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STORY



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COVER PHOTO BY TAP RACK BANG CREATIVE

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50 SWEEPSTAKES

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Hearing Protection Act

AS this is written, less than a month has passed since other members of the S.W.A.T. Team and I attended the 2017 SHOT Show in Las Vegas.

This year, the mood was generally upbeat, and we saw many innovative new products and new takes on some that have been around for a long time.

Two items that seemed to be almost everywhere were suppressors and firearms with threaded barrels.

Suppressors have been growing in popularity for several years, but pending legislation may make them readily available.

In 2015, the Hearing Protection Act, H.R.3799, would have removed suppressors from the National Firearms Act (NFA) and make them available to the public the same as any handgun or rifle, with the same background check requirements. Unfortunately, that bill died in committee.

Earlier this year, Congressmen Jeff Duncan (SC) and John Carter (TX) reintroduced the bill, now known as H.R.367, and Senator Mike Crapo (ID) introduced it in the Senate as S.59.

Like the 2015 bill, suppressors would be removed from the NFA, lifting the red tape and \$200 tax stamp burden from gun owners and requiring only a National Instant Criminal Background (NICS) check. The bill also includes a clause that would refund the \$200 tax stamp for people who bought suppressors after 22 October 2015 (the date H.R.3799 was originally introduced).

Hollywood misrepresentation aside, a suppressor does not "silence" a weapon any more than installing a muffler on a truck makes it silent. Suppressors are, in fact, a form of muffler and reduce the noise of a gunshot to hearing-safe levels.

In most of Europe, which has far stricter firearms laws than the United States, suppressors are basically unrestricted, and it is considered rude to shoot a firearm that is not suppressed.

H.R.367 would make it easier for gun owners and sportsmen to purchase suppressors in the 42 states where they are currently legal. The holdouts are the usual culprits: California, Delaware, Hawaii, Illinois, Massachusetts, New Jersey, New York, Rhode Island, and the District of Columbia.

I'm personally excited at the prospect of making suppressors more readily available and hopefully protecting the hearing of the next generation. If you agree, contact your representatives and let them know you want them to support this legislation.

Until next time, stay low and watch your back. ☺

Denny Hansen

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TIMELESS WISDOM

Thank you for re-running the articles by Louis Awerbuck and Pat Rogers.

Every one of Louis' *Training and Tactics* column has gems of wisdom, interspersed with his dry, self-deprecating wit.

Pat's articles are just as relevant today as when he wrote them. A perfect example of this is his two-part article on clearing malfunctions (*MALFUNCTION REDUCTION: Stay in the Fight*, January and February 2017 *S.W.A.T.*).

J. Cummins, Texas

Thanks for the feedback. Louis and Pat's passings left a huge void that will not be easy, or may not even be possible, to fill. But like other greats, they live on through their writings.

Denny Hansen

RETURN OF THE M1s?

The article on South Korea's Garands (*SOUTH KOREA'S GARANDS: Will They Ever Return?*) by Gary Paul John-

ston in the February 2017 issue is absolutely amazing.

I did have a couple questions that I was hoping to get clarification on:

It is my understanding that President Trump plans on repealing many, if not all, of the Obama Administration executive orders. If this happens, would these arms then be available to be imported into the U.S. as originally planned before Obama issued that executive order to halt it back in 2013?

Does the U.S. or South Korea have or maintain an accurate serial number record, and therefore dates of manufacture, of the full inventory?

Thanks much and keep up the great work. I look forward to every issue.

J. Thompson, email

We're glad you enjoyed the article.

If President Trump repeals President Obama's executive order in regard to reimporting the M1 rifles, they may finally be able to come home. Let's hope he keeps his campaign promises in

regard to this.

To answer your second question, yes, there is a list of serial numbers. I used the website <http://usriflcal30m1.com/ProductionGraph.aspx> to check the dates of manufacture. It revealed that serial number 592, as shown in the article, was made in November 1937.

Denny Hansen

SAFE ROOM IS NOT SAFE

I'm a very happy subscriber, and was surprised to take issue with Brent Wheat's recent column about chemical weapons attacks (*STREET SMARTS*, February 2017 *S.W.A.T.*). As a retired doctor at the Mayo Clinic, I find his recommendation of a sealed room has two major flaws.

To be effective against chemical weapons, the room must be airtight, not just sealed off. And if made airtight, all too soon the occupants of the room will either run out of oxygen to breathe or succumb to carbon dioxide toxicity, so simply plastic sheeting and

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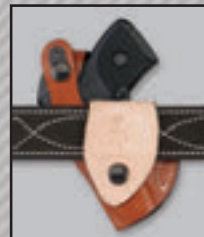


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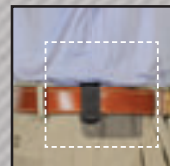
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duct tape are not enough. A source of oxygen and a means for carbon dioxide removal are required to make the safe room that Brent desires. I suggest you correct Brent's column before people build this death trap.

Successful defense requires the fancy bunker filtration systems that I *think* S.W.A.T. covered not so long ago, not just plastic sheeting and duct tape or complete avoidance.

The rest of Brent's column was right on the mark, as chemical warfare defense is a difficult subject. Brent's best advice is not to waste money on military surplus equipment that won't work.

Keep up the great magazine!
J. Graves, M.D., email

We appreciate your support. Thanks for contacting us with your expert advice.

DIRECT ACTION

Thanks for publishing the story about Max Joseph and the Direct Action Group (*COMBAT ARTS SEMINAR: Direct Action Group 25th Anniversary*, February 2017 S.W.A.T.). I have trained with Mr. Joseph on numer-

ous occasions and can attest that few others in the field equal the training he provides.

The only thing I did not like about it was that celebrating the 25th anniversary made me realize how old I'm becoming.

Name withheld by request

Thanks for contacting us. In addition to his training, Max has written for S.W.A.T. on several occasions, including an article explaining how and when Position Sul—which he co-developed with Alan Brosnan of Tactical Energetic Entry Systems—should be used.

FACE PALM

The article about reloading while not covering yourself or others was long overdue (*IN-YOUR-FACE PISTOL RELOADS: Trendy but Unsafe*, February 2017 S.W.A.T.). I have seen these unsafe techniques being used in competition and when attending training courses, and they are always a source of concern for me.

While I was attending a pistol course recently, a student to my right repeatedly covered me. I told him as

politely as I could that he was muzzling me every time he reloaded. When he continued to do so, I told the instructor and asked if the offender could be moved to the end of the line.

To my amazement, the instructor said something to the effect of, "Guns are supposed to be dangerous." I left.

G. Schmidt, North Carolina

Wow! Thanks for sharing this.

In the past few decades, "tactical" training has become a cottage industry. The good news is that almost anyone can hang out a shingle and start teaching. The bad news is that almost anyone can hang out a shingle and start teaching. This is a perfect example of why vetting an instructor is so important. It's like buying a new car: what's under the hood is more important than that shiny paint job.

Denny Hansen ☉

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Simply Rugged Holsters

Back in December, I had the privilege of attending a class at Gunsite. The class was made up of 18 shooters and focused on revolver shooting with a little bit of lever guns.

I feel right at home with revolvers and lever guns, and I jump on any opportunity I have to attend training to further my skills. I decided to take two seven-shot revolvers with me—a Smith & Wesson Model 686 Plus and a snubnose Model 617 Taurus.

The 686 Plus has a four-inch barrel and has been customized to the extent that I sent it to TK Custom to have the cylinder machined to accept moon clips. TK also chamfered each chamber to further enhance loading. It still can be loaded with individual cartridges or a speed loader.

The now-discontinued Taurus 617 is double-action-only and has a two-inch ported tube. The porting—along with its 28-ounce weight—does help control recoil, but will light up the night sky when shooting .357 Magnum loads.

While attending some quality training, this was also a chance to upgrade my gear and get in some worthwhile practice with it.



Simply Rugged Holsters Sourdough Pancake holsters for Taurus 617 (left) and Smith & Wesson 686 Plus. Belt slot positioning allows holster to be worn either strong-side carry or crossdraw. Holes at top of holsters are for attaching Simply Rugged's Inside the Waistband Straps, allowing these holsters to be worn three ways. That's a lot of versatility from a single holster.



Double belt pouch for speed loaders or moon clips perfectly matches holsters. Ammo pouch holds seven individual rounds and can also be used with a speed strip.

The entire holster is dehorned, so it has no rough edges.

I have used Simply Rugged Holsters for a number of years and have always been impressed with their quality. Rob Leahy, the owner and maker of Simply Rugged Holsters, is a true gentleman and puts his reputation behind each piece of work. I contacted Rob for two holsters to fit my revolvers for the class.

Simply Rugged's Sourdough Pancake holsters are made from heavy eight- to nine-ounce steer shoulder. The gun is positioned so the shooter can obtain a full grip, while the trigger is covered. Tightly molded to the gun, the holster does not require a thumb strap for retention.

Three belt loop cutouts, one in the back and two in the front, allow the holster to be carried either strong side

or crossdraw. There are also two holes at the top of the holster, for attaching Simply Rugged's Inside the Waistband Straps. The top of the holster flares out for an easy reholster. The entire holster is dehorned, so it has no rough edges.

The Pancake for my 686 Plus was made to carry on my strong side, and the one for my 617 on my weak side, as I believe in carrying two guns everywhere. Revolvers have a lower round count than most pistols, and while speed loaders and moon clips can be fast with practice, a second gun is faster.

And though I carry two guns, I still carry reloads.

Simply Rugged Holsters makes a double speed loader/moon clip case that matches the holsters, with the

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TK Custom machined author's S&W 686 Plus to accept moon clips.

same camouflage tool stamp around the perimeter. The flap closures secure with a heavy-duty snap to keep the loaders in place.

I also received a Simply Rugged Versatile Ammo Pouch case, which holds seven rounds—either individual cartridges or in a speed strip—for tac loading if the situation calls for it. Like the holsters, the pouches are dehorned and smooth to the touch before leaving Rob's shop.

On a side note, this was the first time I had done much shooting with my S&W 686 Plus since it was machined to take moon clips, and I quickly saw why many competition shooters use them. With practice, they can be almost—but not quite—as fast to reload as a revolver. Additionally, there's no chance of an empty case getting hung up in a dirty chamber, forcing you to pick it out by hand before completing the reload.

I used this gear during hardcore training with great instructors at one of the best fighting schools in the world, and never had a problem with any of it.

Highly recommended. ©

SOURCES

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Danger in the Back Seat

Last month, I tackled keeping your kids safe from predators, for me one of the most uncomfortable columns I've ever written. Today we're going to finish this excursion into nastiness by discussing how women can help prevent sexual assaults.

On the one hand, it's a semi-moot point because most of the regular female S.W.A.T. readers I know aren't the kind of people I'd want to tangle with. I'd sooner attempt to stuff a rabid badger into a shoebox than take on some of the ladies in our audience.

However, nearly all our readers have a wife, girlfriend, mother, sister, or daughter who thinks the world is a place full of rainbows, cotton-candy clouds, and un-twisted people. They are the ones I'm writing this for, and I suggest cutting off the top three paragraphs and then taping it to the screen

of their cell phone. By the time they realize they can't swipe the page, they might be interested enough to read further.

The biggest problem with female sexual assault is (surprise!) misconception. Most ladies worry about assault as they walk around alone at night. That does happen with some regularity, but anyone who is worried about it probably has enough situational awareness to be somewhat prepared.

It is another group of women I'm trying to reach.

These are the ladies, typically 18- to 30-year-old females, who place themselves in common yet dangerous situations without any forethought whatsoever about the possible outcomes. If we could eliminate this category of semi-self-inflicted misery, sexual as-

sault against females would probably drop 50% or more.

I'm referring to those women who go out for a good time and end up seriously inebriated and staggering home alone on a dark street or slipping off with the hot guy they were flirting with all evening. Having dealt with the aftermath of these scenarios hundreds of times in my career, it seems pretty straightforward that a rational person could have foreseen the possible negative consequences of such actions.

Ladies already realize they are at a physical disadvantage during a confrontation with a man, especially if they are so drunk or high that they can barely stand. So why would anyone willingly place themselves in such a situation where a scumball guy can press that advantage?

I know: It's 2017 and a woman

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should have the right to flirt, party, drink, dance and “snog” whomever, wherever, whenever they want and not have to live in fear of sexual assault.

Then again, I deserve to be about 80 pounds lighter and have more hair. Unfortunately, neither of us will get our wish, so we need to accept the world as it really is.

I’m not taking some moral stance regarding sexual behavior. It is simply a statement of fact that once you become so impaired you can’t remember what happened and/or you voluntarily place yourself in intimate circumstances with a stranger, there can be negative consequences. Even worse, legitimate questions will be raised when a crime is alleged.

Before any “advocates” start howling about my point, let’s destroy two common memes that arise on this topic. First, I’m absolutely not implying or saying women “deserve what they get” for putting themselves in sketchy situations. They might have been acting stupidly, but nobody deserves to be assaulted.

Secondly, those heartless cops actually *do* care about what happened to

the victim and aren’t intentionally trying to inflict further emotional distress by asking questions. Unfortunately, we have a legal system that relies on these things called “facts” and therefore we have to know every single detail of an assault before someone can be charged and convicted of a crime that could conceivably put them in prison for the rest of their life. The investigation sucks for everyone involved, but it must be done.

On a related note, I must also point out an unpleasant and inconvenient truth that advocates usually ignore: False allegations by women against men are fairly common. You’ve probably never heard that little nugget of wisdom spoken publicly, but ask any cop, prosecutor, or judge (male or female) in private, and I bet they’ll completely agree.

That doesn’t mean “the system” doesn’t have sympathy for victims, but common sense and duty demand we raise questions before simply accepting one person’s story over another, especially in the absence of compelling evidence.

Of course if we go back to the origi-

nal idea of staying out of potentially dangerous situations, the whole ugliness of the legal system can be avoided in the first place.

If you or someone you know is ever a victim of sexual assault, immediately contact law enforcement. Don’t wait, don’t clean up after an assault (an extremely common response by victims but a major headache for investigators), and realize going in that you will be asked unpleasant questions, usually repeatedly. If ever victimized, you owe it to yourself and every other woman to soldier on and see the case through.

Then again, perhaps forgoing those 15 consecutive shots of tequila before staggering out together to the back seat of his car could have prevented the whole nightmare before it began. The bottom line: In regard to preventing sexual assault against women, a little bit of self-control is far more valuable than decades of self-defense training.

To this middle-aged, balding, overweight male who runs a pretty small risk of sexual assault, it seems like an easy choice. ©



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Souped-Up Wooden Camp Tools

IF you have a camp or cabin for hunting, camping, fishing, or shooting, handcrafting wooden tools is one way to make that camp better. And who doesn't want a more functional camp?

It's also a chance to practice some simple skills. When it comes to the outdoors, simple is always better.

CAMPFIRE TOOLS

In the 1920s Dover Publication *Woodcraft and Camping*, George Sears ("Nessmuk") devotes a chapter to camp cookery. He also discusses the campfire, and what is essential to handling it.

He said, "No campfire should be without poker and tongs." I totally agree, as I know too well how difficult trying to move or rearrange coals and burning logs can be without a proper poker stick. I'm sure we've all reached in and thought we could quickly move a log with our hand before the heat or flame got us. It usually ends badly.



Classic wooden tools can augment any camp. They're easy to make and effective, just as they should be.

A fire poker stick is quite a simple affair, but for those who cook with a kettle or pot that has a bale to suspend over a fire, a certain type of poker is required. It can be made using a fixed-blade knife, small saw, machete, or axe-type of chopper. Preferably it should be made from green wood to resist the heat better, but I use whatever is available. Usually a stout dead stick will do.

I go for something about broomstick-thick and three to four feet long. It should have a neatly trimmed forked section at the bottom for grabbing pots and kettles from the fire and for hooking burning wood to move and rake coals.

The top end should be flattened almost to a point. This flattened section is for fire poking and lifting the lid of a kettle or pot, so it's best to make it like a flathead screwdriver. This simple tool adds safety and convenience to any campfire.

RIGHT: Fire poker has one end like a chisel and other with a trimmed-off fork for lifting cookware from the fire and moving wood around. A must for anybody serious about their campfire.

BELOW: Wooden stump not only serves as a flat place to work off and sit on, but it also makes a good sawhorse. Modified stump can be used to secure wood for sawing.



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BUILDING TOOLS

There's no denying how important a wooden stump can be in the backyard or camp, for providing a flat surface. After a day of outdoor activities, a flat place to sit down in camp is comforting. It makes a good table or nightstand as well.

When it comes to building a fire or other "camp crafts," a stump is the perfect work bench for splitting or carving wood on top of. If laid down sideways, it makes a decent surface to saw on, especially if a "V" notch is made on the side, making it multifunctional.

My most-used wooden tool is the mallet (maul). Having a hardwood hammering tool beats grabbing any old wooden stick to use as a baton or hammering device. Chances are, it will be rotten and crack at the first blow.

A mallet can be made easily with a saw, fixed blade, axe, or tomahawk. I have made many mallets of different sizes, and there isn't really a right or wrong size.

Select a stout piece of wood, dry or green, about three to seven inches thick, and fingertip to elbow length. At about the length of a hand (fingertip to wrist), make a mark and then saw around the wood, about half an inch or more deep. Stand the wood up so the sawed section is on the bottom



Four-pronged spear and three-pronged trident made from green wood serve as camp security weapons as well as hunting and cooking tools.

and with a knife or your preferred cutting tool, baton the wood toward the saw cut. This will start to take shape as the handle, but needs to be carved until comfortable.

Wedges are another important wooden tool to have, especially if you don't have a heavy tool to split wood with.

If only a fixed blade is on hand, wooden wedges are your best friends for splitting logs. Start with stout hardwood pieces. I select wood about the length of my forearm and two to three inches thick. A machete or tomahawk can make these fast by chopping a chisel or "wedge" on each side.

The top portion should be beveled to reduce splitting when it is pounded by your new mallet!

DIGGING AND THROWING TOOLS

Tools can also be used for hunting or as weapons. Two that come to mind have been around since cavemen were tossing them at dinosaurs.

Spears have been made from wood by almost all indigenous cultures around the world and serve many different purposes in a camp. A spear is an extension of your arm, allowing a much higher reach into trees for bird nests (for tinder) or fruit. It's also suited for dark places a hand should be wary of.

For frogging and primitive fishing, a spear is the perfect wooden tool. And it isn't limited to water: Small mammals are also targets of the mighty spear wielder.

Make a gigging spear by selecting

A throwing stick is almost as simple and primitive as throwing a rock at something.



Rabbit stick is length of an arm and thickness of a wrist. It throws, batons, digs, and wedges. INSET: Top end of throwing stick should be rounded for bearing down on while digging. If you won't use it for digging, skip this step.



Wooden wedges made from dry hardwood. You need different sizes for splitting logs.

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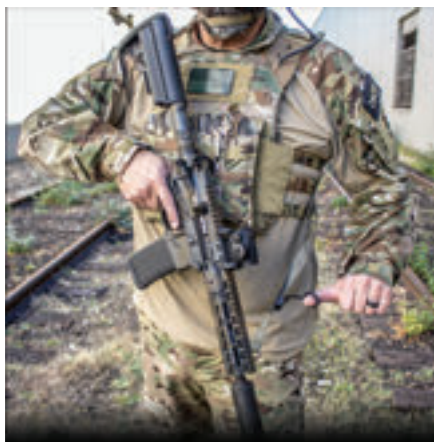
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a long pole that extends higher than your eyes (for safety reasons). Pick the end with the least knots on it and, with a knife or tomahawk, split the pole twice in the shape of a plus symbol, about six to eight inches down. At this point, firmly hold the pieces together as if they were still intact, and sharpen them all together as one point.

Next, wedge sticks in the slits (opposite each other) so they are splayed open. From this point, it is a matter of fine tuning it to optimum sharpness. Use cordage to bind just below the splits to prevent further splitting.

A throwing stick is almost as simple and primitive as throwing a rock at something. To make the most out of a throwing stick, modify it to be a useful camp tool.

Select a piece of wood about the length of your fingertip to your armpit, and about wrist thickness. A chopping tool can help with the construction, or any knife will do. I like to select a piece of wood that has a slight curve to it, but not as dramatic as a boomerang.

One end should be fashioned like a flathead screwdriver for hard digging into the ground, and the other end should be rounded for bearing down hard with a hand when digging.

This serves as a throwing weapon for small game like squirrels, marmots, iguanas, sloths, and rabbits, which is why it's also known as a rabbit stick. It is thrown low to the ground and sideways. The curvature keeps it flying somewhat straight. It doesn't take too much practice to become proficient with it.

You can also use the tool for digging up roots or a trench for a Dakota fire pit, and employ it as a baton or a wedge in camp. The throwing stick is a true multifunctional wooden tool!

