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Maintenance, Tiger Style, Is Key

DURING ALL THE YEARS I'VE SPENT IN CLOSE CONTACT WITH FIREARMS, THE IDEA OF MAINTENANCE HAS BEEN DRILLED INTO MY HEAD. As a boy I was taught not to play with guns by my father allowed me to fondle any of the guns in the cabinet with the following rule: If you touch it, you have to clean it. Well you can bet that put a damper on my enthusiasm. By the time I reached my late teens I would look long and hard at the rifles before deciding to grab one and head off to the hunter rifle silhouette match at the local range. I mean really, should I go there to shoot 20 rounds and maybe win a little plastic trophy, only to be forced to disassemble and clean the rifle from end to end? There were girls to chase.

Having no luck with the girls, I often chose to go shooting, and that resulted in plenty of opportunity to clean the guns.

But, as I learned later on, maintenance is more than just cleaning. Have you ever seen someone have one of those "ah ha" moments when you tell them that new springs in the magazine could solve the feed problems with their pistol?

The short answer is that you have make sure everything that's supposed to be tight is tight; everything that's supposed to move freely moves freely and any spare parts you need are easy to find. That brings us to the story by Tiger McKee about AR-15 maintenance in this issue.

For as long as I've been knocking around the firearms industry, for all the schools I've attended and all the people I've spent time with on the firing line, I've never met McKee face-to-face. I heard some nice things about Tiger during a conversation with Clint Smith and that was good enough to prompt me to take a look at his work, and find room for his writing in this magazine.

In every story McKee has ever written for me I've found something that made me say, "Nice touch." It could be a detail about the operation of a particular firearm or, more likely, something I hadn't thought of until McKee thought of it first. Here's a good example. A couple years back Clint Smith was showing some low-light shooting techniques and attached to the flashlight with a tiny split ring was a fairly large rubber O-ring. Smith called it the Tiger Ring, named after its inventor.

Put your finger through the O-ring when you hold the light and you have a convenient way to keep the light attached to your hand, should you need to do something else, like reload or grab handcuffs. With a quick flip of the wrist the light moves from the back of the hand to the palm or vice-versa.

I now have a Tiger Ring on every flashlight I might carry on my duty belt. The system is not only convenient, but the ring is strong enough to hold the light, but not so strong that it will break your finger in the event that a resistive subject gets hold of the light while you are handcuffing him. (Learned that one the hard way.)

The point is, McKee often comes up with pearls of wisdom that the rest of us overlook. And so it is in this issue. Notice that every part he mentions in his AR-15 maintenance story includes the Brownells' part number. I didn't even ask him to do that. But as I read the story, I found myself thinking, "Nice touch, Tiger."

That's why Tiger McKee and writers like him will always have a place in Tactical Gear Magazine.



Stay Safe,

Kevin Michalowski
Editor, Tactical Gear Magazine

*You don't pick the day.
The day picks you.*



by Tiger McKee

AR MAINTENANCE

DO IT RIGHT.
DO IT YOURSELF.



A RIFLE, ACCORDING TO JEFF COOPER IN THE ART OF THE RIFLE, " IS THE QUEEN OF PERSONAL WEAPONS." When you pick up a rifle, you know you are holding a powerful and personal weapon. It's the same feeling you get when holding a finely crafted Japanese katana. The katana of today's rifleman is the AR carbine. The samurai of Japan would never work on their own blades. They instead used sword experts to maintain their weapons. The beauty of the AR is that the individual - with a few spare parts, the proper equipment, and knowledge - can keep this weapon in top shape.

During the Vietnam War one of the first lessons learned about the AR platform was that if it wasn't cleaned and serviced it would jam. When the M16 was first fielded soldiers didn't even get cleaning gear. Since then we've learned that with proper care the AR is a simple, durable, and effective weapon. It's the perfect tool for the modern samurai.

To keep your AR running you need a few spare parts on hand. The cool thing about the AR is that it's easy to work on. You don't have to be a gunsmith to remove and replace parts. Even if you don't feel qualified to work on your rifle, it's still a good idea to have spare parts. Then, if you have to take your rifle to a gunsmith, you're not sitting around the house without a rifle waiting on parts,

which due to demand are currently hard to acquire in a timely fashion.

The majority of the problems that occur with the AR involve the bolt assembly. You need to have a complete spare bolt assembly on hand. Occasionally you'll see a catastrophic bolt failure where the body of the bolt actually breaks. The solution is to simply install your spare and roll on. Check to insure your spare bolt headspaces properly in your rifle before you need it. Unless you plan on performing a lot of work on AR's and need a set of gauges have a gunsmith check the spare bolt in your rifle. At the same time have it checked in any other AR's you own. One bolt will probably fit several rifles, but check to be sure.

You also need spare parts for the bolt, and the knowledge and tools necessary to perform your own repairs. One of the most common parts to fail is the extractor spring. Here is where some preventive maintenance pays off. I replace extractor and ejector springs in my rifles with chrome silicon springs (Brownells #840-000-051) that have a longer life and more power than factory springs. Replacing these springs is easy. Drive out the pins that hold the extractor and ejector with a punch, replace, and reassemble. A couple of tips will make the job easier. First, don't scrimp on tools; buy quality punches. Second, although it's not absolutely required, a bolt ejector tool, which holds



OPPOSITE: *The military cleaning kit, that stores in the stock, is alright for field use, but I wouldn't recommend it for regular cleaning sessions.*

LEFT: *A rifle for self-defense or combative use has to work properly, every time. With the proper care and maintenance the AR will provide you with years of service.*

the bolt and depresses the ejector, makes replacing the ejector spring much easier. (Brownells #840-000-051)

While we're talking about the bolt, another modification I perform is to replace the cotter pin holding the firing pin in place with an original style solid pin. With use the cotter pin bends, making it harder to remove and install during cleaning. The solid pin (Brownells #231-000-029) cures this problem.

Get an extra set of gas rings for the bolt. Over time these will wear out, and occasionally they break. While I've seen rifles run with missing or broken rings, it's not something I would do for extended periods of time due to the risk of damaging the body of the bolt.

To test the gas rings for wear my Marine Corps Technical Manual advises installing the bolt in the carrier, without the firing pin and cam pin, and then holding the carrier upside down. If the bolt drops free, it's time to replace gas rings. I'm not sure what the 'official' life of the gas rings is, but I have a couple of training carbines with more than 15,000 rounds run through them with no problems. For an operational weapon, they should be replaced regularly. Every 5,000 rounds or so should be sufficient. (Note: Keep a logbook on your weapons. Data books aren't just for sniper rifles.)

One area to inspect on your bolt system, especially with new rifles, is the gas key on top of the carrier. Make sure the allen bolts holding the key are securely staked in place so they can't work loose. (See photo.) I've seen a few of these come from the factory that haven't been properly staked, which allows gas to escape. The bolt doesn't properly cycle, causing a failure to eject or preventing a fresh round from being chambered. To correct this first apply a little liquid thread-lock to the bolts, then torque them to 35 to 40 inch pounds - not foot pounds. Take a good

center punch with a sharp point and stake the head of the bolt to the key in at least two places. Make sure you don't distort the outside edges on the side of the key where it slides in the charging handle.

The other area of concern with AR's is the hammer/trigger pin. Either they break, or the holes for the pins in the receiver get sloppy, allowing too much endplay. Either symptom is trouble, and usually leads to the rifle double firing. You press the trigger and it goes bang. You release the trigger and it goes bang. The cure depends on which problem you have. With a broken pin you replace it. I use Colt pins, because I know they are truly mil-spec. If the receiver is worn, installing a set of oversize pins with either c-clips or hex head screws to hold the pins in position is the fix.

The final area that needs attention is the magazine. If the mag ain't working the rifle don't shoot. Again, quality is key. With the original style aluminum body mags I replace the followers with Magpul's "Self-Leveling" follower. The follower's shape prevents it from tilting over, and the follower is made from a self-lubricating material to aid in function. The new polymer mags are rapidly gaining a reputation for being almost indestructible, and lasting much longer than the aluminum mags. Magpul's PMAG, which has a sturdy polymer body and a stainless steel spring for long life, and Tangodown's new ARC mags, which have moly-coated chrome silicon springs, are the two most popular ones out there. According to my friends working overseas, these two mags are the way to roll.

Keeping the AR clean is mandatory. The AR's gas system creates a lot of blowback, and eventually the buildup of carbon and residue will create problems. There is plenty of info on how to clean an AR out there - tech manuals, DVD's, and videos on Brownells' website - so we're



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TOP LEFT: *The mag feeds the rifle, and so it's just as important as any of your other gear. With aluminum mags I use Magpul's new followers. Magpul's PMag, center, is a heavy-duty performer. Tangodown's new ARC mags, left side, are getting great reviews.*

BELOW LEFT: *To make cleaning your rifle an easy job means having the proper gear. A bore guide, coated cleaning rod, and Brownells' upper receiver cleaning kit are good things to have. G-Tip swabs, pipe cleaners, and brushes are also necessary. The lube you use depends on the environment you're operating in.*

BELOW: *Cleaning carbon off the bolt and carrier used to be a real pain, but the new CAT M-4 tool handles both of these chores with ease.*



not going into all the details here. What I do want to share with you are a few specialized tools that make cleaning easier and more efficient.

First, wear rubber or latex gloves to keep carbon, powder and lead residue off your hands, and a pair of safety glasses insures you don't end up with some caustic chemical in your eyes. Don't clean your rifle on your kitchen table. Your wife won't appreciate it, and you don't want chemicals, powder or lead residue where you eat.

The bolt needs the most attention. There will be a lot of carbon build up on the end of the bolt and inside the carrier where the bolt seats against it. This used to be a real pain to clean, but the C.A.T. M-4 tool created by Combat Application Tools, Inc., is specifically designed for this chore. One end of the tool cleans the tail of the bolt, and the other end is inserted inside the carrier to scrape it out. A

bronze brush, preferably one with a large and small end, similar to the original G.I. brushes, except with bronze bristles instead of nylon is handy, and pipe cleaners are useful for cleaning the firing pin hole on the bolt, the small holes on the carrier and the gas key.

For cleaning the barrel start with the chamber and barrel lugs first. If you clean the barrel, then the chamber and locking lugs, you'll just end up pushing a lot of residue back into your clean barrel. Use a chamber brush first, then finish up with barrel lug recess swabs, which are shaped to match the lugs and wipe out any residue left by the brush. (Brownells #100-002-057)

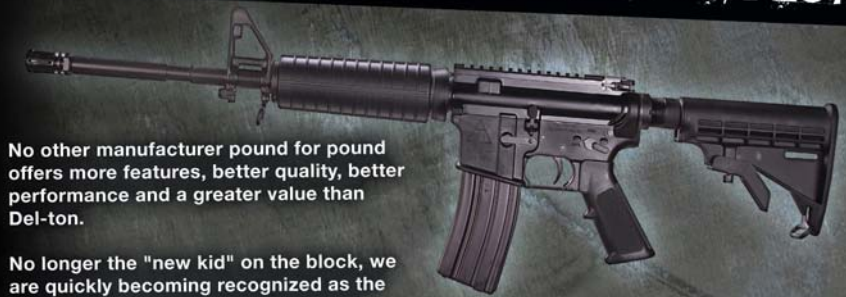
Get a coated cleaning rod and a bore guide, and use them. The jointed cleaning rod like the one supplied in the military kits to fit inside the stock works in the field, but I wouldn't make a habit of

RIGHT: An advantage of the AR is that you don't need a bunch of parts or knowledge to keep it running. Get a spare bolt, plus the common parts that might need replacing, such as extractor and ejector springs and gas rings, along with the tools necessary to perform repairs.

BELOW: Inspect the gas key on the bolt carrier to make sure it's staked properly. If not gas will bleed off, causing your rifle to malfunction.



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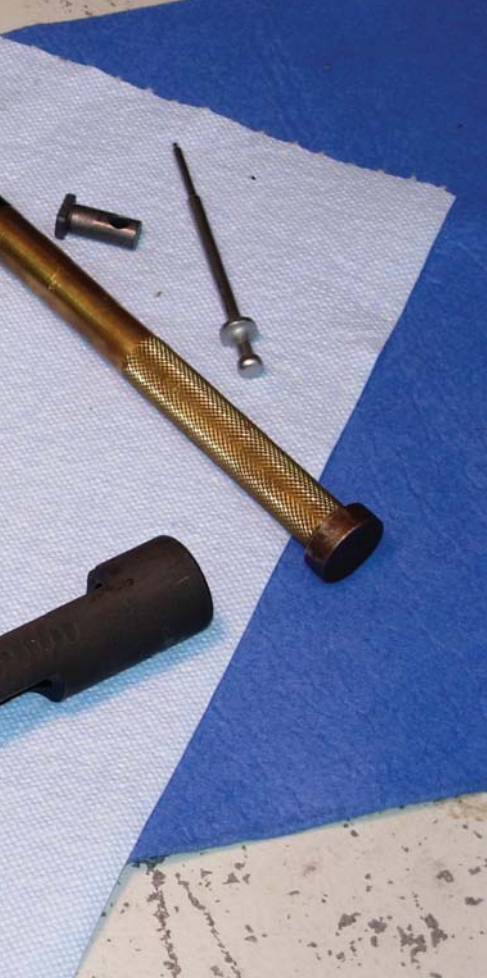
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using it because it will damage the bore. Bronze brushes with your favorite bore solvent and plenty of patches will do the job here. Buy bore brushes and patches in bulk. When the brush starts showing wear, trash it and use a new one.

For the upper receiver, an upper receiver cleaning kit (Brownells #084-823-115) is nice to have. To get into the tight corners and difficult areas Bear Metal's new G-Tip Fun Cleaning Swabs are just the ticket. They come in a variety of shapes and sizes. Get an assortment of them. They are ideal for cleaning the lower receiver around the hammer and trigger assembly. One note on the upper assembly, there is no way to clean the gas tube unless you remove it from the rifle. Gas tubes are cheap, so if there's any question it's simple to just replace it with a new one.

During cleaning visually inspect everything for any signs of trouble such as cracks, chipping, or anything else that might indicate a problem. Use a small penlight and a magnifying glass to check the dark recesses and smaller parts on the AR. As a last step I use an air compressor to blow out everything. A can of compressed air, used for cleaning computers, can be used in the field.



After getting everything cleaned up, it's time to lube it. What type lube should you use? That's a good question. Ask 10 shooters and you'll get 10 different answers. One of my guys, Justin, works in very hot, sandy environments. "I use high-temp wheel bearing grease" - the type used on automobiles - "on most everything," he told me, "from AK's, to AR's and pistols." Remington's oil, a light-weight oil with Teflon, is popular. SLIP 2000 EWL is a big favorite. Some shooters use a combo of grease and oil. Ultimately the lube you need depends on the environment and application. In hot environments, or when doing a lot of shooting, grease works well, but it will gum up on you in extremely cold conditions, which is where oil is best. Sometimes you just use what's available at the time.

The most common mistake most people make is not using enough lubricant on their AR. If it sounds like sandpaper and feels gritty when cycling the bolt, you're not using enough lube. Be sure to lube the charging handle, the bolt carrier, along with a drop on the gas rings, extractor and ejector, trigger, disconnect and hammer. Look at these pieces and you'll notice shiny areas where metal is rubbing on metal. This is where you need lube.

Cleaning and maintaining your rifle is a very personal and subjective process. With time you'll discover what works best for you. The key is to become intimately familiar with your weapon. As the Marine Corps Rifleman's Creed states, "I will keep my rifle clean and ready, even as I am clean and ready." That pretty much sums it up.

Tiger McKee is director of Shootrite Firearms Academy, located in northern Alabama, author of The Book of Two Guns, a staff member of several firearms/tactical publications, and an adjunct instructor for the F.B.I. (256) 582-4777 www.shootrite.org

RESOURCES:

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Tango Down, www.tangodown.com

Combat Applications Tool, www.catm4.com
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by Scott W. Wagner

SAFARI LAND LEADS THE WAY

New Body Armor First to Meet NIJ Standards

I'VE BEEN A COP FOR A LONG TIME, 29 YEARS TO DATE. I am a confirmed coward — I have worn soft body armor under my various law enforcement uniforms for almost all of those years, starting when I worked uniform patrol full time in 1984. Coward you say? That's what we were thought of in the old days when we were still working with cops who were WWII, Korean War, and to a lesser extent, Vietnam War Veterans. You know, you were talking about guys who had stormed Omaha Beach or fought at the Chosin Reservoir without armor. These guys had charged headlong into literally a wall of lead coming their way, and their attitude was "if the entire German/Japanese/Korean/North Vietnamese Army didn't get me, no two-bit punk with a .22 revolver in a dark alley will get me either." Therefore, those of us who were un-bloodied youngsters at the time were seen as (in a nice way) cowards for wearing armor under our uniforms. The guys weren't nasty, they were kinda like "Hmmp, you expecting trouble or something Junior?"

Things have definitely changed. The

first armor that I wore in uniform was a really thick front panel square of armor made of a new (to me) material called Kevlar. I bought it from another deputy, and got only a front panel — the back panel had been misplaced. I had no idea of the brand, or where the rear panel was (he never did find it) or what rounds it was rated to stop. I guess I thought I didn't need a rear panel as I wasn't planning on running from anyone. My guess is that this first vest was rated as Level I armor, which is no longer in common use.

Level I was only capable of stopping .38 Special 158-grain RN lead bullets, .22 LR, and 00 Buckshot. The Columbus (Ohio) Police Department first issued Level I armor to their officers, as it was also the cheapest armor available. They switched out of it when they changed their .38 Special duty round to the 110-grain +P+ "Treasury Load." However, for quite awhile those Level I vests were worn on the street in combination with a duty load in the officers' revolvers that would punch through it. That was a bad combination

My next two sets of soft body armor

(really a better term than vest) was department issued and made by the first manufacturer of concealable body armor — Second Chance. Both were rated at IIA, and would stop pretty near any handgun threat on the street, especially the second set (a set of armor consists of ballistic panels and carriers) which had a hard armor plate over the sternum that would stop rifle fire, including armor-piercing rounds like the .30-06 and .308 at a distance of 100 yards.

