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## LIGHTWEIGHT, MANEUVERABLE, ERGONOMIC 9MM CARBINE

Wilson Combat AR9G

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DENNY HANSEN

## Non-Peaceful Protests

Starting the day after Inauguration Day, we have seen what the popular media terms “peaceful protests.” And while many have in fact been peaceful, some would be better characterized as riots.

Look at the events that occurred at the University of California, Berkeley: Epitomizing the word irony, demonstrators used their right of free speech to condemn the free speech of British journalist Milo Yiannopoulos and force the cancellation of his planned event.

But it didn't stop there. The “demonstrators” quickly turned into rioters, breaking windows and starting fires.

We have seen lines of police officers standing their ground while being attacked with bottles and bricks. I think it's time to take back our streets.

On 20 November 2016, authorities in North Dakota used high-pressure water hoses to quell a protest near the Dakota Access oil pipeline. Seventeen protesters were taken to the hospital—including some who were treated for hypothermia. Play stupid games, win stupid prizes.

The tactic worked, and I believe we will see it used more often.

While watching the news one evening, I heard a woman screeching over a bullhorn that the time for peaceful protests is over and it's time to wage open war on the police, the government at large, and supporters of President Trump.

Be careful what you wish for, snowflake. This isn't the game *Call of Duty*, and many of the folks you advocate attacking are trained, armed, and capable and willing to protect themselves and their loved ones.

Protests that block roadways and stop traffic have prevented ambulances and fire apparatus from responding to emergencies. In some cases, drivers who tried to slowly drive through the protest have been mobbed and their windows broken out. Out of fear for their lives, drivers have sped up and run over demonstrators. Again, play stupid games....

At the very least, protests that close down streets have a detrimental effect on business. Now several states have legislation that would enable peace officers to arrest those involved for “economic terrorism.”

I hope I'm wrong in thinking that things will get worse before they get better. In the meantime, maintain good situational awareness and be prepared with the appropriate measure of force if necessary.

In the March issue, I offered my opinion on national CCW reciprocity. Now our Second Amendment specialist, Kurt Hofmann, gives his perspective on it in *Enemy at the Gate* on page 32.

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

*Denny Hansen*

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# SWAT

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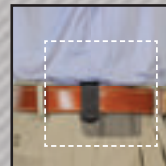
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### GOTCHA!

I was sitting in my chair this winter Sunday morning, enjoying a God-given day of rest. Sipping hot coffee and perusing a fresh issue of *S.W.A.T. Magazine*, I came across the article *BOLT-ACTION THUMPER (.450 Bushmaster Ruger American Rifle, March 2017 S.W.A.T.)* and could barely contain my excitement!

The caption on page 44 stated the rifle was equipped with a Vortex Viper PST 1-6X24. Finally, Vortex had produced a 1-6 scope of higher quality than the StrikeEagle without the bank-breaking price of the Razor HD!

Alas, my excitement was short lived. As I examined the photograph paired with the caption, I could clearly make out the "1-4X24" in no less than two places on the scope. Curses!

I set my coffee down and hung my head in disappointment. The esteemed editor of *S.W.A.T. Magazine* had misled the faithful subscribers.

Also, get some low-mount rings

for that scope. The AR-style mount pictured does not provide for proper cheek-weld and exasperates the height-over-bore issue.

P.S. A quick Google search shows a 1-6 PST Gen II is set for release in the spring of 2017. Exciting news indeed!

Z. Spahr, Georgia

*Thanks for the sharp eye, pointing out the error, and for your comments.*

*When I ordered the scope in for T&E, the Vortex representative told me that the 1-6 PST Gen II was available. I put that in my notes and failed to make the correction in the article, and that carried over to the caption.*

*I also ordered low-mount rings, but the cantilever mount was sent. With the deadline looming, I had to get the rifle to our photographer, have it returned, and still have time to shoot the rifle, so I went with what Vortex sent me. This should not be taken as a slam against Vortex, but only a misunderstanding.*

*I return 95% of the guns I receive for*

*T&E. I'm keeping this one and, with the ballistics of the .450 Bushmaster cartridge, I might end up going with an Aimpoint Micro T-2.*

Denny Hansen

### DON'T IGNORE AN ALARM

The juxtaposition of Brent Wheat's *Chemical Weapon Attack (STREET SMARTS)* and Reza Allah-Bakhshi's *Hand-Drill Fire Making (AGAINST ALL ODDS)* in the February 2017 issue reminded me of the most common chemical threat most of us will face—the products of combustion (fire) and the accompanying smoke. Years ago, smoke from a structure fire was not nearly as toxic as that produced by all the burning plastics of today.

As Brent stated, the best thing to do is leave—*now*! But people don't. I was reminded of this last month, while staying in a small three-story hotel.

At 3AM the fire alarms went off. As a former firefighter, I take them seriously, even though they stopped after

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two minutes. By 3:03 my wife and I were dressed and checking the room door for heat. By 3:05 we were down the fire stairs and outside. (Never use an elevator. In some systems, they all automatically go to the first floor, but in others, the cars go to the fire floor!)

Since we heard no sirens of approaching fire trucks and the alarms were now silent, we walked around the building to the front desk, where the clerk said it was a false alarm. A born cynic, I asked how he knew—he'd caught a guy smoking in a public bathroom off the entry.

Of this completely full hotel, only my wife and I and two other couples had bailed out! All the others either opened a door to the hall (a good way to get killed), looked out the (sealed) windows (another way to die), or ignored the alarms (ditto).

False alarms are rare today, so take all fire alarms seriously. I always have clothes, shoes, and valuables close at hand, and believe that *this* time it's real.

Everyone should do the same.  
S. Nadel, Arizona

*Thanks for the feedback and sharing your experience. I survived a house fire because I took action when an alarm went off, so I can attest to how important it is not to ignore one when it sounds.*

Denny Hansen

### HEAD-SHOT TRIAD

I enjoyed the article on taking headshots of terrorists (*TERMINATING TERRORISTS: The Head-Shot Triad*, March 2017 *S.W.A.T.*). I have performed a failure drill (two shots to the chest and one shot to the head) on the range more times than I can count. A head shot will put a bad guy down immediately, so he cannot harm others. I believe making a head shot is easy and should be well within the skill sets of anyone who carries a gun.

Name withheld by request

*You are correct that a head shot is an effective way to stop a fight. As for your comments about it being easy, let me play devil's advocate.*

*The square range is a great place*

*to perfect the basics, but it bears little resemblance to the real world.*

*The human brain is not much larger than the average adult male's fist. Now take into account that the bad guy is moving and bobbing. You are (or should be) moving. If you are in a public place, bystanders are fleeing frantically, either bumping into you or obscuring the target, and are possibly behind the attacker (Rule 4). It soon becomes obvious that what was easy on the range becomes very difficult.*

*Incorporate movement—lateral, backward and forward—into your drills, including placing "good guy" targets to the side and behind the primary target. Increase the distance as you progress.*

Denny Hansen ☉

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## Off The Grid Concepts

After seeking advice from knowledgeable people and scouring the Internet for reviews, you have decided on the pistol you want to carry for personal defense. You've spent the equivalent of a month's home mortgage on your chosen pistol and several hundred dollars more for ammunition.

The holster you decide on also deserves careful research.

No holster will fit everyone's needs no more than one handgun is a good choice for everybody. Handgun size and individual body shape are just two factors that turn what first appears to be a simple process into something much more complicated.

For example, you decide to go with an inside-the-waistband appendix holster on the advice of a friend who carries that way. You purchase the same holster your friend uses and hurry home to give it a try, only to realize

you've eaten a few too many donuts over the years and can't present the pistol from under your portable food storage unit.

More often than not, I carry in a strong-hand outside-the-waistband holster for the only pistol authorized by my department: a Smith & Wesson M&P 9mm. This sounds like it may make choosing a holster easier, but that is not the case.

I was recently looking for a holster that would fit my M&P equipped with SureFire X400-GN (green laser) Ultra. After asking several makers, I found the X400 is new enough that few manufacturers, at the time of this writing, are making holsters to fit it.

A contact at SureFire put me in touch with Rob Tran at Off The Grid Concepts (OTGC), which makes custom Kydex holsters.

I told Rob I'd like to receive an outside-the-waistband holster for the

M&P with SureFire Ultra in Flat Dark Earth and a double magazine pouch, with the rear pouch for a SureFire Fury light to be carried bezel down.

Just over a week later, I received an OTGC Nocturnal Sidewinder and Adaptive Speed Pouch.

Holsters in the Nocturnal Sidewinder Series are fully adjustable, modular, and customizable to the user's specific needs. These custom formed holsters are precision crafted from Kydex varying from .06 to .08 (standard) and .09 upon request and available in custom colors. Mounting options include Malice, belt loops, and more.

A good presentation (draw) starts in the holster. With a heavy, full-size pistol, a sturdy belt is also a must. I specified 1¾-inch belt loops on the Nocturnal Sidewinder to fit my Simply Rugged Holsters gunbelt.

The workmanship and fit were superb—molded to the exact dimen-



**ABOVE:** Front of Nocturnal Sidewinder shows how precisely it is molded to the pistol and weaponlight. Rivets holding holster together are same distance apart, so belt loops can be adjusted for higher or lower ride.



**ABOVE RIGHT:** Backside of holster shows same precision molding. Belt loops are for a sturdy 1¾-inch wide gunbelt to support weight of a full-size pistol.



**RIGHT:** ASP holds spare magazine and SureFire Fury light. Quick-connect clips can be adjusted higher or lower. Pouch features tension screw between two pouches.



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sions of the pistol and light—and all edges were dehorned and smooth to the touch. My M&P locks into the holster with a positive “click.”

The trigger is completely covered and the shirt guard on the backside of the holster is of sufficient height, but not so high that it digs into my side when seated.

The rivets that hold the front and back pieces of the holster are spaced so the belt loops can be adjusted to make the pistol sit higher or lower, depending on the individual’s needs.

The Adaptive Speed Pouch (ASP) is a wide pancake-style magazine retention device designed for excellent weight distribution and low-profile concealment. The belt loops are injection molded and of the “J” hook type or what OTGC calls quick-connect clips.

An innovative feature of the ASP is an angled spacer to lightly position the magazine outward just far enough away from the body for ease of removal without compromising concealability. A tension screw is between the two compartments.

I specified the rear pouch of the ASP for my SureFire Fury to be carried bezel down for two reasons. First, this positions the light to be withdrawn in position to immediately be deployed with several handheld light techniques.

The second reason is for light discipline. If the light is accidentally turned on, the white light is contained within the pouch and does not give away my position.

Some may question the need for a handheld light when the pistol has a weapon-mounted light. The handheld is for searching and target identification and in case the weaponlight fails. The mounted light is for fighting.

In conclusion, I found the Nocturnal Sidewinder and Adaptive Speed Pouch to be very well-made pieces of gear that should hold up to hard use. I’m glad I found out about Off The Grid Concepts and will be going back to them for other projects. ☺

## SOURCES

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## Do Killers Make the Best Teachers?

ONE of the interesting and wholly unanticipated side effects of the presidential election is that demand for firearms training has increased rather than decreased. Most industry insiders had predicted things would quiet down now that most of our federal leadership isn't using the phrase "Second Amendment" as a vile personal insult.

In spite of expectations, instructors and schools are seeing near-record levels of people seeking training, a welcome but somewhat puzzling situation. Some of the demand is ironically coming from frightened progressives, a wonderful bit of karma because, once they step into our world, they'll quickly learn that "gun people" are good folks who don't care that much about race, religion, or sexual preference. We just

want to hunt, compete, and drill large-caliber holes in bad people.

Regardless of the reasons, this upswing in student numbers is a positive thing, but at the same time a major revolution is happening in the training industry that needs to be discussed. After nearly 20 years of continuous war fighting, hordes of folks with buckets of real-world experience are hanging out their shingles as trainers.

That isn't always a good thing.

Let me start by stating clearly that I wholeheartedly support the military, its people and mission. But the question begs to be asked: Does killing a whole bunch of "tangos" over scores of major firefights make you a great firearms trainer?

Having trained under and around people from every branch of the military, including former members of

nearly every "elite" unit and several people who aren't listed on any official government documentation, it becomes pretty obvious that body count is one of the least important predictors of success as an instructor.

Don't get me wrong—a well-rounded firearms or tactics teacher needs real-world experience. Without having spent time pointing real guns at real people, it's hard to maintain credibility in the eyes of students.

On the other hand, it's pretty obvious that not every technique used in Crapistan to produce the aforementioned stacks of bodies is practical, useful, or even legal back here in the good ol' U.S. of A.

Therein lies the crux of our argument: Shooting is only one facet of a good instructor. Other factors are involved, and most of them are far

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more important in the grand scheme of things.

Here's a brilliant observation: the primary purpose of a teacher is to teach. But not every teacher is up to the task of effectively implanting knowledge into their students. Your math teacher might be Einstein's second cousin, but if she can't explain how to add two single-digit numbers, she's a pretty poor teacher. A great mathematician perhaps, but a lousy instructor.

The same concept applies to firearms and tactics trainers.

For my money, the most important single trait of a good firearms instructor is a deep-seated love of helping students rather than doing it for the money or to be hero-worshipped as The Mystical Tier One Tactical Beard.

The very best instructors I know would teach for free and in total anonymity if they could somehow pay the mortgage every month.

Almost as important is the trait of humility. There are two reasons for this. First, being humble means a teacher will be a lifetime student, always refreshing and perfecting skills

that are highly perishable, while occasionally learning there are better ways to build a mousetrap.

Second, a humble instructor will share the mistakes made during actual operations and the resulting lessons learned. Having passed the half-century mark, one thing I'm sure of is that as humans, we learn and remember far more from a single screw-up than from dozens of successes, even if that cranial-rectal inversion belonged to someone else.

The final pieces of the puzzle are teaching appropriate tactical doctrine based on realistic threat assessment and the fact that what worked in the sandbox may or may not work in Hometown U.S.A. For instance, I recently read a blog post by an instructor who flatly stated target identification is overemphasized in close-quarters engagements.

Speaking as a lifelong cop, you'd better pray you don't make any target ID mistakes here in the private citizen world. I remember a mentally challenged young man who got lost and entered the wrong house one Christmas morning. Reflexively shooting such an

"intruder" would really suck and, life-altering moral distress aside, there's a good chance you'd end up dating that large hairy gentleman in cellblock five. That would be ... unpleasant.

Such "shoot first, ask questions later" doctrine may be proper during house-to-house fighting in downtown Goatdung, Iraq, but it is not something I'd want to teach cops, housewives, and other civilian students. A smart, humble, well-rounded instructor can see those invisible, but real, lines.

In the end, the old rule of *caveat emptor* (buyer beware) still applies. Fortunately it's easier than ever to do some digging, get recommendations, and figure out if someone is teaching for the love of it or simply because they can't get another job killing people.

I've had the pleasure and privilege of knowing some of the world's greatest shooters and teachers. It is the rare individual who can do either well, but it is the exceptional person who is good at both. Find those folks and place yourself at their feet.

The rest will eventually stop teaching and go back to the thing they are really good at: bragging. ☺

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## Improvised Survival Gear

**I**n every corner of the world that I've explored, I've found garbage or junk of some sort. Even in places I was sure were considered "pristine wilderness," there was trash. Finding junk worthy of survival is a practice all its own, but finding it is just the beginning. At the same time, common everyday items can often be turned into survival gear by using a little ingenuity.

### POCKET SHOT

For sale online and in some sporting goods stores for about \$25, the Pocket Shot is a modern version of the sling-shot (*AGAINST ALL ODDS: The Sling-shot Redefined*, October 2016 S.W.A.T.). It shoots marshmallows, rocks, ball bearings, skewers as arrows, and regular arrows. Really, whatever you can fit in there, it will shoot.



Homemade Pocket Shot is cheap and easy to make.

**It shoots marshmallows, rocks, ball bearings, skewers as arrows, and regular arrows.**



All you need to make Pocket Shot are a balloon and wide-mouth plastic drink bottle. Ammo can be rocks, hard candy, ball bearings, or anything that fits inside. Bamboo skewers work as arrows.

You can make your own for about \$1. Start with a wide-mouthed plastic drink container like some water and sport-drink bottles. Using a small saw or sharp knife, cut the body of the bottle off just below the mouth. Remove the colored plastic ring without cutting it.

Take a rubber balloon (found at most dollar stores and party supply stores) and cut the neck, right where the balloon gets wide.

Starting where the cut was made, stretch the balloon over the mouth of the plastic bottle, then stretch the balloon up to the threads of the mouth. Even the balloon out and put the plastic ring back on the mouth, over the balloon. Tidy it up by rolling the rubber back down, toward the plastic ring. The homemade Pocket Shot is ready to use.

Keep the bottle lid to store small rocks or ball bearings (ammo) in the Pocket Shot. It's easy to make, but be aware of safety, mainly ricochet.



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## ZIP TIES

Zip ties are one of the most underrated household “survival” items. They have a long list of uses, including hog-tying game for carrying; quick lashing of shelter poles; lashing gear to holsters, sheaths, or webbing; or just rigging up cords around the house. They are more reliable than ranger bands (inner-tube rubber) because they do not melt as easily or become brittle in the sun like ranger bands. They hold strong and yet are easy to remove with a knife or scissors.

Zip ties are sold at most dollar stores, and in a variety of thicknesses and lengths. I have found them useful when putting together small tables and



Simple camp stool was quickly made with zip ties. More elaborate pieces of impromptu furniture can also be made with zip ties.

making chairs for a survival-style camp.

Last summer, I brought a pack of zip ties on a camping trip in Georgia and couldn't believe how strong they were for holding weight. I made a table and a large camp chair, based off a tripod, using zip ties to hold the parts together. It really made for a fast set-up.

Rather than lashing with cordage, a few zip ties do just as well and last a long time. They can be used to hold the initial framework up for most structures. Zip ties are a strong, fast way of erecting camp shelter poles, tables, and chairs, or hanging or lashing anything around the camp or house.



Foster's Beer can put over top of three pieces of wood makes a tripod. Wider-than-usual beer can is a good find for this project. Make a hole in top of can (RIGHT) to accommodate a cord that is attached to another stick for suspending the pot or kettle.

## TIN-CAN TRIPOD

One easy way to make a tripod without using cordage and having to tediously do all the frapping is to use a junk tin can instead of lashing. All the same rules apply for the tripod like using pieces of wood as close to the same length and thickness as possible. By simply removing the top or bottom with a can opener found on a multi-tool or Swiss Army Knife, the work is almost done.

Naturally, thinner sticks are easier because they will fit in the can, but not

any thinner than a broomstick. This is mainly for hanging a kettle or small to medium metal pot for boiling over an open fire.

Use an awl or knife (if no other suitable tool is available) to bore a hole in the other end of the can. I remove the top because it is easier to get off with a Swiss Army Knife can opener, so the hole I make is in the bottom of the can. All three pieces of wood are stood up and the tin can is put over the three pieces. Spread the pieces of wood until the tripod is balanced and feels solid.



Easy to make and easy to fuel in times of trouble, Super Cat stove is a mainstay of lightweight backpackers and preppers alike.



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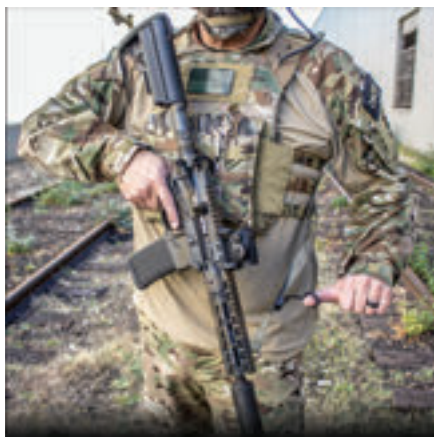
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Thread a length of cord through the hole from the top and tie a simple clove-hitch knot on a small, stout stick. The top will catch on the tin can and hold in place. A larger stick on the bottom can be longer and fit through the bale of the kettle or pot for a secure fit.

Adjust the tripod by spreading the legs apart to bring the kettle closer to the flame, or push the legs closer together for a higher setting.

#### SUPER CAT STOVE

Called a Super Cat because they are usually made from a Fancy Feast cat-food can, small alcohol stoves can also be easily made from a Vienna sausage can or any three-ounce aluminum can. Backpackers and preppers have been using these types of alcohol stoves for years. They run on denatured alcohol, HEET, rubbing alcohol, Everclear, or ethanol as fuel.

Most pressurized stoves require multiple components that must be taped, epoxied or welded together in order to create their pressure chambers.

The Super Cat's pressure chamber, on the other hand, is created simply by placing a pot on top of the stove, thereby blocking the expanding gas from escaping through the top and forcing the flames out through the side vents. The Super Cat design is also simpler than most because it doesn't require the use of a separate pot stand. The stove itself serves as both the burner element and the stand, since the pot is placed directly over the top of the stove.

Once the can is empty, use a regular paper hole punch to make two layers of holes around the circumference of the can (about 16 holes). Fill the can with the desired fuel up to the holes. This will equal one to 1.5 ounces of fuel. Ignite it with a match, lighter, or spark from a ferrocerium rod.

The fuel burns out clean and dry, with no residue to clean. Pick up the can and throw it back into your pack after it cools down. In addition to liquid fuel, the Super Cat accommodates solid fuels like Esbit tablets, trioxane fuel bars, and packaged gel, which are good emergency fuel options.

Look around the forest or near dumpsters and rest assured, you will find survival gear for prepping and any emergency you may encounter. You just need an open mind, a few tools, and a lot of creativity. ©

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Established in 1991, TEES was the first full-time school that focused on the mission-specific skill of explosive breaching. A great deal has changed since then.

# EXPLOSIVE YEARS

## Tactical Energetic Entry Systems

**THE** evolution of Tactical Energetic Entry Systems (TEES) could be summed up as the quintessential American success story. A young man immigrates to the United States and, starting with a meager budget, ends up building a global firm through talent, hard work, and perseverance.