CONCLUSION

Tools don't need to be made from space-age materials to be functional. Tools used in the rustic camps of yesteryear can be just as valuable today. Plus it's very rewarding to make them yourself! ©

Reuben Bolieu is an adventurer, writer, photographer, and survival instructor for Randall's Adventure & Training. He has spent most of his life hiking and backpacking through the wildernesses of the world. He has studied primitive survival techniques from all over the world.

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RED DOT SIGHT FOR 300 BLACKOUT



EOTech XPS2-300

EOTech XPS2-300 on target. HWS provides shooter with greatly improved shooting performance by achieving a more rapid reticle-to-target acquisition with unrestricted peripheral vision.

By Eugene Nielsen

THE 300 AAC Blackout (300 BLK) has elicited considerable interest in the tactical community. Initially a wildcat cartridge developed by J.D. Jones, the round was further developed when “a military customer wanted a way to be able to shoot .30-caliber bullets from an M4 platform while using normal bolts and magazines, and without losing the full 30-round capacity of standard magazines.”

Full power 115- to 125-grain 300 BLK ammunition matches the ballistics of the 7.62x39mm. Subsonic projectiles provide optimal performance with a suppressor. The 300 BLK ammunition with 220-grain Sierra OTM (open-tip match) bullet vastly outperforms the 9mm MP5-SD.

EOTECH XPS2-300 HWS

Designed with the 300 BLK shooter in mind, the EOTech XPS2-300 Holographic Weapon Sight (HWS) offers a two-dot ballistic drop reticle that allows the shooter to zero either subsonic or supersonic rounds in the same reticle pattern.

The HWS was designed to provide the operator with greatly improved shooting performance by achieving a more rapid reticle-to-target acquisition, unrestricted peripheral vision, and highly accurate shot placement.

The XPS2-300 is offered in the popular XPS2 platform, which is the shortest and lightest HWS available. The single compact transverse-mounted lithium 123 battery configuration opens up more space on the rail for BUIS or magnifiers.

The original XPS was the result of input from high-level Special Forces operators. Most loved the battery life of the AA and dual CR123 battery HWS models, but wanted a more compact sight.

With the introduction of the XPS, EOTech gave operators just that. It provides an extended battery life consistent with the AA alkaline model, but in a body that is shorter and lighter than all previous models. Another plus to the CR123 battery is that most tactical lights/weaponlights use it.

The average battery life of the XPS platform at brightness level 12 is roughly 500 to 600 hours. On all models, battery life is reduced at correspondingly higher settings and increased at lower settings.

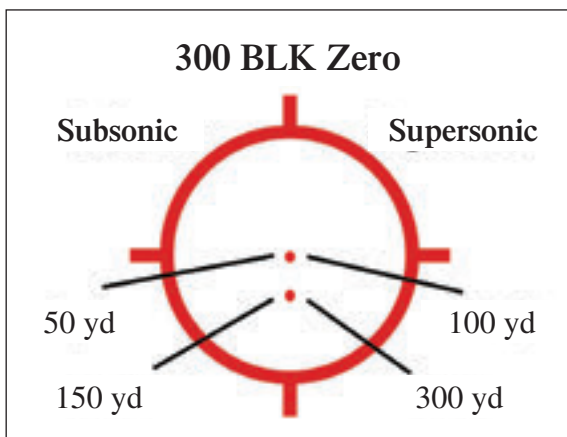
The use of lithium batteries extends battery life and allows for operation in more extreme temperatures. Alkaline batteries perform poorly at colder temperatures: they must be above 40 degrees F for best results. Lithium batteries perform well across a much wider temperature range, including below freezing.

To conserve battery power, the XPS sight has an auto shutdown feature that powers the sight down either four or eight hours after you last manipulate the buttons. The reticle retains constant brightness throughout the operational life of the batteries. If the battery is low, the reticle blinks for a few seconds at start-up.

The XPS is installed and removed with a single slotted thumb screw. It is de-



ABOVE: XPS2-300 is installed and removed with a single slotted thumb screw, and is designed to mount to any one-inch Weaver or Picatinny (MIL-STD-1913) rail.



LEFT: XPS2-300 offers two-dot ballistic drop reticle that lets shooter zero either subsonic or supersonic rounds in the same reticle pattern.

BELOW: XPS2-300 is offered in popular XPS2 platform, the shortest and lightest HWS sight available.



signed to mount to any one-inch Weaver or Picatinny (MIL-STD-1913) rail.

Windage and elevation adjustments on the XPS are easily made via separate click adjustment dials on the side of the housing. The adjustment dials are grooved with a slotted screw head. A specialized tool isn't necessary to make adjustments: a coin or cartridge case works well.

Each click changes the bullet impact point by approximately 0.50 MOA at 100 yards. The adjustment dials are mounted flush with the machined housing to prevent accidental changes in the point of aim.

EOTech designed its HWS to withstand milspec drop tests and remain fully operational. All the electronics are fully encapsulated in a shock-absorbent resin cavity. According to the company, the HWS are extensively tested during the validation of the product using recoil simulators and a variety of environmental conditions.

"THERMAL DRIFT"

The SOF Weapons Program Management Office at NSWC Crane has recently reported (in a SOUM transmitted to SOF on 14 September 2015) some issues with reliability of the HWS at extreme operating temperatures, referred to by the PMO as "Thermal Drift." The PMO has noted a +/- 4 MOA shift at -40 degrees F and 122 degrees F.

EOTech states on its website: "EOTech's sights will experience a point of impact shift away from the point of aim

The XPS has 20 normal brightness settings that are easily scrolled through using up and down arrow controls.

when the sight is used at a temperature different from the temperature at which the sight was zeroed. This shift is greater the more extreme the temperature change. For example, when a sight is zeroed at 70°F then acclimated to 50°F, less shift will occur. On the other hand, if zeroed at 70°F, then acclimated to 0°F, more shift could occur. The maximum shift will occur at temperature extremes and could be up to 5 MOA. Therefore, to achieve optimum accuracy, the sight should be re-zeroed whenever the temperature changes markedly from the temperature at which the sight was zeroed."

Although the HWS was originally stated to be parallax free, all EOTech sights exhibit a varying degree of parallax depending on operating conditions.

HEADS UP DISPLAY

The Heads Up Display (HUD) is constructed of a hardened three-layer, shatter-resistant laminate glass that is 3/16-inch



XPS2-300 on author's San Tan Tactical STT-15 300 BLK pistol build.

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thick. The glass is quite durable. It took several hard hits with a ball-peen hammer to break a test sample. Additional protection for the HUD is provided by a roll-bar type hood.

The optical cavity is sealed and enclosed with a state-of-the-art aerospace composite, providing water- and fog-resistant operation. The XPS is submersible to ten feet for 24 hours.

In holography, all the information required to reconstruct the reticle image is recorded everywhere in the HUD display window. If the window is obstructed by mud, snow, rain, or even if the exterior laminated window is shattered, the HWS remains fully operational, with point of aim maintained. This is not possible with any other optic.

The battery cap and latch on the XPS have been replaced with a simple O-ring, tethered cap, which provides better sealing of the battery compartment and prevents the possibility of losing the battery cap.

The battery compartment is separated from the base, so it can hover over the delta ring of AR-15 series rifles. This design lets the user mount the XPS farther forward on the upper receiver rail, freeing up additional rail space for the G33 Magnifier, night vision (on NV compatible models), and laser devices.

BRIGHTNESS RANGE

The XPS has 20 normal brightness settings that are easily scrolled through using up and down arrow controls. The brightness range of the latest generation HWS, including the EXPS and XPS, has been increased to greatly enhance

the low-light performance of the sight. The sight automatically returns to default setting 12 anytime it is turned on. The XPS2-300 is not night vision compatible.

The reticles can easily be seen against light targets in desert, tundra, or snow-covered environments as well as in extreme low-light conditions without washing out the target. No muzzle side signature is visible under normal use.

The reticle in the XPS2-300 is a 68 MOA circle with two one-MOA aiming dots. The reticle is calibrated for the 300 BLK but compatible with any weapon platform and usable with or without magnification.

With a conventional reflex sight, a glare elimination filter is necessary to eliminate glare as a result of reflective coating and the curvature of the lens. Besides adding cost to the sight, this filter reduces the effective light transmission by approximately 20%.

All optical surfaces on an HWS are flat. They're treated with a scratch-resistant anti-reflective coating to eliminate additional muzzle side signature due to reflective glare. A glare elimination ("kill flash") filter is not needed.

If you shoot the 300 BLK and like the HWS, the XPS2-300 may be just the ticket. ☺

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A Second Amendment President? We'll See

AT the time of this writing, President Donald Trump has been in office less than a month—a situation that has caught many by surprise.

Gun rights advocacy groups are claiming much of the credit for Trump's victory (or at least as importantly, for Clinton's defeat)—a claim not easy to dismiss out of hand. It would certainly be difficult to argue that in an election this hard-fought, this bitterly contested, this narrowly won and lost, the huge and desperate efforts of these groups and their members did not play *some* critical role. (The NRA's \$30 million+ expenditure in the race set a record for the group and exceeded the amount spent on the Republicans' behalf by any other group, aside from a few Super PACs.)

And a defeated Hillary Clinton is certainly a priceless prize for gun rights advocates, particularly given the next President's likely opportunity to shape the Supreme Court. The Clinton campaign's declaration months ago that she believed the Supreme Court's *Heller* decision was "wrongly decided" indicated an interest on her part to end the court's recognition of a Constitutionally guaranteed right of the individual to own firearms.

Coming from someone who would have appointed at least one Supreme Court Justice, gun rights advocates were understandably shaken.

But the gun rights groups aren't showing any signs of being content to play defense. With not only the Republican acquisition of the White House, but their retention of the Senate (a

seemingly very dicey proposition only a short time ago) and House (expected before the election, but few treated it as a sure thing), gun rights groups are declaring, "It's *our* turn now," and making sure the Republican Party, from Trump down, is aware of gun owners' contributions to their electoral success.

Gleefully written articles explore how to prioritize gun rights advocates' wish list: National concealed carry reciprocity? Suppressors off the NFA list? Repealing Obama's anti-gun executive orders? Repealing the noxious Hughes Amendment to the Firearm Owners Protection Act of 1986, which bans private possession of machine guns manufactured or imported after that date, even for those willing and able to jump through the NFA hoops?

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Many seem to be treating all that and more as in the bag already.

Well, maybe, maybe not.

For one thing, although the Republicans held onto the majority in the Senate, it's a slender majority—certainly not filibuster-proof. And Democrats may be inclined to use the filibuster, *liberally*, especially given the Republicans' plan, publicly announced prior to the election (when a Democrat President seemed nearly inevitable and a Democrat Senate majority pretty likely), to use the filibuster to thwart Clinton at every turn.

In other words, it seems legitimately open to question whether or not Republicans can accomplish some of those things, even if they're inclined to go to the effort and expend the political capital to do so.

And that they will be inclined to do so seems far from certain. It's not exactly unusual for a politician, fresh off a hard and narrowly won victory, to "forget" the people who made that victory possible, and the promises made to them.

Trump, although styling himself as the "non-politician," might nevertheless embrace *that* particular tool of the politician early and often.

And Trump has never been what anyone would call a "Second Amendment absolutist." In 2000, he even wrote about his support for banning so-called "assault weapons" and for longer waiting periods on gun purchases.

Certainly it's *possible* that his apparent change of heart on those issues is genuine, and perhaps even permanent, and strong enough to hold up even if he sees a personal advantage in changing sides yet again.

Even after his ostensible conversion, though, with tens of millions of dollars from the NRA backing his political ambitions, he continues to voice his support for the "stop and frisk" policies from the dark days of Mayor Mike Bloomberg in Trump's NYC, but now Trump would apparently like to see such policies implemented on a national scale.

Would they overwhelmingly concentrate on African-Americans and Hispanics, as was the case in Bloomberg's New York? Does that matter? Perhaps even more alarmingly, Trump supports bestowing upon the federal government the power to block firearm sales to "suspected terrorists,"

without a conviction, an indictment, or even an arrest on formal charges.

But let's imagine that Trump becomes a true warrior for the Second Amendment. Let's imagine he truly understands what "*shall not be infringed*" means, and commits himself to that ideal. Then everything is perfect, right?

Again, well, maybe.

In 1997, gun rights advocate Jeff Snyder wrote one of a series of brilliant essays that were later packaged into a book, *A Nation of Cowards: The Ethics of Gun Control*. That particular essay was called "Walter Mitty's Second Amendment," referencing the 1939 James Thurber short story, "The Secret Life of Walter Mitty," about a meek, henpecked man who constantly daydreamed of himself as an extraordinarily brave, tough, and resourceful hero.

Snyder's piece imagines a nation with a proud history of liberty, and where the government recognizes an untrammelled right of the people to keep and bear arms, but where the people are so pleased to be permitted the means to overthrow a tyrannical government that they don't bother to recognize the tyranny as it slowly grinds them under its boot.

A President with truly enormous ambitions, similarly copious self-esteem, and a history of having—and using—near absolute executive power (does any of this sound familiar?) might draw some interesting lessons from this hypothetical nation.

What if he not only made no attempt to reduce the people's access to effective firepower, but was seen to work to *expand* that access? Would he not then become a hero among gun rights advocates, even if he made some inroads on their freedoms in other areas?

If so, this hypothetical leader would need not fear the wrath of an armed populace, because he could be confident this wrath would never come. It cannot come, unless that armed populace has a line in the sand from which they will not retreat, and which they will, if need be, defend with the arms they possess, and with their lives, their fortunes and their sacred honor.

If tyranny comes to America, it won't be stopped by guns. Brave, principled, committed, and aware people *using* guns will stop it.

Let's be certain that's what we are. ©

COMBAT PROVEN

S.W.A.T.'s authors and staff have been on the front lines in wars on five continents over the last 40 years, including the current battle against ISIS. They have served in all five branches of the U.S. Military, including such distinguished units as Rangers, Special Forces, SEALs, MARSOC, Marine Recon, and Air Force Pararescue.



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GTR00

In the Police Museum

IT'S not uncommon for people of a certain era not to have appreciated that era when they were living in it. As an example, who would ever have envisioned that police service revolvers would be relegated to the dustbins of history or that the straight stick hickory baton would one day grace a display case in the police museum?

Some websites discuss in great detail old police equipment. Collectors of such items place a premium on equipment that is no longer manufactured and hard to find. Of course those of us who used this equipment on the job never saw this coming and so much of this antiquated gear was given away or simply lost.

Try to find a clamshell holster that isn't already spoken for, or the nick-eled, spring-steel .38 Special speed

strip commonly issued to recruits during my LAPD Academy days in 1976.

For that matter, try to locate a "Bru-cie Brown" duty rig with a breakfront holster. (This deplorable system used copious amounts of Velcro between the outer duty belt and inner under-belt and left sores on your sides after about a week of street wear.)

The breakfront holster was neither fast nor effective, and returning a four-inch revolver into it without pulling down one's uniform trousers in public was always a bit of a challenge.

A police Gamewell call box key made of solid brass was issued to all recruits back then for the blue cast-iron Los Angeles Gamewell boxes that were affixed to posts and telephone poles throughout the city. It was a simple, direct police-line telephone and nothing more. It dated back to the



1800s. Older models depicted a raised relief fist, with two lightning bolts contained within its grasp. Ostensibly, this meant it was both effective and "lightning-fast" to use.

I never used it once during my entire probationary time in Wilshire Division. Then one fine day, the city



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announced that the Gamewell system was to be defunct, kaput, no more! City planners put aside funds for their removal.

I distinctly remember the day the Gamewells were scheduled to be removed. The old timers came to roll call, left roll call, and immediately transferred bolt cutters, wrenches, and such devices from their personal vehicles to the black and whites. It was then a mad scramble across the city's streets for as many Gamewells as could be fitted into the black and whites' trunks and back seats.

Being a fresh-faced novice, I had no idea what I was witnessing. To make a long story short, every Gamewell throughout the city was gone within 24 hours! No city funds were required for their removal—not one dime.

Today a righteous Gamewell costs hundreds of dollars ... if you can even find one. Replicas are made, but they're not the same as a "real" one, which will have bullet holes, strikes, and ding marks from decades of Los Angeles City abuse. My partner bagged about six of these beauties. I have my original issued Gamewell key

(nicked and worn, but never used) in my shadow box, but I do not have a "real" Gamewell.

The same can be said for the Mickey Mouse ears on the black and whites. These had the shop number of the car in gold and black lettering on their outboard side. These too command a small fortune and, as with the Gamewell, the old timers saw to it that not one of these ever made it to the boneyard. The bell-shaped, chromed-center mounted siren? Same fate. If an old-time Los Angeles Police cop has a bar, it is most probably festooned with a Gamewell call box, two Mickey Mouse ears, and a genuine police siren so he can reminisce about the good old days while downing an ice-cold beer.

To this day, I distinctly remember standing on the roof of Wilshire Station gazing toward the Pacific Ocean before my first-ever roll call as a rookie Los Angeles Police Officer. A Pacific breeze rolled in under an amber-hued setting sun on Venice Boulevard while sirens wailed in the distance.

It was one hell of a ride until 2006, but I did not know it then. It was a simpler era, with less equipment and less

paperwork, and a greater emphasis was placed on one's wits and common sense to be a solid officer. Training Officers had decades under their belt, not just two years. Watch Commanders had white hair and had been there.

Years from now, I suppose Blackberrys, Tasers, and less-lethal munitions will be displayed in police museums. Plasma-ray diffusers will be all the rage then. GPS-embedded chips will recount, record, and analyze every second and action of your time on the streets. Drones will be pre-deployed to ensure your safety, while a heads-up display on your police issued virtual-reality eyeglasses will scroll through a list of 1,000 options available to you on the upcoming call. But it won't be the same. Not by a long shot. ☺

Scott Reitz is a 30-year veteran of the Los Angeles Police Department and the director of the highly acclaimed International Tactical Training Seminars. Course information and schedules are available at their website at www.internationaltactical.com. Looking Back, a free monthly newsletter, is available by email at itts@gte.net.

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Rifle Maintenance Tools

I'M a great fan of multi-tools. I probably own half a dozen different types. I always have one in my truck and usually one on my belt.

But up until now, I had avoided acquiring an AR-15/M16 multi-tool—not out of any dislike for them, but just because I hadn't gotten around to it. That changed when I opted for the Real Avid AR15 Tool. It advertises itself as the "Ultimate Tool for the AR15 Platform," and the description is justified.

REAL AVID AR15 TOOL

The AR15 Tool resembles a typical multi-tool in that it is based on a set of needlenose pliers that incorporate a carbide cutting edge as well.

The difference arises with the various tools that fold into the handles of the tool. Among these are a ten-function bolt carrier group scraper (as well

as firing pin and cam pin), bolt carrier carbon scraper that incorporates a file, 3/32-inch interchangeable pin punch, Tanto-type knife blade, interchangeable pick, carbide glass breaker, bolt override tool, and three-position locking bit driver (12 bits are included).

Not attached to the multi-tool but included and carried in the tool pouch/sheath is an A1 and A2 front sight adjustment tool. I really like the inclusion of the sight tool, as I have a couple of them that I often can't find when I need them. Having one tucked into the pouch of the AR15 Tool makes life easier.

Oh, by the way, the sheath is MOLLE compatible.

With the various bits for the driver, other tasks may be performed, including mounting optical sights, illuminators/pointers, sling swivels, rails, pistol or foregrips, and various other tasks. The inclusion of the pliers,



Gun Boss Pro Precision Cleaning Tools are useful for getting to hard-to-reach places for a thorough cleaning.



Real Avid AR15 Tool includes various accessories as well as MOLLE-compatible sheath.

Tanto blade, glass breaker, and driver and bits also allows the AR15 Tool to function as a general-use multi-tool. Military, law enforcement, and shooters will all find the Real Avid AR15 Tool useful. Suggested retail price is \$79.99.

GUN BOSS PRO

As long as I was evaluating the AR15 tool, I looked at a couple of other items from Real Avid. The Gun Boss Pro is a cleaning kit designed to carry and display for ease of use items needed to clean everything from .22 rifles or pistols to 12-gauge shotguns.

I've probably accumulated a dozen cleaning kits over the years, and still have remnants of the one I bought when I got my first single-shot .22 rifle over half a century ago. Unfortunately, they are not well organized, and I often have to search for the right brush, swab, or rod. The Gun Boss Pro organizes everything quite well, and, most important for me, makes it easy to put items back in the labeled storage space.

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The Gun Boss Pro is also compact enough that it can fit in my range box, so I have it with me should I need it. I don't generally clean guns until I get home, but occasionally I might feel the need to do so.