Speaking of ratings, let's look at the rating system established by the National Institute of Justice, whose order never made any sense, but hey, it's the feds, right? Here they are in NIJ order from lowest ratings to highest taken from the NIJ's publication Selection and Application Guide to Personal Body Armor, NIJ Guide 100-01, also available online.

Type I (.22 LR; .380 ACP). This armor protects against .22 long rifle lead round nose (LRLRN) bullets, with nominal masses of 2.6 g (40 gr), impacting at a minimum velocity of 320m/s (1050 ft/s) or less, and against .380 ACP full metal jacketed round nose (FMJ RN), with

nominal masses of 6.2 g (95 gr), impacting at a minimum velocity of 312 m/s (1025 ft/s) or less. Type I body armor is light. This is the minimum level of protection every officer should have, and the armor should be routinely worn at all times while on duty. Type I body armor was the armor issued during the NIJ demonstration project in the mid-1970s. Most agencies today, however, because of increasing threats, opt for a higher level of protection.

Type II-A (9mm; .40 S&W). This armor protects against 9mm full metal jacketed round nose (FMJ RN) bullets, with nominal masses of 8.0 g (124 gr), impacting at a minimum velocity of 332 m/s (1090 ft/s) or less, and .40 S&W caliber full metal jacketed (FMJ) bullets, with nominal masses of 11.7 g (180 gr), impacting at a minimum velocity of 312 m/s (1025 ft/s) or less. It also provides protection against Type I threats. Type II-A body armor is well suited for full-time use by police departments, particularly those seeking protection for their officers from lower velocity 9mm and 40 S&W ammunition.

Type II (9mm; .357 Magnum). This armor protects against 9mm full metal jacketed round nose (FMJ RN) bullets, with nominal masses of 8.0 g (124 gr), impacting at a minimum velocity of 358 m/s (1175 ft/s) or less, and .357 Magnum jacketed soft point (JSP) bullets, with nominal masses of 10.2 g (158 gr), impacting at a minimum velocity of 427 m/s (1400 ft/s) or less. It also provides protection against Type I and Type IIA threats. Type II body armor is heavier and more bulky than either Types I or II-A. It is worn full time by officers seeking protection against higher velocity .357 Magnum and 9mm ammunition.

Type III-A (High Velocity 9mm; .44 Magnum). This armor protects against 9mm full metal jacketed round nose (FMJ RN) bullets, with nominal masses of 8.0 g (124 gr), impacting at a minimum velocity of 427 m/s (1400 ft/s) or less, and .44 Magnum jacketed hollow point (JHP) bullets, with nominal masses of 15.6 g (240 gr), impacting at a minimum velocity of 427 m/s (1400 ft/s) or less. It also provides protection against most handgun threats, as well as the Type I, II-A, and II threats. Type III-A body armor provides the highest level of protection currently available from concealable body armor and is generally suitable for routine wear in many situations. However, departments located in hot, humid climates

may need to evaluate the use of Type III-A armor carefully. (Author's note: this is the level our issue vests are rated at. I would recommend IIIA to all officers out there, it is very comfortable and weighs as much as my old level IIA armor did — even in hot climates, it is comfortable)

Type III (Rifles). This armor protects against 7.62mm full metal jacketed (FMJ) bullets (U.S. military designation M80), with nominal masses of 9.6 g (148 gr), impacting at a minimum velocity of 838 m/s (2750 ft/s) or less. It also provides protection against Type I through III-A threats. Type III body armor is clearly intended only for tactical situations when the threat warrants such protection, such as barricade confrontations involving sporting rifles.

Type IV (Armor Piercing Rifle). This armor protects against .30 caliber armor piercing (AP) bullets (U.S. military designation M2 AP), with nominal masses of 10.8 g (166 gr), impacting at a minimum velocity of 869 m/s (2850 ft/s) or less. It also provides at least single-hit protection against the Type I through III threats. Type IV body armor provides the highest level of protection currently available. Because this armor is intended to resist "armor piercing" bullets, it often uses ceramic materials. Such materials are brittle in nature and may provide only single-shot protection, since the ceramic tends to break up when struck. As with Type III armor, Type IV armor is clearly intended only for tactical team use.

These are the current standards, while they tell you what rounds a given armor is rated to stop, they don't tell the entire story, such as how do they determine if any given armor "protects against" a given round? How many rounds are fired on it and under what conditions? And, are those standards good enough for modern times? Well, how about I answer just the last question first. The answer is no.

Effective December of 2008, new NIJ standards went into effect for the testing methodology and threat level protection determination. The rating codes of I, IIA, II, IIIA, III, IV remain basically the same, but there are three major changes in how that rating is determined, and what a vest (actually the manufacturer) must do to attain certification at the targeted rating.

In a phone conversation with Angela Milligan and Michael Haynes of Safariland, along with Sean Woodland of the Dalton Agency, which handles press for Safariland, I gained some insight into what these ratings are all about, and how they affect the end user on the street. I think that you will see that these changes affect the end user very little, and actually improve officer survivability, which is always a good thing.

1. NEW threat rounds, such as the potent .357 Sig are used against IIIA vest, and nominal velocity standards are increased. In the 125 gr. bullet range, the .357 Sig round (my agencies duty round) exceeds the ballistics of the .357 Magnum round, which was the former standard. Velocity floor thresholds all were increased by 100 fps, making it harder to pass. This is not an artificial increase. Most modern handgun ammo that uses the latest powders and technology is running hotter out the barrel than it was a decade ago, and there are new rounds such as the .357 SIG and the 5.7x28mm that armor has to protect against. The 04 standards only required 24 round shot testing with the low end threat caliber. The new standards require shot testing with both low-end threat high-end threat rounds for a total of 120 rounds fired.

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es. For the NIJ CPL compliant products list, Safariland went the extra mile to get full size compliance using gender specific panels. All officers who buy Safariland are getting the same threat level protection regardless of size or gender. Not all competitors test all sizes.

3. NEW environmental testing standards. The primary one calls for water immersion where the armor is submerged for 30 minutes for any brand/type seeking to be approved. After immersion the armor is shot to determine if it will hold its ballistic integrity. In the past under the previous 05 standards, NIJ used a six minute water spray test. The six minute test did not totally saturate the armor, although in my opinion, it was probably more realistic than total immersion. I mean how many of us get thrown overboard by say, pirates for a half hour, then immediately get into a gun battle with them after we are pulled out of the drink? We may get sweaty on duty, but I have never had my armor get THAT wet. In any event, the use of submerging testing shows that when the armor panel is heat sealed, no water can penetrate the ballistic material. Ballistics must stay dry and intact. A new environmental test is tumbling. The tumbling test simulates wear, to demonstrate that the armor being tested gives the same protection for the officer in year one as it does in year five. The new standard requires a tumbler machine, which is essentially a very large clothes drier, which tumbles the armor for 720000 cycles (10 days) at 149 degrees to simulate long term wear. The previous NIJ standards were unable to demonstrate that body armor would perform as well on day five as it would on day one. This new tumbling test proves the vest will perform.

There are some other changes, which directly affect the manufacturers of armor and in turn the purchasers, whether they are the department or the individual officers. Price increase (which was not specified by Safariland) will definitely occur, since meeting the new NIJ standards is a very expensive process to conduct. For example, in 2005 it cost \$2000 to have a new vest certified; now it costs a minimum of \$30,000 to get certified as the armor is tested at the factory and then sent to NIJ for testing to confirm results. Also in 2004 the standards for testing panels in the IIA and IIIA required that six panels were submitted for NIJ approval. The new standards require that 28 panels be submitted for testing, which increases the cost of testing fourfold for the new testing standards just in the panels needed for submission alone.

In addition, the NIJ has released a new quality standard known as BA5000 for manufacturers. Under this standard, representatives of NIJ make on-site inspections of the manufacturing facilities to select random armor off the floor to test again. This way testing of armor never stops, so that quality control is maintained throughout production. Safariland is meeting this standard, even with the increase in cost.

Safariland has worked with NIJ from day one to gain compliance and meet standards. In order to do this, they had to invest in rotary tumblers and new materials and designs which incorporated advanced technologies like geometric design to help pass the tests. So far, Safariland is the only manufacturer to have met NIJ standards for all levels of concealable armor.

Level III and IV armor also get some

changes in their armor plates. Armor sample requirements increase from four to nine panels to be submitted for Level III armor and from nine samples to 7-37 samples to be submitted for Level IV. Hard armor plates will also undergo "conditioning" prior to being fired upon. There is 10 days of uniform thermal exposure at 149 degrees F (65 C) and 80 percent relative humidity, one day of thermal exposure cycling from 5 degrees F (-15 C) to 194 degrees F (90 C) from 0 percent to 50 percent relative humidity and a mechanical durability test (armor drop test).

According to Safariland, the comfort level remains virtually unchanged for all their armor. Their new designs make sure the armor is lighter and not as thick with improved flexibility. Are the standards necessary? I can't answer that with any certainty, but I know that I haven't heard of any body armor failures since the one case with the now defunct original Second Chance product line. So like the dreaded Swine Flu pandemic the problem, if there was one, was not significant, otherwise we all would have heard about it, but the standards are here to stay. Contact Safariland at www.safariland.com for more information, the complete NIJ Standards are listed there in downloadable pamphlet or booklet form.

Scott Wagner is a Police Academy Commander at Columbus State Community College in Columbus Ohio, and Commander of the 727 Counter Terror Training Unit. A 29-year law enforcement veteran, he is the designated marksman for the Union County (Ohio) Sheriff's Office SRT.



photos by SHARON AHERN

FIT FOR DUTY

Rugged Folders Built To Take It

TOP RIGHT: *Ahern likes the feel of this massive knife*

TOP LEFT: *The butt of the Crucible II can be used for window smashing and incorporates a blade for cutting web material*

MIDDLE LEFT: *Ahern opens the Blackhawk CQD MARK I Type E*

ABOVE: *Detail of the liner lock*

IF YOU REALLY NEED A KNIFE, IT HAD BETTER BE A TOUGH KNIFE. Law Enforcement and/or military folding knives often have demands placed upon them for performance standards above and beyond the norm. There are several well-known purveyors of this category of lock-blade folder, whose knives are of superb quality. Two among these are 5.11 Tactical and Blackhawk Products, both firms known for a wide range of products aimed at military and law enforcement.



LEFT: The First Responder has a combo edge and handles well

ABOVE: The Ten-Eight is a very useful folder and its pocket clip can be mounted in four different ways; note the holes to receive the mounting hardware

ABOVE CENTER: Ahern opening the Tarani Ten-Eight

ABOVE RIGHT: Detail of the Ten-Eight's liner lock

The knives from 5.11 Tactical are made to the specifications of noted Law Enforcement trainer Steve Tarani. But, a little background on the company name first. “5.11” is a rock climbing term referencing impossible climbing situations which, nevertheless, can occasionally be made possible if undertaken just right. 5.11 Tactical started 30 years ago, making pants for rock climbers. Today, this international firm spans the globe with clothing, holsters, gun cases, equipment packs and a full-line of folding knives. After talking with a 5.11 Tactical representative, I chose to evaluate two of these knives from opposite ends of the pricing spectrum.

Steve Tarani is an advisor to numerous high-profile American Law Enforcement agencies, as well as the Department of Justice, Department of Homeland Security and Department of Defense. The list of Tarani’s credits goes on, and on, among these being the man behind the International Association of Chiefs of Police Model Policy on the carry and use of knives among federal, state and local police officers.

The 5.11 Tactical knives are made in Taiwan to Tarani’s and 5.11’s exacting specifications, the blade steel is actually U.S. made. Consistently, the blades register 58-60 on the Rockwell C scale.

The First Responder’s blade steel is S30V Crucible, the handle scales, steel lined, made of G10, a “strike plate,” otherwise known as a glass breaker, at the butt. The pocket clip can be removed with the provided hex key and repositioned at either end of the knife on either side – quite a convenient feature. There is no thumb stud, but, instead, an amply sized oval shaped hole for thumb operation. The 3.5-inch flat-ground bead blasted blade is over an eighth-inch thick (4mm). My example is a Spear Point combo blade, but a Tanto blade is also available. With its frame lock this knife is ultra smooth to open and closing is just as reliable, but an average sized female hand will experience dif-

ficulty with a smooth one-handed opening. Typical male hands will have no problem. The rear most portion of the blade spine features contact serrations for use in darkness and when added finger pressure might be applied to the blade. This is a serious knife that weighs in at 8 ounces.

At the other end of the scale, weighing only 5 ounces, Model Ten-Eight is smaller, lighter and less expensive than the First Responder. With a blade of 154CM the operating principles are the same; except that the Ten-Eight is a liner lock rather than frame lock. A combo blade as well, my example is a Tanto, but Spear Points are available. Blade length is a nominal 3 3/8 inches.

The First Responder is a do-all knife, of SERE-like proportions, the Ten-Eight more the typical lock-blade folder. Both knives feature a convenient contouring of the handle to allow the first finger added purchase and provide a more positive grip. Both Tarani knives seem to be outstanding values that are built to last and to give long service under rugged conditions. One would not be ill-equipped with either.

Blackhawk Products was started by a Navy SEAL whose pack failed, spilling its contents into a mine field. Mike Noell promised himself that, if he made it back alive, he’d make a pack that wouldn’t fail. He did that. Today Blackhawk offers law enforcement and the military one of the widest selections of task-specific products to be had – clothing, cases, boots, pouches, armor, helmets, holsters, hydration systems, gloves, climbing safety gear, flashlights, etc. And, of course, they make knives.

One of these is Blackhawk’s Crucible II, a folding knife that’s 8 inches long when opened. It sports a liner lock and a 3.25-inch blade. Designed by Kelly McCann, well known writer and trainer, the knife is seriously massive with G-10 handle slabs over 420 J stainless liners, the blade is black Teflon coated AUS8A stainless steel. The width of the

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If This "Incident" Happened to One of the Women At Your Office ... How Would You Have Responded?

December 17, 2007: West Los Angeles, California:

A muscular, tattooed gang member barges into the office of an upscale advertising agency and abducts the young, attractive receptionist at gun point.

But a fast-thinking, alert office employee actually "snaps" the gun out of his hand and then knocks him "cold" with a single crushing blow to the jaw ... and he stays "out" until police come and arrest him!

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The Blackhawk Crucible II opens easily



The First Responder opens easily

blade is truly spectacular, coming in at 1 7/16 inches. The blade is a spear point, the opening stud ambidextrous. The pocket clip can be switched to four different positions. The Crucible II is fast-opening and formidable.

The Blackhawk Products CQD Mark I Type E is one of Blackhawk's top knives, available to military, law enforcement and EMT personnel as an automatic, available to everyone else as a manual-opening knife with an ambidextrous thumb stud. Until recently, the automatic version featured a thumb stud as well, but that change, along with other upgrades in both versions, is found on current production knives. The goal of the features upgrade was to lower the price.

The blade is CPM154 stainless with improved edge geometry. Before you open this knife, make certain that you understand how to close it, or you'll find yourself practicing the recitation of numerous words and phrases from your vocabulary that might be better left unspoken. The opening technique is not at all unusual. Merely use the thumb stud and the knife is open. Closing the knife, however, is quite a bit different from most closing techniques. After the knife is opened, a natural stainless button pops outward. It's located where, with an automatic knife, one might likely find the but-

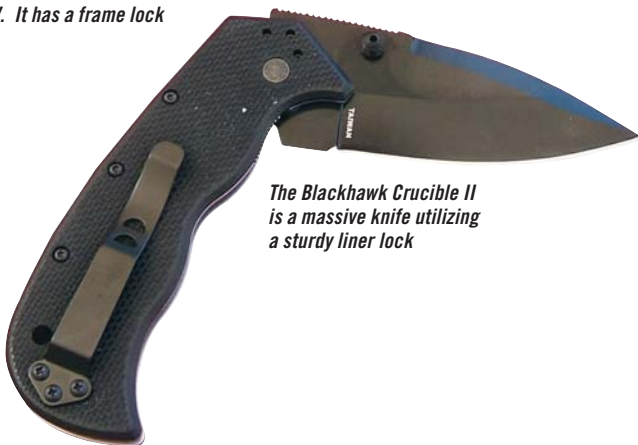
The Blackhawk CQD MARK I Type E features a very unique button lock mechanism.



The 5.11 Tarani First Responder with spear point has a blade made from S30V. It has a frame lock



The Blackhawk Crucible II is a massive knife utilizing a sturdy liner lock



ton for opening the blade. To close the knife, push the button! This unlocks the blade and allows you to fold it closed. It's easy, unless you don't know how.

The blade is finished with a black Tungsten coating. The handle material is mil-spec anodized aircraft aluminum. Overall length is 9.5 inches, blade length is 3.75. Either plain or partially serrated edges are available.

A unique feature of the SQD Mark I-E is a seatbelt/cord cutter that is built into the handle of the knife near the butt. Nothing is required to access this tool, yet it is perfectly secure as the knife is being worn or handled. Additionally, the butt of the knife also incorporates a carbide automobile glass breaker. The combination of these two functions – glass breaking and seatbelt cutting – in one easily carried tool makes a true lifesaver. The knife incorporates a pocket clip that can be mounted for either right- or left-hand use. One can see why so many thousands of the original versions of this knife are in service.

Both 5.11 Tactical and Blackhawk products offer knives that are working

tools for military, law enforcement and private citizens. They are ruggedly built, task-oriented and although made from some of the best quality materials available, their pricing is extremely affordable as an item of equipment for any professional and not any sort of stretch for the average consumer as well. These knives are built to work and keep on working under a wide range of conditions. Whether you buy a knife from 5.11 Tactical or Blackhawk Products you'll be satisfied – no matter how demanding your tastes and tactical requirements.

