

amed for the region in Argentina known for its spectacular bird hunting, the Benelli Cordoba is a clays/field hybrid. As a semi-automatic gun with a 3" chamber. it is appropriate for both the range and the field in pursuit of upland game and bagging the occasional duck. The black satin finish to external metal components, synthetic stock and fore-end and sling swivel studs built into the foreend cap and stock clearly show the Cordoba is ready for harsh use afield, but Benelli has incorporated a number of competition and ergonomic refinements into this field gun as well.

The Cordoba's ergonomic qualities are centered around a group of recoil-mitigating enhancements that Benelli calls the ComforTech system. Using computer software and machines specially designed to measure recoil, Benelli engineers set out to substantially reduce felt recoil without adding weight to the gun.

They measured not only impact, but also how the shock wave traveled through the gunstock and where and how the energy was transferred to the shooter. The results revealed that mitigating recoil was a complex problem that required a number of changes to the stock's materials and construction.

The Cordoba's synthetic stock is embedded with a series of 12 rubber dampeners to absorb recoil energy. These chevronshaped rubber inserts are closely spaced and increase in size as they run diagonally from the wrist to the heel. This line of dampeners is directly in line with the recoil's shock wave, and slow-motion video shows the rubber inserts progressively vibrating and soaking up energy when the gun is fired. In addition, between the inserts the stock is segmented into narrow ribs that flex outward, absorbing more

pull 14%", drop at comb 1%", drop at heel 21/4" **OVERALL LENGTH: 49%**" **WEIGHT:** 7 lbs., 3 ozs. (empty) ACCESSORIES: five choke tubes and wrench, hard case, oil bottle, shim kit for changing cast and drop. SUGGESTED RETAIL

**PRICE:** \$1,600

S.p.A. Via della Stazione 50, 61029 Urbino, Italy **PORTER:** Benelli USA (Dept. AR), 17603 Indian

Head Highway, Accokeek, MD 20607: (301) 283-6981; www.benelliusa.com

shotgun

cylinder **AGAZINE:** four shells

CHANISM TYPE: recoil-

**ARREL:** 30", 28" (tested)

modified, improved-

operated semi-automatic

Benelli Criochoke tubes;

full, improved-modified,

RIGGER PULL: sinale-stage,

OCK: adjustable matte-

black synthetic; length of

recoil energy.

Technogel, as Benelli calls it, was used to create a super-soft recoil pad asymmetrically shaped to conform to the shape of the shoulder pocket and, thus, spread the recoil energy over the widest possible area. Since the recoil pad is asymmetrical, left- and right-hand models are available. The pad can be removed without tools and is available in two thicknesses. The thicker model

The American Rifleman has used the phrase "Dope Bag" at least since 1921, when Col. Townsend Whelen first titled his column with it. Even then, it had been in use for years, referring to a sack used by target shooters to hold ammunition and accessories on the firing line. "Sight dope" also was a traditional marksman's term for sight adjustment information, while judging wind speed and direction was called "doping the wind."

WARNING: Technical data and information contained herein are intended to provide information based on the limited experience of individuals under specific conditions and circumstances. They do not detail the comprehensive training procedures, techniques and safety precautions absolutely necessary to properly carry on similar activity. Read the notice and disclaimer on the contents page. Always consult comprehensive reference manuals and bulletins for details of proper training requirements, procedures, techniques and safety precautions before attempting any similar activity.

The Cordoba's black finish, synthetic stock and the sling swivel studs fixed to the fore-end cap and stock show it is ready for harsh use in the field.



To build a better recoil pad (I.), Benelli turned to the medical industry for a shock-absorbent gel that more uniformly spreads the recoil over a wider area. Airtouch checkering is molded into the Cordoba's slim wrist (r.) and fore-end for better control.

moving rearward; the com-

provides a 143/8" length of pull, but installing the thinner pad reduces length of pull to 14"

That left only one other area to address: the shooter's face. Benelli turned vet again to Technogel, and inserted the new material into the comb of the stock as well. Developed for patients confined to beds, Technogel is not only soft and resilient, but also slippery, so it will not abrade the shooter's cheek or jaw.