Having a sturdy cleaning rod is a necessity if a case gets stuck in a chamber. Having said that, I usually take along an older cleaning rod with stripped threads or some other problem rather than using one of my newer ones. Still, the Gun Boss Pro is handy. The kit does not include cleaning patches, solvent, or oil. Suggested retail price is \$29.99.

GUN BOSS PRECISION CLEANING TOOLS

One other Real Avid cleaning and maintenance item is worth noting. I have it in hand, but have not used it yet. I see it becoming invaluable on those admittedly too infrequent times when I do a detailed cleaning of one of my firearms.

Designated the Gun Boss Precision Cleaning Tools, this kit includes various hooks, brushes, and other accessories that allow access to those hard-to-clean places—you know, the ones you normally use pipe cleaners or patches on the end of the slotted cleaning rod tip to scrub.



Gun Boss Pro Universal Cleaning Kit offers not just an array of brushes, swabs, and tips, but does so in an organized way.

For me, this kit falls into the “better to have and not need than need and not have” category. I am lazy enough that if I can't get at a nook, cranny, or slot, I might neglect thoroughly cleaning it. Not so with the Precision Cleaning Tools. Suggested retail price is \$19.99.

Learn more about these items and others and order them at Real Avid's informative website.

MTM QUICK REST

One other item I've been using is worth mentioning as well. I received the MTM Quick Rest some months ago and threw it in my truck. It took a while before I really started using it, but now that I have, I find it quite handy.

This is a very lightweight, yet sturdy, simple rest. The design allows a solid standing or seated rest for the rifle's forearm for zeroing or static hunting. For a sniper, a sandbag or beanbag rest remains a lot easier to carry into shooting position. The Quick Rest incorporates a shooting pad designed to protect your rifle when shooting.

Many readers know that MTM makes far more sophisticated shooting rests, but they are heavier, more complex, and more expensive. The Quick Rest is simple enough and light enough that I can pick it up along with my rifle when moving among shooting positions.

These products simplify gun maintenance so you can spend more time shooting. I recommend giving any of them a try. ©

Thompson has come to rely more and more on the MTM Quick Rest for quickly zeroing optical sights.



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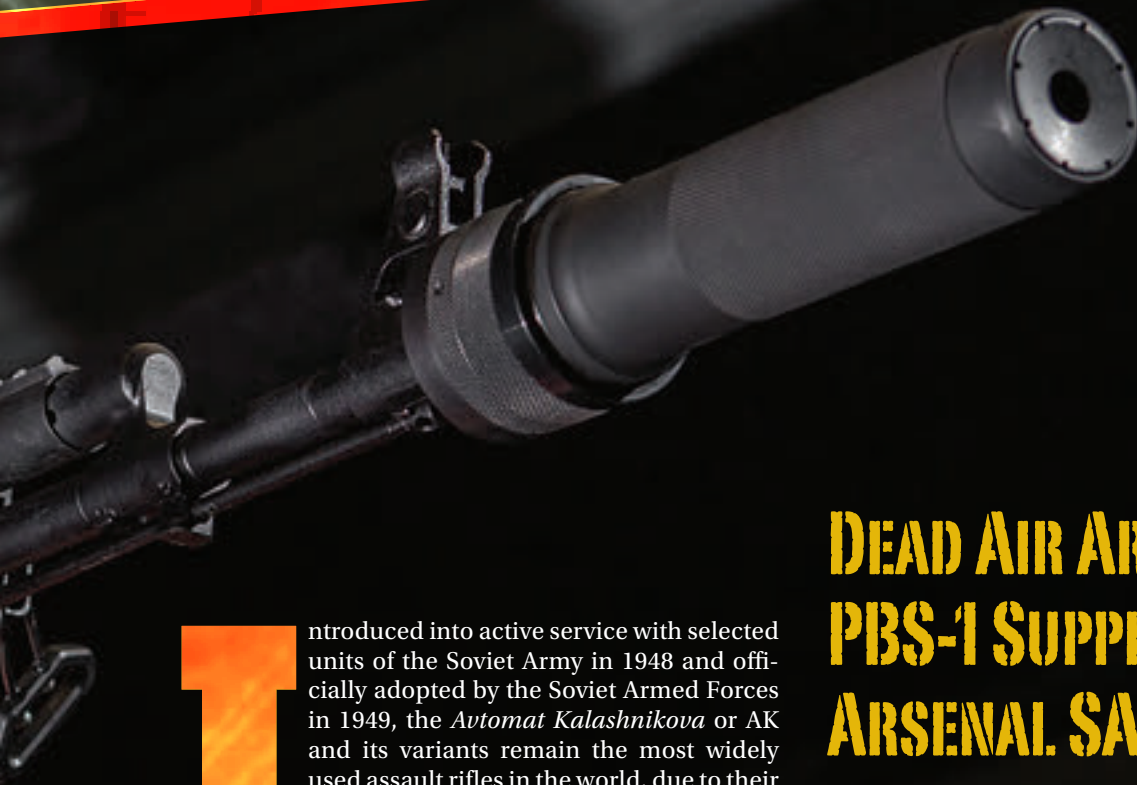
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DEAD AIR ARMAMENT PBS-1 SUPPRESSOR AND ARSENAL SAM7R-65 AK

Introduced into active service with selected units of the Soviet Army in 1948 and officially adopted by the Soviet Armed Forces in 1949, the *Avtomat Kalashnikova* or AK and its variants remain the most widely used assault rifles in the world, due to their comparatively low production costs, ease of manufacturing, reliability under harsh conditions, ease of use, and availability in nearly every geographic region.

The AK and its variants have been manufactured in dozens of countries. More AK-type weapons have been produced than all other assault rifles combined.

Rifles based on the Kalashnikov design have always presented some unique challenges for use with a sound suppressor. Thread diameters and pitches vary greatly, as does the thread concentricity with the bore. Kalashnikovs provide a large amount of gas pressure to the piston in the long-stroke gas system.

Although this is generally associated with great reliability in adverse conditions, adding a typical sound suppressor to the mix compounds the over-gassing. The resulting blowback makes for an unpleasant shooting experience.

Many sound suppressor manufacturers choose not to warrant their products on Kalashnikov-pattern rifles

because of the thread/bore concentricity issue. Other companies simply do not offer mounting solutions in Kalashnikov thread patterns in order to avoid the concentricity problem.

Mike Pappas, Founder of Dead Air Armament™, has long been a fan of the Kalashnikov. Mike, who co-founded another sound suppressor company in 2008, teamed up with silencer designers Todd Magee and Gary Hughes with the goal of building the best sound suppressors on the market.

Dead Air Armament has recently come out with its much-anticipated Wolverine PBS-1 sound suppressor for Kalashnikov rifles. Featuring classic combloc looks, the Wolverine PBS-1 is a state-of-the-art suppressor designed to overcome the issues faced in suppressing the AK.

I recently met up with Josh Locatis, Creative Director of Tap Rack Bang Creative, and gunsmith Kyle Pritchett, Operator/Founder of Down Range Customs LLC, for some range time with the Wolverine and Arsenal SAM7R AK at C2 Tactical in Tempe, Arizona.

By Eugene Nielsen

Photos by Tap Rack Bang Creative

◀ Kyle Pritchett of Down Range Customs shoots Arsenal SAM7R-65 AK with Dead Air Armament Wolverine PBS-1 sound suppressor at C2 Tactical in Tempe, Arizona.



Locking collar unthreaded, allowing clearance for spring-loaded collar to be pulled back ready for install.



Spring-loaded collar locks into front sight retainer pin, and locking collar is tightened for sustained shooting security.



WOLVERINE PBS-1

The Wolverine was designed from the ground up for use on Kalashnikovs. Not only does it eliminate the need to buy multiple suppressors to fit different threaded combloc rifles, but it also strikes an ideal balance between suppression and minimal back pressure. It accomplishes this while remaining true to the overall external size and appearance of the original Soviet military PBS-1 sound suppressor for AK-47 and AKM rifles.

In designing the Wolverine, the varying degrees of non-concentric threads found on Kalashnikovs needed to be accounted for to



ABOVE: Wolverine PBS-1 includes 24mm collar to be used in conjunction with larger thread patterns, as well as takedown tool.

RIGHT: Wolverine PBS-1 includes thread insert for popular 14L AK thread pattern.



The Dead Air Armament Wolverine PBS-1 and Arsenal SAM7R-65 are a great combination for any Kalashnikov aficionado.

prevent baffle strikes. This was accomplished via a specifically engineered bore taper that allows the Wolverine to be used on all but the worst examples of non-concentric threads.

In testing conducted on a large number of foreign and American barrels, Dead Air Armament achieved what it believes to be the optimal bore diameter and taper to prevent baffle strikes on the vast majority of rifles without major sacrifices in sound reduction performance.

You can simply screw the Wolverine on and shoot it with confidence that damage to the unit is highly unlikely. In the event that baffle strikes occur, any damage to the suppressor is covered by the company's lifetime warranty.

Kalashnikovs are hugely over-gassed. This turned off many users from suppressing their weapons, since a typical sound suppressor only makes the problem worse. The Wolverine addresses this with a baffle stack that is designed to have minimal backpressure and to be balanced between the muzzle and ejection port.

The Wolverine has been optimized to equalize the two and thus provide effective muzzle suppression without unnecessarily increasing sound pressure levels and blowback. The result is a much more pleasant suppressed shooting experience.

Dead Air Armament didn't cut any corners when it came to strength and durability. The Wolverine is multi-caliber rated up to 7.62x54R. It is full-auto rated with no restrictions on minimum barrel length. Like the Kalashnikov, it has been built for ruggedness.

The Wolverine has a tough stainless steel exterior with a Cerakote® High Temperature Firearm Finish coated body and nitrided parts. The baffles are Stellite®, a cobalt-chromium alloy specifically designed for wear and heat resistance. Stellite is exceptionally resistant to heat erosion, making it the ideal material for suppressor baffles. It costs more and is harder to machine than most other baffle materials, but provides maximum baffle life.

» SPECIFICATIONS

DEAD AIR ARMAMENT WOLVERINE PBS-1

RATING	Multi: Up to 7.62x54R
LENGTH	7.4 inches (with thread adapter)
WEIGHT	19.8 to 24.4 ounces, depending on mount
DIAMETER	1.5-inch tube, 1.93-inch outside diameter
FINISH	Cerakote body with nitrided parts
MINIMUM BARREL LENGTH	No restrictions
SUGGESTED RETAIL	\$1,099.00

The Wolverine maintains the compact form factor of the original Soviet PBS-1 suppressor. It has an overall length of 7.4 inches (with thread adapter) and a 1.93-inch outside diameter with a 1.5-inch tube. Weight is 19.8 to 24.4 ounces depending on the mount. Installation of the Wolverine is tool-less and takes only seconds.

THREAD DIAMETERS

The Wolverine comes with two external locking collars to accommodate the widely varying thread diameters and pitches associated with Kalashnikovs. The collars work with the rifles' existing front sight block pin to help prevent loosening of the suppressor from recoil under sustained fire.

A 14x1 LH thread insert is included with the Wolverine, making it compatible with most threaded 7.62x39mm AK variants right out of the box. Additional thread inserts to accommodate other common combloc-pattern threads are available (24mm RH AK-74, 26mm LH Yugoslavian M92, et al), as well as common American threads (1/2x28 and 5/8x24) at minimal cost.

SOUND SOURCES

The two main sources of sound that need to be considered when "silencing" the discharge of a firearm are the weapon's report, i.e., muzzle blast, and the "crack" caused by a supersonic bullet passing the sound barrier. The sound from the cycling of the firearm's action is a third consideration for some specialized applications.



Factory-installed four-piece flash hider removed, exposing 14L threaded muzzle.

» SPECIFICATIONS

ARSENAL SAM7R-65

CALIBER	7.62x39mm
TOTAL LENGTH	36.5 inches
BARREL LENGTH	16.25 inches, chrome plated
TWIST RATE	1:9.45
MUZZLE DEVICE	Bulgarian four-piece flash hider
WEIGHT (unloaded)	8 pounds
MUZZLE VELOCITY	2,329 fps
RATE OF FIRE	40 rounds per minute (practical)
SUGGESTED RETAIL	\$1,359.00



LEFT: Unique Bulgarian four-piece flash hider.

BELOW: Test rifle upgraded with U.S. PALM 30-round magazine and AK Battle Grip.



Muzzle blast is the most significant source of sound generated by a firearm. It is the consequence of the shock waves resulting from high-pressure gases exiting the barrel. If the pressure is reduced immediately before it exits, the weapon's report will be reduced. Muzzle blast is also reduced by decreasing velocity of the gases and either absorbing the sound waves or canceling them by interference with reflected waves coming from the same source.

No suppressor can eliminate the ballistic "crack" of a supersonic bullet. For maximum sound mitigation, subsonic 7.62x39mm ammunition is available from several manufacturers that allow both semi-auto and full-auto fire with a suppressed Kalashnikov.

OSHA limits impulsive or impact noise at 140db peak sound pressure. Without hearing protection, exposure to any impulse noise over 140db causes varying degrees of permanent noise-induced hearing loss. It can also lead to tinnitus.

Although a number of variables impact sound suppression, Dead Air Armament states that the sound pressure levels with the Wolverine will range from 136 to 138db at the muzzle and 138 to 142db at the ejection port, across varying hosts with standard military 7.62x39mm ammunition. For comparison purposes, these sound pressure levels are roughly equivalent to that of an unsuppressed .22 Rim-fire rifle shooting High-Velocity .22 LR cartridges.

MANUFACTURER'S TESTING

Dead Air Armament tests all its suppressors to MIL-STD-1474D. This is the standard military test to measure potential hearing damage from noise and is the industry-accepted standard for testing firearm sound suppressors.

Testing is conducted with a sound meter placed one meter to the left and level with the muzzle, with the microphone oriented in an upward position, and 1.6 meters off the ground. Tula 122-grain FMJ 7.62x39mm ammunition was utilized by Dead Air Armament during testing of the Wolverine PBS-1.

ARSENAL SAM7R-65 AK

The Wolverine was mounted on an Arsenal 7.62x39mm SAM7R-65 semi-auto AK. The SAM7R-65 is manufactured by Arsenal Company of Bulgaria

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with 100% new production parts and components and then re-manufactured in the U.S. by Arsenal, Inc of Las Vegas. Materials, fit and finish are second to none. The SAM7R-65 is 922(r) compliant with U.S. or foreign magazines.

The SAM7R-65 receiver is milled from a hot-die hammer-forged receiver blank. Hot-die hammer forging produces stronger and finer-grained steel than the milled receivers machined from bar stock. The hammer-forging process eliminates internal voids and cooling deformations.

According to Arsenal, each forged receiver blank requires over 5.5 hours of milling before assembly, but delivers a receiver of unequalled strength, precision, and durability for substantially extended service life.

The internal components are a mixture of Bulgarian and U.S.-made parts. The bolt, bolt carrier, and double-hook trigger are hot-die hammer forged by Arsenal. The hammer and disconnect are U.S. made.

The SAM7R-65 has a cold-hammer-forged 16.3-inch barrel with a 1:9.45 twist rate from Arsenal's Bulgarian factory, based on Steyr manufacturing technology. It has a hard-chrome-plated bore and chamber. The barrel is equipped with a removable Bulgarian four-piece flash hider with 14x1mm left-hand threads.

The SAM7R has a total length of 36.5 inches and weighs eight pounds without a magazine. The rifle has an intermediate-length buttstock with 13.4-inch length of pull. The rifle is equipped with an AK scope mounting rail attached to the left side of the receiver. It also has a standard AK 800-meter leaf-spring rear sight.

Each SAM7R includes a cleaning rod, bayonet lug, black polymer furniture, one ten-round magazine, sling, oil bottle, and cleaning kit.

The test rifle was equipped with an Ultimak rail, Aimpoint Micro T1 sight, and U.S. PALM Battle Grip. U.S. PALM 30-round AK30 polymer magazines were employed for testing.



Test rifle equipped with Ultimak rail and Aimpoint Micro T1.



Red Army Standard Elite 7.62x39mm ammunition was employed in evaluation.

AT THE RANGE

The Arsenal SAM7R with Wolverine PBS-1 provided outstanding performance during our testing, especially considering the platform and compact size of the suppressor.

First round pop (FRP) was very minimal. FRP results from the burning off of the oxygen in the suppressor by the first round, and occurs with all suppressors to varying degrees. Other than a very slight flash on the first round, no muzzle flash was observable to the naked eye.

Gas blowback, while definitely noticeable, was less than expected for a suppressed AK. In the opinion of all present, Dead Air Armament definitely has met its intended design parameters for the Wolverine.

Reliability, not accuracy, is the strong suit of the AK. There were no malfunctions—not at all surprising with a well-made AK like the Arsenal SAM7R-65. The addition of the Wolverine did not affect reliability in any way.

Compared to other modern assault rifles such as the M16/M4, the 7.62x39mm AK is not regarded as the most accurate weapon. That being said, the SAM7R-65 is reportedly one of the more accurate Kalashnikovs.

The trigger on the sample SAM7R-65 was excellent, with zero take up, a uniform pull, and a crisp, clean break, with no over-travel and a positive reset.

RED ARMY STANDARD AMMO

Century International Arms provided us with a 180-round Range Pack of Red Army Standard Elite 123-grain FMJ 7.62x39mm ammunition for our testing.

Manufactured by the same factories that produced billions of rounds of ammunition for the Red Army of the former Soviet Union and her Iron Curtain regimes, Red Army Standard is available in many popular Warsaw Pact calibers, such as 7.62x39mm, 9mm Makarov, and 5.45x39mm.

If you're looking for reliable, comparatively inexpensive ammunition for your combloc-caliber weapon, Red Army Standard fits the bill. Although not match grade, it has more than acceptable

combat accuracy.

The Red Army Standard Elite is Red Army Standard's premium 7.62x39mm ammunition. It features a lead-core copper full metal jacket bullet and brass case, and is non-corrosive and boxer primed. Muzzle velocity averages 2,287 feet-per-second (fps) out of a 16.25-inch AK barrel, producing 1,428 foot-pounds energy at the muzzle.

FINAL THOUGHTS

The Dead Air Armament Wolverine PBS-1 and Arsenal SAM7R-65 are a great combination for any Kalashnikov aficionado, whether they be shooter or collector. You won't find a better or more versatile suppressor for combloc weapons than the Wolverine. It even comes with an instruction manual written in both Cyrillic and English!

The author would like to give special thanks to C2 Tactical for providing us with the use of its range for the evaluation. Voted Best Indoor Range in Arizona, it has 23 air-conditioned shooting lanes, a new state-of-the-art simulator, firearms rental (including full-auto), retail store, and much more. ©

Eugene Nielsen's background includes protective intelligence investigations and threat management, as well as red teaming security consulting. He has a BA degree from the University of California. He currently owns and operates an investigative and security consulting firm and is licensed in both California and Arizona.

SOURCES

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MOSSBERG MVP SCOUT

The grand prize for this Sweepstakes is a Mossberg MVP Scout Rifle.

The legendary Col. Jeff Cooper defined the general-purpose Scout rifle, and Mossberg has combined those key features in the MVP Scout bolt-action rifle.

The 7.62mm NATO Dual-Push bolt design accepts and feeds both M1A and AR-10 style magazines. The 16.25-inch medium bull barrel is threaded with a removable A2-style flash suppressor (thread cap provided). A high-visibility front fiber-optic sight is paired with a rail-mounted ghost-ring rear sight. The rifle comes with a Mossberg LBA Adjustable trigger, oversized tactical bolt handle, pillar-bedded stock, and 11-inch Picatinny rail. Two removable side-mounted rails are also included.

The Mossberg Scout is available with or without optics. The Sweepstakes rifle comes with the excellent Vortex Crossfire II Scout Scope. A sling is also included.

BLACK HILLS AMMUNITION TIPPED MATCH KING

To feed the Mossberg Scout, the winner receives 200 rounds of Black Hills .308 168-grain Tipped Match King.

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TACTICAL TAILOR COVERT CARRY CASE

To carry the rifle, we are including a Covert Carry Case from Tactical Tailor. Designed to be more discreet than conventional weapons cases, the CCC helps you keep a lower profile when transporting your firearms. Constructed of 1000-denier Cordura nylon inside and out, it includes a four-point adjustable retention system that keeps your weapon secure while 3/8-inch closed cell foam helps protect it. The case also features dual carry handles, a removable shoulder strap, heavy-duty coil zippers, and external pockets with elastic loops to secure four standard magazines.



SOURCES

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FBI

ISSUES NEW PISTOL!



Glock 19M

By Bob Pilgrim

IT'S been quite a while since trainer Ken Hackathorn told me why he started to carry and train with a Glock pistol, relegating his iconic 1911 pistol to a backup or secondary role. He simply stated, "Bob, you find the Glock anywhere in the world. It's ubiquitous."