Rewind to 1989. Alan Brosnan leaves the New Zealand Special Air Service as the Assault Group Commander. After a chance meeting with expatriate Mark Lonsdale, Brosnan comes to the U.S. to work on a large dignitary protection detail.

For the next two years, Alan worked from a base of operations in Los Angeles and traveled the world on dignitary protection details as part of International Diplomatic Security. At the same time, he began training military and law enforcement as part of a subsidiary firm, Specialized Tactical Training Unit. There Alan met Max Joseph. The two would go on to build their own training entities and work together for the next two and a half decades!



By Ron Yanor





**ABOVE:** Sniper training out to 900 yards using field-expedient positions.

**LEFT:** Many unconventional breaching techniques are taught at TEES, including Quickie Saw, Chain Saw, Shotgun, and Thermal Breaching.

**BELOW:** Close Protection training in permissive and semi-permissive environments has been a popular TEES course over the years.





### TACTICAL EXPLOSIVE ENTRY SCHOOL

By 1991, Alan had decided to move to the Memphis area and start Tactical Explosive Entry School with former ATF agent Dave Watson. Their first location in northern Mississippi was sold out from under them before actual construction started. Mid-South Institute hosted some of their initial courses.

Undaunted, Alan and Dave continued the search for property to use as a permanent training facility. Enter Bill Nixon of Omni Distribution. Bill's firm develops and sells explosives and related products. He had a test facility just outside West Memphis, Arkansas that eventually became the TEES range facility until 2005.

Explosive breaching has been the TEES trademark training course. In the early 1990s, that method of entry was in its infancy. A few elite military and law enforcement units had explosive entry capabilities, but it was virtually unheard of within civilian law enforcement.

Police administrators saw the use of explosives as a risk and hazard. As the first privately owned full-time training company in the country to teach explosive breaching, Alan recognized a need to educate the law enforcement community on this topic. A primary goal was, and is, educating administrators that this form of breaching is based on science and uses miniscule amounts of explosives with surgical precision.

The other core course from that era was the Hostage Rescue/High Risk Warrant Service Course. Compared to the "flood method" that was commonly used in that era, the tactics TEES presented were head and shoulders above anything else offered.

The room-clearing methodology was efficient and placed officer safety in high proportion. One of Alan's sayings at the time was, "You can't do anybody any good lying in a pool of your own blood." Their new facility featured a live-fire shoot house, a rarity at that time. Small agencies could experience the high level of realistic training that only a shoot house provides.

TEES courses were light years ahead of any similar courses of that period. Training flowed in a logical progression. By comparison, many other schools' courses were a hodgepodge of unintegrated techniques.

To better understand the operating procedures and rules of engagement of civilian law enforcement, Alan became a reserve deputy with the DeSoto County Sheriff's Department in 1992. As part of their tactical team, he introduced explosive breaching into their skill sets. Alan rose to the rank of reserve captain with 23 years of service.

The next year he became an instructor with the Department of State's Anti-Terrorism Assistance Program [ATAP], which trained foreign law enforcement entities in subject matter related to counter-terrorism.

### EXPLOSIVE GROWTH

The last half of the 1990s was a period of growth for TEES. As their reputation spread, the size and frequency of courses increased. Military units and entire

SWAT teams were attending courses. Dave Watson left to pursue other interests.

Max Joseph came on board as adjunct chief instructor, often spending months at a time on site. Over a period of time, other adjuncts were added: Todd Taylor [Des Moines, IA PD], Bill Yeagle [DOE], Stewart Blackton [Orange County, FL], John Cook [Polk County, FL], and Rob Ulinsey, Jeff Nyce and Bill McQuigan from Montgomery County, MD. Alan's former SAS colleague Duke Henry would also periodically visit and teach.

As the business evolved, so did the facility. The breaching and hostage rescue courses were the mainstays. Custom courses could be scheduled on request. A second, larger shoot house was added in 1998.

A sniper target pit was added to support the recently enhanced sniper course. The pit provided the ability to engage snap and moving targets out to 300 meters. With an innovative range layout, other areas of the facility were used to supplement core instructional areas. Several flat ranges and breaching facades completed the venue. It was a lot of training options packed into 16 acres.

The Assault Course was a landmark event during those days. It was the ultimate "run and gun" course that emphasized sound CQB tactics. The experience involved room clearing, with penalties added for missed shots, missed verbal signals, and improper tactics.

Another portion had knock-down steel targets in various arrangements. Total movement among portions covered over 25 yards. This was always run as a four-, five- or six-operator team as part of every multi-day tactical course.

The records were open. Military teams' times were counted with police teams. When that event was retired, Sangamon County, IL, Sheriff's Department held all three records!

Alan's networking with military and police special operations led to more course topics being offered. A Dignitary/Witness Protection course was added, then an Advanced Explosive Entry & Tactics course, followed by a CQB Safety Officer course. Conducting courses at host locations became common.



Providing security while other team members attend to a downed comrade.



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In 1998 Alan became a U.S. citizen—an occasion he holds in high regard to this day.

### SOUTH TO BRAZIL

Alan and Max began traveling to Brazil on a regular basis to conduct training. By 1999 TEES had established a fixed training location in Curitiba. It quickly became a fully functioning facility that supported the essential curriculum, including explosive breaching and tactical-related subjects.

An annex above the main range imitated a typical Brazilian *favela* (slum) with a maze of rooms and alleys. Kevin Gillies took on the day-to-day training course load. Training in South America presented a unique set of challenges relating to officer core skill sets, ammunition availability, and suitable training locations. All in all, the training provided greatly enhanced the effectiveness and safety of police in Brazil.

One of the more recognizable contributions to the tactical community came out of their work in Brazil—Position SUL. This pistol carry position was developed by Alan and Max out of necessity in 1997. SUL translates as “south” in Brazilian Portuguese. It became the preferred pistol carry position in training and operationally by allowing operators to move in close quarters and maintain muzzle control. SUL has become widely accepted as a practical method since then, not only in Brazil, but in the United States and eventually on a global scale.

### CHANGES AND CHALLENGES

Post-9/11 activities brought more challenges for TEES. Several TEES instructors, Alan included, deployed on multiple missions to Iraq and Afghanistan from 2002 to 2005. The scope and details of these assignments may not be open for public knowledge, but they involved training and dignitary protection up to the national assets level. During all this, the instructors maintained a busy training calendar back in the U.S.

A major change came about in 2005 when Olive Group bought TEES. Alan came over to the new company, as did many of the cadre. New instructors were hired to fill an expanded training role. Alan oversaw the entire training operation.

Millions of dollars were put into the project. Nearly 800 acres of adjacent land were purchased. Two state-of-the-art shoot houses were built. A separate breaching instruction cell had their exclusive area on site, as did the PSD/driving instruction cell with a two-mile hard track and off road area. Numerous vehicles were purchased. There were two 1,000-meter sniper ranges and a drop zone. Seven new classrooms, weapons and explosive magazines and storage areas were built. It was an exceptional facility.

But within a short time, it all came to an end. Due to continuing problems at the corporate level, Alan and a majority of the instructors made a mass exodus between November 2007 and February 2008. Olive sold the facility later that year.

### TACTICAL ENERGETIC ENTRY SYSTEMS

The new TEES was created using the same acronym, but now with the title Tactical Energetic Entry Systems. Only one problem remained—Alan had a non-compete clause in effect until February 2008.

No worries, mate.

The new TEES took off with administrative guidance from Pam Vaughan and the support of some of its instructors. Courses were run at local police facilities and the ranges of colleagues in Illinois and Texas. New courses were added: Mechanical, Thermal & Ballistic Breaching and Mechanical & Ballistic Breaching Instructor. A Master Breacher course followed soon thereafter.

To maintain his non-compete status, Alan formed a maritime security company—Energy and Maritime Security Services, which operated out of Yemen, Kenya, and Singapore.

In 2011, land was secured near Byhalia, Mississippi, just south of Memphis. A new range facility was completed. A classroom with load-out room is situated a short walk from the breaching/shoot house. The unique design features multiple doorways for each room, with flaps to cover the doors when not in use.

This component allows multiple configurations from the same structure. Multi-day classes can run without

duplicating the same floor plan repeatedly, keeping the learning curve fresh.

Over the next three years, additional training aids and range features were built. A two-level conex structure facilitates exterior and interior door breaching and fast rope options. Window breaching is presented using the Kiwi Breaching Pole. Fences and climbing wall allow trainees to move in realistic conditions with their equipment.

The unique nature of this venue facilitates testing new breaching products, leading to better advancements in the field. The site has hosted the International Breaching Symposium, with hundreds of participants on site, vendor displays and live demonstrations of breaching applications.

### WHAT'S NEXT?

To complement their existing Mississippi, Texas and Illinois facilities, TEES recently acquired access to a 1,000-acre MOUT training facility in southern Indiana to conduct courses.

For decades TEES' motto has been “Training for the worst-case scenario,” a maxim it has lived up to. As a founding proponent of explosive breaching, TEES has laid a solid foundation in this field. Not content to rest on its laurels, TEES continues to innovate with new methods and product testing.

The Special Air Service motto best sums up this epic saga: Who Dares Wins! ☺



Founder and owner of TEES, Alan Brosnan (left) was thrilled to have his sister Judy Davison and brother Colonel (Ret.) Garry Brosnan travel from New Zealand to attend the 25th anniversary weekend.

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## National CCW Reciprocity: A Trojan Horse

Gun rights advocacy groups believe that, with a Republican President and the GOP's retention of both chambers of Congress, now is the time for not just fending off attacks on gun rights, but to go on the offense at the federal level.

One of the highest priorities for these groups is federal legislation that would require every state to honor the concealed carry permits issued by every other state.

The appeal of such legislation is undeniable and the logic difficult to refute. Why, after all, would a person's life cease to be worthy of defending simply by virtue of the person having crossed into another state?

Furthermore, requiring every state to recognize carry permits issued in

other states seems well in keeping with the Constitution's full faith and credit clause, which states: "Full Faith and Credit shall be given in each State to the public Acts, Records, and judicial Proceedings of every other State."

Such legislation has been introduced in every recent Congressional session, but hopes for it seem to be particularly high since last November's election. The exact language differs from one bill to another, with some versions even specifying a mechanism to protect the rights of citizens of "Constitutional carry" states—states that do not issue concealed carry permits because they require no such permit.

The forcible citizen disarmament lobby, their pet politicians, and a complicit mainstream media are all horri-

fied at the possibility, with the *Los Angeles Times*, for example, calling such legislation "absurd and dangerous."

One of the more amusing aspects of this debate is that it has led "gun control" advocates, who as a group tend to be enthusiastic about shifting the balance of power from the states to the federal government, to suddenly wail about what they have decided is an attack on "states' rights."

U.S. Senator Barbara Boxer (D-CA) passionately argued on the Senate floor against a national concealed carry reciprocity bill, crying "Leave us alone. Leave us alone," while at the same time fervently supporting restrictive federal gun laws that would be imposed on all 50 states.

But would national CCW reciproc-

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ity truly be an unmixed blessing for gun rights advocates? Or should we perhaps be a bit more careful what we wish for? It's hard to find anything not to like in the near-term effects of such a law. More Americans would legally have an effective means of defending their and their loved ones' lives while traveling around the country.

If the changes stopped there, everyone wins, except for the predatory criminals and the "gun control" advocates who empower them by rendering the rest of us defenseless.

The problem is, there would seem to be no guarantee the changes would stop there. The concern is that, with the federal government having gotten its foot in the door for regulating concealed carry in the states, nothing would stop it from imposing new restrictions the next time power shifts in Washington, D.C.

Most federal regulation of guns is unconstitutional for two reasons. The Second Amendment, with its "shall not be infringed," is the most obvious one. But the Tenth Amendment's prohibition against Congress imposing

laws in areas not specifically enumerated by the Constitution as being within the federal government's purview is also a steep hill for a gun law to climb. Or it *should* be.

Actually, the federal government has been passing gun laws since 1927 and has justified doing so by arguing that the Second Amendment does not protect an *individual's* right to own firearms, only a "collective" right—a concept sufficiently hazy that it does not really have to be honored at all.

To bypass the Tenth Amendment, Congress claims every gun law regulates interstate commerce (even when the gun never crosses a state line), and so is within Congress' authority.

The "collective right" argument was soundly discredited with the Supreme Court's *District of Columbia v. Heller* decision of 2008, although few supporters of onerous gun laws seem to have fully given up hope of bringing that concept back from the dead. Depending on how the political winds blow, that may indeed happen.

But now, it is gun rights advocates who are inviting the federal govern-

ment into the business of regulating the keeping and bearing of arms. Once we do that, how can we later claim that the federal government has no legitimate authority in this area?

The obvious answer is we cannot—not, anyway, without becoming as hypocritical as Senator Boxer was when she whined about the federal government imposing any measure of control over how guns are regulated in California, while at the same time pushing federal laws that would be inflicted on the residents of every state in the union.

Yes, national concealed carry reciprocity may indeed be a battle we can win. But in winning that battle, will we make it much more difficult to win the war? ☉

*A former paratrooper, Kurt Hofmann was paralyzed in a car accident in 2002. The helplessness inherent to confinement to a wheelchair prompted him to explore armed self-defense, only to discover that Illinois denied that right. This inspired him to become active in gun rights advocacy.*

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## Critical Input

Police shootings are receiving more scrutiny than ever before. Any perceived miscarriage of justice, whether right or wrong, can and has affected the perception of the courts and juries who are the ultimate arbiters of whether or not the application of deadly force was appropriate. The real work essentially ensues after the last trigger press.

I have discussed the ability of officers to effectively articulate all actions prior to, during, and after an Officer Involved Shooting (OIS). This is of paramount importance when presenting a case before the courts. Omissions, malapropisms, improper verbiage, and incorrect or conflicting statements can destroy an otherwise justifiable shooting.

Those who question you, whether for monetary or altruistic reasons, possess greater skills than ever before. One chink in the armor can open up

doubt and distrust and turn a legitimate case upside down.

Some departments have full-time detectives who do nothing but investigate shootings. LAPD has such a unit, now referred to as FID (Force Investigation Division). Years ago it was RHD/OIS (Robbery Homicide Division Officer Involved Shooting Section), which sounded a bit more Philip Marlowe, Humphrey Bogart-ish. Regardless of the title, these units do nothing but investigate OISs. They have become extremely proficient.

At any one time, a single RHD detective could have 15 or more OIS shooting investigations running simultaneously. In the course of their career, they will investigate hundreds of assigned OIS cases. This equates to experience—*vast* experience.

They know the questions to pose and the pitfalls to avoid, and they understand how to articulate with great

precision the officer's thoughts, actions, and conduct throughout the shooting than a detective who only works hubcap thefts does.

It is unfair to expect a detective's first OIS investigation to cover all the bases. They need experience. Yet this is precisely what has occurred in some OIS investigations I have been involved in when defending an officer's actions.

Having been involved in this process for 27+ years, I have observed first-hand simple omissions, questions not asked, and conflicting statements not sufficiently resolved that have turned otherwise clean shootings into messy fur balls.

Not all detectives are shooters. Not all detectives are highly proficient or knowledgeable with regard to tactics, marksmanship, weapons manipulation, and the overall process of a field officer's application of force. The of-



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ficer involved in the shooting always comprehends to a much greater degree than the detective those indices and factors that led to the shooting, as well as his actions during the incident.

In short, they were there and the detective wasn't.

What this translates to is that a greater burden is on the involved officer to ensure all the bases are covered in the subsequent investigation. A simple point of fact brought up two weeks post-OIS does not go down well in court. The omission of a point of fact that one (the officer involved, perhaps) suddenly realizes may be of significant importance will not sit well with a jury when it is raised months or years after the fact.

This can lead to the perception of collusion, falsity, or outright dishonesty. "Why didn't you state this before?" "Didn't you think this was important?" "How can you remember this now when you didn't mention it during the initial investigation? Is your memory clearer now than it was two years ago?"

I know from first-hand experience what an OIS investigation entails. I have been there a number of times. It is long, tedious, and exacting. Stressors, tension, and details must be faced and answered for when you are the least likely to want to face and answer for them.

Each shooting I was involved in kept me on scene for another 12 to 15 hours. Multiple walkthroughs, questions, interviews, admonitions, and recounting of specifics are nothing short of exhausting. It was not and never will be much of a party. It requires you to re-compose and steel yourself for a long, exacting and critical phase of the process.

I have a pretty fair handle on how police think, react, and respond to stress. It is readily apparent to me when defending an officer whether he was exacting in his answers or impatient.

It is all on the record in black and white in the facts-in-evidence. It comes through in tape-recorded interviews and videotaped interviews. When you least wish to deal with something is precisely when you *must* deal with it.

I could compose a volume on past cases I have been involved in, in which single points of fact led to points of contention by oppositional parties.

I can also state that what is seem-

ingly insignificant at the time can have critical implications down the road. One simple question posited at the outset would have circumvented the chink in the armor that will be exploited to its fullest in front of a jury.

As the involved party, you must resolve yourself to ensure that all the facts, input, and decision-making factors are correctly and accurately accounted for. Interviews should end with: "Do you have anything to add?"

This is when you slowly and methodically recount the entire incident in precise detail, regardless of fatigue, frustration, or stress. That which is in evidence cannot be removed from evi-

dence. That which is not accounted for at the time cannot be recounted for at a later time without consequences.

Critical input is essentially derived from you, the first party to the incident, and this is precisely what can make or break an entire case! ◎

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

### If you purchased or own certain EOTech holographic weapons sights, you could receive a refund or other benefits under a class action settlement

A proposed class action settlement has been reached involving certain Holographic Weapon Sights made by the EOTech division of L-3 Technologies, Inc. ("EOTech"). The lawsuit claims that the sights do not perform as advertised and may have inaccurate shot placement. EOTech stands by its products and denies it did anything wrong. The Court has not ruled on the merits of any claim or defense. Instead, the parties have entered into the proposed settlement.

#### Who is a Class Member?

You are a Class Member if you own certain EOTech Holographic Weapon Sights manufactured between January 1, 2005, and November 1, 2016 and purchased for personal use on or before February 15, 2017 or if you previously received a refund from EOTech for a Holographic Weapon Sight. The date of manufacture can be found on the underside of the sight. Visit [www.FosterSettlement.com](http://www.FosterSettlement.com) for a complete list of eligible sights and MSRP amounts. Excluded from the class are governmental entities.

#### What does the settlement provide?

- If you previously received a refund from EOTech for a Holographic Weapon Sight ("HWS"), you will automatically receive a \$22.50 voucher toward the purchase of a new EOTech product.
- If you have **not** previously received a refund from EOTech and would like to **keep your HWS**, you may be entitled to a \$25 to \$50 cash payment depending upon the number of Valid Claims, or a \$100 voucher toward the purchase of a new EOTech product. These options require proof of ownership of the HWS.
- If you have **not** previously received a refund from EOTech, you may return your HWS and receive either the purchased price (with proof) or the HWS' MSRP, which range from \$299 to \$1,179, a \$15.00 shipping reimbursement and a \$22.50 EOTech product voucher. These benefits are available **only if you return** your HWS to EOTech.
- Upon final, non-appealable Court approval, EOTech will pay all legal fees and expenses of not more than \$10,000,000 which includes a payment to each class representative not to exceed \$2,000.00. EOTech will pay all costs and expenses of administering the settlement.

#### What are my Options?

**File a claim by May 23, 2017:** You must file a Claim Form either online or by U.S. Mail to the address listed on the Claim Form to receive benefits. Visit: [www.FosterSettlement.com](http://www.FosterSettlement.com), or call 1-800-481-7948.

**Do nothing:** If you previously received a refund for a Holographic Weapon Sight from EOTech, if you do nothing, you will receive a \$22.50 voucher toward the purchase of a new EOTech product. If you did not previously receive such a refund and do nothing you will not receive any additional benefits but **will** be bound by the decisions of the Court regarding these claims, including a release of liability for certain claims against EOTech.

**Exclude yourself by May 23, 2017:** You will not receive any benefit from this settlement but will keep the right to sue EOTech about the legal claims in this case. To exclude yourself, you must do so in writing. Visit the website for full details on how to exclude yourself.

**Object by May 23, 2017:** Write to the Court and say why you do not like the Settlement. Full details on how to object are on the website.

The postmarked deadline to submit a Valid Claim, file an objection, or opt out is May 23, 2017.

The Court will hold a Fairness Hearing at 9:00 a.m. on June 30, 2017, in the U.S. District Court for the Western District of Missouri, Courtroom 7D, 400 E 9th St., Kansas City, MO 64106. The Court will consider whether the proposed Settlement is fair, reasonable, and adequate and how much to award to Class Counsel and Class Representatives as fees, costs, and expenses, and consider objections, if any. The motion for attorneys' fees and costs will be posted on the website after they are filed. You may appear at the hearing, but you do not have to.

**This notice is only a summary.** For details, including a list of affected products, a Claim Form, how to exclude yourself, call toll-free 1-800-481-7948, visit [www.FosterSettlement.com](http://www.FosterSettlement.com), or write to: Foster, et al v. L-3 Communications EOTech, Inc., c/o Heffler Claims Group, P.O. Box 60255, Philadelphia, PA 19102-0255.

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## Savage/Stevens Combo Guns

ON the Savage Arms website the other day, I ran across their Model 42 combo .22/.410 gun. It's a neat little gun that is the current incarnation of the previous combo guns Savage made for decades.

I've always had a lot of affection for these combo guns, which were originally produced by Stevens until 1950. Later versions were produced by Savage as the Model 24.

While I was in college, since I was short of cash for a couple of years, the only long gun I had was a Savage Model 24 in .22LR/20 gauge. I rarely

got a chance to hunt with it, but when I did, either a .22 Long Rifle round or a 20-gauge shell usually did the job. A couple of times it took a combo of the two.

