, centerfire rifle.

doubt seen better days, the same targets were engaged again. Time after time, the sweet sound of ringing steel confirmed successful hits.

Time to stretch it out a bit. We placed an 8-inch disc at 200 yards and dropped into prone. Using a Wiebad Mini Fortune Cookie bag for rear support, the rifle found its mark and continued to find it over and over again. My 7-year-old son even got a first-round impact on the 8-inch disc at 200 yards.

LOOSE ROUNDS

Without a doubt, this rifle would make a killer choice as a varmint hunting stick (pun intended). It proved over and over again that it could successfully make shots on targets the size of small game and varmints like squirrels, groundhogs, prairie dogs, or rabbits. With the proper ammunition, it certainly has the power to take down larger varmints such as coyotes within the appropriate range.

Bush at Vudoo Gun Works spoke to us about this rifle, saying, "My favorite feature about this platform, in both the 22 Long Rifle and the 22 Magnum, is

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The V-22M features a Timney Hit trigger.



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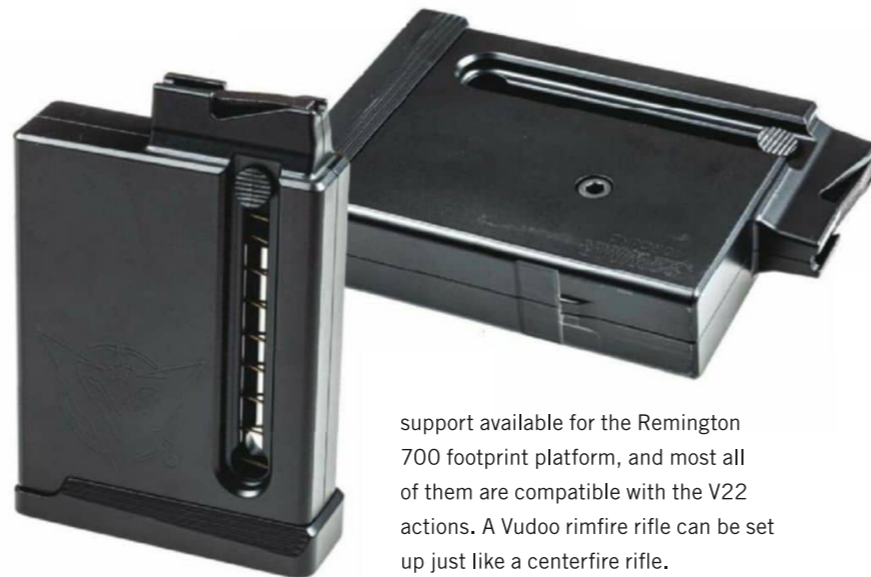
- CARTRIDGE:**
.22 MAGNUM
- BARREL LENGTH:**
20 INCHES
- OVERALL LENGTH:**
40 INCHES
- WEIGHT (UNLOADED):**
11.6 POUNDS
- MAGAZINE CAPACITY:**
5, 10
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\$90

PRICE AS CONFIGURED:
\$8,645

THIS AIN'T YOUR PAWPAW'S 22 MAGNUM



that it's a true-to-scale rimfire rifle, meaning that it's the same physical size and weight of a comparable centerfire rifle. And because it is the same footprint as a Remington 700, it will drop into any stock or chassis that will accept that platform."

He's right — there's such a wide variety of components and aftermarket

support available for the Remington 700 footprint platform, and most all of them are compatible with the V22 actions. A Vudoo rimfire rifle can be set up just like a centerfire rifle.

After spending some time with this rifle, we have to agree with Bush. Aside from being very quiet and having no recoil, of course, nothing about this rifle feels like a rimfire platform. It looks and handles as well as a high-end, custom-built, centerfire rifle. Look beneath its obvious aesthetic qualities, and you'll find a truly capable work of engineering art. You'll find 22 Magnum magic. ■



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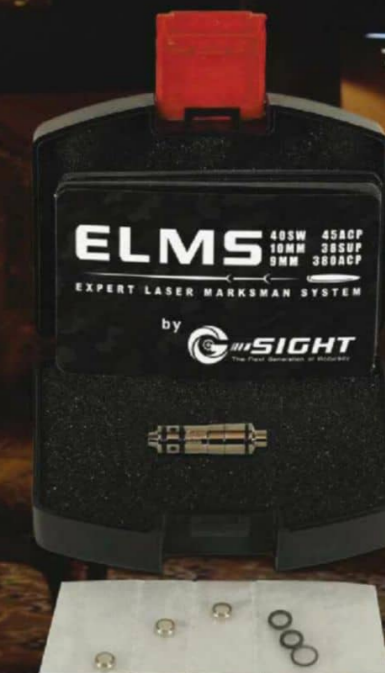
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PIG-POPPING PISTOL

Long Range in a Small Package with the Lantac 6ARC By Dave Merrill

The folks at LANTAC first caught rumor of an exciting new round in development for the AR-15 back in 2018. They were part of a military research project looking for both a new rifle and corresponding intermediate caliber. In January of 2019, they were among a small, select group of companies handpicked to further develop the 6ARC and the rifle to go with it. Hornady, PROOF, and E-Lander were

also a large part of this project.

Once they had their base design with Hornady supplying the ammunition, Lantac decided to invest a lot of research and development on the capabilities of shorter barrels with 6ARC. Because some companies actually do the R&D, Lantac started with an 18-inch barrel with an extremely short gas system, then cut off an inch at a time while tracking ballistic results and capabili-

ties. Once they hit the 15-inch mark, they began chopping off a half inch at a time. In particular, we were told that 14.5 inches was phenomenal in terms of increased range compared to its 5.56 brethren.

But they didn't stop there. Everyone involved was surprised at the capabilities of the 11.5-inch barrel for its size, so they settled on that for a shorty. Thus, the impetus of this article: what we dub the Lantac 6ARC Pig/People Popper.



1:1
ACTUAL SIZE

300BLK, 5.56, 6ARC, and 7.62N compared.

DESIGN

We should first note that we're using a preproduction prototype for this review. Some details may change prior to full production, and we'll note anticipated changes along the way. For the roots of this stubby 6ARC, Lantac started with their LA-SF15 UTP LAW Pistol and made modifications from there. You get the same receivers, SPADA-ML M-LOK handguard, LAW folder, and ambi controls; you just get a bit more to top it all off.

Our version came bundled with the single-stage, 3.5-pound E-CT1 trigger. This co-branded Timney cassette-type

Lantac never really used a "standard" BCG.



PIG-POPPING PISTOL

trigger delivers a crisp and light break, especially when using the bottom of the bow.

An 11.5-inch 1:7.5 twist PROOF barrel is the heart of this rifle. Even with this diminutive barrel length, Lantac forged the traditional carbine-length gas system and went with a mid-length system for a smooth impulse. This is especially impressive when you consider a mid-length gas system can be finicky to dial in even on a 14.5-inch gun, but Lantac consistently uses longer gas system lengths than tradition dictates.

Aside from the caliber itself, the most innovative component here is Lantac's enhanced bolt carrier.

Lantac has never really made a "standard" bolt carrier group; they've always incorporated at least some **big upgrades from Stoner's original**

design. The heavier Lantac E-BCG for the 6ARC is the most advanced that they've produced to date. Starting with a billet of 8629 steel, the carrier is machined then coated with nickel boron via the diamond NiB polish process for an extremely slick and slippery result. The bolt is Carpenter 158 and magnetically particle inspected, like we'd expect from any quality manufacturer. As with all other Lantac carriers, the 6ARC E-BCG features their domed head cam pin, designed to reduce wear both within the receiver itself as well as the cam-pin track in the carrier itself.

In order to keep gas out of your face, especially when shooting suppressed, Lantac added some additional gas vent holes, some cut at an angle to blow gas forward during cycling. These also aid

in keeping the bolt in battery slightly longer, simulating a longer dwell time and allowing for smoother cycling. All said and done, Lantac says their estimated bolt life is three times longer than the current standard-issue bolt.

BALLISTICS

We can't pretend we haven't seen intermediate calibers in AR-15s

The base is a Lantac LA-SF15 UTP LAW.



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PIG-POPPING PISTOL

before, like the 6.8SPC, 6.8SPC II, 6.5 Grendel, and more. So, it wasn't a surprise to learn that the parent case of the 6ARC stems from the 6.5 Grendel, which itself is kind of an incestuous mash-up of .220 Russian and 7.62x39. None of those rounds really caught on outside of niche groups and hog hunters, but the backing of several successful companies plus real-world use in the Department of Defense gives us confidence to say this one may break away from the wildcat-cranny into the wider world of shooting.

6ARC is initially available in 103-, 105-, and 108-grain loads. Undoubtedly, more will be released as popularity increases in both the public and private sectors.

The most effective demonstration of the ballistic capability of the 6ARC is to directly compare the Lantac 11.5 with 108-grain ELD match to the Knight's Armament 20-inch barreled M110 7.62x51mm sniper rifle shooting 175-grain SMK. The charts speak for themselves:

Impressively, these two vastly different rifles diverge by no more than about 0.7 mil — and that's at 1,000 yards. You'll also note that when shooting the full kilo, 6ARC has more velocity than 7.62x51mm.

WEIRDNESS

Magazines may be an issue and are undoubtedly the main issue you'll hear with initial reviews. While 6.5 Grendel AR magazines could ostensibly be used, we received a pair of dedicated 6ARC Israeli E-Lander magazines. While they're about the size of a 20-round 5.56 magazine, each one holds 17 rounds of 6ARC. Similarly,

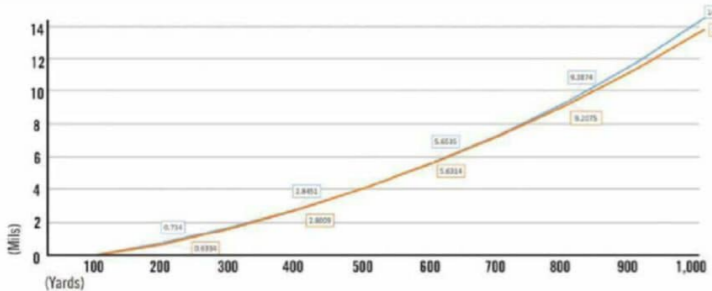


The angled gas ports on the E-BCG push gas away from the shooter.

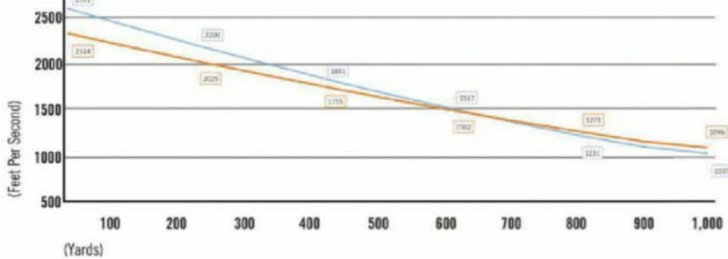


The charts speak for themselves.

COME UPS - MRAD



VELOCITY (FPS)



M110 SASS (20-inch), 175gr SMK Lantac 6ARC (11.5-inch), 108gr ELD-M



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PIG-POPPING PISTOL



what appears to be a 30-rounder only holds 24. A cursory examination gives the impression that the 6ARC magazine is no more than a 6.5 Grendel mag with new markings. Time will tell if further refinements will be needed, similar to Magpul tailoring PMags for 300BLK even though that round feeds well from standard 5.56mm magazines, for the most part.

All 6mm rounds suffer from velocity increases during barrel break-in; the 6ARC is no different. All told, you'll have to chew through around 150 rounds before these velocity increases level off, which is why we're reviewing an already-fouled preproduction barrel. Precision rifle competitor Ryan Hey from MagnetoSpeed explained this phenomenon:

"...a bullet speeds up due to the

lands on the rifling being smoothed out as bullets pass over their surface. This increased bearing surface of the bullet increases pressure, thus the increase in velocity. Copper also fills in the microscopic divots in the metal, but the lands being smoothed out has a greater effect."

Therefore, you should closely track your first few hundred rounds with a new barrel with the aid of a chronograph to determine your ultimate velocities.

OUTFITTING

An easy choice for an optic, even though this is a short barrel, was the Vortex 1-10x FFP. While some would call that overkill for an 11.5-inch rifle, the 6ARC is very capable of long-range accuracy, and we're no strangers to LPVOs on SBRs. For a white

The LAW Folder allows for an extremely portable package.

light, we fitted the SureFire Scout Pro M640 and SR-07 switch with an Arcane Concerted ARCband for wire management. The M640 features an articulating mount and can be directly attached either to Picatinny or M-LOK handguards. The forward controls are an Arisaka finger stop used in conjunction with a Unity Tactical VFG (converted to M-LOK from KeyMod).