Chuck Taylor, another noted trainer and 1911 aficionado, turned to the polymer pioneer quite a few years ago after he conducted some unbelievable round count and torture tests with his piece.

Many other metal pistol mavens have followed suit. There's obviously a love affair going on between military, police and civilian concealed carry club members with the Austrian-American creation.

FBI REJECTION/GLOCK'S RIPOSTE

I can remember when Glock was a dirty word around the FBI, because its simple point-and-shoot attribute was considered unsafe. Firearms Training Unit (FTU) principals published a pamphlet on the "Wonder Nines" that were beginning to proliferate in America and piquing the interest of law enforcement.

New FBI service pistol, Glock 19M in 9x19mm. Features include rounded muzzle, pebble-grain grip flats, finger slot for forced magazine extraction, enlarged magazine base pad, and exchangeable beavertail back strap.



Agents receive four 15-round magazines with orange followers, giving them 61-round carry potential.

These gun gurus condemned one pistol only, and that was Gaston Glock's Austrian import. Because it had no external safeties to activate, save for its "Safe Action" trigger, the Bureau considered the pistol an accident waiting to happen, and historically there were more than a few negligent discharges.

Rumor had it that Glock was going to sue the FBI over this assertion and others that claimed the plastic gun was a potential "terrorist's weapon," because it would not be spotted by metal detectors.

I was contemplating all this flack as I reported to the FBI Academy's Gun Vault to attend a meeting with the man himself, Mr. Gaston Glock. A highly restricted area, the Gun Vault had room for only a few people, including Mr. Glock and one other company representative. The authors of the FTU pamphlet were not there.

The meeting was devoid of any niceties. Right after we were introduced, Mr. Glock got down to business by breaking down a G17 and pointing out all the internal metal parts that made the gun work and safeties that made it safe and could be seen by metal detectors. This was not a sales pitch, but an effort to clear up any misconceptions.

I tried to interject a little humor when I asked Gaston if the space between the magazine well and backstrap was where they kept their schnapps, but he ignored my joke entirely.



DEA'S GLOCK

When I was loaned to the DEA during the attempted DEA/FBI merger, I was issued a Glock 17. DEA's firearms unit was co-located with the FBI FTU in a nearby building and was issuing its agents Glocks. They were very happy with them. But there was no serious effort by the FBI to spend time with DEA to find out more about the gun and why it was so popular.

While shooting falling plates at 50 yards with an HRT buddy, I was approached by one of the FTU's "old ladies." When he noticed I was firing a Glock, he recoiled in horror, exclaiming that it was "unsafe, unsafe." He scampered off to tell others about his close encounter with death. With that same G17, I was the first shooter to clean John Shaw's Mid South's 20-event standards that he formulated with the help of SEAL and Delta operators who attended his school.

FBI HANDGUN ODYSSEY

Every few years, the FBI looks for a new pistol. I was initially trained with revolvers. When the field SWAT program was transferred to the Special Operations and

AmeriGlo sights are vast improvement over factory sights. Orange post is quick to acquire, glows brilliantly in low light, and fits perfectly in rear sight oval aperture.

Research Unit, we acquired the 9mm S&W 459 pistol, while field agents carried the S&W M13 revolver.

The 459 was at the Miami Massacre, and one launched a potentially fatal bullet that lodged near one shooter's heart, but he ignored the wound and kept on shooting. After much agonizing over the event, S&W was contracted to build the 1076 pistol in 10mm.

The caliber was fine, but the pistol did not work out for the majority of agents. After much discontent, repairs and other tinkering, it continued to be issued until the pistols were removed through attrition. The Sig P226 hi-cap pistol was adopted and was well received in spite of some idiosyncrasies that surfaced later. In addition to 15-round magazines, SWAT team members received a 20-round stick.

We also switched from a 115-grain bullet to a 147-grain projectile. FBI HRT had their FN Brownings, which they loved, but eventually traded them in for high-capacity .45 ACP 1911s. Reliability problems led to the acquisition of single-stack 1911s, which after a number of years of service are currently being phased out for another pistol.

As an aside, FBI HRT evaluated some high-dollar 1911s

in 10mm before settling on the .45 ACP. I was shooting with them with a Glock 20 10mm pistol. Prone at 50 yards, the G20 produced groups as good as the 1911s.

FBI EVOLUTION

After changes in the FTU hierarchy, the FBI "evolved" and adopted the Glock 22/23 in 1998. Up until December 2016, the G23 with finger grooves and rail was the standard issue to field agents.

But with the advent of vastly improved 9x19mm ammunition and the successful testing of the Speer 147-grain G2 Gold Dot JHP, the Bureau decided to return to the nine. In fact, the FBI Defensive Systems Unit considers it the best round they've ever tested and favor it over the .40 S&W and .45 ACP.

Besides required penetration through bare gelatin and several urban environmental barriers, it outperformed the other two calibers in FBI criteria. During recent testing for a new handgun, 120,000 rounds of the Speer were fired without one ammunition failure. The FTU also noted that the Parabellum cartridge offers several advantages: less



FBI G19M (top) with its predecessor, the Gen 4 model. M model has absence of front-strap finger grooves and bilateral slide stop/release. New pistol had AmeriGlo sights. Gen 4 gun is personally owned and has had aftermarket AmeriGlo sights installed. M models will initially be manufactured in Austria.

recoil, faster shot-to-shot delivery, more stored stops, and a lighter carry piece.

Private citizens can acquire 50 rounds of G2 ammunition for a tad less than \$30. G2 bullet designs are also available in 180-grain .40 S&W and 230-grain .45 ACP.

SURPRISE TESTING OUTCOME

Many were surprised when Glock won the FBI contract, because the FBI RFP (Request for Proposal) appeared to be written for the modular SIG Sauer P320 pistol. The P320 is a fine shooting and highly versatile piece that can be changed to numerous configurations and calibers just by moving the Fire Control Unit from one chassis to another. But three G17s and three G19s surpassed it in the reliability department by expending 20,000 Speer rounds per gun for a total of 120,000



M model receiver (right) has enhanced internals coated with NDLC. Some springs do not have to be replaced until 10,000 rounds have been expended.

rounds without one stoppage or malfunction.

Preceding completion of the FBI's testing, SEAL teams and U.S. Special Operations Detachment Delta announced their acquisition of G19s. In addition, the USMC MARSOC and MEUSOC also abandoned its recently acquired Colt 1911 Rail Gun for the G19.

Glock has 65% of the police market and now may have the biggest share of the military market, currently producing 70,000 pistols per week with three shifts. Like McDonald's, they have sold millions and millions of them. To keep up with new demand, Glock may have to open another plant.

GLOCK 19M

I don't know if the G19 the military is acquiring is the FBI's M model. To comply with the FBI RFP, Glock had to provide a full sized and compact pistol, along with training pistols, and had to make some substantial changes to the gun.

I had the good fortune to spend some time with an FBI issue G19M and compare it to a Generation Four pistol. The issue pistol exhibited the following changes and features:

- No front-strap finger grooves
- Conventionally rifled barrel, crowned at the muzzle
- Stronger trigger safety pin
- Enhanced locking block and rails
- Longer recoil spring assembly
- Enhanced ejector
- Improved trigger
- Enhanced firing pin safety and spring
- Ambidextrous slide releases/stops, both shielded
- Stronger slide lock lever spring
- Improved magazine base pads
- Flared magazine well
- Cut-out in grip to facilitate easy removal of stuck magazine
- AmeriGlo sights
- Safariland ALS holster
- Four back straps
- Externals and internals coated with NDLC
- Other upgraded internal parts

A number of federal agencies are eligible to piggyback onto the FBI \$85 million contract, so Glock may have an extraordinary number of pistols to deliver. Initial shipments of the M model will come from Austria.

G19M SPECS

The RFP required a trigger weight between 4.5 and 6.0 pounds. The issue pistol's pull was 4.75 to 5.0 pounds with only 120 rounds through it. The trigger had a short, smooth take-up that broke crisply with no noticeable overtravel.

The G19 Gen 4 pistol had longer pre-travel and some creep when it hit sear resistance. Reset was also better on the M model. I fired three magazines of Speer ammunition through the M model. Trigger response during rapid fire and recoil control were excellent.

The M model weighs 22 ounces without magazine—slightly heavier than the G4 at 21.8 ounces. The M model's go-to-war weight with 16 rounds of 147-grain ammunition is 32.5 ounces, while the G19 Gen 4 weighed 32.1 ounces.

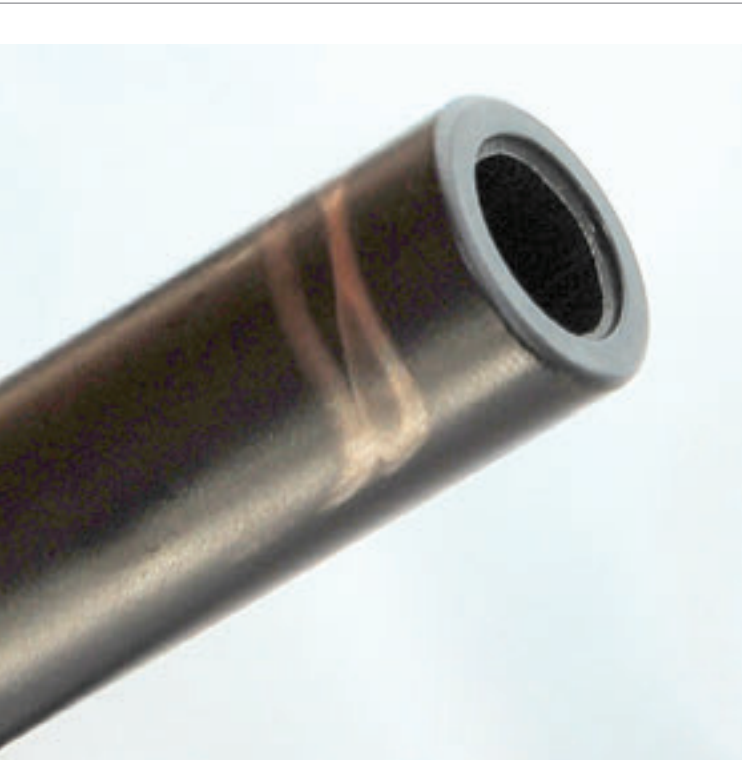
Grip panels have a pebble-grained texture that is not abrasive but is sufficient to provide a good purchase on the weapon when it is dancing from recoil. Front and back



ABOVE: M model's magazine well (right) is flared as well as beveled, and has cutout to facilitate forced removal of recalcitrant magazines.

RIGHT: M model's barrel (right) is a "Hybrid Polygonal" with conventional rifling.

BELOW: M model's barrel is crowned for increased accuracy. Note unusual wear marks on barrel.



straps are checkered. Agents have four different exchangeable back straps to choose from: two medium and two large, with or without a beavertail.

Its hammer-forged 1:9.84 twist barrel is "conventionally" rifled, but is reportedly a "Polygonal Hybrid." Its polygonal barrel has a groove in it, which is supposed to result in better accuracy. Perhaps another reason for the change is to give the agents deploying overseas the option to fire lead bullets if that's the only ammo available. The M model's muzzle is crowned, again for improved accuracy.

Bi-lateral slide releases/stops adorn the M and are shielded from inadvertent engagement by raised frame projections. Left-handed agents are not ignored. The Safariland holster has to be modified to accommodate the dual slide releases/stops, which the company has agreed to do.

Internal upgrades consist of a ¼-inch longer dual recoil spring that mates with an improved notch on the barrel's lug. The firing pin safety has been reshaped from oval to square and is alleged to have been improved.



Slide and internal parts are coated and "cloaked" with state-of-the-art Nitrogen Doped Diamond-Like Carbon (NDLC). Tennifer, previously used by Glock, is a metal treatment, whereas NDLC is a metal coating. Three springs essential for pistol operation have been improved and can endure 10,000 rounds before being replaced.

Four 15-round magazines with orange followers and larger base pads are issued to each agent, giving them a 61-round carry potential. The larger base pads facilitate stripping and inserting magazines. This belt load of ammunition is a quantum leap in capability when compared to the 12 rounds I carried when armed with an S&W M19 revolver.

G19M AND G19 GEN 4 COMPARISONS

Polygonal rifling has the reputation of creating a better seal and, ergo, higher velocities than conventionally rifled barrels. There are so-called fast and slow barrels, and when Ray Chapman at his Chapman Academy let us chronograph our Brownings and Glock 17s, the Glockes were noticeably faster.

I wanted to do the same and compare the M model's barrel with that of the Gen Four's barrel for velocity and accuracy. Even though the day was bitterly cold, with wind chill in the 20s and numb fingers protesting, both 19s shot and handled well. Furthermore, in the gusts, I got tighter five-round groups shooting standing off hand with a two-handed grip than from a bench rest at 25 yards.

Groups of 1.64 and 2.19 inches were obtained from the Gen 4 G19 and G19M respectively. A high individual muzzle velocity of 1,016 feet-per-second (fps) was delivered by the Gen 4 G19 with the Speer G2 147-grain round. Average velocity for a five-round string was 969.6 fps, and Standard Deviation was 26.8.

The M model pitched a high individual velocity of 989.0 fps and an average velocity of 951.4 fps. Standard deviation was 26.6.

Although ballisticians have stated that lower velocities with the same bullet often result in less expansion but deeper penetration, which is one of the most important factors in bullet performance for the FBI, the difference in velocities between the two pistols should produce insignificant differences in terminal performance.

Even though the Gen 4 G19 demonstrated slightly better performance in the accuracy and velocity departments, the two pistols are nearly identical in those two categories.

TEETHING PROBLEMS

Some early teething problems have been reported by a mid-western police department, and their G17Ms had to be recalled. It was reported that during dry firing, some of the pistols' slides separated from the receiver. It is not uncommon for new pistols to exhibit "birthing" problems in the hands of end users after they live with the firearm for a while. Glock, like other major manufacturers, usually corrects the problem quickly.

No problems of any significance have been reported by the FBI regarding the G19M.

Safariland ALS is FBI's holster of choice, but has to be modified to accommodate bi-lateral slide stop/releases.



M model's recoil spring has been lengthened slightly and barrel has enhanced lug slot for more positive spring base insertion. Firing pin safety and spring have been modified in M model (top). It is now square vice round.

CONCLUSIONS

In the eyes of the beholding shooter, Glocks are either loved or hated, considered ugly or functionally beautiful. But nevertheless, after a rocky American start and gradual acceptance by the shooting communities, Glock has won the hearts and minds of the armed masses.

Glock pistols are considered the AK of the handgun world. They are often better than "combat accurate" and have considerable capacity and recoil-absorbing qualities, making them excellent fighting pistols. But their most endearing quality has been down-and-dirty reliability, making them the choice of gunfighters in the know. And they're affordable.

Many excellent polymer pistols are on the market. Most of them have capitalized on Glock's innovations and "improved" upon them. Imitation is the sincerest form of flattery, but the fact that the G19 and its full-sized sibling are now the choices of Tier One national counter-terrorist team assets makes it a no-brainer for me. ☺



SOURCES

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VERSATILE, HEAVY-HITTING

AR

CMMG MkW ANVIL
.458 SOCOM

By Todd Burgreen



What comes to mind when someone mentions getting an AR-pattern rifle for personal defense, law enforcement, or even hunting? I'll bet most would first consider it chambered in 5.56mm/.223 Rem.

CMMG decided to up the ante with the AR platform by not being confined to the 5.56mm chambering. CMMG features AR models chambered in 7.62x51mm/.308 Winchester, 9mm, .300 BLK, .22 LR, 7.62x39mm, and most recently .458 SOCOM in the form of the CMMG MkW ANVIL.



5.56mm and 7.62x51mm (.308 Win) on left side of line-up offer scale to myriad of .458 SOCOM loads available.

.458 SOCOM

The .458 SOCOM emerged from what started as informal discussions within the U.S. Special Operations community after involvement in Somalia. Initial requirements were set forth that shaped the design of the .458 SOCOM. The cartridge needed to fit in standard AR-15 5.56mm magazines. Another important criteria was the ability to fire subsonic rounds to facilitate suppressor use.

Marty ter Weeme brought forth the .458 SOCOM cartridge in 2000 with Tony Rumore of Tromix building the first .458 SOCOM chambered rifle in February 2001. The .458 SOCOM is based on a lengthened .50 AE case that is then necked down to .458. The cartridge utilizes a rebated rim size similar to a .308 Winchester.

Upon testing, it was found that the .458 SOCOM not only lived up to the initial functionality requirements, but also demonstrated ballistics that made it a viable caliber for a multitude of roles.

A surprising variety of .458 SOCOM ammunition is available, from companies such as Corbon, Lehigh, Southern Ballistic Research (SBR), Underwood, BlackButterfly, Polycase, and Venture Munitions. Bullet weights span from 140 to 600 grains. The SBR-loaded Polycase 140-grain ARX reaches nearly 3,000 feet-per-second (fps), 300-grain loads 1,800+ fps, 400-grain 1,600+ fps and 500- to 600-grain 950 to 1,200 fps. For comparison, think .45-70 Government power in a semi auto when using 300- to 400-grain bullets.

Research indicates that the 300- to 400-grain loads are the sweet spot for the caliber, with the most bullet load options. The 500- to 600-grain rounds are for suppressor use.

The .458 SOCOM was specifically designed to



MkW ANVIL as it ships from factory.

Photo: CMMG

The .458 SOCOM chambered CMMG ANVIL can easily penetrate barricade material and still engage targets with power to spare.

generate unprecedented stopping power at short to moderate ranges out of the AR. For 300- to 350-grain .458 SOCOM loads, a 150-yard zero will give a relatively flat trajectory out to 200 yards. A 150-yard zero will have the bullet offset less than one inch low at 50 yards, +2.5 inches at 100 yards, and dropping seven inches at 200 yards.

The .458 SOCOM's heavy, large-diameter bullets and moderate velocities make it well-suited for use in multiple arenas, such as urban/CQB environments, law enforcement, hunting, and personal defense. Shorter range is a shared characteristic of each of the listed roles. The .458 SOCOM's terminal ballistics and large projectile have equal effect on engine block or large hog, assailants with body armor or penetrating front windshields. It passes through automotive body panels easily.

THE ANVIL

The urge to merge AR modularity, ergonomics, optics, and accuracy with a heavier than 5.56mm cartridge has constantly appealed to the shooting community.

The CMMG MkW ANVIL's upper and lower receivers are created from 7075-T6 billet aluminum. The ANVIL's upper is an M4 flat-top style transitioning into a similar rail along the top of the CMMG RKM forend rail. The CMMG ANVIL's upper receiver is equipped with a case deflector as well as an ejection-port dust cover.

The MkW's receiver and bolt group are derived from CMMG's Mk 3 series of 7.62x51mm/.308 Win rifles. CMMG describes the MkW as a mid-sized AR receiver (3/4 inch shorter than an AR-10) and views its adaptation from the larger AR-10 receiver/bolt group an important component of the MkW ANVIL's reliability and durability.

In lieu of trying to force an AR-15 receiver into utilizing the .458 SOCOM cartridge, which is done with some other .458 SOCOM rifle offerings, CMMG decided to go with a slightly scaled-down AR-10 receiver to ensure the MkW ANVIL can handle the power of the round without concern. CMMG was able to do this while still minimizing the MkW ANVIL's weight at 7.5 pounds.

With this said, an AR-15 type trigger group, pistol grip, and rear stock are utilized so users can still access plentiful aftermarket options if desired. Iron sights are not included with the CMMG ANVIL. This is just as well, since it gives the end user the opportunity to install their own choice of BUIS (Back Up Iron Sights).

CMMG is offering three models of the ANVIL, using different furniture and triggers. MSRPs range from \$1,850 to \$1,950 and \$2,150. The MkW ANVIL evaluated for this article is the middle one: the MkW-15 XBE.

MkW-15 XBE SPECS

It features a Magpul MOE pistol grip and CTR adjustable buttstock. The 16-inch 1:14 twist barrel wears a CMMG SV brake. A single-stage milspec trigger provides a six- to eight-pound pull. An SLR Rifleworks Sentry 7 adjustable gas block is used with the direct-impingement MkW ANVIL. This allows users to adjust the amount of gas siphoned off to operate the bolt group, especially if suppressor use is contemplated. This is a nod to the variety of .458 SOCOM ammunition available for use.

The minimalist CMMG RKM KeyMod rail design, measuring 15 inches, defines the CMMG MkW ANVIL's aesthetics. The CMMG RKM KeyMod rail system permits the barrel to be free floated, and shows versatility in satisfy-



CMMG ANVIL set up as evaluated.

ing customer needs by not using full-length Picatinny quad rails, but instead a lower profile handguard with adjustable KeyMod Picatinny rail sections. Short KeyMod sections of rail can be added as desired to numerous positions around the handguard, removed, or more sections added, depending upon the user's preference.