I also kept a few rounds of 20-gauge buckshot around, in case I needed to use it for self-defense. The summer after I completed my degree in business, I went to summer school to pick up the hours I needed for a second major in English. A former landlord of mine let me stay in one of his apartment houses for free if I'd ride herd on his rather questionable renters.

It was in a seedy neighborhood,

and my apartment had recently been occupied by a couple of strippers who had since moved on. One night there was drunken pounding on my door in the wee hours, as an admirer of one of the former occupants was looking for her. When he didn't seem inclined to go away, I grabbed the Savage with a .22 hollowpoint above and a 20-gauge #3 Buck load below and threw the door open.

My visitor was so drunk he actually fell through the door, then noticed the O/U combo gun as he got up. I'm assuming it was the 20-bore barrel that impressed him, as he blubbered an

24C may be used for hunting squirrels, birds, and other game.





apology and staggered away. That was the only time I employed the gun in a “tactical” role.

I sold that Model 24 and didn’t have another one for many years, but when the 24C Camper’s Companion with 20-inch barrels in .22/20 gauge was introduced, I bought one. It was a handy little gun that could be broken into two parts and stowed in the case that came with it. It also had a stock designed to hold one spare 20-gauge shell and ten extra .22 LR rounds. I eventually sold it, but started to regret it almost immediately and continued to regret it for the next 15 or 20 years.

Recently a friend called me from a gun show and said a man had just offered him a well-used but serviceable Model 24C. I immediately told him to buy it.

A couple weeks ago, I decided it was time to take it out and see how it shoots. First, I should make it clear that, though I consider the Camper’s Companion a versatile little preparedness gun, in St. Louis where I live, an



ABOVE: 24C broken down for storage in a pack.

LEFT: USAF M6 Scout is a handy variant of the combo gun, but because of its short barrel length is an NFA weapon for private citizens. Rock Island used to offer a version with longer barrels for the civilian market. Photo: NARA



BELOW: 50-yard group with the .22 barrel and 20-gauge barrel using slugs.

AR-15 or an 870 is normally in my truck for “preparedness.”

Still, I wanted to see where the 24C was shooting in case I ever want to stick it in a pack or in my truck. I took along Winchester M-22 .22 Long Rifle ammo and Federal 20-gauge slugs, as well as some #6 shot loads.

At 50 yards, groups with the .22 barrel weren’t bad, though a little left. Groups with slugs were centered but way low—15 inches at 50 yards. That was fixable because the rear sight is adjustable for elevation. I figured out where it would need to be in order to be close at 50 yards but left elevation

» Continued on page 42







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set for the .22 Long Rifle barrel. With the slug setting, patterns with Federal #6 shot were close to on as well.

Savage Model 24 combo guns are still readily available on the used market, though the 24C Camper's Companion is much sought-after and relatively expensive. As a first gun for a young hunter, a Model 24 in .22/.410 is a great companion in the woods and teaches him or her to take their time with their shots.

However, the Model 42, still available from Savage, is reasonably priced with an MSRP of \$500 and, like the 24C, is a takedown model. It has better sights than the 24 and a polymer stock for better durability in the outdoors.

I bought my 24C mostly out of nostalgia, and I'm sure some reading this either had one or still have it. I like the versions of the Model 24 with the 20-gauge barrel, as it offers the ability to use 20-gauge slugs or buckshot, but the versions with the .410 barrel still make a good beginner's combo gun.

To those S.W.A.T. readers who have or plan to pass a Model 24 on to a child



24C's stock lets shooter carry one spare 20-gauge round and ten spare .22 Long Rifle rounds.

or grandchild, consider the Savage Model 42. It would also make a nice gift.

I admit that what I'm writing about here is basically a single-shot rifle stuck atop a single-shot shotgun, but many beginning shooters start with a single-shot .22 rifle and a single-shot shotgun.

Back in my early teens, I would have thought a combo gun such as the 24C was wonderful. When I got a Savage

Model 24, I was pleased with its versatility. Now, more than half a century later, I still think the Model 24 is a very clever design.

This time I won't sell or trade my 24C! ☺

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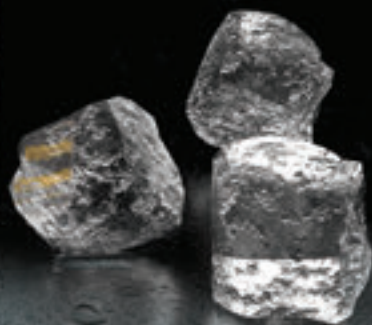


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# THE HISTORY OF SOPMOD

## PART I

### Block I and the Early Years in Iraq

By Jeff Gurwitch

This year marks the 20th anniversary the Special Operations Peculiar Modification (SOPMOD) program has been in use with U.S. Army Special Forces (SF).

I carried and used a SOPMOD-equipped M4A1 carbine during my entire SF career. One thing is for sure—the M4A1 carbine I carried my last combat tour (fall of 2015, Afghanistan) was on a whole other level performance-wise than the one I carried during my first SF combat deployment, the 2003 invasion of Iraq.



Iraq, 2005: author with members of his Iraqi Strike Company. SOPMOD Block I equipped M4A1 with SU-231 (EOTech 552) and SureFire M951 light.

*[Author's Note: SF is not to be confused with SOF, Special Operations Forces, which refers to all the special units within all branches of the military (Army Rangers, Navy SEALs, etc). I will also refer to most SOPMOD items the way they are popularly known on SF teams, by their commercial names as opposed to their formal designations. For example, the SU-231 is simply referred to as an "EOTech" regardless of the generation or model.]*

To best explain how influential the SOPMOD program has been at giving our warfighters a lethal edge over the enemy, I'd like to share my experience with the SOPMOD, specifically how the various generations (blocks) of items performed during my six combat tours in Iraq and Afghanistan.

#### SOPMOD: THE EARLY YEARS

By the time I made it to my first Special Forces ODA in the fall of 1998, the M4A1 was in service with SOF and the first issue of SOPMOD equipment (Block I) was already into its second year of implementation. In fact, Operators had already identified two items in the Block I kit that had issues.

The first item, the tritium-powered Trijicon Reflex Sight, was very dim and hard to see, not the ideal optic for the fast, quick-aim shooting required for CQB. The Army already had good working red dot optics in the inventory. The Rangers and a few other select Special Operations Forces (SOF) units had been using various Aimpoint red dot optics since the early 1990s.

About the same time SOPMOD had decided to go with the Trijicon Reflex Sight, the conventional Army was in the process of selecting the Aimpoint Comp M2 (designated the M68 CCO Close Combat Optic) as the first red dot optic for general issue to all combat troops.

When deciding on which piece of equipment fulfills a requirement the best, the conventional Army and Special Forces often choose differently.

The second item, the Visual Light Illuminator (VLI), had an absurdly short battery life (less than an hour). And while listed as able to produce 90 to 110 lumens at best, it put out a very dismal 90 lumens (too weak a beam for CQB work).



Lastly, the plastic body of the light was prone to breaking somewhat easily.

A year later in 1999, we saw the first phased upgrades for SOPMOD with the replacement of these two items with the Aimpoint Comp M2 and a SureFire model M951 weapon-light. Thankfully SF got on board with the big Army and adopted the M68, not because it had passed some special trial by Operators, but solely for the reason that all combat units were getting issued it. Basically it was just good timing for SF—when issues were noted with the Trijicon Reflex Sight, the Aimpoint Comp M2 was already on its way.

As it turned out, 1999 was a very busy year for the SOPMOD program. The SOCOM heavy-profile barrel was adopted for all SOF M4A1s. Also enough Knight's Armament suppressor-capable flash hiders had finally arrived to outfit every carbine in the unit, even though the Knight's suppressors had been issued back in 1997. Until that point, enough for only about half the carbines were available.

### CRANE SOPMOD MANUAL

The Crane SOPMOD manual was also published that year. Along with technical data and instructions on how to properly zero and operate the various SOPMOD items, the SOP-

MOD manual was the first to offer advanced M4 engagement techniques and ballistic information—well beyond the shooting techniques covered in the Army Marksmanship manual FM23-9.

It's not that the manual showed anything new to SOF. It's just that before the SOPMOD manual, if you wanted to learn these techniques, the only way was from your teammates during range training or from a specialized shooting course. Now for the first time, one manual covered these same techniques in detail.

If you have never seen or read it, I highly recommend trying to get one in print or online. While the equipment information is dated, as it covers the first SOPMOD items circa 1997, the methods and data for shooting distance and moving targets with red dots are still relevant today. In fact, I believe that only the latest edition of the Army Marksmanship manual (now TC 3-22.9), released in the summer of 2016, contains the same amount of shooting techniques and methods as the 17-year-old SOPMOD manual does.

Going into the year 2000, one item that has become standard on most ARs for the last dozen years or so came about at this time, and in a surprising way. It was not some pre-planned upgrade but instead was developed in response to



**ABOVE:** Trijicon Reflex sight mounted on first-gen MK18 upper. SOPMOD Block II items are on rifle because this set-up was being used by SF soldier in Afghanistan in 2012. Even though Reflex sight was replaced 17 years prior, it looks like it had at least one diehard fan.

**RIGHT:** Typical set-up for 2003 invasion of Iraq. M4A1 outfitted with SOPMOD Block I: Knight's Armament RAS Forearm with vertical grip, Aimpoint M68, and AN/PEQ-2 IR aiming laser.



a malfunction existing in a bad batch of M4A1s that our unit had received. The fix for these carbines would lead to the creation of an item.

## ALL HAIL THE O-RING!

During the spring of 2000, the first issue of M4A1s had already hit the end of their operational life span at five years old, and they were being replaced with brand new ones. Almost immediately we started to experience failures to extract with several of the newly issued M4s.

As soon as word went up the chain of command that there was a common issue with the new carbines, the response from the manufacturer was pretty damn good.

Within a month, Colt Mfg. had a team at our unit to inspect and test every newly issued carbine, whether it was having problems or not. All troubled carbines were replaced immediately. The problem was later identified as, during the chrome-lining process of the chamber and bore of the M4 barrels, the chrome lining was too thick on some, resulting in too tight chamber areas, which led to the failures to extract during firing.

It was also determined that if the M4 extractor had a little extra tension behind it, it would still have been able to extract spent cases correctly, even with these flawed barrels. Additionally, the extra gripping force of an enhanced extractor spring did a much better job pulling a spent cartridge out of an extremely dirty chamber, allowing the M4 carbine



**Kuwait, 1998: very young-looking author with M4A1 outfitted with SOPMOD Block I ACOG and AN/PEQ-5 Visible Laser. M4A1 Carbine had only been in service a couple years, and SOPMOD items were only one year old.**

to remain running longer under dirty conditions without cleaning.

So with this data, the techs at Crane developed the Reliability Parts Set, which consisted of three items: a five-coil extractor spring; a slightly lengthened blue rubber insert, which was also changed to black for easy identification; and a rubber O-ring to go around the extractor spring to provide a little extra power.

I do not remember these kits making it in time for the 2000/2001 invasion of Afghanistan, but by the 2003 invasion of Iraq, they were plentiful in the unit.

Since then, the Crane Reliability Parts Set with the O-ring has become standard issue on both the M4A1 and the MK18 shorty uppers. It was not until 2012 that I saw the first upgrade to the O-ring on a military M4, with Colt's newest extractor spring. Although it has fewer coils than the enhanced SOPMOD spring, the coils are significantly thicker, providing so much spring tension that an O-ring is not needed.

If you purchased an AR made by Colt in the last couple years, you have this newer spring. Aside from the thicker coils, it can be identified by its bronze color. If you just have a



**ABOVE: SOCOM heavy M4A1 barrel first adopted in 1999 with square cut-out in barrel. Since M203 40mm grenade launcher mount was designed around original M4 barrel, heavy barrel needed a thin point where mount could slip past it to lock in place.**



**LEFT: Crane O-ring with five-coil extractor spring and black insert, also civilian version D-fender ring.**

**At right is Colt's newest extractor spring, which does not require an O-ring.**





Kuwait, 2003: Author practices on range just prior to invasion of Iraq. Block I equipped M4A1 with Aimpoint M68 and AN/PEQ-2. As for the full vertical grip ... I know! But at the time this is how we were trained to grip it.

silver extractor spring, regardless of the make of the AR, ensure it has a rubber O-ring around it. The added power this little rubber ring provides greatly decreases the potential for extraction problems, especially with a dirty gun.

#### SOPMOD GOES TO WAR

For both the 2001 invasion of Afghanistan and the 2003 invasion of Iraq, the same SOPMOD Block I items first issued

in 1997 were what was primarily available to use. Although I did not participate in the invasion of Afghanistan, I did take part in the 2003 invasion of Iraq, with my assigned task to push north from Kuwait, with the mission of getting into Baghdad.

Because a lot of us expected urban engagements and CQB—with the exception of the teams tasked to operate in the open desert—the set-up of choice for many of us was the M4A1 with Aimpoint M68.

My M4 was outfitted with all the available SOPMOD accessories of the time: a Knight's RAS rail (first generation with the tightening screw by the front sight post), SureFire M951 light, PEQ-2 IR laser, and Knight's Armament vertical grip. I would use this same set-up for my second tour in Iraq in 2004.

All the SOPMOD items worked well, though twice I lost my zero with the M68 from dropping it on concrete. Over the course of the 50-plus raids I took part in, on two different missions I tripped and fell down on paved streets. Each time my rifle hit the ground hard and, while the lens and body of the Aimpoint were not damaged, the zero was completely thrown off.

One item that drew a lot of criticism during this time was the Knight's Armament vertical grip. Commonly referred to as the "Ghetto Grip" or "Broom Stick," it had a tendency to come loose if you did not tighten it enough. There were also reports of them snapping off in the heat of battle from the tight grips of soldiers under stress.

Aside from it perhaps being a bit too long, personally I

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never had a problem with the Knight's vertical grip. As long as I tightened it with a screwdriver, it stayed pretty firmly attached to the rail. In fact, it was not until about 2008, when I got my hands on a Magpul AFG (Angled Fore Grip), that I stopped using the Knight's grip.

## WHERE'S THE EOTECH?

I have not mentioned the use of EOTechs (SU-231) because, although some teams within SF and SOF were using EOTechs as early as 2001, my team was not issued them until early 2005 (Model 552) just prior to my third Iraq deployment. This brings to light the issue of the time lapse between when something is adopted under SOPMOD and when it actually is issued to all SOF.

Because SOPMOD is used by all of Special Operations, which equals thousands of operators from all four major branches of the military, it can take a significant amount of time (usually a couple years) to get a piece of gear out to all units.



Baghdad, 2003: author (second from left) with M4A1 and SOPMOD Block I items first issued in 1997. Aimpoint M68s were popular choice for many operators going into Iraq due to high expectation of CQB in urban areas.

Another example of how long it can take to get fully implemented SOF-wide is the MK18 10.3 upper. Although the front sight post version was widely used by SEALs since the early Iraq days, I did not see one until 2010, and by then it was the newer (current issue) low-profile gas block version.

Back to the EOTech.

Demand grew for these within the teams because of one issue we had with the Aimpoint M68. The dot of the M68 at 4 MOA was great for CQB shooting, but when aiming at a target 300 meters away, the dot appears as a 12-inch circle. Workable at that range, but any distance past 300, the dot appears too large and often obscures what you're trying to aim at in the first place.

The center dot of the EOTech is only 1 MOA and appears as a three-inch dot at a 300-meter target. The smaller dot allows for a precise point of aim or hold offs out to about 500 meters. Combined with the outer ring for quick aiming at CQB distance, many find the EOTech makes a great all-around optic.

But the only option was the fixed-power ACOG without a piggy-backed mini red dot. Those did not hit most units until 2005.

Once my team had them, I too made the switch from an M68 to an EOTech, but when I used one in an actual firefight, I realized I was better with the older M68. During training, I had no problem focusing on the EOTech's smaller center dot and getting easy hits on six-inch plates at distance and such. But the first time I used an EOTech in combat, all I remember is seeing a red blur as I aimed at the threats.

The outer ring of the EOTech sight, designed to facilitate quick-aim shooting up close, totally distracted me from finding the small center dot, making it rather difficult to place it where I needed to on target. In the stress of the fight, the EOTech's design was just too busy for me. I work best with the single dot of the Aimpoint.



ABOVE: Team Blue, Iraq second tour, 2004. SOPMOD Block I M4A1s with additional SOPMOD phased-in upgrades: Aimpoint M68s, SureFire M951 weaponlights and, if you look closely, you can see the extended charging handle latches of the Gas Buster charging handle. Author's teammates on his left and right—two bad asses who always had his back.

RIGHT: Iraq, 2005: M4A1 with SU-231 (EOTech 552). Although EOTech had been in the system for a number of years, author was not issued one until just prior to his third Iraq tour. Also visible is unpopular H&K steel 5.56mm magazine.





#### ADDITIONAL ACCESSORIES

Other items that came out during the early war days were H&K steel 5.56mm magazines, the Gas Buster Charging handle (2004), and the Crane SOPMOD buttstock produced by Lewis Machine & Tool. I did not get a Crane stock until after my last tour in Iraq in early 2006.

Guys liked the Gas Buster not so much because it supposedly helped cut down the extra gas blowback from running the M4 with a suppressor, but because it came with an oversized latch, making it easier to find and grab under pressure, especially with gloves on. To this day, the M4A1 is still issued with the pitifully small milspec charging handle latch.

The H&K steel magazine was not very popular in SF because it was too heavy. Fully loaded, the steel body mag weighed twice what a loaded aluminum one does. One might be able to justify carrying the extra weight on patrol if they were noticeably more reliable, but they were prone to denting if you dropped them on hard surfaces (especially rocky terrain), so many, myself included, did not see any advantage to using them.

#### TO BE CONTINUED ...

During those early years in the War on Terror, the SOPMOD program proved a big hit, from the successful invasion of Afghanistan to the streets, alleyways, and close-quarters urban areas of Iraq. The M4A1 Carbine and SOPMOD items performed well, but there was room for improvement.

As the war carried on, operators desired even more performance out of the M4 and SOPMOD, leading to a complete second generation of SOPMOD optics and accessories.

In an upcoming issue of *S.W.A.T. Magazine*, I will cover the implementation of SOPMOD Block II and my experience with it during my time fighting in Afghanistan. ☺

*Jeff Gurwitsch is a retired Special Forces Soldier who served 26 years in the United States Army (18 years with Special Forces). He served in the First Gulf War, three tours OIF, and three tours OEF. He is an avid competitive shooter, competing in USPSA, IDPA, and 3-Gun matches.*

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A detailed view of a Wilson Combat AR9G carbine, a compact 9mm semi-automatic rifle. The rifle is shown from a three-quarter front view, highlighting its ergonomic design, including a foldable stock and a pistol grip. It features a black finish, a red dot sight, and a magazine. The background is a dark, textured surface.

Lightweight,  
Maneuverable,  
Ergonomic

# 9mm CARBINE

WILSON COMBAT AR9G



# THE

5.56mm NATO caliber AR-15 holds sway for police patrol rifles, but 9mm shoulder-fired weapons occupy a place in many armories, typically as sub-machine guns. Carbines such as the Beretta CX4 are used by several state university police departments, while a few sheriff's departments use the CZ EVO.

Though the 5.56 NATO does not look like it will be supplanted any time soon, 9mms compare favorably in several respects, especially since newer 9mm loads with modern bullet designs perform much better than in the past.

Operationally, the 9mm is ideal in extreme CQB/room-to-room maneuvers where the added range and velocity of the 5.56 are not necessary. The 9mm also generates less muzzle flash and noise, and its ballistics grant greater access to indoor ranges that often lack backstops that can accommodate the 5.56. (Frangible ammo solves the backstop problem, but at much greater ammo cost.)


Ammunition is also less costly, and most 9mm sound suppressors can be used on pistols and carbines. But perhaps the best advantage of the 9mm over the 5.56 NATO is the interchangeability of ammunition and sometimes magazines with duty sidearms.

## WILSON COMBAT AR9

The AR9G was released in early 2016 and is Wilson Combat's first blowback operated AR-15 style rifle. The "G" in the model name designates the use of Glock magazines. Two other versions that use Beretta 92 and Smith & Wesson M&P magazines are also offered.

Short Barreled Rifle versions with 8- and 11.3-inch barrels are also made, for those who desire a briefcase-length rifle of 25.5 or 28.5 inches, but 9mm is the only intended caliber, and a select-fire version will not be made. Now that the FBI has a newfound fondness for the round after testing the newest loads, the perceived need for agencies to upsize to the .40 S&W may abate.

The AR-15 is a somewhat modular design, so selecting suitable components for its intended use matters considerably in how this gun performs in the field. Bill Wilson designed the AR9 for home defense and competition, so he carefully selected features and incorporated premium components with those uses in mind.



Customers can order Wilson Combat AR9 in various configurations, including SBR shown here with KeyMod-type handguard. Wilson Combat TRIM rail handguard is also an option.

By Andy Massimilian | Photos by Steve Woods

Lightweight, Maneuverable, Ergonomic

# 9mm CARBINE



Location of controls duplicates AR-15, but bolt catch is much wider and easier to reach. Large, integral winter trigger guard aids in operation with thick gloves. BCM GUNFIGHTER grip is more comfortable than milspec grip.

The result is a highly accurate, reliable and very easy to shoot carbine.

The AR9G uses receivers made from 7075 grade aluminum billet that fit very tightly together because of a tension buffer installed in the rear of the lower, and close manufacturing tolerances.

Add to that a match-grade free-floating Shaw barrel, Wilson's own aluminum handguard, Q-COMP Flash Hider, drop-in trigger group, and optional flip-up iron sights. A Rogers Super-Stoc, BCM GUNFIGHTER grip, and 22-round translucent magazine from Elite Tactical Systems complete the carbine.