Since we decided on an LPVO for an optic, we ditched the pistol lower and went with a previously registered SBR lower. All of Lantac's components were successfully transferred to this

DISPATCHING 5.7 DBX



DIAMONDBACK
FIREARMS



LANTAC USA
LA-SF15 UTP LAW
6ARC

CARTRIDGE:
6MM ARC

BARREL LENGTH:
11.5 INCHES

OVERALL LENGTH:
21.5 INCHES (FOLDED),
28 INCHES (OPEN)

WEIGHT (UNLOADED):
6.4 POUNDS

MAGAZINE CAPACITY:
17, 24

MSRP:
\$1,855

URL:
LANTAC-USA.COM

ACCESSORIES:
SUREFIRE M640 AND SR07:
\$411

VORTEX 1-10X FFP:
\$2,900

ARISAKA FINGER
STOP:
\$28

UNITY
TACTICAL
VFG:
\$28

MAGPUL PRO BUIS:
\$190

B5 SOPMOD STOCK:
\$95

ARCBAND:
\$6

**PRICE AS
CONFIGURED:**
\$5,513



lower. We tossed the LAW Tactical folder on it but replaced the brace with a B5 Systems SOPMOD stock.

While the Lantac comes equipped with a regular .30-caliber Dragon muzzle brake, we swapped it for a Dear Air and KeyMo compatible Lantac muzzle device. Any Dead Air rifle can drop right on, as will any suppressor with a universal HUB 1.375x24 rear-end combined with a KeyMo adapter. Any silencer with 1.375 HUB mount gives you dozens of device options right from the gate.

We added a pair of Magpul MBUS Pro BUIS, because even in 2020 we still need BUIS to avoid ridicule on the internet.

Once we got our sights, optics, and controls sorted out, it was time for the range.

AT THE RANGE

Sometimes a particular combination of ammo, muzzle device, and silencer gave us good results, and other times the opposite; at first, we thought we

**THIS ISN'T A
PRECISION RIFLE
CAPABLE OF A
COMBAT ROLE.
THIS IS A COMBAT
RIFLE CAPABLE OF
PRECISION.**

were dealing with strange barrel harmonics. Ultimately, we found it to be a heat issue. From a cold bore, we'd get sub-MOA groups (just under 0.9 MOA), which would open up to nearly twice that once the barrel was heated over the course of two magazines.

Keep in mind that this is a pre-production barrel, and the variation may not be as drastic with production models.

PIG-POPPING PISTOL

Also remember this gun isn't intended for PRS competitions but to replace 5.56mm — even our largest groups were smaller than standard M855/A1.

We tried out several silencers, settling on the Dead Air Sandman-S with a 7.62 flash hider endcap. Not only did it consistently group well, the shift when attaching the silencer was exactly 1 mil low, making for incredibly easy adjustments when popping small targets at range.

We found it simple to engage MOA targets out to 800 yards. After it goes transonic, projectile flight becomes erratic. Still, we got hits on a 12x12-inch plate at 1,000 yards, with the main limiting factor being the center aiming point of the Vortex 1-10x reticle obscuring a target of that size.

This isn't a precision rifle capable of a combat role. This is a combat rifle capable of precision.

LOOSE ROUNDS

If the 6ARC doesn't put the NATO 5.56 on life support, it won't be because the 5.56mm is better, but because Hornady simply doesn't currently have the machines to produce 6ARC in quantity — all the machines are running 5.56 and 9mm around the clock to keep up with the never-

ending pandemic and pre-presidential panic. In every measure of capability, sans magazine capacity (which is being addressed as we type these words), the 6ARC totally beats the pants off of everything available that fits within the confines of a standard AR-15 footprint. 900 yards before transonic with a short barrel? 5.56 eat your damned heart out. ■

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RANGE BAG ESSENTIALS

All the Things We Can't Live Without By RECOIL Staff

The bare bones of what you need to go shooting consists of a firearm and ammunition, but in reality, we know you need more than that. If you've been shooting for even a little while, you'll come across items

that you know you can't leave home without. What you see in the following pages are what RECOIL staffers try not to leave home without when we're hitting the range. After much discussion and argument about who'd cover what, we've boiled down our personal

essentials and provided explanations of why we like them.

This list is by no means all inclusive, but it'll give you a great place to start when you're putting your own range bag together or adding items to an existing one.



Iain Harrison

01 PACT CLUB TIMER

MSRP: \$130

URL: pact.com

Like the credit card ads of old, never leave home without it. What gets measured, gets improved, and one of the surest ways of measuring your performance is with a shot timer, be it a big, honking brick like the PACT versions, a small, but cheap-feeling CED, or an app on your phone. Besides, how are you going to bust your training partner's balls if you can't show them, by the numbers, just how much they suck?

02 MS CLEAN KIT NATO

MSRP: \$45

URL: mscleankits.com

Stuck cases and squibs happen, and being able to clear them with a cleaning rod means your range session didn't just wind up in the toilet. If you've ever attempted the same maneuver with a pull-through-type cleaning kit, then you'll know what your better half was thinking that night you tried to get frisky after a day-drinking session with the boys. Fits in mag pouches and has all the tools you need to de-gunkify your gats, as well as providing a crush-proof place to store small parts and lubricant.

03 BLUE FORCE GEAR MICRO TRAUMA KIT NOW!

MSRP: \$130

URL: blueforcegear.com

Because if you have the ability to put holes in things, you should also have the wherewithal to treat them. The BFG trauma kit has just enough in the way of first aid supplies to mitigate the effects of a GSW until help shows up, and stows out of the way on your belt or pack by way of MOLLE or PALS attachment loops.



Dave Merrill

01 MAGLULA STRIPLULA / LULA

MSRP: \$27

URL: maglula.com

MagLULA has been making assorted loader/unloaders for years, and I always keep a couple different models in my range bag. I haven't always seen the utility of a loader, but after spending a long day on the range expending 1K rounds of ammunition during testing, my thumbs were toast for about a week. In particular, I like the StripLULA because I tend to use 5.56 that comes on strippers. The issued charger is cumbersome and a pain to use, whereas the StripLULA will charge a mag in seconds. Traditional LULAs are excellent for loose ammunition and really save your hands over time.

02 D-LEAD D-WIPES

MSRP: \$9

URL: esca-tech.com

As shooters, we should always do our best to reduce our lead exposure whenever possible, and it's especially important for those among us with children. Per the CDC, simply washing your hands isn't enough to do the job, but thankfully we have some good options. I prefer D-Lead simply because it's available for purchase at my local gun store, but there are other brands such as SKC and Hygenall. At home, I keep a liquid bottle of D-Lead, and in my range bag, I keep single-use wipes, which are convenient if I'm someplace without easy access to running water. No one wants to be the paint chip kid.

03 HOT GLOVE CHINAMART

MSRP: \$12

URL: walmart.com

It's no surprise to anyone that silencers can get stupid hot. While normally I'll wait until they cool down enough to handle, it isn't always convenient or possible. This Walmart hot glove isn't going to work miracles, but it allows for intermittent contact with a silencer to work a locking mechanism or crank off without burning the hell out of your hands. At just under \$12 a pair, it's easy to have one in multiple bags or do what I did and give the spare to a friend.

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- 2 X 5 ROUND CAPACITY MAGAZINES • RAPID FIELD STRIP • AMBI CONTROLS • PICATINNY RAIL •



43

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Tom Marshall

01 FIX-IT STICKS THE WORKS

MSRP: \$220

URL: fixitsticks.com

If you don't have a set of Fix-It Sticks in your range bag, you're missing out. Available in a variety of configurations, the essential concept of the Fix-It Sticks kit is a small zippered pouch with a driver handle and a series of bits in different sizes and configurations, as well as some specialty tools like castle nut wrench, pin punch, brass cleaning rods, and rear sight drift tool. These have been a lifesaver on multiple range trips when it comes to zeroing optics, retightening accessories or mounts that shot loose, or fine-tuning the retention on new Kydex holsters. In a couple of instances, I've even used the pin punch to replace Glock or AR triggers in the field.

02 CELOX CLOTting POWDER

MSRP: \$20

URL: celoxmedical.com

In addition to trauma medical supplies, I carry several small packets of powdered clotting agent for range mishaps that may be messy without requiring tactical casualty care. This addition to my range bag arose from a specific incident where a shooting buddy got scope bite while shooting a bolt-action .50 BMG rifle. Immediately after breaking the shot, the rifle, shooting mat, and my friend's face were covered in blood from a crescent-shaped punch into his eyebrow. After staunching the blood flow with a wad of tissues and paper towels, I realized that intermediate wound care should be a part of range-day essentials.