The MkW ANVIL's larger than typical AR-15 receivers offer plenty of support for the modified AR-10 style bolt group used. The larger and heavier bolt carrier offers added benefits in terms of reliability as well as its greater bolt momentum. CMMG labels the modified AR-10-type bolt carrier group used in the ANVIL as their Powerbolt design.

The "overbuilt" MkW ANVIL's Powerbolt and receivers allow for the stoutest of .458 SOCOM to be used without concern of affecting the long-term durability of the rifle. The ANVIL arrived with dedicated .458 SOCOM Lancer L5 AR magazines with feed lips opened to better accommodate the .458 SOCOM cartridge. While the .458 SOCOM can be fed from standard AR magazines, they need to be proofed for reliability. The rounds load in a single-stack configuration with ten-round capacity.



.458 SOCOM rounds are loaded single stack into AR-15-size magazines. ANVIL arrives with modified Lancer magazine to ensure reliable function. AR-15 magazine (right) for comparison.



CMMG adapted MkW ANVIL's upper receiver from its larger AR-10 type rifles, including bolt group. AR-15 bolt group (bottom) for comparison.



Empty .458 SOCOM brass surrounding 5.56mm casing. The .458 SOCOM is a lengthened .50 AE that is necked down to .458. Rim size is similar to .308 Winchester.

SIG SAUER TANGO 6 OPTIC

It was decided to take full advantage of the MkW ANVIL's flat-top upper receiver by mounting the recently introduced SIG Sauer Tango 6 1-6X24mm optic. The flat-top receiver's Picatinny rail allows for one of the sturdiest and most versatile scope-to-rifle connections on the market. Proper scope positioning for optimal eye relief is made easier as well.

Others may choose to go with a red dot optic in a strictly CQB role. To my way of thinking, this limits what the CMMG MkW ANVIL rifle offers in terms of power and effective range. The Tango 6 has a 1X illuminated reticle setting for quick target acquisition at close range with both eyes open. A quick turn of the knob to 6X enables longer precision shots.

The SIG Tango 6 is loaded with high-end features such as adjustable illuminated MOA reticle, extra-low dispersion glass combined with high transmittance glass for outstand-



Polycase 140-grain ARX ammunition (left) next to specialized Lehigh Defense 300-grain Xtreme Penetrator bullet from Underwood Ammunition.

ing light transmission and clarity, along with resettable lockable and zero stop turrets. SIG Sauer offers various power ranges and options in the Tango 6 model lineup, including different reticle styles, MRAD or MOA turret adjustments, and first or second focal plane.

AMMUNITION TESTED

Ammunition tested with the CMMG ANVIL consisted of a variety of loads: SBR Polycase 140-grain Inceptor, Underwood 300-grain Extreme, SBR 350-grain FMJ and 300-grain Solid Brass, Black Butterfly 300-grain Nosler Ballistic Tip, Ventura Tactical 300-grain Controlled Fracture, and Corbon 300-grain T-DPX.

From this sample size, it is obvious that a number of manufacturers are producing ammunition for the .458 SOCOM. While ammunition is not cheap, a user is secure knowing it is available. Handloading is another option.

The CMMG MkW ANVIL kept all loads tested under 2.25 inches at 100 yards. The accuracy level was overall more than acceptable considering the roles envisioned for the ANVIL. Accuracy test protocol consisted of three-shot groups with each ammunition type. Group sizes were averaged.

The flexibility of the SIG Sauer Tango 6's magnification

range was appreciated when exploring the different ammunition loads.

The real eye opener for me was the 140-grain Polycase ARX load. Here is a round that offers something out of the ordinary for the .458 SOCOM, giving ballistics similar to a .308 Winchester versus the rainbow trajectories associated with the heavier bullets. The heavy loads perform as expected, like heavy-hitting hammers that typify the .458 caliber. The 140-grain Polycase ARX offers more refinement in terms of external ballistics that defy what is expected from the short, stout .458 SOCOM round.

IS THE .458 ROUND TOO LIGHT?

I will admit skepticism when it came to the lighter load. How could such a light round be stabilized from the same barrel that was originally meant to fire bullets weighing three times as much? Whatever the science is, it works with the Polycase 140-grain ARX rounds. Accuracy was in the one-inch range at 100 yards! Needless to say, this alleviated my concern.

Steel popper targets were routinely hit out to 300 yards with minimal holdover required. Nothing at all like what would be associated with 300- or 350-grain rounds moving between 1,600 and 1,800 fps.



Unique aesthetic with CMMG MkW ANVIL is 15-inch RKM KeyMod rail surrounding 16-inch barrel with SV brake protruding from forend.



SIG Sauer Tango 6 1-6X24mm optic proved a good match to versatile ANVIL .458 SOCOM.

.458 SOCOM ANVIL lived up to its billing as a hard-hitting rifle/cartridge combination.



The .458 SOCOM ANVIL proved devastating against fluid-drained range vehicles located at Echo Valley Training Center's (EVTC) stepped berms. The .458 SOCOM loads tested had no issue penetrating windshield or car bodies to engage steel popper targets located inside. This is the type of scenario and barrier penetration capability that the .458 SOCOM was designed for.

Further range testing consisted of dumping a ten-round magazine at several targets in rapid fashion. The steel targets were rocked with a satisfying "smack" when hit. The CMMG muzzle brake does a good job taming recoil. CMMG MkW ANVIL recoil was not prohibitive, with accurate rapid shots possible. Unscientific subjective comparison would have it placed in the 20-gauge shotgun category when firing 300- or 350-grain loads.

The inherent familiarity most have with the AR platform, not to mention its ergonomics, validates CMMG's decision to continue to enhance it via caliber expansion. There are

many situations in which the penetration and power of a 300-grain plus .458 bullet fired from an AR-type weapon could be very advantageous. The .223 is notorious for exhibiting poor penetration of automobile glass and other obstacles. The .458 SOCOM chambered CMMG ANVIL can easily penetrate barricade material and still engage targets with power to spare. In many law enforcement situations, the standard-issue handgun or shotgun lacks the power and accuracy to do the job. The same can be said for personal defense or hunting situations.

GO GET ONE

In designing and building the ANVIL, CMMG has taken a proven weapons system and made it better. The CMMG MkW ANVIL places real power in a compact, accurate, and reliable package. The ability to reliably engage targets out to 150 yards with great terminal effect cannot be underestimated. This range is doubled when choosing to go with the 140-grain Polycase ARX rounds.

The CMMG MkW ANVIL is a rifle that will interest many, due to CMMG's reputation plus the resurgent popularity of the .458 SOCOM cartridge.

With quality optic mounted and using premium ammunition, the MkW ANVIL is a prime candidate for use as a general-purpose rifle, especially when factoring in the varied ammunition that is available. ☉



ABOVE: All loads were clocked with RCBS chronograph. Each produced the velocity advertised; a credit to each manufacturer.

BELOW: CMMG MkW ANVIL has AR hallmark traits of adaptability in terms of optics, rails, and trigger, enhanced by .458 SOCOM chambering.

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(660) 248-2293
www.cmmginc.com

ECHO VALLEY TRAINING CENTER

(540) 450-7998
www.echovalleytrainingcenter.com



Two classic S&W .41 Magnum revolvers evolved from the original Model 57: a 7.5-inch barreled hunting .41 Mag and a highly customized "belly gun" with all the nice touches from Ken Kelly at Magnaport. Combined with a Randall knife, a man can accomplish anything!



41

MAGNUM

IN 1964, the .41 Magnum was introduced to the shooting world with predictions that it was destined to be the ultimate police round. People under the age of 40 laugh because they don't remember a world where the police and self-defense markets weren't totally dominated by semi-auto pistols. Older folks who remember seeing duty cops carrying revolvers tend to believe the .41 Magnum might have fulfilled its destiny had there not been a mass migration to semi-autos by police departments across America.

With the wisdom of hindsight, I'd have to challenge that belief. The .41 Magnum had several years to make its mark between its introduction in 1964 and

Is the Middle Magnum Still Viable?

By Dick Williams

the swell of interest in semi-autos in the late 1970s, but failed to do so. Predictions of world domination by the .41 turned into warnings of the cartridge's projected demise.

As it turns out, the "middle Magnum" is alive and reasonably well today because it generated some devoted followers, not in the world of law enforcement, but in the outdoors market. And it achieved this following not just because it attracted some ultra-stubborn shooters prone to joining cults, but because it is a well-balanced cartridge that does almost everything a .44 Magnum does without administering the same kind of punishment to the shooter.

I've had a passion for handguns and handgun hunting since I was in my teens and have successfully hunted various-size game with handguns in different parts of the world. But the older I get, the less tolerant I have become of recoil abuse, and when my arthritis acts up, the .41 Magnum becomes a much more attractive option for big game than ever.

Because of my keen interest in handgun hunting, the .41 Mag revolvers I normally use are not particularly suitable for all-day carry and quick deployment.

When an opportunity to attend a three-day pistol/carbine event at Gunsite presented itself, I began rounding up the "proper" .41 Magnum hardware that a well-dressed gun writer might take to a self-defense class at the world-famous training facility.

THE GUNS

Identifying and selecting the handgun candidates was easy. The first .41 Magnums from S&W were the Models 57 and 58. The Model 57 is/was the classic N-Frame with adjustable

sights, large target-style wood grips, and four-inch barrel.

The Model 58 was envisioned as the "ultimate police revolver" with fixed sights, a slimmer four-inch barrel, and small wooden grips that allow easier double-action shooting, particularly for officers with smaller hands.

I also took my lightweight Model 57 (or Mountain Gun) with a skinny barrel and rubber finger-groove grips from Hogue. It's easier to carry for extended periods of time, and the Hogue grips tend to soften the felt recoil.

The crowning glory in my armory was the Marlin 1894 lever-action carbine in .41 Magnum that had been sitting unfired in my safe for several years. It had the curved pistol-style grip and old buckhorn iron sights with a brass bead topping the front sight.

I was attending a 21st-century self-defense event at Gunsite with a 19th-century designed rifle/pistol combination shooting a 20th-century designed cartridge. Perfect!

THE AMMO

The snag was ammo. The original Remington "police load" was a 210-grain lead bullet moving at about 900 feet-per-second (fps). The theory was that the heavier bullet would penetrate deeper and the larger caliber would make bigger holes.

Keep in mind that in the 1960s, ammo companies were not yet investing big bucks in terminal ballistic performance improvements for handgun bullets. Unfortunately Remington has discontinued production of that lead bullet load, and I did not want to spend three days shooting several hundred full-strength Magnum loads.

Unlike a revolver, where ammo is carried in the cylinder, ammo for Marlin has to transition from the tubular magazine through the action to the chamber, and some bullets may not do that. Choose wisely.





Model 58 S&W revolver loaded with .41 Magnum ammo was envisioned as the perfect police revolver. It fell short of its goal for a number of reasons besides the emergence of semi-auto pistols.

RELOADING BLUES

The first day on Gunsite's handgun ranges had us doing many of the school's standard drills at distances from three to 25 yards. Initially I was feeling a little "outgunned" given the hardware used by the rest of the class: AR-style carbines and semi-auto pistols versus my six-shot wheel-gun and ten-shot lever gun. But my early thinking was based upon the number of rounds one could fire between reloads and not the number of hits achieved in the first six to ten rounds fired.

Right up until my third reload, the Mountain Gun held its own with my classmates. When doing speed reloads and replacing all six rounds using an HKS loader, I didn't slow the class down and pretty much stayed in the fight. Once my two HKS reloaders were expended, it was a different story.

During the longer strings of fire, there were several times I found myself still reloading when the targets turned to face us or the instructor issued the "fire" command.

Tactical or partial reloads went pretty smoothly as long as I "topped off," replacing two rounds at a time. Partial reloads of a revolver allow the muzzle to remain pointing down throughout the maneuver.

Point the revolver at the ground, push the ejector rod part way up, and then ease it back down. The unfired rounds drop back into the cylinder while (hopefully) the fired rounds remain protruding from the cylinder and can be plucked from

Missouri Bullet Company sent me 500 of their 225-grain .41 Magnum Outlaw cast-lead bullets. The heavier bullet seated deeply enough in the case that loaded rounds slid smoothly from the Marlin's magazine tube through the loading mechanism into the chamber. Seven grains of Universal Clays (my "Go To" pistol powder) produced 869 fps from my S&W Mountain Gun and 1,196 fps from the Marlin's 20-inch barrel.

In the revolver, the load's velocity was 30 fps slower than the original police load using a bullet 15 grains heavier. Close enough to the original specs, gentle on the old shooter (me), and totally reliable in both the Smith and Marlin.

I loaded my 500 rounds on a single-station press because I didn't have dies for my Dillon, but as Mel Gibson said in the movie *Braveheart*, "That's something we shall have to remedy!"



ABOVE: Marlin had a couple of 20th-century features including rubber butt pad and cross-bolt safety. Higher velocity loads felt gentle, while cross-bolt safety completely blocked hammer from contacting firing pin but allowed action to be rapidly cycled.

**.41
MAGNUM**





the gun two at a time. Remove two fresh cartridges from your belt loop, pouch or pocket and insert them into the two empty chambers.

If you're attacked partway through the reloading procedure, drop the empties or fresh rounds, close the cylinder and re-engage the threat.

It's not nearly as fast as a semi-auto, but the good news is that there are no partially loaded magazines to deal with when the partial reload is complete.

What's tricky is that a partial revolver reload requires considerably more dexterity and fine motor control than is needed to work magazines in and out of a semi-auto pistol. These skills are difficult to maintain in a stressful situation, so practice the maneuver.

Early Smith & Wesson Model 57 with 8.375-inch barrel replaced .44 Magnum as preferred field firearm of many handgun hunters. With long, heavy cast bullets like these from Buffalo Bore, .41 Mag could take biggest game animals with less abuse to shooter than .44 Mag.

Marlin Model 1894 and can of cast bullet reloads (designed around specs of original Remington lead bullet load) went to Gunsite to show its skill as a defensive rifle. Great performance within reasonable parameters!



RECOIL BLUES

By mid-afternoon I was beginning to think maybe we missed out on a good thing in the 1960s by not issuing .41 Mag revolvers to all cops. Given the ammo technology back then, my .41-caliber Mountain Gun was looking pretty good. It made big holes without depending on bullet expansion, its enhanced penetration capabilities could turn an adversary's cover into simple concealment, and it surrendered very little in speed, placing the first six shots where I wanted them.

When I switched to the smaller Model 58, my conclusions went down the toilet. Recoil from the first four rounds caused the trigger guard to smack my knuckles so hard I was forced to bench the gun with its tiny factory grip and switch back to the Model 57 with the Hogues.

I had two more days of range time planned, much of it operating a lever-action rifle, and I needed those knuckles in reasonably good condition to make it through. I still think a .41 Mag loaded to the 900 fps level makes an excellent defensive handgun—but not in the Model 58 revolver with its tiny grips.

I don't know anyone who originally thought the .41 Mag in a lever-action rifle would excel as a police firearm, but deep down I have a good feeling about a rifle/pistol combo that utilizes the same ammo, and the next two days working the Marlin at Gunsite reinforced that feeling.

CLOSE RANGE AND LONG RANGE

I gave up nothing to my classmates in the close-range drills where we brought the rifle up from low ready and placed one fatal shot into our assailant. Yes, when we started doing two-shot drills, there was a time lag between my first and second shots compared to the other students, but the time difference wasn't much and my shot placement was just as good.

The Marlin's iron sights aligned quickly on target with the brass bead visible throughout the gun's rise to eye level. On two of Gunsite's west-facing ranges, with the morning sun shining over my shoulder, the brass bead front sight became a ball of fire blotting out the smaller longer range targets.

Later in the day, I had no difficulties on the west-facing Scrambler with its steel targets located 80 to 120 yards downrange. Finally, on the Military Crest range with targets ranging from 180 to 280 yards, I ran out of trajectory or iron sight capability or both.

I hit some of the bad guys occasionally, but lacked consistency. I suspect a scope or higher velocity/flatter shooting load would extend the Marlin's range, but as set up and tested, the Marlin is a 100- to 150-yard rifle using a load that is equally comfortable and effective in a handgun and carbine. That's a pretty good urban combo.



ABOVE: Author's Model 57 Mountain Gun, although slightly large for a concealed carry weapon, proved itself a great defensive weapon at Gunsite's testing fields.

INSET: Mountain Gun and two speed loaders carried comfortably all day in leather from Simply Rugged Holsters. An outstanding package for anyone hitting the trail.





Author's like-new three-screw Ruger in .41 Magnum. A world-class trail gun but perhaps too pristine to risk carrying in the field?

ROLES OF THE .41 MAGNUM

So if the .41 Magnum failed in its projected role as the perfect police cartridge, why is it still with us?

As mentioned earlier, it's a great outdoorsman's caliber. With a slightly smaller bore size than the .44 Magnum, there is more metal around the barrel and chambers, and as some handgun silhouette shooters discovered in the 1970s, the extra metal provides enhanced gun survivability in extended shooting sessions involving maximum loads.

Several of the major manufacturers still produce versions of the original higher power .41 Magnum loads featuring a 210-grain JHP, and companies like Corbon and Buffalo Bore turn out some useful specialty loads for big-game hunting.

Using the higher-power .41 loads, no less an authority than Elmer Keith commented on the .41's ability to shoot slightly flatter than the .44 Magnum at 100 yards. My shooting skills would not allow me to verify or contradict that

opinion, but my hands will vouch for the reduced felt recoil of the smaller .41 bore with the heavy loads.

The advantage of the .44 Magnum is that you can still purchase and use the lighter .44 Special factory loads, whereas with the abandonment of the police load by Remington, the .41 Magnum requires hand-loading to tone down recoil.

Too bad the .41 Mag caliber can't be used in cowboy action shooting since manufacturers for that market produce reduced-power loads in many of the bigger bore and center-fire handgun calibers. And without a police market to stimulate sales, there's no incentive for major companies to spend their resources on improved .41-caliber bullet performance at low velocities.

Still, with a high-quality Smith & Wesson, Ruger, or Freedom Arms revolver chambered in .41 Magnum, there's not much you can't do with a handloaded hard-cast lead bullet leaving the muzzle at 900 to 1,100 feet-per-second. ©

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(928) 227-0432
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(800) 331-0852
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(203) 259-7843
www.ruger.com



BUDGET

BLASTERS

Quality ARs That Won't Break the Bank

By Jeff Hall

Like most *S.W.A.T.* writers, I read the letters to the editor every issue. I like to see what the readers think and what they want. One thing I often see is a request for information on cheaper gear.

I heard President Obama talk about “the recovery” and how we got out of the worst recession since the 1930s. It might look that way from Air Force One, but not where I live. I talk to a lot of people who want firearms and training but just can’t afford them.

I keep the classes I teach affordable and most are two days, but for an officer or citizen to drive across the state, pay tuition, gas, lodging, meals, and buy ammo ... he’ll spend close to \$1,000. That’s a major chunk out of a month’s pay. Buying a decent gun is about the same proposition.

I’ve been a huge fan of S&W revolvers for years, and own quite a few. The first auto pistol I owned with the S&W logo was a Model 39, also the first auto issued to a State Police force, the Illinois State Police. It was a nice gun, shot and ran well, and really fit my hand. I’m still not sure why I traded it off.

My first issue auto-pistol was a Smith Model 4006, which was accurate and reliable but co-designed by Band Aid. That thing had more sharp edges than a box of razor blades, and hands were cut every time we reviewed malfunction clearances.





S&W M&P .22 LR AR

A few years ago I was working in Las Vegas. A local store got in a number of S&W M&P .22 rifles, a lightweight, working .22 LR AR carbine. I got a hell of a deal on the gun, several magazines, and a bunch of that long-forgotten *affordable* .22 ammo. I'd paid attention to Pat Rogers when he said you should handle your rifle every day, so when I moved home, I started shooting it often.

The .22 is a cheap way to practice everything from shooting to manipulations, and is accurate and reliable. I recently added a Primary Arms MD-SP red-dot optic, which replicates the Aimpoint Micro I use on my defensive carbines. I get the same feel and reps at a fraction of the cost. MSRP for the AR .22 is \$499 and the Primary Arms optic is about \$90, so \$600 for a good trainer and plinker.

S&W M&P 10 AR .308

I recently tested an S&W M&P 10 AR .308, a basic, usable package with Magpul furniture and one Magpul magazine. It weighs just over seven pounds empty, handles very well, and balances nicely. I'd gotten an email from Nikon regarding their new P-308 4-12X40 variable scope with bullet drop compensator (BDC) reticle, calibrated for 168-grain Match ammunition. I received a T&E sample, which came with mount and rings. I mounted and zeroed this setup on the M&P. Cost: \$1,600 for the rifle and \$250 for the scope and mount.

