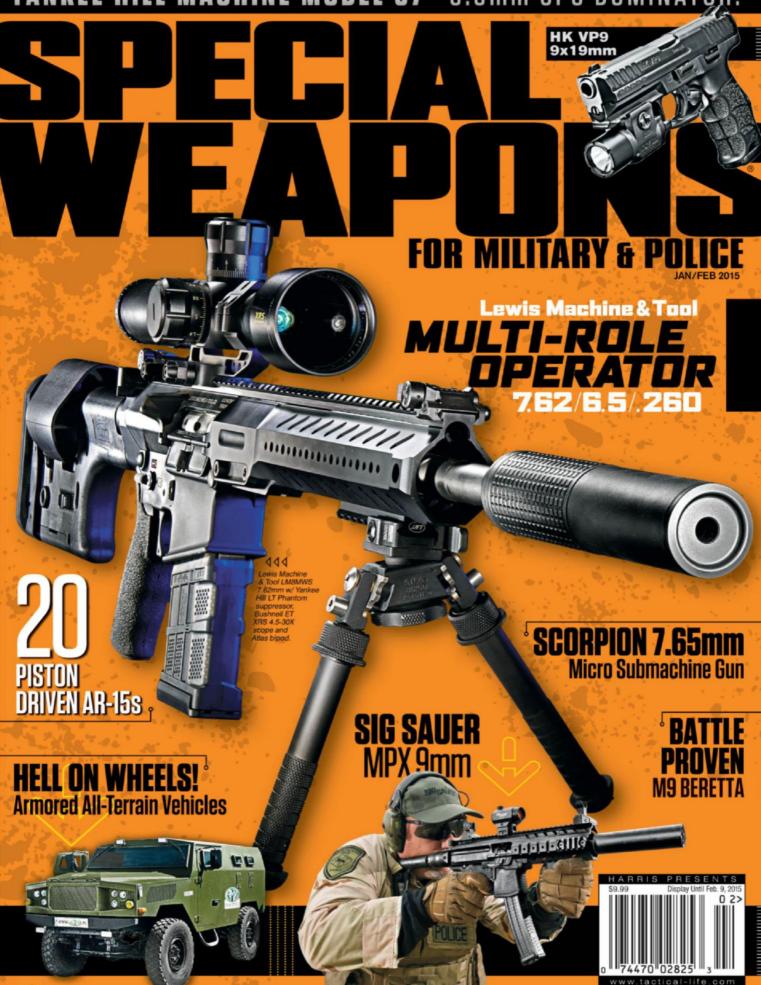
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# SPECIAL JAN/FE 2015 Special-weapons-magazine.com For Military & Police

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"Early in my precision rifle review days, bolt actions with this level of accuracy were rare, let alone semi-autos—so the LMT is truly impressive."

.....

#### SUB-MOA MODULAR WEAPON SYSTEM THAT LETS OPERATORS CHANGE BARRELS AND CALIBERS IN THE FIELD!

BY DAVID BAHDE

ewis Machine & Tool (LMT) builds some of the highestquality rifles you can buy. The company popularized interchangeable-barrel platforms

LEWIS Machine & Tool

with its MRP series, and has led the pack in monolithic upper receiver designs. One of the first 6.8 SPC rifles I fielded was an MRP upper mated to a Colt M16A2 lower. Along with the 6.8 SPC barrel, I also used an 11-inch 5.56mm barrel with a suppressor for entry duties. For patrol training, I installed a 16-inch barrel to match my officers' rifles. Like all LMT rifles, the MRP upper was built to match the current military specifications with hardened parts and proven designs for maximum reliability in harsh conditions. Now LMT has brought this kind of barrel/caliber interchangeability to the .308/7.62mm NATO with its Modular Weapon System, or MWS, platform.

The ability to switch out barrels was born from a need within the special operations community. Units with widely varied missions wanted to simply and reliably change barrel lengths in the field. Most modern rifles geared toward these

The LM8MWS allows operators to swap barrels and calibers to ensure mission success. Shown with a Bushnell Elite Tactical 4.5-30x50mm XRS scope, an Atlas bipod and a Yankee Hill Machine Phantom LT suppressor.

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#### LMT LM8MWS

units have this capability. Sure, you can use multiple upper receivers, but that creates logistics problems. It also means you'll have to swap out optics or sights. Being able to change just the barrel is huge, and coupled with multi-use sighting systems, it increases a rifle's versatility. What if you could also change calibers? This would be a huge bonus. I recently got the chance to test LMT's MWS platform as part of its new LM8MWS rifle, which offers this type of operational flexibility.

#### **Gun Details**

The LM8MWS' upper and lower receivers are forged. Forged receivers are excellent when it comes to strength, consistency and lighter weight. The "slick" monolithic upper is well built and features a long, continuous top rail for sights and optics. The slender handguard looks



ABOVE: Each barrel is cryogenically treated for enhanced accuracy and durability. Also note the polished feed ramps. BELOW: To change out the barrel, operators simply need to remove two bolts.

nice and allows for a comfortable hold. Mounting holes at the 3, 6 and 9 o'clock positions make it easy for operators to add rails and mount lights, lasers and other accessories. My test rifle came with LMT's new folding sights installed on the top rail. These rock-solid units are easy to deploy with one hand and, when not in use, fold flat. Two bolts at the rear portion of the handguard hold the barrel in place, and this area provides a nice flat spot for unsupported shooting. Several quickdetach (QD) slots are also provided for mounting a sling.

To highlight its versatility, I tested the LM8MWS with several barrel assemblies that came with the rifle for testing. The stainless steel, match-grade, 1-in-11.25-inch-twist barrels chambered in 7.62mm NATO were 16, 18 and 20 inches long. I also tested a 16-inch, chrome-lined

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#### LMT LM8MWS

RIGHT: LMT offers the LM8MWS with several optional barrel assemblies in various lengths that include low-profile gas blocks and gas tubes. BELOW: The "slick" monolithic upper receiver features a freefloating forend with a long Picatinny top rail, a short bottom rail, and sides that are drilled and tapped for adding more rails. Also note LMT's new flip-up front sight.

7.62mm barrel with a 1-in-10-inch twist rate. Other calibers included the 6.5 Creedmoor, .260 Remington, 7mm-08 and .243 Winchester—all with 20-inch, stainless steel barrels. LMT cryogenically treated each barrel to increase its accuracy, longevity and ease of cleaning. Each barrel assembly also sported a lowprofile gas block and gas tube, and the barrels were capped with A2-style flash suppressors. Every barrel featured 5/8x24 threading for the addition of muzzle brakes, suppressors and other muzzle devices. Finally, the upper features a hard-chromed bolt carrier group.

The LM308MWS Defender lower receiver includes an ambidextrous safety selector and magazine release. The two-

SND	LEWIS M	IACHINE & TOOL LM8	MWS		
SPECIFICATIONS	CALIBER BARREL OA LENGTH WEIGHT STOCK SIGHTS ACTION FINISH CAPACITY MSRP	20 inches 38 inches 10 pounds (empty) LMT DMR Flip-up front and rear Direct impingement se Hardcoat anodized blac 20+1		Ĩ	
_					
ш	7.62мм NAT	0	VELOCITY	ACCURACY	
FORMANCE	Black Hills Federal Gol Federal M1:	180 AccuBond d Medal Match 168 BTHP	<b>VELOCITY</b> 2,425 2,525 2,470 2440	ACCURACY 0.95 0.70 0.52 0.65	
PERFORMANCE	Black Hills Federal Gol Federal M1:	180 AccuBond d Medal Match 168 BTHP L8 LR • Armory 175 OTM	2,425 2,525 2,470	0.95 0.70 0.52	
PERFORMANCE	Black Hills Federal Gol Federal M1: Silver State	180 AccuBond d Medal Match 168 BTHP l8 LR Armory 175 OTM <b>100R</b> O A-MAX	2,425 2,525 2,470	0.95 0.70 0.52	
PERFORMANCE	Black Hills Federal Gol Federal M1 Silver State <b>6.5 CREED</b> Hornady 14	180 AccuBond d Medal Match 168 BTHP 18 LR Armory 175 OTM 4 <b>00R</b> 0 A-MAX 39 Scenar	2,425 2,525 2,470 2440 2,800	0.95 0.70 0.52 0.65	
PERFORMANCE	Black Hills Federal Gol Federal M1: Silver State <b>6.5 CREED</b> Hornady 14 Handload 1	180 AccuBond d Medal Match 168 BTHP L8 LR Armory 175 OTM 400R 0 A-MAX 39 Scenar GTON	2,425 2,525 2,470 2440 2,800	0.95 0.70 0.52 0.65	

stage trigger group is crisp and clean, while the Ergo rubber grip provides a firm and comfortable hold. Adjustable SOPMOD stocks come standard with the LM8MWS, but my test rifle came outfitted with LMT's new DMR stock, which is adjustable for cheek height and length of pull. The remaining internals are mil-spec.

#### **Range Time**

Having one rifle that can be used for patrol, competition and precision work is intriguing. My caliber of choice for competing is the 6.5 Creedmoor, and I've

Remington. For duty use and training, it is just hard to beat the 7.62mm NATO. So, I used all

three to test the LM8MWS' capabilities. For testing, I mounted a Bushnell Elite

Tactical 4.5-30x50mm XRS scope in an Alamo Four Star single-piece mount, which provides proper eye relief and has proven to return to zero consistently. Bushnell's Elite Tactical scopes are well built with high-quality glass and excellent reticles. The XRS' Horus H-59 reticle is perfect for training, competition or duty, and the scope's turrets lock into place and are large with easy-to-read measurements. The scope can be adjusted in 0.1-mil increments to match the reticle, eliminating math conversions.

Accuracy testing began with the 6.5 Creedmoor and Hornady's 140-grain A-MAX match ammunition. This load has produced some impressive groups, and the LMT was no exception. My best five-shot group at 100 yards measured

#### LANCER L7AWM Advanced hybrid 7.62mm NATO

magazine ready for combat!

By Michael O. Humphries

The new 7.62x51mm L7 Advanced Warfighter Magazine (AWM) from Lancer represents a unique approach to modern magazine design. With competitive offerings on the market today employing primarily either steel or polymer in their construction, the new L7AWM takes a different tack, combining the strength of steel with the longevity and flexibility of polymer in a new hybrid design.

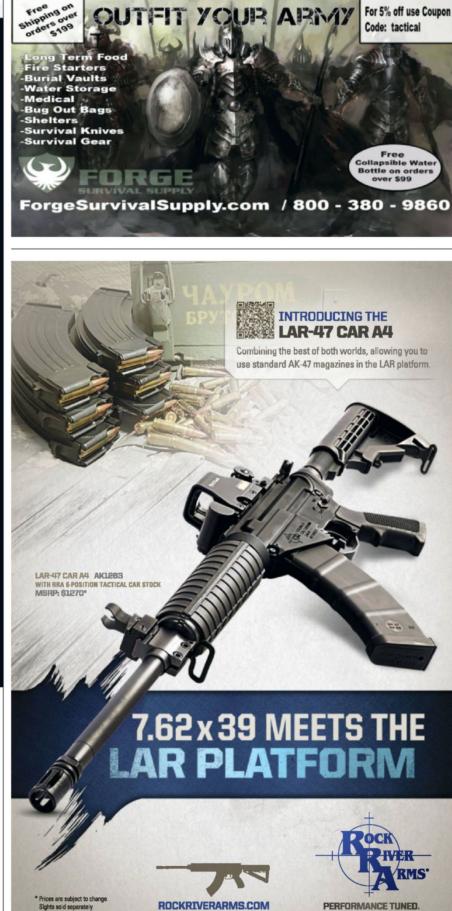
Available in 5-, 10- and 20-round capacity variants, the lightweight magazine features a dual steel overlapping section that wraps around both the upper front and rear portion of the magazine. This is designed to maximize "stiffness" for minimized wear and enhanced feeding reliability. This upper section pairs up with a translucent polymer body with integrated strengthening ribs and pebbled grasping areas. One particularly interesting feature of the L7AWM is a switchable drain port located in the floorplate that works in tandem with internal drain channels. This

allows operators to tailor the condition of the magazine to either waterborne or dusty environments.

Lancer's new L7AWM represents a very interesting take on modern tactical magazine design. It is designed to operate with a wide variety of weapon systems, including the SR-25, SIG716, DPMS .308 and LMT LM308 rifles. For more information, visit lancer-systems.com or call 610-973-2600.

0.5 inches. Recoil was minimal—the carbine barely moved. This prompted me to test the LM8MWS with just its iron sights. LMT's new sights lend themselves to consistency, as proven by a 0.95-inch group with this ammunition at 100 yards. Granted, this kind of shooting takes some practice, but it shows the inherent accuracy of the rifle.

Next I switched to the .260 Remington. While hunting ammunition in this caliber is prevalent, factory match-grade ammunition is hard to come by. Most handload their own for competitions, and I used a load I had cooked up for a custom build with 140-grain Berger bullets in the LM8MWS. In the custom build, 0.25-(continued on page 128)



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#### WEAPONS INSIDER

#### **M72 LAW LASER SIGHT** Crimson Trace's new laser makes this rocket launcher lethal day and night!

BY JACK SATTERFIELD



he moonless night is perfect for an ambush. Seven mujahedin, eager to fight, lie in wait with their PK machine gun, trained toward an open field where American soldiers will walk on patrol near an Afghani hamlet. This night they may kill one or perhaps two Americans, damaging the strained American morale and hastening the invaders' departure. A radio signal from a compatriot hidden near the Americans' track will alert the gunners to open fire quickly and confidently from their bunker with walls thick enough to withstand return fire from American carbines and light machine guns. After a few minutes of shooting, they'll run from their shelter into a nearby dry creek bed and fade unharmed into the blackness.

Radio static jolts the jihadists to action. They count off seconds until the Americans step into the killing

zone and shoot, PK rounds sweeping the ground. The Americans return fire, but the mujahedin ignore the rounds thudding into their bunker. The Americans cannot use their shoulderfired weapons called LAWs in the dark. Suddenly, an enormous crash, obliterating the bunker, the PK and its crew, measures the lethal enormity of the insurgents' mistaken belief.

This scenario soon will be a common experience for those ambushing U.S. ground forces from protected positions at night thanks to a simple, low-cost laser sight that gives the M72 Light Anti-tank Weapon (LAW) the capability to defend and protect American troops from such attacks day or night.

#### Fire By Night

The new LAW laser sight comes from Crimson Trace Corporation (CTC) of Wilsonville, Oregon. Since (continued on page 122)



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#### WEAPON ROUNDUP

# **Piston-Driven Poston-Driven Postone Restruction** Top 20 next-gen AR-style ifles bred to run cooler and

#### By Richard Johnson

leaner. Cooler. More reliable. These are just three advantages cited by people who prefer piston-driven rifles over directimpingement guns. The

Stoner-type direct impingement system traditionally used in the AR-15/M16 platform bleeds off propellant gas from the bore and directs it through a tube to the bolt carrier group, which then cycles the gun. While the direct impingement system can be very reliable, there is no doubt that a lot of fouling can build up on the bolt carrier group.

cleaner in harsh extremes!

A growing number of companies now build piston-driven AR-style rifles. These guns use the propellant gas to operate a rod that acts as an intermediary to exert force on the bolt carrier group to cycle the weapon. All excess gas is bled out of the gun well forward of the receiver. This helps keep the guns extremely clean when compared to the Stoner-type direct impingement system.

There is a wide range of rifle configurations available with a piston system. Calibers run the gamut, as do barrel length, furniture and intended use. Here are some of the best piston-driven ARstyle rifles on the market today.

#### "A growing number of companies now build piston-driven AR-style rifles."

loday's top pistondriven rifles, such as the Barrett REC7 Gen II, are designed to offer the ultimate reliability in extreme environments.

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#### WEAPON ROUNDUP

#### Heckler & Koch MR556A1

Using a piston operating system derived from the combat-proven HK416, the Heckler & Koch MR556A1 is one of the top options in piston rifles today. The MR556A1 uses a heavy-contour, 16.5-inch barrel with a 1-in-7-inch twist rate and a non-chromed bore for maximum accuracy. A free-floating quad-rail is standard on the MR556A1. For more information, visit hk-usa.com or call 706-568-1906.

**Thinin tota tota tota total** 

#### SPECIFICATIONS

CALIBER:	5.56mm NATO
BARREL:	16.5 inches
OA LENGTH:	33.9-37.68 inches
WEIGHT:	9.1 pounds (empty)
STOCK:	Collapsible
SIGHTS:	Troy flip-up front and rear
FINISH:	Matte black
CAPACITY:	30+1
MSRP:	\$3,299

.....

#### Heckler & Koch MR762A1

Chambered in 7.62mm NATO, the Heckler & Koch MR762A1 is a reliable, compact rifle that offers better downrange performance than the typical 5.56mm. A 16.5-inch, cold-hammer-forged barrel is standard, as well as an adjustable buttstock, Troy flip-up front and rear sights and HK's free-floating, quad-rail handguard. The rifle comes with a 20-round magazine. For more information, visit hk-usa.com or call 706-568-1906.

#### SPECIFICATIONS

CALIBER:	7.62mm NATO
BARREL:	16.5 inches
OA LENGTH:	35.94-39.50 inches
WEIGHT:	9.94 pounds (empty)
STOCK:	Collapsible
SIGHTS:	Troy flip-up front and rear
FINISH:	Matte black
CAPACITY:	10+1
MSRP:	\$3,999
·	

#### **Huldra Mark IV**

Aggressively priced at less than \$950, the Mark IV carbine from Huldra Arms offers users an economical way to upgrade to a piston-operated carbine. These 5.56mm NATO rifles have 16-inch barrels with a 1-in-7-inch twist rate and a Melonite finish. The rifles come ready for mounting optics with a Picatinny rail and a low-profile gas block. For more information, visit huldraarms.com or call 218-829-3521.

S	C	F	C	AT	0	NS

CALIBER:	5.56mm NATO
BARREL:	16 inches
OA LENGTH:	32.3-35.6 inches
WEIGHT:	6.16 pounds (empty)
STOCK:	Collapsible
SIGHTS:	None
FINISH:	Matte black
CAPACITY:	30+1
MSRP:	\$949
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#### Huldra Mark IV Tactical EVO

Stepping up from the company's entry-level carbine, the Huldra Mark IV Tactical EVO adds a number of features, including a Samson Evolution handguard and a Magpul CTR adjustable stock. The rifle has a 14.5-inch barrel with a permanently attached flash suppressor. A Melonite finish is used on the barrel for enhanced corrosion resistance. For more information, visit huldraarms.com or call 218-829-3521.

#### **SPECIFICATIONS**

CALIBER:	5.56mm NATO
BARREL:	14.5 inches
OA LENGTH:	31.25-34.3 inches
WEIGHT:	6.6 pounds (empty)
STOCK:	Magpul CTR
SIGHTS:	None
FINISH:	Matte black
CAPACITY:	30+1
MSRP:	\$1,299

#### LMT CQB MRP Defender Piston

Designed for use in close quarters, the Lewis Machine & Tool Company (LMT) CQB MRP Defender Piston is a piston-driven AR available with either a 12- or 16-inch, chrome-lined barrel chambered in 5.56mm NATO. LMT cryogenically treats the barrel for longer life and improved accuracy. A quad-rail handguard and SOPMOD buttstock are standard features. The gun ships with tactical sights, rail covers and a sling with QD swivels. LMT also offers a 6.8 SPC-chambered gun with a 16-inch barrel. For more information, visit Imtdefense.com or call 309-787-7151.

#### SPECIFICATIONS

CALIBER:	5.56mm NATO, 6.8 SPC
BARREL:	12 or 16 inches
OA LENGTH:	29-36.25 inches
WEIGHT:	7.9 pounds (empty)
STOCK:	Collapsible SOPMOD
SIGHTS:	Fixed front, adjustable rear
FINISH:	Matte black
CAPACITY:	30+1
MSRP:	\$2,350

**POF-USA P308 GEN 4** The Patriot Ordnance Factory (POF-USA) P308 is an AR-style rifle chambered for the 7.62mm NATO cartridge. Offering more long-range power than a typical 5.56 NATO gun, the P308 can be had with barrel lengths of 12.5 to 20 inches and be outfitted with a variety of precision optics. The rifles have ambidextrous controls and can be had in a variety of finishes, including Burnt Bronze and NP3. MSRPs start at \$3,244.99. For more information, visit pof-usa.com or call 623-561-9572.





#### SPECIFICATIONS

CALIBER:	7.62mm NATO
BARREL:	12.5, 14.5, 16.5 or 20 inches
OA LENGTH:	31.5-42.25 inches
WEIGHT:	8.3-8.9 pounds (empty)
STOCK:	Collapsible
SIGHTS:	None
FINISH:	Hardcoat anodized, NP3 or Cerakote
CAPACITY:	20+1
MSRP:	\$3,244-\$3,344

#### **POF-USA P415**

The P415 from Patriot Ordnance Factory (POF-USA) combines the fast-handling characteristics of a light and handy AR carbine with the rock-solid reliability of a piston operating system. These carbines are chambered in 5.56mm NATO and come with barrel lengths from 7.25 to 16.5 inches. Magpul stocks, pistol grips and magazines come standard. For more information, visit pof-usa.com or call 623-561-9572.

#### SPECIFICATIONS

L DAA

CALIBER:	5.56mm NATO
BARREL:	7.5, 10.5, 14.5, 16.5 or 18 inches
OA LENGTH:	24.5-38.75 inches
WEIGHT:	6.2-7.9 pounds (empty)
STOCK:	Collapsible
SIGHTS:	None
FINISH:	Hardcoat anodized, NP3 or Cerakote
CAPACITY:	30+1
MSRP:	\$2,319-\$2,475

#### Primary Weapons Systems MK109

Light and compact, the MK109 from Primary Weapons Systems (PWS) gives users the increased punch of the 300 BLK cartridge from a 9.75-inch barrel. For those who want to employ a suppressor, this rifle can be extremely quiet. A KeyMod handguard is standard, as is the nickel-Teflon-coated bolt and carrier. For more information, visit primaryweapons.com.

#### SPECIFICATIONS

CALIBER:	300 BLK
BARREL:	9.75 inches
OA LENGTH:	25.6 inches
WEIGHT:	6.06 pounds (empty)
STOCK:	Magpul MOE
SIGHTS:	Magpul MBUS
FINISH:	Matte black
CAPACITY:	30+1
MSRP:	\$1,949

#### WEAPON ROUNDUP

#### Primary Weapons Systems MK220

Designed as a designated marksman rifle, the PWS MK220 is chambered in 7.62mm NATO and has a 20-inch barrel. The button-rifled barrels are turned in-house by PWS, and they're treated with Isonite QPQ for corrosion resistance. A PWS Precision Rifle Compensator reduces recoil while minimizing ground disturbance when shooting from prone. A Magpul MOE stock, pistol grip and 20-round magazine are standard. Like the MK109, the MK220 uses a KeyMod rail for mounting accessories. For more information, visit primaryweapons.com.

#### SPECIFICATIONS

CALIBER:	7.62mm NATO
BARREL:	20 inches
OA LENGTH:	39.4 inches
WEIGHT:	9.44 pounds (empty)
STOCK:	Magpul MOE
SIGHTS:	Magpul MBUS
FINISH:	Matte black
CAPACITY:	20+1
MSRP:	\$2,599

.....

#### Rock River Arms LAR-PDS

The Rock River Arms LAR-PDS is a 5.56mm NATO carbine with a folding stock and a non-reciprocating, side-mounted charging handle. The upper has a single, full-length Picatinny rail allowing users to mount optics. The buttstock can fold to the side, providing a compact package. An injection-molded, ribbed handguard and an aluminum tri-rail handguard are both available for this rifle. For more information, visit rockriverarms.com or call 866-980-7625.

#### SPECIFICATIONS

CALIBER:	5.56mm NATO			
BARREL:	16 inches			
OA LENGTH:	27-37.75 inches			
WEIGHT:	7.4 pounds (empty)			
STOCK:	Folding, collapsible			
SIGHTS:	None			
FINISH:	Matte black			
CAPACITY:	30+1			
MSRP:	\$1,595-\$1,750			

#### **Ruger SR-556 Carbine**

Ready for duty out of the box, the Ruger SR-556 Carbine is an AR-style rifle chambered for the ubiquitous 5.56mm NATO cartridge. The four-position gas regulator allows the gun to be tuned to your specific ammunition for outstanding reliability. The rifles come with folding sights, an adjustable buttstock and a quad-rail handguard. For more information, visit ruger.com.

#### SPECIFICATIONS

CALIBER:	5.
BARREL:	16
OA LENGTH:	31
WEIGHT:	7.4
STOCK:	Сс
SIGHTS:	Fo
FINISH:	Ma
CAPACITY:	30
MSRP:	\$1

5.56mm NATO 16.12 inches 31-34.25 inches 7.4 pounds (empty) Collapsible Folding front and rear Matte black 30+1 \$1,995

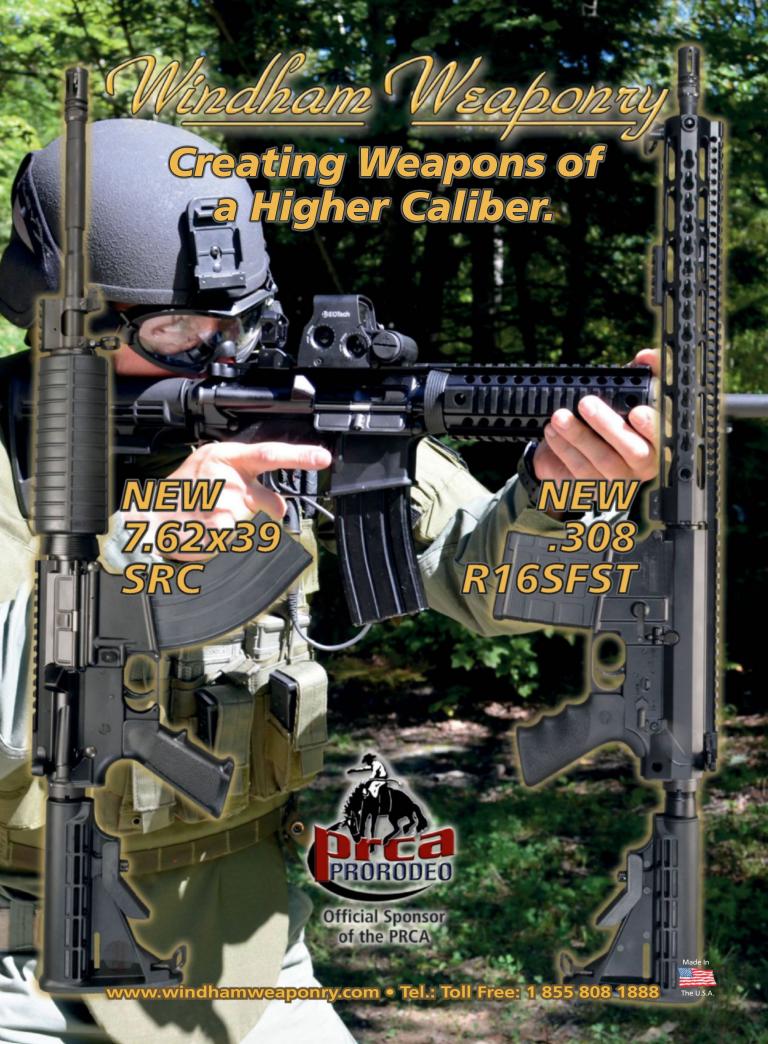
#### Ruger SR-762

Similar in operation and appearance to the company's SR-556 rifle, the Ruger SR-762 upsizes the caliber to 7.62mm NATO. The chrome-lined, cold-hammer-forged barrel is 16.12 inches long, fluted and topped with a Mini-14-style flash suppressor. A Hogue Monogrip pistol grip is standard, as is the adjustable buttstock and the lightweight handguard. For more information, visit ruger.com.

#### SPECIFICATIONS

CALIBER:
BARREL:
OA LENGTH:
WEIGHT:
STOCK:
SIGHTS:
FINISH:
CAPACITY:
MSRP:

7.62mm NATO 16.12 inches 34.75-38 inches 8.6 pounds (empty) Collapsible Folding front and rear Matte black 20+1 \$2,195



#### WEAPON ROUNDUP

#### Sig Sauer SIG516 Patrol

The SIG516 from Sig Sauer uses a short-stroke piston system with a four-position adjustable gas valve to provide officers with optimum reliability. Chambered in 5.56mm NATO, the SIG516 uses standard AR-15/M4 magazines but adds an ambidextrous mag release for left-handed shooters. Flip-up sights, an adjustable buttstock and a quad-rail handguard are all standard. For more information, visit sigsauer.com or call 603-610-3000.

#### SPECIFICATIONS

CALIBER:	5.56mm NATO
BARREL:	16 inches
OA LENGTH:	35.7 inches
WEIGHT:	7.3 pounds (empty)
STOCK:	Collapsible
SIGHTS:	Flip-up front and rear
FINISH:	Hardcoat anodized black
CAPACITY:	30+1
MSRP:	\$1,719

#### **Sig Sauer SIG716 Patrol**

If you need the heavier hitting power of a 7.62mm NATO-chambered rifle, the piston-driven Sig Sauer SIG716 deserves a look. With a six-position buttstock and an ambidextrous magazine release, these guns are well suited for a wide variety of users. QD-type sling attachments and iron backup sights are standard. The nitride-treated barrel is 16 inches long and has a 1-in-10-inch twist rate. For more information, visit sigsauer.com or call 603-610-3000.

#### SPECIFICATIONS

CALIBER:	7.62mm NATO
BARREL:	16 inches
OA LENGTH:	31.3-38.3 inches
WEIGHT:	9.3 pounds (empty)
STOCK:	Collapsible
SIGHTS:	Flip-up front and rear
FINISH:	Hardcoat anodized black
CAPACITY:	20+1
MSRP:	\$2,186

#### **Stag Arms Model 8T**

As one of the most reasonably priced piston ARs on the market, the Stag Arms Model 8T has a surprising amount of standard features and customizable options. Chambered in 5.56mm NATO or 6.8 SPC, the 16-inch, chrome-lined barrel is button rifled and has a 1-in-9-inch twist rate. The rifle comes standard with a free-floating Diamondhead VRS-T handguard and Diamondhead front and rear sights. For more information, visit stagarms.com or call 860-229-9994.