03 BOSTITCH TAPE MEASURE

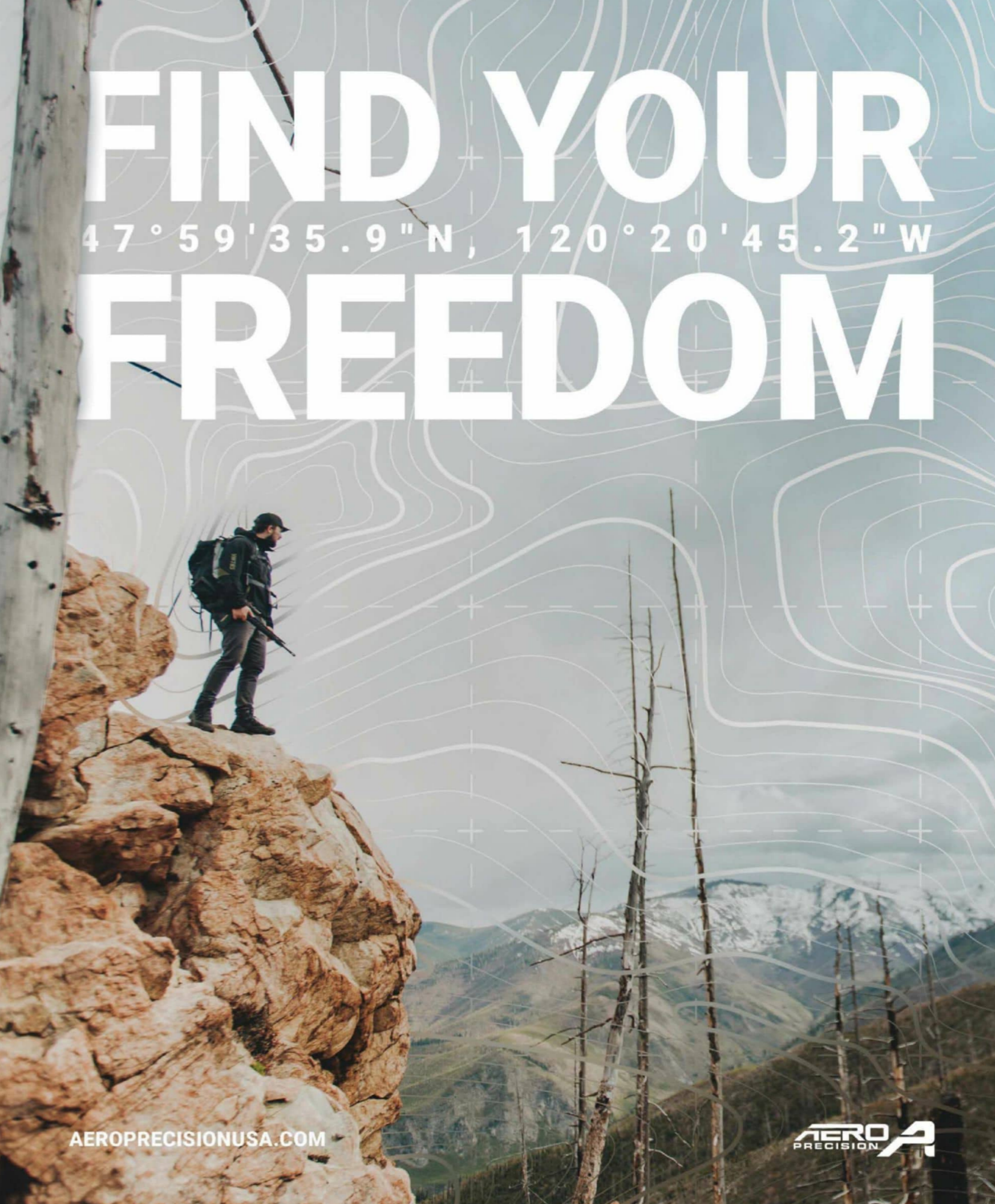
MSRP: \$20

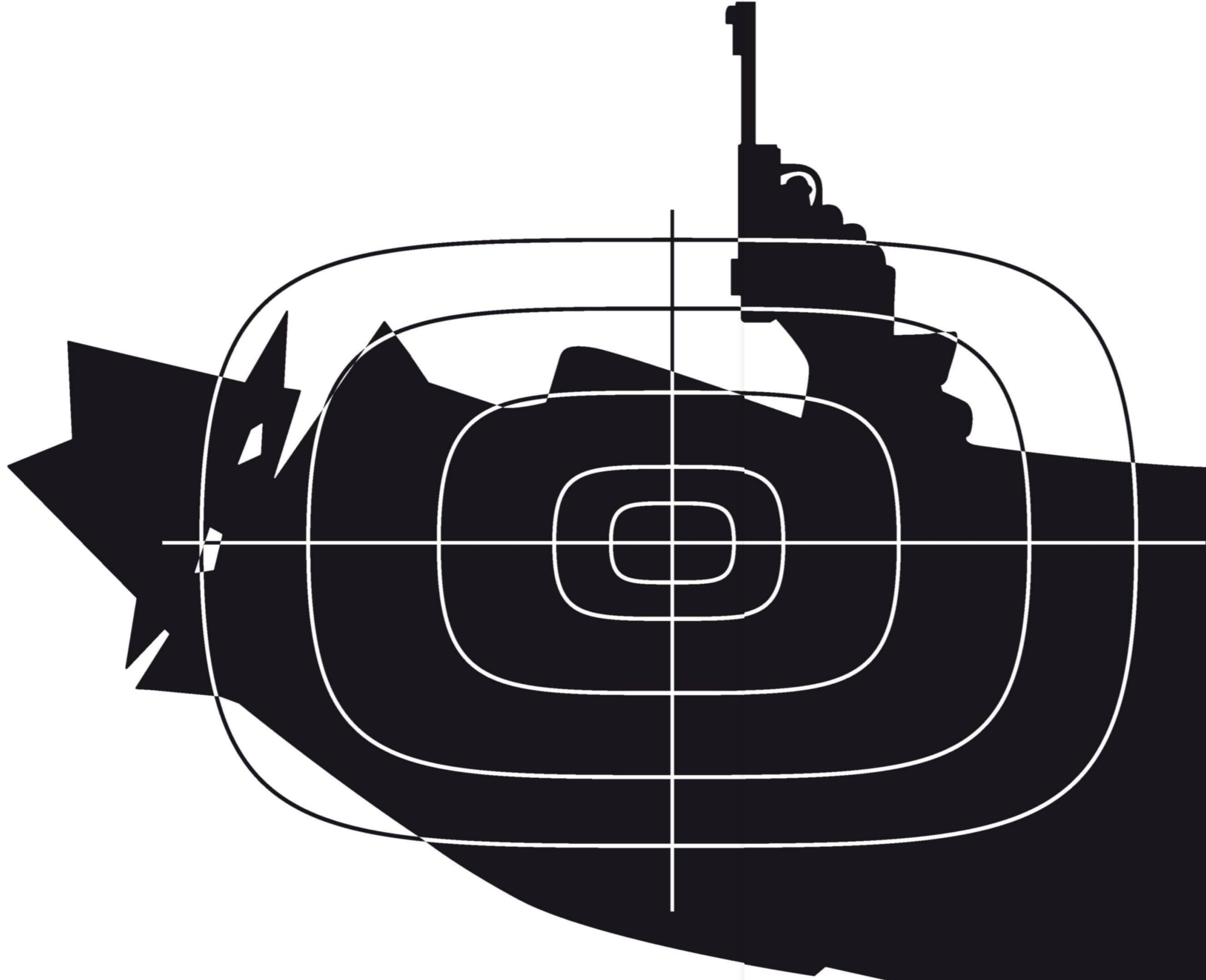
URL: bostitch.com

I lumped these items in together, because they serve the same purpose: data confirmation. The tape measure for lining out distances for drills or test-shoots, and the ruler for measuring groups on paper. I specifically use a see-through plastic ruler so I can place it directly over my groups and still properly read measurements. The tape measure usually logs distance to target (for pistol and close-in drills, longer distances require a range finder) or the distance between targets if shooting a multi-target drill like El Presidente.

FIND YOUR FREEDOM

47° 59' 35.9" N, 120° 20' 45.2" W





RECOIL

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Forrest Cooper

01 SHARPIE CHISEL TIP

MSRP: \$6 (4-pack)

URL: sharpie.com

What gets measured, gets managed. Keeping a set of large chisel-tip Sharpie markers in the range bag accomplishes multiple tasks for any range day. Paper and cardboard targets work double duty as score cards or can store DOPE for longer range practice. By writing score times on the face of a target after a drill, I can snap pictures to keep track of progress over a season. The wider body of the heavy-duty Sharpies fit neatly in the webbing of a shooting belt, and the chisel tip is perfect for marking the most common rounds.

02 ATHLETIC CONES DISC

MSRP: \$5 to 10

URL: walmart.com

Modern shooting has gotten more mobile and more athletic with new variations and takes on competition and training arriving year after year. A small investment that has paid off dividends is bringing along a small stack of cones to any outdoor range. Like many sports, footwork is key, and keeping it sharp isn't something to be left to chance or guesswork. By marking distinct shooting positions and movement patterns, a flat range can quickly become a dynamic training ground.

03 CHECKLIST DIY

MSRP: \$0

URL: n/a

A small token taken from the military, where the tools are revered as life-saving as well as mission critical, is keeping a checklist in the main range box. Similarly, when the time between first and tenth place in a 3-gun or pistol match is often measured in mere seconds, a single forgotten item can make a large investment go sour. To mitigate this, a personalized spreadsheet, printed with space for notes on when optic batteries were replaced, mags thoroughly cleaned, or what spare parts are available, goes a long way to make for a better range day — peace of mind.

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01



03



02

Rob Curtis

01 LABRADAR LABRADAR

MSRP: \$560

URL: mylabradar.com

The only way to judge a rifle's accuracy is to remove variables, and bullet velocity is one of the key parameters that affect where a bullet goes. An accurate rifle shooting ammo that's loaded inconsistently will produce crap groups. And the way we tell if it's the ammo or the gun is by measuring the speed of every shot. I used to use an old-school chrono, but those were a pain in the ass to set up and were occasionally retired by an accidental gunshot. The LabRadar sets up instantly and is supremely accurate. The orange box lives in my range bag, but I still keep my trusty MagnetoSpeed around because as much as I love it, the LabRadar is finicky on crowded ranges, in tall grass, and with rimfire ammunition.

02 OTTO NOIZEBARRIER

MSRP: \$399

URL: otto-comm.com

You can't put a price on hearing, but if I could, it'd be at least \$399. I've had the opportunity to use all kinds of earpro, from high-end over-the-ear setups to feature-rich, Bluetooth-connected jobs, and none match the ease of use, comfort, and performance of my OTTO NoizeBarriers. On regular range days, its regular mode cancels gunshots without producing the conversation-killing cutouts I get from other kinds of electronic earpro. The second, high-sensitivity setting is great during hunts, amplifying rustling foliage from hundreds of yards away. Best of all, I don't need to keep a stock of hearing aid batteries since the NoizeBarriers recharge by dropping into their own USB rechargeable case.

03 DEWALT CARBON FIBER COMPOSITE STAPLE GUN

MSRP: \$48

URL: dewalt.com

Every time I reach into my range box my Dewalt carbon-fiber stapler brings a little smile. It was a Home Depot impulse buy several years ago, and one that I've yet to regret. For a long time, I used one of those heavy, metal Arrow construction staplers. You know, the kind that barely fits in a pocket and only runs out of staples when you've left the box of refills on the shooting bench. The Dewalt is super light, has a belt clip, and best of all, a fuel gauge. All of this makes it totally worth the \$30 street price.

PROFESSIONAL

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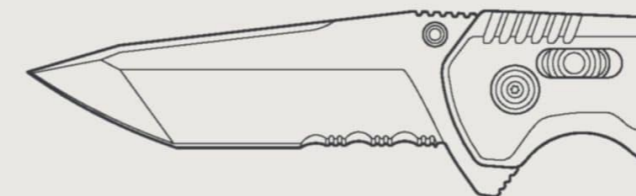


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Steven Kuo



01 KESTREL 5700 ELITE

MSRP: \$699

URL: kestrelinstruments.com

Kestrel's weather meters are such the industry standard that it's like referring to tissue paper as Kleenex. They measure key environmental factors such as temperature, wind, humidity, pressure, altitude, and compass heading. Wind is measured via a built-in impeller. The 5700 Elite combines Kestrel's rock-solid weather sensor with an integrated ballistic calculator and optional wireless connectivity. The Elite model includes Applied Ballistics' solver and custom curves. It can connect via Bluetooth to smartphones and other compatible devices, such as laser rangefinders.

02 SIG SAUER KILO2400ABS

MSRP: \$1,690

URL: sigsauer.com

Whether you're shooting steel or prey, once ranges start to stretch out, you need to know how far they are from you. Laser rangefinders measure the time it takes for light to travel to and from your target. SIG's KILO2400ABS is among the best we've tested, combining a quick, accurate, and reliable rangefinder with an integrated ballistic calculator and environmental sensors. Configure your settings with a companion app, and ballistic solutions powered by Applied Ballistics are displayed right in the viewfinder. It's surprisingly compact, rugged, and comes with a wind meter that plugs into your smartphone, assuming you have a headphone jack.

03 HOPPE'S BORE SNAKE

MSRP: \$9

URL: hoppes.com

Hoppe's has been around for over a century, with a whole generation of shooters addicted to the unmistakable scent of their solvents. Their compact and versatile BoreSnakes are indispensable, having been a permanent fixture in my range bag for decades. With a brass weight to drop through your barrel, embedded bore brush to scrub out deposits, and long tail to clean out the rest, it's a cinch to use in the field — or at home, when you don't feel like busting out all your cleaning gear. Available in various sizes for pistols, rifles, and shotguns.

BLUE COLLAR BUILDS

By Iain Harrison, Patrick McCarthy, and Nick Saiti
Photos by the authors and Kenda Lenseigne

Three Takes on Everyone's Favorite Rifle

America's rifle, the Barbie of firearms, LEGO for grown-ups. Cliches exist for a reason and have a nugget of truth at their core, so we decided to challenge some of our writers to come up with a carbine build that wouldn't break the bank, yet still cover

as many bases as possible. Oh, and to test the results, we'd take it to a local match where they'd compete head to head. In the Arizona desert. In August. Pretty easy conditions, then ...

In order to both level the playing field and keep things as flexible as possible, our

contributors were tasked with building a 16-inch-barrelled carbine with a 1x optic. Other than those basic criteria, the rest was up to their imagination, with a caveat that the final result would have to be within the budget of someone who actually works for a living and has a family, mortgage, and truck payment — trust-fund builds need not apply. With those ground rules established, let's take a look at what they came up with, the reasons for their selections, and how things shook out in the match.



IAIN HARRISON

Being strapped for time as well as cash, I decided that shopping around for components wasn't going to be a big feature of this project, so I wanted to go to one website, click through the offerings on display and unpack a single box when everything arrived at the same time. There are a few big vendors where this is a possibility — Brownells and Midway are just two that usually spring to mind, but there's a third company that's been making strides in the black rifle marketplace recently.

Primary Arms has a reputation for supplying quality, low-cost optics for builds such as these, but they're also a good place to hit for everything else on a build sheet. I wheeled my virtual shopping cart down the electronic aisles on a freedom-driven supermarket sweep.

While your CPA might not be aware of this, one of the benefits of building from scratch is a tax break. Every firearm that leaves the manufacturer is subject to an 11% Federal Excise Tax, which is earmarked for wildlife conservation. Although this is one of the few examples of the Fed funneling tax dollars to places where it gets used for the benefit of all Americans, I'm of the opinion that Washington helps itself to enough of my money, and the couple of grand I spend on hunting licenses and tags every year is sufficient to offset any funds they might get from this build. By purchasing a stripped receiver, you pay FET on that component alone, as that's what the government deems is the actual firearm. You also save money by assembling the carbine yourself, rather than paying someone else to do it for you; more of your hard-earned dollars can go into parts, rather than shareholder dividends.

There's an additional benefit of knowing exactly what went into your build, that the torque specs are correct, that staking has been done, and that fasteners have been Loctited. All of which should translate into greater confidence in your rifle, and the knowledge that should anything go wrong, you have the skills to diagnose and fix it.

Every build starts with a receiver, and this one was made for PA by Mega, who have built a sterling reputation for quality — so much so that they're a manufacturer for several big gun companies. With confidence that it would be in spec, a lower parts kit was added, along with a SB Tactical SB3 brace. We wanted the maximum flexibility when it came to upper receiver configurations, so building a virgin lower into a pistol was the way to go.

In a world of gritty GI triggers with astronomical pull weights, it's hard being a trigger

snob. Fortunately, Geisselle rode to the rescue with one of their excellent SSA triggers, which resulted in a crisp, two-stage, 4.5-pound break and short reset. It's not a gamer trigger by any means, but offers a good balance between precision and speed — perfect for our intended use.

With the lower assembled, it was time to turn attention to the upper, or rather, uppers. With the goal of maximum flexibility in mind, and with the money saved from building from a virgin receiver burning a hole in my pocket, I figured that was enough justification for building a shorty to complement the 16-inch-barreled carbine we'd agreed on. Besides, I'm the boss, and rank has its privileges.

The days of plastic handguards and triangular front sight towers are past, old man. Free-floating the ARs barrel pays dividends in terms of accuracy and consistency, especially when working off of barricades and using a sling, so it was a no-brainer to go with aluminum rail systems. Primary Arms supplied two of their own, a 10-inch and a 15-inch for the 10.3- and 16-inch barrels, respectively. Speaking of barrels, those, like the handguards, bore markings from Expo Arms, which is PA's house brand. Whoever actually made them did a good job, as the specs were what we like to see in general purpose, 16-inch barrel; mid-length gas system with a 0.077 gas port, 1/7 twist, M4 feed ramps, and chrome lining for long life. The 10.3 barrel came with a carbine-length gas system and correctly sized 0.070 gas port diameter — it's always a good sign when the manufacturer sizes the gas ports to match the pressure curve, rather than just using one (usually oversize) port diameter across the range.