I fired 40 rounds each of Winchester, Sellier & Bellot, and Serbian surplus ball. The Winchester and S&B shot just under two MOA, and the gun functioned perfectly. The Serbian ammo was lousy, grouping at nearly three inches. The trigger was a standard two-stage USGI trigger, but I wanted to keep the rifle basic, so I shot it as it came.



ABOVE: Both Primary Arms optics replicate more expensive models, for training and defense.

LEFT: M&P 22 and the .223: functional and simple.



M&P 10 .308 was reliable and acceptably accurate.



Nikon P-308 had positive adjustment target turrets, making dialing DOPE easy.



M&P 15 Sport drops the forward assist and dust cover.

I fine-tuned the zero at 100 yards using Black Hills 168-grain Match. I shot from a bench, with the forend and butt properly supported. The weather was perfect, 72 degrees and no wind. I had a flyer on the first group of three, but the second group was a hair over one inch—not bad for a basic production gun. I threw some targets and stands on the ATV, took my rangefinder, and set targets at 300, 400, and 500 yards. Using the BDC stadia, I got center hits on each target, with the 500-yard target showing an eight-inch, three-round group. Accuracy fanatics might not be happy with that, but those are fight-stopping or animal-drop-ping hits. I figure it was me, not the gun.

So for about \$1,850 retail you can get a rifle and scope that will hit either man or beast as far as your ability will allow.

S&W M&P 15 SPORT

The last leg of affordable S&Ws is the S&W M&P 15. I asked for the most basic model, no bells and whistles, and got the M&P Sport model: MSRP is \$739. It's a basic, standard M4 variant, with a Magpul BUIS, six-position stock, standard front sight and gas block, and plastic forend. What was eliminated to hit that price?

One missing item is the forward assist—thank God! I've never seen a problem get bet-

ter by pounding on a forward assist, so S&W dumped it. The stock trigger was unusually clean and broke at five pounds, and the dust cover was eliminated.

My first requirement in any defensive weapon is reliability. I cleaned the shipping gunk out of the carbine, lubed it well, and started shooting. I shot everything I had on hand—MHS reloads, my own reloads, Winchester, Remington, and Federal ball, commercial JSP, and some Black Hills Match, 280 rounds in all—and had no malfunctions, using both Colt and Magpul magazines. That works for me.

I don't sweat sub-MOA accuracy out of defensive .223 carbines, but I mounted a Leupold 1.5X5 in LaRue QD mounts. From a sand-bagged bench rest at 50 yards, my best three-round group, with Black Hills Match, was about 5/8 inch, so slightly over one MOA. The ball, regardless of brand, all shot about one inch at 50 yards, so this carbine is a two MOA gun. With the average male 16 inches from belt to throat and about 14 inches wide, this gun will do.

JONES ARMS HYPERION

I recently taught a class on the left coast and met a new gun builder, Eric Jones of Jones Arms. He introduced me to his entry-level carbine: black Cerakote finish, billet upper and



M&P 22 and M&P 15 function identically.

lower, no forward assist, Melonite treated match-grade barrel, and Melonite treated BCG. Melonite is reputed to be better than chrome for corrosion resistance. The six-position buttstock and pistol grip have better ergonomics than standard, plastic forend, standard front sight, and aluminum BUIS. Everything in the gun is milspec or better.

I used the same protocol as outlined above, with the following results: 280 rounds fired, no malfunctions. The carbine didn't like heavier bullets, shooting better groups with 55-grain ball. Most of the three-round groups were right at one-half inch at 50 yards, but one group of Winchester ball was slightly under, about 3/8 inch, so with a tailored load you should get consistent sub-MOA accuracy.

The tested model was called the Hyperion and has an MSRP of \$895. It seems like a *very* good deal for what you get.

I mounted the Primary Arms MD-ADS, Advanced Micro Dot, the newest offering from the company. This red dot optic offers 50,000 hours of

use on one battery, adjusts POA/POI easily, and retails for \$189.99.

Primary Arms honestly states that this optic is not intended for sustained combat operations but for home defense, law enforcement, and training. Even so, it works well and is an affordable alternative to more expensive optics. So a basic carbine with a decent red dot is only about \$1,000 and will do all that most people need it to do.

THE BOTTOM LINE

We all want A): the best there is for personal defense, but we all have to consider B): the best we can afford today.

We can scrimp and save for five years, by which time it may be too late, or we can buy a reasonable alternative *now* and save for the "Pulse Plasma Rifle in the 40-watt range" sometime in the future.

I suggest you buy alternative B now, buy all the mags and ammo you can find, get some good training, and save alternative A) for after you win the lottery. ☺



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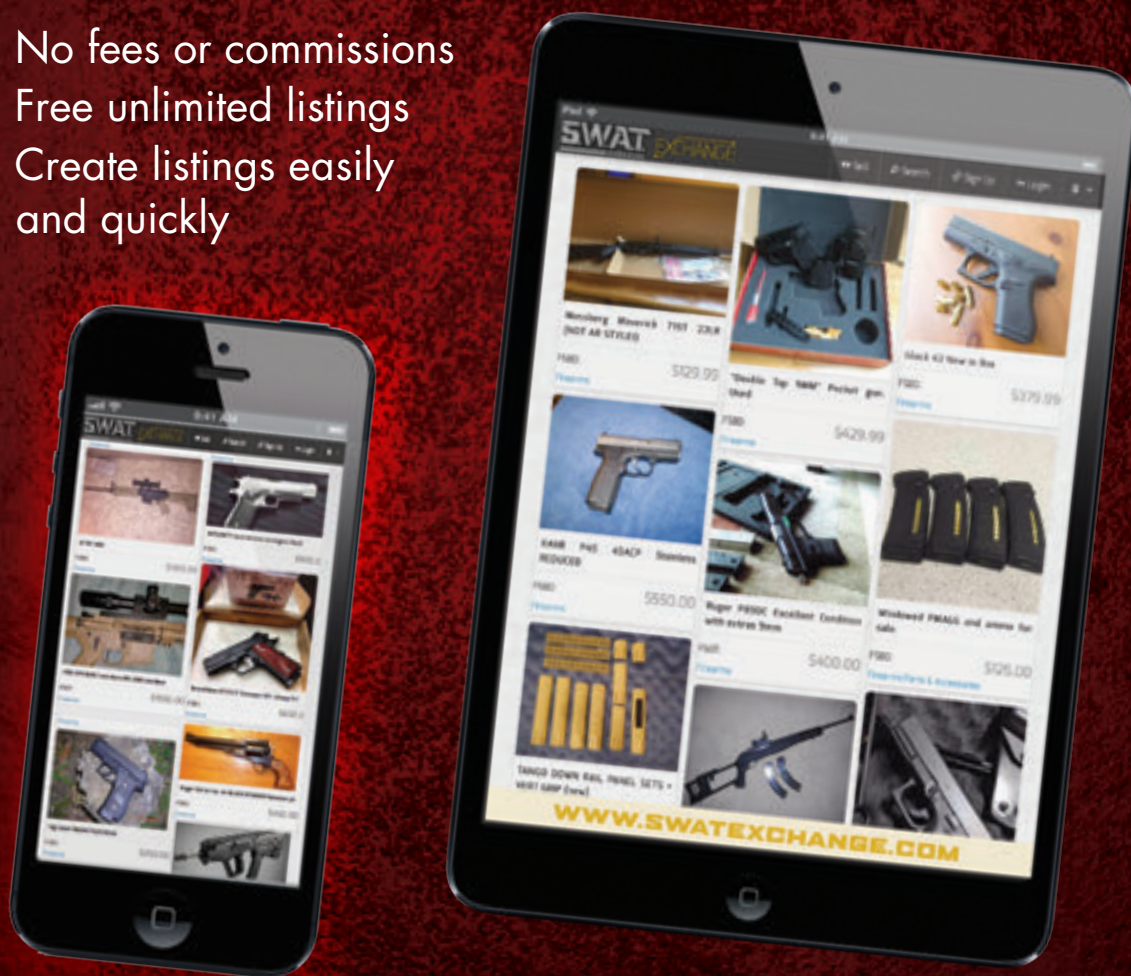
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CARBINE TIPS

AS time marches inexorably on, we see more and more of the same problems cropping up in class. Or as the great Yogi Berra once said, “It’s déjà vu all over again.” The reasons may be many, but generally fall under the category of “You don’t know what you don’t know.”

The equipment aspects have been covered, and continue to be covered, in great depth, probably because buying something is much easier than doing something.

Mindset issues have always been difficult, because only a few are blessed with that mean gene that permits them to fight other bipeds to the death without remorse. Not many can embrace the hate efficiently.

And finally, the integration of biomechanics, equipment and the desire/ability to get all these things working at the same time to more efficiently service the threats in front of you is not a simple matter.

What follows is directly applicable to training, and training is directly applicable to fighting.

Hold It, Mark It, Tighten It, Lube It

By Patrick A. Rogers

Ashleigh Clark conducts strong-hand-only Box Drill. She holds carbine tight against her shoulder, her strong-side arm is against her body to add support, and she can complete the drill (hammer, hammer, brain, brain) accurately and rapidly without a problem.



First off, we need to understand that a carbine is (by one of many definitions) a weapon with a shorter stock and barrel than the rifle, but firing the same cartridge as the rifle. Thus the U.S. Carbine, Caliber 5.56mm M4/M4A1 is shorter than the U.S. Rifle, Caliber 5.56mm, M16A2/A3/A4. Clearly the U.S. Carbine, Caliber .30 M1 (M1A1, M2 and M3) was an exception to this.

The carbine is used more as a close-combat weapon and is most effective in the envelope that extends from near-contact distance out to 200 meters. While the M4A1 and MK18 are certainly capable of achieving solid hits out to and past 200 meters, terminal ballistics are compromised. Understand that while the M16A2-A4 is capable of hitting point targets at 600m, not only are terminal ballistics in the toilet, but target acquisition is also seriously degraded.

The infantry fight is—and has been for many years—in the under-200 meter arena.

Consequently, the way we fight with the carbine is significantly different than the way Uncle Fester hunts deer with a .270 Model 70 in Colorado. And it is light years different than the way the yellow glass crowd fires across the course at the National Matches. Remember that marksmanship—the ability to decisively hit the target—is but one part of the equation.

HOLD ONTO THE CARBINE

This sounds silly, but probably the most common mistake we see is that the shooter does not maintain a firm grip on the gun. Your hands—*both* of them—are maintaining a firm firing grip on the gun, and pulling it straight back into your shoulder. You need to do this in any position you are firing from.

A very common error is to relax when in kneeling or prone, or shooting at distance. If you relax, you will have inconsistent shot groups, and someone will be sure to inquire as to the type of choke you have on the barrel of your carbine.

Consistency is the key to accuracy. Do it the same way every time and you won't have to ad hoc in different positions.

KEEP THE CARBINE IN YOUR SHOULDER

This goes hand in glove (metaphorically speaking) with the above. In days of old, when rifles were made of steel and stocks of wood, we raised our elbow high and made a shoulder pocket for whatever gun we were shooting. The configuration of the AR has the stock in line with the bore—a major plus in controlling the gun. The sights are therefore higher (approximately 2.6 inches, depending on the sight).

But the much-loved shoulder pocket cannot be formed as we are fighting with the gun, and the “classic rifleman” stance of sideways to the target with left elbow high has gone the way of 50 cents-per-gallon gasoline.

We also fight with armor now, and while some vests (like the OTV or MTV) were apparently not designed to properly interface with the carbine, others were.

But all is not lost. We wind up wearing other pieces of gear that may require over-the-shoulder straps (hydration packs come to mind). Place the toe of the stock inboard of that strap. It will keep the stock from slipping off your vest—a very good thing.

I had a shooter in class who was having horrible hits while standing. It wasn't until we got to the shooting-on-the-move

stage that we cured him of his poor trigger control, absence of follow-through, and other issues. Here we found he was deliberately holding the carbine about two inches off of his shoulder. The sad part is, he was doing this intentionally because he read that the (insert offshore SOF here) did it that way. Sigh....

The stock *has* to be firmly in contact with some portion of your upper body.

HAVE LUBE AVAILABLE

As in *immediately* available.

We know that more lube is better than less, but you need to have it on your person. Too often a shooter will flat forget something silly like putting oil on the gun in the morning and, in the middle of a 134-round exercise in mid-afternoon, discover there are functioning problems. I carry a one-ounce bottle of Slip 2000 Enhanced Weapons Lube in my load carriage and wind up replacing it often, as I pass it out among those who neglected to bring any.

A gallon of lube in your car is worth nothing. Two drops on your person may be the difference between you shining or becoming “That Guy.”



Your lube must be immediately available. Author keeps one-ounce bottle of Slip 2000 Enhanced Weapons Lube in a pocket on his vest. It won't do you any good if it's in your kit bag.

IF IT IS ATTACHED TO THE GUN, USE LOCTITE®

A thread locker is not a luxury, it is a necessity. Vibration causes threaded devices to loosen. Every time you press the trigger, vibration causes those nuts and screws to loosen. Once they loosen, you will suffer a loss of zero for sighting devices, and eventually the object will part company with the gun. We see this once or more at every class. Use Loctite®. Note that it doesn't last forever, and you may have to reapply it at intervals.

IF IT IS ATTACHED TO THE GUN, TIGHTEN IT EVERY CHANCE YOU GET

That means at least once daily, and more if you are shooting. Everyone should have a CGT (Cool Guy Tool) on their gear. The manufacturer isn't important, but having something that fits all of the slot, hex, Phillips and torx fasteners on your carbine is considered a good thing. When you get some downtime, break the CGT out and give the screws a nudge. You may be surprised at the results.

AMMUNITION MANAGEMENT

1. BRING MORE AMMO THAN YOU NEED

If you think three magazines will do it, bring five—or six. You may wind up with a bad mag. Or someone else might have a bad mag and you'll need to spread the load to keep people in the fight. Too much ammo only presents an issue in carrying it.

2. BACKFILL YOUR MAG POUCHES

You should have previously identified an emergency reload pouch that will be your "Go To" pouch for an emergency (or speed) reload. However, you may find yourself in a position where you may have done one or more of these reloads. During downtime, instead of contemplating your navel, take magazines from the least accessible pouches and backfill the more accessible pouches.

3. HAVE SOME LOOSE CARBINE AMMO IN YOUR VEST

The military calls a place that stores ammunition an Ammunition Supply Point, or ASP. If you have a small MOLLE pouch or pocket, designate it as your ASP and keep some loose rounds therein. It will pay off in the end for malfunction drills and the like.



Simple chest rigs give you the ability to immediately manage and access ammunition, making life much easier. They can hold from three to eight magazines or even more. Don't overload your chest rig, but make sure you have sufficient ammunition to cover all eventualities. Here two shooters in an EAG class at Eloy, Arizona PD range perform speed reload drills. Shooter in foreground has dumped his empty mag—his trigger finger is straight and he has acquired a spare magazine from his emergency reload pouch.

IF IT IS ATTACHED TO THE GUN, MARK IT

On your spouse's next trip to JoAnn's Fabric, instead of whining and stamping your feet, go into the dang store and pick up some Sharpie's Paint pens. I prefer Aqua, but I'll leave the color choice up to you. Just make sure you can easily see it. (No, you do not have to turn in your Man Card if you are entering the store on gun-related business.)

Make a prominent mark on the attached item as well as on the carbine. Make another mark across any screws. This will give a handy visual indicator if those pesky devils start to unwind under the punishing recoil (mandatory sarcasm included).

Those in the military should be doing this, but some armorers—frequently the bane of my existence—want optics removed so the carbines will fit in the rack. Often the optics are not issued to a single shooter, and he may just get the next in line. If the sight is marked with the carbine's rack number, and witness marks are on the sight and the receiver, hey, you may actually have a rifle with a solid zero.

What joy!



Make prominent paint marks so you can match the accessory to the carbine (in this case, a rack number) as well as witness marks on the mount and rail.

MAINTAIN SITUATIONAL AWARENESS

This shouldn't be an issue, but it always is. Pay attention. Pay attention to what *you* are doing and to what is *going on* around you. Listen to commands from the instructors.

A cool tip here is to have electronic ear protection—it will pay for itself in one class. Having said that, turn the headset around so the microphones are facing the rear. You need to hear what commands are being passed. You have absolutely no need to hear the bullets striking the paper bad guys.

GOT PROTECTION?



Powered ear pro protects ears from damage and enhances hearing. Microphones are directional and normally turned forward for operational use. Brady Miller, who has a very cool job, has his Sordin's turned to the rear to better hear instructions.

DRINK AND EAT

Don't use plain water—mix it with an electrolyte replacement. Bring a hydration pack to the line. If you wind up on the line for more than five minutes, you will need liquid. It does you no good back at your vehicle. Having a hydration pack ensures that you will have fluid on board.

Training is not the proper time to go on a diet. Eat food. Food is energy. Without food and water, you will become weak, unaware, and unresponsive. As soon as it is apparent to an instructor, you will be sitting out the drills instead of shooting them.

SUMMARY

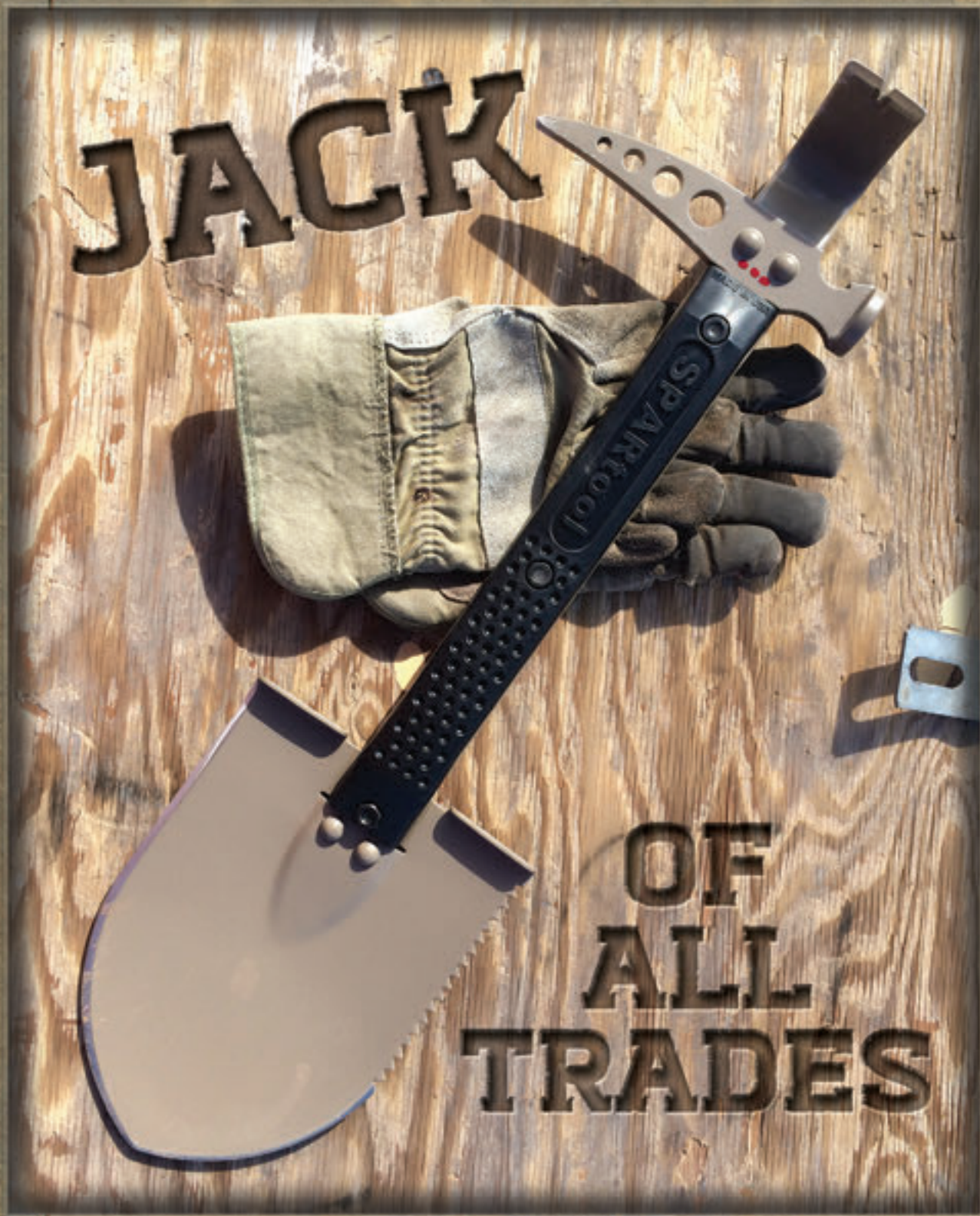
There are many ways to screw things up so badly that you may never recover. There are, however, many issues that can be resolved when you develop a combat mindset, seek good initial and sustainment training, and understand that the fight won't always be in the middle of a sunny and cool afternoon just after you have finished a three-week CQB course.