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NO CURF OR CURF

Knowing when and how to restrain someone can keep you safe

by Dave Morelli

OF ALL THE ARTICLES OUT THERE ON SELF-DEFENSE OF THE HOME AND FAMILY FROM AN INTRUDER, WE LEARN TECHNIQUES AND TACTICS TO GAIN THE UPPER HAND SHOULD WE FACE THIS HORRIFYING EVENT. We develop a plan and set up tactically using verbal commands in hope the intruder will leave or stop the attack. We are also prepared to use our firearms if the threat doesn't stop and we fear imminent and immediate danger to ourselves and others. What if the guy stops and you have him in your home at gunpoint and essentially you have captured him. How long will it take for the police to arrive and take over your great job of stopping a crime? Cops love it when there is a bad guy to arrest in a home invasion.

I remember the lay-down-and-die attitude that was popular in the 1980s. Let the guy have the money and do what he wants and hope that he will go away and not hurt you. This might work with grizzly bears, and I have my doubts there, but the quality of scumbag today might kill you anyway and do you want to take the chance you are going to be the next statistic? I was on duty during those days and that thinking went against the grain for me. I think most Americans these days would rather fight and let the criminal work for once in his life and earn what they are trying to take from us. This attitude makes criminals nervous and less likely to victimize the person who looks capable of fighting back.

There are many scenarios that can play out and hopefully the bad guy will lose ambition to continue his venture when he

comes face-to-face with a shotgun or .45. A smart guy would turn hastily and not look back. That's preferable. Maybe you might have to shoot him to stop the attack, but now you have a wounded bad guy to control. I will tell you now; wounded guys are a little hesitant to obey commands because they have painful and gaping holes in their body that seem to keep their attention on things other than voice commands. They guy might stop and follow your commands and prone out and wait for police to arrive. Police are usually 45 minutes away from me and that is a long time to hold someone at gunpoint. Usually a neighbor can be commandeered to help once the bad guy is face down, but all this is leading to one reality. You have to have a plan for what you will do if you gave a bad guy at gunpoint and no help is read-

ily available. At some point you are going to have apply restraints.

Holding a dirt bag at gunpoint for a long amount of time can result in many bad scenarios. He could build up his nerve to try to take you on, or you might let your guard down giving him chance to make a move. Letting him run off leaves him out there to return for revenge, which makes it hard to get a night's sleep. If he is restrained, you can be in a less threatening position with your handgun when the police come to the door.

One solution to restraining the felonious offender (dirt bag in less politically correct environments) is some sort of handcuff device. The decision to restrain or handcuff an offender can be a good thing or it can turn bad easily and quickly. Putting yourself in a position to be close to the bad guy gives him the opportunity to grab or disarm you. You also have to sacrifice some control of the weapon to put on the cuffs. This is assuming that you are alone in your defensive situation. You could throw him the cuffs and have him put them on himself, which might be a good call in some situations.

If you are alone and decide to restrain the bad guy with cuffs, it is best to put him in the most disadvantaged position possible. This is why police like to have standing bad guys put their hands high on the back of their head and then pull them back so they are leaning back and off balance. The weak side, or the side without the officer's weapon, foot can be placed against the heel the subject's feet further restricting movement. It restricts the vision of the bad guy and places him off balance while the cuffs are put on. If the officer feels resistance he just has to pull the subject off balance and step back out of reach. As the subject topples to the ground the officer can create distance and take appropriate action.

For handcuffing the more dangerous bad guy the police will order the subject

face down on the ground. This is done during high-risk traffic stops or armed felony arrests. The suspect may not have a weapon in his hands but is presumed armed. Commanding the suspect to raise his hands high while covering him with the defensive weapon may reveal a gun in his waistband as his shirt rises. In a home invasion situation I would let the bum know I see the weapon and doing anything but what I tell him to do will turn out badly for him. When the police prone him out at gunpoint, the bad guy knows the cops will shoot if they are threatened. Your bad guy must know, or at least believe, you will also shoot. At that point he has two options: He can run and not look back, or submit to your commands. At that point, order him face away from you and possibly change positions to another source of cover if it is available. If he has a weapon and reaches for it, he most likely will point his gun where he last saw you, which gives you time to react to his bad call.

Once he is facing away command him to get on the ground face down and put his hands on the back of his head. Once he is face down have him cross his legs and approach from the rear and and kneel down on his legs where they cross, making it hard for him to move. Then tell him to put his hands to his back so he can be cuffed. His hands, of course, should be empty at all times during this operation. If you see a weapon, cuff him quickly and remove the weapon after he is cuffed.

In the home there might be alternate methods of putting him at a disadvantage like having him bend forward over the back of a couch or table until his feet barely touch the ground and have him put his hands behind his back. Again you will be approaching him from behind and can cuff one hand then the other while still retaining your weapon. Keep one of your feet against his to make it harder for him to move quickly against you. What ever you decide to do, practice it before you need it

and iron out any problems you discover.

If you have a partner it will be much safer as one of you can cover the bad guy while the other slaps on the cuffs. If you have access to a phone and the police are still a ways out, a call to a neighbor for assistance would be safer than handcuffing an intruder alone. I would still order him to the floor and use the same tactics but he is covered while the partner restrains him. You may have two bad guys to control and if you can safely restrain them it will put the odds in your favor should they get up their nerve and try to take you.

Personally, I would handcuff a wounded suspect even if he is not moving before starting life-saving procedures. Sometimes they wake back up and the fight is still on. Why life-saving procedures? We have stopped the attack and now we have the duty to render first aid so he can sue us later. Also, his is another one of those first impressions deals. When the police arrive a handcuffed bad guy looks more like a bad guy not a poor wounded victim.

Handcuffs are an inexpensive tool for the armed citizen and should be available when needed. They take up little space in a bedroom drawer or can be right on your defensive belt with the other tools to protect your home. There are several styles available and there also is a flex-cuff which looks like a big wire tie that police use in mass arrests. They are modified for use as restraints and they are really cheap so a good supply can be available for large-scale restraining needs.

With handcuffs there are basically two different types: Chain cuffs and hinge cuffs. Chain handcuffs provide less control but are easier to apply to a resisting subject. Hinge cuffs give increased control but are a bit more difficult to apply. When I first got on the job we were issued and trained with chain cuffs. Later, when the hinge cuff came out it was superior for control and department training helped with tactics to get them on a fighting suspect.

OPPOSITE: *Hinge cuffs offer some advantages and disadvantages when compared to chain cuffs.*

BELOW LEFT TO RIGHT: *Flex cuffs and a cutter. ASP hinge cuffs and spare keys. The real difference between hinges and chains. Make sure your cuffs swing freely.*





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For someone that will not have the opportunity to use cuffs everyday, I recommend the chain type because they are easier to apply quickly. The guy I used for pictures was a big guy with big wrists adding to restraining difficulty. Some techniques have to be modified to get the cuffs on quickly. Chain cuffs give some leeway because once one side is on the other will swivel. This is a big help if you are facing resistance or because of the subject's anatomy. The hinge cuff does not swivel and if the first one is put on incorrectly the arm may not bend the way you need to get the other one on.

There is nothing like the restraint given by hinge cuffs though. There is no twisting about with these things. If for some reason it makes more sense to handcuff a subject in the front, which I don't recommend for home defense, the stack method with hinge cuffs give good restraint. Cuffs are applied with forearms parallel in front of the body with both wrists facing down.

ASP makes a wide selection of handcuffs and flex cuffs for the professional and civilian alike. When we did drug raids there were usually many subjects in the house and handcuffs had to be sorted out later. Flex-cuffs helped with this situation and ASP's Tri-Fold flex cuff is a great solution to raid situations. Several can be stored in a holder on the belt and they are cut off at the jail and disposed of. ASP also makes all the tools to facilitate these cuff option including cutters and carriers.

ASP's Tactical Cuff has been developed with input from officers and instructors in the field. The steel frame is over molded with a coating of ordinance grade polymer. That is the closest you'll get to fur-lined guys. Some other subtle but helpful improvements are a reinforced swivel with a roller bearing mechanism. The dual keyway makes the cuff easier to remove because there is always a keyhole on the "up" side of the cuff. Officers are trained to load the handcuffs in the case so that when it comes out and is applied the keyhole should be up. Once the fight is on all that goes in the toilet and the hole was usually down making the officer have to bend over in a less advantageous position to double lock or release the cuff. ASP's cuff has a keyhole on both sides and the hole is beveled for easier insertion. They also have a one direction unlock that releases both locks in a single turn along with a highly visible double lock indicator.

The edges of the cuff are radiused and will not cut the subject. There are more ratchet teeth than standard cuffs, giving better range for larger and smaller wrists.



FAR LEFT: *Keeping your subject off balance gives you an added edge if you have to get close enough to apply the cuffs.*

ABOVE LEFT: *With the subject on the ground, you may need to control the legs while you apply the cuff.*

LEFT: *putting the subject over a table or the hood of a car keeps the tactical advantage with you.*

I will tell you that the edges of the handcuffs against the wrist will hurt and not many folks will sit still if they are in constant pain. It is natural to move to try to get more comfortable. I, like you, really don't care if the subject is a little uncomfortable; he is in our house! But if he fights less that is a plus for us. Large guys are hard to handcuff because of their size and they could easily overpower us. I have used two cuffs to get these guys restrained because their arms won't come back far enough to get one pair of cuffs on.

When putting on the restraints the subject must be stabilized. Whether it is standing, kneeling, or prone. Training in this area is advised. As the handcuffs go on the subject must be under control. Make sure you have total compliance before you start to move in and cuff the offender. Use wrist holds and thumb holds to make sure you have control.

Right in the middle of the operation is when it is the most dangerous. Once one cuff is on your bad guy has a dangerous weapon that can be quickly used against you. Until the other cuff links his hands together. This part of the cuffing should be quick so it is done before the suspect has a chance to get out. Police put cuffs on and off many times a day and it becomes second nature and quick.

Here are some other things to think about. Always approach the subject from the rear with your weapon side away from him. If he is facing away with his hands on his head cuff the right hand then bring both hands to the small of back and cuff the other side. Most people are right

handed so it might help to immobilize the strong hand first. Always watch the hands because any movement generated that can hurt you will usually start with the hands.

Always double lock the cuffs. They won't close up further and they will be harder to pick. Make sure the bad guy doesn't have anything on him that he can use to pick the lock. Also make sure he is not carrying a key. Ohh yea, some of them carry keys. A lesson you should learn if there are handcuffs in the mix. Always have an extra key around or hidden in case you end up with the bracelets on. Not a preferable outcome, but fixable should you get a chance to escape or he leaves you handcuffed somewhere. Practice a couple times using the key while handcuffed. And have the key stashed where it will be the easiest to get to while cuffed. Bad guys will probably handcuff you to the rear because that's how the cops do it.

The handcuff should always be stored in the closed position and the ratchet bow should be able to be pushed easily around so it can be pushed on the wrist and the inertia will carry it around and lock into place. Make sure the cuffs will do this by working with them and maybe putting some dry lube on the swivel. You should be able to push a closed cuff sharply against the finger of the opposite hand and the cuff be loose enough to circle around and lock.

Cuffs can be stored in some type of case and the most convenient would be on the defensive gun belt for in the home. I have several pairs and have one pair in a case in the glove box of my car and one pair in the

home. ASP's cases also have a pocket for a spare key. This is handy, but for the purposes stated above, a spare key somewhere else would be better because everybody reading this article wouldn't know it.

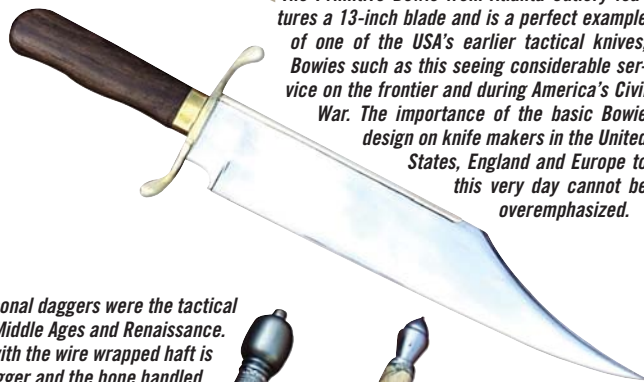
I have been off duty and seen combative idiots trying to wreck a picnic or other event. Because I had a flex cuff or handcuff in the vehicle, once the subject was restrained the fight was over. I also have been in the same situation when the fight continued because once the combatant was let go, the fight was on again as soon as he rested up a bit. So even if the disturbance doesn't turn into a gunfight restraining devices could help. It could also help to prevent a gunfight if the dirt bag has his gun or is allowed to leave the scene and go retrieve a gun.

Again, he looks guiltier on the ground in cuffs when the police arrive and he doesn't have the opportunity to be the first to report his woes to the police. Remember, the first person to call the police is usually perceived to be the victim because that is usually the way it happens. Whether it is just a fight or ends up as a shooting, get the Calvary coming as soon as possible and remember to be non-offensive when they arrive. You will be excited and want to tell the story first. Let them do their job; they will get to the bottom of it. They will want to disarm you. Don't take offense. It is a safety measure for all concerned. If the bad guy is handcuffed and on the ground, I would bet they will come to you first for the story.

► The Ek Bowie is a perfect blending of traditional and modern, practical and fighting – in short, an ideal tactical knife.



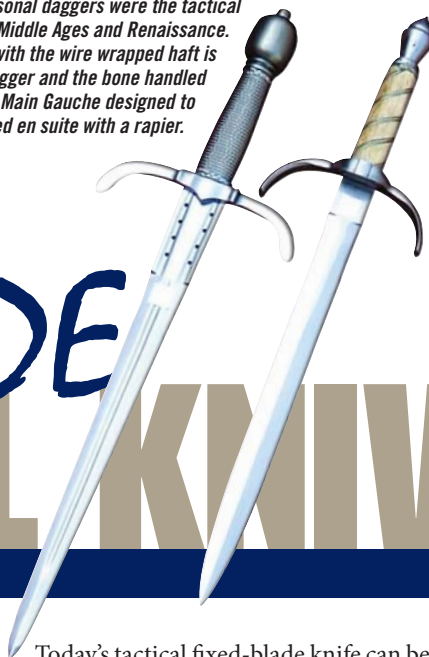
◀ The Primitive Bowie from Atlanta Cutlery features a 13-inch blade and is a perfect example of one of the USA's earlier tactical knives, Bowies such as this seeing considerable service on the frontier and during America's Civil War. The importance of the basic Bowie design on knife makers in the United States, England and Europe to this very day cannot be overemphasized.



► The Blackhawk UKSFK is a commando dagger in the classic sense.



► Personal daggers were the tactical knives of the Middle Ages and Renaissance. The dagger with the wire wrapped haft is a Munich dagger and the bone handled dagger is a Main Gauche designed to be used en suite with a rapier.



FIXED-BLADE

by Jerry Ahern

TACTICAL KNIVES

photos by SHARON AHERN

The Close Companion

THE FIXED-BLADE KNIFE IS LARGELY IGNORED FOR USE IN MODERN WESTERN NATIONS – EXCEPT THE BOOT KNIFE AS A CONCEALED CARRY ITEM, THE “HUNTING” KNIFE FOR THE OUTDOORSMAN, THE BAYONET FOR THE SOLDIER OR KITCHEN CUTLERY FOR THE CHEF. Yet, in the tactical context, the fixed-blade knife is as useful as and more important than ever. The fixed-blade tactical knife has roots going back centuries, as the dagger – or main gauche – was useful for everything from self-defense to use as an eating utensil.

The fixed-blade knife was, more often than not, a weapon used as a companion piece to a larger edged weapon or an early firearm. The sandbar duel involving Jim Bowie popularized what noted firearms pundit and editor Jan Libourel has called “the American short sword.” Such large tactical fixed-blade knives were a reliable alternative to early firearms that were often less than reliable.

Today's tactical fixed-blade knife can be divided into two categories, by intended use. The broadest category consists of knives that are sufficiently stout and sharp to be used as a weapon, but not intended for direct weapons use. The smaller category of tactical fixed-blades consists of knives intended for use as a weapon – for emergency self-defense, sentry removal and other silent anti-personnel applications, or even a fight.

No knife is, of course, more American than the Bowie knife. Everyone has his or her own opinion about what the original knife Jim Bowie died with at the Alamo looked like. The closest to my idea of the original that I've seen among production knives is the Atlanta Cutlery Primitive Bowie, made by Windlass Steelcrafts of India. The blade itself is 13 inches long, the hardwood grip adding another 5 ½ inches. There's a double quillon brass guard and a brass strip along the spine of the blade, this to catch or drag an opponent's blade – if the knife is used for parrying. Weight is 1 ½ pounds.

If we compare a modern knife with the daggers of old, the Blackhawk UKSFK (United Kingdom Special Forces Knife) gets top billing. The UKSFK is a truly serious knife. The blade length is almost 6 ¼ inches, length overall a little under 11 ½ inches. Made from one piece of D2 Tool steel, a hair under ¼-inch thick so as to defy breakage in the field, it even features an integral double quillon guard. The UKSFK's handle scales are textured G-10. I must comment that this knife is extraordinarily sharp. While re-sheathing the Blackhawk UKSFK, I stabbed myself in the palm of the hand. If there were any doubt I'm a red-blooded American, the UKSFK resolved the issue instantly. And, I've got the scar to prove it. The UKSFK comes in natural finish – very pretty – or black – very practical. This is an excellent double-edged defensive knife without serrations to catch on web gear on the way in or out. Weight without its injection molded self-locking nylon sheath is just shy of 10 ounces.

If a smaller tactical knife is needed – and many tactical knives are much smaller than knives like the K-Bars, which came to such fame with the United States Marine Corps – Blackhawk offers the Kalista II. Measuring just 7 ¼ inches overall, with the blade making up only 3 ¼ inches of that, the useable blade length is about 2 ½ inches. Made from AUS 8A, blackened and wearing nicely textured scales, the 4-ounce knife features ridges for positive gripping along the lower length of the haft and on the blade spine, these latter for the thumb. This is a knife that is made for “choking up” and ideally suited for a variety of roles.