Being able to pick and choose parts means getting exactly what you want in a build from the get-go, instead of replacing the ones picked for you by a corporation. Personal preferences play a big part in making a gun uniquely your own, and for me, the go-to charging handle is the Radian Weapons Raptor. Being fully ambi, you can rack it with a bladed hand no matter which one's on the pistol grip, and it does a decent job of sealing off the back of the upper receiver in the event you want to run it suppressed, reducing the amount of gas blowing back into your face.



Leupold
www.leupold.com

Primary Arms
www.primaryarms.com

Radian Weapons
www.radianweapons.com



PATRICK MCCARTHY

For my Blue Collar Build entry, I set out to make an affordable 16-inch carbine easier to transport. Although I won't call this a dedicated "truck gun" or "bug-out gun," it could certainly fit either of those needs. More importantly, it retains the versatility and ballistics of a full-size weapon.

My starting point was a Palmetto State Armory AR chambered in 5.56mm NATO. It features a mil-spec upper and lower with Magpul MOE furniture, a 16-inch 1:7 twist Chrome Moly Vanadium barrel with mid-length gas system, and PSA's own 13.5-inch M-LOK free-float handguard. The fit and finish on this rifle looked good, and it felt light and maneuverable in hand. I noted that the rear takedown pin fit rather tightly, and could not be budged with fingers or a loose round, so I had to resort to using a multi-tool to push it through the receiver. Thankfully, this improved somewhat with use and

lubrication. I also noted after zeroing the rifle that the castle nut had worked its way loose, but a quick turn of an armorer's wrench and thorough staking of the end plate resolved this issue.

The EPT designation in this PSA AR's model name stands for Enhanced Polished Trigger. It felt smoother than a typical mil-spec setup, but I wanted something lighter and more precise, so I installed Timney's budget-friendly Impact drop-in trigger. It offers a slender trigger shoe, smooth 3-pound break, and crisp reset. To prep the gun for the range, I added a few more accessories, starting with an EOTech XPS2 holographic sight to complement the included Magpul MBUS flip-up iron sights. A Blue Force Gear sling lets me carry the gun comfortably, and a Magpul vertical foregrip offers improved control while shooting.

LEO TakeDown provided the quick-detach barrel system for this build, which uses a

sliding collar and indexed ball bearings to couple the barrel to the receiver. Whether you're trying to save space in your range bag or configure a gun for quick deployment from a backpack, the LEO TakeDown system lets you quickly split your gun in half. Now, you may be thinking, *why don't I just separate the upper and lower receivers?* First, this leaves both your upper and lower open to dust, lint, and other foreign objects. Second, dealing with pins isn't as fast as the LEO Takedown's simple collar mechanism, and it requires more fine motor skills (especially with our test rifle's tight rear pin). Lastly, separating the gun at the barrel keeps the two halves as short as possible, allowing it to fit into a smaller case or pack. Here's a quick comparison:

- › Assembled length: 32.6 inches
- › Length of upper and lower assemblies: 25 inches + 15.2 inches
- › Length with LEO Takedown system: 19 inches + 16.5 inches



Another advantage of the LEO TakeDown system is its ability to accept multiple barrel and handguard combinations without an additional upper. The kit can be purchased with a spare barrel coupling for an additional \$56. This makes it easy to swap between two or more setups — for example, **one with a gas system tuned for a suppressor and one configured for unsuppressed use.**

Installing the LEO TakeDown system was made more challenging by the fact that we were starting with a complete upper, and had to disassemble it. This led to the discovery that my rifle's barrel nut was very heavily torqued — I was only able to remove it after freezing the upper overnight, placing it in a barrel lug vise block, and putting my full body weight onto a 3-foot breaker bar. For this reason, I'd suggest starting any LEO TakeDown build with a stripped upper. I also learned that any handguard with indexing tabs will interfere with the takedown collar, so these had to be filed down before reassembly. The finished system shifts the handguard forward by about an inch.



EOTech
www.eotechinc.com

LEO Takedown
www.leotakedown.com

Palmetto State Armory
palmettostatearmory.com

Timney Triggers
timneytriggers.com



NICK SAITI

Most consumers don't feel the need for modification. The comfort of having something work the way it was intended is not a notion to strive for, but the way things should be. This idea has no place in the gun world. Shooters cannot leave well enough alone. It's good, but just think how much better it could be if we added aftermarket parts. Why drive stock?

Now that everyone has an AR-15, the next stage in evolution is the progression of skills. For many, plinking and poking holes in paper gets boring after a while, so the next step is to get faster and more consistent at making those holes. There's no better way to learn than to jump in the deep end, so why not sign yourself up for a competition?

The influx of new AR-15 owners has created another problem (or opportunity

depending what side you're on). How do you set your gun apart? This is the allure of the AR platform. Colors, lengths, calibers, ergonomics, and genders (it's 2020 after all) are all malleable. Not to mention the idea of wringing out more performance from that new blaster.

There are a few parts that are considered essential to performance in practical shooting. The barrel, trigger, free floating handguard, and sighting system all play crucial roles, the rest of the parts just have to work. Competitions are rarely won because of better equipment, but they can definitely be lost because of inferior parts.

The Springfield Armory Saint rifle is a modern-day version of the Stoner design and a good balance of value and quality. Its 16-inch barrel is chambered in 5.56mm so you can shoot both .223 and the hotter NATO spec

stuff, and its mid-length gas system does wonders to tame the fast bullets. It features flip-up iron sights for all the sadists out there. The nickel-coated trigger group is not exactly a high-end aftermarket part, but it's better than most factory levers we've tested. In all, it's a solid base to work from.

Since my counterparts don't have the experience in competition that I do, I decided my gun was to be on the flashy side. To accomplish the ostentatious task the Timber Creek Outdoors (TCO) Enforcer complete build kit was selected. This was mostly for my colleagues' benefit. If my rifle is bright there's no way they would miss what I'm doing, and in the end they might learn something. Pure beneficence. I chose red in honor of my Albanian heritage, though alas, my Adidas tracksuit was at the cleaners, and gold chains are hard to run with (sorry, grandma).

The kit has everything needed to set your new AR apart from the other mall ninjas. You never have to answer the question, "Which one is yours?" They'll know when they see it. The kit includes a 15-inch M-LOK ultralight handguard. Thin, durable, plenty of real estate; and amazing looks to boot — everything you want in a competition handguard. To call the ambidextrous charging handle oversized is an understatement — we were worried about it getting through tight doorways. Let's just say it's not easy to miss even when the pressure is on. The grip is all aluminum, which gives the gun a solid feel and is a refreshing change from the normal plastic piece. The dust cover, forward assist, ambidextrous safeties, extended mag release, trigger guard, and take-down pins are all upgraded anodized parts, and the buffer tube is also color-coded to match the rest of the kit. The Heartbreaker compensator works well to mitigate muzzle movement and has an uncanny ability to make ears on either side of you bleed. It's loud.

This is the type of kit you should definitely buy a matching outfit for. Every part that can be is anodized. The Enforcer kit is massive (we counted 13 pieces, not including pins and springs) and comes in nine color choices. Top it off with a lifetime warranty, and you will never mix up your gun with anyone else's again.

BLEED COLLAR BUILDS



Holosun
holosun.com

Springfield Armory
www.springfield-armory.com

Timber Creek Outdoors
timbercreekoutdoorsinc.com





SPECIAL ADVERTISEMENT SECTION

SPECIAL ADVERTISEMENT SECTION

BLUE COLLAR BUILDS

AAR

IAIN

Building two uppers to cover any foreseeable eventuality was a fun exercise, but the match stage designs didn't allow me to exploit the advantages of the 10.3-inch version. I've shot matches before which involved mowing down phalanxes of paper and steel from inside a passenger car, and it's in these scenarios where the shorties really shine.

Watching Nick shoot is always a pleasure, and he knows how to get the most from his gear by doing sneaky, pro shooter stuff like showing up with a zeroed weapon. If I were to make any changes to my gear, it would be to add a compensator to the muzzle of the 16-inch upper — after shooting Nick's Albanian



turbo Adidas special, the advantages in this setting were immediately obvious, compared to the A2 flash hider on my build.

PATRICK

I'm relatively new to competitive shooting, having only participated in a few Steel Challenge matches in the past, so I knew going into the match that this Blue Collar rifle's capabilities were likely to exceed my own. Iain and Nick tore through the stages at an impressive pace, while I just did my best to keep up. Still, I had a great time with the gun and was impressed by its performance, especially at this price point. I didn't have a single malfunction while running inexpensive Wolf Gold 55-grain ammo.



between winning and losing has more to do with the time spent preparing than just the performance on match day — matches are won or lost before a shot is fired.

My Albanian masterpiece came from humble, but solid beginnings and like a butterfly shedding its chrysalis, emerged from the bench to glide through the match stages.

I wound up taking fourth overall in the match, beaten only by shooters using high-dollar match rifles and magnified optics, which just goes to show you can do pretty well with a Blue Collar build.

Although the takedown nature of this build wasn't directly applicable to the competition, and no stage involved drawing the gun from concealment, it was certainly helpful on my way to and from the range. The 6-inch-shorter packable length makes it much easier to stash the gun in a backpack, whether you're doing so prior to a bug-out scenario or a mundane range trip.

NICK

The competition field is a fierce one. Winners don't like to lose, losers trick themselves into thinking they don't care, while the newbies are still trying to figure out what all the buttons do. If you want to perform well, you must spend time to be familiar and proficient with your equipment. In the end, the difference



OPTICS

PRIMARY ARMS MD25

WEIGHT: 6.5 ounces

MSRP: \$170

URL: www.primaryarms.com

With a claimed 5,000-hour battery life, you can set your desired brightness and leave the MD25 on. Just remember to swap out the CR2032 every time you vote for a president. Its 2 MOA dot is crisp, with just a hint of blue in the lens coating and while there's no 'off' position between brightness settings we had no problem picking up the reticle in the desert sun at noon. There's two night-vision settings for those who want to team it up with NODs, but we didn't try this feature out during our evaluation. It's packaged with spacers of various heights, so you should be able to find a mounting solution that works for your application, and the mount itself is secured by two torx screws for a compact footprint.

LEUPOLD FREEDOM RDS

WEIGHT: 7.2 ounces

MSRP: \$390

URL: www.leupold.com

At just 1 MOA, the dot in this sight is tiny. While this might sound like a disadvantage, it actually gives you more flexibility, as at longer distances less of the target is obscured and you're able to place your shots more precisely, particularly if you adopt the old trick of dialing the brightness way down so that the dot's transparent. It features typical Leupold build quality and is based around a 34mm tube, which means your mounting options aren't limited to the included AR-height, three-bolt mount. Of all the red dots we tried, this one has the clearest glass, though you do pay a penalty in battery life.

EOTECH HWS XPS2 GREY

WEIGHT: 9.0 ounces

MSRP: \$575

URL: www.eotechinc.com

This versatile sight is the smallest and lightest model EOTech offers, making it a great choice for anything from an agile competition build to an every-day-carry duty gun. The classic "0" reticle features a 1-MOA dot inside a 68-MOA ring. Our test match involved targets ranging from 5 to 450 yards; the ring proved very helpful for gauging the point of impact on closer targets, and the dot was small enough to allow precision at longer range. One of EOTech's magnifiers would have been a welcome addition in the latter case, but the XPS2 performed admirably on its own. The holographic design ensures the reticle remains clear and crisp even if you have an astigmatism, and battery life is a respectable 1,000 hours. We also appreciate that this sight is made in the USA.

HOLOSUN HS403C

WEIGHT: 2.8 ounces

MSRP: \$242

URL: holosun.com

Holosun started out in 2013 and has since earned a great reputation for cutting-edge technology, durability, and a reasonable price point. The Holosun HS403c is a 20mm "tube" style micro red dot designed for carbines and rifles. The 2 MOA dot is bright enough for a sunny day and the multilayer glass is clean. It features a 1/3 co-witness mount and a little detail that is often overlooked — the dot emitter is at the 5 o'clock position so as to not hinder the ability to co-witness iron sights. Arguably one of Holosun's best innovations is the solar failsafe option. Essentially this is a mini solar panel for your red dot ensuring that unless the sun dies you never have to worry about battery life. The design is minimalistic and works perfectly to get the job done.



TEN TIMES CLOSER

The Vortex Razor HD Gen III 1-10x Stretches Past Its Competitors

By Rob Curtis

If you've got some cash burning a hole in your pocket, you're probably fighting the urge to ditch the red-dot on your AR in favor of a low-power, variable optic. There are plenty to choose from, but the hottest new release of 2020 is the Vortex Razor HD Gen III 1-10x24 FFP.

That alone isn't enough to tempt guys to shell out \$2K, though. It's got to have good glass, not weigh a ton, hold zero after rough handling, have plenty of adjustment, and have a well-thought-out reticle. Fortunately, the Gen III checks all those boxes.

Vortex's head of product development Rob Morell tells us the Gen III was designed to perform out to 600 yards, but we racked up reliable hits at 750, and undoubtedly could push it further.