The Cordoba uses Benelli's Inertia Driven operating system. Upon firing, the free-floating, heavy bolt body compresses a stiff coil spring as the gun starts pressed spring then drives the bolt body to the rear. A cam track in the bolt body guides a circular lug in the bolt head, rotating it out of engagement as the whole assembly slides rearward, extracting and ejecting the spent hull. Energy from the recoil spring and its corrosion-resistant guide housed in the stock push the bolt forward and back into battery. Benelli's inertia system reduces lock time for faster shot recovery. According to the manual, 3 dram, 11/8-oz. loads are the minimum necessary for reliable operation.

Like Benelli's other

shotguns, The Cordoba's barrels and chokes are cryogenically treated to create a smooth surface for shorter shot strings and more even shot patterns.

The Cordoba's controls include a safety button at the rear of the trigger guard and a cartridge drop lever at the front. The curved trigger blade has a smooth face. The unit of our test sample broke at 6½ lbs. pull after minimal takeup. We pattern tested the gun with Federal Premium No. 6 shot, a field load we considered appropriate for upland birds, since that appears to be the Cordoba's raison d'etre. There were



12 ga., 2¾", 1¼ oz.,

No. 6 Copper-Plated Lead

Average Pellet Count: 281.

159 (55%)

92 (32%)

57 (23%)

Total Hits

21" Inner Circle

30" Outer Ring

no gaps or thin spots, and pattern quality and uniformity were among the best we've seen in any shotgun we've tested regardless of price.

Five chokes knurled for rapid changes, reveal the Cordoba's competition heritage. Other competition refinements include a fiber-optic front sight and metal mid-rib bead for more precise shot placement and lead calculation, and a stepped, ventilated sighting rib that brings the sighting plane closer to the shooter's eye.

Looking at the Cordoba, one sees that Benelli has surrendered to the American shotgunner's taste for the all-around semiautomatic shotgun. Equally at home in the field or on the range, the Cordoba has a combination of features necessary for both purposes but nothing that would limit its utility in either venue.



ne measure of a great gun design is its adaptability to calibers and purposes not originally envisioned. Like Mauser's bolt-action rifle and Browning's M1911 pistol. Eugene Stoner's AR-15/M16 rifle stands out as a timeless design that in new forms and chamberings—from 9 mm sub-guns to long-range .308 precision rifles-has come to dominate a broad range of shooting activities. The gun once vilified as a "Mattel toy" has evolved into a durable arm, capable of firing some of the most powerful rounds available, as exemplified by the rifle under review here, ArmaLite's AR-10(T) Ultra in .300 Remington Short Action Ultra Mag.

The AR-10(T) Ultra is the product of a collaboration between the Geneseo, Ill., firm and the United States

(RSAUM).

Army Marksmanship Unit (USAMU) to develop an AR-10 rifle suited to longrange work. While the .308 Win. has a nominal muzzle velocity of around 2620 f.p.s. with a 180-gr. bullet, the .300 RSAUM can push the same projectile to 3000 f.p.s., yielding about 200 f.p.s. more velocity, at 1,000 yds., with significantly less drop and wind deflection. The .300 RSAUM's flatter trajectory also allows the use of scopes with a smaller range of adjustment.

Based on the proven AR-10 platform, it is currently only available in .300 RSAUM with a free-floated, 24" heavy-profile, stainless-steel barrel; a flattop upper receiver with an integral Picatinny rail; aluminum-and-polymer tubular fore-end, with four short Picatinny rail segments for mounting lights, lasers or other accessories;

and a detachable, fiveround, steel box magazine. All carbon-steel parts are coated with a black-oxide finish, while the aluminum components are black anodized. The synthetic fore-end, pistol grip and buttstock are olive drab.

Internally, the AR-10(T) Ultra follows established AR15/AR-10 operating principles, so all controls are identical. However. there are changes from the standard AR-10. The bolt face has been opened up to handle the larger 0.532" nominal head diameter of the .300 RSAUM, the ejection port in the upper receiver has been enlarged, and the gas port in the barrel is located 3" farther forward than in the .308 Win, version. The lower receiver remains unchanged, because the existing magazine well is large enough to accommodate the fat

RSAUM cartridge case.