Known for its commando knives in all of America's wars from WWII until the present, Ek Commando Knives offers a knife that bridges the two major categories of tactical knives. It is the Ek Bowie, made from one solid piece of high carbon surgical stainless steel that is 3/16ths thick. The blade is 6 ½ inches long with a useful edge of about 6 inches and, as is proper for a Bowie style knife, it has a sharpened recurving “false” edge as well. I chose heavily texture Micarta handle slabs, which give an extraordinarily solid grip behind the double quillon brass guard. Ek knives are made for rough use in the field and the brass nuts that hold the handle slabs together can even be turned out for removal and cleaning or replacement of

the handle scales. A screwdriver would do the trick, but the slots are such that a coin or cartridge would do as well. The butt extends ¾ of an inch past the handle scales and would be suitable for some types of pounding, particularly against an opponent. Although this is ideally suited as a fighter, this knife is equally well suited for all those far more mundane tasks a knife needs to be up to in the field or during a tactical operation. During certain types of activities, particularly when stealth might prove important, you're going to want to field blue this shiny stainless steel. Weight of the knife is 13 ounces and it sits well in the hand.

A name familiar in the tactical family is SureFire. We normally think of tactical lighting, but SureFire, however, also offers a number of very interesting knives. When Sharon and I were at the 2009 Blade Show in Atlanta, I was amazed to see SureFire's Echo Fixed-blade Combat/Utility knife. Made from crucible steel and coated with rust proofing to resist corrosion, the Echo is also an example of a trend found with many modern knives, wherein the edge is ground only on one side of the blade. This is done for various reasons. SureFire does this in order to protect more of the blade from rust and corrosion, while still leaving a wholly serviceable cutting edge. There are cutouts in the frame to save on weight and the Micarta handle slabs are not only comfortable, but offer a secure grip under a wide range of tactical conditions. The knife was also designed to be an asset for the combat swimmer. It features usable serrations on half the length of the blade, while the forward portion of the blade is for more standard cutting. The integral guard is single quillon and there are thumb contact serrations just aft of the spine and a palm contact set of serrations on the upper side of the butt. The knife's unique sheath can be positioned a number of ways on your equipment. Weight of the knife is approximately five ounces.

Cold Steel is a name well respected for a wide range of edged weapons and related products. Some few years ago, while in conversation with Cold Steel president Lynn Thompson, I asked him what was his personal favorite size from among his trademark Tantos. He told me that the Magnum Tanto II made from San Mai steel was probably the ideal size. This is very close in size to many of the classic



▲ The Kalista II is arguably the smallest of the tactical knives shown here; but, don't count this excellent knife out because of size. It's a fine choice.



▲ The Crawford specimen examined for this article, although perfectly rugged for a wide range of tactical needs, is a fighter.



▲ The SureFire tactical knife is also designed for use by combat swimmers.



▲ FROM TOP: The Blackhawk UKSFK, the Ek Bowie and the Cold Steel Magnum Tanto II.

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► *The Cold Steel Magnum Tanto II in San Mai III is a knife that can be used for a wide range of tactical purposes and is extremely fearsome looking.*

▼ *The RAT Cutlery people are into teaching harsh environment survival. Not only is the knife painstakingly made for the task, but so also is the sheath.*



Japanese knives of antiquity. The Tanto point's geometry is extremely strong, but lends itself to excellent penetration. In many ways, the Cold Steel knife is ideal in the tactical application. Blade length is 7 5/8 inches while usable edge is about 7 inches. With full-tang construction and with 3/16" thickness, the Magnum Tanto II features a full rounded guard, a skull-crusher pommel and hand filling Kraton grip. This is, quite frankly, a knife we keep about the Ahern house because of its ruggedness. Cold Steel Tantos are known for their superior cutting and piercing abilities. Weight is 12 ounces without the sheath.

For a very long time, Benchmade Knives – famous for their folders, automatic knives and Bali-Songs – did not make fixed-blade knives. But, that changed quite a few years ago and Benchmade's fixed-blade tactical knives are as well respected as the firm's folders. Two Benchmade fixed-blades that are ideally suited to the tactical role are the Nimravus and Nimravus Cub. My Nimravus has all the extras, namely the G10 handle scales, the combo edge and the Kydex sheath with thumb lock. It features what Benchmade calls a "modified Tanto" shaped blade, what to me looks for all the world very much like a single edge spear point. Benchmade's serrations, as found on their knives with combo edges, really work. The steel is 154CM, the construction one-piece, the finish black, the weight just at five ounces. There's a lanyard hole in the pommel and there are lashing holes around the sheath.

The Nimravus Cub II, like the Nimravus, is one piece, the blade has a plain edge. Both knives have a hardness of 58-60. This knife was designed with input

from airborne personnel, according to Benchmade's website. The handle material is lightweight synthetic and heavily textured. The knife weighs a little over three ounces. Blade length is 3 1/2 inches, whereas the Nimravus has a blade 4 1/2 inches long. The sheath is ambidextrous and has a parachutist retention strap. If I'm understanding the sheath correctly, it can be dismounted from its backing, the backing secured to the rigging and the actual sheath body and knife re-attached.

One of the most respected custom knife makers – because of quality and creativity – is Pat Crawford. Actually Crawford Knives is Pat Crawford and his son, Wes Crawford. Anyone who follows my writings is no stranger to the always interesting, always functional and occasionally weird knives bearing the Crawford name. When I mentioned to Pat that I was going to be doing this article and asked him if he had a knife that he thought might fit, Pat suggested "The Dragon."

The Dragon is part of what's called a "hand to knife fighting system." The late Bob Kasper was a knife designer but not a knife maker and, much as we did with our Big Ugly One knife years ago, Bob Kasper went to Pat and Wes Crawford with his design. The knife is derived from a fighting system or style called "Arwrology" and is a radical departure in close combat. The basic Arwrology system was developed by physician and martial artist Gordon Eric Perrigard and the basic concept is reflexive fighting with a minimal amount of body movement. Where a knife comes in with this is that one would do the same thing one would do empty handed, but with The Dragon in hand. Aside from fighting, this design is great at penetration and cutting. Tests conducted

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model: SMF (right) with digital-camo finish

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▲ The Benchmade Nimravus Cub is specially designed to be compatible with the equipment needs of airborne personal, yet well suited to tactical applications, whether military or law enforcement.

by Pat and Wes Crawford had the knife taking on steel belted radials and Kevlar. Blade length is 4 ½ inches, while length overall is 9 ½ inches. The handle is Micarta, the steel S30V and the sheath is Kydex. Weight of the knife is about 4 ½ ounces. It is designed to be grasped as tightly as possible in the fist and become an extension of the hand, whether one is cutting or fighting.

RAT Cutlery was a name that was new to me. As I discovered RAT, I also learned that, in addition to knives, the firm is also heavily involved in hands-on, on-site survival training in some rather serious locations. The RC3 that RAT sent me weighs bang-on five ounces on our postage scale. Length overall of this one-piece knife is 8 ¼ inches, while the 1095 steel blade is 3 ½ inches long. The handle slabs have a good feel and the rearmost portion of the blade spine is ridged for a positive surface when cutting pressure must be applied. The pommel is drilled through for attaching a lanyard or lashing. An important part of this super-tough knife is its radically designed sheath, which can be lashed to equipment, extended to be worn below equipment and features a ballistic nylon MOLLE back. There's an elastic pommel cover coupled with a Velcro retention strap. In short, this is a very simple looking but high-tech knife with a high-tech sheath made by people who actually work with their products under harsh conditions in the field. I'm glad I discovered RAT and if you have not, you will be when you discover RAT too.

Chris Reeve has been in the knife making business for a very long time and has earned a great deal of respect. Chris Reeve knives are normally associated with their one-piece hollow handle knives, but there is a great deal of concern that in tactical operations, weight is an important consideration. For the purposes of this article, it was thought that the professional soldier model would be the best bet. Done in collaboration with



▲ There's a lot to be said for weight savings with the tactical knife. This one from Chris Reeve is designed to skimp on weight, but nothing else. It has a great feel and can be attached to a wide range of tactical equipment.

Bill Harsey, this is small yet extraordinarily serviceable. Made from one piece of S30V stainless steel with a blade hardness of 57/58, the handle area is cut away at the center for additional lightening. Length of the blade is 3 3/8 inches, while thickness is 1/8-inch. Length overall is 7 ¼ inches. The rear portion of the handle works as a shackle wrench. The Kydex sheath is made by Blade Tech. Coated with KG Gun-Kote in order to reduce glare and the further protect the steel, the knife weighs three ounces. The forward most portion of the haft is ridged for thumb contact and the rearmost portion of the haft is ridged to accommodate the third or possibly third and fourth finger, depending on how one holds the knife. The lower edge of the haft is contoured with a finger groove for the first finger and second finger. The sheath features lashing holes so that it can be attached, as needed, to individual equipment. The lanyard provided on the butt of the knife will not only assist with this lashing, but is also said to reduce noise when the knife is set on a hard surface. However, I consider this last feature somewhat dubious, because it is dependent upon how one puts down the knife. One of the smallest of the knives profiled here, The Professional Soldier makes up in practicality what it might lack in size.

Obviously, there are numerous fine manufacturers whose tactical knives space limitations disallowed covering here. The attempt was to take fixed-blade tactical knives from sources that might more readily come to mind for different types of knives, yet sources that are well known for their excellence. Clearly, the fixed-blade tactical knife is an essential asset for the military or law enforcement professional and a good bet for civilians as well.



▲ The Nimravus from Benchmade with its optional locking hard sheath is a versatile tactical knife aided by the usable combo edge.

Where to find them:

ATLANTA CUTLERY
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www.atlantacutlery.com

BENCHMADE KNIFE COMPANY
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by Tiger McKee

SHOTGUN UPGRADE

The Simple Steps To Create A Fighting Shotgun



IT'S 1984, MIAMI VICE IS THE HOT SHOW ON TELEVISION, AND I'M AT THE LOCAL GUN SHOP. I'm drawn toward a rack full of Mossberg pump shotguns, used and rough-looking, with 18-inch barrels and pistol grips, for only \$60 each. I'm young, don't know a whole lot about weaponscraft yet, and the Mossberg looks like the perfect 'truck' gun. I pick out the best of the lot, blaze a trail home, grab some shells, and go shootin'. It doesn't take long before I realize several things. I have a 12-gauge pistol that's too big to hold with one hand or a shotgun that's too small to use properly, and while hip shooting is fun and looks cool, it sucks for accuracy. The short gun goes into storage, and is forgotten.

Fast forward to 2009. Popular television shows don't interest me much these days. I've been teaching weaponscraft to other shooters for over 15 years. I'm digging through the unsafe that holds the weapons I don't shoot often, but will never get rid of. There, tucked in the corner, hidden behind everything else is the old Mossberg. It's the perfect project, patiently waiting for my attention. Now that I know a little bit about defensive shotgunning I'm finally going to make the Mossberg into a proper truck gun. It'll be a shotgun for self-defense against rattlesnakes, varmints or, if necessary two-legged threats. And, I'm going to do it all myself, without spending a bunch of money.

Step one: Acquire a stock to replace the pistol grip, and a new forend because the existing one is wood and cracked. Every shotgun I've ever owned for defensive or combative use had to have the stock shortened to the proper length, which is normally the case unless you're a giant. The solution is a youth stock. These short stocks are available for

LEFT: The final product is a shotgun that looks good, can actually be used as a truck gun, and didn't cost a lot of money.

BELOW: This is what the Mossberg looked like before the rebuild. Used and abused, but it's got the potential to be an excellent weapon.

ABOVE RIGHT: The Mossberg handles great, functions well, and with the new XS sight it's quick to get onto target.



Mossberg, Remington, and Winchester shotguns and provide the proper length of pull, normally around 12 inches.

After browsing Brownells' catalog I select a Ram-Line Cadet stock set (#674-000-011) which has a molded fiberglass stock and forearm. The kit comes with the stock and bolt, forend and the tool needed to install it. I'm the first to admit I don't know much about wrenching on shotguns, especially when it comes to replacing the forend, but after reading the instructions included with the stock set it turns out to be a simple and quick process. With the new furniture installed the Mossberg is already looking a lot better. After playing with it a little I decide to use a belt sander to round off the edges of the recoil pad so the stock mounts into the shoulder without the pad snagging on my clothing.

The next part of the process is installing a sling. The sling for your long gun is like a holster for the pistol. It's an essential piece of equipment. There are a variety of options when it comes to slings, but I've found that a simple cotton carry sling does everything I need. Although tactical slings - I use this term for any sling that loops around my body - have their place, for general-purpose use I'm not a big fan of them. Chances are if I need the shotgun I won't have a lot of advance warning, so I probably won't have an opportunity to be looping or buckling slings around my body. Often the extra material on a tac sling gets in the way during manipulation of the weapon, and personally I don't like being tied to my weapon. With a carry sling, when I do need both hands free I simply loop the sling over my neck, and with the proper sling length I can still



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ABOVE: The time spent installing the XS sight is well spent. The large dot makes getting on target quick and easy, plus the tritium insert will come in handy for low-light firing.

ABOVE INSET: The hole is drilled, then a 6-48 tap is used to thread the barrel for the new sight. After installing the new sight bead, a Brownells #26, the XS sight is glued on top of it.

mount the weapon. When choosing your sling consider the anticipated use of the weapon, and that each style sling has advantages and disadvantages.

I like my slings attached to the left side of the stock instead of the bottom, so that when the shotgun is slung, either over my shoulder or around the neck, the gun hangs flat against my body. (For a left-handed shooter you attach to the right side of the stock.) I mount the sling to the side of the stock by removing the recoil pad, drilling a hole and bolting a sling swivel to the left side of the stock. For the front mount I use a mount that clamps around the barrel and mag tube, again with the sling swivel on the left side of the weapon.

With the new furniture and sling mounted it's time to think about how to carry extra ammo on the shotgun. One of the disadvantages of the shotgun is its limited magazine capacity. Most defensive situations don't require a high round count, but it's better to have ammo and not need it, as opposed to needing it and not

having it. An advantage of the shotgun is that there are a variety of rounds available for them. A sidesaddle allows you to carry different type ammo. You can load up with buckshot, and carry slugs in the sidesaddle. Should the situation calls for slugs you've got them with you.

Since this is a do-it-yourself kind of deal, and I'm wanting to keep it simple, I choose to go with a Velcro mounted side saddle, which is a cheap and easy way to get the job done. After digging through the parts box I find a plastic shell carrier. I slap a section of Velcro with adhesive on it to the left side of the receiver, and then mount the other side of the Velcro to the sidesaddle. This way if I don't want the carrier and extra ammo on the shotgun it's a simple matter to remove it, plus I can swap it from one shotgun to another. While this might not be the way to go if you're patrolling a dusty street in Baghdad or operating out of the highlands of Afghanistan, I've been using this setup on another shotgun for many years and haven't had any problems, so for the truck

gun I feel pretty safe.

So far the Mossberg is looking good, it's still kind of worn out looking, especially with the new furniture contrasting with the worn out finish on the barrel and receiver. Like I mentioned above, when I got it this shotgun had been rode hard and put up wet. To take care of the looks department I decide to apply a camo paint job. Camouflaged weapons look cool, it separates you from all the rest of the black guns, and visually/tactically there's nothing that stands out like a solid black weapon. I want a paint job that will work in rural environments, where I live, as well as urban areas, where I sometimes travel. After considering my needs I decide to work with a form of camo know as "Dazzle," which was used on naval ships during the first and second World Wars.

I go over the gun with a scuff pad so the paint has a good surface to cling to, and then clean and degrease. Anything I don't want painted, such as the safety, action release button, action rails and bolt, is covered with masking tape. Next I paint the entire gun with a can of flat black primer. The primer is thick, so it fills in a lot of the pits from surface rust on the barrel and mag tube, and it provides good coverage so it only requires a couple of light coats. Next I use masking tape to cover the areas I want to remain black, and spray a coat of light green. I repeat this process, cutting masking tape into geometric shapes, and spraying each successive color until I end up with what I think will be a bitchin' paint job. You never really know what it's going to look like until you peel off the tape, but the good thing about spray-can D.I.Y. paint jobs is that if you don't like the results, you can just scuff it up and start over.

The rebuild is complete, or so I thought. After playing around with the shotgun a little I decide the front sight bead isn't going to cut it. I've been using my eyes for 50 years now, and it's getting difficult to see a small bead sight, especially in low-light environments. For big sights that are easy to see there's only one way to go – XS Sight Systems. XS offers sights for about any weapon you can think of, and their "Big Dot" sights with tritium are ideal for quick target acquisition and low-light environments. For shotguns they offer a front sight only, which epoxies over the bead sight, and a "Tactical Ghost-Ring" sight with a rear aperture adjustable for elevation and windage. Since the "Ghost-Ring" setup requires some machining work on the receiver and a front sight base on the barrel



The camouflage process starts by painting the entire gun with flat black primer. The areas that will remain black are covered by masking tape, and then the next color is sprayed. This process is repeated until you've worked in all your colors.

I elect to go the easy route with the front sight only. (XS #SG-2003-3)

Installation of the sight requires a .125 to .140 inch front sight bead for the "Big Dot" to attach to. With a Mossberg you have to remove the factory sight, which is too small, and install a Brownells #6 or #26 front bead. So, I'm going to have to do some machining work, but nothing that can't be accomplished in your average garage.

The first step of the installation process is to remove the existing bead. Technically you should have a sight tool to perform this action (Brownells #080-000-094 for large-diameter sights) but since I have a shade-tree gun shop, and I'm not worried about marring up or scratching the new sight because it's going to be covered by the XS sight, I use a small set of vise grips. With the old sight out it's time to drill and tap the hole for the new bead, a Brownells #26, which has 6-48 threads. For this size thread you need a #31 drill bit; do not try to get away with something in your drill bit set that is close. You'll either end up a hole that's too small, which means you break the tap when threading, or too big a hole, in which case you don't have enough metal in the threads. You could drill the hole with a hand-held drill, but it's critical to drill it a clean straight hole without distortion. Use a drill press. If you don't have a press, any machine or automotive shop should be able to do this part for you.