Morell says some compromises had to be made in order for the Gen III to be lightweight, capable, and affordable. They didn't scrimp on glass, nor feel, and the rotation of the erector tube is silky smooth for a fast throw from 1x to 10x. The 34mm tube gives 37 mils of total elevation travel, after zeroing for 55-grain ball at 100 that left 20.8 mils to play with. That's enough elevation for 1,100 yards.

10x is a place where an argument can be made for a parallax adjustment, but Vortex chose a fixed parallax design to keep weight, complexity, and cost down. The same goes for locking turrets; you can live without them since the EBR-9 reticle gives you 10 mils of elevation with a Christmas tree for precise holds.






SHORT BARREL DOMINATION

ADVANCED FIREARMS +
TERMINAL AMMUNITION

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SBR and Pistol variants available in Black and Arid.

Calibers:
 .300 BLK
 7.62x39
 5.56 NATO



PDX

MDX 508



MDX 510

SHORT BARREL AMMUNITION



To maximize effectiveness of our PDX series, we've partnered with Fort Scott Munitions to design cartridges specifically formulated for high-performance from short barreled firearms. The Maxim Defense Ammunition wound cavities exceed the standards of both expanding and fragmenting projectiles found on the market today. The TUI® design of the projectiles tumble all the way down to 500 fps.



Calibers:
 .300 BLK 115gr & 190gr
 7.62x39 117gr
 5.56 NATO 55gr, 62gr, & 70gr



MAXIM
DEFENSE®
www.MAXIMDEFENSE.com



VORTEX
RAZOR HD GEN III
1-10X24 FFP

FOCAL PLANE:
FRONT

TUBE DIAMETER:
34 MILLIMETERS

ADJUSTMENTS:
0.1 MIL CLICKS

TOTAL ELEVATION:
37 MILS

LENGTH:
10.1 INCHES

WEIGHT:
21.5 OUNCES

MSRP: \$2,900 (INCLUDES THROW LEVER)

URL: VORTEXOPTICS.COM

EYE BOX

The Gen III is sensitive to head position, as many LPVOs are. At 1x, the eye box feels large, but it shrinks considerably as the magnification rises. With the optic mounted in the ideal position for 1x-3x viewing, you'll likely need to close your adjustable stock one notch to get rid of scope shadow and see the full field of view at 10x.

RETICLE

By design, a scope that rides the 10x magnification rails needs a flexible reticle. Any reticle with stadia fine enough to be useful at 10x is barely visible at 1x. Conversely, a central aiming point that's useful at 1x will be humongous when zoomed up to 8x or 10x and obscure your target, unless you're shooting minute-of-building at 300 yards.

The folks at Vortex put on their thinking caps and came up with two new reticles for the Gen III, the EBR-9 BDC, a MOA-based, bullet-drop compensated reticle based on a .223 load for gamers, and the EBR-9 MIL, a straightforward, MRAD version with a Christmas tree-style layout with aiming dots down to 11 mills. Both reticles feature a range-finding tool based on a silhouette/torso, thicker stadia at the edges for use below 8x, and a segmented aiming point with a central dot that shows plenty of target, even at distance.

ILLUMINATION

The trick to making the Razor Gen III work at both ends is illumination. At 1x, the illuminated reticle turns the Razor Gen III into a red-dot sight.

Morrell says, "We were really banging our heads on the wall figuring out how to make the illumination bright enough while conceding the fewest compromises in the scope's design."

The Razor Gen III's reticle illumination works on the principle of constructive interference. This means more of the light is focused on the shooter's eye instead of getting bounced around and diffused before it gets to the eye. The result is fully daylight bright.

A trade-off for this degree of brightness means any deviation of the eye position from the center of the eye box results in the dot dimming. At lower magnification, where it's meant to be used, there's plenty of room to move before the dot dims. At 10x, the illumination is so narrowly focused that it can be used as a way to judge and defeat parallax when reaching out.



AT THE RANGE

My range buddy Rudy Gonzor from Ridgeline Training and I swapped the optic back and forth over a daylong, hot, and dusty evaluation. We ran everything from the USMC's MEUSOC 50- to 3-yard rifleman qualification to known distance and unknown distance drills from 100 to over 750 yards.

On glass and in the dirt, the scope worked well; contrast was sharp, edges of all targets were well-defined, and colors were accurate, even into the shadows. The dot was plenty bright in the noon sun. There was a bit of pin-cushioning at the edges, but nothing distracting. We did have an issue pop up on the range: parallax error.

Which takes us to the second thing we evaluated: parallax. Without a parallax adjustment, the scope is parallax free only at 150 yards. At 100 yards, we shot from the center of the scope, then from the edge to see how induced parallax affected our zeroing groups. Our 3.2-inch group opened up to 4.7 inches when shooting from the very edge of the glass. We'd never do that IRL, but knowing there's up to a 47-percent accuracy error waiting to bite you in the ass is important. (See "Everything Wrong with the LPVO" on page 62.)

LOOSE ROUNDS

ARs are more capable than ever. With the right sighting system, there's no more versatile platform to work from CQB to overwatch and beyond. While a 1-8x will get the job done, the Razor Gen III 1-10x offers just a little more in an impressively compact package and reasonable price. ■



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The ATAC Defense ADER with the Dead Air Nomad-Ti

By Dave Merrill

TUNGSTEN & TITANIUM

You may not have ever heard of ATAC Defense before, but you've definitely seen their wares. This Mississippi-based company started out more than two decades ago with automotive parts manufacturing before moving into the firearms realm eight years ago. Automotive and aviation manufacturing companies transitioning to firearms has become something of a common refrain over the years; it's almost like a natural progression. For nearly a decade, ATAC Defense was the man behind the curtain, OEMing more than 300 parts for different companies, but now they've decided to make their public debut under their own name.

THE ADER

ATAC has three different initial offerings, all with their own variations. Featured here is the ADER: the ATAC Defense Enhanced Rifle. It has all of the bells and whistles, while the ADBR (ATAC Defense Basic Rifle) is for those just getting their feet wet.

MANY COMPANIES CALL THEIR RIFLES AMBIDEXTROUS WHEN THERE'S ACTUALLY NOTHING AMBIDEXTROUS GOING ON OTHER THAN THE SAFETY SELECTOR. NOT SO WITH THE ADER, WHICH HAS AN ENHANCED AND AMBIDEXTROUS MAG RELEASE, AMBI SAFETY, AND OVERSIZED AND AMBI CHARGING HANDLE — ALL OF ATAC'S OWN DESIGN.

They also have 9mm pistol builds with 4.5- and 8.5-inch barrels. All are available with a wide variety of Cerakote finishes, and the enhanced models have several triggers to choose from.

The ADER is crammed with custom parts. Many companies call their rifles ambidextrous when there's actually nothing ambidextrous going on other than the safety selector. Not so with the ADER, which has an enhanced and ambidextrous mag release, ambi safety, and oversized and ambi charging handle — all of ATAC's own design. Even though the safety has a 90-degree throw instead of the increasingly common 45- or 60-degree short throw, it won't rub against the trigger finger when using a high hold (a common issue for me personally).

ATAC offers three different triggers: a 3.5-pound single-stage with either a straight or curved bow, or a two-stage with a 1.5-pound first stage and 2-pound break. The two-stage ATAC trigger is a total standout — among

If ATAC Defense ever decides to sell their controls or triggers separately — you'd be well-advised to snatch them up.

the very best produced for an AR-15. If ATAC Defense ever decides to sell these separately, you should snatch one up.

Other specifications get high marks for quality too. HPT/MPI bolts cut from Carpenter 158 steel. 1/7 twist barrels formed from 4150 steel blanks per Mil-B-1159SE specifications and then black nitrided. The entire bolt carrier group is also NiB treated.

The receivers themselves are basic 7075 forged affairs. In the future, we'd like to see integral trigger guards and an ambidextrous bolt lock/release à la ADM, Grey Ghost Precision, and Knight's Armament.



For furniture, ATAC turned to Mission First Tactical, the other polymer accessory company, for their Minimalist stock and Engage grip. ATAC's own M-LOK handguard has a continuous top rail and integral QD sockets.

The gas system may give you pause, as the ATAC Defense ADER features a 16-inch barrel with a carbine-length gas system. However, it's not an immediate deal-breaker; while mid-length gas systems generally make for a soft shooter, carbine gas systems are incredibly reliable. ATAC says that longer gas systems will be an option in the future. We'd like to see ATAC implement an option for an adjustable gas block as well.

The ADER ships with a three-chamber brake that curiously features external threads at the base. We asked ATAC about plans for their own suppressor line in the future; it was a little hush-hush but with a wink and a nod. While the brake is effective, it's also very loud just like all other brakes. We removed it to affix a Dead Air Nomad.

THE NOMAD-TI

Dead Air Silencers first released the Nomad in October of 2018. This was Dead Air's first wide-body, tubeless, 1.735-inch diameter can with the now-universal HUB 1.375x24 TPI rear end. Therefore, a nearly endless supply of mounting solutions is available.

The Nomad isn't just a lower-pressure suppressor due to sheer volume — just look at that X-ray. It's clear the Nomad isn't simply the same old silencer design in a slightly fatter profile. Each baffle has its own secondary chamber to store and then bleed gas after the projectile passes, effectively making the Nomad a silencer with multiple bore evacuators. We first covered bore evacuators in RECOIL Issue 35, as the Gemtech Integra integrally suppressed rifle uses the same technology.

A bore evacuator effectively delays the movement of the gas, giving it slightly more time before it follows the path of least resistance. The end result is that the majority of the extra gas goes through the muzzle end rather than back-flowing through the barrel and needlessly increasing pressure, gas in your face, felt recoil, and wear.

Dead Air first followed up the Nomad with the performance-enhancing E-brake, and then after some skunkworks testing, they released the Nomad-L at SHOT Show 2020. What you see here is the Nomad-Ti, an all-titanium version of the Nomad-30 that weighs in at a mere 9.6 ounces, including the bundled direct-thread mount.

It's easy to see why Dead Air keeps investing in the Nomad system. From the day they released them, they can't keep them in stock; it was a great performer, and people quickly took notice.

Unlike most Dead Air cans, the Nomad-Ti does indeed have barrel length restrictions — high pressures produced by short-barreled 5.56 guns will heat and eat titanium for breakfast. As such, the Nomad-Ti is limited to 5.56 barrels of 12.5 inches or above for slow-fire.

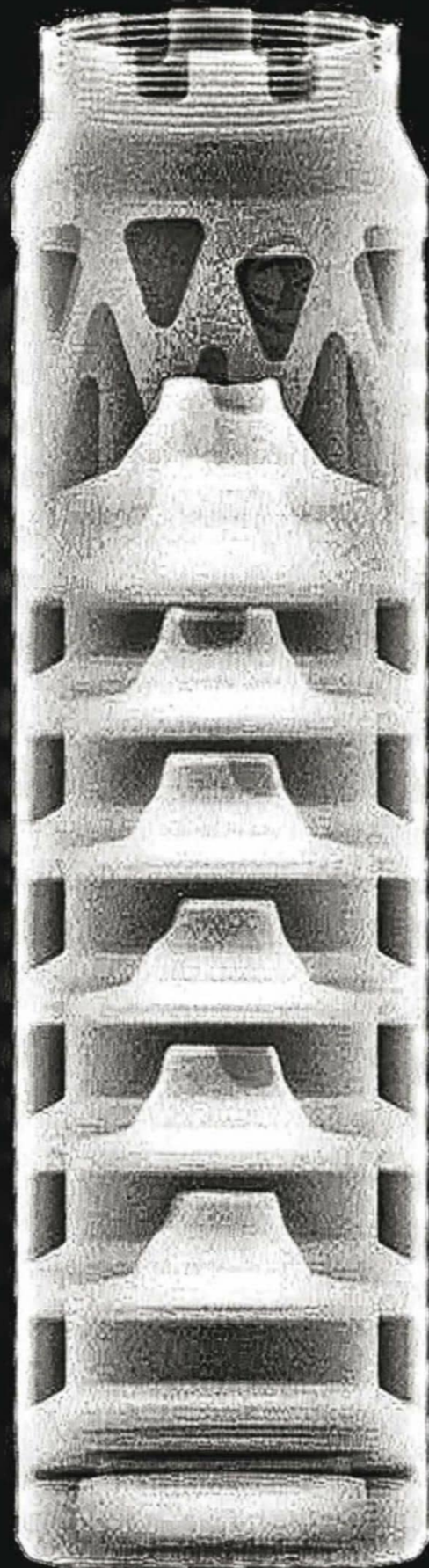
In addition to being better suited for a 16-inch rifle like the ATAC ADER, it comes naked and uncoated, so it really pops next to the tungsten Cerakote. Remember: Looking cool is always the first rule.

Instead of using the provided Dead Air direct-thread mount, we went with a JMAC Customs X-37 brake. It's compatible with all 1.375x24 TPI silencers, as well as their BDS-37 blast shield for unsuppressed use, should we find ourselves in a state with oppressive NFA restrictions.