#### SPECIFICATIONS

CALIBER:	5.56mm NATO, 6.8 SPC
BARREL:	16 inches
OA LENGTH:	33.25-35.75 inches
WEIGHT:	7 pounds (empty)
STOCK:	Collapsible
SIGHTS:	Diamondhead front and rear
FINISH:	Hardcoat anodized black
CAPACITY:	30+1
MSRP:	\$1,275

#### **Stag Arms Model 8TL**

Stag Arms is one of the few companies that make left-handed AR-style rifles. The Model 8TL is a left-handed version of the popular 8T, and it comes with all of the same features, including the chrome-lined barrel, Diamondhead components and an adjustable buttstock. Standard rifles are chambered in 5.56mm NATO, but the guns can also be had in 6.8 SPC. For more information, visit stagarms.com or call 860-229-9994.

#### PECIFICATIONS

CALIBER:	5.56mm NATO, 6.8 SPC
BARREL:	16 inches
OA LENGTH:	33.25-35.75 inches
WEIGHT:	7 pounds (empty)
STOCK:	Collapsible
SIGHTS:	Diamondhead front and rear
FINISH:	Hardcoat anodized black
CAPACITY:	30+1
MSRP:	\$1,295
·	

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#### **GUN TEST**

# ARMALITE Ŀ HAN The new Defensive Sporting Rifle delivers

affordable **BIG-BORE POWER!** 

> By Robert Jordan Steve Woods Photos

ArmaLite's new DSR 10 rifle in 7.62mm NATO provides operators and civilians alike an affordable, accurate carbine built for top-notch reliability. Shown with a Nightforce 2.5-10x32mm NXS riflescope.

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rmaLite literally put the "AR" in AR-15. Many people don't realize that Eugene Stoner was working for ArmaLite when he developed the rifle. RE 1294 19-14

They also don't realize that "AR" stands for ArmaLite Rifle. The company literally invented the rifle, and everything after it has simply been a copy. Also, Mr. Stoner originally intended for the rifle to be chambered in 7.62mm NATO/.308 Winchester. Putting my hands on the ArmaLite Defensive Sporting Rifle (DSR) 10 felt a little like going back to the beginning and embracing the future, all at the same time.

I am constantly bombarded by fellow federal agents asking me the same question: "I want to buy an AR-style rifle. Which one should I buy?" They are looking at rifles that cost between \$600 and \$5,000 and want to know if a more expensive rifle will be worth it. With very few exceptions, I tell them it will not. A rifle that is absolutely reliable, is simple to maintain and can easily be upgraded is almost certainly their best investment. Most people do not need a rifle that has every bell and whistle. They won't be landing on beaches with it in the arctic. They won't be shooting 5,000 rounds through it every week. They won't be sniping bad guys in hostile territory from 1,000 meters. Rifles that can do those things are really cool, but they are also really expensive. A rifle that handles the basics, and does them well, will be just as useful to them as the \$5,000 custom gun.

ArmaLite recognizes this fact. The company recognizes that most cops have families and a limited income, but they put their lives are on the line. ArmaLite's challenge was to build the best fightstopping, dependable weapon for a reasonable price. Its answer was the Defensive Sporting Rifle series. This series includes two rifles chambered in 5.56mm NATO, the DSR 15 and the DSR 15F. The DSR 15F has a fixed, A-frame front sight,

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#### ARMALITE DSR 10 7.62mm



The lower receiver is outfitted with an M4-style collapsible buttstock and an A2-style pistol grip, which are both functional, dependable and easy to upgrade.

and the DSR 15 has no front sight but allows one to be added to the Picatinny rail on top of the gas block. The third and final rifle in the series is the DSR 10, chambered in 7.62mm, which I recently got my hands on for testing.

#### **Gun Details**

The DSR 10 does not come with a lot of extra features. Instead, ArmaLite focuses on high-quality fundamentals. What impressed me the most was the barrel. Made from 4140 chrome-moly steel, the barrel is hand-lapped twice, the bore is chrome lined and the exterior is phosphated. Barrels are typically made by one of three different processes: button cutting, hammer forging and single-point cutting. Each technique has certain benefits and detriments. Each technique also leaves tool marks on the

affect accuracy. Lapping a barrel means using an abrasive compound and running it up and down the barrel to smooth out some of the rough edges. I have an MDS bore scope that I often use to check out the barrels of the test guns and barrels during cleaning. You cannot judge how accurate a barrel will be simply by how it looks, but when there are lots of chatter marks, gouges or pitting in the steel, you know you aren't likely dealing with a tack driver. The barrel on the DSR 10 looked as smooth as

lands and grooves that

my hand-lapped, single-cut barrel that I special ordered from Krieger Barrels a few years back. In fact, I don't think I have ever seen a production barrel that looked so clean and smooth. I had high hopes for the range testing.

After the barrel, the next most important features for accuracy are a free-floating forend and a good trigger. The DSR 10 has a standard M4-style forend with single heat shields, which certainly helps keep the costs down. Plus, it allows the end-user to decide which style of forend they want on the rifle and install it themselves. There are literally

hundreds of styles today to choose from and what works best for me may not be the best for you. The trigger is a stan-

l he trigger is a standard mil-spec-style unit,

NS NS	ARMALITE	DSR 10			
SPECIFICATIONS	CALIBER: BARREL: OA LENGTH: WEIGHT: STOCK: SIGHTS: ACTION: FINISH: CAPACITY: MSRP:	7.62mm NAT 16 inches 35-38.3 inch 7.9 pounds ( Collapsible Optics-ready Direct imping Hardcoat and 20+1 \$999			
ш	LOAD		VELOCITY	ACCURACY	
PERFORMANCE	Federal 150 S Federal 168 S Winchester 1	-	2,663 2,486 h 2,449	1.10 0.93 0.63	
PERF	Bullet weight measured in grains, velocity in fps by chronograph, and accuracy in inches for best five-shot groups at 100 yards.				

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LEFT: The 7.62mm DSR 10 accepts the highly regarded and available Magpul magazine, and one 20-round PMAG is included. BELOW: ArmaLite hand-laps the DSR 10's 16-inch, chrome-lined, 4140 chrome-moly steel barrel twice for superior accuracy and consistency.

during a match, it really stinks. If it backs out and your rifle turns into a club during a firefight, it may be the last error you ever make. If you replace the trigger, get a solid, dependable one.

The M4-style collapsible stock will lock into six different length-of-pull positions and is installed on a mil-spec-diameter buffer tube. Again, this is the kind of little feature that I appreciate. Mil-spec tubes have a different diameter than commercial tubes and are stronger. They typically cost a little more to make, so many manufacturers opt for commercial-sized tubes because most consumers won't know the difference. My one small complaint was

that the castle nut was not staked in place.

This probably would never cause a problem, and if it really bothered me, I could do it myself with a center

but it was the crispest mil-spec trigger I have ever shot. It had a little creep, but not very much. However, it was stiff. My Lyman electronic trigger gauge measured the pull weight as being 10.94 pounds. This dependable trigger is excellent for most combat and law enforcement

purposes; it will work just fine. If you want a better trigger, again, there are plenty of high-quality drop-in kits to choose from. I will offer one word of caution. Most adjustable triggers are meant for competition and precision shooting—not combat. If a screw backs out and a trigger fails

punch and a hammer in three seconds. The gas block, a clamp-on-style unit

with a Picatinny rail on top for mounting an iron sight, appears very robust. The Picatinny rail on the gas block sits about

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#### ARMALITE DSR 10 7.62MM

"...the DSR 10 comes with a phenomenal barrel and topof-the-line reliability right out of the box."

0.39 inches lower than the Picatinny rail on the upper receiver. If you want to install iron sights, you have to buy the right style so that they will co-witness. No sights of any kind are provided with the rifle. Again, this keeps costs down and allows the end-user to only pay for the sight that they actually want.

The DSR 10 has a standard A2-style pistol grip. The rifle also uses the DPMS/ KAC style of magazines, which is the most common type, and it means that Magpul magazines will fit. ArmaLite ships the DSR 10 rifle with one polymer, 20-round Magpul PMAG.

I picked the rifle up on a Friday, gave it a quick cleaning and liberally oiled the bolt and bolt carrier. AR rifles will shoot dirty, but they will not shoot dry. The majority of AR weapon failures that I have seen through the years have been caused by insufficient lubrication. The biggest difference internally between an ArmaLite AR-10 and an AR-15 is that ArmaLite puts a spring on the AR-10 firing pins instead of leaving them free-floating, as they are on AR-15s. As you'd expect, the bolt carrier group and firing pin are larger and heavier on the 7.62mm NATO rifle. When you load and charge an AR-15, the

mfr

# Vortex SPARC II An ultra-compact reflex

#### sight enhanced for tactical applications!

#### **BY D.K. PRIDGEN**

ith the broad availability these days of flattop rifles with integrated strips of Picatinny rail, the ability to equip your carbine with an optic is easier than ever. Concurrent with that movement has been the broader acceptance of reflex and holographic optics. The greater number and variety of the optics available, the better for

us, and good sights can now be had to fit every budget. Vortex Optics offers a nice variety, including one of the company's newest, the "micro-sized" SPARC II.

#### **SMALL SIZE, BIG PUNCH**

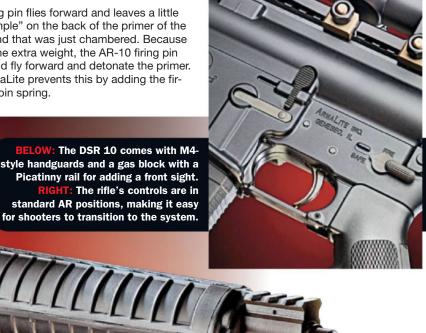
Following in the footsteps of the original SPARC, the durable, 1X magnification SPARC II is parallax free, compatible with T-1 micro mounts and includes two batteries and several mounts for most installation requirements. The SPARC II has the same 22mm objective lens and 2-MOA red dot as the original, as well as multi-coated lenses that provide unlimited eye relief. The unit is shockproof, waterproof (O-ring sealed turret caps) and fogproof (nitrogen purging)-all in a package around 3 inches long.

Of the changes/improvements bestowed upon the SPARC II, I consider the switch to more commonly available CR2032 batteries and the excellent finger-release flip lens caps the most significant. The same goes for the narrower, simplified button tower (only two buttons) and the improved battery life. Then there is the trimmer battery cap, which has been redesigned for tool-free removal.

Vortex lenses are amazing-the fresh, crisp dots are clearly visible in the brightest of direct sunlight. I consider Vortex's SPARC exceptional enough to have one mounted on one of my duty weapons, and the SPARC II is headed for another! For more information, visit vortexoptics.com or call 800-426-0048.

firing pin flies forward and leaves a little "dimple" on the back of the primer of the round that was just chambered. Because of the extra weight, the AR-10 firing pin could fly forward and detonate the primer. ArmaLite prevents this by adding the firing pin spring.

BELOW: The DSR 10 comes with M4style handguards and a gas block with a Picatinny rail for adding a front sight. T: The rifle's controls are in standard AR positions, making it easy for shooters to transition to the system.





WEAPONS-MAGAZINE.com



Despite rainy range conditions, the DSR 10 turned in impressive results in terms of both accuracy and handling.

#### Range Time

The following morning was overcast with steady rain. I headed to the Brazos River Sportsman's Club in Fulshear, Texas, to test the DSR 10's accuracy and run it through some shooting drills. Whenever you are shooting paper targets in the rain, a clear, 55-gallon trash bag placed over the top will keep the target from disintegrating and allow you to shoot just as well as on a sunny day.

I rough-sighted the carbine in at 25 yards and then dialed it in at 100. Apart from having to wipe the scope lenses, the rain had no effect on the rifle or my Oehler 35P chronograph. The barrel did not disappoint, and the accuracy was far better than I expect to see on a rifle of this type. Several of the five-shot groups were under an inch.

For tactical drills, I mounted a Steiner 1-5x24mm scope with an illuminated reticle. Most of the drills were inside of 25 yards. Despite the light weight of the gun, recoil was very controllable, and the rifle was quick and easy to manipulate through drills with multiple rounds and multiple targets. In the end, I was pretty muddy, but I had nothing but good things to say about the DSR 10. I have shot a lot of rifles that cost quite a bit more money and were not nearly as accurate or as dependable as this one.

When I first started out in law enforcement, I was on a pretty tight budget. I had to carefully consider gun purchases beforehand, and I was always hoping to find a gun that outperformed its price tag. The ArmaLite DSR 10 is exactly what I was looking for. With an MSRP of \$999, I would expect a lengthy break-in period and 100-yard groups that hovered around the 3- to 4-inch range. Instead, the DSR 10 comes with a phenomenal barrel and top-of-the-line reliability right out of the box. While it may not have a lot of extra features, it allows the end-user to upgrade it when and how they see fit. Honestly, for tactical purposes, the addition of sights and a light are really all that are required. The end product will perform at the same level as rifles that cost a lot more money, and I would not hesitate to trust my life to its rock-solid dependability. For more information, visit armalite. com or call 800-336-0184. SW

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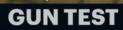
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Sig Sauer MPX 9mm shown equipped with SigTac MRDS optic on a riser mount and SIG-SD suppressor.

Sean Utley Photo

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Lightweight, compact and available in numerous configurations and calibers—9mm, .40 S&W and .357 SIG—the new MPX submachine gun from Sig Sauer can easily be transformed to fit a variety of tactical needs. Just add a SIG-SD suppressor and it's ready for CQB duty.

G SA

Compact powerhouse takes SMGs to the next level with lightning-fast CQB STRIKES!

> s a long-time SWAT cop, I've used my share of submachine guns (SMG). Early in my career, they were the norm—rifles were rarely used for entry work. Much of my initial training was on an HK MP5, and I completed training and armorers courses, including HK's excellent Master Submachine Gun training school. These weapons are accurate, fast on target and very handy in close spaces—to the point where many rifles are being introduced to mimic these qualities. Many agencies still use similar weapons. Frankly, the rifle is not always the best tool for the job, making the SMG a viable alternative.

BY DAVID BAHDE Sean Utley Photos

#### SIG SAUER MPX 9<sub>MM</sub>

**RIGHT:** The MPX's long Picatinny top rail allows operators to mount a variety of fast-targeting optics or sights, including Sig's own Mini Red Dot Sight (shown).

**BELOW:** The author tested the MPX with a prototype SIG-SD 9mm suppressor that added only 5 inches to the end of the barrel. During testing, the SIG-SD was easy to attach and did not alter the weapon's point of impact or reliability.



#### "It may be the most versatile submachine gun produced in recent history."

Operators need shoulder-fired weapons that deliver high rates of fire without the noise, flash and velocity of a rifle, and SMGs work perfectly in this role. They are more easily and reliably suppressed with very short barrels, and their accuracy is typically stellar. Simply put, there are just some jobs and operations where the submachine gun is the best tool for the job.

Enough interest exists that many companies have attempted to attain the renowned reliability and usability of the MP5 in an AR-platform weapon. In my experience, they have been only moderately successful. Viable in a few law enforcement environments, most short-barreled ARs are simply not reliable enough for a special operations soldier. Modify-

ing these compact carbines to reliably operate in the real world has always been a compromise at best. Unfortunately, the oftenover-hyped demand for rifles has kept innovation with pistol-caliber carbines and SMGs out of the picture—that is until now. Sig Sauer may have come up with the best attempt so far with its new MPX series of SMGs.

While other attempts at viable modern SMGs have met with

#### SPECIFICATIONS: SIG SAUER MPX

CALIBER: 9mm BARREL: 8 inch OA LENGTH: 16.7-2 WEIGHT: 6.5 pc STOCK: Foldin SIGHTS: Optic ACTION: Pistor FINISH: Matte CAPACITY: 10/20, MSRP: N/A

8 inches 16.7-24 inches 16.7-24 inches 6.5 pounds (empty) Folding Optics-ready Picatinny rail Piston-operated, select-fire Matte black 10/20/30+1 N/A



some success, creating a subgun with the AR's ergonomics remains the holy grail in the tactical world. Aiming for this goal, Sig Sauer started from scratch to develop what may be the next generation of SMGs in its MPX. While attending training at the Sig Sauer Academy, the opportunity arose for me to get some trigger time on the MPX submachine gun along with Sig's 9mm silencer.

#### **Gun Details**

The MPX is available in a number of configurations. There is the standard MPX model that I was able to test. The MPX-P is configured as a pistol using an 8-inch barrel with no stock. The MPX-SD model utilizes an 8-inch ported barrel that is integrally suppressed. For those in need of a shorter version, the MPX-K utilizes a 4.5-inch barrel. All models except the MPX-P are available as select-fire or semi-automatic weapons with either a folding or collapsible buttstock.

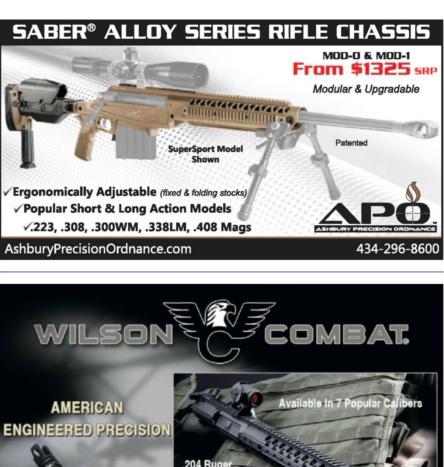
The MPX utilizes Sig Sauer's proven short-stroke gas piston system, configured specifically for this platform. The use of a fully closed and locked rotating bolt enhances its operation and safety. Barrels can be changed in the field to meet varying mission requirements, and the bolt holds open on the last round. Starting out in 9mm, the MPX is easily convertible to .357 SIG and .40 S&W. A monolithic upper receiver with an integral top rail allows for the use of any common AR-compatible sighting system, including red dots and holographic sights.

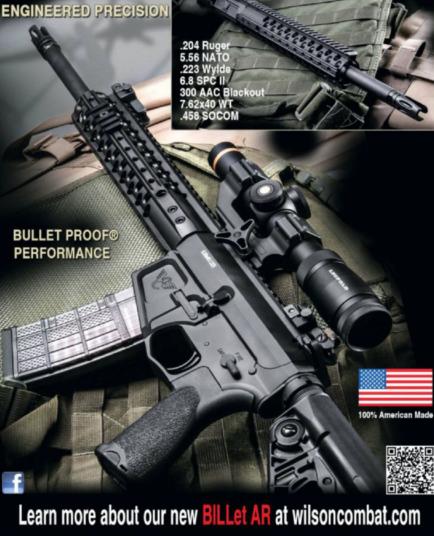
The MPX utilizes AR-style controls, which makes for minimal training and transition time. Any AR-compatible trigger can also be installed. The remaining controls are also in the AR style, including the magazine and bolt release, which are ambidextrous. The non-reciprocating charging handle is placed similarly to an AR's, and it does not interfere with any rail-mounted accessories. While the excellent SIG516 pistol grip is used, any ARbased grip can be added. Stocks are interchangeable and can be configured based on mission needs. Magazines are built specifically for the MPX by Lancer Systems, and they are available in 10-, 20- and 30-round capacities.

#### **Range Time**

The MPX I tested at the Sig Sauer Academy was a standard 9mm version with a folding stock. The stock folded to the left and snapped into place nicely. The prototype 9mm SIG-SD silencer I was able to use was attached to the threaded barrel; it measured about 5 inches in length. For targeting, I had flip-up AR-style backup iron sights as well as a Sig Mini Red Dot Sight. This test sample MPX had seen some serious range time with an estimated 10,000-plus rounds of all types of ammunition run through it. I used both 20- and 30-round magazines. For ammunition, I used Speer 124-grain FMJ rounds. All of the testing was done in full kit, minus a helmet.

When it came to accuracy, the MPX was stellar. After a few rounds to find the proper hold, I was able to stack three rounds on top of each other on the head of a steel silhouette target at roughly 40 yards. Using a similar steel target with a 4-inch swinging "hostage" plate, I was able to pretty much move the swinging portion back and forth at will. Shooting from roughly 20 yards off-hand, the MPX seemed to be as accurate as a rifle, more so than a submachine gun, creating one ever-larger hole in paper targets and a solid slab of lead on the steel targets. As expected, recoil was all but nonexistent, and the SIG-SD sound suppressor kept the subma-





#### SIG SAUER MPX 9MM





**LEFT:** The author tested the MPX with AR-style sights, including this dual-aperture rear unit with protective wings. **RIGHT:** Picatinny rails of various sizes can be mounted to the MPX's modular handguard for adding lights, lasers and other mission-critical accessories.

**BELOW:** The lower receiver features a crisp AR-style trigger, an enlarged triggerguard and Sig's ergonomic, textured grip. **BOTTOM: Several** stock options are available for Sig Sauer's MPX series of weapons, including the SBX stabilizing brace or either collapsible or folding units for truly compact firepower. chine gun pretty much exactly where it was aimed with very little movement. Sig Sauer's 9mm MPX is flat-out accurate, even on the move.

One of the equalizing factors with an SMG is the ability to administer controlled bursts on select-fire. The standard during the Master Submachine Gun and Hostage Rescue School at HK was putting four rounds into 0.75 inches while moving and firing on full-auto. With practice, failure drills consisted of getting nine rounds on target while on the move. Mimicking this standard, shooting doubles and triples with the MPX was a breeze. With what approaches a 1,000-rpm rate of fire, it's easy to get a lot of rounds on target in short order. Shooting on the move, it was equally easy to keep multiple-round bursts on target. About the only thing the MPX would not do easily was allow for "sin-



gles" on select-fire. Honestly, that is a product of the rate of fire and the AR trigger. I could do it, but not consistently it's about the same with my M16 rifles. From a practical perspective, it is less an issue with these controls, as moving back to semi-auto is pretty easy, but it is something to be aware of. For the most part, trigger presses on select-fire will be doubles or more.

This system really shines in today's tactical world when it comes to reloading. The AR platform pretty much rules in America, and the MPX uses the same basic controls. In other words, whatever reloading protocol you currently use with your AR carbine will be exactly the same. Reloading was fast and smooth, with zero learning curve required.

The MPX's reliability was also excellent. Ejection was consistent and reliable. Magazines inserted easily and fit in my M4 magazine pouches. Sized very similarly to MP5 magazines, my guess is pouches for those would work as well.

#### **Final Notes**

There are a ton of things to like here—most of all, the MPX's similarity with the AR platform. While rumors abound as to new rifles in the military or special operations, reality is different. In this day of budget cuts and downsizing, switching to a completely new system is mostly out of the question. The AR platform will be the primary system for years, maybe decades, to come. It would be easy for an agency to transition from AR-platform rifles to the MPX, as there would be no need for reprogramming training.

Suppressed, the MPX is almost ear safe, and it's easily usable on operations without hearing protection. Even heated up during sustained fire, there was no visible shift in the point of impact. Because of the threaded barrel, the suppressor is easy to remove, making for a really compact package. The 13.5x1 LH thread pitch keeps the suppressor from coming loose under sustained automatic fire.

The MPX's folding stock made it possible to start from a concealed position one might use in a protective detail and move smoothly and easily to well-aimed shoulder fire—even while I was on the move. It may be the most versatile submachine gun produced in recent history.

Sig Sauer really has something with the MPX, especially for those units or teams that need a solid submachine gun. Chambered in 9mm, .357 SIG or .40 S&W, it is an excellent weapon that can be used across the NATO environment. If you are looking for a solid submachine gun, make sure you check out the new Sig Sauer MPX. For more information, visit sigsauer.com or call 603-772-2302.

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#### **TACTICAL RIDES**

# All-Terrain WAR-ZONE WHEEIS

Rounding up the fast-strike tactical transports used by armed forces around the world!

#### **By Jack Satterfield**

Photos Courtesy Manufacturers

"Weapon systems may win battles, but trucks get troops and equipment to battlefields."

France's Sherpa 4x4 vehicles, made by Renault, feature turbocharged deisel engines and are available in several variants, including a light special operations model (shown).

ne of Napoleon's most famous military maxims is "An army marches on its stomach." That may be true, but for more than a century, armies have relied on trucks to support marches and maneuver. Weapon systems may win battles, but trucks get troops and equipment to battlefields. Modern war covers such wide areas that fighting without trucks is inconceivable. Transport aircraft and cargo helicopters have exponentially increased mobility, but ground vehicles remain the primary transport platforms in nearly all phases of military operations, and a surprising number of nations rely on homegrown vehicle designs. Truck sizes vary widely with their

mission requirements, but the most numerous and recognizable types are relatively small trucks that handle utility assignments with multi-mission capabilities ranging from combat to hauling hauling ancillary equipment.

The trucks included in this article represent an eclectic selection of the many military vehicles currently in use. Readers will immediately recognize some, while others may be completely unfamiliar. Many are produced in large, well-developed nations as one would expect, but several others originate in surprising places. It is clear, however, that these truck designs reflect the unique characteristics of military forces, and the environments where they must operate, around the globe.

SPECIAL-WEAPONS-MAGAZINE.com



#### AUSTRALIA: Hawkei

The Hawkei, named for a highly venomous Australian snake, is a 4x4 light protected mobility vehicle (PMV) for armored patrol, mobile command and special operations missions. The Australian Defence Force could procure up to 1,300 Hawkeis. They typically carry four to six troops, weapons including .50-caliber machine guns, 40mm grenade launchers and even small radar units, and weigh about 7 tons. For more information, visit thalesgroup.com.







#### AUSTRIA: Pinzgauer 2

Although classified as a light utility vehicle, the BAE-designed Pinzgauer is an all-wheel-drive vehicle with a payload approaching 4 tons. Its configuration is similar to a commercial cab that accepts several different modules depending on mission requirements, making it a cargo hauler, weapons carrier, armored troop transport, ambulance or mobile communications shelter. The vehicle itself can be sling-loaded by a rotorcraft. For more information, visit baesystems.com.

"...these truck designs reflect the unique characteristics of military forces, and the environments where they must operate, around the globe."



FRANCE: Renault Sherpa The Sherpa family of 4x4 military vehicles entered service in 2006. Powered by a Renault turbocharged diesel engine, Sherpa variants include an armored cab model with reduced total weight for air transport and capacity for remotely controlled weapons. An extended version of the Sherpa can carry 10 troops, and special operations versions can conduct high-risk reconnaissance and liaison missions. For more information, visit renault-trucks-defense.eu.



#### TACTICAL RIDES



#### GERMANY: VW/Rheinmetall Amarok M

The Amarok is derived from a commercial pickup, and it looks it, with clean lines and a Volkswagen grille. Developed independently in 2012, VW and Rheinmetall collaborated to produce a light utility truck for the German army and also for export. Available with a single or double cab, the Amarok handles patrol, special operations, command, communications or utility missions. It can carry 1.37 tons. For more information, visit rheinmetall-defence.com.







#### INDIA: Tata Xenon

Tata, India's largest automaker, produces the Nano, the world's cheapest car at \$3,000. The 4x4 Xenon, another commercial derivative for military use, transports cargo and up to 12 troops on folding seats in the truck bed. It can carry weapon mounts and be configured for mobile command functions, ambulance and reconnaissance missions. Both single- and double-cab versions are available. For more information, visit tatamotors.com.



#### ITALY: Iveco LMV

Italy's Iveco developed the Light Multirole Vehicle (LMV) privately in 2006 with immediate success, serving the Italian army and military forces in Belgium, Croatia, the Czech Republic, Norway, Spain and the United Kingdom. Built to protect against IEDs with modular kits for various missions and threat levels, the 4x4 can carry 2.3 tons and seven troops. Its missions include utility transport, ambulance and mobile command. For more information, visit iveco.com.





#### JORDAN: Desert Iris

The Desert Iris is a light vehicle for airborne and rapid-deployment forces designed by Jordan's King Abdullah Design and Development Bureau. In service in Jordan, it has been exported to Bahrain, Libya, Saudi Arabia and the United Arab Emirates. Part 4x4 truck, part dune buggy, and based on Toyota components to reduce costs, the Iris carries troops and weapons including machine guns, TOW missiles and rocket launchers.

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#### TACTICAL RIDES



#### POLAND: Tur 2/3

The 4x4 Tur 2 and Tur 3, designed by AMZ-Kutno in 2008 and derived from the Iveco LMV, are light protected vehicles for Polish troops in Iraq and Afghanistan who were vulnerable to IED attacks. The Tur 3's 220-horsepower diesel engine and armored configuration permits combat service. It carries five troops and has a roof hatch with a machine gun or grenade launcher pintle mount. For more information, visit amz.pl/en.





#### RUSSIA: GAZ-233

Russian automaker GAZ started Tigr production in 2005 and ended in 2012, delivering vehicles to Russian military and police forces with exports to Armenia, the Congo, Mongolia, Nicaragua and other nations. About the size of a Humvee, the Tigr carries 12 troops and machine guns or grenade launchers. An up-armored version is available. Its payload is about 1.5 tons with configurations for rapid-reaction team deployment, convoy escort and patrol missions.



#### SOUTH KOREA: Kia KM450

The KM450, a 4x4 troop-carrying military truck, is a modernized version of the U.S. M715 truck produced under license by Kia Motors since 1998. Its payload is about 1.5 tons. An armor kit increases protection for drivers and passengers. An ambulance version can carry five litters. Other available or planned configurations include a shop van, reconnaissance vehicle, communication center, surveillance decoding unit, artillery fire control and EOD. For more, visit military.kia.com.







#### SPAIN: URO VAMTAC

The URO Vehiculo de Alta Movilidad TACtico (VAMTAC) is another Humvee derivative launched in 1998 serving in Spain with exports to Belgium, the Dominican Republic, Ireland, Malaysia, Morocco, Portugal, Romania and Venezuela. Body types include a pickup, command/control and chassis-cab for mounting modular bodies for ambulance, fire-fighting, command, weapon carrier and cargo missions. The VAMTAC mounts several weapons. It is also air transportable. For more information, visit urovesa.com.

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#### TACTICAL RIDES



#### SWITZERLAND: MOWAG Eagle V

The MOWAG Eagle V is available in 4x4 and 6x6 versions, developed in 2010 and 2012, respectively. It is armor protected, sized between Humvees and MRAPs. Its missions include troop and cargo transport, patrol, reconnaissance, command and control, ambulance and others. Its 7-ton payload can accommodate 20 troops. The Eagle's turbocharged diesel engine delivers 245 horsepower. For more information, visit gdels.com.



Swiss Army Photo



#### UKRAINE: SRM-1 Kozak

Praktika, a producer of civilian armored vehicles for banks, developed the Kozak light protected vehicle in 2009. Based on an Iveco 4x4 chassis, the Kozak can carry 10 troops. Its missions include troop and cargo transport, ambulance and patrol. It is air transportable by helicopter or aircraft. A new version using the more economical and widely used GAZ-66 truck chassis was developed this year.



#### UNITED KINGDOM: Land Rover Defender

Nearly 100,000 Land Rovers are sold annually, and about 10 percent of these serve military forces worldwide. The Defender started production in the late 1980s in the British Army. Various models with different wheelbases and mission capabilities are available. The Defender handles missions and functions including troop transport, equipment or communication systems, weapon carrying, mobile workshops, shelter carries, ambulances or light vehicle recovery. For more information, visit landrover.com.