Threading the hole comes next. To do this properly you need the small handle that holds the tap, thread cutting oil, and patience. Don't try to do this without the handle to hold the tap or you will create a mess, unless you get really lucky. When tapping I've found that it's better to tap a little, back the tap out, then tap a little more, repeating as necessary.

After threading the hole install the

new bead. First, check the length of the threads on the new sight. You may need to shorten it, which I did with a Dremel and cut-off wheel. Liquid thread locker on the threads insures the bead won't come loose. I use the Loctite's red stuff. Once this is installed you're ready to glue the XS sight on top of the bead. First, degrease the area to clean off any oily residue. I mix up some JB Weld, and fill the cavity on the underside of the sight with the glue. Now you press the sight over the bead, making sure to wiggle it so it centers on the barrel. As you seat the sight on the barrel you'll have some of the glue squish out the sides, so XS suggests using a Q-Tip with rubbing alcohol to clean off any excess.

The shotgun is complete and ready for action. A quick trip to the range confirms it's functioning properly, it looks a whole lot better than what I started with, and now it's a weapon that I can actually use. Most of you probably have "that" shotgun sitting in a safe or closet taking up space. With winter coming on, it's the perfect time to gather some parts, and step out there and do a little gunsmithing. Turn "that" shotgun into something useful. Plus, when you pull it out at the range all your friends will be impressed.

Tiger McKee is director of Shootrite Firearms Academy, located in northern Alabama, author of The Book of Two Guns, a staff member of several firearms/tactical publications, and an adjunct instructor for the F.B.I. (256) 582-4777 www.shootrite.org

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RSA .450" High 1/8" Radius Non-Serrated Blue	\$14.95
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RSA Gas Ring Shims	\$18.00
RSA Oversize Cylinder Latch	\$29.95
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Bisley Style Trigger	\$36.67
Bisley Halfcock Hammer & Trigger Kit Stainless Steel Finish	\$199.95
Bisley Halfcock Hammer w/Vaquero Trigger Kit Stainless Steel Finish	\$199.95
Bisley Halfcock Hammer only Stainless Steel Finish	\$139.95
Bisley Style Trigger only Stainless Steel Finish	\$39.95
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Neat STUFF

by Jerry Ahern



photos by SHARON AHERN



▲ Ahern holds the fully assembled U.S. Survival Rifle.



▲ And the whole thing fits in the buttstock.
 ▲ The Swiss-Tech tool has proven invaluable to the Ahern family on numerous occasions

PROBABLY THE COOLEST THING ABOUT BEING A WRITER WHO SPECIALIZES IN PRODUCING CONTENT FOR PUBLICATIONS SUCH AS TACTICAL GEAR IS THAT YOU GET TO PLAY WITH A LOT OF NEAT STUFF. I likely inherited my fondness for “neat stuff” from my dad, Jack Ahern. So far, my son hasn’t picked up the trait, but maybe one of his boys will. The girls in the family likely won’t get too heavily into neat stuff, because neat stuff is kind of a guy thing. As much as any girl could be, though, my wife is into neat stuff. On Sharon’s key ring, for example, she carries a small Swiss Army Knife with scissors, screwdriver blade with file, tooth pick, tweezers and main blade. Sharon also keeps a blue light Photon Micro-Light in her purse.

On my key ring, I keep a basic Swiss-Tech multi-tool that is so old a new and improved model is out. This is the tool that incorporates pliers, a wire cutter and stripper, a flat head screwdriver and a Phillips head. This is the most convenient tool I have, really, because it’s always readily accessible. We have a screen door that staples keep sliding out of; using the tool like a block of steel, I periodically push the staples back in. There’s a faucet handle that loosens up occasionally and the Phillips head is perfect for that. When our son and his wife purchased a new clothes dryer a while back, our intrepid daughter-in-law used the tool to hook up the new dryer vent hose. When we had our holster business, some of the screws on the head of our clicker (die press) would start to loosen and I’d take the Swiss-Tech tool off my key ring and tighten them up. The Swiss-Tech tool is great, too, when there’s very little room in which to work, because it can be used with the screwdriver arm at a right angle to the rest of the tool.

Swiss-Tech makes lots of other neat stuff, too. I also have a Swiss-Tech Utili-Key. It incorporates a straight and serrated cutting edge, a micro-screw driver, a glasses screwdriver, a Phillips and a bottle opener and it weighs half an ounce and goes on and off your key ring effortlessly. It’s so small, in fact, that I couldn’t find mine for Sharon to photograph!

I wear one or the other of my Woolrich Elite Series Tactical Algerian Field Jackets quite often. These jackets,





◀ The Surefire pen ready to write; note the window smasher tailcap.

◀ The Benchmite II is unique in its opening and closing procedure.

▶ Sharon holding the blue Photon light. The Photon Light is so tiny it could get lost in the palm of Sharon's hand.

▼ The Xikar folding scissors with knife blades unfolded.



▲ The HawkHook is extremely versatile. Use it to smash in the glass, then cut away the seatbelt.

◀ The Benchmade pen is an excellent writing instrument.



▼ Ahern's right hand is just going inside a hidden exterior breast pocket below a more obvious pocket that has still another pocket on its exterior. The Woolrich Algerian field jacket has 13 pockets in all, many of which easily will handle a handgun.

The Surefire pen in the sleeve pocket of the Woolrich Elite Series Tactical Algerian Field jacket.



with their multiplicity of hidden pockets, definitely qualify as neat stuff. The Algerian Field Jacket has 13 pockets, some of them concealed behind other pockets! Many of these pockets will handily carry a decent sized handgun. One of those pockets is on the sleeve and built to carry a pen, and I often carry my Surefire Pen in that pocket. The Surefire Pen is a high-quality writing instrument with a body made from anodized aerospace-grade aluminum, a stainless steel tip, pocket clip and automobile glass window smasher tail cap. The pen writes beautifully. The point is fully twist-retractable. For added convenience, a variety of refill lengths can be utilized with the Surefire Pen. Still another dual-function pen comes from Benchmade. It, too, has an anodized aluminum body, but some models are available with a stainless steel body. Accessing the point is done the old fashioned way, a la fountain pens of yore. Pull the cap off and place it on the other end and write away. When not in use as a pen, with the cap in the closed position, the Benchmade Pen can be used as a striking implement for self-defense. Both the Surefire and Benchmade pens are attractive writing instruments, neither screams of it dual use possibilities.

Benchmade has a knife that's the very embodiment of the term "neat stuff," even though it's only a knife and doesn't have any trick functions. Called the Benchmite II, it utilizes the uniquely effective Levitator lock. To open or close the knife, depress the inset panel on the right side handle piece. This wonderful little lockblade folder weighs just over an ounce and a half. The drop point Tanto blade is fabricated from AUS8 stainless. It's drilled through for addition to a key ring, if one wishes. I just like to carry the Benchmite II loose in my pocket. It's the ideal innocuous looking knife that is seriously well made and ready for a surprisingly large array of tasks. An automatic opening version – quite a bit more expensive – is also available, where

legally permissible.

Although, perhaps, no longer imported from Italy, Xikar, noted for their still readily available high-quality cigar cutters and related items, produces a truly excellent pair of folding scissors. Open the scissors and unfold four different blades, including a knife and a screwdriver and a file. I'm not into fishing, but it's my understanding that these are considered an outstanding accessory for fishermen. Fisherman or not, a pair of folding scissors like these could come in handy for a variety of uses, including cutting bandage material or tape and opening holes in garments to administer first aid.

Blackhawk Products makes the HawkHook, a small, folding cutting tool incorporating a seatbelt cutter, an automotive glass smasher and a screwdriver. The seatbelt cutter will also safely cut parachute chord and webbing. There's a straight serrated cutting edge, a flat screwdriver tip that can also be used for prying, a bottle opener and a wire stripper. Made from stainless steel, the Blackhawk HawkHook includes a pocket clip and is small and light enough to be carried constantly, if one wishes. The blade itself is blasted AUS8A stainless.

Apparently no longer available is the SIG Sauer pocket cleaning kit. Mine is for the .45 and incorporates a two-piece brass rod, a third rod piece that is a jag tip, and two additional rod pieces, one of which is a swab, the other a brass bristle brush. The container itself – about half the size of a chubby cigar – is the handle piece. This is a go-anywhere accessory, a gift from my son-in-law. But it no longer appears on the SIG Sauer website. A great gadget, though. If you find one at a gun show, buy it.

Something that truly qualifies as neat stuff for military and SWAT use. During the Viet Nam War, a lot of GIs used what became known as the Viet Nam Tomahawk. There is more than one source for these 'Hawks, today, and they have appreciable differences. Under consideration as neat stuff is the one from Fehrman Knives.

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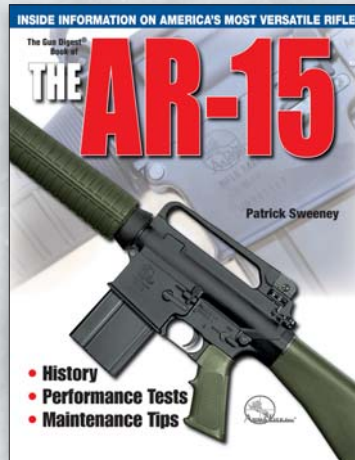
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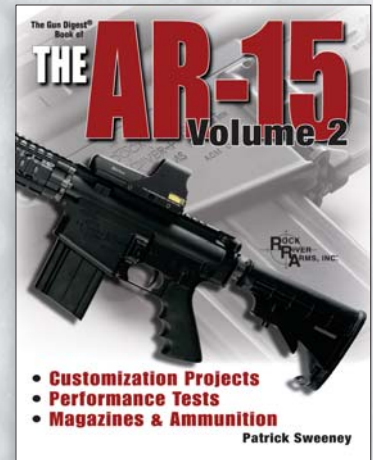
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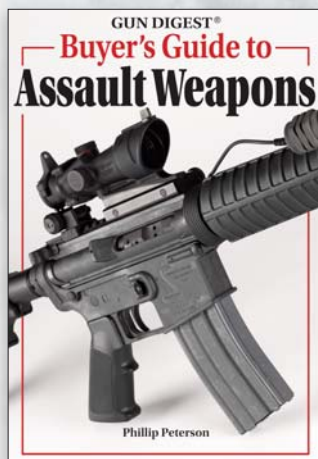
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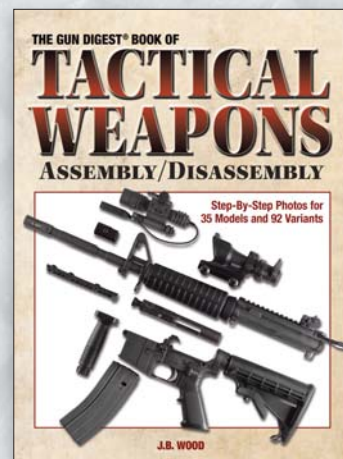
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▲ The Fehrman Tomahawk is a terrific piece of equipment.

◀ The SIG Sauer pistol cleaning kit is really quite handy and quite small. The kit assembled with jag tip in place.

With a head made from drop-forged 01 Tool Steel and a handle fabricated from a very tough modified nylon, the handle essentially sweated to the head, this is a serious item of neat stuff. The 'Hawk can be thrown, of course, and, at one pound even, it's a great thrower. But, these days, our GIs and other personnel who get up close and personal with deadly enemies, use the Lagana VTAC 'Hawk at contact range to neutralize enemy personnel. As far as I know, throwing is not an issue for modern combat use. The tomahawk can also be used for mundane chopping and cutting chores, of course. Again, since it weighs so little, it's perfect to take along. And, to be sure, 'Hawks are fun to throw for sport. With a virtually indestructible handle, the Fehrman Knives version of the Viet Nam Tomahawk is outstanding quality, through and through. A traditional item from America's frontier days, the tomahawk is still very useful equipment, as both a weapon and a tool.

When talking about neat stuff with people who are into weapons-related items, it's hard not to think of an ultimate item of neat stuff. Of course, I'm talking about the Henry Repeating Arms Company U.S. Survival Rifle, an improved version of the AR-7 as developed for use by downed U.S. Air Force pilots. Everyone who has seen the "007" film "FROM RUSSIA WITH LOVE" knows the rifle. A .22 LR with eight-plus-one capacity, it's the rifle that completely disassembles to be stowed inside the waterproof buttstock. The rifle actually floats when it is assembled or disassembled. The most noticeable improvement made by Henry Repeating Arms – aside from a choice of camo, silver or black Teflon finish – is reconfiguring the compartment within the stock for holding the receiver segment of the disassembled rifle. This change allows the receiver to be stored with one eight-round magazine in place, loaded or empty. The second magazine goes in the original magazine component compartment, thus allowing two magazines to be carried in the rifle, doubling the rifle's emergency capacity.

My Henry U.S. Survival Rifle is all black. It travels with us, occasionally, in the trunk of the car. In shooting tests, it's proven perfectly reliable and more than acceptably accurate. It's truly neat stuff.

Neat stuff is like beauty, I suppose, all "... in the eye of the beholder." I lost my dad in June of 1971, before I had most of my neat stuff. But, I think Jack Ahern would have enjoyed my lifetime's gathering of "neat stuff" as much as I do. He wasn't into guns and knives at all, but he had a true appreciation for neat stuff, nonetheless. Check out all these purveyors of neat stuff next time you're surfing the net – which is pretty neat in itself.

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by Dave Morelli

Eyes and Ears



I STILL REMEMBER MY ACADEMY DAYS WHEN THE LAST THING WE HEARD ON THE FIRING LINE BEFORE THE COMMAND TO FIRE WAS EYES AND EARS. The range master must have done a great job of pounding that in because other memory cells don't come in as clear these days. It was important because in those days there weren't fancy hearing protection that would allow you to hear instruction but would block the shot. Forgetting to replace your hearing protection resulted in ringing ears, especially when shooting under the covered line. Also, being able to see and hear later on in life seemed worth protecting.

Although my eyes don't focus as they once did, I can still see and enjoy the beauty of the world around me because I protect them when engaging in the shooting sports. I have worn glasses since grade school so having the frames on my face comes naturally and the glasses have provided some protection to my eyes over the years. Numerous times my eyes have been saved from damage because of my glasses; however they are not the best protection. One

OPPOSITE: I gave the glasses a direct hit with the Remington 1100. Sorry Manny. A part of the pattern hit the right side of the goggles (my right) and although they were pushed around they didn't come off the face.

BELOW: Sure glad to be wearing my Revision Sawflys. I have been stung numerous times with lead splatter and it is only a matter of time when piece finds my eyes. I am confident the lens will fare better than my unprotected eye.





LEFT: *The lenses withstood the impact of the shot. Not Bad. I feel better knowing that the lead splatter will not breach the lens after being slowed down by contact with the steel.*

BELOW: *The Sawfly is a great choice. The Rx carrier inside the glasses give impaired vision shooters protection and clear vision. The Rx carrier will easily transfer to the other Revision Products.*



of my academy mates wore an eye patch for several weeks because of an accident on the range. We were doing an exercise involving blanks and a piece of blank material passed by inadequate shooting glasses and injured his eye. Fortunately there was no permanent damage and we now have better eye protection products.

Revision Eyewear LTD offers protection for any mission. I checked out three of their products for this story and have been using their Sawfly glasses for all my shooting these days. These lightweight indestructible glasses offer three easily changed lenses from clear to polarized to laser lenses. They fit comfortably even through long practice sessions and provide exemplary protection without going to goggles.

Eye protection on the range and on the street is mandatory. Revision products meet all the military standards for ballistic impact. The lenses are scratch-resistant, which is paramount for a plastic lens, resist most chemicals, and also provide UV protection to the eyes.

I like the test that shows Revision products will withstand a direct hit with #6 shot from a 12 gauge at 16 feet. While no one wants to be splattered in the face with shot at that distance, it is nice to know these lenses will stop such projectiles. Although I am not from the "show-me" state, this is a philosophy I have adopted over the years, especially when it comes to protecting my eyes. I decided I wanted to see this phenomenon for myself. Confidence

in a product is much greater when it is the result of witness, not hearsay. I'm sure the average reader is not going to shoot up their new Revision eyewear, so I decided to do it for you.

I set up the same scenario advertised by Revision in their flyer except I used a Remington Model 1100 and I didn't chronograph the shot, but am confident it is close to 1300 fps. Temperature was 70F and not much wind. I made the test on their Desert Locust goggles, placing the eyewear on the face of Manny D. Mannequin, a reactive target from LE Targets. At 16 feet, the shot did not breach the plastic lenses and barely knocked the goggle off Manny's face. Other eyewear I have put to this test usually broke in two, severing the frame even though the shot didn't breach the lens. The soft frame material was not severely damaged by the shot and the strap retained the goggles on the face, slightly out of position.

In a mission scenario, this goggle would provide excellent protection from the flying debris that is common to explosive entry, gunfights, and combat situations. This would be my choice for a professional mission or combat training.

Another good option in goggle form is the Bullet Ant. It is a smaller goggle that is quite comfortable and would be a good choice if the larger Locust got in the way of other headgear. All of the Revision

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Products are helmet compatible though.

Getting back to my aging eyes. Anyone that wears corrective lenses knows the difficulties that surround shooting. Fogging lenses, blurry vision, and cumbersome corrective systems. Revision's Rx Carrier solves the problem and once you fit it with your prescription, it is interchangeable with the Sawfly, Desert Locust, and Bullet Ant. Sweet, hey? I keep my carrier in the Sawfly and have shot many matches with protected confidence and perfect vision. Well, as perfect as my eyes are capable of.

With the prescription lens so close to my face I would think there would be some fogging but there is enough air-flow to keep the lenses clear. The Bullet Ant goggle also keeps my eyes protected without any fogging problems. I really like these for ATV riding because the full goggle protection keeps dust and debris from getting in my eye without the fogging thing. Check them out at www.revisioneyewear.com.