OUTFITTING

We attached a US Optics TS-8X first focal plane 1-8x24mm with a 5.56mm Plumb Precision reticle

TUNGSTEN & TITANIUM



THE STEYR AUG A3 M1





**ATAC DEFENSE
ADER**

CALIBER:
5.56MM

OVERALL LENGTH:
31.5 INCHES

WEIGHT UNLOADED:
6 POUNDS, 4 OUNCES

BARREL LENGTH:
16 INCHES

MAGAZINE CAPACITY:
20, 30

MSRP: \$1,399

URL: ATAC
DEFENSE.COM

**DEAD AIR
NOMAD-TI**

CALIBER:
.30

OVERALL LENGTH:
6.5 INCHES

WEIGHT:
9.6 OUNCES

MSRP: \$1,099

URL: DEADAIR
SILENCERS.COM

FEATURED ACCESSORIES:

SUREFIRE
M600DF

\$299

SUREFIRE
SR-07 SWITCH

\$112

US OPTICS
TS-8X PLUMB

\$895

DUECK DEFENSE
RTS SIGHTS

\$200

JMAC
CUSTOMS

X-37

\$120

ARISAKA FINGER STOP

\$28

MAGPUL MVG

\$23

PRICE AS FEATURED:
\$4,175



TUNGSTEN & TITANIUM

(see RECOIL Issue 49 for a review) in a Midwest Industries mount. A set of Dueck Defense offset iron sights served as backups, and a 1,500-lumen SureFire M600DF riding on an Arisaka inline scout mount with an SR-07 remote switch made for a helluva light beacon out front.

We then added a Magpul MVG to use in conjunction with an Arisaka finger stop to ensure consistent hand placement. Some may consider that a suspenders-and-belt setup — but our pants certainly aren't falling down.

AT THE RANGE

The trigger was exceptional; you can go fast as needed but also utilize it for precision work. The recoil impulse unsuppressed is fast but gentle — an adjustable gas block for the ADER is in our near-future for suppressed use; it was workable but not optimal. Though the Nomad-Ti is low-pressure, we'd still like a bit more control of the increased gas pressure. For testing, we rolled with basic-bitch 55-grain M193 ammunition, which turned in

perfectly acceptable 1.5-inch five-shot groups. Undoubtedly, match ammunition would result in tighter groups, but this essentially is a fighting rifle, not a DMR.

Hearing safe? Welp, we didn't even consider adding ear protection when shooting outdoors; indoors is a different story with 5.56mm of any stripe or barrel length.

LOOSE ROUNDS

Dead Air Silencers continues to impress us with their innovation. Even though the Nomad-Ti is a straightforward extension of an existing product line, a sub 10-ounce suppressor with this level of performance is exceptional.

While the ADER is the first rifle ATAC Defense has produced, it's far from a freshman effort. Over the last eight years, they've clearly learned what right looks like and put it all out there. While there's some room for changes and improvements, dollar-for-dollar the ATAC Defense ADER is more than a solid choice. ■



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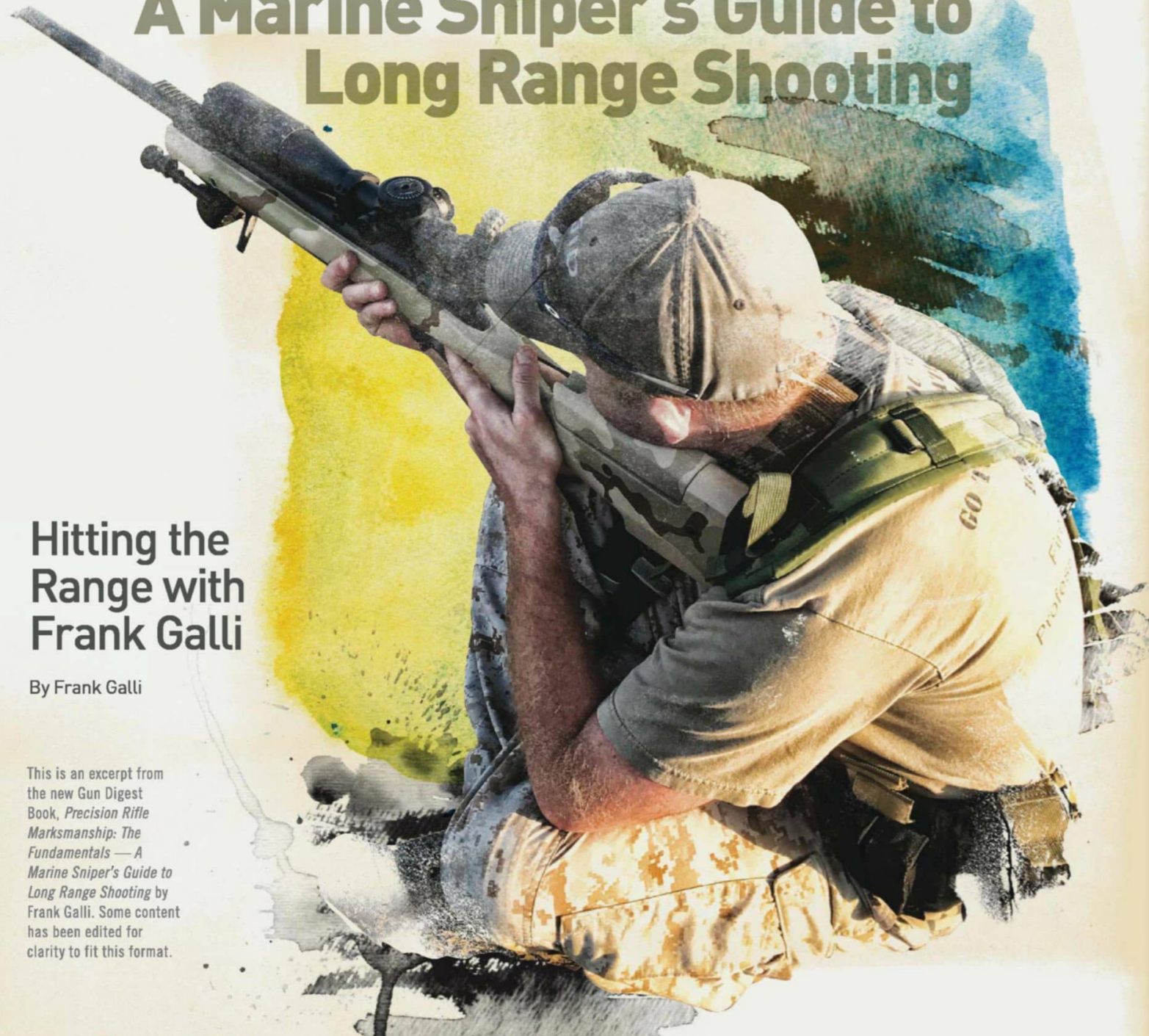
PRECISION RIFLE MARKSMANSHIP: THE FUNDAMENTALS

A Marine Sniper's Guide to Long Range Shooting

Hitting the Range with Frank Galli

By Frank Galli

This is an excerpt from the new Gun Digest Book, *Precision Rifle Marksmanship: The Fundamentals — A Marine Sniper's Guide to Long Range Shooting* by Frank Galli. Some content has been edited for clarity to fit this format.



Before we begin, I want to state that you want a 100-yard zero with all rifles with tactical, raised, or what we call target turrets. A 100-yard zero is the best option out there, even for hunting rifles. I will expand after a few other topics.

BORE-SIGHTING

Prior to firing our first rounds, we want to bore-sight the rifle on a target at distance. Sure, there are a host of ways to skin this cat, I get it, everyone has their own idea of zeroing. It can definitely depend on the type of rifle you are shooting whether you can “look” down the barrel in order to line up the sights. Some rifles make this process easier than others.

You can certainly shoot the rifle inside 100 yards, like at 25 yards, but you should familiarize yourself with the mechanical offset associated to your system. The mechanical offset is the height of the scope over the bore. We look through the scope and the bore is 2 inches or so below this, so we have to account for the mechanical offset. At 25 yards, you will have a significant amount of dope dialed on the scope to make up the difference. That means your 25-yard initial zero has to be as

high as your scope is mounted.

AR-15 shooters understand their mechanical offset because they shoot inside 100 yards all the time. If you want to hit a target inside a room, you have to aim over it to account for the sight-above-bore offset.

Back in the day, everyone wanted their scopes as low as possible. This was to help with hunting, using a point-blank-range zero. The lower your

Focus on the fundamentals of marksmanship while zeroing.

hunting optic is mounted, the easier it is to hold over and hit an animal at a particular range. That range was usually pretty close.

Today, we have monolithic rails, we have adjustable cheek pieces, and we have software to translate the offset. You need to know about mechanical offsets in order to hit targets inside 100 yards, but from a 100-yard zero everything is up. What I mean is, you will always add elevation to shoot these targets, and you will not have to hold under.

I like to have a smallish, round, brightly colored target at 100 yards I can point the barrel at it and see it from the action. Then, I can glance up and align the reticle to the center of this target. Doing this gives me a good solid bore-sight. This is dependent on being able to remove the bolt and look through the action; at times this means moving the cheek-piece out of the way. For this action, the rifle on a bench with a front and rear rest is easiest to manage. It's one of the few times I would recommend a Lead Sled to hold the rifle in place.



PRECISION RIFLE MARKSMANSHIP

With the rifle bore-sighted on target, it's time to address the 100-yard zero.

Our first reaction is to chase the zero. By chasing the zero, I mean we forgo the groups for adjusting individual shots. At a bare minimum, we want to move the center of the group to the center of the target. It's all about point of aim matching up to our point of impact. It's during the zeroing process I am focusing on my fundamentals of marksmanship. I mimic Tom Cruise during this stage when he spoke about

No Mind in *The Last Samurai*. No mind: We want to be completely blank behind the rifle and let our body act.

When the rifle is brand new, we want to knock out a few groups in order to settle in and get comfortable with the recoil pattern. It's not about barrel break-in as much as it is about us getting our positive repetitions in. Years ago, I tried to mandate only five-shot groups on my Sniper's Hide website. That proved to be a futile request to my members. So rather than harp on



Familiarize yourself with the mechanical offset associated with your rifle.

the benefit of a five-shot group, I will allow three-shot groups. It's been said, three shots test the equipment, five shots test the shooter. I want to push myself to the next level. So, shooting a nice five-shot group and then moving that group to the center of the target is important to me.

I can race to complete this process, but I usually take my time. I want to look at the group size, the recoil pulse, the view through my scope. As I noted earlier, I want to become intimate with the rifle, and zeroing is the most delicate of processes. I shoot my group, then measure the distance from center, or my point of aim, using the reticle. The reticle is a calibrated ruler 3 inches in front of my nose. The reticle, especially in modern optics when the system of adjustment using the turrets matches the system used by the reticle, is completely straightforward. What you see is what you get. If the reticle reads 1.2 Mils left and .7 Mil high, the adjustment is easy, exactly what you see. I don't need to walk downrange; I don't need to use a grid. I can stick a single dot on a plain white piece of paper and simply measure the group distance from center.

I do have a thought on cheating the 100-yard zero. When absent of any other reasoning, I always zero just slightly left of center. One click, regardless of the scope used, to the left helps me in a variety of ways:



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PRECISION RIFLE MARKSMANSHIP

1. It gives me the edge as a fine aiming point should I need to fine-tune the 100-yard shot.

2. I counteract any right-hand drifts some might talk about.

3. It keeps my ultra-fine, quarter-inch aiming point intact. It's the same concept as the benchrest target, when you aim low and hit high.

We use a 100-yard zero because it's consistent. It has a very short time of flight, so as the conditions change, the zero is not affected like if we zeroed at farther distances.

Imagine zeroing your rifle in Florida at a distance beyond 100 yards, then having the shooter travel to Colorado where the air is thinner. You can easily see a change in that zero, which will only grow the farther you shoot. When we used to consider 400 to 800 yards to be long range, these offsets were not really noticed. Especially when people took this concept into the terms of

Have tools on-hand to properly float your turrets after completing your zero.

hunting. Hunters, back in the day, were trying to get as close as possible. You will not see the issues inside 400 yards by any stretch of the imagination. But, today, with people shooting beyond a mile and taking game beyond 500 yards, we absolutely see it.

We have epic debates with all sorts of reasoning when it comes to zeroing a rifle. Every week the members of the Sniper's Hide forum are discussing the pros and cons of zeroing at distance. One of the most common misconceptions is zeroing at distance adds more to your elevation. It doesn't work that way. If you can zero at 100 yards, and you don't, you gain nothing. The only time this is necessary is when guys are shooting extended ranges where they have so much cant in their base, they cannot dial down to 100 yards. Place a 60MOA base on a rifle and your 100-yard zero goes out the door. This is a specialty thing and should not be



looked at as the rule, but the exception to the rule.

We put in our repetitions and we fine-tune our zero, so it is point of aim. Now, we have to reset our turrets on the scope. Nothing drives me crazier than people coming to class with a zero



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scattered on the turrets. Ask the student: "Why are the turrets on 3.1 Mils with your windage at .8 right?"

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This gives us a valid starting point and positive return location. We can dial anything on the scope and always come back to zero. Reset your turrets, and if you do not have a zero stop, take a picture of the location as referenced by the markings a manufacturer will include on the scope.