UK MoD Photo





#### UNITED STATES: HMMWV

The most widely used, and most copied, military vehicle in the world, the HMMWV (known as the "Humvee") has served more than 50 other nations for more than 30 years. More than 20 U.S. variants are in use as troop and cargo carriers, ambulances, armament carriers, TOW missile carriers, shelters and prime movers. Armored versions are also available. Its familiar wide track was designed to drive in the tracks of main battle tanks. For more, visit amgeneral.com.

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## **ROCK RIVER ARMS**

BIG-BORE WARRIOR HARNESSES THE X-TREME POWER OF THE .458 SOCOM!

By Mike Detty Alex Landeen Photos

The new LAR-458 X-1 from Rock River Arms packs the barrierbusting power of the .458 SOCOM in a rifle featuring several accuracy enhancements and upgrades that translate to fast followup shots. Shown with a Trijicon 1.25-4x24mm AccuPoint scope.

#### I n a very short time period, the .458 SOCOM cartridge has become a staple in the armament of many American shooters.

Originally conceived to provide Special Forces operators with devastating power and penetration, the .458 SOCOM is more than twice the diameter of the 5.56mm NATO bullet and churns up twice as much energy yet fits neatly within the design parameters of the M16/AR-15 platform. This power, combined with the familiar AR-15 chassis, makes the .458 SOCOM particularly appealing to law enforcement personnel. Rock River Arms (RRA) is one company that recognized the awesome potential of this cartridge

early on and has now added the LAR-458 X-1 rifle to its AR-platform lineup.

Built from the ground up to be a fasthandling rifle, RRA incorporated many features normally associated with 3-Gun competition rifles into the X-1. Some of these noteworthy features include a tuned, two-stage trigger; a stainless steel, cryogenically treated barrel; and a freefloating handguard. It is as handsome as it is accurate, and should prove worthy of any agency's armament. But first a little more detail about the cartridge and its potential tactical applications.

#### **SOCOM** Power

The .458 SOCOM cartridge was initially developed for possible use by the special operations community. As conceived, these operators wanted to "If your needs require a lightweight, fast-handling carbine with plenty of bone-crushing power, I'd strongly recommend taking a look at the Rock River Arms LAR-458 X-1."

be able to use the standard M4 lower receiver and magazines without modification. Besides use on armored hostiles, the round could also be used to stop vehicles and smash through walls and other hard cover.

To put things into perspective, the .45-70 cartridge that killed thousands of buffalos in the 1800s could fire a 300-grain bullet at 1,810 feet per second (fps) and generated a potent 2,182 footpounds of energy. The big frontal area of the bullet, combined with its velocity, made it devastatingly effective on game and humans alike. But the .458 SOCOM actually generates a whopping 10 percent more energy than the old .45-70! If you're a student of ballistics you might say, "So what? That's about the same amount of energy a .308 produces."



### DSA ZM-4 5.56MM RIFLES



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DSA Inc. manufactures many of the AR15/M4 parts used in the complete AR15/M4 pattern DSA ZM-4 rifle. We have been a quality manufacturer and supplier to the AR15/M4 market for nearly ten years, supplying both the individual as well as other manufacturers. At DSA, we pride ourselves on attention to detail, adherence to specifications and our ISO 9001 Quality Control Standards. From a basic AR15/M4 pattern rifle to a completely customized configuration, DSA has the parts, quality and knowledge to assemble exactly what your needs are. In addition to the ZM-4 rifles, DSA is widely known for our complete USA made FAL pattern rifles, RPD belt fed and a variety parts and accessories for them.



#### RRA LAR-458 X-1

That's true, and there are many manufacturers of AR-style .308s. But the .458 fits into the AR-15 platform for a gun that is smaller, lighter and faster handling—and the round wants to impart its energy into whatever it hits rather than drill its way through it. Additionally, a 5.56mm NATO upper receiver can quickly be installed on the lower, providing unprecedented versatility for the end-user.

One of the great things about the .458 SOCOM is how little you need to change to make it work with a standard AR-15. The .458 SOCOM is a fat, slightly tapered round that possesses a shoulder, which it headspaces on, and a heavily rebated rim. The case-head diameter is approximately 0.472 inches, or the same as a 7.62mm NATO round, and its diameter requires that the bolt face be relieved to accept this round. Both the extractor and ejector (and their springs) are different, but the carrier itself remains unchanged.

"Besides use on armored hostiles, the round could also be used to stop vehicles and smash through walls and other hard cover."



The .458 SOCOM churns up over 10 percent more energy than the old buffalo-dropping .45-70 cartridge while fitting in AR-platform rifles.

#### **Gun Details**

Rock River Arms' LAR-458 X-1 utilizes the direct gas impingement system with a carbine-length gas tube and a low-profile gas block. A standard buffer is installed along with a stronger buffer spring.

The heart of the X-1 is its 18-inch, stainless steel barrel. Measuring a full 0.923 inches in diameter, the barrel is fluted, increasing its surface area and reducing weight while remaining very rigid. The fluting also helps the barrel dissipate heat better. The barrel is also bead blasted to make it less shiny, and internally it features a 1-in-14-inch rifling twist rate to stabilize big, heavy bullets. X-1 barrels are cryogenically treated for improved accuracy, and Rock River Arms guarantees the rifle is 1.5-MOA accurate with proper ammo. My test rifle's accuracy was even better, but more on that later.

Surrounding the barrel is RRA's excellent TRO (Top Rail Octagonal) free-floating handguard. Its full-length top rail allows operators to mount night-vision equipment forward of the primary optic.

I had a chance to shoot one of RRA's first .458 SOCOM rifles back in 2008. That unit had a 16-inch barrel, an M4-

type collapsing stock and a standard A2-style flash suppressor. It packed quite a punch on both ends. As I recall, I described the recoil as being like shooting slugs in a lightweight 12-gauge pump action. But my outing with the X-1 was an all together different experience!

There's a few factors

that helped in reducing recoil. The first is that the X-1 is slightly heavier at 8.7 pounds unloaded, compared to the CAR A4, which weighed about a pound less. Another reason the X-1 is more comfortable to shoot is its excellent Operator A2 buttstock. Not only does it give a very comfortable length of pull for me, but it also has a rubber buttpad. It's not really a recoil pad, per se, but it's designed to The LAR-458 X-1's 18-inch, freefloating, stainless steel barrel is cryogenically treated, fluted and capped with Rock River Arms' recoilreducing Hunter muzzle brake.

keep the buttplate from sliding out of position on a ballistic vest. The buttplate, and this helps dissipate some of the recoil. The wedge shape of the stock also provides a more comfortable cheekweld when used with optics. My test sample came with a fixed buttstock, but RRA also offers the LAR-458 X-1 with an adjustable Operator CAR buttstock.

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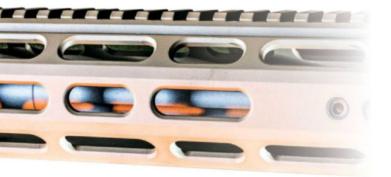
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#### RRA LAR-458 X-1



LEFT: RRA's Top Rail **Octagonal handguard** has several lightening cuts that help dissipate barrel heat. Users can add rails as needed. **RIGHT:** The fixed **Operator A2 stock** provides an excellent cheekweld when used with optics as well as sling-mounting options.



able to add pressure to the trigger until I broke the shot. One thing about shooting the .458 SOCOM is that it always produces a big hole, making it easy to spot your hit! The X-1's trigger is one of RRA's excellent two-stage triggers. The first stage is all take-up, allowing the shooter to prep the trigger prior to firing, and the second stage breaks crisply with 4 pounds of pressure. It is a non-adjustable trigger, which to me is a huge plus, and it should be especially useful for law enforcement applications.

My test X-1 rifle surpassed its 1.5-MOA accuracy guarantee. Despite the disparity in bullet weights, from 300 to 500 grains, I was surprised that the gun did not show a preference for one weight over the other. Given the .458 SOCOM's softball-like trajectory, you'll want to limit your shots to the 120- to 150-yard range.

Recoil was very manageable, and I was able to fire about 60 rounds from the bench without being unduly bruised. The first couple shots were disconcerting. If you've done a lot of AR shooting, then you've probably accumulated the associated muscle memory, and that is what makes shooting the .458 SOCOM so deceptive. Everything feels exactly the same as a 5.56mm weapon, so when I added the 4 pounds of pressure necessary to break the X-1's trigger, the report and recoil always seemed to surprise me.

One of the problems of shooting this popular caliber is finding ammunition. If you rely on commercial ammo, you'll have a hard time finding any on the shelf and your best bet might be an internet search. RRA's Steve Mayer suggested I call Southern Ballistic Research (SBR)probably one of the biggest commercial loaders of the .458 SOCOM. When I spoke with Buddy Singleton, the owner of SBR, he told me that he had rounds on the shelf that were ready to ship. SBR is a small, veteran-owned company that produces high-quality precision ammunition for law enforcement, military and civilian customers. I was able to locate some CorBon ammunition as well.

Mayer told me he thinks the 300-grain bullet is probably the best choice overall for the .458 SOCOM. As Mayer pointed

The lower receiver comes with with a matchgrade, twostage trigger, an enlarged triggerguard and a Hogue pistol grip.

tal in taming this bad boy's recoil is the RRA Hunter muzzle brake. RRA's new product development coordinator, Steve Mayer, told me, "We've gotten pretty good at making muzzle devices in the last 15 years. Our Hunter and Beast brakes utilize a multi-chamber design, and we can significantly reduce both real and perceived recoil as well as muzzle climb by using vector thrust to control where the gases go when they exit. That makes the .458 SOCOM very comfortable to shoot and makes it much more likely you'll hit something on the second shot!"

But the component most instrumen-

#### **Range Time**

For the accuracy portion of my evaluation, I fired the LAR-458 X-1 from a seated rest with my targets set out at 100 yards. I used a Trijicon 1.25-4x24mm AccuPoint scope in an American Defense mount with the magnification set at its maximum power. I fired five-shot groups without letting the barrel cool.

The scope's illuminated reticle, an amber chevron, burned brightly against the black, 2-inch Shoot-N-C targets, and I was

NS	ROCK RIV	ER ARMS L	AR~458 X-:	1	
SPECIFICATIONS	CALIBER:	.458 SOCOM	(C)	-	
L L L L	BARREL:	18 inches		and the second s	0
5	OA LENGTH:	39.5 inches		111	C M
H	WEIGHT:	8.7 pounds (	empty)		
ر م	STOCK:	Operator A2		200	
_	SIGHTS:	Optics-ready	/ Picatinny rai		
	ACTION:	Direct impin	gement semi-	auto	20 22
	FINISH:	Hardcoat an	odized black		The second se
	CAPACITY:	11+1			
	MSRP:	\$1,660			
PERFORMANCE	LOAD		VELOCITY	ACCURACY	
	CorBon 405 J	HP	1,617	1.25	
Ā	SBR 300 Bar	nes TTSX	1,840	0.86	
R	SBR 300 Hor	nady JHP	1,840	1.02	
ц	SBR 350 FMJ		1,650	0.94	TIM
Ë	SBR 350 JSP		1,650	0.99	
				fps by chronogra ups at 100 yards.	



"My test X-1 rifle surpassed its 1.5-MOA accuracy guarantee. Despite the disparity in bullet weights..."

out, manufacturers produce .458 bullets from 100 to 600 grains. The folks that designed these rounds for the .45-70 one hundred and thirty years ago could never have envisioned someone shooting these fat pills through a semi-auto. This is a case where you will want to do your own experimentation and research to see what bullet weights work optimally in your gun.

Fortunately for us, SBR has been developing and refining the .458 SOCOM for years and offers 23 different loads, each designed with a different projectile for specific missions. Each of these loads has been tested and developed for use in a semi-auto AR, and they work well with the LAR-458 X-1—it digested each of the test loads without a problem.

#### **Final Notes**

Surprisingly, the .458 SOCOM works best in military-style aluminum magazines. You'll be able to squeeze between six and seven of the thumb-sized cartridges into a 5.56mm-sized 20-round magazine. Thirty-round 5.56mm-style magazines will hold between nine and 11 rounds. Mayer cautioned that too many rounds will place too much weight on the magazine spring, which might cause a misfeed by not allowing the round to feed before the bolt rides over it.

If your needs require a lightweight, fast-handling carbine with plenty of bonecrushing power, I'd strongly recommend taking a look at the Rock River Arms LAR-458 X-1. I was impressed with its accuracy and reliability. Backed with a lifetime warranty, the X-1 is a weapon you can count on! For more information, visit rockriverarms.com or call 866-980-7625. SW



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#### **GUN TEST**

HK drops the hammer, creating a new striker-fired 9x19mm for the 21st century!

BY ANDY MASSIMILIAN

Photos Courtesy HK

Heckler & Koch

Heckler & Koch designed the 9mm VP9 so that it can easily be adapted to fit each operator. Shooters can alter the grip with interchangeable backstraps and side panels to find the perfect fit. It's been a long time coming: the first striker-fired, polymer-framed pistol from Heckler & Koch since the VP70 and P7 pistols were discontinued. While the VP70 shares some characteristics with the VP9 (namely its polymer frame and striker-fired system), the VP9 is closer in form to the P30 series of pistols because it uses a similar frame, slide, sights and magazine. The VP9, however, is not merely a striker-fired P30, because it differs in several ways aside from the trigger.

The VP9 is a German-made, full-sized, polymer-framed pistol that uses the familiar tilting block, locked-breech design. With an overall length of 7.34 inches and a height of 5.41 inches, the VP9 fits right between the compact P30 and long-slide P30L pistols, and sports a reasonable price tag of \$719.

The VP9 employs a single-action system, meaning the cocked striker only moves forward when released. This is in contrast to Glock triggers that pull a pre-tensioned striker slightly rearward before releasing. The cocked striker can be seen through a small hole at the rear of the VP9's slide.

Like the Glock, the VP9 has a pivoting trigger safety toggle that prevents the trigger from moving rearward unless depressed. This serves as a drop safety that is supplemented by a firing pin safety that rotates out of the way, allowing the striker to be released only when the trigger is depressed. This allows a round to be safely carried in the VP9's chamber.

The main benefits of striker-fired pistols are a low bore axis that channels recoil more directly backward and a consistent trigger pull that is lighter than most double-action, hammer-fired pistols. The drawback of many designs, however, is the trigger, which many shooters tend to find springy, imprecise and increasing in weight of pull during its travel.

The VP9 combines the ergonomics and handling characteristics of the next-gen HK P30 with an ultrareliable striker-fired operating system.

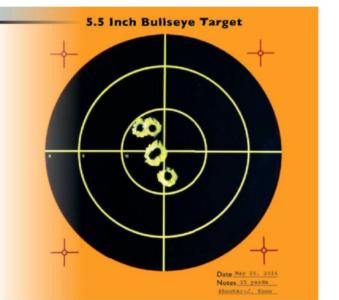
9 mm z 19

"The pistol's parts are well fitted and finished to a point that goes way beyond what is required to make an accurate, reliable firearm."

JØ)

#### **HECKLER & KOCH VP9**





This test 5.5-inch target, placed 25 yards downrange, shows the VP9's accuracy potential. The author's own testing backed up these results, and the pistol digested over 300 rounds flawlessly.



#### "At the range, the VP9 was accurate and totally reliable with multiple types of ammo."

HK focused on a better design for the VP9, and though it doesn't have the trigger stroke of a 1911, the 5.4-pound trigger breaks predictably after discernable creep of about 0.1 inches as the sear drops down out of contact with the striker. Trigger resistance builds quickly rather than gradually, and that steep resistance curve makes the break feel crisper than most and not springy. The reset is also short and readily felt. The trigger's geometry is also quite good, with a wide trigger shoe that makes the pull weight seem less than it measured and a trigger toggle that fully recesses into the shoe and does not protrude slightly like other designs.

The VP9 field strips with an added measure of safety because the takedown lever will not rotate unless the magazine is removed. Also, rotating it decocks the firing pin and allows the slide to move forward off the frame without having to pull the trigger.

The slide is very well engineered in some subtle ways. It is milled from a single, forged piece of high-carbon steel and has a profile that tapers from bottom to top. This taper makes the pistol far more comfortable to carry inside the waistband than blocky, square-profile slides where

NS	HECKLER & KOCH VP9					
SPECIFICATIONS	CALIBER:	9mm	and the second s	LAND Los VPC		
	BARREL:	4.09 inches	and the second			
5	OA LENGTH:	7.34 inches	-	THE REAL	In mark	
H	WEIGHT:	25.56 ounces	s (empty)	0.0		100x
_ <u>∽</u>	GRIPS:	Polymer			C. T	
_	SIGHTS:	Fixed, three-	dot luminous			
	ACTION:	Striker-fired				
	FINISH:	Matte black				
	CAPACITY:	15+1			Con Contractor	1
	MSRP:	\$719				
_						
ш.	LOAD		VELOCITY	ACCURACY		1
PERFORMANCE	Remington 11 Sig Sauer 124	I JHP	1,094 1,139	2.20 1.40	Do.	D
ö	Winchester 1	тэ ғмі	1,182	1.50		1
PERF	Bullet weight measured in grains, velocity in fps by chronograph, and accuracy in inches for best five-shot groups at 25 yards.				•	

the slide may be in contact with your body. Its taper towards the top also tends to guide the shooter's attention towards the sights. Front serrations on the front of the slide make press-checking the chamber easy. Two detachable "charging supports" protrude about 0.13 inches from the rear of the slide and are intended to make racking the slide easier for shooters with reduced hand strength.

The slide assembly rides on four steel rails that attach to the frame in a manner different from other polymer-framed HK pistols or Glocks that use relatively small rails individually molded into the frame. The VP9 uses rails that have longer bearing surfaces (especially the forward rails) and are connected to a one-piece stainless chassis that holds the locking block and is pinned into the frame on the front. The chassis also holds the trigger pin, slide release lever pin and the rotating steel crossbar that locks the slide assembly to the frame. The rear slide rails are part of the trigger housing.

The VP9's pinned-in rail design allows for rail replacement without having to replace the frame, and it appears to be a much more durable method than separately molded-in rail inserts. That being said, the only rail failure I have heard of with a P30 was during an HK-commissioned torture test in 2010 where one rail insert broke off the frame at just over 90,000 rounds.

The VP9 adopts the first-rate ergonomics of the P30 embodied in the ambidextrous slide and magazine releases

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#### HECKLER & KOCH VP9

#### SEAHORSE GUN CASES

#### By Jorge Amselle

aintaining complete control of weapons and gear is a must for the armed professional. This is true of not only when they are on your immediate person, but also when you are off duty and not in direct control of them. It goes without saying that

when these are not in use or on your person, it is best to keep this valuable equipment locked up and secure.

Seahorse Protective Equipment Cases are not only built tough to protect your gear, but they are also very discreet. To the average onlooker they simply look like sturdy cases of the sort typically used for expensive or fragile gear, such as video equipment. It also helps that these cases can be had in a variety of colors ranging from standard black to grey and even safety yellow or orange; the weapons case could pass for road-safety or traffic-accident equipment.

**DUTY PROOF:** Seahorse cases are made with a reinforced polymer shell that is shockproof, waterproof and dustproof. The interior features thick foam padding and an eggshell lid with adjustable compartments for gear, ammo, magazines and more. There is an automatic pressure-purge system on the exterior to account for elevation and atmospheric conditions, as well as standard molded padlock holes (locking latches are also available from Seahorse).

The cases range in size, storing from one to four handguns, and a variety of inserts are available for added versatility. These cases meet military specifications and international standards for protecting sensitive gear and withstanding temporary immersion in water as well as extreme temperatures. For more information, visit seahorse.net or call 626-339-6673.

and the highly configurable grip. The slide release levers are easy to reach with the thumb of the firing hand and are designed to chamber the first round from the magazine. Other gun-makers advise racking the slide with the support hand to chamber a round and equip their pistols with very small slide-lock levers to discourage the one-handed method despite it being much faster. Those small, difficult-toactivate levers are also a hindrance when clearing a double feed, which requires locking the slide open.

The VP9's ambidextrous magazine

#### VP70) By Leroy Thompson

When the Heckler & Koch VP70 was introduced in 1970, it was very innovative—probably too innovative for the market. Incorporating a polymer frame, a double-action-only (DAO) trigger system and an impressive magazine capacity of 18 rounds, the VP70's features are now common on many contemporary pistols. However, the revolutionary design was considered a curiosity in its time because it was the first polymer-framed pistol ever made, 12 years before the Glock.

#### **RADICAL FIREPOWER**

Lesser known was Heckler & Koch's burst-fire VP70M, or "military," version, which functions as a standard semi-automatic pistol unless its holster/stock is attached at the rear, allowing it to function in three-shot burst mode using a selector switch on the stock.

Because I've worked with close-protection teams that use machine pistols, such as the VP70, I've tried to become familiar with this type of weapon. With the stock attached, the VP70 is controllable in burst-fire mode; however, the holster does not work well for concealed carry. HK

SPECIFICATIONS:				
<b>HKV</b>	P70			
Caliber:	9mm			
Barrel:	4.6 inches			
OA Length:	8 inches			
Weight:	28.9 ounces (empty)			
Grips:	Polymer			
Sights:	Fixed			
Action:	Semi-auto (VP70Z); select-fire (VP70M)			
Finish:	Matte black			
Capacity:	18+1			
-				

also offered a special sling that allowed the VP70 to be carried across the chest.

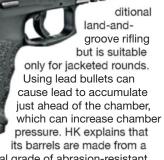
Today, the VP70M is rarely encountered in use, though some VP70Zs are still used or reside in autopistol collections. Mostly, though, it is an interesting link in the chain of modern pistol development. release levers are at the rear of the triggerguard. Shooters are meant to use their trigger fingers—not their thumbs—which would require a change of grip for most people. To release the magazine, simply slide the trigger finger rearward along the triggerguard or quickly tap the lever with the tip of your finger.

Like the P30 series, I consider the VP9's grip design "best in class." The grip has shallow, wide finger grooves that accommodate fingers of different sizes. This engineering is all about making the pistol more shootable, not enhancing the "cool factor" that drives so many cosmetic features on firearms these days. The VP9's grooves are far better than narrow, deep grooves that fit fewer shooters' hands well and often impede a secure, tight grip. The VP9's grip circumference and trigger reach can be tailored to fit hands of different sizes by removing a single roll pin and substituting one of three backstraps or side panels. Interchangeable backstraps are old hat, but the VP9 and P30 series are still the only production pistols to offer different side panels to increase its "made to fit" qualities.

Comfort matters, but optimal fit is critical to controlling and recovering from recoil and quickly accessing the slide lock and magazine release with only the firing hand and without adjusting the firing grip. The same careful engineering applies to the oversized triggerguard, which allows a gloved finger adequate access. The size is about safety and speed. Gloved fingers can cause unintentional discharges if squeezed into small triggerguards because the shooter thinks his or her finger is not contacting the trigger when it is actually depressing it with the added girth of an insulated winter glove.

The cold-hammer-forged barrel has polygonal rifling that lasts longer than traHK's competition shooters found the VP9's trigger much better than other polymer-framed designs due to its short reset and predictable break.





special grade of abrasion-resistant cannon steel that lasts extremely long. The VP9 is tested to withstand all SAAMI 9mm loads and the higher-pressure, non-SAAMI-specified +P+ loads that approximate the velocity of some .357 Magnum loads.

The VP9 uses green luminous night sights in a three-dot configuration rather than the radioactive tritium-filled units that are prohibited in Germany. Luminous sights need to be charged by exposing them to light. Mounted in dovetails, these sights are made from steel, not polymer, and are windage adjustable by drifting. Underscoring one of several design features that separate this pistol from its competition, the sights are intentionally mounted at the very front and rear of the slide to maximize the sight radius and improve shooter accuracy. The rear sight is also tapered towards the top to quickly guide the shooter's attention to the front sight.

The VP9 is very well made. The recoil spring guide rod is made of thick steel not polymer. The pistol's parts are well fitted and finished to a point that goes way beyond what is required to make an accurate, reliable firearm. Even inside the slide, on non-critical areas, you will find smooth surfaces with very few tool marks, which makes for quicker, easier (continued on page 127) Provide the same all-LED head. Simply pull and turn the knurled bezel on any "V-Series" model to select the spectrum of light that meets your mission

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requirements; with no filter required. SureFire invented the WeaponLight-

## **BERETTA M9 BATTLE LEGACY** The U.S. Army reenlists the torture-tested 9mm that's

#### served for nearly three decades! BY ROBERT A. SADOWSKI

t the end of July 2014, Beretta Defense Technologies (BDT) announced that the U.S. Army has purchased additional M9 pistols from Beretta USA. This is the sixth delivery order to date. Under separate contracts, Beretta USA is also supplying M9 parts and components.

In September 2012, the Army awarded Beretta USA a five-year contract for up to 100,000 pistols. Gabriele de Plano, the vice president of military marketing and sales at Beretta USA, said, "To date, Beretta has delivered some 600,000 M9 pistols to the Department of Defense, with about 425,000 pistols going to the Army."

US 900 NO BERETA USA SEASO

M9-115000

The new five-year contract is an "Indefinite Delivery/Indefinite Quantity" (ID/IQ) for up to 100,000 pistols. Of that total quantity, Beretta has received six delivery orders from the Army, which manages the contract, for almost 18,000 pistols. Another order for 6,000 pistols is also in the works, but has not been vet released by the Army. "BDT plans to start delivery in October 2014," added de Plano.

#### Still Fighting Strong

The U.S. Air Force, Navy and Army have used the M9 since it was adopted in 1985 as a replacement sidearm for the aging M1911A1, which was at the end of its life cycle. Since 1987, the M9



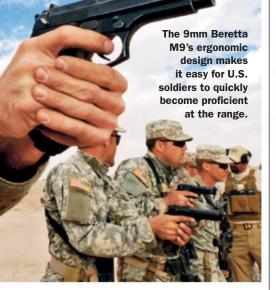
has been manufactured at Beretta USA's production facility in Accokeek, Maryland. Recently, Beretta USA announced that both manufacturing and research and development will move to Tennessee next year, while Beretta USA's headquarters will remain in Maryland.

The M9-a military version of the Beretta 92FS—was a major departure from the M1911, the traditional U.S. military sidearm since 1911. The M1911 pistol has a single-stack magazine with a capacity of 7+1 rounds, employs a single-action trigger and is chambered in .45 ACP. The M9 is chambered in 9mm and has a 15+1 capacity with a double-stack magazine. The trigger system also operates in double-action and single-action modes. The M9A1 variant, which is an enhanced M9, has been used by the U.S. Marine Corps since 2006. The M9A1 variant differs mainly from the standard M9 in that the frame features

Beretta has delivered some 600,000 M9 pistols to the Department of Defense since it was officially adopted in 1985.

#### SPECIFICATIONS **BERETTA M9**

OALIDED.	0
CALIBER:	9mm
BARREL:	4.9 inches
OA LENGTH:	8.5 inches
WEIGHT:	33.3 ounces (empty)
GRIPS:	Composite
SIGHTS:	Blade front, adjustable rear
ACTION:	DA/SA
FINISH:	Matte black
CAPACITY:	15+1



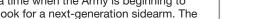
an integrated Picatinny rail for attaching a tactical light or other accessories. It also uses magazines with a PVD coating that reduces friction, and the magazine body is designed to be sand and grit resistant.

"In 1985 when the contract was awarded, Beretta sold the M9 design to the U.S. Army, and the Army now manages the pistol's Technical Data Package (TDP)," says de Plano. One of the recent modifications to the M9, according to de Plano, is a change to the surface finish to a dry film lubricant, or DFL. Beretta still owns and controls the design of the 9mm Beretta 92 pistol.

The M9 has been thoroughly torture tested prior to adoption, surviving temperatures from -40 to 140 degrees Fahrenheit, saltwater, drops on concrete and being buried in sand, mud and snow. The average M9, as tested at Beretta USA, runs for about 17,500 rounds without a stoppage. During Beretta's testing, some sample pistols fired 168,000 rounds without a malfunction.

#### **Next Generation**

The order for more M9s comes at a time when the Army is beginning to look for a next-generation sidearm. The





giving both old school elegance and practical function. Each rifle is test

t inside 1/2MOA with factory match ammunition.

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#### **BERETTA M9 BATTLE LEGACY**

#### "THE AVERAGE M9... RUNS FOR ABOUT 17,500 ROUNDS WITH-OUT A STOPPAGE."

The tank-tough Beretta M9 has proven itself in battle for the last 29 years, from the invasion of Panama and the Persian Gulf War to the Global War on Terror in Afghanistan and Iraq.

Modular Handgun System (MHS) program conducted by the Army is a search for a replacement sidearm for the M9 and M11 pistols. Beretta believes it can improve even further upon the M9A1, said de Plano. "Internally at Beretta we call it the M9A2 concept, which is a furtherenhanced M9A1 with an accessory rail, a sand-resistant 17-round magazine, a removable front sight [to allow for night sights or tall suppressor sights] and a threaded barrel. The concept pistol would also have a third-generation barrel and locking block and an internal recoil buffer like that used in the .40 S&W-chambered Beretta 96A1, as well as changes to the internal geometry of components and the components' materials."

The Army is currently responding to gun industry questions, and the draft request for proposal (RFP) is scheduled for release in early fall of 2014, and the final RFP should be issued in December 2014. The RFP will define the Army's specifications for a new pistol. Surprisingly, the initial MHS specs will allow for a pistol heavier than the M9. No caliber is specified, but the Army wants enhanced terminal ballistics. Firearm industry submissions are set for 2015, though dates are subject to change by the Army.

As the official sidearm of the Army, Navy and Air Force, the M9 is a battleproven weapon, and with Beretta's research and development responding to the military's feedback, it is poised to continue supplying sidearms to the U.S. military well into the 21st century. For more information, visit beretta.com.



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hoto: Josh Wolfe

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### **160th SOAR** NIGHT STALKE **Providing aerial support for America's Tier One special operations warriors!**

#### **BY LEROY THOMPSON**

DoD Photos

fter the 1980 mission to rescue American hostages from Iran was aborted due to helicopter problems, the U.S. Army began developing a helicopter component structured and trained to support special operations. When officially activated in October 1981, it was designated the 160th Aviation Battalion. Many of the original personnel came from the 101st Airborne Division. Over the next decade, the unit would evolve and be designated the 160th Special Operations Aviation Regiment (Airborne), or SOAR, in May of 1990. From Operation Urgent Fury in 1983 through current operations around the world, the 160th SOAR has been involved wherever U.S. special operators have been committed. Long-range, low-level penetrations are a specialty of 160th SOAR crews.