The target crown of the rifle's 24" barrel is recessed, and the bore is button-rifled with a six-groove, 1:10" right-hand twist to stabilize even the heaviest .30-cal. bullets. The outer diameter of the stepped barrel measures 0.80" at the muzzle and 1.00" under the handguard.

We mounted a Springfield Armory 4-16x50 mm tactical scope on the AR-10(T) Ultra using Leupold Mk IV rings and tested the rifle for accuracy at 100 yds. off sandbags. Test ammunition included Remington loads with 150and 165-gr. Core-Lokt and 180-gr. Nosler Partition bullets. Initially, there were some failures to fully eiect brass with the 150-gr. Core-Lokt load. Quick disassembly revealed that the carrier and bolt were essentially bone-dry, and



proper lubrication eliminated the problem. ArmaLite's two-stage match trigger broke at 5 lbs., which felt even lighter due to its smooth take-up, crisp break and minimal overtravel. Thanks to the weight of the gun and the recoil-absorbing properties of its semi-automatic action, recoil was moderate with the 150- and 165-gr. bullets. The 180-gr. load proved to be fairly stout, generating recoil that was brisk, but manageable.

ArmaLite guarantees 1 m.o.a., three-shot groups at 100 yds., and our test rifle

**ARMALITE AR-10(T)** 

MANUFACTURER: ArmaLite,
Inc. (Dept. AR), P.O. Box
299, Geneseo, IL 61254;
(800) 336-0184;
www.armalite.com
CALIBER: .300 Remington
Short Action Ultra Mag
ACTION TYPE: gas-operated
semi-automatic rifle
RECEIVER: forged aluminum
upper and lower

BARREL: 24" stainless steel, heavy profile RIFLING: six-groove, 1:10" right-hand twist MAGAZINE: five-round steel box

SIGHTS: none supplied; Picatinny rail for scope mounting TRIGGER PULL: two-stage,

5 lbs. STOCK: synthetic; length of pull, 14½"; drop at heel, 5/8"; drop at comb, 5/8" OVERALL LENGTH: 43%"

WEIGHT: 11 lbs., 9 ozs.
ACCESSORIES: two magazines, instruction manual SUGGESTED RETAIL
PRICE: \$2,340

approached or achieved this with five-shot groups of all the loads we tested. The gun showed a slight preference for the 150-gr. Core-Lokt load. Even better accuracy would likely be achieved with target-grade ammunition loaded with match bullets, such as Sierra's 168-, 175- or 180-qr. HPBTs.

The rifle proved to be slightly muzzle-heavy, which contributed to steadiness in off-hand and sitting shooting positions. Also a plus in such positions was the magazine, which only protrudes about 5/8" below the magazine well and did not interfere with the support hand posi-

SHOOTING RESULTS .300 RSAUM Vel. @ 15' **Group Size In Inches** Cartridge (f.p.s.) Smallest Largest Average Rem. No. PR300SM<sup>1</sup> 3132 3,268 0.71 1.03 0.83 15 Sd Core-Lokt PSP 3,343 1.22 0.97 Rem. No. PR300SM2 3020 0.76 165-gr. Core-Lokt PSP 32 Sd Rem. No. PR300SM3 3,595 0.90 1.35 180-gr. Nosler Part. 11 Sd Average Extreme Spread: 0.98

Measured average velocity for 10 rounds from a 24" barrel. Range temperature: 82° F. Humidity: 67%. Accuracy for five consecutive, five-shot groups at 100 yds. from a sandbag. Abbreviations: PSP (pointed soft-point), Rem. (Remington), Sd (standard deviation) Part. (Partition).

tion on the fore-end. With its 24" barrel, the rifle is not exactly handy, but it is comparable in length to a typical precision bolt-action rifle.

The AR-10(T) Ultra is a unique rifle that is produced on a limited semicustom basis. With a list price of \$2,340, it is not inexpensive. Even so, the

accuracy, reliability and power of the AR-10(T) Ultra rifle will likely endear it to a diverse population of shooters—military and law enforcement precision riflemen, hunters, long-range target shooters and those who simply enjoy firing powerful semi-automatic rifles.





by K.B.I., Inc., a Harrisburg, Pa., company that imports arms from around the world. Among these is the Charles Daly M-5, a polymer-frame M1911-style pistol made by BUL Transmark of Tel Aviv, Israel. Currently, several models of that gun are marketed by the company, two with 5" barrels and chambered for the .45 ACP cartridge: the fixed-sight M-5 Government, reviewed here, and the M-5 IPSC, which features adjustable sights, an ambidextrous safety and a stainless-steel slide. All are available with 14-round magazines. Forthcoming will be models in .40 S&W,

the M-5 was one of the first high-capacity polymerframe .45 ACP handguns.