There was a time that as soon as I was done zeroing, I would set up a chronograph to measure my muzzle velocity.

We need to know our muzzle velocity in order to determine the range we can shoot. We use the bullet's ballistic coefficient to describe drag. The ballistic coefficient translates the bullet's shape, area, and mass into a number we can use. Combine that information with the air density and muzzle velocity, and we can then predict a range.

I have changed my thinking, mainly because of software, so I don't necessarily chronograph anymore. I use drop, but chronographing a rifle is an important component to data collection.

If you are a reloader, you absolutely need a chronograph. And today our

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PRECISION RIFLE MARKSMANSHIP



can be noted using a chronograph. It's at this point, before doping the rifle at distance, I engage in collecting muzzle velocity numbers. You need a starting point with software, so if you have access to it, chronograph data is necessary to get the ball rolling. Personally, I have enough experience I can swag a value that will be within 50 fps, and software will do the rest. ■

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choices in chronographs are excellent. The issue in the past was the sunlight and using the sky screens. Variations in sunlight caused problems with consistency, as well as the spacing between the screens limited the accuracy of the systems. With devices like the LabRadar and the MagnetoSpeed, we have first-class options.

I will admit more information is better, so if you can chronograph and get a solid set of data, absolutely, I am all for it. Also, consider firing at least 200 rounds before the barrel may or may not settle into a specific speed.

Different calibers have different routines, so I hesitate to make a general claim here. The best reason to use a chronograph today is to figure out when your barrel needs to be replaced. Variations in your muzzle velocity are a pretty good sign your barrel is going south. Changes in standard deviation



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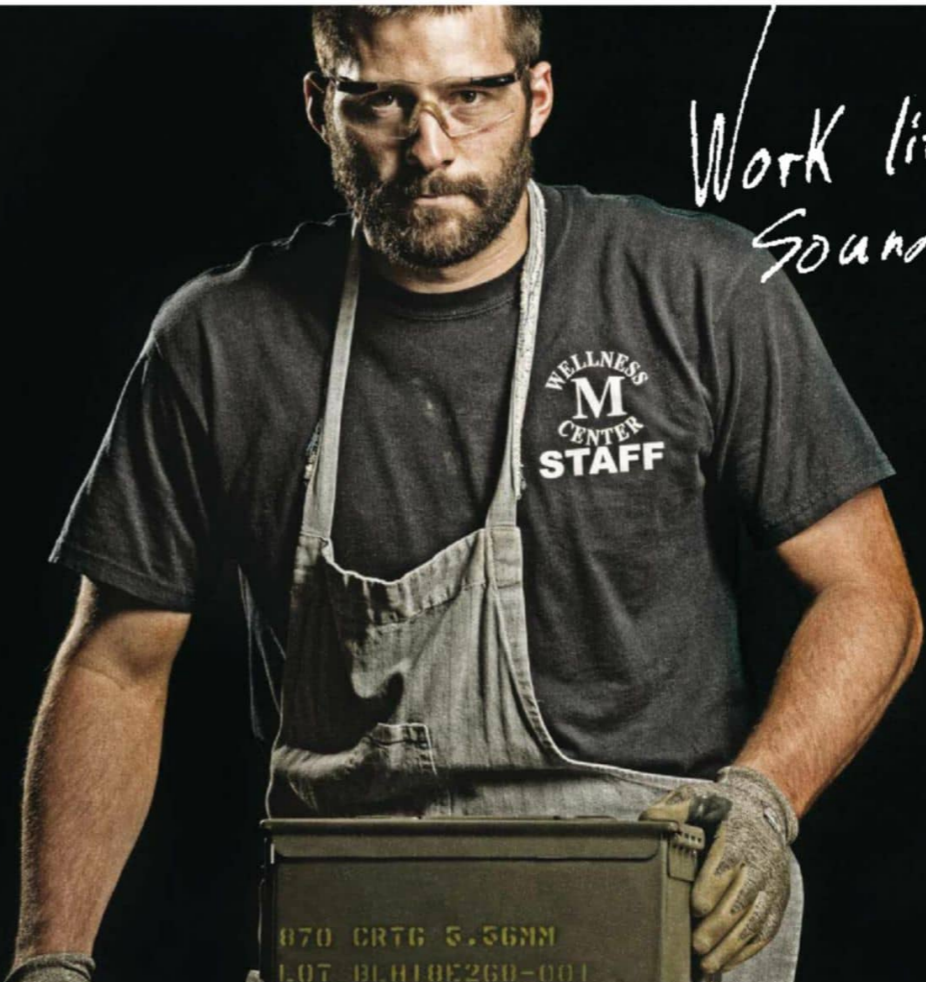
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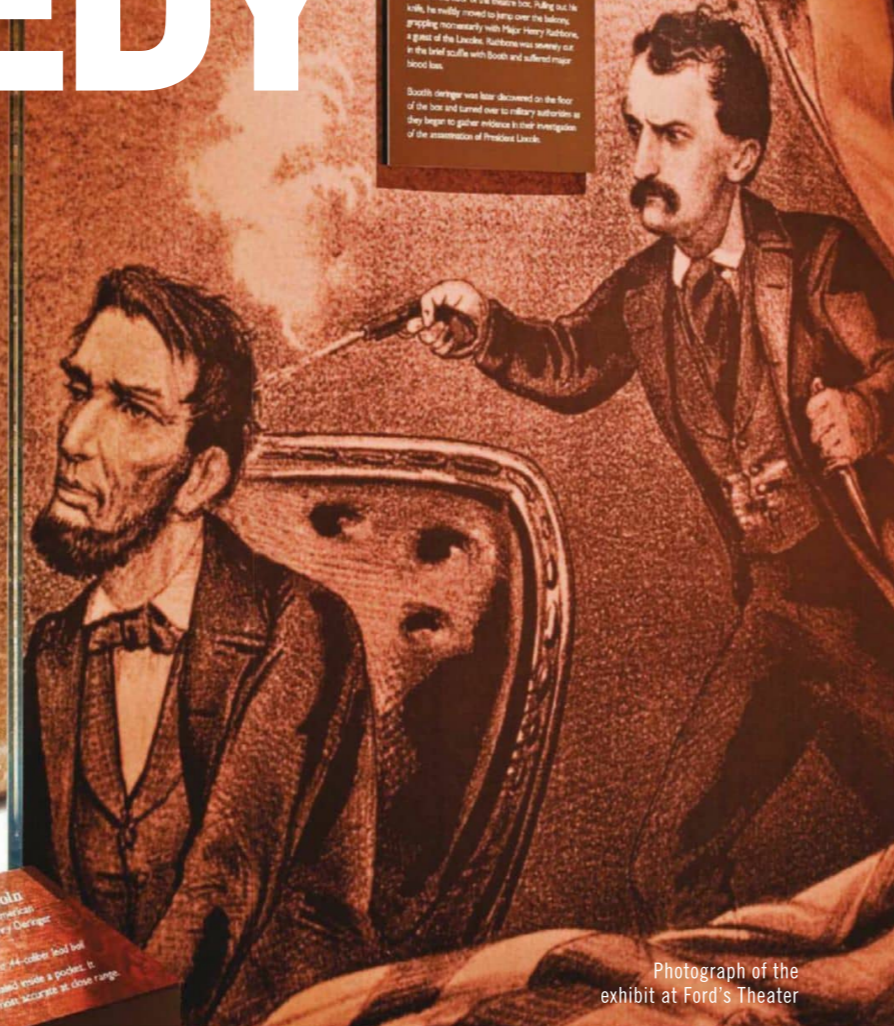
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The Gun That Killed Abraham Lincoln
With a signature, Mr. Wilkes Booth charged the course of American history. The gun is a .44 caliber Smith & Wesson revolver, made in 1848. It is a single shot, and it was used to kill Abraham Lincoln. The gun is a .44 caliber Smith & Wesson revolver, made in 1848. It is a single shot, and it was used to kill Abraham Lincoln.

A Single Shot
After John Wilkes Booth shot the president at close range with his single shot derringer, he dropped the pistol on the floor of the theater box. Picking up the knife, he readily moved to jump over the balcony railing, landing on the floor of the theater box. He was severely injured, and he died of his wounds. The bullet was found in the back of his skull, and it was used to identify the assassin of President Lincoln.



Photograph of the exhibit at Ford's Theater

Assassination Pistol of President Abraham Lincoln

By Ashley Hlebnsky

For a long time, many museums have had unofficial policies not to collect artifacts considered “nefarious.” At the same time, other museums only focus on spirited objects associated with cultural trauma. Rarely do you find a happy medium.

Assessing what fits the definition of “nefarious,” however, always seems to

be up for debate. There’s no true set of criteria for determining what should or shouldn’t be displayed at a particular institution. That’s usually left up to the discretion of the curator or those in charge. When making the decision though, institutions first assess their mission. Does collecting this artifact make sense for the overall content and messaging of the museum or

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historic site? If so, another question that's often asked is "Is it too soon?" Meaning, has there been enough historical distance between the tragedy and the audience that's visiting. And even if it is too soon, do you still want it anyway? Perhaps you're looking to utilize that artifact for an emotional impact, or you want to have it in the collection for a later date when it may be more appropriate to display. If the answer is to collect the item, the next step is what to do with it. If the museum professional chooses to exhibit it, then how? There have been many academic conferences dedicated to the fine line between glorification and sterilization of tragedy. And these debates often find people quite at odds. This conversation continues until the institution either decides to take the risk and exhibit it or hide the history away in a vault, because it's deemed too difficult to see.

Left: This pair of Henry Deringer pistols was made for Colonel William F. "Buffalo Bill" Cody. Buffalo Bill Center of the West, Cody, WY, USA. Buffalo Bill Museum.

Center: Ethan Allen Single Shot Derringer Pistol. Buffalo Bill Center of the West, Cody, WY, USA. Cody Firearms Museum.

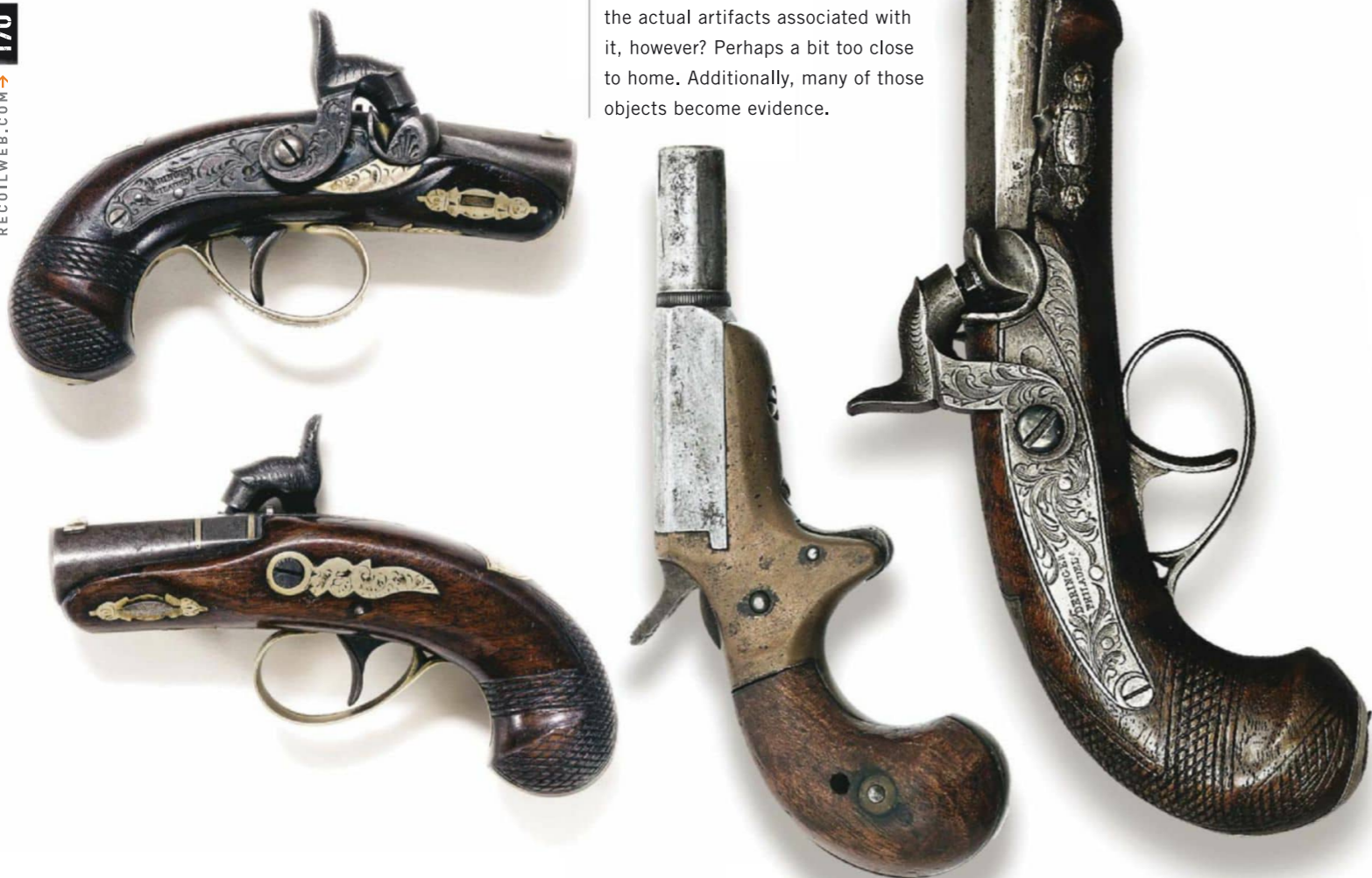
Right: Deringer pistol owned by John Wilkes Booth. Artifact in the museum collection, National Park Service, Ford's Theatre National Historic Site, Washington, D.C. Photo by Carol M. Highsmith.