The 160th SOAR has the mission of infiltrating behind enemy lines or into other denied territory to insert or extract U.S. or allied special operations personnel. SOAR helicopters may also be used for resupply, close air support or medical evacuation of special operations personnel.

#### Making The Cut

The 160th SOAR recruits among pilots who have completed at least one full tour after flight school. Its considered desirable for recruits to have flown 1,000 hours-100 of them using night-vision equipment-but it's not required. Enlisted

personnel are recruited from among those possessing the maintenance and other support skills needed in the 160th SOAR. Before being selected for the 160th SOAR, pilots attend a weeklong assessment at Fort Campbell, Kentucky, where physical, mental and emotional evaluations are given. Physical tests include swimming in full flight gear with a helmet.

Officers and enlisted personnel assigned to the 160th SOAR must first

be assigned to the training unit: Green Platoon. Enlisted personnel undergo five weeks of training and officers attend eight months' worth. Among the skills covered are CQB with weapons, hand-to-hand combat, escape and evasion, survival on land and in the water, and other useful skills for personnel who will be flying dangerous missions. Many members of the 160th SOAR will attend airborne and air assault schools. Since the 160th SOAR

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chief of a 160th SOAR MH-47 fires its M134 minigun.

specializes in flying low and at night, pilots spend much of their initial training time sharpening these types of skills. By the time they join their operational battalion they have earned the right to be called "Night Stalkers."

The 1st and 2nd Battalions of the 160th SOAR are based at Fort Campbell, Kentucky, as is the Training Company, while the 3rd Battalion is based at Hunter Field, Georgia. In 2005, a fourth battalion was formed at Fort Lewis, Washington. There are also companies assigned to Southern Command and at times Pacific Command, and elements are assigned to work with the Combat Applications Group (Delta) on anti-terrorist missions. During the Global War on Terror, elements of the 160th SOAR were based in Iraq and Afghanistan.

This is a general look at 160th SOAR organization. In actuality, companies will be organized to fit the missions and operational area of those operators they support. Although U.S. Navy SEALs have their own helicopter support, 160th SOAR sometimes works with them as well. In fact, 160th SOAR pilots learn to carry out operations from aircraft carriers. Probably the best-known operation carried out by the 160th SOAR with the SEALs was the May 2011 raid on Osama bin Laden's compound. Reportedly, special stealth versions of the Black Hawk helicopter were used on the raid.

#### **Taking Flight**

The 160th SOAR operates three types of helicopters. Perhaps the one most familiar to many readers is the MH-6 or AH-6 Little Bird. The MH-6s are the small gunships used so effectively in the Battle of Mogadishu and shown in the film Black Hawk Down. The MH-6 is a light utility helicopter modified to transport up to six troops on outboard "benches" along its sides. At least some MH-6s incorporate forward-looking infrared radar (FLIR) systems for night operations and intelligence gathering. The MH-6 may be configured for fast-roping and STABO (Stabilized Body) operations. The MH-6's minimal size allows it to insert small teams of operators directly onto buildings or other targets. The small size also makes it easily deployable by transport aircraft; a C-141 can transport six Little Birds and a C-130 can transport three. Within 15 minutes of unloading them, the helicopters are mission ready.

The AH-6J is the light attack version of the Little Bird and can be armed with a selection of 7.62mm miniguns, 70mm rocket pods, .50-caliber machine guns, Hellfire missiles, 30mm cannons or Stinger air-to-air missiles. An enhanced MH-6M version is due to become the standard Little Bird attack helicopter by 2015. Many 160th SOAR AH-6 pilots were formerly Cobra pilots who find the AH-6's ability to use diving fire to get up close and personal with their targets a real rush.



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#### **GUNS OF THE ELITE**

### Black Hawk Down: SOAR RESCUE

Special operators who were involved in the Battle of Mogadishu agree that, without 160th SOAR Little Birds' ability to hunt at night, many of them would not have made it out of the bloody city. The battle in October of 1993 started as a snatch of warlord Mohamed Farrah Aidid but ended as a battle for survival against thousands of his armed militia supporters.

The 160th SOAR had both Black Hawks and Little Birds available for the operation—a total of 16 helicopters. During the initial assault on one of Aidid's headquarters, four AH-6J Little Birds, each carrying four snipers, two per side, and armed with 7.62mm miniguns and 70mm rockets, hovered in front and back of the building

The 160th SOAR also uses three types of MH-60 Black Hawk helicopters. The MH-60K is a special operations utility helicopter that incorporates aerial refueling capability, advanced survivability equipment and improved navigation systems to allow for accurate flying in bad weather or other adverse conditions. The MH-60L is another utility version designed for special operations, while the MH-60L Direct Action Penetrator (DAP) version is designed to offer fire support to operators or carry out strike missions. Weapons with which the MH-60L DAP may be equipped include 30mm chain guns and M134D Gatling guns. The latter may be operated as fixed, forward-firing weapons or as door guns. The helicopter can also deploy precisionguided munitions. The MH60L DAP can carry out armed infiltration missions and can also act as an armed escort for other 160th SOAR helicopters. As with other 160th SOAR MH-60s, the MH-60L version can operate in all types of weather and over rough terrain due its sophisticated radar and other navigation aids.

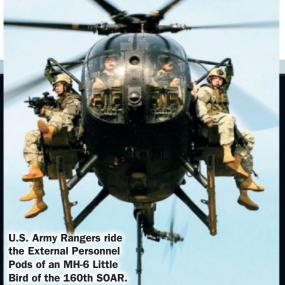
The heaviest 160th SOAR helicopter is the MH-47G Chinook, an upgraded version of the MH-47E. The MH-47D is designated the "Adverse Weather Cockpit" version and is designed for use in all types of weather. The MH-47D or E variant may be used to insert a substantial number of operators at one time by landing or hovering, fast-roping or parachute insertions. The heavy lift capability also allows the MH-47 to carry out sling operations to deliver or remove equipment. The MH-47E incorporates many redundant avionics systems for survivability on missions. It may also be aerially for overwatch and fire support. Two other AH-6Js brought in the Delta assaulters who fast-roped onto the building. Rangers fast-roped from Black Hawk helicopters to secure the city block around the building. Two dozen of Aidid's lieutenants were captured and extracted in trucks by the Rangers.

However, 37 minutes into the mission, a Black Hawk helicopter was shot down. Ranger and Delta operators on foot immediately headed for the downed chopper to extract any survivors. Once the Rangers had secured the crash site, though tenuously, a Little Bird came in to extract two survivors. The Rangers and Delta

"The 160th SOAR has the mission of infiltrating behind enemy lines or into other denied territory to insert or extract U.S. or allied special operations personnel."



**160th SOAR crewmembers prior** to a mission. Note that their Beretta M9s have lanyards affixed.



operators, however, became pinned down by enemy fire near the crash site. Making things even more difficult, a second Black Hawk was shot down at another location.

FIGHTING BY NIGHT: Cut off near the crash site, the Rangers and Deltas were constantly attacked that night. However, the Little Birds flew mission after mission, making gun runs and killing hundreds of

refueled. Both MH-47s may be equipped with a fast-rope insertion/extraction system, an internal rescue hoist, an external rescue hoist and an external cargo hook. Both have FLIR and other sophisticated navigation systems. The MH-47G, which will replace many 160th SOAR birds over the next few years, includes enhanced avionics and navigation equipment as well as better hardening and M134 miniguns and M240D machine guns to give it more firepower.

To aid in survivability, larger SOAR helicopters may be equipped with an active-radar Missile Approach Warning System (MAWS) coupled with an airlaunched countermeasures dispenser to dump chaff and flares. High on the wish list of items that will enhance survivability are an acoustic detection system to alert aircrews if they are being engaged by small arms; better, lightweight ballistic protection for personnel and critical components; and better cockpit protection.

#### Mission-Ready 24/7

Pilots and crewmembers of the 160th SOAR have sophisticated night-vision goggles and systems and high-tech navigation systems. Pilots can navigate precisely to their objective in total darkness flying nap-of-the-earth. Their aircraft have survivability packages and their own defensive firepower. Nevertheless, 160th SOAR crews operate in dangerous situations in areas controlled by the enemy. As a result, they must be trained to fight or escape and evade should their bird go down.

In the past, 160th SOAR crewmembers were armed with HK MP5K submachine guns that they carried in special Somali militiamen. The 160th SOAR pilots and crew were about the only personnel at Mogadishu that had nightvision goggles (NVGs), and they used them to good effect. Little Bird passes were so close that Rangers remember the spent brass hitting their helmets like rain. When the Little Birds were out of ammo, they would often keep making passes so that enemy combatants would stay behind cover. In addition to gun runs, the Little Birds would drop ammo, medical supplies and even a few NVGs.

When the relief force arrived, Little Birds continued to fly overwatch as the Americans were extracted from the chaos. Many current 160th SOAR tactics evolved form lessons learned in Somalia, and U.S. special operators learned not to go into combat in the future without NVGs and a plentiful supply of water. The 160th SOAR has two mottos: "Night Stalkers Don't Quit" and "Death Waits in the Dark." They proved both during the Battle of Mogadishu.



U.S. Army Rangers prepare to fast-rope from a 160th SOAR MH-60.

Eagle Industries quick-release thigh holsters, often with a piece of paracord tied to the stock and also affixed to the webbed gear. Just drawing the submachine gun and thrusting it towards a target would deploy the stock. Normally one of the short 15-round magazines was carried in the MP5K. A spare magazine pouch carrying four magazines was carried on the opposite thigh. However, 160th SOAR pilots now carry the same weapons as many of the operators with whom they work-an M9 pistol and an M4 Carbine. Often, 160th SOAR crewmembers do their firearms training along with the Rangers or Special Forces with whom they work and achieve quite a high level of competency.

SOCOM operators are trained to carry out a wide range of missions behind enemy lines and in dangerous circumstances. However, a good portion of the time they have to be inserted and extracted to carry out those missions. Many times, the extraction can be particularly difficult. That's why the motto of the 160th SOAR is "Night Stalkers Don't Quit."

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## K-MAX HELO

#### Unmanned helicopter executes life-saving missions inside deadly war zones!

#### BY JACK SATTERFIELD

DoD Photos

he late aeronautical engineer Charles Kaman's intermeshing rotor design, with his patented servo-flap control for rotor stability, enabled a helicopter's rotors to turn synchronously from pylons canted around the rotorcraft's center of gravity. This approach cancels torque, eliminates the need for a tail rotor, stabilizes hover and greatly increases

#### SPECIFICATIONS: KAMAN K-1200 K-MAX

LENGTH:	51.83 feet
HEIGHT:	13.58 feet
EMPTY WEIGHT:	5,145 pounds
MAX LOAD:	6,000 pounds
MAX TAKEOFF WEIGHT	<b>:</b> 12,000 pounds
POWERPLANT:	Honeywell T53-17 turboshaft
MAX SPEED:	100 knots
CRUISE SPEED:	80 knots
RANGE:	267 nautical miles
FUEL CONSUMPTION:	85 gallons per hour

lift to handle very heavy cargo sling loads. Kaman helicopters enjoyed a long military service. A commercial rotorcraft, the K-1200 K-MAX "aerial truck," performs heavy-lift missions, including logging and firefighting operations. The K-MAX routinely lifts 6,000-pound loads at sea level, more than its empty weight.

Today, a partnership between the Kaman K-MAX and an advanced unmanned pilotage system from Lockheed Martin is adding to the K-MAX's success. The Unmanned K-MAX Program, managed by Lockheed Martin, involves the installation of a sophisticated system linked with the K-MAX's mechanical flight controls

in the single-seat cockpit, turning the helicopter into an efficient cargo hauler that moves military supplies without unnecessary risk to aircrews.

#### Its Own Pilot

The program began around 2008, when the U.S. Marine Corps called for an unmanned aerial cargo resupply platform to alleviate the overwhelming threat to ground vehicles in convoys from improvised explosive devices (IEDs) as trucks provided logistical support to outposts and combat units in the field. In addition to the threat of attack, ground convoys in combat theaters must navigate over challenging terrain that slows trucks to a crawl, making them more vulnerable to ambushes and wasting hours of drive time. Using manned rotorcraft also is wasteful, since they are usually designed and best utilized for more urgent missions than logistical support.

Although not in active production, the



A K-MAX helicopter serving with Marine Unmanned Aerial Vehicle Squadron 1 rests on a helipad while being refueled in Helmand Province, Afghanistan.

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#### **COMBAT VEHICLES**

"During the 30-month deployment in support of Operation Enduring Freedom... the K-MAX flew more than 2,100 hours and carried 4.5 million pounds of cargo."

K-MAX was an obvious choice for USMC consideration because of its small size and lift efficiency, and Lockheed Martin developed and produced the pilotage system, delivering the first aircraft just nine months after the initial order. According to Jon McMillen, the business development manager for Lockheed's Unmanned K-MAX Program, "Installation of the system does not inhibit the K-MAX's mannedflight capabilities. A pilot can fly it with the system in place. This greatly accelerated system development, since we could fly the K-1200's unmanned system with a safety pilot on board. We conducted our test flights without restriction because the manned K-MAX is already fully certified. Even though a pilot didn't touch the controls, our test flights were manned."

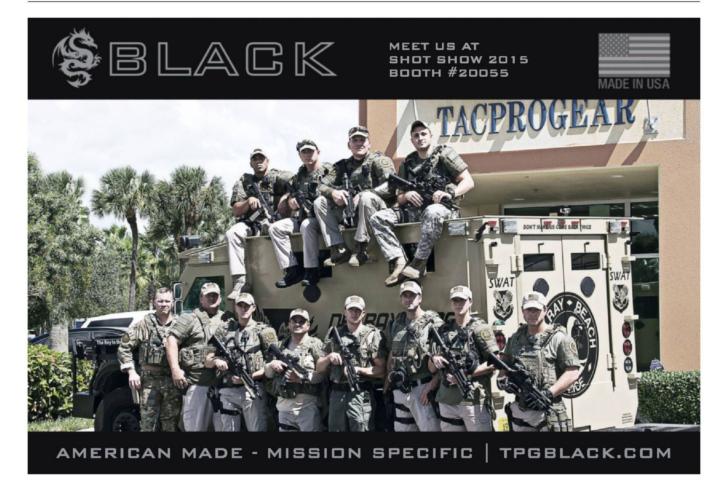
Lockheed's pilotage system is autonomous—not remotely piloted—meaning that it can operate the K-MAX throughout an entire mission from ignition to touchdown without any intervention. The



The Marine Corps is pioneering the use of unmanned helicopters as an alternative to alleviate the need for ground convoys. Here landing support team Marines with Combat Logistics Battalion 5 rush toward a hovering K-MAX unmanned helicopter in Helmand Province, Afghanistan.



system is designed around an advanced autopilot with sensors and data links to operate with preprogrammed flight parameters, including altitude, speed and navigational waypoints, from the takeoff point to a destination. Because the K-MAX utilizes simple analog cockpit instruments and mechanical flight controls, with no digital "glass" cockpit displays or electro-mechanical servos, the system



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#### **COMBAT VEHICLES**

installation merely links to control rods. "Ground controller training is relatively easy," added McMillen. "We can take just about anyone with XBox gaming experience and teach them to handle mission programming. Then, the system handles the flight, completely hands off."

In many cases, the helicopter does not land, descending instead to a low hover so that ground personnel can unhook sling loads, after which the rotorcraft ascends to cruise altitude and returns to its takeoff point. The rotorcraft also can be flown remotely with inputs during a flight from a ground control station. This is important if situations change after a flight has begun. Quick inputs to change the flight route enable the K-MAX to avoid unforeseen air defenses or other problems. The one-seat cockpit can also carry a wounded or injured troop from an outpost to an aid station far more quickly and safely than ground transportation.

At the program's outset, the Marines also considered the Boeing A160 Hummingbird, an unmanned rotorcraft with conventionally configured blades and an innovative structure that provides lift with low fuel consumption, giving it exceptional range and flight endurance. However, developmental problems eliminated the Hummingbird from further consideration. Currently, the Boeing MD530F Unmanned Little Bird is contending with the K-MAX for an eventual procurement contract.

#### **Enduring Freedom**

Meanwhile, the K-MAX passed all its preliminary feasibility tests with flying colors. Naval Air Systems Command (NAVAIR) awarded the Lockheed-Kaman team a \$46 million contract for two aircraft in December 2010 and the K-MAX successfully completed a five-day Quick Reaction Assessment in 2011, leading the Marines to deploy the rotorcraft to Afghanistan for experimental use in combat support missions by November of that year, with the first mission in December. The initial deployment was for six months, but was extended repeatedly until the K-MAXs came home in August 2014.



"Lockheed's pilotage system is autonomous not remotely piloted—meaning that it can operate the K-MAX throughout an entire mission from ignition to touchdown without any intervention."



Although one rotorcraft experienced repairable damage after a hard landing, it was quickly replaced. To suggest that the overall experiment was successful is clearly an understatement.

Jamie Cosgrove, a NAVAIR spokesperson, summed up the operation. "During the 30-month deployment in support of Operation Enduring Freedom," she said, "the K-MAX flew more than 2,100 hours and carried 4.5 million pounds of cargo. The average full-mission-capable rate was 92 percent [meaning that a rotorcraft was ready to go when called 92 percent of the time], and this capability kept vehicles off the road and reduced the Marines' exposures to IEDs."

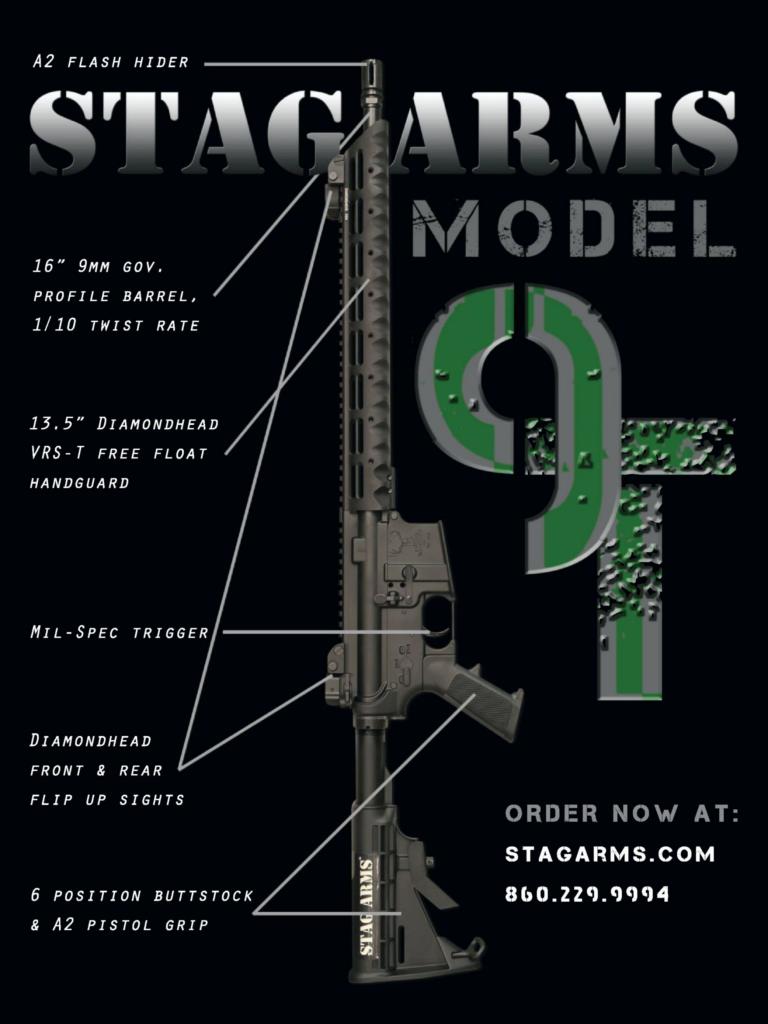
McMillen elaborated on the K-MAX's impressive statistics. "We flew 1,900 separate sorties at distances up to 160 nautical miles," he noted. "The concept called for delivery of 750-pounds loads with a daily total of up to 6,000 pounds. We easily handled 30,000 pounds a day with loads up to 4,500 pounds each, including heavy items such as electrical generators and water pumps."

McMillen added that these mission round trips were usually completed in a couple of hours, while ground convoys using poor or nonexistent roads would require between 10 and 17 hours to cover much shorter distances—if they could get there at all.

"If we assume that two CH-53s were required to fly the same missions as the K-MAXs," McMillen said, "the deployment performed missions equivalent to about 900 cargo and security vehicles. It also completely eliminated up to 46,000 hours of exposure time for their five-man aircrews and Cobra gunship escorts. As for cost, procurement is likely to be half as much as an equivalent rotorcraft. From an operational standpoint, once you factor in all the indirect factors, flying the K-MAX wasn't much more expensive than a truck convoy with a security escort. Direct flight costs are about \$1,300 per hour, and the rotorcraft requires about 1.4 maintenance man hours per flight hour, a very low ratio. For example, the same ratio for an H-60 Black Hawk has been reported to be up to 17 maintenance man hours per flight hour."

Although the Marines haven't decided on a formal procurement program because of budget constraints, the unmanned K-MAX showed its mettle. Kaman has tooling in place and is ready to resume production. In addition, the K-MAX team is ready to offer the system to commercial users for such dangerous missions as firefighting, transport of hazardous biological and chemical materials and to other U.S. and international military customers. For more information, visit lockheedmartin.com.

SPECIAL-WEAPONS-MAGAZINE.com



#### **GUN TEST**

## YANKEE HILL MACHINE NOODEL 57 Billet-crafted carbine

Billet-crafted carbine streamlined for speed, style and UNSTOPPABLE DOWNRAGE POWER!

#### BY MICHAEL O. HUMPHRIES

Photos Courtesy Yankee Hill Machine

The Model 57 from Yankee Hill Machine features billet upper and lower receivers for extra durability and a unique style. As shown, this Model 57 features a limited-edition Burnt Bronze Cerakote finish. "If you take this carbine out of the case at the range, you are going to attract attention." Any informed fan of the modern AR rifle is undoubtedly well acquainted with the name Yankee Hill Machine (YHM). Having earned a reputation for building rock-solid AR parts and accessories, the company's history stretches back to the 1960s, when it first produced cleaning rods for M16 cleaning kits under a U.S. military contract. As the years passed, the company developed a reputation for quality and began producing parts for firearms manufacturers under OEM contracts. YHM soon found itself producing parts featured on rifles from some of the biggest manufacturers in the industry.

However, the company determined that it could produce its own designs better and cheaper and set about developing its own distinctive product line. One of the earliest examples of this was the Phantom 5C2 flash suppressor, which helped establish YHM as a brand within the industry. In the mid-1990s, YHM took the next logical step and began producing complete AR-platform rifles (as well as a suppressor line), further building its brand. At the same time, the company continued to produce its respected line of parts and accessories, with many of them still showing up on competitors' products through to this day.

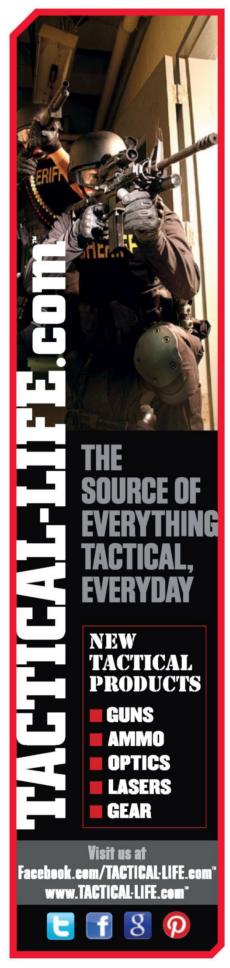
Not wanting to rest on its laurels, YHM has recently expanded its line of complete AR rifles to include the Model 57 billet carbine. As you likely surmised from its moniker, the heart of the rifle is its billet-machined upper and lower receivers. The Model 57 is available in chamberings ranging from 5.56mm NATO to 6.8 SPC to 300 Blackout, and is offered in a traditional matte-black finish or as an even more distinctive limited run of Burnt Bronze Cerakoted carbines.

#### **Gun Details**

The billet upper and lower receivers are the heart of the Model 57 carbine, and they feature very unique styling. Machining the receivers from 7075-T6 aluminum billet (which is done in-house by YHM) allows the company to develop custom-style anodized receivers that can still accept most milspec-configured parts.

The lower receiver features numerous upgrades and enhancements over standard forged receivers. The magazine well features an oversized chamfer for faster reloading and an integrally machined triggerguard that enhances both the handling characteristics of the carbine as well as its strength. From a visual standpoint, one of the most distinctive elements of the lower is the exterior

The billet upper is machined from 7075-T6 aluminum. Note the heavy-duty shell deflector and forward assist housing (left) and the fluting (right) along the exterior.



#### YHM MODEL 57



YHM caps the Model 57's barrel with its new Slant muzzle brake/ compensator, which is made from heattreated steel and is plated with a matte black Melonite QPQ finish.

of the magazine well. The forward face features machined-in grasping grooves, and the forward two-thirds of its lower face sports a downward rake. The rear of the magazine well area blends into a generously sized "gate" portion around the magazine release button. Internally, the carbine features a two-stage, 5-pound trigger. While the safety is non-ambidextrous, the lower features selector markings on both sides that correspond with the selector switch's lever on the left side and a raised tab on the right.

The Model 57's billet upper receiver matches the styling of the machined lower, taking advantage of the machining process to really enhance the styling of the part over a traditional forged upper receiver. Internally, the anodized flattop receiver sports M4-style feed ramps and a dry lube coating, while externally it features a heavy-duty forward assist housing and shell deflector, as well as attractive lightening cuts/grooves above the forward assist and along the left side of the upper.

As with the lower, the upper can accept standard mil-spec-configured parts and accessories. The dust cover included with the rifle is adorned with the chambering of the firearm. This semi-automatic rifle also features YHM's EZ Pull takedown pins, which feature extended and enlarged heads for simplified disassembly. Another enhancement is the inclusion of YHM's Tactical Charging Handle that features an extended latch.

Forward of the receiver section is a mid-length Specter SLR-Slant freefloated forend. The handguard features a full-length top strip of rail along with 4-inch rail sections at the 3 and 9 o'clock positions and a 4.5-inch strip of rail at the 6 o'clock position at the front of the forend. The bottom of the rail is drilled and tapped to accept additional sections of rail if so desired.

The handguard covers a carbinelength, direct-impingement gas system with a low-profile gas block attached to the short 16-inch barrel. The barrel is made from 4140 steel that is heat treated to 25-32 Rockwell, and it features extensive ball-cut fluting that is as visually notable as the cuts to the billet receivers. The finish is on the barrel is a Melonite QPQ coating. Topping off the 1/2x36-tpi-threaded muzzle

10			NE MODEL S	-7		
SPECIFICATIONS	TANKEE I			J/	1	
F	CALIBER:	6.8 SPC			-9	
	BARREL:	16 inches			33	
5	OA LENGTH:	33.5-37.5 inc	ches		33	3
H	WEIGHT:	7.43 pounds	(empty)			8
S	STOCK:	Magpul CTR	8			
_	SIGHTS:	Flip-up front	8			
	ACTION:		gement semi-a	auto	37	
	FINISH:	Burnt Bronze				
	CAPACITY:	25+1				
	MSRP:	\$2,295				
	LOAD		VELOCITY	ACCURACY		
PERFORMANCE	Federal Fusio Hornady 110 Remington 11	V-MAX	2,486 2,588 2,434	0.78 0.98 0.92		
PERF	Bullet weight measured in grains, velocity in fps by chronograph, and accuracy in inches for best five-shot groups at 100 yards.				Po	

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4.42 seconds

sub MOA

 The 7075-T6 aluminum billet lower receiver features an integral triggerguard and machined-in grasping grooves.
 The carbine comes with Magpul's MOE+ pistol grip and CTR buttstock as well as YHM's EZ Pull takedown pins.
 Another enhancement included with the Model 57 is YHM's Tactical Charging Handle, which has an extended latch that is easier to manipulate while wearing gloves.

of the barrel is YHM's Slant muzzle brake, which is machined from steel and plated with a matte black Melonite QPQ finish.

Obviously, no YHM rifle would be complete without some trademark YHM accessories. To that end, the Model 57 is topped off with a set of the company's Quick Deploy Sights (QDS) that flip up with the push of a spring-loaded button. The sights, manufactured from aluminum and anodized black, lock solidly into both open and closed positions. When folded flat, they add only 0.44 inches to the top rail. The rear sight is a dual-aperture peep that is windage adjustable, while the front sight is an elevation-adjustable post with heavy-duty protective wings.

To round out the package, the Model 57 sports a Magpul MOE+ pistol grip that has a reinforced polymer body covered with a comfortable rubber over-molding for enhanced handling. It has a storage trapdoor at its base and is compatible with Magpul's storage cores. The collapsible buttstock on the commercial-spec receiver extension tube is a Magpul CTR unit. It features a low-profile, A-frame shape for minimized snagging on gear that protects the release latch. For added stability, the stock also features a friction lock that minimizes stock movement once engaged. The buttpad of the Magpul CTR stock is an extended 0.55-inch unit. Finally, the Model 57 comes with a standard carbine H1 white-tip buffer.

YHM ships its Model 57 rifles in hard plastic cases, and they each come with two magazines. In the case of rifles chambered in 5.56mm NATO or 300 AAC Blackout, the package includes two 30-round Magpul Gen 2 PMAGs. The 6.8 SPC version comes with two 25-round ASC metal magazines designed specifically for feeding that cartridge.

#### **Range Time**

YHM recently sent me a Burnt Bronze Model 57 in 6.8 SPC for testing and review. As is likely clear from my earlier description of the design and features of the Model 57, YHM went to great lengths to create a carbine that is visually distinctive and eye catching. I can attest, from the moment I opened the plastic case, that I believe the company has soundly achieved its goal.

The rifle is remarkable looking, from the Burnt Bronze Cerakote finish on the

upper and lower receivers and the forend to the intricate fluting and lightening cuts on the receiver sections and the barrel to the muzzle device at the threaded tip of the barrel. If you take this carbine out of the case at the range, you are going to attract some attention.

The Model 57 came with all the aforementioned parts and accessories, and Yankee Hill Machine was kind enough to also include an additional 4-inch rail for the forend. I took the Model 57 out and closely inspected it. Beyond the flashy appearance, the carbine proved to have everything expected of a contemporary, well-made AR carbine. After a light lubing and reassembly, I took the Model 57 carbine to the range with a Leupold 6.5-20x50mm Mark 4 LR/T M1 scope and a selection of Federal, Hornady and Remington ammunition.