The AR9 uses Wilson's Armor Tuff Cerakote finish, which is applied over a base finish of hard coat anodizing for aluminum parts like the receivers, and over Parkerizing for carbon steel parts (e.g., the barrel). Thus, the metal is protected even if the outer Cerakote wears off.

The AR9 uses a lower receiver dedicated to a particular magazine—Glock, Beretta, or M&P—rather than starting with a standard AR-15 receiver and then adapting the mag well with spacers and inserts. The dedicated system works much better because it is simpler and has no parts to come loose or break. It also simplifies cleaning.


Except for lacking a forward assist, which Wilson sees as unnecessary, the AR9 has the same operational controls as the standard AR-15. Interchangeable parts between a standard AR-15 and the AR9 include the trigger group, grip, and buttstock.

## DESIGN CHALLENGES

According to Bill Wilson, designing an AR-15 for the 9mm presents two essential challenges: reliable feeding and reliably holding the bolt open after the last round is fired.

Wilson's testing showed that double-feed magazines as





**The AR9G has quick, maneuverable handling characteristics, thanks in large part to the trim, lightweight, and ergonomic stocks and handguards.**

Full-length M1913-style rail allows accessory mounting, including spring-loaded flip-up aperture sights from Wilson Combat. These sights sit very close to the receiver when stowed.

AR9G bolt uses a plunger-style ejector similar to AR-15.

Bottom view of bolt shows firing pin and slot for hammer.

# Lightweight, Maneuverable, Ergonomic

# 9mm CARBINE

used on the UZI, Rock River and Colt 9mms are prone to creating stoppages because the round feeds at an angle when stripped from the magazine. Single-feed magazines move cartridges into the chamber without sideways movement and allow more of the bullet to be guided by the chamber walls as it is stripped from the magazine. Eliminating this possibility mandated the use of a single position feed as used on most pistols.

The other challenge is a bolt catch that will reliably lock the action open after the last round is fired and not before, even when the magazine is pressed upward while firing. This issue is more noticeable with AR-style carbines that use Glock factory and after-market magazines, because the dimensions of the magazine vary considerably and are made by multiple companies, according to Wilson.

Wilson solved this problem by modifying the lower receiver of first production AR9G rifles and by shipping them with magazines made by Elite Tactical rather than Glock OEM as was originally done.

Unlike other 9mm AR-15 carbines, the Wilson AR9 uses a plunger-type ejector like the standard AR-15 instead of the more common receiver-mounted versions. This decision was made because the steel connector between the magazine follower and the bolt catch rides on the left side of the lower receiver, where an ejector would typically be mounted.

## ACCURACY

Accuracy is a measure of a firearm's mechanical consistency—it launches a bullet the same way with every shot—but it also is a function of how well the firearm can be shot once it's placed in human hands.

Wilson tested several custom match barrels and chose the Shaw because he felt it was the most accurate. Wilson cuts the chamber using the same dimensions as the Beretta 92 pistol and contours the barrel at his shop.

With telescoping AR-15 buttstocks, wobble is a typical cause of inaccuracy, but the AR9 avoids this with the Rogers Super-Stoc. This stock is one of the best tactical designs I have found, because it is lightweight, sturdy, adjusts quickly to any of six positions, and locks into place with zero wobble.

Finally, a good trigger is indispensable for accurate shooting. My unit came with Wilson's TTU variant. This drop-in unit has a short, light take-up stage, crisp break, and minimal travel, which are exactly what's required to deliver rapid, accurate shots on target, because the shooter's finger moves minimally to fire and to reset the mechanism.



AR9G has no forward assist but shares the dust cover, charging handle and shell deflector of the "standard" AR-15. Large knurled magazine release and secondary locking lever secure buttstock in position without any wobble.

## » SPECIFICATIONS

### WILSON COMBAT AR9G

MANUFACTURER	Wilson Combat
MODEL	AR9G
TYPE	Semiautomatic, blowback operation
CALIBER	9mm Luger
CAPACITY	22+1 with supplied magazine
BARREL	16 inches
MUZZLE DEVICE	Q-COMP Flash Hider
OVERALL LENGTH	32.75 inches (stock collapsed)
WEIGHT (EMPTY)	Six pounds, 1 ounce
SIGHTS	None included
STOCK	Rogers Super-Stoc
PISTOL GRIP	BCM GUNFIGHTER
FINISH	Armor Tuff
SUGGESTED RETAIL	\$1,995





## » AMMUNITION PERFORMANCE

BRAND	LOAD	AVERAGE VELOCITY	BEST GROUP	AVERAGE GROUP
Atlanta Arms	115-gr. JHP	1,350 fps	1.1 inches	1.55 inches
Black Hills	115-gr. +P JHP	1,590 fps	.875 inch	1.25 inches
Winchester	115-gr. FMJ	1,374 fps	1.25 inches	1.875 inches

Five-shot groups at 50 yards obtained from a Caldwell BR rest and measured center to center. Velocity measured 15 feet from the muzzle with an Oehler 35 chronograph.

Using a Lyman electronic trigger-pull gauge, the total trigger-pull weight on my rifle was 4.5 pounds, with a 2.5-pound break. The trigger works in conjunction with the GUNFIGHTER grip, which places my finger on the trigger at the last digit, for better trigger control than the milspec design.

### RANGE TIME

I tested the AR9G for accuracy shooting with a Leupold scope off sandbags at 50 yards with three different loads, and then using an Aimpoint CompM3 for handling and CQB drills.

The AR9G was very accurate with

both Black Hills 115-grain JHP and Atlanta Ammunition Elite 115-grain JHP, where the best five-shot groups were under two inches measured from the centers. There were no stoppages encountered in 200 rounds fired.

Though the most popular AR9 is the Glock variant, Bill Wilson notes that Glock magazines have considerable variation in dimensions, which can effect functioning. Bill recommends that users of original Glock mags install a Wolf extra power spring to keep the bolt catch working properly, even though this change may reduce the round count on G17 mags by one.

### HANDLING, ERGONOMICS

The AR9G has quick, maneuverable handling characteristics, thanks in large part to the trim, lightweight, and ergonomic stocks and handguards.

The BCM GUNFIGHTER grip positions and its angle make it far more comfortable to hold the rifle with the muzzle pointing down just in front of your feet than the milspec grip. This muzzle-down position is typically used when standing post and is certainly appreciated for duty. The GUNFIGHTER's grip angle works best for shooting off hand and kneeling, though it is not ideal for prone or bench-rest fire because of the angle it places the wrist.

The handguards also work very well because they are narrow enough to allow a shooter a solid grip even with a gloved hand, and are smooth and devoid of sharp edges. The Wilson TRIM handguard has a full-length Picatinny-style rail at 12 o'clock and multiple drilled and tapped holes on the other three sides for mounting accessory rails where you want them and not have to contend with sharp-edged full-length Picatinny rails where you intend to grasp the stock.

### FINAL NOTES

Carbines that use pistol magazines are a growing segment of the market, but the Wilson rendition is clearly among the highest quality available and carries a lifetime warranty that lasts as long as the rifle, not the original purchaser. ☺

## SOURCES

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Having a white light on a carbine may be necessary, useful or useless, depending on your point of view, frame of reference, MOS, job title, or vocation. For our purposes, we'll assume you understand the necessity of having a white light on your carbine: being able to identify and if needed engage a potential threat.

The state of the art of white lights and mounts has come a long way since the Maglites and hose clamps of not that long ago, but the bottom line is still the same. However, now we can do it more efficiently, and with smaller, brighter, and better illumination tools.

The early problems—how to attach the light—have been made a non-issue with the near-universal adoption of the Mil-Std-1913 rails that replace the plastic handguards, as well as mounts that are compatible with the rails.

# WHITE LIGHT PLACEMENT

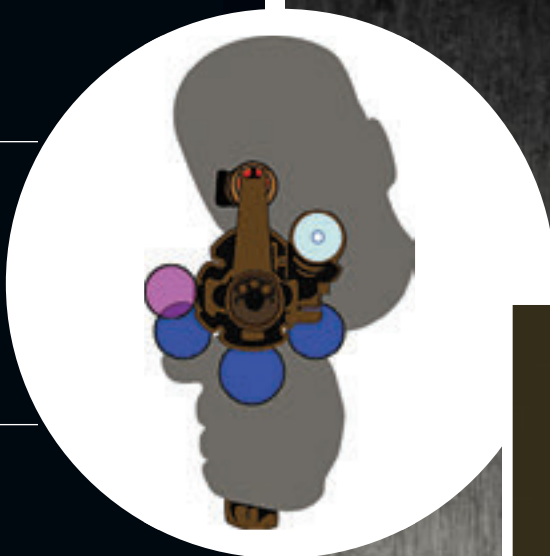
## Making the Interface Work

By Patrick A. Rogers

Illustrations by Duke Krieger



Light can be mounted anywhere on the gun. Finding the sweet spot may or may not be difficult, but you need to consider the pros and cons of each position. Rogers runs light at 10:30 because it puts it closer to the bore-line, makes switchology efficient, and interfaces well.



### WHERE TO PLACE THE LIGHT ON THE GUN?

The issue of where to place the light on the gun is, has been, and always will be a subject over which arguments are made. We'll try to make the choice somewhat less complicated, but at the end of the day, you may not have much choice.

At the very beginning, you need to understand that the light mounted on the carbine is an illumination tool, not a less-lethal weapon, although that distinction is often blurred.

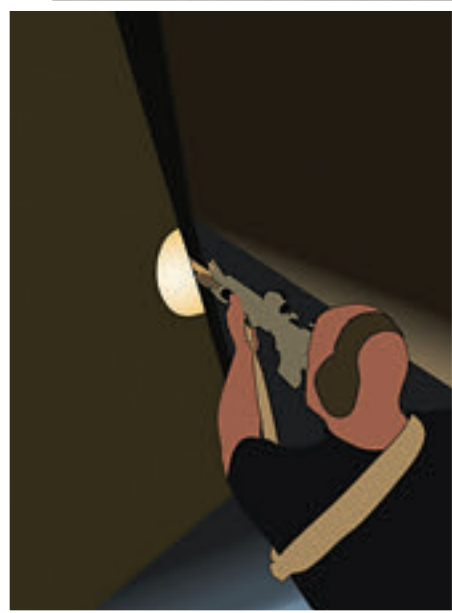
You also need to understand that the light is there to assist you in acquiring, identifying, and processing a potential threat. And while the light is important, placement of the light and the switchology necessary to operate it should complement—not interfere with—your ability to use the carbine efficiently. This is a point many either fail to understand or deliberately ignore.

The quad rails found on many weapons give the operator a choice of attachment at four points: 12, 3, 6 or 9 o'clock. Light mounts can be offset to allow for additional mounting options.

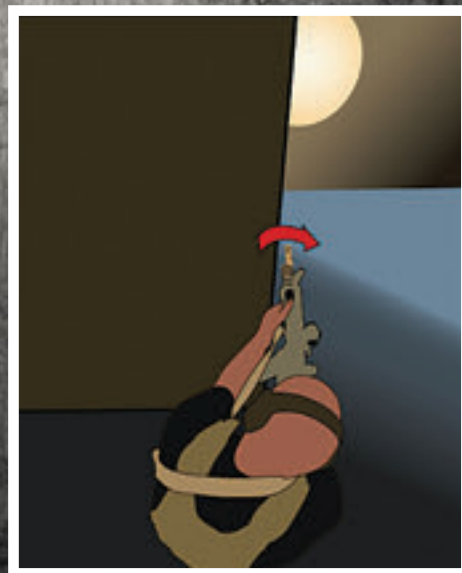
As long as you cannot mount it in the bore of that bullet launcher, any mounting on the gun is coaxial with the bore, and therefore a compromise. That compromise includes downrange barrel shadows as well as illumination splashback from close barricades.

Splashback can be defined as the beam of white light that should be illuminating the area/person down the hall from you, but instead hits the wall directly in front of you. You have failed to put the light where it needs to be and instead illuminated yourself. We can mitigate one or both, but it is unlikely we can eliminate either without a complete change in the integration of the support/weapon systems.

The original mounting of the aforementioned Maglites and hose clamps varied according to user preference, but was generally at 3, 6, and 9 o'clock. There could be some variation of the position due to the round shape of the flashlight and the round or oval shaped handguards used. The 12 o'clock mounting was never used due to interference from the front sight base.



Splashback: sight and muzzle clear the barricade, but the light, because of built-in offset, does not. Result is light strikes near wall and does not illuminate danger area/threat.



Modifying your position—either by keeping the gun vertical and pushing it farther away from the barricade or rotating the gun—will clear the light from the barricade.

## SOPMOD KIT

With the introduction of the SOPMOD Kit in the late 1990s, life became easier. The Knights Armament Company RIS and later RAS provided four 1913 rails to which one could mount mission-essential attachments at 12, 3, 6 or 9 o'clock.

The issue Visible Light Illuminator (VLI) was a poor performer for a great many reasons and was replaced almost immediately at different levels with SureFire lights. The widespread use of the SureFire family of lights also broadened choices. With the SureFire lights also came a tape switch, which permitted placement of the switch away from the light. The light didn't need to be convenient to your hand. It could be mounted anywhere you wanted it.

The tape switch was not without faults, though. While permitting the quick light on/light off technique used by many, it was also susceptible to white light negligent discharges. These might be operational, or as mundane (but embarrassing) as having the light activate inside a gun bag.

When considering where to place the light, first try to imagine how the light would interface with the carbine and your non-shooting hand. If we look at the carbine from the business end, we can see a variation of where the light might be mounted going literally around the clock. But where on the clock should we put the light?

## ROUND THE CLOCK

Clearly the optimal place for the light would be at 12 o'clock. The light would cast a shadow below the barrel, but that is not a major issue. However, it would require a folding front sight. Not a big issue for some, but my preference travels to the opposite direction. I prefer a fixed front sight base. The

rationale for this is simple. In the event of a red dot sight (RDS) failure, you can instantly use the ocular lens of that downed sight as a large ghost ring aperture—providing the front sight is up. If you have a folding front sight, you may have to fumble for awhile to get back in the fight.

IR illuminators and laser aiming sights, such as the current AN/PEQ-15 Advanced Target Pointer Illuminator Aiming Light or the DBALa2 Dual Beam Aiming Laser Advanced Squared, are commonly mounted at 12 o'clock and they have priority over the white light. Of course, if infrared is not in your playbook, drive on with that 12 o'clock mounting for the white light.

The 6 o'clock position was very popular, and the SureFire (SF) M900/910 lights, while large and heavy, combined a Vertical Foregrip with a very capable light. They also provided a lock-out switch; something long overdue.

But it cast a very distinct barrel shadow above the barrel. When shooting behind a close barricade it could, depending on weapon orientation, cause splashback if you illuminated that close wall instead of what was beyond. If the light was kept vertically underneath the barrel, there was no problem, but canting the carbine (rotating it around the bore axis) could cause that problem.

The wing positions—3 and 9 o'clock—were default positions for those not using the M900/910 lights. The SF Millennium Universal Light with integral mount was an issue light for many units and was used in these positions. While bulky,



**ABOVE:** Trooper uses SureFire G2 in Viking Tactics mount at 5:30.

**LEFT:** Stephan Hilliard's LWRC M6A2 PSD (6.8mm) has no BUIS but has Insight SU-233 from SOPMOD Kit mounted at 12 o'clock. Aimpoint T1 is not infallible but is extremely reliable. At distances this gun would be used at, T1 tube can be used as a large ghost ring.



it was functional and is still in use. The small, lighter, and more useful Scout Lights also had an integral mount and were used in a similar fashion.

#### SPLASHBACK AND OTHER ISSUES

What are the drawbacks of any of these locations? Light splashback can be a problem, or not. The waffling here is because the closer you are to a barricade, the more likely and the more pronounced that splashback can be. Tactical geometry dictates that as you get farther away from the barricade, the fewer problems you will have—with lights or otherwise.

Except that in the real world, rooms are small and full of furniture, garbage, and other impedimenta. You may not have that 100% solution and just might have to punt to stay in the game.

The 3 and 9 o'clock positions can cause splashback if the carbine is vertical. You can rotate the carbine out to clear both the muzzle and the white light, but it may require a rotation of up to 45 degrees.

If you use an offset light mount, you have additional options as well as problems. Offset light mounts are generally used in conjunction with Vertical Foregrips (VFG).

Those using a VFG have a choice of hand positions. The conventional position wraps the hand around the VFG as if you were holding a beer can. Another (and perhaps better) method is to short stock the VFG—bringing the hand high up so the thumb is on the support side of the handguard and not wrapped around the VFG.

Those using the first method usually run their lights on an offset mount, putting the light at approximately 5 o'clock for right handers and 7 o'clock for wrong handers. Those using the short-stock method run the lights at 9-11 o'clock for right handers and 3-1 o'clock for lefties.

Generally speaking, the top or bottom light positions usually require the use of a remote (tape) switch. Using the wing positions allows direct access to the tail cap or use of a tape switch.

If you are a right-hand-dominant shooter using a conventional grip, a right-hand barricade will present little grief. But if you're behind a left-hand barricade, you have issues. That 7 o'clock white light will have to be ro-



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tated waaay over in order to clear the barricade—not generally acceptable. Alternately, you can expose more of the gun (and you) to get the light and bullets downrange (reverse this for left-hand-dominant shooters).

If you are adept at switching shoulders, you can minimize this to a degree, but that may be at the expense of a degradation of accuracy.

By using an offset mount, you can bring the light above the barrel, and while casting a shadow, it will be at 5 o'clock (7 o'clock for left handers). It is closer to the boreline and thus requires less rotation to clear close barricades.

### MULTI-TASKING

A fair number of people have come to my classes with the light not where it might be best placed, but rather where it might fit. Additionally, the method used to activate the light was often an afterthought—if any thought were given at all. Often the shooter had to change the placement of his non-firing hand drastically from the normal firing grip to turn the light on. This is not a realistic scenario.

Most people can perform a single function well. When faced with two functions to be performed simultaneously, some degradation of skills can be expected. When tasked

with three or more functions, a greater loss of skills can be expected, based on my observations over the years.

An example is a shooter who is locked on to a single drill while on the square range. Adding a “two, speed reload, two” drill adds other levels of complexity, and some start throwing shots they shouldn’t. Throw a movement into the mix: “two standing, speed reload, two kneeling” and some have more problems.

That same locked-on square-range shooter is able to perform multiple drills by breaking them down into separate, individual components and do pretty well. But take that same shooter and put him into the shoot house, and he will exhibit Bambi Syndrome—a deer in the headlights. Instead of a flat range, he is now in a non-linear environment. Targets may be in front, to the sides or even behind him. Other shooters and instructors may be downrange or in close proximity.

The complexity starts building exponentially.

Now add low light: having to work a white light to acquire, identify, and process what you see. Life has become pretty tough. It will be tougher if you fail to integrate the light and the means to operate it efficiently.

### ONE WORKABLE SETUP

For classes taught by my company, EAG Tactical, we needed a useful white light that would not break the bank, as we had to get lights on a fair number of guns. I settled on the following:

- SureFire G2 Light
- TNVC Q5 LED drop-in
- Z59 or Z49 clickie switch
- Viking Tactics VTAC Light Mount (NSN 1010015344536)



Light at 5:30 requires change of hand position to activate light. Quad rail offers options not available with standard handguards.



ABOVE: SureFire G2 in Viking Tactics mount, standard tailcap replaced with Z59 clickie cap, is operated with support-side thumb. DBALa2 tape switch is activated by heel of shooter's hand.



LEFT: This gun belongs to someone who uses it for a living. Tape switch on top fires PEQ-15 mounted at 3 o'clock. Other tape switch goes to SureFire Scout Light. Using TangoDown VFG, shooter can activate either unit without moving his hand.



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I am a right-handed shooter, so I place the light on my guns at approximately 11 o'clock. I use a short grip with my non-shooting hand, so my thumb naturally rides high and in close proximity to the Z59/Z49 switch. I run a DBALa2 on the 12 o'clock rail, with the pressure switch located on the 9 o'clock rail. I can operate the DBAL switch with the heel of my non-shooting hand.

The advantage is (or should be) obvious: I can run the gun normally in well-lit environments, and run a white light, IR illuminator, or laser aiming dot without drastically changing my non-shooting-side grip. The set-up is intuitive and easy to master.

The Viking Tactics Light Mount is made of plastic and can accept a variety of lights, to include the SureFire Executive and G2 series lights. We have been using a number of these and are well satisfied. Other companies that manufacture quality offset light mounts are Daniel Defense and Vltor.

The system described above works for me but may or may not for you. As with all things, your mission requirements will define what equipment you need. Make those decisions wisely. If you have a white light that requires you to switch your hand position to activate it, it may be detrimental to your continued existence.

Above all, seek and acquire quality training with your weapons system. You, the bullet launcher, and any support equipment on the gun have to work in harmony to be effective—and the only way that happens is through habitual association under pressure. ©

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## SOURCES

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### DANIEL DEFENSE, INC.

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# Looking for a Few **GOOD MARKSMEN**

What comes to mind if someone says they want a specialized long-range (1,000 yards plus) precision rifle for law enforcement or military applications?

No offense intended to the .308 Win, but 1,000 yards and beyond is a realm best served by cartridges with more powder capacity pushing heavy-grain, high-ballistic coefficient bullets downrange. A decision needs to be made if this rifle is for materiel or personnel interdiction.

If personnel are the primary mission, the massive .50 BMG can be dismissed. The benefit of calibers other than .50 BMG is immediate, as rifles become more portable in terms of size and weight for both weapon and ammunition.

Two prime cartridge considerations are the .300 Win Mag and .338 Lapua Magnum. Up to this point, mention of these cartridges would confirm that the rifle will be bolt-action. This no longer holds true, thanks to Alexander Arms and their Ulfberht semi-automatic .338 Lapua Magnum.