Use common sense, and research your needs. The error-net can provide some useful information, but most of what is posted on the bubble gun forums comes from the poster playing video games in his mother's basement.

Be prepared to change all you had believed in on Training Day 1 when you find out things don't work as you believed they would. And be prepared to reconfigure both your equipment and your mind to deal with whatever is in front of you.

Keep your head in the fight. ☺

[This article first appeared in the March 2008 issue of S.W.A.T.]



SPARtool Multipurpose Survival Tool

By Ken Matthews, R.N.



Some all-in-one tools and devices are awesome, and some aren't worth the cheap pot metal many of them are made from. What tools can you combine and still get functionality and efficiency from, and what tools just do not belong together?

Good question, and many of us have shelves full of cool-tool ideas that just didn't work, were poorly designed, or were manufactured using inferior materials with only profit in mind.

Stewart Yeoh, president and designer of the SPAR-tool, has been there too. He told me, "I was updating my bug-out bag two years ago and wanted a solid camp shovel I could dig and chop with. I bought numerous options but was generally unimpressed with their durability and functionality. It seemed like no one who designed these things really understood how tools worked, or how much abuse anything that goes outdoors ends up taking. As an engineer and a guy who has used tools my whole life, I started to design my own product, with three goals in mind: it had to be functional, lightweight, and indestructible."

PURPOSE-BUILT TOOLS

Purpose-built or task-specific tools are just that: designed for a specific task and purpose. They usually work exceptionally well for that specific task, and marginally well, poorly or are downright dangerous when used outside of the design scope.

Think of adjustable wrenches as hammers, knives as screwdrivers, and shovels as pry bars. It might work and get you by, or you may end up with a broken tool, metal fragments in your eye, or an extra hole in your skin. Generally, it's best not to use them outside of their design/build parameters.

At this end of the spectrum, it's easy to have so many purpose-built tools that you're overwhelmed or weighed down when going and doing.

MULTI-TOOL TRADE-OFFS

When you ask one device to do many jobs, plan on performance compromise. This is usually true with all kinds of mechanical devices. Even if they are awesome at their primary jobs, they may be a *big* disadvantage when used in the "multi-tool" role.

A sniper rifle is widely considered a poor entry weapon. A hot-rod may have lots of horsepower but suck at plowing a field. A breaching ram might be the wrong choice for driving in a finishing nail.

Where can you make compromises and still have a great multi-purpose tool?

Purpose-built tools are great but take up a lot of space and can be heavy to carry.





SPARtool: 1, cinderblock: 0.



SPARtool saw blade has an aggressive bite.

A pile of cinderblocks was my next target. The pick tool was begging to show off its stuff.



Axe blade made short work of a 2x4.

USING SCIENCE

Yeoh stated that he and his team did not include any tools in the design and manufacture of the SPARtool if they would not perform to 90% of what a similar-sized task-specific tool would. They used science to put this thing together.

Yeoh said, "The tool has been carefully designed so that every function serves its purpose and does the job comparably to a single-function instrument. The shovel and blade edge are aligned parallel with the handle to make straight cuts, and the tool is perfectly balanced around its midpoint. The saw has a progressive rake angle and wide offset on the leading teeth to make cuts easier to start, and the 1075 carbon steel blade has been tempered to 48 RC for a good balance of flexibility and hardness."

He also pointed out that some of the included tools augment other tools. For instance, the pry bar end, when grasped with the cover on, can give additional leverage to the shovel. Additionally, if you're right-handed and using the axe-blade part of the shovel, all other sharp points are directed away from your body.

TESTING THE 90% THEORY

Does it work? Is this conglomeration of tools worth packing? I took the SPARtool with me for a weekend in the desert and banged, busted, hacked, and dug.

The Root Test: Many prickly tumbleweeds are in this part of the country. I wanted to see how the shovel blade tip would clear these weeds, some of which have ½-inch diameter roots. The SPARtool shovel cut through these like the proverbial hot knife through butter. I was surprised how sharp and effective the tool was for this task.

Pick Axe Test: A pile of cinderblocks was my next target. The pick tool was begging to show off its stuff. Short work here: The average cinderblock took three strikes from the pick to defeat. Check that box!

Axe Test: The last four to five inches of the right side of the shovel blade are sharpened and designed to use as a chopping tool/axe. My test involved a weathered 2x4. The



Shovel did exactly what it's supposed to.



SPARtool's pry bar/wrecking bar performed well.



SPARtool only had light surface marks after a day in the field.

blade proved to be very effective. At 12 strikes, I was halfway through, and at 26, completely through. Elapsed time was less than a minute.

Saw Test: Initially, I thought the saw blade would be relatively useless. I believed the teeth were short and not aggressive enough. I was wrong. The saw actually bit into wood well, and the short strokes were more effective than I expected. This is functional beyond its appearance. I also found the pry bar to be a great spot to grasp when sawing. It gave more leverage to the saw's bite.

Shovel Test: The shovel blade is sharp and digs well. As mentioned earlier, the pry bar head works well to add leverage to the shovel when digging out rocks and roots. Even though the soil I tested this on was baked desert dirt, the shovel performed admirably.

Pry Bar/Wrecking Bar Test: I like to test these on car doors and windows when possible. But the only nearby vehicles had owners who would not have appreciated my altruistic tool test on their primary mode of transportation. So I settled for tearing apart an 8x8 square log. Next was prying up old ten-penny nails and some padlock hasps. The pry bar on the SPARtool handled these tasks just fine!

Bottle Opener Test: This is the one function I did not test. My preferred elixir-of-life beverage is usually in a can, but I have no doubt this bottle opener performs as advertised. And like Stewart said, "If you're thirsty enough, the whole tool is a bottle opener!"

After these tests, the SPARtool was functionally none the worse for wear. The FDE finish of the tool has scratches and scrapes, but I could find no noticeable dulling of the pick axe, axe, or saw. The handle and grip remain tight and solid, and I have a newfound respect for the SPARtool.

RECOMMENDATIONS

My wish list for the SPARtool can likely be easily addressed.

First, I'd like to see more robust protectors for the sharp points of the tool. The ones provided worked fine during my tests, and if you are using standard protective gear (highly recommended with any tool) of gloves and eye-pro, you

should have no worries. But I want to be able to grab the tool anywhere I need for leverage while performing a task without worrying about injury.

Second, I'd like a multi-purpose (see how that works?) Kydex sheath/holder for the SPARtool. Ideally it would be MOLLE compatible for a rucksack, to strap it onto the rollbar of my side-by-side or bolt the holder to the top of a toolbox.

While it must be tempting to outsource components and manufacturing processes, we all get upset when we hear of jobs going to other countries. SPARtool and their team have taken the high road and opted for local, in-state business to help them in the manufacturing process. Everything about the SPARtool is Utah-based and manufactured. In my opinion, you have to appreciate a company that puts principle over profit.

DOES IT BELONG?

The bottom line is, does the SPARtool belong in your gear locker, strapped in your vehicle or ATV, or rigged to your loadout ruck?

Yeah, I think so. While I wouldn't pick the SPARtool if I knew my job was to split a cord of firewood, frame a house, or breach a solid-core door, I *would* pick the SPARtool if I didn't know what I'd run into and wanted a tool that would do many things reasonably well.

At \$150, I believe it's a great value, and coming in a variety of finishes, you can't go wrong. ☺

Ken Matthews is a former SWAT team member with a Utah police department, fulfilling collateral responsibilities as a sniper and team medic depending on the mission. He has been an underground miner, EMT and Ambulance Commander, and a Flight Nurse and Air-Medical Program Director with over 1000 patient missions.

SOURCE

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REAL-LIFE ROBOCOPS

Drones and Robots Provide Edge in Threat Environs

By W. Thomas Smith Jr.

Danicked yet determined to elude pursuing law-enforcement officers, the armed-robbery suspect stumbles his way through thick brush in the dead of night. If he can reach the river, he hopes to lose the dogs and any officers on foot.

Surely no police vehicles will be able to get through this morass of tall grass, close-growing scrub oaks, twisting vines, and pine trees. And the airborne cops with their night-vision capabilities haven't yet had time to scramble a helicopter. He would have heard it by now, and he'll be long upriver before the helicopter lifts off from the airport helipad.

OPPOSITE: Master Deputy Marcus Kim of Richland County Sheriff's Department pilots DJI Inspire 1 drone, demonstrating its deft maneuvering capabilities. FLIR camera is mounted just under drone's nose.

All the suspect hears is his pounding heart, his gasping for air as he runs nearly full steam through the dark woods toward the perceived safety of the river.

He stops momentarily to catch his breath and get his bearings. The only sound other than his own breathing is the distant roaring of a tractor-trailer heading down the Interstate highway about a mile or so away. That, and frogs. Sounds like millions of them. He must be near the river.

What the fleeing suspect doesn't hear is, 300 feet off the deck, an unmanned aerial vehicle (UAV or "drone" in popular parlance) with a forward-looking infrared (FLIR) camera mounted under the drone's nose.

Watching both the dogs and the fleeing felon, the Richland County (South Carolina) Sheriff's Department DJI Inspire 1 surveillance drone, with its single engine and four small rotors (which is why it's sometimes referred to as a quadcopter) is as quiet as a perfectly humming weed eater. And that's what it sounds like.

The suspect hasn't got a chance. His heat signature has already been painted on the remote FLIR screen being monitored by RCSD Master Deputy Marcus Kim, who remotely pilots the department's three drones. When he's not flying drones, Kim serves as a member of the department's Community Action Team, an outreach and community bridging program between the sheriff's department and the communities it serves.

FLIR CAMERA

What's an infrared camera, and what type of FLIR does the Richland County Sheriff's Department (RCSD) use on its drones? A FLIR camera is essentially a device that produces thermal images on a remote screen by looking at the invisible radiant energy of a source (the heat from a source) as opposed to a conventional camera, which uses existing light.

"This is especially effective at night," says Deputy Kim. "We can pick up any heat signature from bodies—humans and animals—running cars, even recently driven vehicles when the engine is still hot."

Part of the RCSD's "tactical air force," which also includes two helicopters, the DJI Inspire 1 drone does what the big, expensive, high-maintenance helicopters cannot. Drones are extremely quiet and much more easily deployed.

"If nothing else, drones get on and above the scene quicker," says Kim.

The RCSD's drones are relatively small and lightweight—the Inspire 1s in the department's inventory weigh only about six pounds each—and are transportable in the trunk of a standard police vehicle. They are relatively inexpensive to operate, and not overly pricey on the front end.

The DJI Inspire 1 drone costs about \$2,000. But the tiny FLIR camera is not cheap, costing approximately \$13,000, whereas the conventional daytime camera costs less than \$1,000.

DJI Inspire 1 drone. Four rotors mounted atop each quadrant of landing frame give DJI Inspire its nickname, quadcopter. DJI Inspire 1 drone has lateral range of approximately three miles out and ceiling of about 400 feet off the deck. Drone is also equipped with GPS homing device, so if it strays too far, it automatically returns to its remote pilot on the ground.



Nevertheless, drones are cost-effective considering their capabilities. And it's not simply surveillance of fleeing suspects and tracking suspect-pursuing K-9s that make drones such an effective crime-fighting platform.

Drones are indispensable in 21st-century SWAT operations like those employed by the RCSD's Special Response Team (SRT), often providing the best—perhaps the only—real-time photographic intelligence for operators on the ground. The drones are also capable of being mounted with an array of weapons if needed. “Everything from tasers to tear-gas to distraction devices, even a small-caliber .380 firearm,” says Kim.

Drones are also especially effective in woodland searches for missing persons.

WHAT'S THE RANGE?

About three miles out and 400 feet off the deck, according to Kim, though for obvious reasons the lateral 360-degree

distance and the ceiling limits are rarely if ever tested. An interesting feature of the drone is that if it strays too far, it automatically returns. “The drone sets a GPS home-point when launched,” says Kim. “So if you lose it, it'll come back to you.”

One of the more interesting recent uses of the RCSD's drones has been in surveillance of the fenced-perimeters of prisons in Richland County, where corrections officers are often few in number.

“We've worked with the South Carolina Department of Corrections to make sure no contraband comes over the fences of some of the corrections facilities,” says Richland County Sheriff Leon Lott. “In the past, they've had a problem in which everything from phones, drugs, and a variety of weapons have been thrown from the outside over the fences and into the prison yards to waiting inmates.”

Lott adds, “With our drone surveillance capabilities, we not only see this, but we are then able to track the perpetrators after the act, and ultimately bring them to justice.”

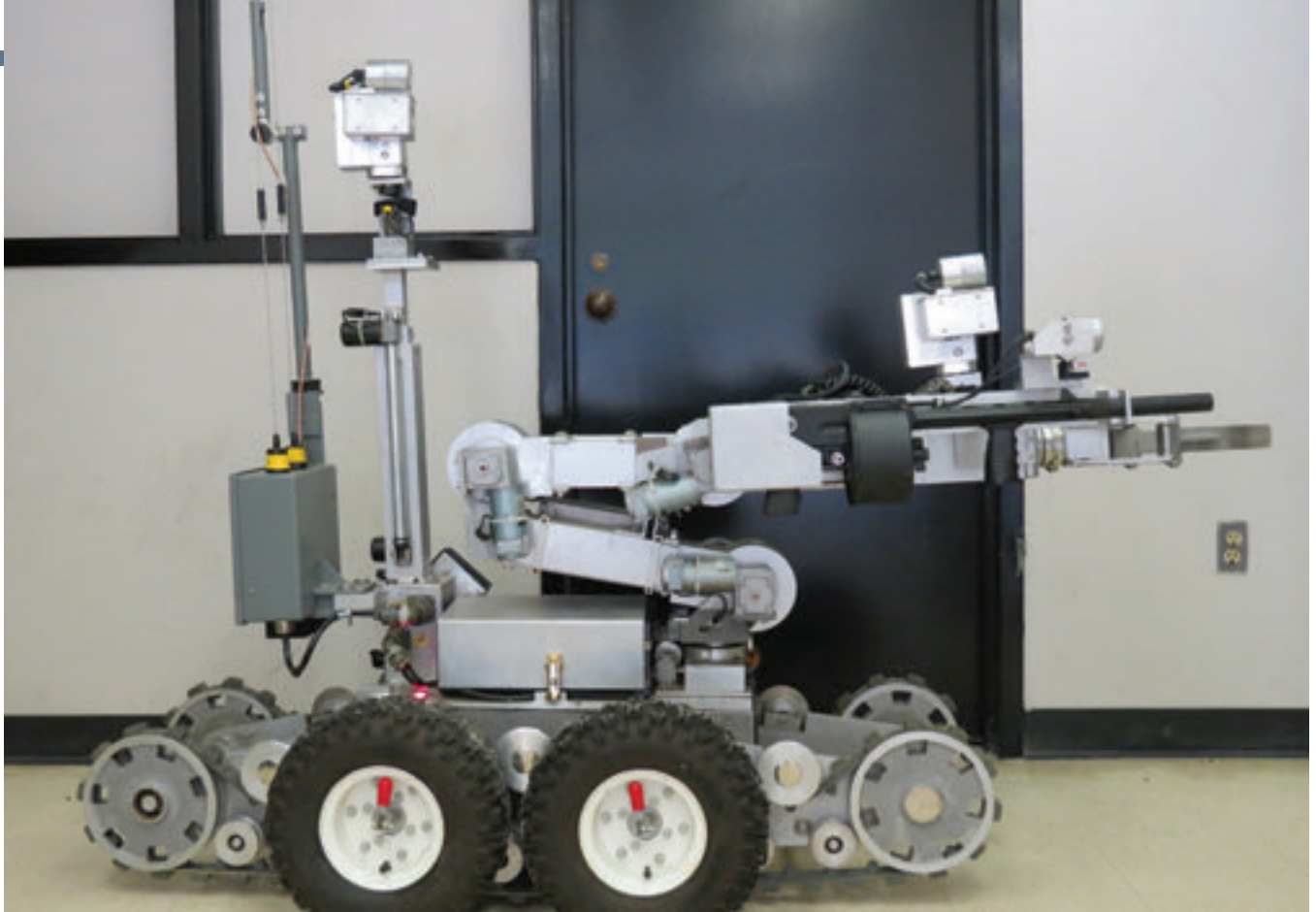


ABOVE: About seven feet off the deck, DJI Inspire 1 drone slows to a hover. This side view is a good vantage point from which to see the \$2,000 drone's \$13,000 FLIR camera.



LEFT: Deputy Kim points to his own signature on screen as drone's FLIR camera watches him and others observing drone's flight.

FAR LEFT: Barely audible, DJI Inspire 1 drone flies above rear parking lot of headquarters of Richland County Sheriff's Department in Columbia, South Carolina. RCSD is one of the largest law enforcement agencies in South Carolina.



ROBOTS

Drones aren't the only remotely piloted platforms in the RCSD inventory. Sheriff Lott's force of some 700 uniformed officers is also supported by three ground-based robots which, like the unmanned drones, are capable of various tactical and surveillance operations.

The RCSD's robots come in three sizes and increasing capabilities: the small iRobot 110 FirstLook (about the size of a remote-controlled toy car and weighing less than ten pounds), the medium iRobot 510 PackBot (a tracked platform weighing less than 100 pounds), and the large Remotec F6-A (a 300-pound force multiplier with a retractable arm and small tires).

The small robot, like its bigger brothers, is capable of surveillance and observation. "And we can use the small robot as a non-threatening way to communicate with a barricaded suspect," says Lieutenant David Linfert, the RCSD's bomb squad commander. The iRobot 110 FirstLook is used primarily for SRT purposes.

Unlike drones, robots aren't cheap. The cost of the iRobot 110 FirstLook is approximately \$23,000.

"The medium-sized tracked robot can do the same things as the smaller one," says Linfert, "but is also used for explosive ordnance disposal work and disarming or disposing of IEDs."

The medium-sized iRobot 510 PackBot, which is capable of climbing stairs and over obstacles, carrying items, and being fitted with multiple cameras, costs around \$100,000.

The largest is the Remotec F6A. At a cost of \$210,000, the F6A does it all: everything from door and window breaching to vehicle disablement and even serving as an "extra man" for an SRT entry team, in that it can secure a previously searched area so no one can sneak up behind the team.

Remotec F6A, largest of RCSD's three robots. This particular robot can serve as a stay-behind force-multiplier for RCSD's SRT by remaining in previously cleared areas so no one can move undetected behind the team. It is fitted with Striker 12-gauge shotgun capable of firing less-lethal ammunition.

"With the big robot, we have many capabilities, including the ability to mount weapons," says Linfert. "We can mount everything from a 37mm tear-gas launcher to a pepper-spray dispersal system to a 12-gauge shotgun that can fire non-lethal ordnance like beanbags and rubber bullets."

Additional features include radiation, biological, chemical, and explosive monitors utilized in a WMD threat environment. All three robots operate on a wireless radio frequency, can operate up to four to six hours on batteries, and can work in hazardous WMD environs.

BOMB CALLS

Like drones, robots are important pieces in the RCSD inventory, especially in 2017 and even more so in Richland County. According to Linfert, the RCSD receives between 100 and 150 EOD-related calls per year, and they are not all bomb threats phoned in by teenage boys.

Richland County encompasses large-acreage military installations like Fort Jackson and McEntire Joint National Guard Base, vast military reservations that extended much farther beyond their present borders in earlier decades (especially before and during World War II). Land once utilized as munitions impact areas for grenade and mortar training, as well as for artillery live-fire training and aerial bombing runs, has become civilian commercial and resi-

dential properties, with housing subdivisions built on land sometimes still concealing unexploded ordnance.

That's where the robots come in, and the unexpected and unexploded ordnance can be safely defused and disposed of without posing a risk to the lives of RCSD bomb squad officers.

Speaking of which, the RCSD bomb squad directs robot operations, providing support to the SRT and other RCSD elements. The bomb squad is composed of five bomb experts, including full-time members of the SRT, patrol officers, and one bomb technician (Linfert) who is also the bomb squad commander.

The bomb squad and robots also support the local military bases when the military's



Sheriff Leon Lott leads Richland County Sheriff's Department, a force of 700 sworn law enforcement officers and 140 non-sworn employees. RCSD serves county that encompasses South Carolina's capitol city, Columbia, and is one of the largest law enforcement agencies in the state.

Photo: Senior Deputy III Katelyn Jasak

own EOD experts are deployed or otherwise unavailable.

Asked about the 100 to 150 "bomb calls" a year, Linfert says they do indeed include juvenile hoaxes but more often than not are newly discovered unexploded wartime munitions.