My first impression of the Model 57 upon firing was quite good. Although 6.8 SPC rifles can be a bit whippy in recoil compared to 5.56mm models, the carbine's recoil was very tame. This was no doubt due to the well-designed brake as well as the carbine's

7.43-pound weight. The rifle was also extremely accurate, turning in sub-MOA best five-shot groups with all three loads tested, showing a slight preference

for the Federal load. This is one accurate carbine. While the accuracy is no doubt attributable to precision manufacturing and fitting, the trigger pull did not hurt either, breaking very cleanly at 6 pounds. While this was a tad above the advertised weight of the trigger, I was happy with the smooth pull and clean break it offered.

Once done with the accuracy testing on the bench, I moved on to running the gun through some shooting drills. I swapped out the Leupold scope for a Vortex StrikeFire II reflex sight paired with a VMX-3T magnifier unit on a flip-to-side mount and began shooting at targets ranging from 25 to 50 yards. I was able to hit them quickly and accurately, and the carbine ran through a few hundred rounds without a hiccup.

It looks as though Yankee Hill Machine has accomplished its mission with the new Model 57. With its distinctive styling, top-notch features and impressive performance, the carbine is well worth the asking price for the consumer who wants something a little different. And, the limited-run Burnt Bronze finish adds even more appeal for the AR enthusiast who is looking for an eye-catching new addition to his or her collection. For more information, visit yhm.net or call 877-892-6533. SW

# **MORE YHM WARRIORS**

In addition to the Model 57 carbine, Yankee Hill Machine offers a full line of tactical-style AR carbines and rifles. The following is a roundup of some representative offerings.

# **Specifications:**

SFM-100 TODD JARRETT COMPETITION

CALIBER:	5.56mm NATO, 6.8 SPC
BARREL:	16 inches
OA LENGTH:	35 inches
WEIGHT:	6.9 pounds (empty)
STOCK:	Ace ARFX
SIGHTS:	Flip-up front and rear
ACTION:	Direct impingement semi-auto
FINISH:	Matte black
CAPACITY:	30+1
MSRP:	\$2,007

Designed with input from renowned shooter Todd Jarrett, this 5.56mm carbine features a full host of enhancements right out of the box.

# Specifications: SOC-8510-OD SLR

BARREL: OA LENGTH:	5.56mm NATO 16 inches 33.5-37.5 inches 6.9 pounds (empty)
<b>ACTION:</b>	

The 5.56mm SOC-8510-OD SLR Specter Smooth carbine features a striking OD green Cerakote finish and the SLR smooth mid-length handguard.

# Specifications:

YHM-8600	<b>ENTRY-L</b>	EVEL	RIF	LE
			10 million (1997)	-

5.56mm NATO, 6.8 SPC
20 inches
38.5 inches
6.4 pounds (empty)
Fixed A2-style
Optics-ready Picatinny rail
Direct impingement semi-auto
Hardcoat anodized black
30+1
\$1,311

The 20-inch-barreled YHM-8600 Entry-Level Rifle is optics ready and designed to provide a dependable platform for accessorizing.



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WINDHAM

WEAPONRY

BY JORGE AMSELLE Steve Woods Photos

> Windham Weaponry's SRC-308 joins a growing list of heavy-hitting patrol rifles, but it offers a reliable, accurate and optics-ready alternative.

he AR rifle has never been more popular, building on half a century of service with the U.S. military. Now ARs chambered in the much larger 7.62mm NATO round have become popular, and one of the newest entrants in this arena is the Windham Weaponry SRC-308.

I find this ironic given how the AR-15 originally came about. Eugene Stoner's initial design was meant to replace the M1 Garand rifle. Using composites and aluminum from the aircraft industry, Stoner came up with the ArmaLite AR-10, chambered in 7.62mm NATO with a detachable 20-round magazine.

The Army eventually selected a different design that would be renamed the M14, but the ArmaLite AR-10 continued to be improved, and two significant military contracts followed for the Sudanese and Portuguese armies. The ArmaLite AR-10 saw extensive combat use in various in-

**GUN TES** 

"At only 7.55 pounds unloaded, the SRC-308 is very light for an AR in this caliber, and its combination of low weight and short length made it very handy on the range..."

> Windham's SRC-308 is easily capable of trouble-free, sub-MOA performance. Shown with a Nightforce 2.5-10x32mm NXS riflescope.

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PECIAL WEAPONS®/JAN/FEB 2015 75

# WINDHAM WEAPONRY SRC-308



One of the SRC-308's big advantages is that it retains familiar AR controls. As a result, operators won't have to master a new weapon system to benefit from its 7.62mm chambering.

# "IN TERMS OF ACCURACY...the SRC-308 proved outstanding, achieving precision rifle results out of what is essentially a standard duty carbine."

surrections throughout Africa and provided reliable and effective service in rough conditions. A small number were also bought by Cuba and ended up in the hands of Dominican Republic revolutionaries.

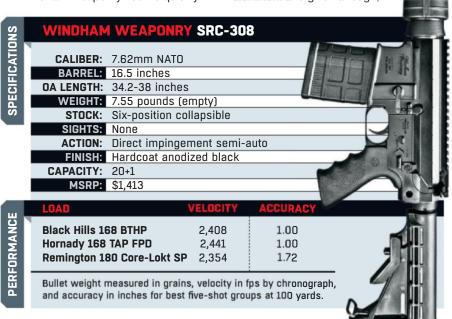
The ArmaLite AR-10 must have left a lasting impression with U.S. military testers, as the Air Force would soon return to seeking a lightweight and small-caliber rifle that eventually became the AR-15 and M16 in 5.56mm NATO.

The Windham Weaponry SRC-308 is. at its core, an AR-15 design beefed up to accommodate the 7.62mm NATO/.308 Winchester cartridge. It remains a semiautomatic, direct-impingement rifle with the same manual of arms and controls that are familiar to all AR users, which means the transition and training requirements are minimal. Windham Weaponry itself is quickly

becoming a recognizable name in the AR market for its high-quality, milspec, reliable and accurate rifles, but this should come as no surprise to those familiar with the company's history. Named after the town of Windham, Maine, the guns are all made in the same factory and by the same machinery and workers who were formerly under the Bushmaster name. Now that same experience and attention to detail are being devoted wholeheartedly to this new, but familiar. endeavor.

# **Gun Details**

The SRC-308's upper and lower receivers are made from forged 7075-T6 aircraft-grade aluminum and given a tough,



# transparent round-count windows on the side portions of the body and

employs an anti-tilt follower for smooth and reliable feeding. Internally, the magazine features black-oxide-coated stainless steel springs, and the exterior of the magazine sports ribbed gripping surfaces and aggressive front and rear textures. The flared floorplate design offers the benefit of enhanced handling and extraction from magazine pouches as well as being removable for care and maintenance of the magazine. The included snap-on impact/ dust cover helps protect the polymer magazine and its contents.

One of the newest additions to the

PMAG line is the PMAG 25 LR/SR Gen

M3, a 25-round magazine that brings a

great deal of firepower to SR-25/M110-

pattern 7.62mm NATO rifles. Made here

in the U.S., the 25-rounder features

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greater strength and lighter weight, Magpul's PMAGs

have become

the standard for

many in not only

pattern carbines

also with 7.62mm

NATO-chambered

and rifles but

variants.

5.56mm series AR-

Magpul and its

line of PMAG magazines have popularized the

**7.62MM PMAG** 

By Michael O. Humphries

The PMAG 25 LR/SR Gen M3 is available for a wide range of 7.62mm NATO AR-pattern rifles, including the ArmaLite AR-10A, Bushmaster .308 ORC, Colt LE901-16S, DPMS LR308, JP Enterprises LRP-07, LaRue Tactical OBR, LMT LM8MWS, LWRCI REPR, Patriot Ordnance Factory P308, Ruger SR-762, Smith & Wesson M&P10, SIG716 and the Windham Weaponry SRC 308. For more information, visit magpul.com or call 877-462-4785.

matte black, hardcoat anodized finish. The upper receiver has a Picatinny rail on top for mounting sights and optics. The carbine comes with no sights, but that's why it's named the Sight-Ready Carbine (SRC). The SRC-308's standard round handguards don't have any rails on them, so any optics will be relegated to the 7.25 inches of rail you get on top of the receiver. The top of the gas block also features a 2-inch Picatinny rail that has been raised to match the height of the upper receiver's rail for mounting a front sight. The upper receiver includes a standard steel dust cover, an integral shell deflector and a forward assist.

The 16.5-inch barrel has a medium contour. Made from mil-spec 4150M chrome-moly-vanadium 11595E steel, the barrel has a chrome-lined bore and chamber with six-groove, 1-in-10-inch, right-hand-twist rifling. The exterior is Parkerized for corrosion resistance, and the barrel is threaded. An A2-style flash suppressor comes installed.

A mid-length gas system is housed under an 8.5-inch-long, round set of

The SRC-308 has several duty-ready enhancements. Note the integral triggerguard and the ambidextrous, quick-detach sling swivel attachment points at the rear of the lower.



handguards that gives the carbine a very traditional look and feel. Internally, the bolt is proportionally larger, which will feel massive and very heavy to those used to the standard 5.56mm bolt carrier group. However, the 7.62mm bolt carrier group functions and disassembles in the exact same way for easy and familiar maintenance. Made from Carpenter 158 steel, the bolt carrier also features a properly staked gas key using Grade 8 hardened fasteners for added reliability. The charging handle works well but does not have an extended latch. When using optics, as this rifle is designed to do, it can sometimes be difficult to operate the charging handle, and in my opinion an extended

latch is definitely an upgrade to consider in these situations.

The lower receiver has an integral triggerguard that has been slightly enlarged to provide better access with gloved hands, but not so much as to interfere with normal operation or appear unusual.

The controls are all standard for an AR, with the right-side magazine release deeply recessed inside a full receiver fence to avoid unintentional activation. While the safety selector is nonambidextrous, it does feature a notch cut on its right side. This, in concert with selector markings cut on both sides of the receiver, allows the user to visually verify the condition of the rifle from either

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# WINDHAM WEAPONRY SRC-308

side. The magazine well is slightly flared for faster reloads, and the bolt release is slightly recessed due to the beefier upper receiver, but it's still very easy to engage or release with a palm slap. Notably, and very conveniently, the rear of the lower receiver features ambidextrous quick-detach (QD) sling swivel attachment points.

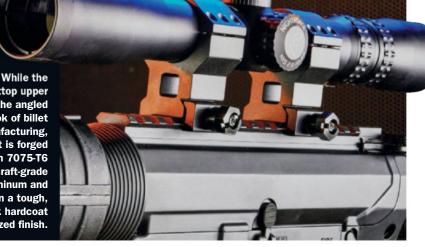
The lower receiver also comes equipped with a Hogue pistol grip that is both extremely comfortable and very ergonomic. It features soft rubber overmolding that really grips the hand with a nice pebbled texture. The grip has finger grooves on the front, palm swells on the sides, and a beavertail at the top rear helps to lower the grip, placing the index finger more in line with the trigger. The only thing I would like to see added to the Hogue grip is some sort of cover for internal storage space.

The standard M4-style collapsible stock can be adjusted for six different length-of-pull positions to accommodate shooters of different statures or those using the rifle while wearing heavy winter clothing or body armor. At the toe of the stock there is a standard steel sling attachment point. Finally, the SRC-308 ships with a 20-round Magpul PMAG.

### Range Time

On the range, the Windham Weaponry SRC-308 performed in an exemplary fashion with zero malfunctions and zero maintenance. ARs usually like to run with

flattop upper has the angled look of billet manufacturing, it is forged from 7075-T6 aircraft-grade aluminum and given a tough. black hardcoat anodized finish.





The SRC-308 ships with polymer, M4-style handguards that protect the support hand from barrel heat.

some lubrication on the bolt carrier. In my experience, this is especially the case with 7.62mm-chambered ARs. The SRC-308. however, did not need any extra lubrication over a standard AR. The only thing I noticed is that the spent casings

> did not get thrown out as far as the gun, without any added lubrication, got dirtier.

> > At only 7.55 pounds unloaded, the SRC-308 is very light for an AR in this caliber, and its combination of light weight and short length made it very handy on the range, especially for off-hand shooting. It struck me as an ideal rifle for someone who needed the hard-hitting power of the 7.62mm NATO round but was going to spend most of their time carrying the rifle instead of shooting it. There

TOP LEFT: The threaded muzzle of the barrel is topped off with an effective A2-style flash suppressor. M LEFT: The polymer buttstock can be adjusted to six different length-of-pull positions to accomodate body armor or shooters of various statures.

is a price to be paid for the light weight, and that is in terms of recoil, which was expectedly stout.

In terms of accuracy, however, the SRC-308 proved outstanding. achieving precision rifle results out of what is essentially a standard duty carbine. The single-stage trigger, while crisp with minimal creep, weighed in at 6.5 pounds and was purely mil-spec.

For accuracy testing, I used the Trijicon 3-9x40mm TR20-2 AccuPoint scope with a mil-dot crosshair reticle featuring an illuminated amber dot. The scope's excellent fiber optics gather ambient light to illuminate the center amber dot without batteries. This is a very welcome feature, especially for anyone who has hit the range with a red dot or illuminated scope only to find a dead battery.

Regardless of the trigger, firing from a stable benchrest at 100 yards, I was able to achieve 1-MOA results. According to Windham Weaponry, this is not unusual, as the test targets the company showed me demonstrated. Windham did recommend using heavy match ammunition for the best results. My best results were right at 1 inch using 168-grain match ammunition from Black Hills and Hornady. Windham said that it was averaging 0.25 to 0.75 MOA using Australian Outback and Federal Gold match ammunition.

I have had the opportunity to test several Windham Weaponry ARs in the past, and this is the first of the company's 7.62mm ARs I have tested. Like the other models from this company, it exhibited impeccable performance, outstanding accuracy and displayed a very high-quality build with a superior fit and finish. This is a company that has no problem standing behind its products, and it offers a fully transferable lifetime warranty. For more information, visit windhamweaponry.com or call 855-808-1888. SW



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SECURI

# SMG ROUNDUP

# Modern Chinese Substantiation Substantiation GUNS A behind-the-scenes look at China's military and police CQB powerhouses!

# **By Maxim Popenker**

p until the mid-

1960s, submachine guns produced in China were copies of foreign designs, such as the 7.62x25mm Type 50 and Type 54, which were licensed copies of the Soviet PPSh-41 and PPS-43, respectively. However, following the political split between the post-Stalin Soviet Union and Maoist China, the latter was left on its own to develop new small arms. The result was a series of 7.62x25mm submachine guns that represented a unique and in some cases very capable Sino-style take on this classic weapon system. This era was represented by the Type 64, Type 79 and Type 85 series of submachine guns.

POLICE

In the mid-1980s, the People's Liberation Army (PLA) decided to follow the international trend and initiated a research and development program with the purpose of switching to small-caliber, high-velocity ammunition. By 1987, the PLA had selected the 5.8x42mm as the future caliber for its infantry small arms. Following further development, in the late 1990s the PLA adopted a new family of infantry small arms, known collectively as the Type 95 and firing 5.8x42mm ammunition of domestic design. After this changeover, the PLA decided to switch its sidearms to the same bore diameter and developed a new pistol/SMG round that became known as the 5.8x21mm DAP92. This round has a bottlenecked case 21mm long and fires a pointed bullet with a steel core. It's somewhat similar in concept to the Belgian 5.7x28mm SS190 round, although the Chinese ammunition appears to have less power and range.

At the same time, the People's Armed Police (PAP) decided to switch its sidearms and future submachine guns to a domestic version of the 9x19mm Luger round, which is known in Chinese service as the 9x19mm DAP92. Since then, most SMGs designed in China have appeared in two chamberings-one in 5.8x21mm to suit the Army and another in 9mm to suit the domestic police and foreign customers. Examples of this new era of modern SMG design include the Type 05 and the Type 06. Read on to learn more about each individual weapon system, including its design, specifications and intended roles.

A People's Armed Police officer stands guard with a Type 79 SMG with a holographic sight, a vertical foregrip and a tactical light.

# **TYPE 64**

Despite an emerging new class of assault rifles, submachine guns were still required for some specialized roles. The first such role was special operations, which usually require stealth. As a result, in 1964 the People's Liberation Army adopted its first indigenous submachine gun, the 7.62x25mm Type 64.

This is a simple blowback-operated weapon that fires from a closed bolt in semi- and full-automatic modes. It features a solid, machined-steel receiver, a flip-up rear sight set for 100 and 200 meters and a downward-folding shoulder stock. The safety lever is similar to that of the Kalashnikov AK, but it has only two settings; a separate firing mode selector is located on the left side of the gun.

Equipped with an integral sound suppressor that encloses a perforated barrel, the Type 64 fires specially designed 7.62x25mm Type 64 ammunition that was based on the 7.62x25mm Tokarev case, but loaded with relatively long and pointed bullets with steel and lead cores. The resulting cartridge was subsonic, thus making it well suited for suppressor use. In case of an emergency, the Type 64 could be used with standard supersonic 7.62x25mm Type 51 ammunition, but the service life of the suppressor degrades noticeably in this case.

# **SPECIFICATIONS**

CALIBER:	7.62x25mm Type 64
BARREL:	9.6 inches
OA LENGTH:	25-33.5 inches
WEIGHT:	7.5 pounds (empty)
ACTION:	Blowback, closed bolt
CAPACITY:	20, 30
<b>RATE OF FIRE:</b>	1,000 rpm



The next weapon of this class was the 7.62x25mm Type 79 submachine gun. It was originally intended for the "jungle warfare" role, so it was designed to be unusually light for its power, making it easy to carry during long patrols in deep jungles. To achieve this lighter weight, Chinese designers used an action more commonly associated with much more powerful assault rifles. The Type 79 uses a gas-operated, rotary bolt action with a short-stroke gas piston located above the barrel. The bolt group is more or less an adaptation of that of the Type 56 (AK) assault rifle. The receiver is made from steel stampings. The selector/safety switch is also patterned after the Type 56 rifle, and allows for both semi- and full-auto fire.

An extended magazine housing serves



as a forward grip, as the forend is very small. Its box magazines hold only 20 rounds of ammunition. The shoulder stock is made from stamped steel and folds up and forward when not in use. The standard iron

SPECIFICAT	IONS
CALIBER:	7.62x25mm
BARREL:	7.9 inches
OA LENGTH:	18.5-29.1 inches
WEIGHT:	4.2 pounds (empty)
ACTION:	Gas-operated, rotating bolt
CAPACITY:	20
<b>RATE OF FIRE</b> :	1,000 rpm

sights have settings for 100 and 200 meters.

The Type 79, which was developed between 1971 and 1979, entered mass production around 1982 and was manufactured in significant numbers. It can still be seen in the hands of People's Armed Police operators, often outfitted with modern accessories such as red-dot sights or tactical flashlights. According to Chinese sources, the Type 79 was a failure in its original role of a "jungle" weapon due to its poor reliability, excessive rate of fire and limited magazine capacity. As a result, today the Type 79 submachine gun is used mostly as a police weapon in urban environments.

# **SMG ROUNDUP**

**TYPE 85** 

Due to problems inherent in earlier guns, the PLA requested a new weapon. Designed between 1979 and 1983, it was type-classified in 1985 as the Type 85 and approved for mass production around 1987. This was a simple and straightforward 7.62x25mm design produced with extensive use of stamped and formed steel and welding, thus dispensing with the complicated gas-operated action of the Type 79 and the expensive machined receiver of Type 64. It was developed in two separate versions—standard and suppressed—with different barrels.

The Type 85 is a simple blowbackoperated weapon that fires from an open bolt. It uses a tubular steel receiver. The safety/selector lever is located on the right side, above the triggerguard, and allows for semi- and full-auto fire. The suppressed version has gas ports drilled into the front half of the barrel, which is covered by an integral, multi-baffle suppressor made from steel and containing 10 removable baffles. The gun is fed using the same 30-round box magazines as the Type 64. The shoulder stock is made from steel and folds to the right when not in use.

The suppressed version is optimized for special 7.62x25mm Type 64 ammunition with a heavy, subsonic bullet, but it can also fire standard 7.62x25mm Type 51 ammunition, though it'll be louder and the sound suppressor baffles will subsequently have a shorter service life.



# SPECIFICATION

CALIBER:	7.62x25mm T51/T64
BARREL:	8.3 inches
DA LENGTH:	17.5-34.2 inches
WEIGHT:	4.2-5.5 pounds (empty)
ACTION:	Blowback, open bolt
CAPACITY:	30
RATE OF FIRE:	780-800 rpm

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# **SMG ROUNDUP**

Т	Y	Ρ	E	0	5
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There has been much development and field-testing of submachine guns carried out by various state- and privately owned factories, and often externally similar prototypes have appeared in Chinese press under various designations. One of the new designs can be identified as a service weapon—the 5.8x21mm Type 05, which is in use by the PLA. The Type 05 is a blowback-operated weapon that fires from an open bolt. The gun has a bullpup configuration, with a compact aluminum receiver and separate polymer shoulder stock/housing and pistol grip/trigger units. The safety/ selector switch is located above the pistol grip, and allows for semi- and full-auto. This bullpup only ejects to the right side, so firing from the left shoulder is impossible, or at least hazardous to the shooter.

The Type 05 comes with a flip-up, aperture-type rear sight and a protected front post sight, along with a proprietary scope mount on top of the carrying handle. It can also be equipped with a detachable sound suppressor. The Type 05 feeds from a proprietary, four-row, box magazine that hold 50 rounds of 5.8x21mm ammunition. It is also available in 9x19mm, with it believed that the 5.8x21mm version is intended for domestic usage and the 9mm for domestic police usage and export sales.

SPECIFICAT	IONS
CALIBER:	5.8x21mm
BARREL:	9.8 inches
OA LENGTH:	19.6 inches
WEIGHT:	4.85 pounds (empty)
ACTION:	Blowback, open bolt
CAPACITY:	50
<b>RATE OF FIRE:</b>	500 rpm



# SPECIFICATIONS CALIBER: 9x19mm

BARREL:	9.1 inches
OA LENGTH:	16-23 inches
WEIGHT:	4.85 pounds (empty)
ACTION:	Blowback, telescoping bolt
CAPACITY:	50
<b>RATE OF FIRE:</b>	800 rpm

# **TYPE 06**

The 9x19mm Type 06 is in use by certain SWAT-like units of the PAP. It is also blowback operated and uses a telescoping bolt that wraps around the barrel in its forward position. The receiver is made from polymer and is open at the top; two pistol grips are integral to the receiver. The submachine gun feeds from a 50-round helical magazine loaded on top of the weapon that is made from polymer and is similar in design to U.S. Calico magazines.

The Type 06 is fitted with open sights;

the rear sight is of the aperture type and has three range settings for 50, 100 and 150 meters. The gun also has a mounting point for a red dot or night sight just behind the rear sight block, which requires a proprietary scope mount with a high base. The muzzle of the weapon is threaded to accept a sound suppressor. The shoulder stock, also made from polymer, is of the telescoping type. As with the Type 05, the Type 06 is also offered in 5.8x21mm as well as 9x19mm, with the 5.8x21mm version intended for domestic usage and the 9mm for domestic police usage and export sales.





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# **BATTLE RIFLES**

# **RIO'S ELITE AR-10A4 RIFLES** BOPE operators keep the

# peace in Brazil with powerful 7.62mm ArmaLite rifles!

A.G.G.G.G.

**BY RONALDO OLIVE** 

epending on what part of the world you're talking about, law enforcement agencies vary quite widely in terms of tactics and gear employed due to the actual threats they're expecting to face. Let's take Brazil as a case in point.

South America's largest (3.2 million square miles) and most populated (over 200 million people) country, Brazil faces several large-scale criminal activities consisting mainly of drug-related matters. Although not a major producer of marijuana and cocaine, the nation rates as a major importer from neighbors such as Bolivia, Colombia, Paraguay and Peru, both for local consumption and for re-routing to Europe, either direct or via Africa. As is common in other parts of the world, drug trafficking is concentrated in the country's main metropolitan areas, such as Rio de Janeiro, which has over 6.5 million residents. Brazil's national homicide rate in 2014 reached 29 deaths per 100,000 people, the highest since 1980.

The bad guys get their best weapons mainly via the very same drug routes, such as Paraguay and Bolivia, as their borders with Brazil are virtually uncontrolled. Gun shipments are occasionally found and seized by LE officials while en route to their final destinations, but significant caches are more frequently caught after major confrontations and the capture of hideout depots. The gangs in Brazil use a variety of weapons—anything from M1 Garands and BARs to whatever AR-15, FAL and AK variants you may think of, plus subguns, shotguns and handguns.

# **BOPE** Defenders

Broadly speaking, the country's public security system can be divided into federal and state police forces. The federal side, under the direct control of the *Minist rio da Justiça* (Ministry of Justice) includes the *Polícia Federal*, the local counterpart to the U.S. FBI, and the *Polícia Rodovi ria Federal* (Federal Highway Police), responsible for actions along the 38,000-mile network of federal roads. The Federal Police is also in charge of border and immigration control, and the prevention of international drug trafficking, contraband, terrorism and the like.

All 26 Brazilian states and the Federal District have both *Polícia Civil* and *Polícia Militar* organizations, the former being in charge of criminal investigative work and the operation of the *Delegacias Policiais* (called *Distritos Policiais* in some states), where criminals are taken in order to be booked and initially charged with law violations. The Military Police forces have

# SPECIFICATIONS: ARMALITE AR-10A4

CALIBER:	7.62mm NATO
BARREL:	16 inches
OA LENGTH:	35-38.25 inches
WEIGHT:	7.75 pounds (empty)
STOCK:	Collapsible
SIGHTS:	Flip-up front and rear
ACTION:	Direct impingement semi-auto
FINISH:	Hardcoat anodized black
CAPACITY:	20+1

ArmaLite's AR-10A4 rifles have proven themselves in numerous armed confrontations in dangerous areas around Rio de Janeiro. Shown equipped with an EOTech 552 HWS.

### **BELOW:**

A GRR sniper carries the Czech-made 7.62mm NATO CZ 750 boltaction rifle.

Grupo de Retomada e Resgate (GRR) team members, typically employed in hostage-rescue situations, train to clear a structure with their AR-10A4 rifles.

# K0)P

personnel constantly practice their marksmanship. The first countersniper assignments were implemented in the 1990s when a number of 7.62mm NATO Heckler & Koch G3SG/1 rifles were acquired. These accurized variants of the famed German battle rifle, equipped with Zeiss 1.5-6x42mm scopes, gave good service for a number of years. Occasionally, individual samples of one or another type of sniper rifle found its way into the battalion's nventory for trials and very limited use, including the Fz .308 AGLC, native manufacturer IMBEL's attempt at this specialized market sector, but it generally fell short of the performance required for LE use.

A new breath of life then came in the form of the U.S.-made 5.56mm NATO Colt A3 HBAR Elite, which was later officially adopted. Featuring a free-floating, heavy, 24-inch barrel and a Leupold 3.5-10x40mm scope fitted to its flattop receiver, it was fully capable of achieving sub-MOA accuracy at the 100-meter standard police engagement distance, and performed more than adequately at longer distances. Its

semi-auto operation and 30-round magazine was duly appreciated in Rio's frequent urban combat situations, when a sniper is sometimes forced to offer additional shots to counter multiple threats.

**"WHEN THE** 

**GOING GETS** 

TOUGH, CALL

THE POLICE.

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THE POLICE,

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WHEN IT GETS

7.62mm POWER: When there's a need for more power but not semi-automatic fire, BOPE marksmen use the 7.62mm CZ 750 bolt-action rifle. It features a 26-inch barrel, an overall length of 48 inches and a weight of 11.9 pounds (empty). These rifles are fitted with Leupold 3.5-10x40mm scopes.

The urban combat settings in Rio de Janeiro have now given the police sharpshooter another duty: providing spotting and accurate-fire support to exploring and advancing troops. And that's what the 7.62mm ArmaLite AR-10 SuperSASS has often been used for since it entered service with the BOPE a couple of years ago. Topped with a Leupold 6.5-20x50mm scope, this semi-auto rifle has a 20-inch barrel and a quad-rail handguard typically fitted with rail covers. For this powerhouse, the BOPE typically uses Lapua 167-grain Scenar HPBT ammunition.

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# **BATTLE RIFLES**

ranks similar to the armed forces, from private to colonel, and wear uniforms that vary from state to state, being in charge of general patrol duties and immediate responses to criminal emergencies, plus carrying out major armed operations on a pre-planned basis. They also have special units working along state-operated roads and highways.

# Fighting Edge

Now called the Polícia Militar do Estado do Rio de Janeiro (PMERJ), Rio's Military Police was officially created on May 13, 1809, as the Divis o Militar da Guarda Real da Polícia da Corte in the wake of the arrival of the Portuguese Royal Family to the colony. The original, 218-men strong organization gradually reorganized over the years and has matured into the present strength of about 43,000 men and women. Under its current organizational structure, the Comando de Operaces Especiais controls a number of specialized outfits (airmobile, K9, riot control, maritime), the most prominent of which is, for sure, the famous Batalh o de Operaçes Policiais Especiais (Special Police Operations Battalion), popularly known as the BOPE.



There's a general saying in Rio that translates into English more or less like this: "When the going gets tough, call the police. When it gets tough for the police, call the BOPE." Enter the battalion's day-to-day combat elements—the *Equipes de Operaçes Especiais* (Special Operations Teams)—men who are called in to act (practically every single day) in high-risk tasks. To face these warzone-like police combat scenarios in the "Wonderful City," the BOPE requires reliable weapons to match the unit's constant, top-notch physical and tactical training programs. Until recently, the BOPE was equipped on a roughly 50/50 basis with 5.56mm NATO Colt M16A2 Commando carbines and 7.62mm NATO IMBEL-made FAL Para rifles, but several decades of very intense use of both types began to show that it was just about time for an up-to-date replacement to be called into service.

In 2008, the BOPE began a very detailed technical evaluation and procure-



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Rio's "men in black" train with their recently delivered AR-10A4s, which came equipped with EOTech holographic sights and vertical foregrips.

.....

ment program to obtain a new 7.62mm NATO rifle for general adoption to substitute the 50-year-old (in Brazilian service) FAL rifles of Belgian origin and local manufacture. The winner was announced in early 2014: the U.S.-made ArmaLite AR-10A4. Deliveries began in July of 2014, and following the required troop training and familiarization process, the AR-10A4 entered service and is now in its new fulltime job with Rio's "men in black."

# **AR-10 Crime Fighter**

This modern-day descendant of Eugene Stoner's original and, at that time (mid-1950s), futuristic AR-10 design has already been accepted by the skillful Brazilian LE operatives. Those operators with whom I spoke have pointed out some the gun's valuable features, starting with the AR-10A4's controls and manual of arms, which are similar to the M4s and AR-15s they have been using for many years. Equally prized is the fact that the ArmaLite gun is about 2 pounds lighter and 8 inches shorter than the full-size FAL, an important factor because the BOPE usually is deployed for long periods of time in mostly hilly, densely constructed areas.