## **.338 HISTORY**

Initial .338 Lapua Magnum (.338 Lapua) development can be traced to 1983 with Research Armament Industries (RAI) in the United States. After preliminary experiments, a .416 Rigby case necked down to take a 0.338-inch bullet was selected, since this diameter presents an optimum of sectional density, ballistic coefficient, and penetrating capability for rifle bullets.

## **Alexander Arms Ulfberht Precision Semiauto Rifle**

By Todd Burgreen

At Echo Valley Training Center, Alexander Arms Ulfberht was evaluated under field conditions, not just off the bench.







Alexander Arms Ulfberht with Nightforce ATACR mounted is a complete weapon system intended for long-range precision.

Difficulties with case development lead RAI to contact Lapua of Finland in 1984. RAI was forced to drop out of the program due to financial difficulties. Lapua, SAKO, and Accuracy International finished the development with a redesigned case more suitable to withstand the high pressures required to launch 250- or 300-grain bullets at nearly 3,000 feet-per-second (fps).

The .338 Lapua quickly established itself as the ideal military long-range anti-personnel cartridge, as it fills the gap between the 7.62mm NATO and .50 BMG. This statement is supported by the United States Special Operations Command's (USSOCOM) solicitation for a new long-range Precision Sniper Rifle (PSR) centered on the .338 Lapua.

USSOCOM intention for the .338 Lapua rifle is to interdict enemy personnel, positions, and non-technical vehicles mounted with crew-served weapons out to 1,500 yards or farther, while also being capable of defeating NIJ Level III body armor out to 900 yards.



Hundred-yard groups were harbingers of great long-range accuracy results out of Alexander Arms Ulfberht.

## Being able to harness the .338 Lapua Magnum in a semiautomatic platform is not a simple undertaking.

Questioning the standard approach is not always the easiest path to follow. Alexander Arms decided to up the ante with the .338 Lapua via the semiautomatic Ulfberht. Alexander Arms is known as an innovator with their .50 Beowulf and 6.5 Grendel chambered AR platforms. The Ulfberht semiauto continues along this path.

### THE VIKING SWORD

The Ulfberht name follows Alexander Arms' tendency to choose names derived from Norse legend and history for their products. Ulfberht is the name of a unique type of sword produced by the Vikings. The Ulfberht sword was made of steel that was uncommonly strong and durable for its time. The same analogy can be made in regard to the Ulfberht .338 Lapua rifle.

The Ulfberht will definitely not be labeled a compact rifle. The 27.5-inch 4140 steel barrel is button-rifled with a twist rate of 1:9.3. The barrel is fluted once it extends past the forend. Overall length of the rifle is 41.5 inches with a weight of 20 pounds.

A side-folding Magpul PRS stock is attached to the receiver, allowing for an adjustable length of pull and cheek height. This stock is rock solid, with design characteristics making it conducive to long-range shooting from the prone position using either improvised shooting rests or a bipod. The ergonomics of the stock permit a comfortable, repeatable cheek weld.

Four detachable ten-round magazines arrive in the hard case with the Ulfberht. A 30 MOA offset Picatinny rail runs along the top of the receiver and blends in with the railed free-floated forend surrounding the barrel.

The forend is drilled and tapped on the sides and bottom for adding more rail sections if desired. An AR-style pistol

grip and 4.5-pound trigger provide shooter interface with the Ulfberht.

The Alexander Arms Ulfberht .338 Lapua combines premium materials with simplicity of operation to not only harness .338 Lapua power, but also to provide superior accuracy while still providing semiautomatic benefits. The Ulfberht has only ten moving parts out of its 48 total components.

### SOVIET INSPIRATION

Bill Alexander based the Ulfberht's operating method on the Soviet/Russian DP-28 machine gun. The Ulfberht adapted the long-stroke gas piston of the DP-28 by inverting it to accommodate being magazine fed from the bottom. The gas system on the Ulfberht features five adjustment settings

that handle manual operation, suppressor use, various load pressures that the .338 Lapua cartridge can have, as well as extreme temperatures in terms of cold and heat.

Conversations with Bill Alexander reinforced the importance of using the proper gas setting per ammunition used to ensure the smoothest operating of the Ulfberht's action. The provided manual simply outlines which setting based on observed brass ejection pattern.

Being able to harness the .338 Lapua Magnum in a semi-automatic platform is not a simple undertaking. It requires both keen engineering and proper blending of materials to be used. There is a reason why semiautomatic .338 Lapuas have been confined to the custom realm until now.

The receiver is machined out of high-grade 9310 steel,



**ABOVE:** Twin oversized locking lugs on Ulfberht's bolt are testament to operating pressures that had to be tamed with a semiauto .338 Lapua.

**LEFT:** Folding Magpul PRS stock enables reduction of length, easing transport while still providing rock-steady shooter interface.



Nightforce rings mounted Nightforce ATACR 5-25X optic to Ulfberht. ATACR is ideal companion to heavy-hitting .338 Lapua semiauto rifle.





Ammunition from Lapua, Black Hills Ammunition, and Hornady enabled various bullet weights and styles to be evaluated in the Ulfberht.

which contains vanadium, giving it a tight molecular structure that resists cracking—important when considering the pressures associated with the .338 Lapua and the jarring a semiautomatic action produces.

Along these same lines, the barrel is press fitted into the receiver, creating a breach that measures 1.75 inches in diameter. The action consists of a 16.5x0.5-inch operating rod that has a solid block of 17-4 stainless steel attached to it in the form of a bolt group.

The Ulfberht's bolt has dual ejectors and an HK-style extractor. The bolt does not rotate when cycling; rather it is locked into the receiver by two oversized steel locking lugs that cam inward out of the way to unlock the action once pressures drop, permitting safe operation of the action. Alex-

ander felt this was the best method to support the barrel, as well as to lock the bolt closed on the semiautomatic action.

This all contributes to safe, reliable functioning and tamed recoil. The bolt runs to the back of the receiver during recoil under constant dual-spring pressure wrapped around the operating rod. The distance traveled by the bolt is twice the distance of the .338 Lapua's cartridge length. This provides for a smooth, non-jarring recoil pulse, assisting in accuracy and shooter endurance/recoil management when firing in target-rich environments.

The Ulfberht brings together individual high-quality components into one 25-pound package after adding an optic and loaded ten-round magazine. Suggested retail price is \$5,800.

#### NIGHTFORCE OPTIC

A Nightforce ATACR 5-25x56mm (34m tube) was mounted on the Alexander Arms .338 Lapua via Nightforce rings. Nightforce is a noted high-end optic manufacturer with numerous products in use with elite military and police forces around the world.

The Nightforce ATACR can be fitted to the biggest magnum boomers due to constant 3.5-inch eye relief at all magnifications. The Nightforce's tough construction is perfect

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for recoil resistance due to inertia forces experienced during recoil, especially with a cartridge like the .338 Lapua. The ATACR has 120 MOA of elevation adjustment and 60 MOA in windage. This all lends itself well to long-range shooting adjustments.

The Nightforce ATACR features multi-coated ED glass. Based on research for this article, ED (Extra Low Dispersion) glass prevents or lessens chromatic aberration because it concentrates and directs the wavelengths of light more effectively. Generally speaking, the better the aberrations are controlled, the cleaner and brighter the image will appear. This is especially important at long-range, high-magnification observation. ED glass is usually reserved for premium optics due to the cost associated with it.

Other notable characteristics of the Nightforce ATACR optic are second focal plane reticle, ZeroStop elevation adjustment, .25 MOA or .1 Mil adjustments, Hi-Speed elevation adjustment with windage knob capped, separate parallax adjustment with distance markings, digital reticle illumination, enhanced engraving, integrated power throw lever, and

XtremeSpeed diopter adjustment. Many of these items are proprietary Nightforce features. The Nightforce ATACR is a good fit for the long-range .338 Lapua Ulfberht.

### ON THE RANGE

A variety of .338 Lapua ammunition was tested with the Alexander Arms Ulfberht: Black Hills Ammunition 250- and 300-grain Sierra MatchKing, Lapua Lock Base 250-grain FM-JBT, Scenar 250- and 300-grain HPBT, and 250- and 285-grain BTHP and 285-grain ELD Match Hornady ammunition.

The first requirement of a tactical rifle is precise, repeatable accuracy. The Ulfberht consistently produced MOA groups with the different .338 Lapua ammunition utilized—an important logistic consideration—while exhibiting a slight preference for the Black Hills and Lapua 300-grain loads. Hundred-yard performance with the Ulfberht was typified by one-inch or less groups. All the 300-yard groups measured below 2.75 inches, with the Black Hills 300-grain Match loads the best at two inches.

The .338 Lapua does not show its true potential relative



**ABOVE:** Ulfberht's adjustable gas block is accessed at end of the forend, allowing rifle to be tuned to the particular load used.

**BELOW:** Simplicity of Bill Alexander's Ulfberht is evident upon field-stripping.





Alexander Arms Ulfberht arrived in hard case perfect for storing or transporting a scoped rifle and other accessories, including extra magazines.

to other cartridges until past the 600-yard line. The high ballistic coefficient bullets matched with the high launch speed keep the round supersonic past 1,500 yards.

The Ulfberht rifle did not spend a lot of time at the Echo Valley Training Center (EVTC) 100-yard range during this T&E, as 300 yards and farther are more indicative tests of a precision tactical rifle. EVTC is properly set up to handle extensive test firing of a precision tactical rifle like the Alexander Arms Ulfberht, with its 600-yard range and access to various off-site locations where up to 1,500 yards is available.

EVTC has fixed dug-in firing positions, which proved perfect for this evaluation. The shooter can remain standing while firing the Ulfberht from off the ground stabilized by front rest and rear sandbag. This proved easier for managing recoil compared to lying behind the rifle in a more traditional prone position.

While the Ulfberht's muzzle blast is impressive, recoil is not excessive and can be characterized as the softest-shooting .338 Lapua I have experienced to date. It proved feasible



to rapidly place multiple rounds on 500-yard steel. At times a round was still in the air when the previous shot made the steel target ring out with impact.

Another note of interest is how easy the ATACR Mil-R reticle made hitting targets at that distance. The benefit of holding directly on target with appropriate hash mark

» Continued on page 88

## This Drawer Isn't For Your Socks

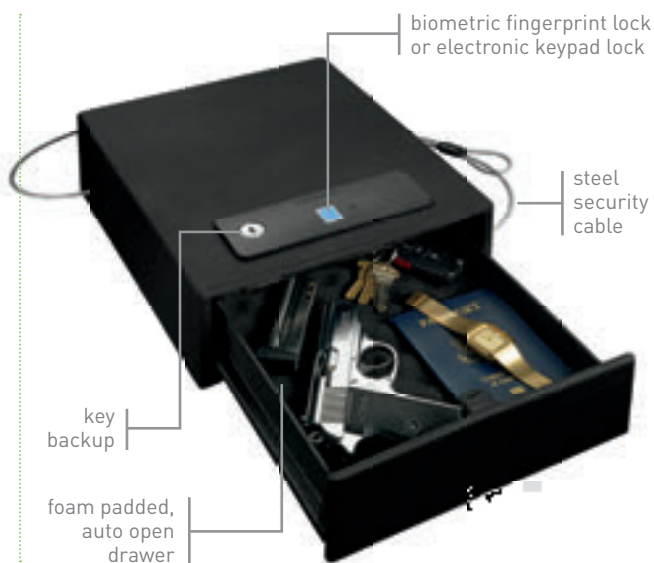
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# \$300 SHOOTOUT

How much handgun performance can you get for \$300? We found an SCCY CPX-1, a 3rd Gen S&W 909, and an S&W Model 10 and tested them.

## Testing Bargain Blasters

By Justin Dyal

**P**oking around the Internet, a new shooter stands a high probability of coming away with one of two impressions. First that he or she is best off with a 1911, but only *certain* makes and models will do, and those only after sending it off for sundry modifications and reliability work.

If our prospect avoids that line of logic and several months' rent expense, they are still likely to be convinced they need the latest striker-fired polymer sweetness ... but only after a month's grocery cost in upgrades and, better yet, milling the slide for an optic that costs more than the base gun.

There is understandable angst when the prospective buyer counts their mad money and comes up well short of the outlay required for these enthu-



siast pieces. I had a random curiosity as to what type of service-caliber protection I could find for \$300 or less and set out on the hunt. I discounted the very low end and leave that for others to ascertain worthiness.

But I did easily find three representative examples to explore the concept: the SCCY CPX-1 9mm, a Smith & Wesson Model 10 .38 Special revolver, and a moderately used Smith & Wesson Model 909 3rd Generation 9mm.

#### SCCY CPX-1

I knew very little about the SCCY, but happened to see one in the case at Guerrilla Armament in Jacksonville, North Carolina for under \$200. It was a like-new pistol that someone had traded in, rather than brand new, which seem to run about \$270 in many shops. Curious, I picked it up. In overall feel, fit and finish, it seemed to well exceed some similarly styled autos in that general price bracket.

The pistol is a subcompact 10+1 9mm that weighs a super-light 15 ounces empty and runs a double-action-only trigger to drop its spurless hammer. The grip is hand-filling and comfortable for its overall small size. The double-action pull ran about eight pounds across a fairly short travel and was remarkably smooth.

The combination of grip "feel" and trigger quality made the decision easy. I was definitely buying at that price, and with no haggling. I think the little gun is plain ugly, but well aimed at the first-time buyer. It has a pretty remarkable warranty backing it, so I was off to the races.

#### S&W MODEL 10

Many millions of Smith & Wesson Military & Police .38s have been turned out in the 100+ years they've been around. It is *the* quintessential police service revolver and probably has more cumulative service time than any other handgun in history.

Smith gave it the number 10 when it began numbering its models in the 1950s, but the design is functionally identical from 1899 to the present day. I've previously reviewed a police trade-in special (*POLICE TRADE-IN BONANZA: Used Service Weapons Find New Life*, November 2015 *S.W.A.T.*), but this beauty was a find from a tiny shop on the side of a rural highway.

The serial number puts it in the 1980s and it was probably fired very



ABOVE: SCCY CPX-1 shot better groups than many autos at twice its price.

BELOW: Venerable Model 10 with 20-yard target showing three hit groups from Winchester wadcutters and new Black Hills Extreme load with its distinctive cuts.



little if at all. The cylinder had the tells of being left sitting in some location, likely a drawer, that had allowed dampness to eat the bluing off where it rested, but it was otherwise pristine.

The trigger in both single- and double-action feels stock, but like all the parts, it went together in perfect harmony. \$300 even, and out the door I went. Finding a \$300 K-Frame can be somewhat regional and may take a little patient shopping, but in many areas it isn't hard.

### 3RD GENERATION S&W 909 9MM

Smith & Wesson had a virtual stranglehold on the law enforcement market from the 1950s onward, so when departments began to switch to autos in numbers, it was natural for many to choose the 3rd generation pistols. They still serve in a few places in limited numbers.

The value line was S&W's last-ditch effort to combat the polymer Mongols that overran so much of the market in the 1990s. The simple economics are that a polymer striker-fired pistol is inexpensive to make, and the Glock was beating S&W on price so badly that Smith had to counter with something. That begat the 909 (single stack), 910 (double stack with "ban" 10-round-only mag), and 915 (double stack 15 rounder).

These were no-frills 3rd gen guns that had slab sides rather than contours, flat finish, single-sided safety levers, and

substituted some polymer parts for machined ones. It is a rare day that you can't find one of these on the auction sites for under \$300 in serviceable condition.

I found the less-common 909 on auction from the Woodlawn Boys in Alabama, a specialist in bringing collectibles to market. This Smith was an odd fit for the high-end auction grouping at the time, and with modest wear it wasn't getting many bids. I'd been interested in trying out a single-stack Smith, so was thrilled when the pistol went to me for \$280.

Now it was time to compare the three bargain blasters.

### IMPRESSIONS

The SCCY got off to an inauspicious start. Every couple of rounds, the pistol would fail to extract the fired case and tie itself up in a pretty nasty double-feed. The gun snobs among S.W.A.T. readers are undoubtedly tut-tutting and confirming their high-end bias. However, a call to the customer service line quickly confirmed that the pistol was in a problematic serial number range, and SCCY had a replacement slide and barrel in my hands within two days.

**None of the handguns failed to deliver—in fact they did quite well.**

One test was number of hits to the head from the holster in three seconds at seven yards. S&W 909 consistently stacked six hits.







Four tests all use three-second time limit to frame performance in practical limits.



All test guns shot well out to 50 yards on Defense Targets steel, with even subcompact SCCY ringing three of four attempts.

They knew me only as a customer with an issue, not a writer at work, so I am confident this is the typical experience. The replacement slide and barrel ran without any issues across the rest of the shooting. Not only that, but the little lightweight also stacked up 25-yard groups with both Winchester's new 90-grain lead-free flatpoints and Ranger 147 JHPs that would do any pistol proud at 1.4 inches for five and 1.1 inches for four, respectively. The CPX points very well and recovers out of recoil well despite the muzzle flip that comes with the territory at such light gun weight.

The Model 10 was as well balanced, simple, and dependable as the classic is known for. This particular wheelgun proved to be especially accurate with numerous loads, overlapping wadcutters into just over an inch at 25 yards. I tried the new Black Hills 100-grain Xtreme fluted solids in the fixed-sight Smith and printed a two-inch group a few fingers' width low at distance with light recoil.

The surprise in initial handling was the 909. It felt remark-

ably good in a firing grasp and was relatively light at 27 ounces. The DA trigger was well broken in and buttery smooth, and the single-action broke crisply. The controls are well placed and the auto is thin at only .92 inch across its width; svelte in a Glock world. The 909 consistently shot acceptable 2.75 to 3.25 groups with all loads, but I haven't yet found a knothole combo.

#### TESTING, TESTING

I decided on the drills before ever firing a shot from the test guns. For comparisons to be meaningful, context is everything. I wanted to see what these pieces were capable of but without getting overly distracted with, as my good friend Pat Rogers used to say, "Inconsequential increments."

I wanted to take a situationally relevant time span, say the oft-quoted three seconds of the average confrontation, and get a sense of what these budget blasters would do inside of it. I chose four distinct tests, and the score would be

## TEST RESULTS

HANDGUN	AMMO	Hits to head from holster in 3 seconds/7 yds	Plates hit from ready in 3 seconds/10 yds	Hits to 8-inch circle from ready in 3 seconds/20 yds	Hits from four attempts at 10x20-inch steel in 3 seconds/50 yds	TOTAL
SCCY CPX-1	Winchester 90-gr. lead free	5	5	3	3	16
S&W Model 10	Black Hills 100-gr. Xtreme	5	5	3	4	17
S&W 909	Winchester 90-gr. lead free	6	6	3	4	19

the maximum possible hits (a shooter's MPH) in each test's three-second limit.

**TEST ONE:** Maximum number of hits to a standard IDPA head box from the holster in three seconds at seven yards.

**TEST TWO:** Maximum number of eight-inch steel plates hit from the ready in three seconds at ten yards.

**TEST THREE:** Maximum number of hits to an eight-inch circle from the ready in three seconds at 20 yards.

**TEST FOUR:** Number of hits out of four attempts on a 10x20 Defense Targets reduced steel silhouette at 50 yards, from the ready in three seconds.

The tests span close, mid, and distant shooting scenarios in the same compressed timeframe. The aggregate hit count across all four strings is a very good quick comparison of how well a particular handgun performs for a shooter overall.

Looking over the results in the table on page 71, you can see that none of the handguns failed to deliver—in fact they did quite well. The SCCY lagged slightly behind the others but out-shot my expectations with it being such a light sub-compact gun.

The Model 10 results were satisfying and consistent. Something about a good vintage K-Frame brings out solid shooting. The smooth wooden grips on this one are better than the stock Magnas found on most 10s, but maybe not as conducive to fast follow-up shots in the drills as a cheap second-hand pair of Pachmayrs might have been.



Holster options are very slim for both SCCY and 909. TG Holsters made high-quality custom IWB models to author's specs for each.

## FINDING THE UNICORN



Search long enough and even top-shelf autos like this HK occasionally turn up priced to move. This USP shot like a match gun with Tac XP loads and aced the tests.

This is a true story: There I was, hanging out at the local gun store. It was the end of summer, after vacations, back to school, and the sundry other things that put a drag in retail sales.

I was loitering as the guys were getting a transfer ready for me, and the owner handed me an HK USP. I hadn't handled a USP in years and wasn't particularly interested in this .40, either. That is until he named his price ... \$300.

I triple verified he was serious. He insisted he had come into it cheap and was more interested in cash in hand than watching it gather dust and be theoretically valuable. There is only one right move in that situation—the HK came with me.

This was certainly in the top three best deals I've ever scored and is not meant as an illustration of what to expect (don't) but more as an example of what can happen to the occasional fortunate treasure hunter. And this time I was the one scoring the deal you hear about and think, "No way."

The USP had burnt-out night sights and well-broken-in trigger pulls that dropped the hammer smoothly in both double- and single-action. The HK stacked up Winchester 165-grain USA flatpoints into 1.75 inches at 25 yards, a 155-grain XTP hand-load into 1.5, and Black Hills 140-grain Tac XPs into 1.25 inches.

The chunky German auto cycled deceptively flat and fast with the Black Hills load, feeling much more like a hot 9mm load than what you normally associate with .40 S&W. I was able to shoot the USP particularly well in the test course, tallying seven from the holster at seven yards, dropping all six plates easily and then scoring four hits at 20 yards. The long shots were gimmes with the HK. In fact, I was able to go five for five on an eight-inch plate at 70 yards with the ugly beast.

So search on ... mythical deals are out there!



Still, once about every third run on the plate rack, I could squeak all six plates in under three seconds, which I was thrilled with. The long shots were easy money with the smooth DA and even easier from single-action.