Ear protection is also mandatory for the shooter no matter what his or her mission. One gunshot is all it takes to degrade hearing and the right gunshot can wipe it out completely. Most of my hearing loss is from lack of education when I first started shooting and a few too many rock con-

certs. These days I don't even think about shooting without proper ear protection. I have been wearing molded ears plugs made for me by my friend Ed Santos at Center Target Sports. They fit tight, block out all sound, and don't get in the way when doing tactical drills with the carbine.

There are many versions of ear protection that have electronic devices that fit in the ear and allow the user to hear but block out high decibel sound. Some of the better ones are kind of expensive, but there are many models within the grasp of all shooters. These are handy when in a shooting class and it is necessary to hear commands from the rangemaster clearly but still be protected from gunfire. They would also be advantageous to missions or competition that make muff-type protection impossible.

Ear muffs provide some of the best ear protection but are clumsy in practical situations. I do use them, especially when shooting big stuff like the .50 BMG, along with my ear plugs. Double protection is always good with these big guns. The older plain muffs have been replaced with electronic muffs like the ones from Walker's. Walker's Power Muff Quads provide 9x hearing enhancement with sound-activated compression. I really like these muffs when attending a class

because they are adjustable to tune in all other noises and instruction from the rangemaster. As my ears are diminished already, the Power Muff Quads allow me to hear instructions that would be garbled with my own ears. They are also useful in other applications where superior hearing is necessary but loud noises need to be blocked, such as working with power tools. I like them for cutting firewood. This technology is also handy in the hunting field as they will protect your hearing when the shot is made, but the user can still hear minute sounds of game in the woods. In a tactical situation, the sound amplification could give operators valuable intel and protect their hearing if shots were fired in close quarters like a hallway or enclosed room.

Eyes and ears are precious gifts and will degrade on their own with age. Don't be in a hurry to wear them out. Let the words "eyes and ears" ring through your memory every time you pick up a gun to shoot. It is better than the ringing you'll get as a result of shooting without them.

Dave Morelli is a retired police officer from Las Vegas. He now lives in Idaho.

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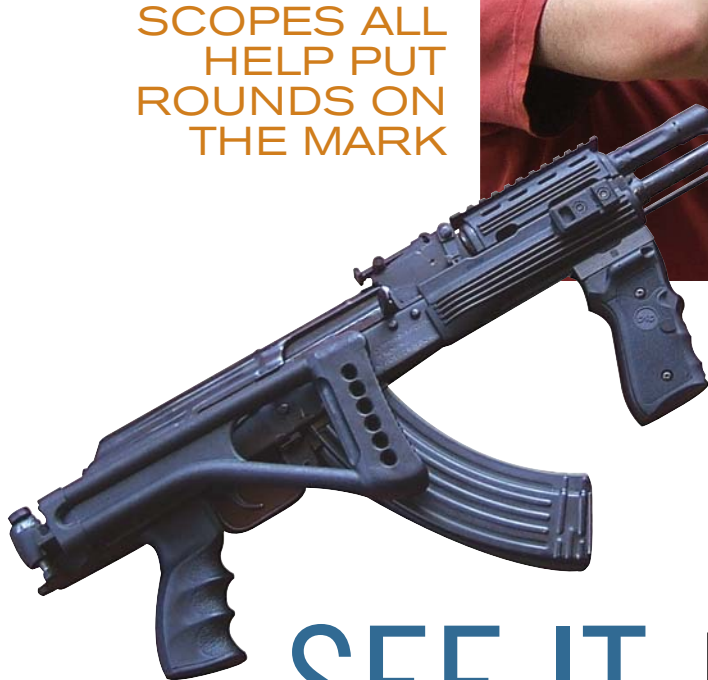


LIGHTS,
LASERS AND
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HELP PUT
ROUNDS ON
THE MARK

by Jerry Ahern



Photos by SHARON AHERN



SEE IT, SIGHT IT, SHOOT IT

ONE COULD JUST AS EASILY PHRASE THE TITLE OF THIS ARTICLE AS "TARGET ACQUISITION AND DISPOSITION." Before you can shoot it, you've got to see it – know where it is and how far away. Then, you've got to get your weapon aligned with it, get it under your sights, which can also demand knowing how far away the target is. Then, you drop the hammer, as required. Sometimes, the process is more simplified, when the target may be at extremely close range. Then, the Acquisition and Disposition parts can become all-but simultaneous.

First: Let's See It: The Leupold 10X50mm Military Tactical Binoculars are so high tech it is almost unimaginable. Do you need to find the range of a target? Use the adjustable Mil-Dot reticle for easily determining target range. Taking these binoculars afield in rough terrain? They are armored and 100% waterproof at any reasonable depth. Are you in an environment where black or really dark green might

stand out? How's coyote brown strike you? Every feature you could think of is incorporated in these binoculars. Coated prisms all but eliminate the problem of light defraction. The binoculars are designed to be adjustable to your specific vision. The eye relief is adjustable so that the binoculars can handily be used in the presence of goggles or other protective eyewear or no eyewear at all. There are lens caps, of course, and a handy neck strap and the zippered case with its own strap is designed to be fully MOLLE compatible. The case is, of course, padded and includes a compartment containing a cloth for wiping the lenses, as needed. Taking the Leupold 10X50 Military Binoculars out of a house air conditioned to a habitable temperature and into the Georgia sunshine in August was living proof of the fact that no matter how high tech your optics might be, a radical change in humidity and temperature will blind you every time. These binoculars are only for sale within the United States, unless special State Department clearance is obtained. This is a good thing. Whether you are tactical or into any other activity that would be enhanced by what certainly seems to be the ultimate binoculars, these 10X50s are fantastic. The first step in taking down a target, whether in the tactical context or as a hunter, is to accurately identify it and determine feasibility for the shot. These Leupold binoculars fill that function.

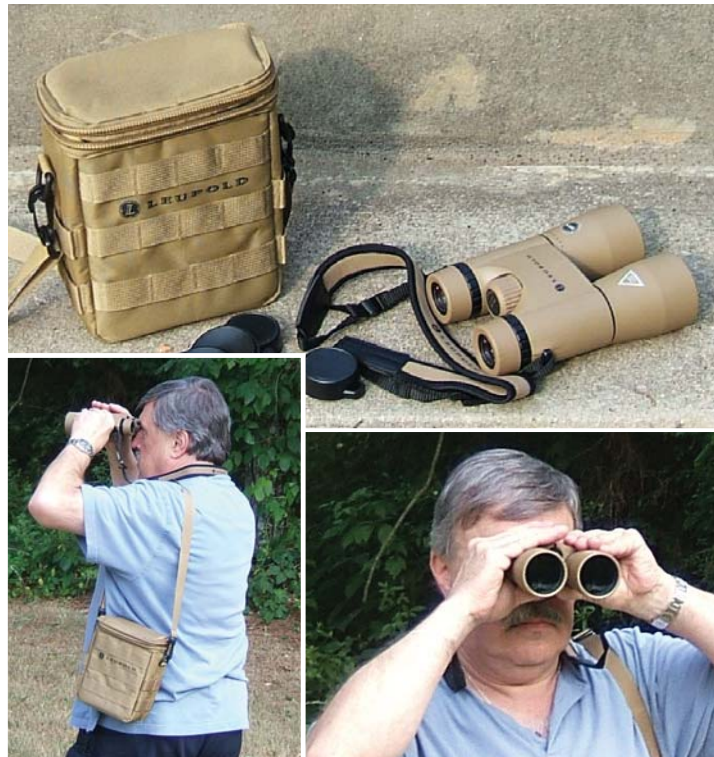
Light 'em Up: In tactical applications, an adversary may suddenly reveal himself at close range, and often under extremely poor lighting conditions. The SureFire X300 Weapon Light addresses this scenario. The X300 mounts easily under the frame of any pistol with a Picatinny rail. Made for use with a pistol, it could be mounted on a rifle or shotgun, if the need arose and the long gun had a Picatinny rail. My X300 is mounted under the frame of my Glock 22. The X300 is an intense light. Bad guys love to hide in the dark and are often afraid of their nefarious intentions being exposed to the light – not to mention the light disrupting their night vision.

The X300 is an electronically regulated LED that generates 110 Lumens. The Total Internal Reflection lens focuses the beam, but also allows enough additional light to satisfy the needs of peripheral vision. As is typical with SureFire, there is a hard-anodized aerospace-grade aluminum body working in conjunction with o-ring seals and a tempered Pyrex window or lens cover. The unit runs on SureFire's proprietary three-volt Lithium batteries.

The X-300 utilizes what is called a "Rail-Lock,"

which is extremely easy-on and easy-off, but just as extremely reliable. I pride myself on being all thumbs, but even I can get the X-300 on and off my Glock with perfect ease. I am not yet a fan of lights being attached to firearms, but it is the tactical trend and I cannot help but admit that the Glock in combination with the SureFire X-300 really works.

In concert with the X300 that I use on my Glock 22, the weapon is also fitted with Crimson Trace LaserGrips. For a Glock, of course, one can't go around swapping grips. The Crimson Trace unit is an over-mold, as it were, and easily actuated. The assailant against whom the laser is employed will almost certainly realize that the bullet will hit very close to the red spot on his/her chest. Light up the attacker with the Crimson Trace laser or the Surefire X300 light and the reality of the situation should not escape your opponent. The next step, if hostilities escalate, is the gun going bang and his/her evil career being cut short. The marvelous thing about the Crimson Trace and Surefire units is that they drastically reduce the need for the gun to go bang at all. But even if you don't believe in the deterrent effect of the laser or the blinding effect of the light as force option, you must admit that the laser allows for fast, accurate fire from any posi-



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tion and the light certainly provides for target identification. Furthermore, in an extreme close-quarters incident, the laser dot can tell you if your ECQB shot is aimed at your attacker or at a body part that belongs to you. Fighting from the ground and firing from flat on your back means you want to make sure that bullet does not hit your knee, leg or foot as it heads toward the bad guy.

The Crimson Trace unit disallows a little bit of finger purchase on the Glock's slide serrations, but not so much as to be any sort of inconvenience. What I did reconfirm the last time I was shooting the Glock was that the laser makes gross target acquisition ridiculously simple under a variety of light conditions. The red laser, for example, is perfectly visible against even a moderately light colored target in strong sunshine. And, living in Georgia tends to make one an expert on strong sunshine.

Just grip the pistol and the gripping action activates the laser along the concavity of the back strap. The dot size is more or less a half-inch at 50 feet, what the laser will be set for as it comes out of the box. But, the LG-617 is readily adjustable for windage and elevation as required. You'll have over four hours of use time and the Lithium batteries have a five-year shelf life. On those occasions when I've felt the need to acquire more #2032 Lithium batteries, I have gone to my local Wal-Mart. The batteries are so inexpensive that I've forgotten how much they cost. Typically, you won't encounter any special problems with holstering and so many of the better holster makers these days are of-

fering their holsters for guns equipped with Crimson Trace lasers.

If you're potential target may require a little more oomph than a pistol cartridge or you would be pushing your marksmanship skills with a pistol, both problems are handily solved by another Crimson Trace product originally made for the AR-15, but it works just as well on my Century International Arms WASR AK-47. My unit is the VF-302 vertical fore-end grip, which has been discontinued in favor of the MVF-515, which is a light and laser combination. Either unit is a terrific asset for any tactical rifle equipped with a Picatinny rail, when that rifle will be used at closer range. The advantage offered by either the discontinued laser-only unit or the new laser and light unit is, as Crimson Trace advises, that you can keep both eyes open, when the likelihood of a close-range encounter exists. Wedding such a unit to an AK-47 is a natural pairing. We've all seen reports of US Military units in house-to-house bad guy clearing, using AKs because of their maneuverability and more powerful cartridge. But, whether one of these laser units is on a semi-auto AK or a selective-fire military- or departmental-issue AR, their effectiveness is undeniable. Plus, you get the added benefit of a vertical fore-end grip, which facilitates use of these rifle caliber firearms with the convenience of a submachinegun.

When your target may be at short to intermediate ranges, and rapid acquisition could be of paramount importance, it would be hard to imagine a better sight system than a Leupold Mark 4 1-3X 14mm Close Quarter/Tac-

tical Scope, hereinafter referred to as the Mark 4. We mounted one of these on an AR-15 and set out to The Firing Lane in Bogart, Georgia. At 25 yards - the maximum distance available - my son-in-law, Danny Akers, did what I consider some remarkable shooting. He brought the scope to perfect zero in a few rounds, then shot a five-round group, four rounds of which were literally one hole only slightly larger in diameter than a single bullet hole, the fifth round a flyer which was about a half-inch out. Keep in mind, Danny had never used the scope before, never fired this particular AR-15 before, was using reloaded ammunition of a type he had never fired before and did all of his shooting rather quickly from an off-hand, standing position.

Yes, we're glad Danny's on our side.

The scope comes with everything needed to mount it on an AR equipped with a carrying handle or a Picatinny rail. Here are some of the features. There are 11 reticle illumination settings, this means you can adjust the scope to the light conditions your tactical situation presents. Good old ordinary AA Duracells or other high-quality standard batteries can give you more

than 6000 hours of use. Power settings range from 1 to 3X. The mounting system is so reliable that you can fire your rifle, remove the Mark 4 for one reason or another and replace the scope, still keeping your zero -- as far as I can tell. The on/off adjustment knob is easily worked and click-adjustable windage and elevation dials work in ½ MOA increments. Danny actually adjusted for windage and elevation with the head of a spent case. The reticle even works when it's turned off, by the way, or the battery is removed. Whether your mission is tactical, target or hunting, the Mark 4 CQ/T is an outstanding choice.

In the old days of the Cold War, when there seemed to be fewer crazies in the world and enemies were more easily identifiable, one could afford to be less than high tech. Today, when virtually anyone can be hiding a secret identity as a suicide bomber and there are nutballs in the world who will do things like India's Mumbai massacre, you need all the help you can get in terms of identifying, fixing and dropping people who have no respect for human life. Being proficient with cutting edge individual weapons technology is a necessity for those professionals in the military and

in law enforcement that defend the innocent and the well-intended prepared individual who wants to be able to do what he can -- if he must.

Where to find them:

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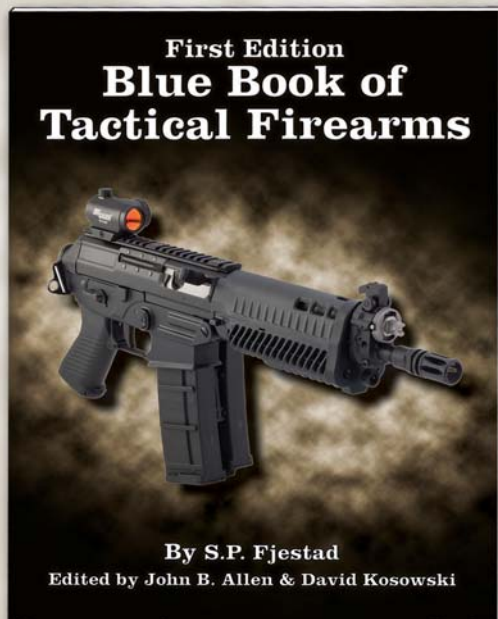
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ext. 3

Fit to FIGHT

THE TREADMILL: A machine for your most basic skill

by Gary Reichert



TOP LEFT: *The Precor 954 treadmill offers top of the line entertainment options, but also doesn't skimp on features like 4-inch rollers that make the working parts as solid as the electronics.*

LEFT: *The Precor 932 is one of the more economical light commercial treadmills.*

The Life Fitness Classic is a workhorse treadmill proven through years of hard use in fitness centers across the country. The Life Fitness display is very basic, meaning all of your investment goes into the nuts and bolts that make a dependable treadmill.

A PURSE-SNATCHER SPRINTS THROUGH A PARK HURDLING OBSTACLES WHILE TRYING TO ESCAPE.

A car careens out of control directly toward your position. A child stands frozen in the face of oncoming traffic. Small arms fire cracks from a nearby window, while you stand in the middle of a vacant lot. All of these scenarios have one thing in common. The faster you run, the better your chance of successfully completing your objectives.

No skill is as vital across multiple to tactical situations as running. Whether you are chasing a fleeing combatant, temporarily need to become a fleeing combatant, or simply need to move quickly from one area of cover to another, running is your go-to skill.

Since, I believe in 100 percent honesty with my readers. It must be said. I hate to run. Not “prefer not to”, not “mildly dislike” running. I full dead-on hate running. And I hated it even before having a quad tendon rupture that was surgically reattached within two weeks of writing this article. As I type this I can barely walk. Meaning this the perfect time for me to write a review of what you need to know about treadmills because I won’t have to actually get on one.

The objective of this article is not to sell any specific brand of treadmill. The treadmills used for comparison are from three major manufacturers: Star Trac, Precor and Life Fitness. There other major manufacturers including Nautilus, Woodway, Paramount, Matrix and Cybex that come to mind immediately. All make good treadmills. This article shows you what specifications the manufacturers offer

as a basis for comparison, and helps you decide which are important for your application. That said, I would have no qualms recommending any treadmill in this article as a great choice for your fitness center.

The principals and items of comparison will translate across all treadmills from home units to high-end commercial units. The specific treadmills used for comparison are all “Light Commercial” offerings.

The next step down is consumer products. Police, fire and military fitness centers all are commercial installations. Putting a consumer piece in these installations will void the manufacturer’s warranty the moment it goes through the door. You also won’t save any real money going with a consumer treadmill unless you buy junk. Good quality consumer treadmills start at about \$3,000. The Light commercial treadmills listed here have a sug-

gested retail price of between \$4,495 and \$6,901. I have seen several of the models discussed in this article delivered and installed for between \$3,000 and \$3,500. The cost of replacing a motor or computer board outside of warranty will offset any money you may have initially saved.

The step up is to a full commercial treadmill. These are made to withstand the rigors of a Gold’s Gym or Lifetime Fitness where they will be run on continually for eight or more hours per day. The units need to withstand huge amounts of heat and static electricity. In tactical fitness centers, other than some high-use military facilities, your treadmills will not see more than 3 or 4 hours of intermittent use. Also, there is a trend to add more and more entertainment related electronics to high-end commercial treadmills; everything from integrated TVs to I-Pod docking stations and multiple personal cooling fans. While these extravagances make great selling points for \$50 per month memberships, they aren’t critical for your facility.