All of the BOPE's AR-10A4s came equipped from the factory with EOTech 552 holographic sights on the flattop upper receiver rails and vertical foregrips on the bottom rail. Folding backup iron sights (a front post and an aperture rear) are also available in case Murphy's Law kicks into action and their batteries die. Picatinny rails are also present on the sides of the fully machined-aluminum handguard for the addition of other accessories, and the rifles come with rail covers for more comfortable handling when not in use.

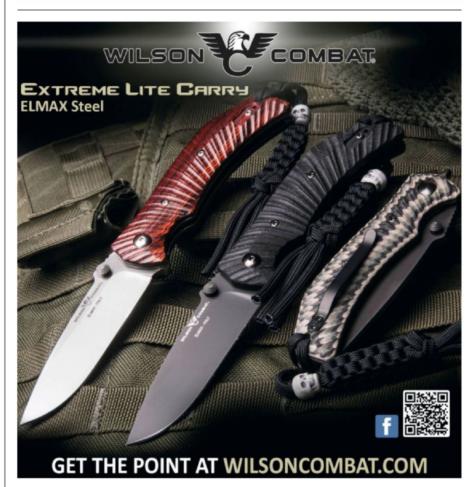
The result is a top-tier, 7.62mm NATO rifle ready to help BOPE operators engage threats from "conversation distance" out to longer ranges due to the rifle's power and performance capabilities. Thanks to the help of one of America's most renowned rifle manufacturers and its AR-10A4, the BOPE has the firepower it needs to fight the heavily armed threats it faces on a daily basis. For more information on ArmaLite, visit armalite.com or call 800-336-0184.

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BY AL. J. VENTER

**FOREIGN FIREPOWER** 

DoD Photos

# Since 1961, this rocket-propelled grenade launcher has fought alongside insurgents and allies around the world!

C-

have been in quite a few conflicts where the RPG-7 rocket-propelled grenade launcher was readily available—Sierra Leone, Beirut, El Salvador and more. But only once has this weapon been purposely used against me.

That happened in Africa during one of South Africa's cross-border raids into Angola. I was in the passenger seat of a French-built Aerospatiale Alouette III helicopter that was providing top cover to an armored group near the town of Xangango on the great Kunene River.

The gunship was commanded by a youthful lieutenant who, like most young pilots fairly new to action, believed he was invincible. He and his machine gunner went in low and fast to strike at an enemy position that had been identified by one of the soldiers on the ground. The

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EliteIron BattleDog suppressor in .308 shown actual size: 6 inches, 16 ounces, and 28db sound pressure level reduction.\*

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\*Sound pressure level reduction: 28 db Rifle: McReesPrecision BR-10 chassis and folding stock with Remington 700 action and 20-inch Krieger barrel. Mounted: 6-inch, 16 ounce Elfteiron BattleDog sound suppressor and EliteIron REVOLUTION Bipod. Ammunition: Custom hand load .308 175 grain Sierra Match King at 2,700 fps. Ambient Temperature: 62° F at Potomac, Montana Altitude: 3,980 feet above sea level. Humidity: 35%

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- 10. Nozzle
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- 12. Powder Propellant
- 13. Rocket Motor Rear
- **14.** Ignition Primer
- 15. Fin
- 16. Paper Cartridge 17. Powder Charge
- 18. Turbine
- 19. Tracer
- 20. Foam Wad

retaliatory fire was heavy-from a 12.7mm Soviet gun we concluded afterwards-but the lieutenant was undeterred, and they silenced the gun, which was hidden under some trees with another weapon.

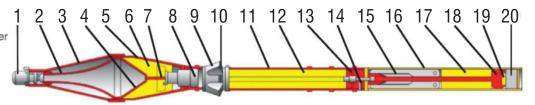
We had just pulled out of that approach and were gaining altitude when there was an enormous blast just above our heads. For a moment or two we were blinded by the flash and smoke, but by then our momentum had moved us ahead of that bit of drama.

You guys OK?" the lieutenant asked us through his headset. All I could do was nod, but the gunner behind us had quite a lot to say about this unexpected attack because a piece of shrapnel had zinged off his flying helmet. It could have been much worse, he conceded afterwards-a couple of inches lower and who knows what would have been the outcome.

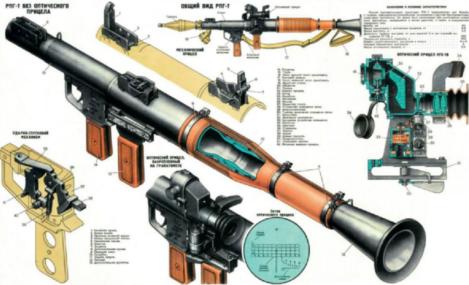
But that RPG explosion did underscore one aspect of its capabilities: If it is not a direct hit, the blast is terrific, but the shrapnel is usually fairly light, in large part because the grenade part of the weapon is covered by a thin steel "envelope." This is essential if the RPG is to travel the roughly 3,000 feet it needs to cover before it self-destructs.

# **Under Fire Again**

I was even luckier the next time I had a close call with this device. I was travelling in Mozambique with my three sons on a diving trip shortly after that civil war had ended. We had come to a stop towards the front of a roadblock when an army vehicle came around the bend and threw out a large plastic bag. I froze when I noticed that the thrown parcel contained the business ends of about a dozen RPG-7 grenades. The container was clear plastic, and there was no mistaking the contents. Worse, the bag landed along-



### ПРОТИВОТАНКОВЫЙ ГРАНАТОМЕТ РПГ-7 нои



The RPG-7's munition (top) is deadly effective. Shown above is an original Soviet training poster for the RPG-7 launcher, with detailed sections on optical sights and firing mechanisms for the easy-to-use weapon.

side our front wheel, together with a shout from the fellow throwing to one of his mates on the ground to "Grab that stuff!"

The rocket grenades were obviously intended to resupply the military unit in that area, and the truth is, had only one of them detonated, they all would have gone up. And we would have, too!

In theory, it was supposed to be quite safe because the Soviet instruction manual explains that the grenade will only explode after it has been launched: It needs the requisite number of Gs to be armed, which, as any armorer with battle experience will tell you, can sometimes be a problem with Moscow's armaments.

Also, things don't always work out the way they're intended. I know of one South African soldier killed in Angola after handling an RPG-7 grenade that he'd filched from a captured enemy arms depot.

## Simple Design

There is no question that the RPG-7-a portable rocket-propelled grenade launcher-like its Soviet cousin, the AK-47, is one of the finest insurgency weapons ever designed. It is rugged, cheap, accurate when properly used and incredibly easy to handle. The weapon needs perhaps five minutes of instruction and a reasonable eye and the results are usually pretty good. I fired a bunch of them after we'd captured an arms dump in Angola during Operation Protea. Then we all had a go, using a 44-gallon drum about 100 yards away as a target.

The weapon's munition has two parts and includes a "booster" section and a "warhead and sustainer motor" section. These must be assembled into the readyto-use grenade. Once the rocket part has been clicked into the business end of the weapon, you sling the launcher over your shoulder, make sure that nobody is standing behind you, take aim through a large pair of metal sights and pull the trigger. An almighty blast follows, but there is no discernible recoil.

There are various additions available on the international arms market, including specialized long-distance sights, but these usually are expensive. Several were captured by French forces in Mali, originally delivered to Muammar Gaddafi's Libya and stolen by recalcitrants after he had been overthrown.

I exchanged a few emails with Mark Bowden shortly after he had published Black Hawk Down. He was then still working for The Philadelphia Inquirer, and I asked him about RPG-7s used in the Mogadishu attack. Mark confirmed that there were an awful lot of them, one of the reasons why two U.S. Army Black Hawks were knocked out of the sky by the Somali irregulars.

Subsequent research showed that forces linked to several Somali warlords had been waiting on the ground for the choppers to arrive over the scene, together with hundreds of RPG-7s that had been ferried in from Yemen by al-Qaeda. All the rebels had to do was point them at the gunships and fire, reload and do it over and over again.

Because of the volume of fire and the fact that the grenades self-destruct, there simply had to be some hits. And there were, as Bowden graphically depicts in his remarkable book.

# **Effective Weapon**

It is interesting that, as a weapon, the RPG-7 has been out there operationally for more than half a century, the first coming off the production line in 1961. It had been preceded by the more basic but equally lethal RPG-2, of which we saw a lot in the Rhodesian War.

More recently, the South African Army acquired them in large quantities from Eastern European arms dealers and issued them to its troops. There was a stage during the Border War when it considered manufacturing RPG-7s.

In its day this weapon was a Vietcong mainstay, and even the Provisional IRA got to use it against the British Army in Northern Ireland. In Afghanistan and Iraq today, there is not a single irregular unit without RPG-7s, as many news clips now being shown of Sunni militants on the move demonstrate. RPG-7s are also commonly seen in the hands of government forces as well.

This situation also holds in Mali, where the French are battling AQIM (Al-Qaeda in the Islamic Maghreb) and Tuareg forces in the north of the country. These forces are also linked to Nigeria's militants, who call themselves Boko Haram.

Currently there are more than 40 countries whose militaries use RPG-7 launchers, and nine countries manufacture several variants, including China and Iran, which manufactures them with olive green handguards, pistol grips and in a "commando" variant.

With that in mind, the RPG-7 has earned its reputation as a powerful and effective weapon. Its low cost, easy availability and simplicity of use make the rocket-propelled grenade launcher a common sight on many battlefields around the world today. And, with more than half a century of use under its belt, there is no telling how many more decades this venerable weapon system will continue to fight in war.





GUN TES

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# BY MICHAEL O. HUMPHRIES

he roller-delayed-blowback family of Heckler & Koch (HK) weapons has always held a certain mystique for me. Heralding back to the heydays of the 1970s and 1980s when

U.S. shooters had access to a wide selection of foreign-made semi-automatic small arms, these classic firearms always caught my eye on the rifle racks at the local gun shop. However, as a young teenager with little discretionary income, I was not able to purchase one before the unfortunate (and utterly misguided) restriction on their importation in the late 1980s.

Fast-forward to today. While we are awash in just about every variant imaginable of the ever-popular AR-pattern rifle, shooters with slightly more idiosyncratic tastes such as myself must dig a little deeper to locate interesting alternatives. Needless to say, my interest was piqued when I received a press release from a new company indicating it planned to produce a group of U.S.-made firearms based on the HK roller-delayed-blowback family of weapons. That company is Moore Advanced Dynamics (MAD), and its goal is to deliver both original and modernized variants of these weapons with a custom-grade attention to detail achieved through handwork and hand fitting. But, before we dig into the details

of the new company and its products, it may be helpful to first lay out the details of what makes these roller-delayed-blowback weapons so interesting.

# **Full Circle**

The HK series of roller-locking small arms should be familiar to students of military rifles, with the G3 being one of the most widely produced 7.62x51mm rifles in the world. Stemming from a weapon dubbed the StG 45 and developed in Germany in the waning years of World War II, the design had a circuitous early life that carried it through post-war France, then Spain (as the CETME) and then back to its homeland in the Cold War-era West Germany. It was there in the late 1950s that it became the G3, produced under the banner of Heckler & Koch.

The design was revolutionary in every sense of the word. While taking advantage of modern manufacturing techniques such as extensive use of stamped steel and plastics, what truly set the design apart was its operating system. While comparable designs employed some variant of a gas system (where gas is tapped off the bore to unlock a rotating or titling bolt and then cycle the action), the G3 employed what may be best described as a delayed-blowback system. Firing from a closed bolt, the G3 employed a non-rotating bolt head that was instead locked into place with dual rollers located at the 3 and 9 o'clock positions on the bolt head. These two rollers locked into recesses located inside a steel trunnion inside the stamped steel receiver.

When a round was touched off, the forced required to push the rollers back into their recesses within the bolt would keep the action closed long enough for chamber pressures to drop to safe levels. When this happened, the case would be pulled straight back and ejected, with the recoil spring assembly then driving the bolt and bolt carrier forward to strip a new round from the magazine. While it may seem that the massive chamber pressure and recoil force created by the 7.62x51mm cartridge would overwhelm a system like this, it proved to be a solid and reliable design. The result was a truly unique operating system that offered several advantages over the somewhat more complex gas-operated systems.

As an interesting side note, one design element added to the design was the addition of longitudinal flutes within the chamber. Testing of the roller-delayed-blowback design revealed a tendency for the bolt to rip off the heads of fired cases in the chamber. This was likely due to the lack of rotation of the case as would happen with a rotating bolt system, which helps break

The MAD33 is a recreation of the classic HK roller-delayedblowback 5.56mm. It is hand-built with extreme attention to detail. Note the cooling slots cut into the handguard.

# Specifications: **MOORE ADVANCED DYNAMICS MAD33**

CALIBER: BARREL: **OA LENGTH:** WEIGHT: STOCK: SIGHTS: ACTION: FINISH: CAPACITY: MSRP:

5.56mm NATO 17 inches 37.25 inches 8.5 pounds (empty) Fixed or collapsible Diopter Roller-delayed blowback Cerakote 30+1\$2,450

the fire-formed case loose from the chamber. Short of lubricating the cases (which would be problematic and impractical in a military small arm), the designers had to come up with a solution. The answer was the addition of the flutes within the chamber that allowed gases to flow around the fired case and help it reliably and consistently release from the chamber.

The G3 was an immediate success. being adopted by the West German military as well as many other militaries around the world. And, due to popular demand and HK's interest in expanding into other markets, the company developed variants of the design in 5.56x45mm (as the HK33) and also 9x19mm (as the

# Performance:

LOAD Black Hills 55 FMJ Hornady 75 FPD Winchester 45 JHP

VELOCITY	ACCURACY
2,780	1.65
2,420	1.85
2,995	1.25
ed in grains,	velocity in fps

Bullet weight measured in grains s by chronograph and accuracy in inches for best five-shot groups at 100 yards.

# Specifications: **MOORE ADVANCED** DYNAMICS MAD33KAR

CALIBER: 5.56mm NATO 12.69 inches (17.5 w/flash suppressor) BARREL: OA LENGTH: 28.75-36 inches WEIGHT: 8 pounds (empty) STOCK: Fixed or collapsible SIGHTS: Diopter **ACTION:** Roller-delayed blowback FINISH: Cerakote CAPACITY: 30+1 **MSRP:** \$2.900

The MAD33KAR is a shortened version of the standard MAD33. Note the railed forend, collapsible buttstock, permanently attached muzzle device and standard **AR** magazine conversion.

# THE MAD FAMILY

# By Michael O. Humphries

n addition to the MAD33 reviewed in this article, Moore Advanced Dynamics produces a full line of these classic roller-delayed-blowback weapons. From traditional variants to modernized versions, offered in chamberings ranging from 7.62x51mm to 5.56x45mm to 9x19mm, there is likely a MAD gun that is just right for you. Take a look at the rest of the family here.

SPECIFICAT		But what is a fan of this design to do today, with the originals not only restrict- ed from importation but also no
Caliber:	9mm	longer produced by HK? Enter
Barrel:	8.9 inches	Moore Advanced Dynamics, a domestic manufacturer bringing
OA Length:	17.3 inches	a custom shop approach to the
Weight:	4.8 pounds (empty)	production of these classic weapon sys-
Grip:	Polymer	tems—as well as a fresh approach to the
Sights:	Diopter	designs. After I spotted the press release
Action:	Roller-delayed blowback	from the company, I called and had a
Finish:	Cerakote	chance to speak to Gary Jessup, general
Capacity:	30+1	manager of the company, at length about
MSRP:	\$3,450	not only the MAD guns, but also the
		people behind the company.
SPECIFICAT	IUNS:	"The founding group here at the
MAD9	CARBINE	company is made up of four people.
Caliber:	9mm	They are James Eric Moore, the owner;
Barrel:	8.9 inches (16 w/faux suppressor)	
OA Length:	34 inches (fixed stock); 26.63-33.13 inches (collapsible)	
Weight:	6.2 pounds (empty)	<b>*</b>
Stock:	Fixed or collapsible	
Sights:	Diopter	Contraction of the local division of the loc
Action:	Roller-delayed blowback	
Finish:	Cerakote	10
Capacity:	30+1	
MSRP:	\$3,750	
SPECIFICAT		
SPECIFICAT		
SPECIFICAT		
	7.62mm NATO	
MADG: Caliber: Barrel:	7.62mm NATO 12 inches (17 w/flash suppressor)	
MADG: Caliber: Barrel: OA Length:	7.62mm NATO 12 inches (17 w/flash suppressor) 37.7 inches (fixed stock); 30.4-37.5 inches (collapsible)	
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MADG: Caliber: Barrel: OA Length: Weight: Stock: Sights: Action: Finish: Capacity: MSRP: SPECIFICAT MAD91 Caliber: Barrel: OA Length:	7.62mm NATO         12 inches (17 w/flash suppressor)         37.7 inches (fixed stock); 30.4-37.5 inches (collapsible)         9 pounds (empty)         Fixed or collapsible         Diopter         Roller-delayed blowback         Cerakote         20+1         \$2,550         7.62mm NATO         17.7 inches         40.4 inches (fixed stock); 33-40.25 inches (collapsible)	
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MADG: Caliber: Barrel: OA Length: Weight: Stock: Sights: Action: Finish: Capacity: MSRP: SPECIFICAT MAD91 Caliber: Barrel: OA Length: Weight: Stock: Sights: Action: Finish: Capacity:	7.62mm NATO         12 inches (17 w/flash suppressor)         37.7 inches (fixed stock); 30.4-37.5 inches (collapsible)         9 pounds (empty)         Fixed or collapsible         Diopter         Roller-delayed blowback         Cerakote         20+1         \$2,550         7.62mm NATO         17.7 inches         40.4 inches (fixed stock); 33-40.25 inches (collapsible)         10 pounds (empty)         Fixed or collapsible         Diopter         Roller-delayed blowback         Cerakote         20+1         \$2,550	
MADG: Caliber: Barrel: OA Length: Weight: Stock: Sights: Action: Finish: Capacity: MSRP: SPECIFICAT MAD91 Caliber: Barrel: OA Length: Weight: Stock: Sights: Action: Finish:	7.62mm NATO         12 inches (17 w/flash suppressor)         37.7 inches (fixed stock); 30.4-37.5 inches (collapsible)         9 pounds (empty)         Fixed or collapsible         Diopter         Roller-delayed blowback         Cerakote         20+1         \$2,550         IONS:         7.62mm NATO         17.7 inches         40.4 inches (fixed stock); 33-40.25 inches (collapsible)         10 pounds (empty)         Fixed or collapsible         Diopter         Roller-delayed blowback         Cerakote         20+1         \$2,550	

MP5). The result was an entire family of small arms that combined simplicity of operation with rugged reliability. It was these designs that became the basis of the civilian-legal semi-automatic guns I had admired on the racks at the gun shop-the HK91 (7.62x51mm), the HK93 (5.56x45mm) and the HK94 (9x19mm).

# A New Beginning

But what is a fan of this design to do



# MAD33 5.56mm / DETAILS

The standard MAD33 accepts **HK-pattern magazines. Shown** is a steel 30-round unit that came with the rifle.



HE DEFENDERS

12 GAUGE | MAXIMUM PERFORMANCE | DEFENSIVE AMMO

The barrel has a 1-in-7-inch twist rate for stabilizing heavy bullets, and it is topped off with an HK-style flash suppressor.

The MAD33 received for testing came equipped with a fixed synthetic stock. Also note the rotary drum diopter rear sight.



ITEM NO.	GAUGE	LENGTH	FPS	BUCK	PELLETS
ANSLR1200BK	12	2 3/4"	1200	00	9
ANS1200BK10	12	2 3/4"	1290	00	12
ANS124BK10	12	2 3/4"	1325	4	27
ANS12MD10	12	2 3/4"	1300	MULTI*	7

\* Multi = .650 round ball, 6X1BK



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The front sight unit of the 5.56mm MAD33 rifle is a classic HK-style

unit where the front sight post is protected by a heavy-duty steel ring.

# MADD33 5.56mm

# MAD33KAR 5.56mm/ DETAILS

The MAD33KAR's permanently attached muzzle brake takes the barrel beyond the 16-inch length required for legality.



ABOVE: The MAD AR magazine conversion allows 5.56mm HK-pattern rifles to accept AR-style magazines like 30-round Magpul PMAGs (shown). **RIGHT:** MAD33 rifles are available with either fixed polymer stocks or collapsible steel stocks (shown).

Chris Alexander, master builder and R&D coordinator; Mark Jessup, finish and quality manager (as well as product development); and me, as general manager," Gary explained. The result is a small but agile company dedicated to one simple goal: making the best guns possible. "We have four guys all looking at the same products, but from four different perspectives. When we all agree on a solution, it is usually the best path forward," he said. He then went on to explain to me that each and every gun is hand built in small numbers to maintain top-notch quality control.

My next question for Gary was how these guns would compare against original guns from the '70s and '80s. "We know the design, and we also know how to take it to the next level. I have been shooting these guns for 20 years. Give me a pile of parts and a blindfold and I can put any of them together. Mark and Chris have surpassed me, and Eric brings both a 'big picture' and an exacting detail perspective to the entire system." Gary went on to explain that the MAD guns are built to the original standards, but with even tighter tolerances. "That is where all the handwork and attention sets our guns apart," he said with a hint of pride in his voice.

The result is a line of guns made up of 7.62x51mm (MAD91), 5.56x45mm (MAD33) and 9x19mm (MAD9) series weapons. As with most domestically produced guns of these types, the MAD guns feature a combination of U.S.- and foreign-made parts. In the case of these guns, all the non-U.S. parts are original German HK parts sourced from Adam Weber at hkparts.net. "Adam is a wealth of information on these types of guns, and has been instrumental in this entire project," Gary said. But, it is important to remember that the guns are more than simply the sum of their parts, with the company's exquisite attention

to detail making sure it all comes together correctly. "We are not simply a parts assembler. We are building these guns 'right' from the ground up. On each gun, we match up the bolt carrier assembly, trunnion and barrel for fit and keep them together through the whole process. And that is just one part of the process," he continued. "I could tell you where we acquired every part for each gun, but that doesn't mean you are going to be able to put them together in your garage. We've worked hard to get these to the quality level we want to give to the customer, and I think it shows in the end result."

As the conversation continued, I asked him in particular about the MAD33 rifle and its sibling, the MAD33K. For the purist, the MAD33 is a dream come true, being a straightforward semi-automatic recreation of the HK33. For those looking for something a little different, the MAD33K is the "Kurz" version that features a 12.69-inch barrel with a long, permanently attached muzzle device to bring the barrel to a non-NFA 16 inches. Both fixed and collapsible stocks are available, as is a tri-rail forend. A strip of Picatinny rail is welded to the top of the MAD33K's receiver for mounting optics.

One other really interesting thing Moore Advanced Dynamics has developed is an AR magazine adapter system for the MAD33 5.56mm. This interesting option (standard/removable on MAD33AR and MAD33KAR rifles, or available for your own HK33/HK93-style rifle) allows you to use standard AR-15-pattern magazines (the company recommends the use of Magpul PMAGs, but the system is designed to work with any modern polymer or standard GI samples). "What we are trying to do with this and the optional rail system is give AR fans a new take on the classic HK system. They can bring their AR gear to this gun, and it is ready to go," Gary said.

# Range Time

I recently had an opportunity to try out the MAD33 series of rifles for myself. I received a standard MAD33 rifle in 5.56mm NATO, and I was immediately struck by its fit and finish. All of the welds on the gun were clean, and the Cerakote finish on the metal was a rich, deep black (although other colors are also available). I also noted that it (like all MAD guns) featured the original-style paddle magazine release-a nice bit of attention to detail. A fixed stock and polymer lower assembly rounded out the package. The sample MAD33 I received did have one upgrade over a standard gun-Gary had cut some angled cooling vents into the handguard. Apart from that, it was practically a stock HK93.

All MAD33 variants feature 1-in-7inch-twist barrels, so I selected a range of both light and heavier bullets for testing the MAD33 standard rifle. As I did not have a claw mount available, I elected to test the rifle with open sights at 100 yards. Once I had my ammunition selected, I headed out to the range with the gun and the ammo. I settled in on the bench and began running the rifle through its paces. The rifle's accuracy-particularly considering I was using open sightswas outstanding. The tightest group, achieved with the lightest bullet weight of 45 grains, was a 1.25-inch group with the Winchester load. The other two loads came in within the 1- to 2-inch range, which I consider to be outstanding for an iron-sighted gun at this distance.

When it comes to delivering a topquality 5.56mm rifle that has been hard to acquire for about a quarter century now, Moore Advanced Dynamics has definitely delivered with its MAD33 series. From the classic standard MAD33 to the short MAD33K to the MAD33KAR ready to accept AR magazines, there is definitely a rifle out there for you. For those who want something a little different than a cookiecutter AR, the MAD guns deserve a very close look. For more information, visit madkc.com or call 913-499-8391.



# NEW! MI AR-15/M16 Lightweight M-Lok Series One Piece Free Float Handguards

# Incredibly Lightweight Design, Super Slim 1.5 inch Outside Diameter!

With five built-in anti-rotation QD sockets for push button swivels 
 Features a high quality MIL-STD 1913 top rail
 Rugged construction from hard coat anodized T-6 6061 aluminum, fully dehorned for a non-abrasive, comfortable feel
 Proprietary Barrel Nut and Barrel Nut Wrench included, some gunsmithing required, NOT FOR USE ON GAS PISTON GUNS
 Includes one five slot Magpul M-Lok Polymer Rail Section 
 100% made in the U.S.A., includes lifetime warranty

Lightweight M-Lok Series One Piece Free Float Handguards	Special Introductory Prices!
12 Inch Rifle Length - 8.2 ounces with barrel nut	#MI-LWM-12 <b>\$189.95</b>
15 Inch Rifle Length - 9.3 ounces with barrel nut	#MI-LWM-15 <b>\$199.95</b>

# NEW! MI AR-15/M16 SSM M-Lok Series One Piece Free Float Handguards

# Lightweight Design with Super Slim 1.5 inch Outside Diameter!

With five built-in anti-rotation QD sockets for push button swivels
 Features a T-Marked MIL-STD 1913 top rail
 Rugged construction from hard coat anodized T-6 6061 aluminum, fully dehorned for a non-abrasive, comfortable feel
 Proprietary Barrel Nut and Barrel Nut Wrench included, some minor gunsmithing required for installation
 Includes one five slot Magpul M-Lok Polymer Rail Section
 100% made in the U.S.A., includes lifetime warranty

SSM M-Lok Series One Piece Free Float Handguards	Special Introductory Prices!
9 Inch Mid-Length - 7.2 ounces with barrel nut	#MI-SSM-9 <b>\$149.95</b>
10.5 Inch Carbine - 7.8 ounces with barrel nut	#MI-SSM-10 <b>\$159.95</b>
12 Inch Rifle Length - 8.7 ounces with barrel nut	#MI-SSM-12 <b>\$179.95</b>
15 Inch Rifle Length - 10.1 ounces with barrel nut.	#MI-SSM-15 <b>\$189.95</b>

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BY DONALD J. MIHALEK Photos Courtesy Meggitt Training Systems

Training systems have come a long way, and the military has taken notice. Meggitt simulators like the FATS M100 system make it easy for combat teams to practice marksmanship and other lifesaving essentials while immersed in realworld scenarios, from virtual ranges to HD video training. Trainees and instuctors receive immediate marksmanship feedback via wireless devices, such as tablets (above).

**HIGH TECH** 

2 A RAFAT

n the 1980s, when the video game craze hit, many teens and pre-teens flocked to the arcade with a pocket full of quarters and tried to hone their skills on the latest and greatest of stand-up video games. The industry quickly moved from Space Invaders and Asteroids, of which we all tried to get the high score, to Donkey Kong and the like. When Mortal Combat hit the scene, all bets were off as one-on-one competitions raged in the nation's arcades.

Today, those games seem very basic. Brian Cowlishaw, an assistant professor of English at Northeastern State University, said, "The latest trend in video games, such as the 'Medal of Honor' series, the 'Battlefield' series and 'America's Army,' is to be especially 'realistic.' Such games proudly transport the gamer into immersive, gut-wrenching virtual battlefields. They persuade the gamer that, in an echo of WWII-era journalism, 'You are there'—on the beaches of Normandy, in the jungles of Vietnam, in modern military hotspots." What these games do is try to "simulate" real-life combat situations.

The largest purveyor of these "real-





Meggitts' simulators can help train police officers in decision-making scenarios that require shoot/no-shoot responses.

istic" combat games is the U.S. military-but not for the reasons some might think. Virtual combat simulators provide a training option and realism that, in some cases, can't be duplicated with regular brick-and-mortar training. Unless you are in Afghanistan, it can be hard to convincingly replicate that environment. But, with a Meggitt virtual simulator, you can bring Afghanistan to America.

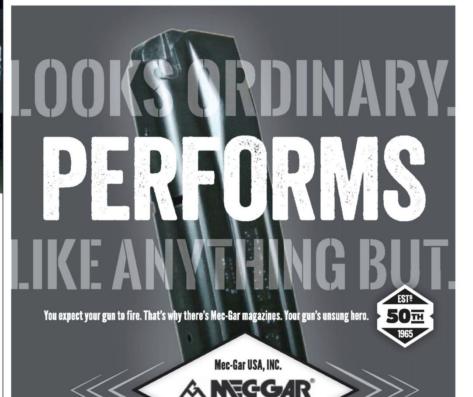
# **21st Century Sims**

Meggitt Training Systems, based out of Suwanee, Georgia, is the "leading supplier of simulation and live-fire weapon training systems supporting military, defense and security forces, federal and international law enforcement agencies, large metropolitan training academies, thousands of police departments, ammunition and firearms manufacturers and commercial shooting range owners."

In 2006, Meggitt acquired Firearms Training Systems, Inc. (FATS) because of its reputation for developing, manufacturing and supporting small arms, indirect fire/forward air control and vehicle trainers. In 2008 the company merged with Caswell International, a leader in the live-fire industry, and Meggitt Training Systems was created, and it's the first company to introduce wireless BlueFire firearms simulators that utilize Bluetooth technology to communicate with system hardware while maintaining accurate weight, recoil and real-time diagnostics.

# Virtual Battlefield

For military use, Meggitt Training Systems has designed an array of highend virtual training simulators that can train our troops in almost every type of combat environment. The FATS M100 simulator supports several simultaneous mission sets and training modes that can move from CGI marksmanship (a virtual range) to HD video training. The system integrates advanced, third-party gaming engines, including a 3D Marksmanship Training environment featuring tetherless BlueFire weapon simulators. The result is realistic training with correct targeting and





www.mec-gar.com

# Got Lowers? M&A Parts can help.

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# "They have become a go-to training method for troops, as they prepare soldiers for any possible situation they could experience in combat or on a deployment."

extremely accurate shot placement and ballistics for a full training experience.