The 909 shot at a level similar to most stock service autos in my hands. What was interesting was the number of shooters in my area who saw or handled the sleek Smith 9 and immediately were taken by it. It is lively in the hand and so well balanced that one can be forgiven for overlooking its modest capacity at 9+1 rounds. The first shot comes very fast with the 909's smooth, short DA.

### ECONOMICS

There are clearly risks in going with a used handgun. Even in this case, one out of three was a certified lemon. The attractiveness of the SCCY, however, was partly its lifetime warranty of the gun. The Smiths' warranties are long gone, but both models are well-known commodities and I was comfortable with the condition of each speaking to probability of success.

Jumping even \$60 to \$70 from the \$300 range opens up a good number of new model 9mm and .40 compact carry models from several makers at everyday going prices, with warranties. It also brings the shooter into the bracket for most of the

police trade-in Glocks and M&P service autos. For a true beginning shooter on a budget, new is probably the better choice unless they have a buddy who can help sort "used and priced to move" from "you get what you pay for (... as in dog)."

Of course, the "Buy once, cry once" advice is worth repeating and is almost universally good. The most popular compact and service autos have extensive aftermarket support for holsters, sights, accessories, etc that random fading-from-market older guns or entry-price-point models don't.

I imagine that anyone who enters the market at the \$300 level either stays there as a gun owner who infrequently shoots or eventually moves upmarket. However, well-established shooters can often use an additional knock-around handgun for certain roles such as a truck or boat gun, where price is the key feature as long as performance baselines are met.

My experiment was a success from my point of view. Each of the guns fits the applications I had in mind for a less-expensive handgun. I even had TG Holsters, a high-quality custom holster outfit crewed by active-duty Marines, make up some custom one-off inside-the-waistband holsters for the 909 and SCCY.

These handguns turned out to be bargains, and I plan on using them—a lot. ☺

## SOURCES

### SCCY

(866) 729-7599  
[www.sccy.com](http://www.sccy.com)

### SMITH & WESSON

(800) 331-0852  
[www.smith-wesson.com](http://www.smith-wesson.com)

### BLACK HILLS AMMUNITION

(605) 348-5150  
[www.black-hills.com](http://www.black-hills.com)

### DEFENSE TARGETS

(910) 742-6022  
[www.defensetargets.com](http://www.defensetargets.com)

### GUERRILLA ARMAMENT

[www.guerrilla-armament.com](http://www.guerrilla-armament.com)

### TG HOLSTERS

[www.tgholsters.com](http://www.tgholsters.com)

### WINCHESTER AMMUNITION

(615) 258-3340  
[www.winchester.com](http://www.winchester.com)

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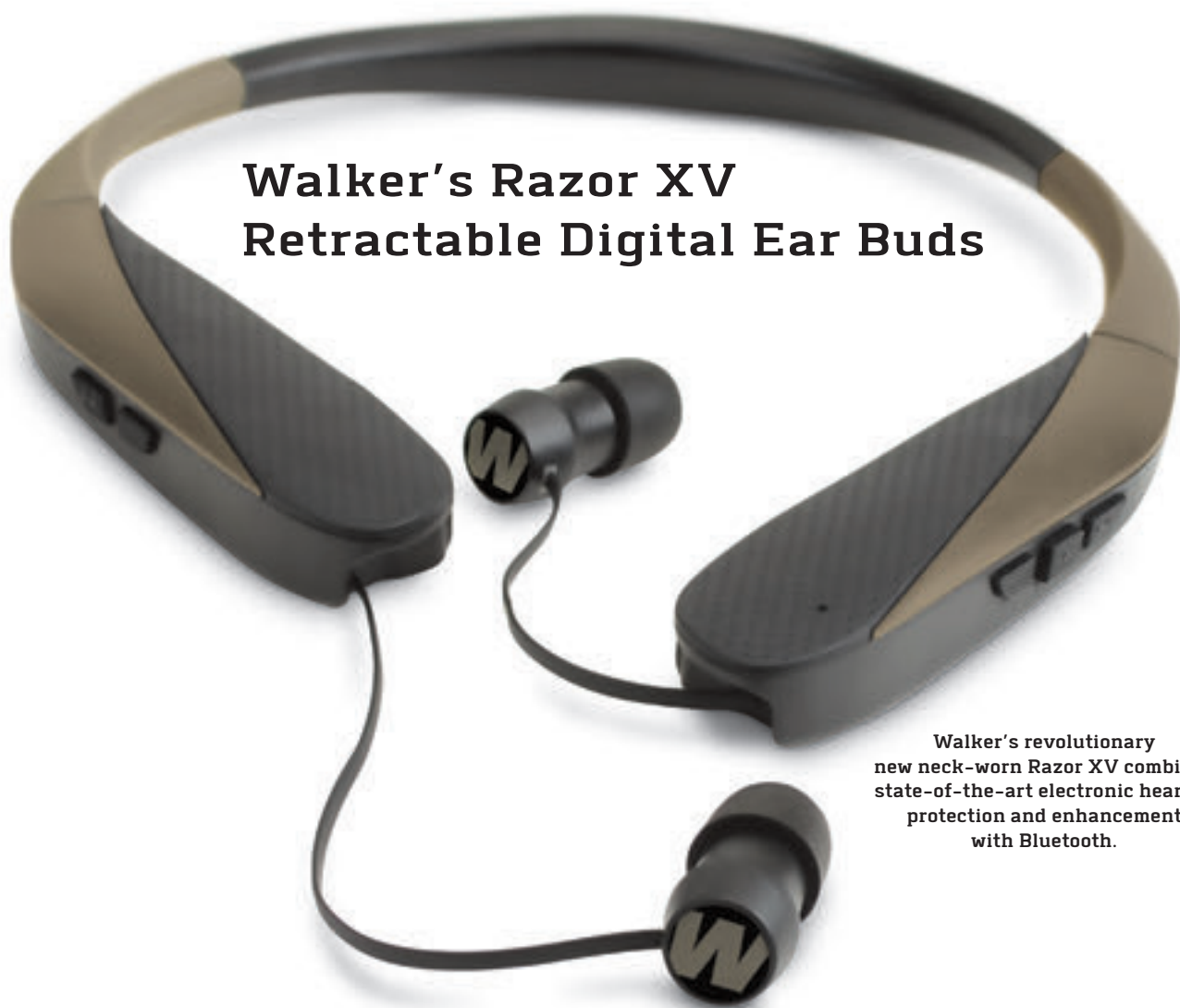
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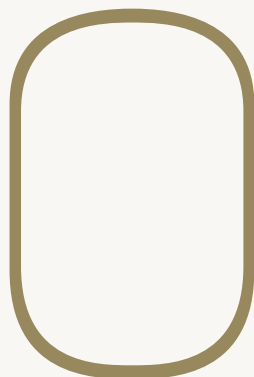
# HIGH-TECH EAR PRO

## Walker's Razor XV Retractable Digital Ear Buds



Walker's revolutionary new neck-worn Razor XV combines state-of-the-art electronic hearing protection and enhancement with Bluetooth.

By Eugene Nielsen



Over a quarter century ago, Walker's® revolutionized the hearing protection industry with the original Walker's Game Ear®. Now it has done so again with its new Razor™ X Series Digital Ear Bud headsets. Available in two models—the Razor X and Razor XV with Bluetooth®—the new headsets are game changers.

The patent-pending Razor X and Razor XV are a revolutionary new style of hearing protection incorporating a neck-worn design with retractable digital ear buds. The lightweight, flexible rubber neck band provides incredible

comfort for all-day wear and zero interference with you, your weapon, or headgear.

Not only do they protect your hearing, but they also enhance your natural hearing ability up to nine times. As with all Walker's products, they are weather resistant for outdoor use. I received the Razor XV for evaluation.

### RAZOR XV

The Razor XV features Bluetooth® synchronization with mobile devices. You can take a phone call or stream your favorite music, all while



protecting yourself from the harmful effects of gunfire.

The Razor XV features independent volume control between the Bluetooth feed and microphone, so you can quietly stream audio from your mobile devices and still hear voice commands and maintain audio situational awareness.

Neck-worn Bluetooth headsets have been on the market for a while, for example the popular LG TONE Active+ Bluetooth wireless headset. But Walker's Razor XV is the only neck-worn headset to combine Bluetooth and state-of-the-art electronic hearing protection.

When the Razor XV is turned on, it automatically searches for the last paired device and then connects. If the device is not found, it searches for a few minutes and if not paired, Bluetooth turns off to conserve battery power.

Designed with Sound Activated Compression (SAC) circuitry, the Razor X and XV feature a no-fail system that activates instantaneously (0.02-second reaction time) to protect your ears from harmful noises, providing an impressive 31dB of noise reduction when used with properly inserted ear tips.

The user can select from two compression modes: Outdoor Mode (shorter compression time) and Indoor Mode (longer compression time to compensate for range echo). The ear buds still provide passive protection when the device is in the "off" position.

The Hi Gain omni-directional ear-bud microphones and HD speakers on the Razor XV (and I assume the Razor X) provide clear sound enhancement. Audio quality is excellent. The volume control for the ear-bud mics lets the operator select from nine ambient sound levels: Sound Level 0/Mute to Sound Level 9/+14dB.

The retractable ear buds are equipped with flat, no-tangle cables. Simply pull them out to use and push a button to retract them back into the housing and out of the way. Three pairs of foam ear tips (S/M/L) are included to ensure optimal fit for maximum noise reduction and comfort. Extra ear tips may be ordered from Walker's.

Power is provided by an internal 250 mAh rechargeable lithium-ion battery that provides up to ten hours of operation. Charging is via an integrated Micro USB port. The port is protected by a rubber plug that is attached at one end to prevent loss. An AC wall adapter with USB port and a one-meter Micro USB cord are provided for convenient charging.

The unit is equipped with an auto shut-off (low power mode) after four to six hours. Pressing any button wakes up the unit and resets the timer.

### OPERATION

All controls on the Razor XV are simple, well thought out and out of the way. They are easily operated, even with gloves. Audio beeps guide the user in selecting the various settings.

In Bluetooth pairing mode, an LED status-indicator light flashes blue then red until the device is paired. Once paired, the blue LED flashes every few seconds. The LED remains in constant "on" when the battery is charging and turns off when the battery is fully charged.

Due to the flexible rubber neck band, the headset can be folded and stuffed into a pocket or pouch for convenient carry. A cloth storage case comes with the unit.

In the relatively limited time I have been using the Razor XV, the performance has been outstanding. It is now my go-to hearing protection.

Suggested retail price for the Walker's Razor XV with Bluetooth is \$159.95. Suggested retail price for the Razor X without Bluetooth is \$119.95. Given the minimal price difference, I recommend going with the Razor XV. Both come with a one-year limited warranty. ©



Razor XV comes nicely packaged and includes three pairs of ear tips (S/M/L), AC wall adapter with USB port, one-meter Micro USB cord for charging, storage case, and instruction sheet.



Razor XV is easily paired with Bluetooth-enabled mobile devices, such as author's Apple iPhone, shown here in Magpul Field Case [see page 84 for more on this outstanding piece of gear].

### SOURCES

**WALKER'S LLC**  
(877) 269-8490  
www.walkersgameear.com

**MAGPUL INDUSTRIES**  
(877) 462-4785  
www.magpul.com

# DIY SNIPER SYSTEM

## Precision Shooting for the Working Man

By Will Dabbs, M.D.

Photos by Sarah Dabbs



Combination of factory Remington 700 AAC-SD rifle with Archangel stock, Gemtech Tracker suppressor, and top-notch Lucid glass makes for a modestly priced precision rifle that requires only a little basic assembly. Completed rig performs great on the range.

Archangel AA700 buttstock includes integral bipod that snaps into place one-handed. Bipod sports fixed command height and positive operation.

**A**pparently all Army officers are supposed to play golf. Back when I wore the uniform, it was what all the cool kids did, so I bought myself a cheap set of used golf clubs from a disreputable establishment called Speedee Pawn that had been through a fire.

The truly committed golf worshippers with whom I played toted custom-built clubs that looked like space-station components and cost as much as my car. But even with



my fire-surplus Speedee Pawn specials, I held my own on the links. Methinks there might be a message there, perhaps something deep and timeless.

Have you priced a hand-built precision rifle lately? I am part owner of a small company that builds them, and I cannot yet afford one of my own. A tricked-out top-end minute-of-gnat's-butt precision rifle costs as much as a family vacation to Australia. But for those willing to sacrifice maybe a quarter inch downrange, markedly cheaper options exist.

Precision riflery is indeed a storied art, and those who have mastered the craft are rightfully revered as artisans. The holy melding of flesh and steel that conspires to drop a high-velocity rifle bullet precisely on target as much as a kilometer or more distant requires superlative equipment, world-class dedication, and untold hours of practice.

Such stuff as this sells quite a lot of gun-related swag and instills well-founded fear in the enemies of our great republic. American military snipers are out there plying their trade downrange as I sit comfortably in my living room typing these words. May they reap a bountiful harvest.

sion rifle look like if we built it at home from Information Age COTS (Commercial Off-the-Shelf) components? The answer to that question is, remarkably effective.

It's a rare situation in which a private citizen would take a justifiable shot at a hostile two-legged target at more than about 20 meters. We call them defensive firearms because we use them for defensive purposes. It would be tough to convince a judge that you were feeling threatened by a Bad Guy five football fields away.

But not unlike base jumping, *Dancing With the Stars*, the Democratic Party or Twitter, sometimes there need not be any real-world practicality to our pursuits. Frequently folks do things just because they can. As a result, the capacity to print tiny clusters of holes with a precision rifle at simply ludicrous distances can become a splendid challenge for its own sake.

## FOUNDATIONS

The Remington 700 is the world's most successful mass-produced precision rifle. More Remington 700 rifles have been



At only 11 ounces, Gemtech Tracker suppressor is remarkably lightweight yet manages guns up to .300 Win Mag. When running home-rolled subsonic ammo, this rig is just stupid quiet.



## MISSION ESSENTIAL NEEDS STATEMENT

To maximize downrange effectiveness with a precision rifle does indeed require a boatload of cash. Tuned triggers, bedded stocks, hand-fitted barrels, and printed actions don't just happen. They all reflect pricey raw materials, expensive machine time, and attention from folks who master their craft meticulously over decades.

But advances in CNC milling technology and materials science have conspired to render some surprisingly fine performance out of equipment that might otherwise be considered mass-produced. What might a proper suppressed preci-

manufactured than any other commercial bolt-action rifle in history. Originally marketed by Remington in 1962, the classic Model 700 action is available from the factory in 30 different calibers.

The same basic Model 700 serves as the M24 in U.S. Army service and the M40 with the Marines. Short, standard, and long action versions accommodate various cartridge sizes, and the gun is available with a wide variety of finish, magazine, and barrel length options. The sheer tonnage of venison this classic sporting rifle has put on American tables in the last half-century boggles the mind.

My Remington 700 AAC-SD Tactical rifle came with a 5/8x24 threaded 20-inch 1:10 twist heavy barrel and a robust dull tactical finish. The standard X-Mark Pro externally adjustable trigger is set to a nice and crisp 3.5 pounds out of the box. It can be tweaked down to 2.5 pounds if desired. The Remington 700 AAC-SD is affordable, with a suggested retail price starting at \$842, but street prices are often several hundred dollars less.

Lots of folks make aftermarket stocks for rifles, but Archangel has established a reputation for producing quality stock systems with innovative features at reasonable prices. Their AA700 fits the Remington short-action receiver and is available in both .223 and .308 versions. The AA700 sports a removable proprietary ten-round box magazine and comes with either aluminum pillar bedding or aluminum bed block bedding systems. The stock alone weighs 5.6 pounds and is impervious to weather or moisture. The AA700 is designed to free float any commercial barrel profile.

The Archangel AA700 stock is made from a carbon-fiber filled polymer and is easy to install. The gooseneck-style pistol grip is fully ambidextrous and includes a prominent bilateral palm swell. Both the cheek riser and buttplate are click adjustable for cheek weld and length of pull without tools. A built-in secure grip storage compartment holds a couple of last-ditch rounds or some compact range snacks. The stock includes an integral flush-fit bipod that deploys one-handed and sports a fixed command height. The AA700 stock is available in Black, Desert Tan and Olive Drab.

### TAMING THE BEAST

In 1934, when the government first got into the business of regulating firearms, the \$200 transfer tax on a sound suppressor was the modern-day equivalent of about \$3,500. To put that in perspective, at that time, a brand-new V8 Ford automobile cost \$535 right off the dealer's lot.

These heady sums effectively banned the purchase of sound suppressors and machine guns by the American public. As sneaky and un-American as such legislative antics might seem, you've got to credit the law's authors for their ingenuity in maliciously circumventing the Constitution's original intent. But nowadays, inflation has turned that same \$200 transfer tax into something markedly more manageable.

Sound suppressors are legal to own in all but eight U.S. states. Oddly, these same states invariably vote Democrat in national elections and typically suffer disproportionately high crime rates. Forty of the U.S. states allow sound suppressors for hunting. This practice is imminently sensible.

I recall sitting on a frigid deer stand with my Dad on a



**Getting the rig into action required nothing more than some simple assembly, and the resulting heavy-barreled sniper rifle shoots markedly better than I do.**

**LEFT:** Fully ambidextrous pistol grip on Archangel AA700 stock features palm swells appropriate for any shooter regardless of their handedness.

**BELOW:** AA700 buttstock is a drop-in fit for the Remington 700 rifle and easily adjustable for comb height and length of pull via large thumbwheels.







Caldwell Lead Sled DFT revolutionized author's precision shooting. With meticulous controls and robust construction, Lead Sled DFT excises most of the human error from the equation.

brisk winter morning in the Mississippi Delta back when I was about six years old. A modest eight-point had the poor judgment to wander nearby, and my Dad put him on the ground with a single shot from his bolt-action 7mm Magnum rifle. That round going off right next to my head had me answering the phone for a week when it wasn't ringing. As a result of that experience, I have little interest in shooting that rifle even today, four and a half decades later.

Our politicians would have us believe that sound suppressors are the sole purview of terrorists and hitmen. This flawed presumption emerges directly from the rarefied bowels of Hollywood.

Between 1995 and 2005, there were 15 documented cases of sound suppressors being used in the commission of crimes nationwide. You are 275 times more likely to be killed by a stepladder and 33 times more likely to be struck by lightning. Sound suppressors should be sold over the counter at American bait shops alongside Slim Jims and night crawlers.

One of the biggest names in sound suppressors in America is Gemtech. Their new Tracker sound suppressor is purpose designed for use on precision rifles. Weighing in at only 11 ounces, the Tracker is rated for .300 Win Mag rifles and does a superb job of suppressing a weapon's muzzle noise. As this can is made from 7075 aluminum and designed for bolt-action rifles, it should be allowed to cool to ambient temperature every 10 rounds.

If you want a can to hang onto the end of your fully automatic belt-fed machine gun, the Tracker is not for you, but Gemtech makes other cans that do that just fine.

## ACCESSORIZING

The glass came from Lucid, which makes remarkably capable, top-quality riflescopes at less than half what big-name optics of comparable capability cost. Their 4-16X44 scope is rated up to .338 Lapua and includes an L5 etched glass reticle nestled within a 30mm aluminum matte black anodized tube.

This reticle allows the shooter to estimate bullet drop for subsonic and supersonic loads and adjust on the fly without a lot of ancillary clicking. There are easily accessed 1/8 MOA adjustments and superb optical quality, all at a suggested retail price of \$419. You can spend more on a nice



AA700 comes with proprietary detachable 10-round box magazine.

# ROLLING YOUR OWN

## Loading Subsonic Ammo Without Hocking a Kidney

A proper sound suppressor can do a superb job of masking gun noise, but if that bullet is travelling faster than 1,126 feet-per-second (fps) at 68 degrees F in dry air, it will produce a vigorous sonic crack no matter what whiz-bang super stuff you hang off your muzzle.

The answer to this quandary is subsonic ammo. Commercial subsonic ammo is available but expensive. The key to affordable subsonic ammo is Hodgdon Trail Boss powder.

My friend and boss Denny Hansen could literally write a textbook on the subject. This guy even makes his own bullet jackets out of spent .22 LR cases. In contrast, I'm a Luddite and living proof that you need not be Yoda the reloading Jedi to produce an effective, inexpensive product.

Heavy bullets make for slower velocities, but be forewarned. I loaded some really heavy 77-grain subsonic loads that came out of my suppressed .223 bolt gun sideways and sounding like a hornet on crack.

Be attentive to whether or not your barrel twist will adequately stabilize these heavy projectiles. I typically get better service loading standard-weight bullets and titrating down powder charges until the velocity is subsonic.

Hodgdon Trail Boss powder was designed specifically for low-pressure cowboy action loads. The individual powder



Key to loading your own inexpensive subsonic rounds at home is Hodgdon Trail Boss powder. Individual powder grains are shaped like little doughnuts so take up a lot of volume, making for uniform ignition and better safety than short-loaded rounds that use more conventional propellants.

particles look like little doughnuts with a hole in the center, so they take up a lot of space for a given charge weight.

As a result, this particular powder works perfectly for reduced-charge subsonic rifle loads. Short-charged loads with conventional powders can result in inconsistent ignition, poor performance and, in extreme cases, catastrophic results. With Trail Boss, it is also all but impossible to overcharge your cases.

I started out with ten grains of Trail Boss behind a Speer Match King 168-grain HPBT (Hollow Point Boat Tail) bullet. This produced about 1,075 fps and a modest

sonic crack. The intensity of the perceived noise is a function of exposure. Shoot a supersonic round through a suppressed weapon into the ground ahead of your firing point, and it makes very little noise. Launch that same round out across the countryside, and it makes a great deal of racket.