The one aspect that full commercial treadmills offer which may be of value to your team is speed. Most light commercial treadmills have a top speed ranging between 10 and 12 miles per hour. The full commercial treadmills often have capabilities of up to 16 miles per hour. Keep in mind that 10 miles per hour is a six-minute mile. A six-minute mile is hauling. Running 16 miles per hour is a 3:45 mile. I personally think that a sub-four-minute mile capability is overkill for a treadmill. But, if any of your team is training for the Olympics, it may be worth the additional investment.

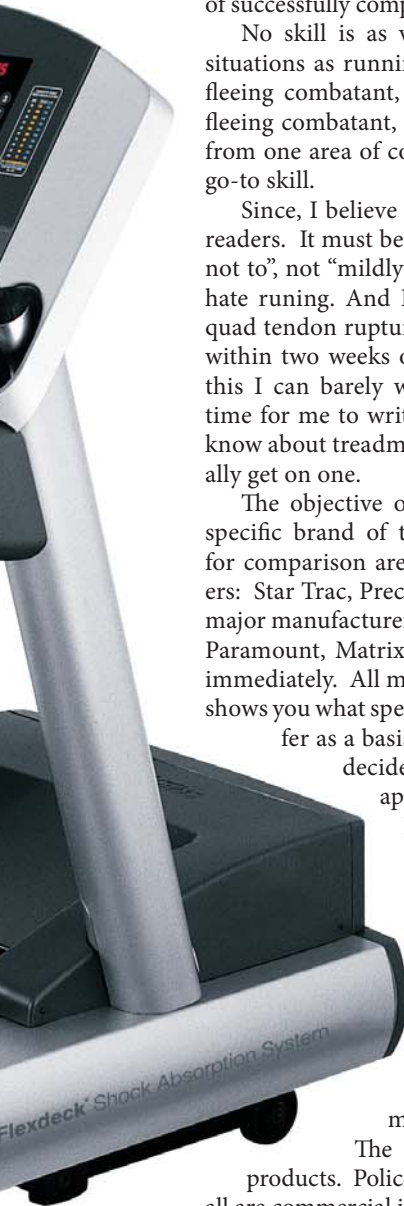
The light commercial treadmills included here for comparison, along with their MSRP are:

Star Trac S-TRc	\$5,595
Star Trac S-TR	\$4,495
Life Fitness Classic Treadmill.....	\$6,901
Life Fitness 91-Ti	\$4,566
Precor 954i.....	\$6,895
Precor 932i.....	\$5,995

One of the components of this article is a matrix going through the features of these six treadmills. Before we get to that, we will walk through the major line items and establish what matters and what doesn’t.

Motor

Manufacturer’s always list motor size as a primary item for comparison. Motor size does matter in high-use facilities. A higher horsepower allows the motor to operate at a lower fraction of its maximum, saving wear and generating less waste heat. Chances are your treadmills will not get nearly enough use for heat to be an issue. All of the treadmills listed here have a 3 hp or larger motor and are all more than adequate for the job at hand.



	STARTRAC		Life Fitness		PRECOR	
	S-TRc	S-TR	Classic	91Ti	954i	932i
Frame/Finish	Powder Coated Steel Frame	Powder Coated Steel Frame	Steel Frame	Steel Frame	Powder coated steel	Powder coated steel
Dimensions	81"l x 32"w 58"h	81"l x 32"w 58"h	83"l x 37"w 63.5"h	81"l x 32"w 58"h	88"l x 35"w 64"h	79"l x 39"w 59"h
Motor	5 HP AC	3 HP AC	4 HP AC	3 HP AC	4 HP AC	4 HP AC
Max Speed	12.5 mph	12.5 mph	13 mph	10 mph	12 mph	12 mph
Max Incline	15%	15%	15%	15%	15%	15%
Max Decline	N/A	-3%	N/A	N/A	N/A	N/A
Roller Size	3" Sealed Bearings	3" Sealed Bearings	3.5" Precision Crowned	2.75" Precision Crowned		
Running Area	60'l x 20'w	60'l x 20'w	60'l x 20'w	60'l x 20'w	60'l x 20'w	56'l x 22'w
Display Readouts	Time, distance, incline, speed, heart rate, 1/4 motivational track, profile, calories, MET's course profile.	Time, distance, incline, speed, heart rate, 1/4 motivational track, profile, calories, MET's course profile.	Elapsed Time, Speed, Distance, Incline, Calories per hr, distance climbed, Heart Rate, watts, Met's, custom messaging.	Elapsed Time, Speed, Distance, Incline, Calories per hr, distance climbed, Heart Rate	Calories, Distance, Heart Rate, Incline, Pace, Profile, Speed, Time, SmartRate	Calories, Distance, Heart Rate, Incline, Pace, Profile, Speed, Time, SmartRate
Entertainment System	15" Integrated HD with PVS Optional	N/A	Optional LCD System.	Optional LCD System.	12' Optional PVS	12' Optional PVS
Heart Rate Monitoring	Telemetry and Contact	Contact Heart Rate	Polar Telemetry & Lifepulse Digital Heart Rate	Polar Telemetry & Lifepulse Digital Heart Rate	Touch/Wireless	Touch/Wireless
Custom workouts	13 Custom workouts	13 Custom workouts	6 Customized Workouts.	NONE	6	7
List Price	\$5,595	\$4,495	\$6,299.00	\$5,999.00	\$6,895.00	\$5,995.00
Warranty	Light Commercial: 3 Year warranty on parts and labor, 5 year parts and labor motor and mcb.		2 Year electrical, 1 Year mechanical and labor. 7 Year motor, frame and shock absorbers.		Seven Year Frame, Five year Display, motor, Three year motor controller, One year ware items, two year parts, one year labor	
Website	www.startrac.com		www.lifefitness.com		http://www.precor.com/	

Maximum Speed and Incline

All six treadmills have maximum speeds between 10 and 12.5 mph and a maximum incline of 15 percent. These are typical for light commercial treadmills and not different enough to be significant and all are sufficient for your needs.

Roller Size

This is one of the more underrated and more important items of comparison. The roller size determines how much tension must be on the belt for the drive motor to make the belt turn. Bigger rollers have a greater surface contact area and require less tension to generate an equal amount of force driving the belt. Less tension means less stretch and longer life for the belt.

Often on older treadmills, you can feel the belt slip or hesitate when your heel strikes. The fix for this is to tighten the roller and increase tension on the belt. Bigger rollers make the belt stretch less, require less maintenance and make the belt last longer.

Running Area

This is the amount of the belt that is open for the runner's foot strike. Width isn't critical, but a minimum length can be important. The specific number doesn't matter as long as your runner with the longest stride can maintain a comfortable stride length. Across the models listed, all running area lengths, with one exception, are 60 inches. This is one area where consumer treadmills often skimp to lower production costs.

Standard Equipment, User Readouts and Custom Workouts

Enter sales and marketing BS-- stage right. This is the marketing department's chance to earn their pay by raising the perceived importance of all the useless crap to provide an edge over their competitors. Gadgets don't determine what a user does on a treadmill. More than 95 percent of the people who run on treadmills get on, press quick start, adjust the speed, then run until they reach their target time or distance. Nearly, everything else is cosmetic.

Heart Rate Monitoring

Integral heart rate monitors can be fun, but contact monitors are notoriously inaccurate. Often two identical treadmills, side by side will display significantly different contact heart rate readings. The Polar monitors are more accurate, but most users interested in their heart rates will already have watches, so the capabil-

ity for the treadmill to monitor heart rate is redundant. All of the treadmills offer contact heart rate monitors and all but one offer telemetry monitoring.

Warranty

This is the one aspect that is nowhere near standard across manufacturers. Warranty is typically divided into separate categories for parts and labor. When manufacturer's talk up their product's durability they often reference a 3-, 5- or 7-year parts warranty. The dirty little secret is the parts warranty doesn't cover the part that matters. A typical 3 hp treadmill replacement motor will run about \$200. The minimum charge for a service call is about \$150. With one trip to diagnose the problem and a second to install the part, your best case is for labor to exceed parts by 50 percent. Add drive time and one or two potential mis-diagnoses by the service tech and labor get out of control quickly.

One consideration the manufacturers don't always list is how friendly their treadmills are for physical therapy. Writing this article with my left leg in an immobilizer, I may be more sensitive to this than usual, but injuries and rehab are an unavoidable part of tactical situations. From sprained ankles to quad detachments, stuff happens. Make sure your treadmill can handle these special circumstances when they arise. There are three features required to make a treadmill rehab friendly: low step up height, slow starting speed and either integrated or available hand rails.

With the basics covered, there are several specific pit-falls, so pay attention.

Internet Retailers

The Internet is a great tool to get about anything you want at a bargain price. Or to at least you think you are getting a bargain, until your payment clears. There are some legitimate Internet retailers; unfortunately there are less reputable retailers as well. Challenges range from misrepresenting consumer products as commercial products to the inability to arrange for warranty service. Here are the minimum questions I would want answered (in writing) from the retailer before buying any treadmills on line.

1. Is the warranty a manufacturer's warranty and can I get independent verification from the manufacturer?
2. Who handles warranty and service claims in my area and can I contact them?
3. Are the units new or used?
4. When will they be delivered and what recourse do I have to get my deposit

returned if the schedule is not met?

5. Who have you sold to in my area that I can call as a reference?

6. Brand X Treadmills at Amazingly Low Prices

There are a few brands of treadmills available over the internet that claim to offer full commercial treadmills at under \$2,000 delivered and installed. They offer apparently great warranties and claim the treadmills will do everything the major brands will at a fraction of the price. These brands would need to be dealt with individually on a brand-by-brand basis to give a fair comparison. As a general rule, if it seems too good to be true, it probably is. The short answer is; if these treadmills were as good as the ones produced by major manufacturers, why aren't they in the high-use facilities like Lifetime Fitness and Gold's Gym. Commercial fitness centers work off of a narrow profit margin. In a facility with 50 treadmills, saving \$2,000, or more, per unit would add up. If they could really save \$100,000 on treadmills, they would.

Extended Warranties

These can be life-savers, especially on brands where the manufacturer's warranty is lacking. They are available for up to five years, and you should plan for replacement after five years anyway. On a \$4,000 treadmill, a five-year extended warranty covering parts and labor, typically runs under \$500. You would break even on one major repair, like a motor or main circuit board replacement.

Buy Local

Most major manufacturer's have regional representation through commercial dealers designed to handle "Vertical Markets" including police and fire. When you can, buy through this regional representation. The reps are a great resource and the dealers have service networks in place. The reps make one simple point of contact for you for everything from simple operating questions to service issues.

Running is a valuable skill and like any skill, must be practiced to be developed and maintained. With the guidelines portrayed here, you should be able to make a solid purchase decision on a light commercial treadmill. Now you can use your running to chase down bad guys instead of tracking down information on which treadmill to buy.

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TACTICAL PANT FEATURES FULL PERFORMANCE

Propper International, manufacturer of the highest quality garments for military, tactical and law enforcement use, proudly introduces the new Propper Light Tactical Pant, just in time for the warm weather. The Propper Light Tactical Pant offers more features and better benefits to the wearer, whether the job demands active performance or just another day at the desk. Engineered for action, the Propper Light Tactical Pant is made from fade resistant 65% polyester/35% cotton ripstop fabric with a DuPont Teflon coating to repel liquids and stains. Totally exclusive to Propper, the Light Tactical Pant comes with a FREE black nylon duty belt, a secure wallet pocket-in-a-pocket, a double coin/utility pocket, and six colors including a new Grey color, all at a wallet-friendly price of \$34.99 MSRP.

Available in Men's sizes in Black, Olive, LAPD Navy, Khaki, Coyote and Grey. **For more information on Propper's New Light Tactical Pant or to find a dealer near you, call 800-296-9690, fax 877-296-9690 or visit www.propper.com.**





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OPERATORS DEPEND ON 5.11'S TACLITE, FASTAC AND GLADIATOR SL5 GLOVES

Experienced law enforcement officers and operators quickly learn which gloves they can count on. To equip users with the latest designs for their changing needs, 5.11 partnered with world-class tactical expert Jeff Gonzales, a highly-decorated and respected 12-year veteran of the Navy SEALs and president of Trident Concepts, LLC (TRICON). Gonzales, who wears gloves daily both in the field and for training, understands the demanding conditions officers and operators face. Real-world experience from Gonzales and feedback from field operators generated 5.11's outstanding Taclite, FasTac and Gladiator SL5 gloves.

If you wear gloves in hot weather, you need 5.11's lightweight, breathable Taclite gloves. Ideal for indexing a pistol, driving and conducting searches, the cool Taclite glove offers golf-glove agility and second-skin protection. Constructed with fine goatskin palms, the gloves feature a Lycra backing for stretchy comfort and great fit. Key components include 5.11's TacticalTouch fingers for maximum dexterity, plus an industry first: a unique, articulated thumb design known as the 5.11 TacticalTouch Thumb, which offers enhanced movement and touch sensation. At the base of the glove is a Velcro cuff, along with a smart strap that stays out of the way as you mop sweat from your brow. Priced from \$24.99, the black Taclite Glove is available in sizes S-2XL.

All 5.11 gloves deliver unmatched quality, performance, comfort and value – and each comes with a free carabineer. **To find your closest 5.11 Dealer, call 866-451-1726 or visit www.511tactical.com so you can try on all 11 precision-engineered 5.11 glove styles and check out authentic Taclite clothing, the Select Carry Pack, eyewear, summer socks and more.**

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H Seeing what can't be seen is now possible with tactically powerful thermo technology from NIVISYS. The NIVISYS TAM-14 Thermal Acquisition Monocular is a powerful ultra-compact hand held or firearm mounted device that solves some very real tactical problems for the military and law enforcement.

Thermal gear is almost like using x-ray vision. Observing suspects of interest through smoke, fog, bushes and other objects that otherwise may hide them from all other types of visual devices. The NIVISYS TAM-14 uni provides a powerful tactical advantage solving these problems.

The TAM-14 also has an operator manipulated menu driven electronic system giving the operator a choice of five sight reticles with 1/4M.O.A. elevation and windage adjustments that are set internally with the controls. This feature makes possible precision short and mid-range shots from the firearm it may be mounted on.

At only 5.7 inches in length and weighing just 16.2 ounces it truly can be taken and operated most anywhere and in a variety of unit mountings. Fielded by U.S. Military, federal, state and local law enforcement organizations.

For additional details call 480-970-3222 or visit www.nivisys.com.



NIVISYS

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In a tactical situation, seeing and not being seen may save lives and resolve a dangerous situation. NIVISYS' TQP (Tactical Quick Peek) tri-fold periscope is a handy hand-held unit that solves some real tactical problems for military and law enforcement. It is a win-win situation when you can take proven technology and couple it with modern features to come up with a winner.

The NIVISYS TQP can be deployed in 15-seconds from its compact carry take-down configuration. Simply unfold the hinged one piece unit (no separate pieces to assemble), hand-tighten the connectors and the TQP is ready to use to safely peer down hallways, up, over and around obstacles and yet keep the operator safely behind protective cover.

The TQP can be combined with NIVISYS' MUM-14 ultra-compact night-vision monocular (with built-in IR light source) for night- or low-light operations. Because of the previous features and a 3x-magnification the TQP's, overall ease of use in real time vision the TQP is superior to a mirror image. The TQP offers significant advantages (and reflection protection) over mirrors, especially in the event of longer deployments where you may have to observe from cover for hours on end. MSRP: \$406.

For additional details call 480-970-3222 or visit www.nivisys.com.



YOU'RE READY FOR THE NEXT CALL WITH BAIL OUT BAG

Since the Columbine massacre, active shooter situations have increased dramatically. Recent killings of police officers in California and Pennsylvania, as well as family and mass murders in multiple states demonstrate that an officer must quickly be prepared for an escalated response. Increased threats like these demand a fast “grab and go” bag that deploys instantly and provides quick and easy access to all your essential equipment. The new Bail Out Bag from 5.11 is made specifically for Active Shooter Response situations. Just drop your AR magazines in the three front pockets and pack the center compartment and side pockets with extra pistol mags, flex cuffs, 550 cord, a radio, GSW first aid kit, snack bar, door wedges, water, SWAT-T, etc. Pouches attach to web platforms on the exterior side utility pockets and bag interior, which is lined with 5.11 Back-Up Belt System platform. The adjustable shoulder strap with quick-release capability features a web-covered shoulder pad that can be placed in a lower position to add an additional pouch, or removed altogether. The back of the bag has padded aero-mesh to wick moisture, along with a belt loop for stability. Constructed of rugged 1050D nylon with YKK zippers and Duraflex hardware, 5.11's Bail Out Bag holds 557 cubic inches or 9 liters. It's priced at \$44.99 and comes in black and flat dark earth. **Call 866-451-1726 or visit www.511tactical.com today to find your closest 5.11 Dealer, where you can pick up Bail Out Bags, PUSH Packs and Range Ready bags, plus tactical apparel, footwear and more.**





GUN TUBE INSPECTION SYSTEM

InterTest Inc. of Columbia, NJ introduces the iShot M4 Gun Tube Inspection System, designed for the internal inspection of cannons, mortars and howitzers.

The 14-inch length x 52mm outer diameter camera head visually reveals the general state of a gun tube's interior at high magnification. The camera head is equipped with two high-resolution CCTV cameras for optimal inspection of the rifling's condition. The front view camera has a fixed focus with 115-degree field of view. The side view camera allows the user to remotely focus the camera displaying any wear or corrosion within the gun tube. The ruggedized iShot M4 Gun Tube Controller Console is equipped with a built in eight-inch monitor allowing the user to view the inspection while adjusting focus, light intensity, and recording all in one shot. The controller console is also equipped with a CF reader, USB Cable, 4GB CF Card, DVR Serial Port and PS2 for your keyboard. The included centering devices ensure the camera head is consistently in a centralized position within the gun tube achieving maximum inspection performance. Centering devices are designed for 57mm, 60mm, 81mm, 105mm, 120mm and 155mm bores (additional sizes available upon request). The 17-foot telescoping push pole allows for easy insertion and measurement graduations in both US Standard and Metric, aiding in the identification of the flaw or corrosion location in the bore. Applications include; Tank Gun Tube, Mortar Tube, Ship Gun Tube, Turbine Rotor Bores, Generator Rotor Bores, Shaft and Pipe Inspections.