The FATS M7 military training simulator is a portable, one-screen simulator that can provide judgmental and marksmanship training. This virtual simulator offers a multi-tiered experience where trainees move through different scenarios. The virtual marksmanship training can be basic or advanced, and shoot/don't shoot situations help the trainee's decisionmaking process.

For forward observer (FO), forward air control (FAC), fire direction center (FDC) and mortar crew training, The Indirect Fire Trainer (IFT) puts students in practical combat situations so they can hone their skills. This system can also incorporate flight simulations to support pilot-in-theloop JTAC training.

These virtual trainers are in place in a large majority of U.S. and some foreign military locations. They have become a go-to training method for troops, as they prepare soldiers for any possible situation they could experience in combat or on a deployment.

# **On The Streets**

To hone critical law enforcement street skills, the FATS L7 virtual training system provides law enforcement marksmanship and judgmental training. It also can offer a multi-tiered training environment that provides either basic or advanced marksmanship training and shoot/don't shoot situations.

Meggitt's Hostile Fire Simulator (HFS) makes firearms, use-of-force and judgment-based training as realistic as possible. This system adds some realism by discharging projectiles at trainees, stressing the importance of cover and concealment. This "under fire" experience adds the needed stress to help officers learn to adapt to hostile situations. Additionally, instructors are able to assess each student's performance and give feedback that could save their lives.

To further solidify the company's commitment to law enforcement, during the 2014 Police Week, Meggitt donated a virtual training system for the soon-to-bebuilt National Law Enforcement Museum (NLEM), slated for opening in 2016. Meggitt and the NLEM worked together to develop a virtual visitor training experience unlike any other. A scenario appears on the screen for a participant and the volunteer "officer" will move through a real-world scenario where they will have to make split-second decisions and react as an officer would on the street. These scenarios will be based on actual officer-



Instructors can adjust scenarios in real time while students respond to the stimuli.

involved incidents and real-world events.

Meggitt has recently been reaffirmed as the supplier of the U.S. Army's nextgeneration virtual small arms trainer (EST II). To date, Meggitt Training Systems are in use by the USMC, the National Guard, the USAF, the UK's Ministry of Defence, the Canadian Army, the Royal Canadian Navy, the Roval Canadian Air Force, the Australia Defense Forces, the Singapore Army and Police Coast Guard, and a host of other military forces and LE agencies around the world. If you are looking for the ultimate virtual training experience that could help defenders train to better protect and save lives, Meggitt Training Systems may have the right simulator for you. For more info, go to meggitttrainingsystems.com or call SW 800-813-9046.



# **IVITATION OF CONTRACT OF CONTRACT.**

# BY DAVID BAHDE

have been running a 5.56mm NATO Tavor SAR from IWI US for over two years now. One of the first available, this particular model has been around since IWI began offering semi-auto Tavors to the U.S. I've tested the SAR in temperatures ranging from -14 to 104 degrees Fahrenheit, from sea level to altitudes of 10,000 feet. It's endured dust, rain, mud, muck, snow and even some hail. I've carried the SAR on long hikes, bouncing it around rocky hills and through the woods. Seldom out of reach, I've taken it all over the country.

I've used the Tavor SAR in training courses, from CQB distances out to 1,000 yards. The carbine has fired over 12,000 rounds—ammunition ranging from military surplus to match grade, including steel-

cased rounds. I've used it with several sound suppressors and many other accessories available on the market. This is easily the most thorough testing I have ever completed. What follows are my conclusions based on this testing, including what accessories have proven the most valuable to me.

# Battle-Proven Bullpup

No rifle I've ever tested so far has proven as reliable as the Tavor SAR. Bullpup designs are different, but once you get past those differences, they offer several advantages. At close range, the 16.5-inch-barreled Tavor SAR handles like an AR with a 10-inch barrel, minus the reliability issues. It truly excels when it comes to working in tight spaces or around barricades. Moving to a kneeling or prone position is a breeze, and "No rifle I've ever tested so far has proven as reliable as the Tavor SAR."

Specificati	ons:	Party of
IWI TA	VOR SAR	dial.
CALIBER:	5.56mm NATO	1
BARREL:	16.5 inches	1
OA LENGTH:	26.13 inches	
WEIGHT:	7.9 pounds (empty)	
STOCK:	Reinforced polymer	
SIGHTS:	Flip-up front and rear	25
ACTION:	Piston-operated semi-auto	815.
FINISH:	Matte black	-
CAPACITY:	30+1	100
MSRP:	\$1,999	

# Performance:

1				
	LOAD	VELOCITY	ACCURACY	
	Hornady 60 TAP A-MAX	2,880	0.65	
	Silver State Armory 70 TSX	2,955	1.27	
	Silver State Armory 77 OTM	2,578	1.00	
	Winchester 55 FMJ	2,870	1.57	

Bullet weight measured in grains, velocity in fps by chronograph, and accuracy in inches for best five-shot groups at 100 yards.

Firing thousands of rounds over two years, this IWI Tavor SAR, tricked out for the author's needs, has proven itself to be reliable, accurate and extremely versatile. Shown equipped with a Bushnell ET 1-6.5X SMRS optic.



the SAR is easy to

# **DUTY CARBINE**



"THE TAVOR SAR'S accuracy is solid, well within realistic deployment needs, and that has not changed since day one."

carry for long periods of time because its weight is mostly centered and toward the rear. Sure, it's not a lightweight rifle, but it carries like one. The SAR also fits nicely in the latest covert bags.

The Tavor SAR's accuracy is solid, well within realistic deployment needs, and that has not changed since day one. Using the factory trigger, 1-inch groups with Silver State 64-grain PPT and Hornady 60-grain TAP ammunition are the norm. Install a Geissele, Timney or Shooting-Sight trigger and sub-1-inch groups are possible. Equipped with a scope, hits on an IPSC steel silhouette target are regular. During a recent training course, I made first-round hits at 600 vards using an EOTech sight and magnifier from an unsupported prone position. Zeroed at 50 yards, repeated hits out to 300 yards were a cinch from kneeling. The Tavor is no DMR, but it is as accurate as any rifle built for combat.

The author installed a Manticore LUMA ambidextrous safety to easily deploy the Tavor SAR from either side. He also tested the carbine with drop-in trigger units from Geissele, Timney and ShootingSight (shown). For fast targeting in all situations, the author added a Bushnell Elite Tactical 1-6.5x24mm SMRS scope and a Trijicon RMR (above). The Gear Head Works FLEx (right) is a metal ejection port cover with a QD swivel.

# **Mission Upgrades**

Gear Head Works makes the Tavor Modular Forearm (TMF) and the Fulcrum Located Extra (FLEx) swivel, a metal plate that replaces the plastic factory ejection port cover and offers a QD sling swivel. It gives you the ability to switch between single- and two-point slings quickly and firmly. During department training, this addition proved invaluable in rollover prone and off-hand shooting.

The TMF is a machined-aluminum forend that allows you to mount rails and a 1-inch light in the center. My SureFire Scout light with a KM2 conversion proved useful in both low-light and IR environments. The TMF's sides provide a solid handhold, perfect for my needs.

Manticore Arms offers the LUMA safe-



ty lever for the Tavor SAR. Several options are available, but the LUMA is made of aluminum and is ambidextrous. You can mix and match medium or slim levers as necessary. I installed medium LUMA levers on both sides, which made it easy to use the carbine with either hand.

Another must-have is Galloway Precision's extended shell deflector. Deflecting brass farther forward and away from the operator, this add-on allows you to shoot the SAR from either shoulder without brass bouncing off your chin. Unless you roll your cheek over the ejection port, you'll forget it is there.

I used several sights and optics with the SAR. Cycling through red dots, holographic sights and scopes, the Bushnell Elite Tactical 1-6.5x24mm SMRS was the most versatile. Its generous eye relief makes it usable in most any position. Any shorter optic with good eye relief should work fine. It needs to mount forward, so a one-piece AR mount is probably required. I also added a Trijicon RMR on a one o'clock rail for work up close. If you mount the scope at a typical AR height, you can co-witness it with the SAR's flipup front and rear sights.

## Trigger Time

The SAR's factory trigger is commensurate with true mil-spec M16 triggers. However, I tested three different aftermarket triggers in the SAR from Geissele, Timney and ShootingSight. All are complete, non-adjustable units that drop in easily. Timney's Tavor trigger is a single-stage unit housed in aluminum with a 4-pound pull. ShootingSight's two-stage TAV-D trigger is modeled after the M1A trigger with a 5-pound pull weight. Geissele's Supra Sabra, modeled after the company's SSA, is a crisp two-stage design with tool-steel internals.

Timney's trigger was very crisp, making it much

easier to achieve pinpoint accuracy. The take-up is long compared to an AR's—that comes with any bullpup's transfer bar. But the trigger was predictable, clean and crisp. I prefer two-stage designs, so the ShootingSight and Geissele models suited me well. Geissele's Super Sabra feels much the same as the proven SSA trigger. The take-up is a bit longer, but the second stage is predictable. Both the TAV-D and Geissele will likely meet any police policies and were flawless in testing.

If you like to extend your support hand as far as possible along the forend, the Tavor SAR is not for you; it isn't a race gun. Its balance allows it to swing very quickly, so "driving" the gun is pretty easy. It works perfectly with a plate car-



rier, and others who have tested it did not feel cramped. If your arms are exceedingly long, it may feel a bit short.

The Tavor SAR has become my favorite go-to 5.56mm rifle. I use it for department training and courses. It fits perfectly in my Haley Strategic Incog bag for discreet carry. Set up correctly, it is completely ambidextrous and usable in any condition and at any practical range. If you want a rifle that really works and you are willing to move outside the mainstream, the Tavor SAR may just be the perfect rifle for you. It certainly is for me—and there are 12,000 spent cartridge cases that can prove it! Perfect for concealed carry, the compact Tavor SAR fits easily in a Haley Strategic Incog bag with ammunition and a chest rig.

# FOR MORE INFORMATION:

### IWI US

iwi.us; 717-695-2081

Bushnell bushnell.com; 800-423-3537

Galloway Precision gallowayprecision.com

Gear Head Works gearheadworks.com

**Geissele** geissele.com; 610-272-2060

Manticore Arms

manticorearms.com; 630-715-0334
ShootingSight

shootingsight.com; 513-702-4879

**Timney Triggers** timneytriggers.com; 866-484-6639

Trijicon trijicon.com; 800-338-0563



# **MISSION GEAR**

# **SWITLIK SURVIVAL SURVIVAL SYSTEMS** Protecting America's defenders with top-tier aviation and nautical survival gear.

**BY DONALD J. MIHALEK** 

n September 2, 1944, a 20-year-old naval aviator launched off the USS *San Jacinto* aircraft carrier en route to Chichijima in the Pacific. The mission was to bomb a Japanese

installation was to bornb a Japanese installation that lay in the path of the attack on Iwo Jima. At this point in World War II, the Allies were on the march and the Japanese were desperate. Kamikaze attacks were prevalent, and winning the war by any means necessary became the mission of the soon-to-be-defeated Japanese Empire.

As this pilot later recounted, "The minute we started, there were angry, black puffs of anti-aircraft fire. And they were all over the place. And you can't negotiate around them. I mean you just keep going. And then I felt that we were hit. And I felt the plane kind of go forward like this. And I tried to stay on my target, released the bombs and pull out here. So I have the satisfaction of knowing that I completed my mission. We came down off these mountains. I can tell I was hit. The plane was burning. The cockpit was beginning to fill up with smoke. I have a clear picture of my parachute blowing up onto Chichijima."

When former President George H.W. Bush left his aircraft, the parachute that saved his life was made by Switlik, and since then, that company has made aviation and nautical survival gear for him and other warriors and rescuers.

# Switlik Origins

Based in Trenton, New Jersey, Switlik was founded by a Polish immigrant, Stanley Switlik, who arrived in the U.S. at the age of 16 via steerage class in 1907. Originally founded as a leather and canvas manufacturing company, Switlik got its survival roots when it began manufacturing pilot and gunner belts, flight clothing and experimented with parachutes for legends like Amelia Earhart and Admiral Richard Byrd.

When World War II started, Switlik became part of America's "Arsenal of Democracy" as it went into overdrive to equip U.S. forces with parachutesearning the company five Army-Navy "E" awards for productivity. That support for America's defenders continued into Korea and Vietnam. and the company still supplies support systems for our warriors. Switlik is at the

Each U-Zip-It dry suit is custom tailored, and the articulated knee, seat and elbows are constructed of highly abrasion resistant, heavy-duty Nomex/ Kevlar ripstop fabric. U.S. Coast Guard crews depend on Switlik survival gear for rescue missions. Crewmembers wear Switlik's extremely durable U-Zip-It dry suits and utilize POD-6 and POD-8 life rafts.



forefront of developing new inflatable products; including life rafts, vests and "anti-G" and anti-exposure suits. Switlik's gear is in use from police and fire services like the NYPD, FDNY and LAFD to the U.S. Coast Guard, NASA and military allies around the world.

# Survival Gear

Whenever a U.S. Coast Guard air crewman answers the call and races to the scene to pluck a desperate life from an angry sea, they are wearing a Switlik U-Zip-It dry suit. This suit was made for long-duration wear with the safety and comfort of the rescuers in mind. It not only keeps the wearer dry, but it also provides fire resistance and breathability to help prevent the wearer from overheating. The U-Zip-It is the only dry suit that has a unique, low-slung, U-shaped entry zipper that allows for unassisted donning while also greatly enhancing comfort and freedom of movement. Kevlar-reinforced elbow, knee and seat patches offer enhanced abrasion resistance, while the flame-resistant collar and internal Nomex neck guard add another level of protection and comfort.

The Coast Guard also uses Switlik POD-8 and POD-6 life rafts on its missions. The Switlik

# "SWITLIK IS ONE OF THE WORLD'S LARGEST PRODUCERS OF ANTI-G SUITS FOR THE U.S. MILITARY."

The CSU-13B/P helps USAF pilots counter G forces with an inflatable bladder to compress the waist and legs.

you, the first thing they'll probably do is throw you a Switlik life raft.

When the "Top Gun" pilots of the U.S. Air Force, Navy and Marine Corps take flight, they are wearing either the CSU-13B/P or CSU-15A/P anti-G suit, which counteracts positive head-to-foot G forces used in high-performance military aircraft. This wraparound garment has an internal inflatable bladder that compresses the waist and legs of the wearer during G-induced flying maneuvers. Switlik is one of the world's largest producers of anti-G suits for the U.S. military.

# **Presidential Protection**

President George H.W. Bush never forgot his WWII experience or the gear that kept him alive. Switlik has a long relationship with former President George H.W. Bush and still equips him today. As an avid speedboat owner, Switlik developed life preservers for him and the Secret Service. To protect the former President, the Secret Service asked Switlik to develop what became the Rescue Vest-a combination rescue swimmer's harness and inflatable life vest. This is the only product on the market that fit the Secret Service's needs, and it is still in use to protect the former Commanderin-Chief during his boating operations. Switlik continued its presidential protection with President George W. Bush, who wore Switlik gear while serving as a pilot in the Texas Air National Guard. He also wore a Switlik anti-G suit when he piloted a military plane and landed on an aircraft carrier during his presidency.

Over the 20th century, it's probably safe to say that Switlik has saved more lives than many could possibly imagine. For more information, visit switlik.com or call 609-587-3300.



President George W. Bush wore a Switlik anti-G suit after landing on the USS *Abraham Lincoln* (left), and Switlik developed life vests for President George H.W. Bush (right).

POD-8 is used by the Coast Guard for airdrop situations to boaters in distress. This raft includes the unique Switlik Toroidal Stability Device (TSD), which provides superior in-water stability and has been tested by the Coast Guard to ensure that it is nearly impossible to capsize, even in the most severe conditions or from helicopter down-wash.

The other Switlik life raft is the POD-6, which Coast Guard aircrews use for selfrescue in the event of an accident. It was designed to incorporate a first-of-its-kind air-charged inflation system with a viewable go/no-go pressure gauge. A Switlik "Convertible Canopy" system is used for ease of boarding and is equipped with buoyancy tubes with airtight internal bulkheads and sleeves for buoyancy redundancy. This raft is one of a few that can be inflated back to full buoyancy even with a hole in it.

The POD-6 raft used by the Coast Guard is an adaption of a raft originally designed for NASA. If the Coast Guard arrives on scene with a helicopter to rescue

# **GUN TEST**

### ARSENAL SARADAU SARADA

"THE SAM7UF... IS NOT A COLD WAR RELIC BUT A MODERN AK PRODUCED WITH TIGHT TOLERANCES USING HIGH-TECH EQUIPMENT."

108 SPECIAL WEAPONS®/ N/FEB 2015

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RELIA

**BY JORGE AMSELLE** 

33

SPECIAL-WEAPONS-MAGAZINE.com

With the SAM7UF in 7.62x39mm, Arsenal is now delivering a classic AK built to exacting Bulgarian standards with a milled—not stamped—receiver and a traditional under-folding stock. K-47 rifles are most certainly not all created equal. It is estimated that there have been close to 100 million AK-type rifles produced worldwide, and they are still being made. Depending on

how you count, 30 countries have made or currently manufacture AK-style rifles. Of course, this includes many variants that are rather distinct from the original AK, such as the Israeli Galil, Finnish Valmet and Czech vz. 58.

For many American AK fans, there is only one company that produces AKs that could be considered the Cadillacs of the platform: Arsenal, Inc. in Las Vegas, Nevada. Arsenal is the exclusive licensed U.S. manufacturer of firearms from Arsenal of Bulgaria.

Bulgarian-made AKs have a very good reputation in the firearms community. For my money, the Bulgarian AKs made by Arsenal, Inc. are some of the best available, combining brand new (i.e., not chopped-up military-surplus) Bulgarian parts and the requisite number of U.S. parts into one firearm built with extreme attention to detail and quality.

Bulgarian arms production was first established in 1878 under

the name Artillery Arsenal of Rousse. The factory eventually was moved to the Bulgarian capital of

Sofia and renamed Sofia Artillery Arsenal. It moved again to Kazanlak and underwent another name change, to State Military Factory. During the Soviet-dominated post-WWII period, the factory adopted an even more statist name and became known as Factory 10. The name has changed a few more times since then and is now known as Arsenal, but the emblem remains the number 10 inside two circles, which can be seen on surplus and new production guns as well as on all original Bulgarian magazines.

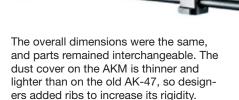
### **Gun Details**

The new SAM7UF from Arsenal continues this tradition for very high-quality AKs. It is a 7.62x39mm, semi-automatic, long-stroke gas-piston-operated rifle that fires from a detachable, 30-round box magazine. As the "UF" in its name designates, it features an under-folding steel stock as well as a milled receiver. The Bulgarian Arsenal is one of the few that continues to produce milled-receiver AKs as well as more common stampedreceiver AKs.

Kalashnikov's original AK-47 design called for a stamped-steel receiver, where a flat piece of metal is stamped, folded and welded to manufacture the receiver. Stamped receivers were easier and cheaper to manufacture. However, due to production problems, they decided to use milled receivers machined out of a solid block of steel for better strength. This change increased the production time and the rifle's overall weight.

Eventually production problems on the stamped-receiver AKs were resolved, and the AK-47 became the AKM (Modernized). The AKM was first adopted for use in 1959 and largely replaced the AK-47 in the Soviet Union and its satellite states.

# ARSENAL SAM7UF 7.62x39mm



Regardless, the Bulgarians continued to produce milled-receiver AKs. The SAM7UF. however. is not a Cold War relic but a modern AK produced with tight tolerances using high-tech equipment. The receiver is hot-die hammer forged and then milled on CNC machinery in Bulgaria. Hot forging allows for a shaped part to be made with dimensions close to the final product, minimizing the amount of machining necessary. The heat used also strengthens the metal with a finer grain,

while the 5-ton hammer forging helps remove any imperfections in the steel.

If you are mass-producing rifles for an army this process isn't ideal, as each receiver takes over five hours to complete, but the result is an extremely strong receiver built to last. In order to help reduce the weight of the rifle, milled-receiver AKs (including the SAM7UF), feature scalloped lightening cuts on either side of the receiver just above and forward of the magazine well.

Arsenal has not produced an under-folder AK for some time,

2.34

ABOVE LEFT: The standard AK controls are easy

to master. Also note the lightening cut on the receiver, just above the magazine. **ABOVE RIGHT:** The rear sight is elevation adjustable to a very optimistic 800 meters. LEFT: The 16.25-inch, Bulgarian-made barrel is cold-hammer forged using Steyr manufacturing technology. It features a chrome-lined bore and and chamber as well as a removable barrel nut.

> and most AK fans will be more familiar with the company's side-folding AKs. The company produced a limited run of underfolding AKs two years ago, known as the SAS M-7 series, which were available at a premium. The new SAM7UF, however, matches the significantly lower cost of Arsenal's other offerings, which is still not inexpensive by AK standards, but then again you do get what you pay for.

> The other major component for this rifle is the improved under-folding stock. It uses modern stamped and reinforced steel arms, and the folding, open-top buttplate is also made from stamped steel. This allows the stock to be folded or unfolded with a standard 30-round magazine installed. The left-side-mounted push-button lock operates

easily and effectively, and it locks the stock in line with the action and bore axis of the rifle. The locking mechanism engages on both sides of the receiver with four solid pins for added rigidity and strength. In fact, there is no play at all with the stock unfolded, and this provides for a very firm and stable firing platform at the range.

The remainder of the rifle uses all brand-new parts built to military specifications. The receiver dust cover is solid, like an original AK-47's, not ribbed. The bolt and bolt carrier are Bulgarian made with the same highquality steel and attention to detail as the receiver. The double-hook trigger is



PERFORMANCE

**SPECIFICATIONS** 

# **RSENAL SAM7UF**

SIGHTS: Front post, adjustable rear Piston-operated semi-auto FINISH: Matte black CAPACITY: 30+1 MSRP: \$1,299 Hornady 123 SST 2,109 3.70 2,265 3.80 Red Army 123 FMJ

Bullet weight measured in grains, velocity in fps by chronograph and accuracy in inches for best five-shot groups at 100 yards.

2,182

Winchester 123 FMJ

The front sight on the SAM7UF is adjustable for elevation and protected by two steel "ears." As with most AK rifles, the front sight is located at the end of the barrel to extend the normally short sight radius. The under-folding steel stock sturdily locks into place in the open and closed positions. Also note the sling loop on the hinge.

"FOR MANY AMERICAN AK FANS, THERE IS ONLY ONE COMPANY THAT PRODUCES AKs THAT COULD BE CONSIDERED THE CADILLACS OF THE PLATFORM: ARSENAL, INC. IN LAS VEGAS, NEVADA."

> tion, with the rear sight having the usual optimistic 100- to 800-meter settings. There is no scope mount, now commonly found on the left side of AK receivers, as the under-folding stock precludes this.

### Range Time

The SAM7UF's fit and finish were excellent, as is common with all of the Arsenal AKs I have seen and handled. In terms of weight, the Arsenal AK was no different than other under-folding AKs I have tested, and its compact size made it easy to transport and handle on the range. For range work, the folding stock is comfortable enough, but when trying to shoot for accuracy, the cheekweld was not especially comfortable.

Firing from a benchrest using sandbags, I tested the SAM7UF's accuracy with several types of ammunition at 100 yards. The folding stock, the iron sights and my old eyes made things a little difficult in this regard. Nevertheless, I achieved good results. It's not a precision rifle, per se, but it's certainly effective.

The Arsenal SAM7UF is built with sufficient U.S.-made parts so that any magazine can be used, and it will accept standard 30-round magazines, although I found the fit a bit on the tight side. The rifle ships with a cleaning rod, one 30-round magazine, a sling, an oil bottle and a cleaning kit. Arsenal, of course, makes several other models in 7.62x39mm, 5.56x45mm and 5.45x39mm using both milled and stamped steel receivers, which are more economical. For more information, visit arsenalinc.com or call 702-643-2220.

Bulgarian made, while the disconnector and hammer are domestically produced. I had experienced issues with U.S.-made AK trigger groups in the past, and this rifle exhibited none of those bad tendencies. There was no trigger slap and the sear engaged reliably every time, even when firing from a benchrest position. The single-stage trigger did have a fair amount of travel with no discernible let-off point, but it was smooth with no overtravel and weighed a consistent 4 pounds.

The 16.3-inch barrel is also Bulgarian made and cold-hammer forged using Steyr manufacturing technology. Coldhammer forging is a process in which a steel blank is hammered around a mandrel, creating the lands and grooves as well as the chamber of the barrel. This results in a longer-lasting barrel. The bore and chamber are hard-chrome plated for corrosion resistance even when using corrosive military-surplus ammunition.

At the muzzle end, the barrel has standard 14x1mm left-hand threading. The SAM7UF comes standard with an earlytype, easy-to-remove muzzle nut that is held in place with a spring-loaded detent pin. Users have the option of installing a more modern slant brake or a more practical flash suppressor or muzzle brake. The under-folding stock makes the rifle very handy for carrying and vehicle use. The stock can also be deployed with a 30-round magazine in place.

under the barrel



One nod to modernity is the SAM7UF

rifle's 90-degree-vertical gas block. The

for the 7.62x39mm round, but problems

developed when the Russians switched

to the AK-74 in 5.45x39mm. The higher-

velocity round had a tendency to shear

when passing by the gas hole. By using a

the shearing problem. The new gas block

cludes a standard bayonet lug and space

More of the rifle's modern features

include the polymer, U.S.-made pistol grip

with a steel insert and the polymer, U.S.-

made handguards, which include a stain-

less steel heat shield. The standard hand-

guards are one of my biggest complaints

with standard AKs, as they are generally

too small to keep barrel heat away from

your hands, but these do a good job of it

All of the controls are standard AK,

with a right-side-mounted safety selector

right-side-mounted charging handle; and

lease. The sights are adjustable for eleva-

with English markings; a reciprocating,

an ambidextrous paddle magazine re-

thanks to the added heat shields.

used in the Arsenal under-folder also in-

for the full-sized cleaning rod included

90-degree gas block, the size of the gas

hole was significantly reduced, as was

old 45-degree gas block worked fine





aul Scarlata Photo

A new take on the 7.65mm Vz. 61 ultra-compact Cold War machine pistol! he Czech Republic and Slovakia, once united under the flag Czechoslovakia, were both provinces of the Austro-Hungarian Empire until gaining independence in the aftermath of World War I. In 1919 the *Jihocesk zbrojovka* (South Bohemian Arms Factory) merged with

the Hubertus Engineering firm to form the *Cesk zbrojovka* (Bohemian Arms Factory), better known by the initials CZ. The company's first products were semi-auto pistols that used a rotating barrel system to lock the breech.

In 1924, the Czechoslovakian Army adopted the CZdesigned *Pistole* vz. 24 ("vz" is short for *vzor*, which means "model" in Czech.) Chambered for the low-powered 9mm *pistolový n boj* (.380 ACP), it used the rotating barrel locking system. Three years later CZ introduced a blowback design, the *Pistole* vz. 27, chambered for the 7.65mm *pistolový n boj* (.32 ACP), which was adopted by the Czechoslovak Army and sold to police forces around the world.

During the German occupation of Czechoslovakia (1938 to 1945), the vz. 27 was manufactured in large numbers for the Wehrmacht, and post-war production continued

BY PAUL SCARLATA • Sean Utley Photos

"While originally intended for police and security personnel, the Czech Army found the vz. 61 a very attractive item."

610032

CzechPoint's Scorpion pistol is a semi-auto version of the Czech Army's subcompact, select-fire Samapol vz. 61 submachine gun. It looks exactly like the vz. 61 except it does not have the folding wire stock. Note the left-hand "cocking point," thumb safety and mag release.

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TOP: The Scorpion's ejection port is located on top of the receiver, and spent cases are thrown straight up in the air. LEFT: The telescoping bolt fits over the end of the barrel to reduce the length of the receiver. Note the dual recoil springs. RIGHT: Like the original vz. 61 submachine gun, CzechPoint's semi-auto Scorpion pistol uses 10- and 20-round detachable box magazines.



until 1951 for police and commercial sale, with over a half million pistols eventually leaving the factory. The post-WWII Czechoslovakian Army intended to replace the ex-German and Soviet weapons in service with those of native design, but these plans where cut short by a 1948 coup that saw a communist government take power in Prague.

Bowing to demands by the USSR for the standardization of small arms, the Czechoslovakians agreed to adopt Soviet-caliber cartridges while stubbornly clinging to their tradition of using weapons of native design. Thus, while other Warsaw Pact armies used the ubiquitous Soviet 7.62x25mm

TT-33 Tokarev pistol, the Czechoslovakians developed the 7.62mm *Samonabíjecí Pistole* vz. 52 (7.62mm Semi-automatic Pistol Model 52).

In 1951, the Soviets adopted the *Pistolet Makarova*, a blowback-operated pistol with a double-action/singleaction (DA/SA) trigger, and the *Automaticheskij Pistolet Stechkina*, a select-fire

machine pistol with a detachable shoulder stock that doubled as a holster. Both were chambered for the 9x18mm Makarov cartridge. Needless to say, the Czechs were not impressed with either of these weapons, or their cartridge, and continued to issue the vz. 52. But they did see a tactical role for a weapon similar to the Stechkin, and in the usual, efficient Czech fashion went about designing one.

### **Gun Details**

As with the other Czech military and police arms, they turned to CZ, who assigned the project to engineer Miroslav Ryb r. Between 1959 and 1961, Ryb r developed a weapon that found approval and was adopted as the *Samapol* vz. 61 (Submachine Gun Model 61).

The vz. 61 was a blowback-operated, select-fire weapon built on a rectangularshaped, stamped-steel receiver that contained the bolt and trigger mechanism and had a number of features that set it apart from most submachine guns of the time.

# CZECHPOINT SA VZ. 61 SCORPION

CALIBER:	.32 ACP
BARREL:	4.53 inches
OA LENGTH:	10.75 inches
WEIGHT:	2.43 pounds (empty)
GRIPS:	Wood
SIGHTS:	Protected front post, U-notch rear
ACTION:	Semi-auto
FINISH:	Matte black
CAPACITY:	10+1
MSRP:	\$595

VELOCITY

984

Bullet weight measured in grains, velocity in fps by chronograph,

and accuracy in inches for best five-shot groups at 25 yards.

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Fiocchi 73 FMJ



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## **CZECHPOINT SCORPION**

LEFT: On the select-fire vz. 61, a rate reducer was fitted into the hollow, wooden pistol grip. The semi-automatic Scorpion pistol does not require this device, so it has been removed. RIGHT: Thanks to its short overall length, the muzzle end of the vz. 61/Scorpion's barrel is left exposed. Also note the guards protecting the elevationadjustable front sight post.