For transonic loads, the bullet slows to subsonic speeds quickly, and the crack is less pronounced, as exposure to the supersonic phase is brief. I tweaked my powder charges down until I consistently got about 1,015 fps. This took 9.0 grains of Trail Boss. The resulting load is thoroughly ear safe with a suppressor and just stupid quiet. No kidding: These loads through this suppressed rifle are all but noiseless, and they don't cost anything more than the basic components. They also retain enough downrange horsepower for practical use.

After a hard day at the clinic stamping out disease, nothing is more cathartic than settling in behind my trusty reloading machine and churning out a few rounds. The activity is soothing on a visceral level and doesn't require a great deal of mental capital. It'll save your hearing, make you a more neighborly shooter, and cure what ails you after a long day at work.

### » DOWNRANGE PERFORMANCE

#### Remington 700 AAC-SD Heavy Barrel 7.62x51mm

LOAD	VELOCITY [fps]	GROUP SIZE [inches]
Federal 175-gr. HPBT MatchKing	2,574	1.1
Gorilla 175-gr. HPBT MatchKing	2,574	0.65
Hunting Shack 175-gr. HPBT	2,422	0.5
Winchester 168-gr. HPBT MatchKing	2,523	0.5
Reload 168-gr. HPBT MatchKing	1,015	1.35

Three-round groups fired from a Caldwell Lead Sled at 100 meters. Velocities are average of three rounds fired across a Caldwell Precision Chronograph located 15 feet from the muzzle.





Lucid riflescopes cost about half what the big names might and render superlative quality and features.

riflescope, but you could also put your money in a tidy pile and set fire to it.

I'm man enough to admit I'm not the world's greatest shot with a precision rifle. With half a century under my belt, my eyesight and general fortitude are not what they were back when I flew helicopters for Uncle Sam. But as with many things, technology has a solution when physiology lets us down.

The Lead Sled DFT (Dual Frame Technology) from Caldwell Shooting Supplies puts the precision back into precision shooting even when we don't do our part. The Lead Sled DFT rests securely on any firm surface and accepts lead shot or weight plates for stability.

The system fits most any rifle or shotgun chassis and allows precise adjustments via fingertip wheels. The dual-frame design accommodates Modern Sporting Rifles with long magazines as well. I am privileged to shoot for fun and money, and the Lead Sled DFT legitimately revolutionized my precision shooting game. I can't believe I waited so long to get one.

The rifle nestles securely within the padded cradles on the Lead Sled. The shooter then adjusts the lay of the crosshairs using the Sled's precise adjustment wheels. Take care to squeeze the trigger smoothly, and you can really find out what sort of accu-

racy a rifle is mechanically capable of producing. Once I got mine set up, I tried out several different guns from my collection just to assess what they could do when human error is taken out of the equation. The exercise was great fun.

#### PRACTICAL MAGIC

With some well-crafted ammo and a little patience, I can indeed print those stupid tiny groups with my homebuilt precision rifle. Getting the rig into action required nothing more than some simple assembly, and the resulting heavy-barreled sniper rifle shoots markedly better than I do. The rig is fairly heavy but makes a superbly stable shooting platform and looks thoroughly awesome.

For hunting applications, this rifle in .308 is proof against any reasonable North American game animal. With the sound suppressor in place, my COTS precision rifle is a superb deer gun. Particularly when run from within a proper shoot house with a firm rest, this rifle allows me to take shots during deer season out significantly farther than I might with a more conventional thin-barreled weapon. While not exactly chicken feed, the package is also not nearly as expensive as a hand-built custom gun.

You can easily spend as much on a

hand-built precision rifle as you would for a nice used car. Squeezing that last quarter inch out of your groups down-range does indeed demand a premium.

But for those of us who just like turning ammo into noise and have not yet made precision shooting into some kind of bizarre religious exercise, COTS equipment is plenty serviceable.

You might be surprised at what kind of performance you can wring out of some basic Information Age precision shooting gear. ©

## SOURCES

### REMINGTON ARMS COMPANY, INC.

(800) 243-9700  
www.remington.com

### ARCHANGEL MANUFACTURING

(800) 438-2547  
www.archangelmanufacturing.com

### BATTENFELD TECHNOLOGIES INC.

(Caldwell Shooting Supplies)  
(877) 509-9160  
www.btibrands.com

### GEMTECH

(208) 939-7222  
www.gemtech.com

### HORNADY MFG. CO.

(800) 338-3220  
www.hornady.com

### LUCID

(307) 840-2160  
www.mylucidgear.com

# SEE THE **HEAT**

## Thermal Imaging on Your Smartphone

By Eugene Nielsen



**ABOVE:** FLIR ONE is excellent personal safety and security tool that lets you see at night, detect bad guys in dark places without giving away your position, and see through light fog and smoke.

Photos: FLIR Systems

**RIGHT:** With FLIR ONE, you can easily spot a recently driven vehicle by its residual heat.



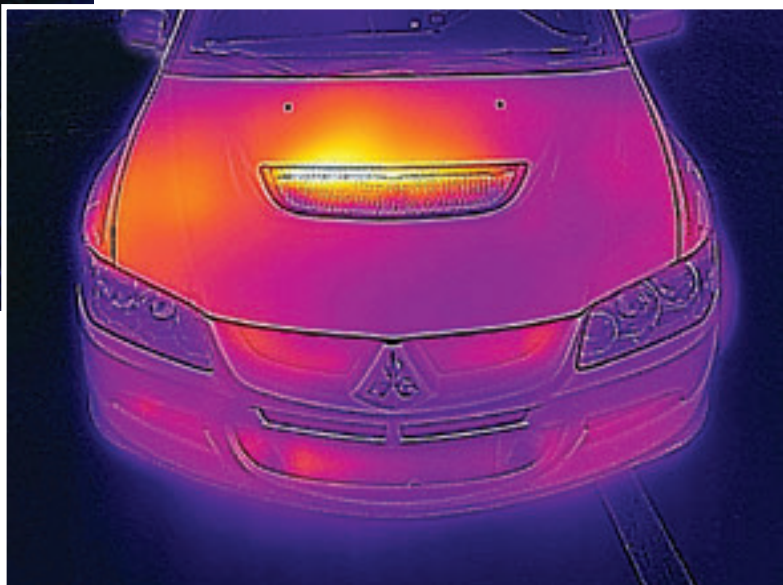
Thermal imaging will change the way you see the world. Although cost was once a limiting factor, thermal imagers have never been more affordable. They have also never been more practical. Today's thermal imagers are smaller, lighter, and provide greater performance than ever before.

With the new FLIR ONE from FLIR Systems, the world leader in thermal imaging technology, thermal imaging is now as close as your smartphone. And with an MSRP of \$249.99, it won't break the bank.

### HOW THERMAL IMAGING WORKS

All natural or man-made objects that aren't at absolute zero temperature emit electromagnetic radiation of many different wavelengths. The hotter an object becomes, the more infrared (IR) radiation is emitted as a result of the thermal agitation of its atoms or molecules.

The spectral distribution or wavelength depends on the nature of the body (i.e., its relative effectiveness as a radiator, or "emissivity") and its temperature. Darker colors and duller surfaces usually have a higher emissivity and radiate







FLIR ONE iOS plugs into Lightning port. Android model plugs into micro-USB port.



Port extender is required to use FLIR ONE with protective phone cases.

more effectively. Lighter colors and shinier surfaces have a lower emissivity and radiate less effectively.

The human eye can only detect electromagnetic radiation within a narrow band of wavelengths, known as the visible spectrum. The IR region of the electromagnetic spectrum lies outside the visible spectrum. It's typically divided into three regions based on wavelength: near (or shortwave) IR, mid (or midwave) IR, and far (or longwave) IR.

Modern-day thermal imaging devices operate in either the midwave or long-wave IR region. The FLIR ONE operates in the longwave IR region.

By sensing the IR energy that's radiated by objects, thermal imagers generate a real-time image that provides a thermal signature of a scene. By measuring very small relative temperature differences, invisible heat patterns are converted by the thermal imager into clear, visible images that the human eye can see.

Since a thermal imaging system senses heat and not light, it can be used in full daylight and at night. Because they sense heat, thermal imagers have a much greater range of applications than image intensification (I<sup>2</sup>) devices.

I<sup>2</sup> devices require a certain level of visual contrast to distinguish objects in a scene, even with adequate light. Objects of similar colors may blend together or become indistinguishable when viewed by an I<sup>2</sup> device. Since thermal imaging detects heat, it will detect targets in many conditions where a night-vision device may miss them.

Thermal imagers don't require visual contrast to discern objects. Although fog and other forms of precipitation and high humidity do degrade thermal images (by absorbing IR before it reaches the sensor), thermal imagers can see through dust, clouds, smoke, haze, light fog, light rain, and most camouflage.

Personnel, equipment and other objects can be separated from cluttered backgrounds and foliage. Thermal imagers present information about the surroundings that would not be available with any degree of light amplification.

Hollywood aside, thermal imagers cannot see "through" walls, doors, glass, or clothing, or detect buried objects.

**Live thermal images of the world around you are displayed on your phone or tablet screen. It can capture still images, videos, panorama images, and time-lapse videos.**



New FLIR ONE is ultra-compact thermal imaging camera attachment that brings thermal imaging to iOS and Android devices. It features FLIR's patented Multi-Spectral Imaging (MSX) technology.

Thermal imaging has numerous everyday applications for law enforcement, search and rescue, personal safety, security, outdoor activities, energy inefficiencies, and environmental monitoring. The Law Enforcement Thermographers' Association (LETA) currently recognizes 12 law enforcement applications for thermography. (See page 87.)

#### FLIR ONE iOS & ANDROID

A thermal camera accessory for smartphones makes a lot of sense. Hundreds of millions of smartphones are in use worldwide. Practically everyone in the industrialized countries has one.

The FLIR ONE Thermal Imaging Camera Attachment is available in two models. The FLIR ONE iOS® connects into the Lightning port of an Apple® iPhone® or iPad®. The FLIR ONE Android® connects into the micro-USB port of an Android device. FLIR Systems provided me with a FLIR ONE iOS.

The new FLIR ONE is robust, well-designed, compact and fits in a shirt pocket. It measures only 2.8x1x0.7 inches. It weighs 2.75 ounces, less than a third of the weight of the first-generation FLIR ONE. The only control is a small on-off button on the side of the unit with its own status LED.

The FLIR ONE is powered by a built-in rechargeable 350 mAh Li-ion battery, so it doesn't consume any juice from your phone or tablet. The battery provides more than 45 minutes of continuous operation on a single charge. The FLIR ONE automatically shifts to a low-power mode when it's inactive to conserve the battery.

FLIR will replace the entire device if necessary within its warranty period. The FLIR warranty length and support are

similar to other mobile phone accessories and consumer products with built-in batteries.

It takes less than an hour to fully charge the FLIR ONE. The battery charges via the Lightning port on the iOS and the micro-USB port on the Android. A charging cable is included.

Live thermal images of the world around you are displayed on your phone or tablet screen. It can capture still images, videos, panorama images, and time-lapse videos.

The FLIR ONE is equipped with two side-by-side cameras: a VGA visible camera and the revolutionary FLIR Lepton® longwave infrared (LWIR) micro thermal imaging camera. The powerful Lepton thermal camera in the second-generation FLIR ONE has four times the resolution of the first-generation FLIR ONE.

The FLIR Lepton is the world's smallest thermal imaging camera. Prior to the Lepton, thermal imaging cores were too large and expensive for mobile integration. The patented Lepton is a micro thermal camera core and detector all in one. It's ten times less expensive than traditional thermal imagers and has greater thermal resolution and sensitivity than common low-cost thermal sensors.

The second-gen FLIR ONE features automatic tuning, eliminating the need to periodically reset the thermal sensor.

The operational temperature range of the first-gen FLIR ONE is 32°F to 95°F, which may be a limiting factor in many environments. The scene temperature range in the new FLIR ONE has been enhanced to -4°F to 248°F. It has the ability to detect temperature differences as small as 0.18°. The second-gen FLIR ONE also features automatic tuning, elimi-

» *Continued on page 88*

## » SPECIFICATIONS

### FLIR ONE iOS & ANDROID

SCENE TEMPERATURE RANGE	-4°F to 248°F
OPERATING TEMPERATURE	32°F to 95°F
WEIGHT	2.75 ounces
DIMENSIONS (L×W×H)	2.8×1×0.7 inches
BATTERY CAPACITY	<b>350 mAh Li-ion battery</b> One charge provides more than 45 minutes of continuous operation. FLIR ONE neither consumes power from the connected device battery nor charges it.
VISIBLE CAMERA	VGA (used for FLIR MSX blending)
SENSITIVITY	Can detect temperature differences as small as 0.18° F
CHARGING METHOD	Micro-USB paired with 1A wall charger (charges FLIR ONE only, not device)
CERTIFICATIONS AND STANDARDS	FCC, CE, RoHS, CAN ICES-3 (B)/NMB-3(B), UL
DEVICE COMPATIBILITY	Apple products containing Lightning connector. Android products containing micro-USB.



Each FLIR ONE comes boxed with a thermal camera charging cable, hard rubber protective case, and lanyard.



# LAW ENFORCEMENT APPLICATIONS FOR THERMAL IMAGING

## Fugitive Searches and Search & Rescue

Thermal imagers can be invaluable tools in fugitive searches and search & rescue. People and animals are excellent radiators of thermal energy. Thermal imagers can be used to quickly search large areas in darkness or daylight. Thermal imaging is excellent for finding people hidden in foliage. Searches can be conducted without blind sweeps involving numerous officers or without giving away the searcher's position. Thermal imaging can detect warm objects hidden in debris, such as recently tossed evidence, blood trails, and recent foot prints.

## Vehicle Pursuits

Vehicles radiate considerable heat during and after use, from the engine, tires, brakes, and exhaust. Thermal imaging lets officers easily track a vehicle from the air or another vehicle. A recently driven vehicle can be detected from its residual heat.

## Flight Safety

Aircraft-mounted thermal imagers are effective tools to enhance flight safety during nighttime operation or through obscurants such as smoke from wildfires. Hazards such as power lines and other obstacles can easily be detected.

## Marine and Ground Surveillance

Thermal imagers let officers navigate under conditions of total darkness and conduct surveillance undetected.

## Perimeter Surveillance

With thermal imagers, officers can surveil more effectively and secure perimeters with less manpower.



Good protective case is a must for your smartphone.  
Author considers Magpul Field Case ideal protective phone case for EDC.

## Structure Profiles

One of the earliest applications in which thermal imagers proved to be especially helpful was in the detection of indoor marijuana-growing operations, because they require the use of high-intensity lamps. These lamps generate heat, which must be exhausted from the building in order to maintain acceptable growing conditions.

In June 2001, the U.S. Supreme Court found that the use of a thermal imager on a residence was a "search" under the Fourth Amendment. The Court held that police officers must have a search warrant before taking thermal images of a residence. (*Kyllo vs United States*)

## Disturbed Surface Scenarios

Whenever a surface is altered or disturbed, its IR characteristics are also altered, although it may not be noticeable to the naked eye. For example, turned earth radiates heat differently than compacted earth. Thermal imagers can detect buried items due to the change in radiance of the soil.

## Environmental Law Enforcement

Thermal imagers can be employed to track pollutants to their source. Pollutants (such as chemicals, oil, and waste matter) radiate or emit heat differently than the soil or water surrounding them. Airborne emissions from illegal nighttime burning operations can be monitored. Dumpsites can be covertly surveilled under conditions of total darkness using thermal imagers.

## Officer Safety

Thermal imagers can be a valuable officer safety tool during ground operations, especially at night. They can be used to covertly locate threats such as hidden suspects, guard dogs, obstacles, and trip wires, and can be employed through visible obscurants like dense smoke or dust.

## Hidden Compartments

Thermal imaging is useful for detecting hidden compartments in walls or floors, or in vehicles used for transporting drugs, contraband, or people. An adjoining wall or bulkhead causes a change in the thermal characteristics of a surface, and a thermal imager can detect it.

## Accident Investigation/Skid Marks

Traffic accident investigators can use thermal imaging. Modern vehicles with anti-lock braking systems make it difficult to collect measurements of skid marks on scene, but the thermal signatures resulting from friction between the tire and pavement can linger up to 30 minutes or longer and can be visualized with thermal imaging.

Accident reconstructions at well-traveled intersections can also be made easier through the use of thermal imagers. The numerous skid marks, oil stains, and grease marks can make it difficult to tell which marks should be attributed to the accident. A thermal imager can point to the warmest marks, likely indicating those that were left most recently.

## SEE THE HEAT

**+** Continued from page 86

nating the need to periodically reset the thermal sensor.

A really cool feature of the FLIR ONE is what FLIR refers to as Multi-Spectral Imaging (MSX™) technology. MSX is a patented proprietary technology that embosses details from visible images onto thermal images. MSX adds visible edge detail onto thermal images without eliminating any thermal information, greatly enhancing perceived resolution.

The FLIR ONE app, available for free download from the Apple App Store and Google Play, features a simple and intuitive graphical user interface (GUI) with numerous features that make it easy to collect and share thermal images. The app can load captured images directly to the camera roll and users can easily share them on social media.

Don't expect military-grade performance from a consumer-grade thermal imager. That being said, the second-generation FLIR ONE greatly exceeded my expectations.

FLIR gives a range of about 100 feet for you to see the heat signature of a person with the FLIR ONE. I was able to detect the heat signature of a person out to about 100 yards under optimal conditions, but most of the definition was lost at about 30 feet without MSX.

The FLIR ONE is sensitive enough to detect residual heat from a recently handled object. If you place your hand on a cool surface for a few seconds, your handprint will be visible for up to a minute afterward.

The FLIR ONE shoots 640x480 images, and thus any taken with the device will not be high definition (HD). HD thermal imaging currently costs thousands of dollars. As an example, the new FLIR LS-Series (LS-X and LS-XR) thermal imaging monocular, which are designed for law enforcement, will run you just under \$6,000.

### CHARGING AND PROTECTIVE CASE

If you have a protective case on your phone, you need to either remove the phone from the case or use a port extender to connect the FLIR ONE. This is due to the thickness of the case.

If you have an Android device, FLIR will send out a micro-USB extender for free if you submit a request via FLIR.com. If you have an iOS device, as I

do, you'll have to purchase a Lightning extender from third-party sources at this time.

My iPhone resides in a Magpul® Field Case. If you're looking for an outstanding case for basic protection of your phone in the field, check out the Field Case. I haven't found a better case for EDC.

As with everything Magpul makes, the Field Case features an exceptionally well-thought-out design and top-notch construction. It's made of a semi-rigid rubber for protection from bumps and abrasion. It has a sleek minimalist design that slides easily into a pocket, yet has an unprecedented grip enhanced by PMAG®-style ribs. It's made in the USA and has an MSRP of only \$16.95.

Although the Field Case features a snap-on design that allows easy installation and removal, I don't want to give up the protection it provides in the field. So for me, a port extender is the obvious choice for use with the FLIR ONE.

### SUMMING UP

The new FLIR ONE clearly dominates the competition in its price range in terms of performance. While it may not meet everyone's needs, it offers some innovative features that put it in a class of its own. And having a thermal imager small enough to carry in a shirt pocket opens up a world of possibilities.

The FLIR ONE has received a number of awards, including the prestigious and highly competitive Consumer Technology Association 2016 CES Innovation Award in the Wireless Handset Accessories category.

Each FLIR ONE comes boxed with a thermal camera charging cable, hard rubber protective case, and lanyard. It's warranted against defects in materials and workmanship for one year, or 18 months with registration. ©

## SOURCES

### FLIR SYSTEMS, INC.

(844) 283-5471  
[www.flir.com](http://www.flir.com)

### APPLE, INC.

(800) 275-2273  
[www.apple.com](http://www.apple.com)

### LAW ENFORCEMENT THERMOGRAPHERS' ASSOCIATION

(405) 330-6988  
<http://leta.org>

### MAGPUL INDUSTRIES

(877) 4-MAGPUL (462-4785)  
[www.magpul.com](http://www.magpul.com)

## A FEW GOOD MARKSMEN

**+** Continued from page 69

versus an estimated hold over is obvious. Also, the Mil-R reticle is a great tool for estimating range to a target. A favorite reactive target has always been the dastardly 4½-inch diameter clay pigeon. A 100-yard zero easily translated into holding the correct hash mark below the main horizontal wire directly on target, ensuring hits at 300 and 500 yards.

### CONCLUSIONS

The .338 Lapua is clearly superior to both the .308 Win and .300 Win Mag for long-range personnel interdiction because of better ballistics and down-range power. In the same vein, the semiautomatic Ulfberrht offers other advantages to the marksman who is using a bolt-action rifle.

That a powerful, accurate rifle like the Ulfberrht is capable of fast follow-up shots from its ten-round magazine is invaluable. Yes, first-round hits are paramount, but do not underestimate the importance of fast follow-up shots after observing initial impact or if more targets are available.

A trained marksman will definitely be able to put to good use the ballistic advantages offered by the .338 Lapua cartridge. The Alexander Arms Ulfberrht, with its precision long-range semiautomatic firepower, makes it that much easier. ©

## SOURCES

### ALEXANDER ARMS

(540) 639-8356  
[www.alexanderarms.com](http://www.alexanderarms.com)

### BLACK HILLS AMMUNITION

(605) 348-5150  
[www.black-hills.com](http://www.black-hills.com)

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for the "what ifs?"**



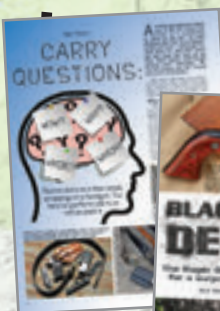
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For on the move reliability, old favorites and new features can add comfort in dark times. Make sure you have the tools you need.