The M4 Gun Tube Inspection Kit Includes: Dual View Camera Head (14 inch x 52mm OD), Camera Controller Console, Set of 6 Centering Devices, 4GB CF Card, Armored 25 foot Camera Cable, 17 foot Telescoping Push Pole, Rugged Water Proof Carrying Case (47.2 x 16.5 x 9.2 in.) and all necessary Video Cables. **908-496-8008 or visit www.intertest.com.**

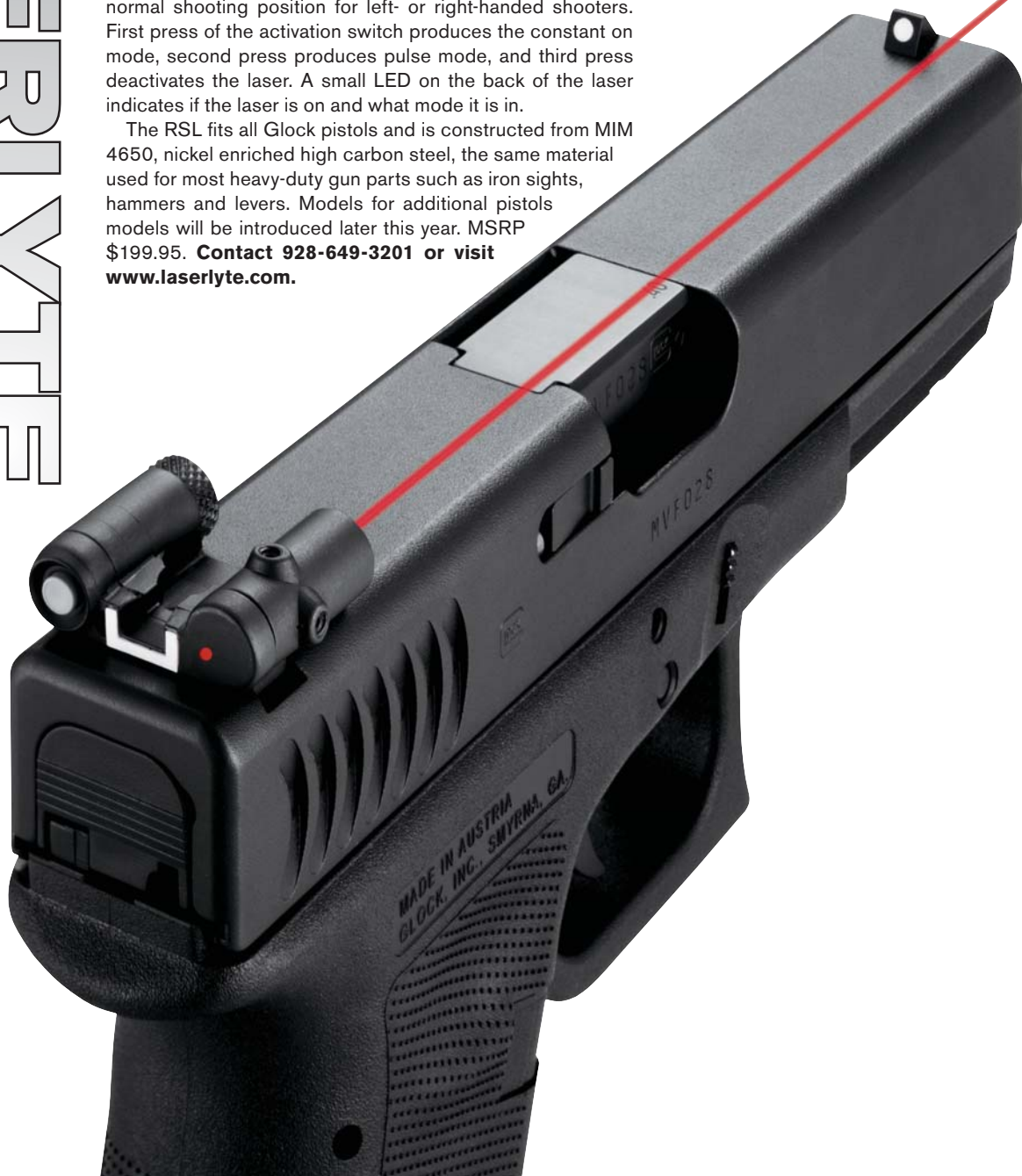
LASERLYTE

WORLD'S FIRST REAR SIGHT LASER

LaserLyte, the leader in laser technology, introduces the Rear Sight Laser (RSL) – a ground-breaking new laser design incorporated into the rear sight. Compact size and revolutionary performance make the new RSL the most extraordinary system LaserLyte has ever produced. Easy-to-install and easy-to-operate, the new RSL offers a high-power laser with the benefit of not having to replace existing grips, internal stock parts or holsters.

The activation switch is a strategically placed button at the back of the slide that is easily activated by the thumb in a normal shooting position for left- or right-handed shooters. First press of the activation switch produces the constant on mode, second press produces pulse mode, and third press deactivates the laser. A small LED on the back of the laser indicates if the laser is on and what mode it is in.

The RSL fits all Glock pistols and is constructed from MIM 4650, nickel enriched high carbon steel, the same material used for most heavy-duty gun parts such as iron sights, hammers and levers. Models for additional pistols models will be introduced later this year. MSRP \$199.95. **Contact 928-649-3201 or visit www.laserlyte.com.**



BODY ARMOR MEETS NEW NIJ STANDARDS

Safariland announced recently that it is one of the first body armor manufacturers to satisfy the requirements of the National Institute of Justice's (NIJ) new Voluntary Body Armor Compliance Testing Program under NIJ Standard-0101.06 (NIJ-06).

Safariland's XT-700 Type II (#BA-2000S-FC01) and XT-300 Type IIIA (#BA-3A00S-BR01) models have been determined by the NIJ to comply with the new NIJ-06 standard. Both models are part of Safariland's XT-Series of concealable body armor, and are now available for immediate purchase. As of this date, these are the only Threat Level II and Threat Level IIIA vests that have been authorized by NIJ under the new NIJ-06 standard. Safariland's NIJ-06 body armor models set a new industry benchmark by combining their latest technologies -- Geometrics and proprietary framing -- with advanced ballistic materials. The new available models include:

- XT-700 Type II -- provides advanced ballistic protection in a lightweight, hybrid design.

- XT-300 Type IIIA -- provides optimum ballistic performance in a robust design.

Please call 800-347-1200 or visit www.safariland.com.



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BLACKHAWK!

THERMOSTATIC BASE-LAYER GARMENTS

BLACKHAWK! Products Group, designers and manufacturer of the new Warrior Wear Thermostatic Base-Layer garments Engineered Fit series. These new garments are designed to regulate body temperature, wick out moisture, inhibit and control the growth of odor causing bacteria, and provide the wearer with total freedom of movement with maximum comfort. The Engineered Fit series uses material technology that allows the wearer to choose between a body-contoured Standard Fit and a full Compression Fit simply by size selection. To achieve a Compression Fit, or a true next-to-the-skin fit, select a size one down from your normal size. The Compression Fit eliminates any potential friction related "hotspots" and helps to reduce muscle fatigue.

The garments have a smooth matte-finish to reduce bulk when layering. Stretch mesh panels in all the garments enhance the freedom of movement and help to dissipate body heat. Flat-seam construction and a seamless top-of-shoulder construction prevent irritation. Available in the spring of 2009, the Engineered Fit series of shirts includes a Short Sleeve mini-mock collar shirt with an MSRP of \$39.99; a Long Sleeve mini-mock collar shirt with an MSRP of \$49.99; a Short Sleeve V-Neck shirt to wear under button-down shirts with an MSRP of \$39.99; a Short Sleeve 1/4 Zip front with mock neck with an MSRP of \$47.99; and finally a Long Sleeve 1/4 Zip front with mock neck with an MSRP of \$54.99. The Engineered Fit series of bottoms include the Long Bottoms with an MSRP of \$49.99 and Boxer Briefs with a 6-inch inseam and elastic waistband for \$24.99 MSRP. Both come with a comfortable 1-inch elastic waistband and stretch mesh panels to enhance freedom of movement and help to dissipate body heat.

For more information on BLACKHAWK! and BLACKHAWK! products, log on to www.BLACKHAWK.com or call 800-694-5263.





VEST WINS NTOA RECOMMENDATION

Protective Products International announces the Hornet Urban Assault Systems Tactical Vest has received an overall score of 4.32 from the National Tactical Officers Association's (NTOA) Member Tested and Recommended Program.

The Hornet is the law enforcement version of PPI's U.S.M.C. Modular Tactical Vest (MTV). The Hornet provides a full 360-degree load bearing capability in a two-point emergency release system. Made of 1000 denier construction with a cool mesh inner surface for greater air circulation, adjustable shoulders, and an emergency extraction drag strap, the Hornet is a modular system accommodating additional collar, throat, biceps, side gap, groin and lower back armor protection. The Hornet also accepts side SAPI carriers and is MOLLE compatible. A front abdominal flap secures an external cummerbund and has an auxiliary pouch for documents or a holster. The Hornet is available with a wide selection of equipment pouches and is available with PPI's Armorlite, TG and ST ballistic systems.

For more information on PPI's Hornet Urban Assault Tactical Vest or any other of Protective Products' ballistic protection solutions, call 800-509-9111 or visit www.body-armor.com.

PROSPECTIVE PRODUCTS
INTERNATIONAL

TRIJICON



RX30: A SERIOUS ADVANTAGE IN LOW LIGHT

Trijicon, Inc. has introduced a new non-magnified, self-luminous sight engineered to provide increased field-of-view capabilities that provide fast target acquisition for the military, law enforcement and hunting enthusiasts. The larger objective of the new Trijicon RX30 Reflex allows the user to move the firearm freely and remain on target at multiple shooting angles when surveying an area.

The new Trijicon RX30 Reflex sight features a large 42mm clear aperture lens for a generous field-of-view that offers both the biggest sight picture available and better illumination than ever before. With no batteries to rely on, this dual-illuminated sight features both fluorescent fiber optics and a tritium lamp for a clearly defined aiming point in any light condition. The glow-in-the-dark tritium provides amber reticle illumination in dim light, while the fiber optic system automatically controls the brightness of the reticle in all other light conditions. The Trijicon RX30 Reflex features advanced multi-layer coated lenses for superior, distortion-free light transmission. A larger +/- 30 MOA (one click per inch at 100 yards) allows for a greater range of adjustment for mounting to various firearms.

For more information about the new Trijicon RX30 Reflex sight, or any of the company's line of self-luminous aiming systems for tactical and sporting use, contact **Trijicon at 49385 Shafer Ave., Wixom, MI 48393. Telephone: 800-338-0563 or visit www.trijicon.com.**

ELZETTA



TACTICAL WEAPON LIGHT

Introducing the revolutionary new Elzetta ZFL-M60 LED Tactical Weapon Light featuring illumination by Malkoff Devices. Elzetta's ZFL-M60 LED Tactical Weapon Light is rated at 235 honest lumens out the front (not rated at the emitter like competitive units). Benefits include optical beam projection for uniform lighting, electronic current management circuitry for optimized battery life, fully potted electrical components for ruggedized performance, and a patent pending heat sink mechanism for efficient thermal management. Run time is approximately 1.5 hours at full output on a fresh set of 123A lithium batteries. The ZFL-M60 body, constructed of Mil-Spec Type III Hard Anodized 6061-T6 Aluminum, features circumferential grooves which may be fitted with O-rings (included) for an enhanced fit in Elzetta Tactical Flashlight Holders, providing a complete Elzetta Illumination System.

All Elzetta products are designed, engineered, and manufactured in the USA using American tooling and materials. **Call 859-707-7471 or visit www.elzetta.com.**



BE COMBAT READY WITH RETRACTABLE SIDEARM TETHER

Hammerhead Industries – a leading provider of high performance firearm attachment systems for the Navy Seals, Army and Marines – is introducing its latest military-grade retractable lanyard that will securely attach a soldier's firearm to his/her side in order to prevent loss and damage – while still allowing full movement and usage of the gun should duty call for a quick draw.

Two models are available to suit a variety of specific applications: the Gear Keeper RT2 Low Force Model and the Gear Keeper RT3 Super Force Model. The Gear Keeper RT2 Low Force provides no resistance on the sidearm, providing shooters with full range of motion while remaining tethered and snag-free. This 36-inch extension system is preferred by shooters who want to carry their sidearm for a longer period of time.

The Gear Keeper RT3 Super Force provides 24-ounces of retraction and can extend up to 32 inches – easily suspending a fully loaded handgun while providing additional stabilization for aiming. The Gear Keeper RT2 Low Force Model is designed with a sturdy stainless steel cable with nylon coating, and the Super Force Model is designed with a nylon braid over a Kevlar core – a low-profile lanyard that allows full mobility without snagging, and a high impact case and stainless steel spring and hardware. The RT2 Low Force has a 60-pound break strength, while the RT3 Super Force has an 80-pound break strength. Both are strong enough to withstand harsh environments, but will break away should entanglement occur.

To learn more about the Gear Keeper Sidearm Tethers (RT2 Low Force Model or the RT3 Super Force Model) or any of the company's line of innovative tether products for law enforcement, military, industrial or recreational use, contact Hammerhead Industries, Inc. at 1501 Goodyear Avenue, Ventura, CA 93003 • Phone: 805-658-9922 or visit www.gearkeeper.com.

POLYSTINGER LED RECHARGEABLES: ULTRA-BRIGHT AND RELIABLE

Streamlight, a leading provider of high-performance lighting tools for law enforcement professionals, has introduced the PolyStinger LED and PolyStinger DS LED rechargeable, polymer flashlights that provide exceptional brightness and durability with power C4 LED technology. The PolyStinger DS LED also adds a tail-cap switch.

Streamlight's C4 power LED technology provides two to three times the output of previous LEDs, up to a 50,000-hour lifetime and is impervious to shock.

The compact PolyStinger LED and PolyStinger DS LED lights offer three controlled variable intensity modes and a strobe mode. The high mode provides 24,000 candela peak beam intensity and 185 lumens of measured system output. The medium mode provides 12,000 candela peak beam intensity and 95 lumens, while the low mode generates 6,000 candela peak beam intensity and 50 lumens of measured system output. In addition, the lights' deep-dish parabolic reflectors produce a long-range targeting beam with optimum peripheral illumination to aid in navigation.

The PolyStinger LED model weighs 11.5 ounces, measures 8.07 inches in length, and is available in black or yellow. The PolyStinger DS LED weighs 11.9 ounces, measures 8.64 inches, and is available in black only. Both are backed by Streamlight's Limited Lifetime warranty. The suggested retail price for the PolyStinger LED is \$194.00 and the Stinger DS LED suggested retail price is \$209.00.

For additional information, please call 800-523-7488 or visit www.streamlight.com.



STREAMLIGHT

THE VERSATILE MULTI-FUNCTIONAL ARMOR BLANKET

Protective Products International responded to a request for a protective solution that could be easily attached to a partition of a police vehicle offering ballistic protection against handgun rounds potentially fired from the backseat. PPI engineers developed a ballistic blanket concept that addressed the safety concerns within the vehicle and also offered the officer quick removable tactical cover in an emergency, thus creating Protective Products' MFAB; the Multi-Functional Armor Blanket.

The MFAB's mounting mechanism is movable. The panels can be vertically hung on a car door or on the interior wall of any first responder vehicle. Individual MFAB panels can be linked together to increase the protective coverage. The MFAB meets U.S. Military Fragmentation Requirements and is NIJ Level IIIA certified. It weighs 23.36 ounces or 1.46 lbs per square foot. The MFAB can be thrown over the windshield of a police cruiser for instant portable tactical cover and can also provide mobile personal protection for officers on entry with carry handles at each end of the MFAB. The MFAB also offers bomb and blast protection and with the additional carry handles allows the MFAB to be used as a stretcher in an extraction situation.

For more information on the MFAB or any other of Protective Products' ballistic protection solutions, call 800-509-9111 or visit www.body-armor.com.



THEY'RE HERE ... THE NEW
SWFA SS 3-9x42 FFP/MIL/MIL

FIRST FOCAL PLANE MIL-DOT RETICLE 30MM
 1/10 MILDRADIAN WINDAGE AND ELEVATION

& NEW
SWFA SS 10x42 HD



The purpose built SWFA SS 3-9x42 encompasses all the features needed in a DM scope. First focal plane (FFP) mil-dot reticle means that the shooter does not have to worry about being on a particular power setting in order to range the target. Shot correction can easily be called and adjusted in mils using the .10 milradian (Mrad) adjustments, alleviating the need for time consuming translations from mils to moa. Low end magnification (3x) provides a larger exit pupil which translates into a wider field of view, increased light transmission and less critical eye relief allowing for accurate suppressive rapid fire (a key role of the DM). High end magnification (9x) provides ample magnification to engage targets upwards of 900 yards. A single turn of the turret will dial in 5 mils of drop, two turns provides 10 mils with access to more if needed.

DESIGNED AND BUILT FOR THE U.S. ARMY DESIGNATED MARKSMAN (DM)

The SS 3-9x42 is at home on highly accurate M14s, AR-15s as well as LTRs and PBRs. The ideal scope for not only DMs but also L.E. officers who have a similar role.



\$599.95

*Accessories sold separately

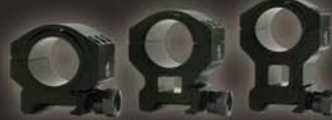
* Anti-Reflection Device (ARD) sold separately



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 \$9.95



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SWFA SS-Tac
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