What I find interesting is that in discussions of tragedy, firearms often hold their own weight in the conversation of to collect or not to collect; to display or not to display. That's perhaps because on one side, many gun museums have wanted to highlight the larger histories behind firearms, and therefore, avoid crime and tragedy since it gets all the mainstream press. And on the other hand, many museums don't have staff familiar with firearms, so they're often influenced by the negative perceptions of guns in the present or just simply don't know what to do with them to safely and securely exhibit. Interestingly, museums and historical societies recently have been collecting artifacts that memorialize mass shootings — collecting items left at the site after the shooting — similar to the collecting at the Vietnam Memorial in Washington, DC. Collecting the actual artifacts associated with it, however? Perhaps a bit too close to home. Additionally, many of those objects become evidence.

And this is what often happens with firearms used in violent circumstances. However, after time has passed, occasionally the artifact returns to the scene of the crime — as is the case with the Henry Deringer pistol that John Wilkes Booth used to assassinate President Abraham Lincoln at the Ford's Theatre in 1865.

ACT 1: THE FIREARM

The firearm used in the assassination of President Lincoln was a Henry Deringer single-shot percussion pistol made in Philadelphia, Pennsylvania. The website for the Ford's Theatre National Historic Site lists it as a .44 caliber. While many people will refer to this pistol as the "Lincoln murder gun," it has managed to maintain a long legacy apart from its infamy.



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Henry Deringer (1786-1868) was part of a family of gunsmiths. His father, Henry Deringer Sr. was a gunsmith who worked on long rifles and muskets for civilians and the military. They set up shop in Philadelphia around the turn of the 19th century. Junior also went to Virginia in the early 1800s to apprentice. While Deringer is most well known for his single-shot, large-bore pocket pistols, he started off making an array of arms including muskets, rifles, and swords for both military and civilian markets. But in 1825, he made his first single-shot pistol from a flintlock. This evolved into the classic Deringer. They were almost always sold in matching pairs, selling for \$15 to \$25 for the set. It's estimated about 15,000 were made. The pistols were back-action, meaning that the working parts for the action were behind the hammer, and the guns were generally chambered in .41 caliber. This small pocket pistol was popular, especially on the civilian market, because of its powerful caliber yet diminutive size. They also became popular with Cavalry officers in the Indian Wars — even Colonel William F. "Buffalo Bill" Cody owned a set.

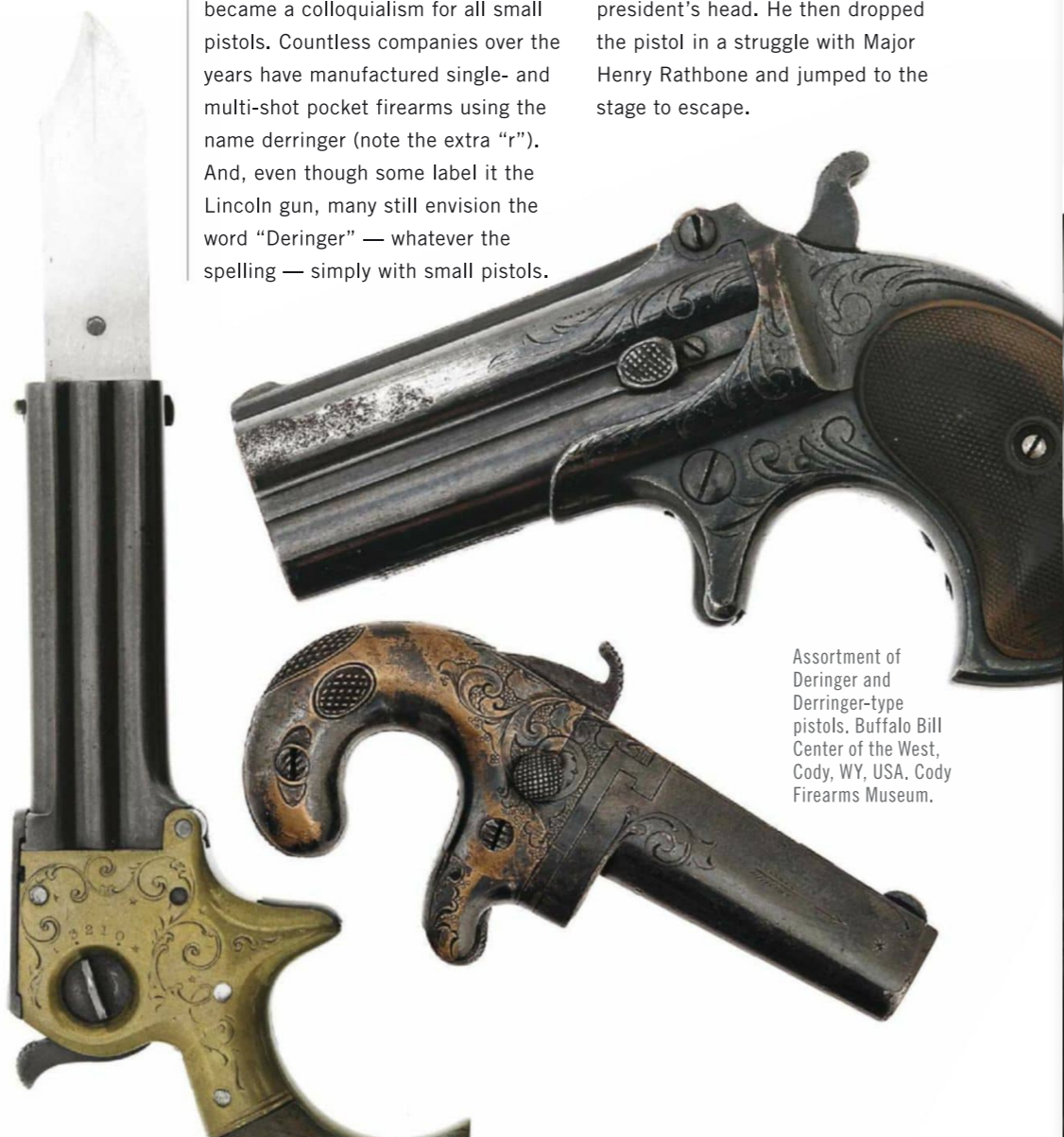
The word, der(r)inger, though doesn't always refer to Henry Deringer's products. This firearm became so popular that it sparked all types of copycats and infringements. One manufacturer, Slotter & Company, even hired someone named Deringer so they could use his name on the side plate. Clearly, in this case, imitation wasn't the sincerest form of flattery, since Deringer spent his career having lawyers fight off these infringers. He even won a California Supreme Court case (Deringer v. Plate), that became a significant part of trademark case law.

But regardless of the copycats, Deringer had created a pistol so popular, that his name essentially became a colloquialism for all small pistols. Countless companies over the years have manufactured single- and multi-shot pocket firearms using the name derringer (note the extra "r"). And, even though some label it the Lincoln gun, many still envision the word "Deringer" — whatever the spelling — simply with small pistols.

ACT II: THE CRIME

Pocket pistols in early history were often perceived as nefarious. They were something you could conceal and many worried they would be used for crime. Sometimes they were coupled with a secondary weapon such as a blade or brass knuckles. Ironically, Deringer was able to commercialize pocket pistols on the market, even though one of his guns would be used in the most nefarious way possible — assassination.

On April 14, 1865, while President Lincoln was enjoying a performance at the Ford's Theatre, well-known actor John Wilkes Booth, made his way into the Presidential Box. He fired one fatal shot to the back of the president's head. He then dropped the pistol in a struggle with Major Henry Rathbone and jumped to the stage to escape.



Assortment of Deringer and Derringer-type pistols. Buffalo Bill Center of the West, Cody, WY, USA. Cody Firearms Museum.

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The firearm was found by a patron, William T. Kent, who had helped relocate the president's body after the assassination. He returned to the theater later to find his keys and spotted the gun. It was then placed into the custody of the federal government to be used as evidence in the May and June 1865 trial of conspirators working with Booth. The Judge Advocate's General Corps kept the firearm after the case, and it was in the War Department headquarters. In 1940, the firearm and other weapons associated with the crime went to the Ford's Theatre.

ACT III: THE EXHIBIT

The assassination of President Lincoln marked the first murder of a President in United States history, and unfortunately would not be the last. The impact of his death would shake a nation — one that was already divided coming out of Civil War. In an instant, Ford's Theatre became a site of tragedy and has now become a living memorial. From museum to functional theater, people can visit the site in order to learn about the past and/or escape into the fictional through performance.

This artifact, however, was the subject for display debate, dating to at

U.S. Military Pistol made by Henry Deringer. Buffalo Bill Center of the West, Cody, WY, USA. Cody Firearms Museum.

least 1931, when the War Department denied a request to display it at Ford's Theatre. The rejection letter stated: "...the relics should not be allowed to be displayed to the public under any circumstances, on the theory that they would create interest in the criminal aspects of the great tragedy, rather than in the historical features thereof, and would have more of an appeal for the morbid or weak-minded than for the students of history.

... the Lincoln relics should not be placed upon exhibition anywhere."

However, in 1940, it was transferred from the War Department to the Park Service and has been displayed at Ford's Theatre ever since. Today, the Ford's Theatre is working with International Sites of Conscience, an organization dedicated to interpreting sensitive topics in museums and historic sites, to better utilize the site and its artifacts as a vehicle for larger discussions about the impact of assassination on the nation. Additionally, right before the COVID-19 closures, the Theatre even added a QR code asking visitors the question: How should museums display weapons of violence?



MAKE: Henry Deringer (Philadelphia, PA)
MODEL: Deringer Pistol
CALIBER: .44
ACTION: Back action percussion ignition
BARREL LENGTH: 1.5 to 6 inches
RATE OF FIRE: Single Shot

As a museum professional and historian, I think artifacts like this should be exhibited for the public. Not because there's already entire industry around people's fascination with the macabre, called "Dark Tourism," but because I believe strongly that it's through understanding all histories, including the ones that hurt, that we, as a nation and individuals, can heal and learn from the past. ■

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TOXIC MASCULINITY WHISKEY

By Tom Marshall



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While many veteran-owned businesses are small or fledgling, this one truly puts the start in “start-up.” At time of writing, Batch #001 has been on the market for just over 60 days. We had a chance to speak with Jeff Miller, Toxic’s PR point man. Miller may well embody the most toxic of males. He joined the Army in 1966 and worked briefly in Combat Development Command before winding up in 6th Special Forces group, where he worked on a project involving “forensic analysis of the intelligence failures that led up to the TET offensive.”

After a break in service, he returned to active duty, first with 1/26 Infantry; then 10th Special Forces Group before leaving military

service for a full-time posting in the intelligence community. He went back into the Army Reserves where he deployed to Desert Storm with 12th SFG, rounding out a total of 14 years in the Special Forces community.

While teaching an evasive driving course, a student approached him with the idea of starting a “politically controversial whiskey.” Miller says, “I was immediately all-in. I loved the idea.” By design, their brand leaves no room for fair-weather fans. “We are trying to make a social/political statement about the mistreatment of boys and young men ... masculinity is in no way toxic ... and should be celebrated.”

They’ve started with a rye whiskey that’s 84-percent rye, 11-percent corn, and 5-percent malted barley. Currently, they’re working to

get their product into all 50 states, expand the merchandise line, and begin supporting veteran and first-responder charities. They’re already working on a bourbon and are looking at a number of possible follow-on products, to include tequila, vodka, and cigars.

Starting a business is never easy, especially when your brand is bound to bunch up some panties in the mainstream. But we tip our hats to their masculinity, toxic or otherwise, and urge you to keep an eye on these up-and-comers in the veteran whiskey business. ■



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M/T**

KNOW NO BOUNDARIES

Your off-road rig can only go as far as its tires will take it, which is why the WILDPEAK M/T is built to withstand the most punishing conditions. Make sure you're prepared to face any challenge that comes your way. When adventure calls, answer it with the WILDPEAK M/T.



MAXIMUM OFF-ROAD TRACTION BUILT FOR THE TOUGHEST TERRAIN

The rugged WILDPEAK M/T is built to get you there and back whether you're on the pavement, mud, snow or rocks. The M/T features Falken's proprietary three-ply DURASPEC Sidewall Technology with two high ply turn-ups that provide an additional layer of protection and durability.

26 TIRE SIZES | 15" - 20" RIM DIAMETERS

FALKEN
TIRES