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If you look like a sheep or tourist, you will be eaten. Keeping a low profile and your eyes open will help. Discover more travel safety tips inside the SURVIVE Special Edition.



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# Buck Knives Thug

I like to carry a big, stout knife when in the woods. I once had to chip through ice for water, and a pocket-knife just won't do it. I like a knife that I can chop, pry, dig and hammer with, but that will still hold an edge. The Buck Knives Thug meets all of those demands—in spades. I also carry a folder for smaller chores.

Buck Knives should be familiar to all S.W.A.T. readers. An American, family-owned business since 1902, Buck became famous for the Buck 110 folding knife, which almost everyone carried in the 1970s. Over the

years, Buck created a series of excellent knives, from folders to fighters to bush knives.

Ron Hood (1944-2011), a Vietnam vet who made films and wrote books on wilderness survival, designed a series of survival knives in collaboration with Buck. The last in the Hood series, the Buck Thug knife, was unveiled at the 2016 SHOT Show.

The Thug is 13 inches overall, with a seven-inch blade, and it weighs 11.6 ounces. The blade is made of high-carbon 5160 spring steel, so it takes an edge very well, and is heat treated to

Rc 57-59, so it holds the edge. The full-tang handle is stout, nearly a quarter-inch thick, so it won't break.

The removable handle stocks are Micarta, and the Shock Mitigation System really works. I pounded on the spine with a stick when I was splitting kindling and it nearly eliminated the felt impact at the handle.

The Thug comes in a nylon sheath with a pouch for a stone, small folder, or multi-tool. The knife is made in the U.S.A. and retails for \$200.00.

A bush knife needs to do a number of things: clear brush for a shooting

Buck Thug comes in nylon sheath with a stone.







Thug cut alder branches with one or two strokes ...



... then shaved hair and cut paper easily.

**A bush knife needs to do a number of things: clear brush for a shooting lane, cut poles for a shelter, split kindling for a fire, maybe dig a small hole. And it needs to do these things and leave a decent blade edge for cutting.**

lane, cut poles for a shelter, split kindling for a fire, maybe dig a small hole. And it needs to do these things and leave a decent blade edge for cutting.

I spent a couple of days in Man Camp in the forests of northern Idaho. Man Camp is a gathering of like-minded souls: veterans, shootists, martialists, and preppers who train, exchange information, and establish networks for future cooperation. This gathering was a good opportunity to test the Thug.

Shelter is a primary need in a crisis. I carry a Proforce Equipment Stasha shelter with me all the time. This lightweight shelter can be set up in a variety of ways. I prefer to use a ridgepole set between two trees.

One way to obtain said ridgepole is to cut a one- to two-inch diameter stick, eight to ten feet long, from local vegetation. Any alder or willow sapling will work, and the idea is to cut it easily. I selected a proper alder and was able to cut the two-inch pole with two strokes of the knife, then cut off all the twigs and branches. I cut a couple of stakes to hold guy lines, and notched them with my small folder.

When campfire time came, I dug a small trench with the flat of the Thug. I gathered small twigs and branches, then split some larger wood as de-

scribed above, and soon had a decent small fire going.

Two easy tests determine if a knife holds an edge. Rub a little spit on your forearm and see if the blade will shave



A quality folder makes small chores easier.

hair. Next, hold a piece of paper and see if the blade will cut smoothly without tearing the paper. The Thug passed both tests with flying colors.

Every bush knife is a trade-off—a balance among size, weight, and utility. If the knife is too big and heavy, you won't carry it. If it's too light and small to do the chores outlined above, its usefulness is questionable. The super-duper 27-blade bottle-opening, can-opening, awl-and-screwdriver carrying army knife might work for some chores, but fails when strength is really needed.

We all like fighting knives. I have the same Randall #1 that I got 45 years ago. The reality is that none of us will ever need a true fighting knife, but *all* of us may need a large utility knife that can be pressed into defensive service.

The Thug fits all these roles, is made in America by Americans, and is reasonably priced, making it a good choice.

I replaced another knife on my TEOTWAWKI belt with the Thug, and I hope I never need to use it. ☺

## SOURCE

**BUCK KNIVES**  
(800) 326-2825  
[www.buckknives.com](http://www.buckknives.com)

# SureFire M300 Mini Scout Light

Since its introduction in 1986 of the first weapon-mounted light (a novel concept at the time), SureFire® has continued to set the standards by which all weapon lights are judged.

The SureFire Scout Light® needs no introduction. With many different models to choose from, there's a Scout Light for nearly any mission requirement and individual preferences. Where size and weight are issues and performance cannot be compromised, the SureFire M300 Mini Scout Light® is an outstanding choice.

The M300 Mini Scout Light is a powerful, lightweight weapon-mount-



Total Internal Reflection optic on M300 Mini Scout Light creates versatile beam with enough reach for medium-range applications and sufficient surround light for peripheral vision.

ed light that quickly and securely attaches to any MIL-STD 1913 (Picatinny) rail via its integral thumbscrew clamp or optional SureFire RM45 Offset Rail Mount.

Powered by a single 123A lithium battery (included), the M300 Mini Scout Light's virtually indestructible Cree LED has recently been upgraded to 300 lumens of tactical-level light. The upgraded light maintains the same ultra-compact light weight of its predecessor, measuring just 4.1 inches long and weighing in at only 4.8 ounces with battery.

Focused by a proprietary 22mm TIR (Total Internal Reflection) optic,

Powered by a single 123A lithium battery, M300 Mini Scout Light has maximum output of 300 lumens and tactical run-time of 1.3 hours.

**All SureFire LED illumination tools are thermally regulated to keep the LED junction temperature below the recommended limit.**





the M300 Mini Scout Light provides plenty of reach for mid-range applications and enough surrounding light for close quarters. Also called a “collimating lens,” a TIR optic collimates the light and sends a concentrated beam of light out in the same direction.

The TIR optic on the M300 Mini Scout Light produces a bright center hotspot for longer reach, combined with an extremely broad spill beam that provides greatly improved peripheral vision compared to most reflector-based lights of similar output and reach.

The redesigned TIR optic produces a smoother beam with fewer artifacts than previous generations of TIR optics. The M300 Mini Scout Light provided for evaluation has superb beam quality with no noticeable artifacts. The M300 has an anti-reflective coated scratch-resistant borosilicate glass window that resists impact and maximizes light transmission.

SureFire uses both tactical and total runtimes for its specifications. The M300 has a tactical runtime of 1.3 hours, which is identical to its lower (200 lumen) output predecessor. Tactical runtime is defined by SureFire as the runtime (at highest setting for multiple-output lights) until output drops below 50 lumens. Total runtime is the runtime until the batteries are exhausted.

The issue of heat management is at the core of many LED-based lighting applications in order to maintain the longevity of the LED. All SureFire LED illumination tools are thermally regulated to keep the LED junction temperature below the recommended limit. When run continuously, the M300 maintains its initial level of output for only a couple of minutes and then begins a decline until it drops out of regulation.

The M300 Mini Scout Light can also be powered by rechargeable lithium-phosphate batteries. The runtime of rechargeable batteries is approximately 50% less than the runtime provided by disposable 123A lithium batteries, although maximum output levels are typically not affected.

Depending on usage, rechargeable batteries can result in considerable cost savings over time. That being said, for weaponlight applications, I prefer disposable batteries.

This M300 Mini Scout Light comes



M300 Mini Scout Light is an ultra-compact and powerful LED weaponlight. It mounts securely to any MIL-STD-1913 (Picatinny) rail via an integral thumbscrew clamp. It comes with a shrouded click-type tailcap pushbutton switch. A remote tape switch can be ordered as an option.

with an installed click-type tailcap pushbutton switch only—press for momentary-on, press further to click constant-on. The tailcap switch is shrouded to minimize the chance for accidental activation. Remote tape switches can also be ordered from SureFire as options.

Several models of remote tape switches are available from SureFire for Scout Lights. These include the SR Remote Dual Switch, SR-D-IT Remote Dual Switch for Weaponlight and ATPIAL Laser Device, and UE07 Remote Switch Assembly for Scout Lights.

As with all Scout Light models, the M300 Mini Scout Light is machined from high-strength aerospace aluminum with milspec Type III hard anodizing. It is O-ring and gasket sealed for water resistance. The M300 Mini Scout Light is available in black only.

Although the M300 Mini Scout Light is already low profile with the thumbscrew clamp, you can make it even more streamlined by adding the innovative SureFire RM45 Off-Set Rail Mount.

Designed specifically for Scout Light models equipped with a thumbscrew clamp, the RM45 positions the light in the offset position between the rails of a MIL-STD-1913 (Picatinny) forend. The RM45 is constructed of



SureFire RM45 offset mount is available for Scout Light® models equipped with thumbscrew clamp, such as M300 Mini Scout Light. It positions light in the offset position between rails of a MIL-STD-1913 forend for lower profile and reduced snag potential.

aerospace aluminum and hard anodized with a milspec Type III finish. It adds very little weight to your weapon.

The M300 Mini Scout Light has a suggested retail price of \$299.00 and is backed by SureFire's No-Hassle Guarantee. ©

## SOURCE

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# GEAR LOCKER

## NEW PRODUCTS & ACCESSORIES



### Spyderco Endura Zome

Spyderco's Endura 4 Lightweight Zome combines all the features of this best-selling model with a multi-colored, hand-dyed "zome" handle. Zome (pronounced "zoh-may") is an ancient Japanese art form that focuses on dyeing textiles and is closely associated with many aspects of Japanese history and culture. The handles are molded in a light base color and then individually hand-dyed by expert Japanese artisans. The brilliant green shades of the patterns on this knife complement all the other defining features of the Endura 4 Lightweight, including a full-flat-ground VG-10 stainless steel blade, sturdy back lock mechanism, skeletonized stainless steel liners, and four-position pocket clip. Suggested retail price is \$119.95.

#### SPYDERCO

(800) 525-7770  
[www.spyderco.com](http://www.spyderco.com)

### AR-15 Style Safety for Shotguns

The cross-bolt safeties found on many models of shotguns can be clumsy to operate in high-stress situations, especially when wearing gloves.

Signature Solutions (S2-USA) has created the world's first AR-15 style selector switch safety for shotguns. The S2-USA maintains the same transition and feel as an AR-15 style safety. The S2-USA safety itself is made in the USA and constructed from corrosion-resistant 17-4 stainless steel. The selector switch that comes into contact with the thumb is 6061-T6 black anodized aluminum. The safety is currently available for Remington 870s and Benelli shotguns.

#### SIGNATURE SOLUTIONS

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### Non-NFA Pump 14-Inch Barreled Shotgun

O.F. Mossberg & Sons, Inc has introduced the 590 Shockwave pump-action firearm with 14-inch barrel, pistol grip, and overall length of 26.5 inches. Classified by the BATFE (Bureau of Alcohol, Tobacco, Firearms and Explosives) as a "Non-NFA Firearm," the 590 Shockwave requires no tax stamp for transfers. This compact 12 gauge has all the features of Mossberg's legendary pump-action platform. The Shockwave Raptor pistol grip features an enhanced textured finish and has a "bird's head" shaped profile, allowing for maximum control while minimizing felt recoil.

#### O.F. MOSSBERG & SONS, INC.

(203) 230-5300  
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## **Trijicon HD XR Night Sights**



Trijicon has answered the call for a more precise HD night sight: the HD XR. Trijicon's HD sights have become increasingly popular among concealed carry holders, police officers, and professional shooters.

The sights allow for an expanded field of view and a more precise sight picture due to the front sight. Thinner at .122 inch, it allows for space on either side of a properly aligned front sight, improving accuracy at any range. Retaining the bright orange or yellow ring for immediate visibility, it remains fast to target and easy to see under any conditions. A steeply hooked front surface on the rear sight continues to facilitate emergency slide manipulation, while its wide "U" notch makes it easy to line up the front sight.

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## **Black Hills HoneyBadger**

In 2016, Black Hills Ammunition changed the rules for defensive ammunition in .380 and .38 Special by introducing a new concept: non-expanding pistol bullets with hard cutting edges and deep flutes that outperform the best defensive hollowpoint ammunition. Black Hills has added three more loads: the all-new HoneyBadger™ 9mm 125 grain, .45 ACP 135 grain for the ultimate in self-defense, plus a HoneyBadger™ .44 Magnum 160 grain for hunting or defense against two-legged predators. The HoneyBadger™ 9mm and .45 ACP were designed to provide optimum performance in ballistic gelatin while avoiding over-penetration.

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## **TOPS Knives Bartender Defender XL**

Pop one open. The Bartender Defender XL is a follow-up to TOPS Knives' very popular Bartender Defender. Customers appreciated that the original was extra small and lightweight, but they wanted a slightly longer blade to work with. This new model is still less than 5.5 inches overall length when sheathed but has a blade over two inches long. Another update is that the bottle opener is accessible without having to remove the knife from the sheath. TOPS went with a smooth and attractive tumble-finished 1095 blade with clear Cerakote finish to protect from rust. Suggested retail price is \$80.00.

### **TOPS KNIVES**

(208) 542-0113  
[www.topsknives.com](http://www.topsknives.com)

## Second Amendment in Action

### Rough Neighborhood

Residents were not surprised to hear the news when a home invasion happened in a south Indianapolis apartment complex. The woman whose apartment was broken into told reporters she'd been petitioning management to install security cameras in the building. Instead, on a Monday afternoon while she was at work, multiple men kicked her door in and encountered her boyfriend.

The boyfriend and at least one of the invaders exchanged gunshots. Both were struck and injured. Neighbors reported seeing three men flee the scene, but it is unknown if all were involved in the home invasion. Both the boyfriend and the wounded intruder were transported to a local hospital for treatment.

SOURCE: WRTV, Indianapolis, Indiana, 2/7/17

### Deterrent Failure

The small corner liquor store in Paterson, New Jersey had no fewer than 29 surveillance cameras, as well as three large TV monitors prominently displayed in the store, so there was no doubt in the minds of shoppers that they were being recorded. But this didn't deter two men in ski masks who burst in on a January evening. While the second man kept his hands in the pockets of his hoodie, the leader of the pair stuck a gun across the counter and in the face of the store owner's brother.

But the store owner wasn't counting on just the cameras to protect his business and employees. He drew a concealed subcompact 9mm and fired at the attackers, who promptly reversed course and ran back out the door. The store owner followed, but did not pursue, and returned inside to wait for the police. The robbers had not been identified or apprehended at the time of this writing.

SOURCE: News 12 New Jersey, Edison, New Jersey, 1/20/17

### Step Outside

It was almost midnight on a Wednesday in January when a masked man entered a Winchester, Virginia convenience store brandishing a gun and announcing a holdup. The clerk handed over the money, but that didn't satisfy the robber, and he ordered the clerk outside at gunpoint.

As the clerk exited the store, she took advantage of the stickup man's divided attention and produced her own handgun, opening fire. The rob-

ber was hit multiple times and later transported to the hospital, where his wounds were operated on. The clerk was uninjured, and the robber faces charges of armed robbery, abduction, use of a firearm in the commission of a felony, and wearing a mask in public.

SOURCE: WHAG-TV, Hagerstown, Maryland, 1/26/17

### Wrong Car

Two shadowy figures approached a car in the parking lot of The Grove Bar & Eatery in Beech Grove, Indiana just past midnight on a Saturday in early January. Stepping up to the driver's side of the car, the shorter of the two figures produced a gun and demanded the driver give him everything he had. The driver protested he only had a phone, to which the robber replied, "Give us that."

The occupants of the car were a mother and son who had been hired to work security for the bar and, instead of handing over his phone, the car's driver produced his own gun and fired on the robbers, killing them both. The older of the two robbers was 29 and had previous convictions. Police would not reveal the name of the younger of the slain attackers, the one who had brandished the gun. He was 14 years old.

SOURCE: *Indianapolis Star*, Indianapolis, Indiana, 1/7/17 ©

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## COMING NEXT ISSUE

in **SWAT**

**A Pistol for the Future?**  
*Smith & Wesson M&P M2.0 Pistol*

JUNE ISSUE ON SALE MAY 2nd



## The One-Eyed King

**THE** pros and cons of sighted versus unsighted fire have been argued since Moses was a corporal.

The bottom line, in actuality, is that the technique utilized should be dictated by situational circumstances. If, for example, you're beset upon at contact distance, you'll be shooting from a weapon-retention position, which will obviously dictate unsighted firing techniques. Extending the weapon under these circumstances can result in your assailant grabbing the gun and inserting it where the monkey put his peanuts.

If, on the other hand, you have to take a finite shot when the shootee is moving—and surrounded by bystanders who are trotting around like recently beheaded chickens—point-shooting would make about as much sense as a mermaid on a bicycle.

Simply stated, if you are trading bullets with a lone assailant who is standing in front of a concrete bunker, you can afford to fire your weapon with more abandon than if he were mobile and assassinating people in a crowded restaurant. There's a time and a place when collateral damage is not an option—especially when innocent people who happen to be in the wrong place at the wrong time sustain the damage.

Since the advent of firearms 700 years ago, three major advances in technology have improved inherent firearms accuracy: rifling of the barrel, changes in ammunition design and, last but not least, the affixation of sighting systems to the weapons. So if you can shoot a smoothbore with some degree of relative accuracy with non-"match" ammo, it becomes apparent that in the battlefield of the blind, the man who has a sighted weapon at his disposal becomes the One-Eyed King.

And if manufacturers design firearms with integrated sights, be they "iron" or "glass," why would one choose to ignore them and voluntarily resort to unsighted fire? The reasons put forth by proponents of "point

shooting" are many and varied: "It's instinctive, it's faster, you can't always visually acquire sights," and on and on.

The problems with the above arguments, in sequence, are (a) shooting a firearm is not instinctive—never was, never will be. It's a learned process. Instinct is something with which you were born. (b) As far as "faster" is concerned, this author has been privileged to know many true gunfighters, none of whom were of the garden-variety armchair commando brigade. And not one of them was "fast." Quick, yes; fast, no. And (c) nobody said you can always visually acquire the sights.

You use the sights when you can, and resort to Plan B when you can't. It's the same as driving a car: You keep both hands on the steering wheel. Admittedly, many people can safely steer the vehicle with one hand while munching on a hamburger with the other. There are even some who feed their faces with one hand, hold a cell phone with the other, and steer with their knees. And some of them haven't crashed—yet.

There's a reason race-car drivers feed through and communicate by helmet-mounted equipment. It allows them to steer and shift gears with both hands. Amazing. Equally as amazing is the fact that as soon as sights were affixed to firearms, shooter hit ratio dramatically increased. And the better the sight system, the better the hits.

So why are we even discussing the point?

Because yes, you may have to use unsighted firing techniques in an emergency, the same as you may have to drive on an icy road surface in an emergency. But the main thrust of this column is to describe some techniques that can be used when one is under duress, but that aren't necessarily the perfect sight alignment/sight picture combination employed during paper-punching target shooting.

A system yours truly plagiarized years ago from Larry Mudgett is to initially plant the front sight on target and then "rock" the rear sight from below to vertically align with the front. This

**You use the sights when you can, and resort to Plan B when you can't.**

lends visual acuity and alacrity to the sight alignment/sight picture process, as the front sight stands out more on its own against the background than if it were initially "buried" against the rear blades on a handgun. It's the same "Eyes-Muzzle-Target" technique developed by John Satterwhite for shotgun use, except used when deploying a pistol.

Two systems designed for quick, accurate close-up pistol shooting are those originated by Jeff Cooper and Jim Cirillo. Colonel Cooper's nomenclature for his technique is the Flash Sight Picture and entails a quick optical acquisition of the front sight. Precision of superimposition of the front sight upon the target and alignment with the rear sight are relevant to how finite the shot placement required, and/or how large the target is, or if there are foreground and background "no-shoots."

Mister Cirillo's system is based on the same foreground/background limitations, but instead of locking in on the front sight, Cirillo's technique is to use the entire slide or cylinder of the gun as a sight. In other words, if the slide on a semi-auto pistol is optically rectangular when superimposed on the target, or the cylinder is visually circular instead of elliptical, it's trigger time.

Avoid gadgets, gimmicks, and fables. Sometimes things aren't what they seem to be. Try keeping a laser dot on an erratically moving, woolen-sweater-attired human torso, and you'll soon find out whether you're Wild Bill Hickok or Dead Bill Hiccup.

Firearms manufacturers put sights on firearms for a reason, and even though Moses never made sergeant, he was a helluva corporal. ☺

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



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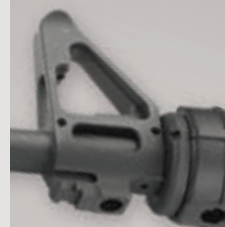
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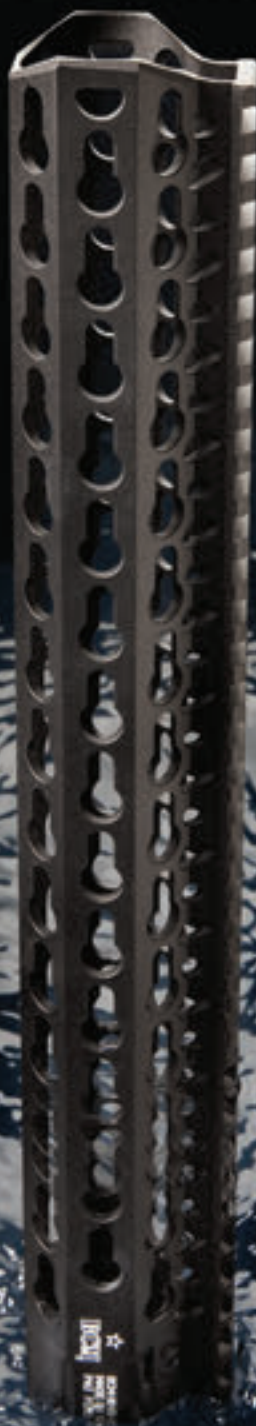
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