First of all, it fired from a closed bolt and was chambered for the

7.65mm *pistolový n boj.* This cartridge allowed the weapon to be of very compact size and produce lower recoil than 7.62mm or 9mm weapons. While the .32 ACP is not held in high esteem by American shooters, in Europe it was the primary police cartridge for the first eight decades of the 20th century, and it was also widely used by the military forces of many countries.

The vz. 61's compact dimensions were achieved by using a telescopic bolt assembly that wraps around a considerable portion of the barrel, a feature the Czechs pioneered on their Sa vz. 48 (CZ 23) series of submachine guns, and it was also used on the Uzi and Beretta M12 submachine guns. The weapon features a spring-loaded case extractor installed inside the bolt head and a fixed double ejector, which is a protrusion in the weapon's frame.

As the bolt is relatively light, an inertial rate reducer housed inside the pistol grip lowers the rate of fire from 1,000 rounds per minute to a more manageable 850. The rate reducer operates as follows: When the bolt reaches the end of its rearward stroke, it strikes and is caught by a springpowered hook mounted on the back plate. At the same time it drives a lightweight, spring-loaded plunger down into the pistol grip. The plunger is easily accelerated and passes through a heavy weight that is left behind because of its inertia. The plunger, having compressed its spring, is driven up again and then meets the descending inertia buffer. This slows down the rising plunger which, when it reaches the top of its travel, rotates the hook, releasing the bolt, which is driven forward by the compressed recoil springs.

Dual cocking points ride in slots on both sides of the receiver and are serrated to allow a secure purchase when pulling the bolt to the rear. Detachable 10and 20-round double-column magazines are inserted into the receiver in front of the triggerguard, and a safety/selector lever is located on the left side of the receiver above the pistol grip.

An ejection port on top of the receiver allows spent cases to be thrown clear. While designed to be fired with two hands, the vz. 61's small size allows the shooter to fire it one-handed if desired. Sights consist of a protected front post that can be adjusted for elevation while the U-notch rear sight has settings for 75 and 150 meters.

Among its other unique features is a wire shoulder stock that folds over the top of the receiver when not in use, which resulted in the weapon receiving the nickname "Scorpion." This became so widespread that CZ used it in its advertising when it released the weapon on the commercial market.

While originally intended for police and security personnel, the Czech Army found the vz. 61 a very attractive item and issued it to staff officers, vehicle, artillery and aircraft crews, squad leaders, paratroopers and its 601st Special Forces Group.

As with its other products, CZ released the vz. 61 on the world market, where it has seen service in nations ranging from Afghanistan to Indonesia to Mozambique. The communist Czechoslovakian government provided others to kindred groups in the name of "international socialist brotherhood," and they were commonly seen in the hands of the various "national liberation" and terrorist groups in the Middle East, Africa, Asia and Latin America. The Yugoslavs found it attractive enough that they obtained a license from CZ to manufacture it as the *Mašina kremenjak* M.84.

Over the years, several versions of the Scorpion have been manufactured. In the 1990s, CZ offered the following submachine guns: the vz. 61 E (7.65mm version with a plastic pistol grip), the vz. 82 (chambered in 9mm Makarov with a 4.4-inch barrel) and the vz. 83 (chambered for

the .380 ACP cartridge). A semi-auto version, the CZ-91S, was developed for the civilian market and offered in the above three chamberings and 9mm Luger. The Yugoslavs also manufactured a semi-auto version in 9mm Makarov as the M.84A.

### Range Time

Currently, a semi-automatic pistol version of the Scorpion, manufactured by Czech Small Arms in Jablunka in the Czech Republic, is imported by Czech-Point. Externally, it looks identical to its select-fire cousin, except it lacks the fold-



Like the original, the Scorpion's U-notch rear sight can be adjusted (rather optimistically) for 75 and 150 meters.



The protected front sight post can be rotated to zero the .32 ACP Scorpion pistol's sights for elevation.

ing stock. Also, the rate reducer has been removed. I recently got my hands on this version of the Scorpion for a full test and evaluation at my local range.

CzechPoint's website has the following statement regarding ammunition for the vz. 61: "It is recommended that 7.65mm Browning FMJ (round nose) be used to ensure excellent reliability during cycling. Our Scorpions utilize original CIPspec 7.65mm Browning barrels. For this reason, CzechPoint does not recommend American manufactured (SAAMI-spec) ammunition as it may cause feeding issues. The following ammunition is recommended for the Scorpion as it is high quality and CIP-spec: Privi Partizan, Sellier and Bellot, or Fiocchi."

Fortunately, in the darker recesses of my landfill-like supply closet, I discovered several boxes of Fiocchi ammo. I threw the ammo in my truck with the vz. 61 and headed to my gun club to see if this *malý ceský kr sy* (little Czech beauty) could do what was needed to be done.

To be honest about it, considering its rather crude sights, I found the vz. 61 to be quite accurate when fired from a rest at 25 yards. With a lowest sight setting of 75 meters, it tended to print a bit high, but once

DONE RIGHT.

# "The vz. 61's compact dimensions were achieved by using a telescopic bolt assembly that wraps around a considerable portion of the barrel."

I had the "Kentucky elevation" figured out, I was able to consistently produce 10-shot groups ranging from 2 to 3.25 inches in size, printing dead on to point of aim.

The Fiocchi ammo ran with 100-percent reliability, and recoil was negligible, feeling similar to a .22 LR pistol. And while it ran 100-percent reliably, it threw empty cases straight up, many of which came back down on top of my head. I then set up a Dirty Bird combat target and proceeded to do some off-hand shooting from various distances, firing the vz. 61 with both supported and unsupported (one-handed) grips. Much to my delight, and despite its less than optimal sights, I managed to chew up the center of the target in a most pleasing manner.

The proper way to fire the vz. 61 with two hands is to place your support hand around the front of the magazine. Do not place it alongside the receiver or the dual cocking points will become dual pain inflictors! While it looks rather clumsy, it is easily fired one handed and actually balances quite well.

I ran about 250 rounds of Fiocchi ammo through it that afternoon without a single malfunction of any type, which is very commendable performance. One thing I found amusing is that the spent cases were ejected straight up in the air and as they descended produced a buzzing sound. Until we realized what it was I thought I had stepped into a hornet's nest.

The CzechPoint Sa vz. 61 offers shooters a great opportunity to own their own version of this unique, classic machine pistol in civilian-legal, semi-automatic form. For more information, visit czechpoint-usa.com.

PWS now offers a Modern Musket<sup>™</sup> line of range-ready DI AR-15 rifles for those who prefer the classic M16 operating system combined with the innovative upgrades and expert craftsmanship PWS rifle owners are accustomed to.

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# **AUSA 2014 SPOTLIGHT** Rounding up the newest combat gear from the Association of the United States Army 2014 expo!

BY SCOTT R. GOURLEY

# **Under the theme of "Trusted Professionals:**

Today and Tomorrow," the Association of the United States Army (AUSA) 2014 Annual Meeting and Exposition, held in Washington, D.C., in October hosted more than 600 industry and military exhibits, 10 international pavilions and myriad professional panels. Although difficult to select from among the hundreds of unique equipment items displayed, here are 10 of the most interesting of the show.



### **BAE Intelligence Situational Awareness**

In highlighting its future vehicle technology capabilities, BAE Systems presented a technology demonstration vehicle platform that incorporated a hybrid electric drive system and a turreted tactical laser that could have potential application against targets like unmanned aerial vehicles. The company also profiled a number of other supporting technologies that could also be applied to tomorrow's fighting vehicles. One example was the Intelligence Situational Awareness system that coupled external cameras with a helmet-mounted sight to provide crewmen with "see-through armor" and the ability to scan their 360-degree surroundings. For more information, visit baesystems.com.



CHARGING STATUS

### **3M Peltor** Tactical Earplug

3M used the AUSA event to spotlight its new Peltor Tactical Earplug. Although the company has had a long history of providing tactical hearing protection, the new earplug represents its first standalone in-the-ear solution to tactical hearing challenges like high levels of steady state and impulse

noises. The earplug does not integrate into a radio system, which is by design, since developers say that the system is designed for soldiers who don't carry a radio but still need hearing protection. At the same time that they provide hearing protection, the earplugs also have sound-amplification capabilities for situational hearing and can help troops better hear mission-critical verbal communications in quiet environments. The powered earplugs come in a recharging case. For more information, visit 3M.com/PeltorTEP or call 800-328-1667.

## **Beretta Intelligent Rail**

T Worx, the commercialization arm of Prototype Productions, Inc., teamed with Beretta Defense Technologies (BDT) at AUSA 2014 to display a new Intelligent Rail on Beretta's ARX carbine. The effort reportedly evolved from a Small Business Innovative Research (SBIR) grant to develop a circuit board that can be inserted into a standard Picatinny rail to convey power and data. The design on display at AUSA used a consolidated battery pack in the carbine buttstock housing six AA batteries to power multiple aiming and sighting devices. The consolidated power source allows the individual devices to be made much smaller and the data capability allows for movement of still or video data from the accessory off of the weapon for additional observation or analysis. For more information, visit berettadefensetechnologies.com.



## **General Dynamics LWMMG**

General Dynamics' Ordnance and Tactical Systems continues to display and demonstrate its Lightweight Medium Machine Gun (LWMMG). First unveiled just over two years ago, the LWMMG was developed to meet the needs of the special operations community by filling the current gap that exists between current 7.62mm and .50-caliber machine guns. The LWMMG utilizes a .338 Norma Magnum cartridge that reportedly allows trained gunners to engage point targets at ranges beyond 1,800 meters off of the integral bipod. Developers point to the inherent efficiency of the 300-grain .338 Norma Magnum bullet, explaining that it is double the weight with twice the energy of a 7.62mm bullet at the muzzle and more than five times the energy at 1,000 meters. For more information, visit gd-ots.com or call 727-578-8100.



### **Polaris Defense DAGOR**

Along with a booth ceremony highlighting the performance of the MRZR within U.S. Special Operations Command, Polaris Defense used AUSA 2014 to launch its new DAGOR (pronounced "dagger") ultra-light combat vehicle platform. Drawing on the company's heritage of extreme special operations mobility systems, DAGOR is a purpose-built vehicle designed with a trophy truck-inspired suspension to carry 3,250 pounds of payload or a nine-man infantry squad at a high rate of speed over terrain usually traveled on foot. In terms of vehicle mobility, the width of the DAGOR allows it to be rapidly loading into the CH-47 Chinook platform without modification, and the weight allows it to be sling loaded under the UH-60 Black Hawk. For more information, visit polarisdefense.com or call 866-468-7783.



### **Barrett M240 Lightweight**

According to Ronnie Barrett, Barrett Firearms decided to use AUSA 2014 to highlight "everything the Army is or should or could be interested in." One of the items drawing attendee interest was Barrett's M240 Lightweight, which Barrett describes as "basically an M240 or MAG-58 machine gun with a modernized receiver." Instead of the historic 64-component, riveted-sheet-metal receiver, the Barrett design uses welded construction that eliminates material previously required just to hold the rivets. The elimination of that material translates to a receiver that is 4 pounds lighter. Moreover, eliminating extra weight in the barrel design further reduces system weight by an additional 1.5 pounds. Other M240 Lightweight design features include a new collapsible buttstock, a handguard that attaches to the receiver instead of bolting onto the gas tube and detachable bipod legs. For more information, visit barrett.net or call 615-896-2938.

### **General Dynamics MUTT**

While the Army continues to study the possible application of robotics in future tactical environments, General Dynamics Land Systems has developed the Multi-Utility Tactical Transport (MUTT), an unmanned "tethered" leader/



follower platform that affordably lightens the load of dismounted soldiers. Measuring 66 inches long by 54 inches wide, the MUTT can carry 600 pounds of payload on a highly articulated crawling suspension with an extremely low noise signature. In addition, the MUTT can provide up to 1 kilowatt of expeditionary power. For

of expeditionary power. For more information, visit gdls. com or call 586-825-4000.

## **QinetiQ TALON V**

The new TALON V robot was unveiled at AUSA 2014 by QinetiQ North America. The next generation of the popular TALON family is an "open architecture robot" that embraces the U.S. Army's unmanned systems interoperability profile to allow for the easy integration of new capabilities to the robot. Modules like cameras, communications packages, navigation and manipulation tools can easily be replaced by specialized payloads from another vendor using this interoperability profile. For more information, visit qinetiq-na.com or call 781-684-4000.



"Modules like cameras, communications packages, navigation and manipulation tools can easily be replaced by specialized payloads from another vendor using this interoperability profile."



### **Revision NervCentr**

Revision Military highlighted its expanding capabilities beyond vision, head and body protection to include its new NervCenter line of power-management products. One of the products is the Lightweight Assault Battery (far left) that is designed to fit into a standard ammunition pouch and provide power capacity somewhere between current Li-80 and Li-145 batteries, translating to the energy needed for a 12-hour mission. The larger element, the SharePack (left), is a conformal battery with a complete power-management system that fits into a side plate compartment and provides between 9 and 36 volts while eliminating much of the current ancillary power equipment. Revision Military's SharePack can store, delivery, harvest and share power. For more information, visit revisionmilitary.com or call 802-879-7002.

### **Textron Systems OSRVT**

Textron Systems pointed to the latest upgrade to its One System Remote Video Terminal (OSRVT). With more than 3,100 OSRVTs fielded to Army, Marine Corps and special operations elements, OSRVT provides its users with the ability to access video feeds from unmanned aircraft systems (UAS). The new "OSRVT-50" upgrade to the entire inventory will provide its users with "bi-directional" capabilities, allowing warfighters to control UAS payloads to obtain better information on particular areas of interest. Looking toward the future, the company also exhibited notional repackaging of OSRVT capabilities in a range of configurations, from a wristworn system to an Android device that could be employed by police or civil fire elements who might have UAS access in the future. For more information, visit textronsystems.com or call 410-666-1400. SW



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# M72 LAW LASER SIGHT

### (continued from page 12) 1994, CTC has manufactured pistol-grip-integrated, "instinctively activated" (illuminated when holding and pointing the firearm) laser sights that project a visible red or green beam onto the aiming point. CTC now is a global leader in laser sight development and production, with more than 200 systems priced around \$400 or less, including gripintegrated, rail- and frame-mounted laser sights for many popular handgun models as well as AR-15 rifles with both visible and invisible infrared beams for use with nightvision equipment.

The M72 LAW, produced by Nammo Talley of Mesa, Arizona, has been an infantry mainstay for more than 50 years. It is a lighter, more portable and inexpensive derivative of the World War II bazooka, firing self-propelled, 66mm munitions from a two-piece extendable tube that is usually discarded after firing. Over the years, the LAW, with several variants currently in use in nearly 30 nations, has incorporated many enhancements, including improved reliability, better triggers and more accurate, powerful rounds tailored for both hard and soft targets with A7 anti-armor and A9 anti-structure rounds. But, the weapon could not overcome a major operational limitation-its rudimentary folding peep sight is awkward in optimum conditions and nearly impossible

"IN TESTING, NAVY SEALS WHO HAD NEVER FIRED LAWS BEFORE WERE CONSISTENTLY HITTING TARGETS AT 350 YARDS...THEY NEVER MISSED!" to use in darkness at extended ranges, making the M72 a daylightonly weapon despite the marked increase in nighttime combat operations and a clear need for penetrative munitions to neutralize structural targets concealing adversaries.

Now, CTC's new LAW laser sight gives the system true 24/7 capability. According to Jeff Hoblitt of CTC Defense, Nammo Talley approached the company in 2010 to develop the sight system. "We completed the system development a year and a half after receiving the request," Hoblitt said. "We had a prototype ready for evaluation in September of 2011."

### Laying Down The LAW

Evaluations included military specification testing to MIL-STD-810G, the Department of Defense's protocol covering field and laboratory environmental factor tests including extreme hot and cold temperatures, total immersion in soil, water and other fluids, exposure to dust and sand, vibration and shock. Compliance with MIL-STD-810G ensures the LAW



The manportable M72 LAW has been a standard U.S. infantry weapon for decades. Here troops are using the traditional folding sights, which are harder to aim with and don't work at night.

ABOVE: The

mounts to a

small bracket

on the M72's

firing tube.

visible and

versions of

the SFL-100

laser sight are

available, and

the units have

a maximum

range of 400

meters.

infrared

**RIGHT: Both** 

SFL-100

auickly





laser sight will take plenty of abuse and still function properly in any combat situation.

Laser technology was not an issue for the new sight. "It's not more powerful or complicated than other laser systems." Hoblitt added. "The system's advanced nature is based on its interface with a mounting plate that ensures the laser is automatically bore-sighted when installed on the M72, and an elevation adjustment efficiently and accurately calibrates range to target." CTC had to develop the dynamics of the interface between the laser and the baseplate, upon which it is mounted in just a couple of seconds. The connection is simple and purely mechanical, but it ensures proper alignment between the beam and the rocket's trajectory and requires minimal training. The baseplate cost is low, so it can be discarded with the firing tube once the LAW has been used.

Hoblitt also noted that the laser sight, using both a visible red beam and an invisible infrared light visible with night-vision goggles (NVGs) widely used by U.S. troops in night operations, is an eye-safe, lowpower device generating less than 5 milliwatts (mW). "Most Western military forces are interested in infrared beams," explained Hoblitt, "because they're visible only with NVGs, while red beams mark the operator's position and make him vulnerable to counter-fire, especially at night. Visible beams are, however, very useful for training.'

In addition to permitting nighttime use, making the M72 a 24/7 weapon system, the new laser also enhances firing during daylight. "Although it is very flexible and versatile, the LAW is more difficult to aim and fire than a rifle even in the best conditions." Hoblitt explained. "Because the tube balances on top of the operator's shoulder and has no stock or brace, it is not as ergonomically stable as a rifle, so lining up the peep sight can be difficult. With the laser sight installed, accurate aiming is a far easier two-dimensional process. The operator's head can be in any position because the front and rear sights require no alignment. You can literally point and shoot."

The laser has a maximum range of about 400 meters, far beyond the operational range of the LAW itself. Although the laser beam broadens at greater distances and is subject to a variety of lighting conditions, it is exceptionally accurate even at long ranges. "In testing, Navy SEALs who had never fired LAWs before were consistently hitting targets at 350 yards," Hoblitt said. "They never missed!"

### **Battle Ready**

The CTC laser sight is now available to U.S. military forces. U.S. Army Rangers have ordered a quantity, and the sight was issued a National Stock Number in June 2014. The cost of the laser, according to Hoblitt, is low, about \$300 or less, about the same as most CTC commercial lasers. The system includes the sight and the mounting bracket. Nammo Talley is planning to install brackets on newly manufactured LAWs in the factory soon, guaranteeing widespread sight use. For M72s already in military inventories, CTC has created a bracket clamp that provides identical functionality once installed on the LAW tube. "It wasn't easy to ensure the bracket clamp provides the same automatic bore-sighting," Hoblitt said, "but we did it."

Today, CTC's laser sight is only available for the LAW, but Hoblitt notes, "We have the capability and intention to use it for similar systems. Some larger, vehiclemounted rocket systems utilize night sights, but they're big and expensive. The laser sight is the right way to go because it's intuitive, like a heads-up display, and ideal for close-quarters combat in urban environments." For more information, visit crimsontrace.com or call 800-442-2406.

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AGUILA AMMO Aquilaammo.com

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**SOG SPECIALTY KNIVES** Sogknives.com

SPARTAN BLADES Spartanbladesusa.com

SPEER Le.atk.com

**SPRINGFIELD ARMORY** Springfield-armory.com

**STAG ARMS** Stagarms.com

**STOCKY'S** Newriflestocks.com

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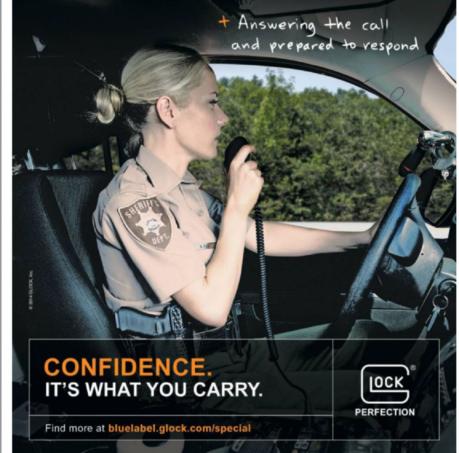
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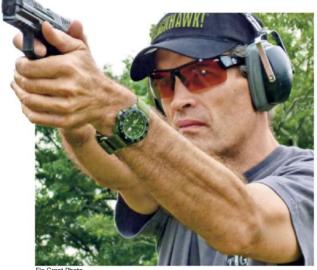
### (continued from page 53)

cleaning. This extra care in manufacture, though superfluous to function, is part of the appeal of Heckler & Koch pistols.

### Range Time

At the range, the VP9 was accurate and totally reliable with multiple types of ammunition. The average five-shot group size with all ammunition was less than 2.5 inches from sandbags at 25 yards, and these results could easily have been better with improved conditions at the range. The smallest group, produced with Sig Sauer's new 124-grain JHP load, was 1.4 inches, followed closely by Winchester's 115-grain FMJ with a group measuring only 1.5 inches. The VP9 also did not require any sight adjustments.

The luminous sights are quick to ac-



quire even in daylight and give a much cleaner sight picture than most night sights that have a white-outlined circle in which the tritium insert fits. Tritium sights are very functional in darkness. but in other light conditions they can make it harder to acquire a hard front-sight focus. In a low-light, indoor shooting session, the VP9's sights were easy to pick

The VP9's controls are easy to activate, which will enhance your speed, and the customized grip helps reduce perceived recoil for fast follow-up shots.

up when charged from a flash-

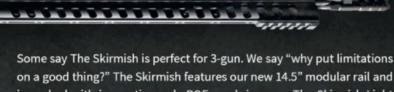
light. For me, the sights could be improved by making the front sight a different color and creating a small step on the angled forward surface of the rear sight.

The VP9's ergonomics and trigger made it perform very well during practical drills where I used a CrossBreed IWB holster. Perceived recoil was light and manageable thanks to the exceptionally well-fitting grips. The magazine release levers-though some may be accustomed to a push button-are easy to activate quickly with the correct technique.

### **Final Notes**

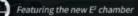
HK always takes longer to research and develop new designs than other arms-makers, and, as a result, does not bring as many new products to the market as some of its competitors. However, HK's approach—evaluating all other designs and consumer feedback on what works and needs improvementcan produce a superior product, with the VP9 being a prime example. This pistol improves on many factory triggers used in striker-fired designs in a much more affordable sidearm than prior HK models. For more information, visit hk-usa.com SW or call 706-568-1906.

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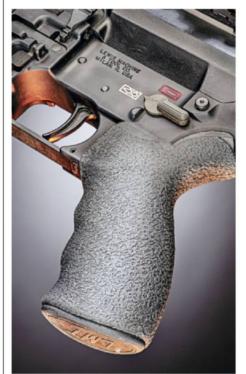
# LMT LM8MWS

### (continued from page 11)

inch groups were the norm, with several closer to 0.2 inches. The LMT came very close, with the best group measuring 0.27 inches. This can be an incredibly accurate caliber with some real reach, and it's one of the most popular calibers for serious precision rifle competitors.

Since the 7.62mm is the bread and butter of this platform, I tested the LM8MWS with several loads. All of the loads I tested were accurate, with the M118 LR ammo creating the smallest group, which measured 0.52 inches. Everything else was tighter than 1.5 inches, with most hovering around the 1-inch mark. As I am old enough to remember when ARs in this caliber were lucky to create groups tighter than 3 inches, the accuracy of these modern rifles continues to amaze me. Early in my precision rifle review days, bolt actions with this level of accuracy were rare, let alone semiautos-so the LMT is truly impressive.

Moving back to the iron sights, I tested the LM8MWS from various shooting positions, around obstacles and with various types of ammunition. These sights are excellent. They appear to be a combination of my favorite CQB sight (the HK style) up front and a proven long-range unit for the rear. This setup facilitates really fast shots up close—just line up the circles and press the trigger. The rear sight is adjustable for windage. Designed for a 300-



The lower receiver features an ergonomic pistol grip that is comfortable and makes it easier for you to stay in control and on target, no matter what caliber is used.



The magazine release and safety are ambidextrous, and the rifle also comes with a tactical charging handle that is easier to use with scopes mounted.

yard zero, the rear sight has large white markings to help with bullet drop. Once I worked out the wind, hits at 500 yards were pretty regular. As backup sights go, these are excellent, and they could easily be used as a standalone sighting system.

# "If you want a truly versatile AR with sub-MOA precision, complete reliability and incredible versatility, the LM8MWS should be one of the first on your list."

Once zeroed at 100 yards, there were minimal point-ofimpact shifts when switching between calibers, allowing you to use just one scope. You will just need to document the changes where precision was needed. Being able to use one sighting system is one of the advantages of this design, and it worked well.

Swapping out barrels is simple, fast and requires only one tool, the proper torque wrench, which LMT provides. During testing I loosened the screws holding the barrel in place as much as a turn with no change in the point of

impact. Just check them under hard use on occasion. Removing and replacing a barrel generally yields little to no change, especially if you torque the bolts properly.

The LM8MWS' reliability was excellent

with every barrel, and ejection patterns were impressive. From prone, with consistent pressure in the pocket, the rifle created a tidy pile in the same place with all of the ammunition. The ejection pattern was a bit less regular in rapid fire, but the rifle was completely reliable.

The trigger is crisp, but it's not a 2-pound target trigger. The second stage is longer and weighs around 5 pounds, which I consider perfect for most duty applications. The trigger reset is tactile and audible, making repeat shots fast. The ambidextrous safety was well placed and easily accessed with either my thumb or the trigger finger, allowing for the use of most modern grip methods.

All in all, the LM8MWS is an impressive rifle. If you want a truly versatile AR with sub-MOA precision, complete reliability and incredible versatility, the LM8MWS should be one of the first on your list. For more information, call 309-732-9527 or visit Imtdefense.com.



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# BARSKA 6-36×60mm SWAT-AR

The SWAT-AR 6-36x60mm riflescope is an all-new tactical scope from Barska Optics. The new SWAT-AR 6-36x60mm has been designed for long-range rifle platforms and features fully multi-coated optics and parallax adjustment for crisp clarity at longer distances. The SWAT-AR 6-36x60mm comes equipped with an illuminated mil-dot glass-etched reticle that can be set to either green or red, and adjustable brightness settings ensure accurate targeting in all lighting conditions. The SWAT-AR comes complete with an angled, sniper-edged sunshade and a 35mm cantilever mount. For more information, visit barska.com or call 888-666-6769.



## DEAD AIR 7.62 SANDMAN-S The "S" in Sandman-S

stands for short, and with a length of only 6.8 inches and a weight of 17.3 ounces, that's exactly what this sound suppressor is. The Sandman-S delivers performance in a small package. It's a great crossover suppressor for your 5.56mm, 300 BLK and 7.62 platforms. The Sandman-S also features a QD system that makes it easy for operators to add or remove the suppressor in seconds without any wobble that could affect

performance. The baffles are manufactured from Stellite and welded into a solid core for added strength and durability, while the exterior is given a Cerakote finish. For more information, call 877-892-7544 or visit deadairsilencers.com.

# GARRETT PD 6500I METAL DETECTOR

The Garrett PD 6500i walkthrough metal detector has several features that should appeal to law enforcement and security professionals. It analyzes targets across a broad range of frequencies for greater accuracy, providing superior ferrous and non-ferrous detection. The Garrett PD 6500i walk-through metal detector provides uniform detection and precise pinpointing. Independent zone indicator lights on both side panels identify not only the height but also the left, center and right locations for one or more objects passing through the archway. For more information, visit garrett.com or call 800-234-6151.



# INTELLIGENT AUTOMATION ARGUS PS



Intelligent Automation, Inc. (IAI) has introduced the ARGUS PS to provide a covert, mobile, unattended perimeter security and alert system. Derived from proven technology originally developed for U.S. military applications, the ARGUS PS consists of rugged wireless sensors networked together to form a protective, invisible trip-

wire around any area or infrastructure of interest. Using as few as two to more than 50 small, battery-powered devices and one or more ARGUS Eye Pan-Tilt-Zoom cameras, the ARGUS PS provides alerts of intrusions, and images are sent directly to the user-friendly control computer, existing police surveillance command station or to any cellular telephone(s). For more information, visit i-a-i.com or call 301-795-4463.

## MESA TACTICAL URBINO STOCK

Mesa Tactical has unveiled the Urbino Tactical Stock for the 12-gauge Mossberg 930. More than just a pistolgrip buttstock, the new Urbino for the Mossberg 930 is a complete stock system with

a shorter return spring and housing, allowing

the shortest length of pull (12.5 inches) available. The optional field-adjustable cheekriser provides an improved cheekweld when using optics, the optional Limbsaver buttpad offers greater shooting comfort, the shock-absorbing over-molded rubber grip reduces shooter fatigue, and a variety of standard and proprietary sling mounting options are available. For more information, visit mesatactical.com or call 714-545-3332.

# SPARROWS EOD LOCK PICK SET

The Sparrows EOD Lock Pick Set is designed to cover the specific entry and tool requirements of EOD professionals. With the assistance of the EOD community, including the highly respected EOD members of the Air National Guard out of Oregon, Sparrows was able to design a set that is compact and fits their daily requirements. The selection of picks is heavy on raking tools,



as this is the fastest method of picking a lock. This set includes a mini Door Jim to assist in quickly open door latches. For opening luggage and briefcase locks, Sparrows has added a mini knife and finally a set of wafer picks for filing cabinets. For more information, visit sparrowslockpicks.com.

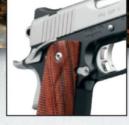


# Kimber CDP Pistols. Unequaled Quality. Unmatched Performance.

Easy to carry and conceal, the Ultra CDP™ II .45 ACP has a 3-inch barrel and weighs 25 ounces. It is also offered in 9mm and with Crimson Trace Lasergrips.



CDP pistols have custom features like low-profile night sights and a Carry Bevel treatment for smooth, rounded edges that will not snag clothing or holsters.



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Built in the Kimber<sup>®</sup> Custom Shop,<sup>™</sup> CDP (Custom Defense Package) pistols combine .45 ACP power and the most important concealed carry features into a light weight, high-performance package that gives them their name. The stainless steel slide plus a match grade barrel and trigger ensure durability and accuracy. Aluminum frames wear the premium KimPro<sup>®</sup> II finish that is self-lubricating and extremely resistant to moisture and salt. Quality and performance are the true measures of value and Kimber pistols set the industry standard. Nowhere is this more evident than in a CDP. Visit the nearest Kimber Master Dealer and see for yourself.



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