There are also responses to "fake devices" used to divert officers away from other

"The robots keep our personnel out of direct danger. They are quickly and easily deployable, and operator friendly."



iRobot 510 PackBot, a favorite of EOD personnel, is capable of climbing stairs and over obstacles, carrying items, and being fitted with multiple cameras. Weighing less than 100 pounds, this medium-sized robot costs about \$100,000.

criminal enterprises, and responses to chemicals discovered in drug labs that can also be used to manufacture homemade explosives.

"Like our drones, our robots are key in mitigating the risk to human life," says Sheriff Lott.

Linfert agrees, adding, "The robots keep our personnel out of direct danger. They are quickly and easily deployable, and operator friendly."

For deputies and other law-enforcement officers, especially those operating in the world of SWAT, like the RCSD's SRT, drones and robots give the good guys an edge in terms of mission success.

In current threat environments, where bad guys also often have access to sophisticated weaponry and high-speed technologies, drones and robots serve as the eyes and ears, and sometimes the arms and hands, of law-enforcement officers. This dynamic is not only key to winning the fight. It's also critical to saving lives. ©

SOURCES

DJI
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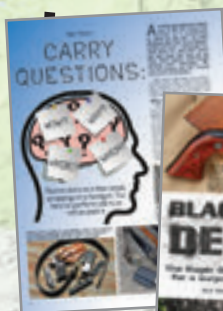
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Bravo Company Mfg Colonel Blade Low Vz-PRO

Offered exclusively through Bravo Company Mfg, The Colonel Blade™ Low Vz-PRO may be the ultimate EDC fixed-blade knife for personal defense. What sets The Colonel™ apart from the competition is its patented advanced design. It is made for shooters, so your drawstroke is the same every time.

The Colonel is not an all-around utility knife. It was not designed nor is it intended for that role. It is a specialized tool designed solely for personal defense in extreme close quarters encounters to repel a lethal force attack where an assailant is attempting to take your handgun or you cannot access your handgun. And it excels at that.

Designed by combative instructors Al and Nico Salvitti, with input from former Special Forces operators J.D. Potynsky and Tom Spooner of Northern Red, The Colonel utilizes the existing muscle memory ingrained in every shooter to facilitate effective stabbing and slashing without the need for specialized training. There aren't any complex drill forms to remember, nor any new stances or grips to learn.

The Colonel is drawn in the same manner as a handgun. Striking with the blade is the same as throwing a punch. And everyone knows how to do that. It meshes with the skills you already have. It excels as a stabbing weapon. When you hit, the com-

pression from the punch will drive the blade of The Colonel deep into the vitals. It is virtually impossible to defend against, even for a trained fighter.

The grip angle mirrors that of a pistol, allowing The Colonel to sit low in the hand for positive retention. The grip angle aligns and stabilizes the arm, forearm and wrist into the strongest position in a forward grip for improved strike mechanics, powerful strikes and increased tip-to-target acquisition. Simple and very effective.

The patented design of The Colonel makes it next to impossible for the user to stab or cut themselves while employing the blade. The

Available from Bravo Company Mfg. The Colonel is a new fixed-blade knife for personal defense that is designed for shooters. It carries, conceals, and draws like a gun.





The Colonel grip aligns your upper arm, forearm, and wrist into the strongest position. Blade work with The Colonel is the same as boxing.

design also lends itself to use with a reverse grip, providing enhanced grip and reach when compared to conventional knives. By utilizing natural body mechanics, the ergonomic design of The Colonel is also exceptionally comfortable and well-balanced in the hand in either gripping technique.

The Colonel is hand forged in Italy and coated, assembled, and sharpened in the U.S. It features a full tang, single-edged 2.75-inch spear-point blade in N690Co stainless steel with a matte-black nitro-carburized finish, three-inch contoured handle with checkered black G10 scales, large (winter glove suitable) teardrop-shaped finger ring, and aggressive jimping at the spine and hilt.

N690Co is a cobalt-enriched stainless steel from Austrian steel company Bohler. It is considered an exceptional high-end stainless steel. The added cobalt improves the wear resistance and edge retention of the steel in addition to ensuring a uniform grain structure. Although some have referred to N690Co as an upgraded 440C, it is very similar to VG-10.

The blade properties are further enhanced by QPQ liquid ferritic nitrocarburizing, a case-hardening process that imparts high surface hardness and improves wear, fatigue, and corrosion resistance for metals. It is extremely durable. Glock Tenifer and Smith & Wesson Melonite are other examples.

The Colonel comes with a custom-made sheath from G-Code®. The sheath is formed from the

high-quality 100-series KYDEX®. The outer edges are trimmed and buffed to a smooth, comfortable finish that won't create hot spots when the sheath is worn. The sheath features a multi grommet/slot pattern that provides for a variety of attachment methods and utilizes a friction fit to securely hold the knife. It is very secure, with absolutely no rattle, yet easily pops off when deploying the blade.

The sheath comes equipped with a patent-pending multi-positional ambidextrous belt clip for IWB/AIWB carry that fits up to a 1.75-inch belt. The clip is made of a durable polymer and locks securely on the belt. The clip incorporates a negative-angle design at the neck that forces the sheath to ride closer and tighter to the body for optimal concealment. The clip rotates to allow adjustment of cant and can be easily removed for pocket carry or to change the method of attachment.

To meet the requirements of certain end users, The Colonel has been kept completely "sterile." Both the knife and sheath are devoid of any markings.

While supplies last, BCM is shipping a free aluminum Colonel Trainer with each Colonel Blade. The Colonel Trainer features a blunt one-inch blade and reversible clip for carry. The shorter blade is designed to allow you to practice full strikes and enhance muscle memory without stopping at the tip. It is useful for more than just training, as the design of the Colonel Trainer also lets it be effectively employed as a less-lethal tool for suspect control.



Knife comes with high-quality G-Code Kydex sheath.



Aluminum Colonel Trainer lets you safely practice full strikes and establish muscle memory.

After carrying and training with The Colonel, I must say I am very impressed. It's an outstanding low-profile fixed-blade knife for EDC. Design, materials, and workmanship are outstanding. The Colonel has a unique combination of features that put it in a class of its own. Bravo Company clearly has a real winner.

List price for the Colonel Blade Low Vz-PRO is \$199.00. Bravo Company's price is \$149.95. The Colonel Trainer is regularly priced at \$25.00. ©

SOURCES

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www.bravocompanymfg.com

G-CODE HOLSTERS

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NORTHERN RED, LLC

www.northernred.com

Viking Tactics Glock Sights

THE tactical and shooting markets are fortunate to have a solid number of companies that reliably turn out quality, innovative products. Viking Tactics (VTAC) is one of these. Their sights were an integral part of the special edition VTAC Smith & Wesson M&P and available for that handgun as an accessory shortly afterward.

This was unorthodox, since the world we live in is—good, bad, or indifferent—a Glock-centric one. The Glockenmasses were envious and vociferous in demanding that Kyle Lamb fix this imbalance in the shooting universe. He did, and I spent a chunk of the last year trying out a set of the VTAC sights on a Glock 17.

The VTAC set has several features, but the most salient is the arrangement of protected green fiber-optic rods stacked vertically over tritium capsules. This gives a true any-light, any-environment option in a rugged steel sight made for VTAC by Trijicon.

Before we jump in, allow me to offramp for a second to lay out some groundwork.

I've known a good number of top five percent type champion shooters. Their preferred sights on match guns



VTAC sights stack well-protected heavy-duty fiber-optic rods on top of tritium vials for a three-dot picture in any lighting conditions.

share themes or principles, but are rarely the same. Sights are the shooter's visual control panel and tend to differ based on the visual acuity of the shooter, their individual emphasis on precision versus speed, and the lighting conditions they most often shoot in.

I've also observed that an individual's degree of ability to cleanly break the trigger influences the amount of light he prefers around the front sight.

The VTAC sight is unabashedly oriented to hard use in a duty environment. Where many sights are either fiber optic *or* tritium, the Viking sights give both.

But wait. Aren't fiber optics fragile and geared toward competition or casual use? Well, many are. The

The value of the VTAC sights really jumps out when taking the Glock from a bright outdoor environment into a typical darkened structure.



thin fiber-optic rods that fit neatly within competition-type sights can break over time. It happens and most of those types of sights have the rods quite exposed for the thin rod to gather light and to make replacement simple.

The VTAC unit's fiber-optic rods are significantly thicker than the average competition-flavored rod and are firmly crimped into the steel sights, appearing very well protected. It's hard to picture a scenario in even the rough environs these are meant for where the sight could take such a beat-

Viking Tactics is now offering their innovative any-light high-visibility sights for Glocks.

ing as to disgorge one of the fibers.

With the large fibers, there is no escaping them, even in overcast light. They are impossible to ignore. They are so noticeable that the eyes can shift downrange to the threat or target while still getting quite a bit of information from the sights. I found them almost too bright in harsh light while trying for a hard front-sight focus, but they didn't negatively affect hits.

I had taken a stock Glock 17 with the pathetic stock plastic sights through a number of baseline drills, and comparing the VTAC sights in every case led to an increase in speed as well as accuracy. The green dots made running the plate rack too easy: just follow the bouncing green dot out at the end of the pistol, and steel plates rippled off the rack.

In bright light, the tritium vials are visible, but I had no problem ignoring them, and after a while I didn't really "see" them until transitioning into a darkened space. There is a narrow band of ambient light where the fibers are picking up and channeling a little green back toward the shooter, and the dimness of the room lets the eyes simultaneously pick up the glow of the tritium, effectively giving



Forward face of rear sight is serrated and somewhat vertical to assist in one-handed slide manipulation. Extra depth of rear sight notch accommodates both dots.



Even in overcast shade, fibers are prominent and boost hitting speed and certainty.

a double stack of three dots.

Not really a big deal, and it would be hard to confuse the sight picture in any way.

The value of the VTAC sights really jumps out when taking the Glock from a bright outdoor environment into a typical darkened structure. At each step of the way, the sights channel back highly visible information on their alignment.

Literally dozens, perhaps hundreds, of Glock sights are on the market, and most exhibit one or more of the recent trends in sights. These include thinner front sights, wider rear notches, or some combination that allows more light around the front sight, taller sights, rear sight shape that assists in one-handed manipulation of the action, and high visibility features. The VTAC checks all those boxes.

Viking went with a gently trapezoidal-shaped front blade in order to give the sight the required thickness for the tritium vial in the bottom while giving the shooter a finer sight tip at .110 with less obstruction of the target than the typical .130 or thicker sight. The stacked fiber and tritium necessarily make the sights a little taller than stock, and the rear notch is correspondingly deeper to allow both dots to be aligned. This is visually different than more traditional designs.

I found the arrangement to be quite fast up close and still plenty precise

out to long range. I was hitting fine out to 75 yards on reduced silhouettes with the sights—right in there with the very best duty sights and with more information available to me around the front sight.

There is wide variation in milled slide setups for mounted red dots on pistol slides, but I believe the VTAC is just tall enough to give a bit of lower edge co-witness with some of the slide/dot combos. Best check your intended application to be sure, but the VTACs are tall while not being quite as high as the suppressor sights some are using to pair with red dots.

The forward edge of the rear sight housing is nicely serrated and nearly vertical, allowing rapid manipulation without fear of scuffing up the hands. There is plenty of surface area and traction to assist in one-handed cycling of the slide by catching the forward face on an object, belt, etc.

The VTAC sight is available as a matched unit as tested here or as a fiber optic/tritium front paired with a plain black rear for those who like to keep the rear sight simple. The sight is also available for SIGs and M&Ps. ©

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From Inland Manufacturing, the maker of truly "real" M1 Carabines, comes the modern Liberator .45 ACP Derringer pistol. The Inland Derringer celebrates the original single-shot Liberator pistol of World War II fame manufactured by the Inland Division of General Motors in Dayton, Ohio for resistance forces in Europe.

In an agreement with Bond Arms, this high-quality Derringer is stainless steel with a bead-blasted, anti-glare finish. It has handsome wood grips featuring the Inland cartouche. Built solid like a tank, this Inland Liberator is a fun and great-looking pistol. In .45 ACP caliber, it is a potent and very reliable concealed carry firearm. The Liberator is exclusively marketed by MKS Supply, LLC. Suggested retail price is \$495.00.



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Second Amendment in Action

Christmas Morning Surprise

In the wee hours of Christmas morning in the unincorporated community of Sunnyland, just east of Peoria, Illinois, a homeowner was awakened by something that didn't sound like Santa. Grabbing his .357, he left his girlfriend in bed while he headed into the hallway to investigate, only to encounter a woman he didn't know in his house.

He grabbed her and she started screaming curses. Another shadowy figure, this one a man, approached down the hallway with something in his hand. The homeowner repeatedly yelled for him to stop. When he didn't stop but headed for the bedroom where the homeowner's girlfriend was still in bed, the homeowner opened fire. Police arrived and took both intruders into custody. The male turned out to be a repeat offender on parole for bank robbery in a nearby town.

SOURCE: *The Journal Star*, Peoria, Illinois, 12/27/16

Not Just a Pawn in Life

The day after Christmas in Mableton, Georgia, the owner of Dixie Gun and Pawn would normally be looking forward to a busy day of folks coming in to spend their Christmas money. But this year brought a rude Boxing Day present in the form of a pair of masked armed robbers who burst into the shop yelling, "Get down on the floor! Get down on the floor or we'll kill you!"

The shop owner went for his own gun in its holster on his belt, and the robbers started shooting. But the defender's return fire was more effective than his assailants' wild shooting. When the dust had settled, one of the robbers lay on the floor with fatal gunshot wounds and the other had fled the premises. The owner of the shop was unharmed. At the time of this writing, police were looking for the second shooter, who was seen leaving in a silver Dodge Magnum.

SOURCE: WGCL-TV, Atlanta, Georgia, 12/26/16

After Midnight

A neighborhood on the west side of San Antonio echoed with the sound of gunfire around one in the morning on the Wednesday after Christmas. Two armed intruders forcing their way through the front door of his home in the darkness interrupted a homeowner's quiet night. When confronted by the homeowner, the home invaders started shooting.

The homeowner grabbed his own gun, turning a shooting into a gunfight. Despite grazing wounds to the head and hand, the defender struck one intruder in the torso and the other in the torso and leg. The defender and his assailants were all transported to the hospital. A third man was being questioned by police as a possible accomplice to the men found in the house.

SOURCE: WOAI-TV, San Antonio, Texas, 12/28/16

One Outnumbers Two

A Detroit man was pumping gas at a local gas station a few minutes after midnight just two days before Christmas when he was approached by two strangers. One of the two produced a handgun and the pair attempted to carjack the gas station customer. But the would-be carjackers had made a crucial error in the victim selection process, since the man filling up was also the holder of a Michigan Concealed Pistol License.

Swiftly turning the tables on his assailants, the intended victim drew his handgun and opened fire, striking both attackers. When police arrived, both wounded carjackers were taken into custody and transported to the hospital, under arrest.

SOURCE: WXYZ-TV, Detroit, Michigan, 12/23/16 ©

Attackers sometimes come in multiples. This eight-shot Ruger can handle a wider variety of situations than its five- or six-shot kin.



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MAY ISSUE ON SALE APRIL 4th

Retaliatory Defensive Shooting

YOU can dress a pig in a sweatsuit, but that doesn't make him an Olympic athlete.

And you can attend a ten-day defensive firearms course, but that doesn't make you a gunfighter. It may make you adept in the fields of weapon manipulation and accuracy with a specific firearm. You may even walk out of there with a modicum of strategy and tactics—but it's not the same as retaliatory defensive shooting when under attack for real.

Defensive shooting, by nature, is retaliatory. If you have the opportunity to smoke somebody's hindquarters before he can react to your action, you are not responding defensively. You are initiating an action, even though it may be warranted, and this, by definition, is not an immediate defensive response to a deadly force threat.

There's a reason that the Irish sold you a pig in a poke. By both parties' agreement, you didn't know what you'd bought until you forked over the money. The rules of the game entailed that you didn't get to open the bag until you'd paid for the porker. And like everything else, not all pigs are the same—and every gunfight is different, with no rules. You want "rules of engagement"? Talk to your fiancée.

So if you train under one school of thought, you'd better hope that your enemy does what your *sensei* said he would, or you'll end up being neither the buyer nor the seller, but more likely the bacon in the bag. And that, in a nutshell, is the problem with different training schools.

First and foremost, let it be clearly stated that this author firmly believes one should attend every school which one's time and finances allow. Knowledge is power.

But having said this, it would be as well to realize that the hierarchy in every training academy firmly believes in their system from a *subjective* viewpoint. The trainee retrospectively looks at the training *objectively*. This leads to the inevitable quotation,

"Those who can, do. Those who can't, teach."

And it would also be as well to remember the words of the late, great shotgunner Elmer Fudd: "Be vewy, vewy careful." Because as good as Fudd was with that old double, the dwatted wabbit never seemed to take buckshot hits.

And I personally don't want a pedagogue who can't control his own caw-wot patch when I'm trusting his training to ready me for war. Yes indeed, Mister Fudd, sir, I'll certainly pay attention in your school, but I'm going to be vewy, vewy careful in choosing what information I swallow and what I expectorate.

Because while you're chasing a talking rabbit for stealing your lousy carrots, I'm in a real gunfight, with real blood and real bullets—and I can't afford to lose Round One. This isn't a ten-round boxing match with Marquess of Queensberry rules. Lose Round One and there is no Round Two.

I'm watching a video, the contents of which are intended to relay to us lesser mortals how to instantaneously react to an armed carjacker. The technique entails running both thumbs along the seatbelt to aid in locating the belt release latch, releasing said mechanism, acquiring a firing grip on a conveniently located pistol, "tracking" the steering wheel to avoid sweeping one's nether regions with the gun muzzle, and then accurately firing rounds at your assailant through the open driver's-side window.

Now I'm no longer a teenager, so I don't know everything anymore, but my beFuddled mind tells me you're probably dead long before you could finish reading the previous sentence, which, granted, was probably the longest sentence in literary history. And this much I know for sure, Elmer: either you've never been carjacked for real, or else you're wittingly or unwittingly committing sophism of the worst kind—or both.

On what do I base this opinion? The fact that for 34 years I lived in a coun-

try where the national pastime was carjacking, that's what. Hence the Parliamentary/Congressionally approved foot-pedal-operated device that incinerates carjackers by means of a laterally emitted ball of white flame. And yes, the designer/manufacturer's proudest claim is that the fireball doesn't destroy the paintwork on the intended victim's car.

If you're deploying a pistol against a would-be carjacker, here's how it works in actuality:

First, you'll be reacting off a visual impetus, not an audible (as used on a training range). So you'll be slower.

Second, you aren't going to get the seatbelt unlatched in a hurry, no matter how much you practice. Or are you the only person on the planet who's never embarrassed himself after finally reaching a restroom with an exploding bladder—and then missed the jeans zipper release on four frantic successive attempts?

Third, you *will* sweep yourself with the gun muzzle in a panic-stricken attempt to make up for lost time. No careful steering wheel "tracking" now.

And one more for luck.... How did your side window magically lower itself—or I guess you haven't actually fired rounds through a driver's-side window while seated behind the wheel. Try it sometime. It's a blast—literally and figuratively.

While safety is mandatory on a training range, as a trainee you must take a long, objective look at the difference between safe range training and what actually transpires in battle—or you may walk away from the training exercise with a misguided sense of security.

Yes, you can dress a pig in a sweatsuit, and you may be able to train him to run fast. And you may even strike a bargain buying a pig in a poke. But when all is said and done, a pig is only bacon that hasn't stopped breathing yet. ☺

[This column first appeared in the April 2008 issue of S.W.A.T.]

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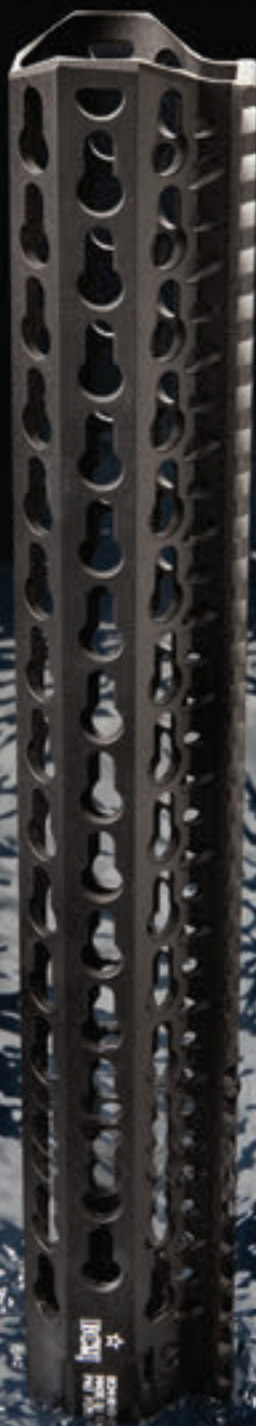
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