The M-5's polymer frame provides several advantages: reduced weight, increased recoil absorption and a slimmer grip profile. In regard to this last attribute, the M-5's moldedin checkered panels on its frontstrap and sides obviate the need for separate grip panels, making possible a narrower, smaller grip circumference than that of many steel-frame highcapacity (or even singlecolumn) M1911 pistols. In actual measurement, the M-5's trigger reach was slightly shorter than that of a Colt Government Model with a beavertail grip safety

Technically, the This 2" group is typical of the accu-M-5 has a polymer- racy achieved with a variety of loads. and-steel frame.

Molded into the polymer grip is a steel upper insert that constitutes the frame rails and houses the hammer, sear and disconnector and their respective pins. This insert affords greater durability as well as increased precision in pin placement and alignment than would be possible with an all-polymer frame.

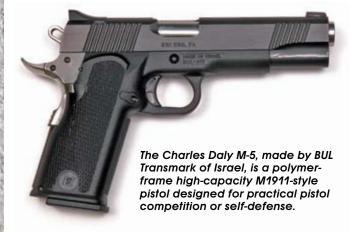
Beyond the polymer frame, the M-5's notable features included: a skeletonized lightweight trigger; beavertail grip safety with palm pad; extended strong-side thumb safety; front and rear slide serrations; checkered mainand fluted ejection port, and a full-length, one-piece guide rod with reverse spring plug. About 80 percent of the M-5's parts are interchangeable with the corresponding Government Model components. Its primary differences are in the magazine, trigger, magazine catch and mainspring housing. Also distinctive is the gun's 5" ramped bull barrel, whose 0.695" muzzle diameter engages the bore of the slide directly, eliminat-

spring housing; lowered

Sighting is by way of a

ing the need for a barrel

bushing.



SHOOTING RESULTS (25 YDS.)					
.45 ACP Cartridge	Vel. @ 15' (fps.)	Energy (ft. lbs.)	Group Size In Inches Smallest Largest Average		
Federal No.P45HS1 230-gr. Hydra Shok	837 Avg. 12 Sd	358	1.51	2.02	1.67
Hornady No. 9112 200-gr. XTP	855 Avg. 14 Sd	325	2.19	2.75	2.49
MagTech No. FD45A 165-gr. JHP	1104 Avg. 15 Sd	447	1.87	2.30	2.12
Average Extreme Spread					2.00

Average Extreme Spread

Measured average velocity for 10 rounds from a 5" barrel. Range temperature: 72° F. Humidity: 57%. Accuracy for five consecutive, five-shot groups at 25 yds. from a sandbag. Abbreviations: JHP (jacketed hollow-point), XTP (Extreme Terminal Performance),

## **CHARLES DALY M-5**

**MANUFACTURER:** BUL Transmark Ltd., Rival Street 10, Tel Aviv 67778 Israel: +972-3-6392911; www.bultransmark.com

**IMPORTER:** Charles Daly/ K.B.I. Inc. (Dept. AR), P.O. Box 6625, Harrisburg, PA 17112-0625;

(866) 325-9486 www.charlesdaly.com CALIBER: .45 ACP

**ACTION TYPE:** lockedbreech, short-recoiloperated semi-automatic handgun

FRAME: polymer with steel insert BARREL: 5"

RIFLING: six-groove, 1:16" LH

**MAGAZINE:** detachable steel box, 14-round capacity **SIGHTS:** dovetail-mounted post front, fixed low-snag notch rear TRIGGER PULL: two-stage.

4 lbs. **OVERALL LENGTH:** 81/2" **WIDTH:** 11/8" **HEIGHT:** 55/16"

WEIGHT: 35 ozs. **ACCESSORIES:** plastic storage case, owner's manual SUGGESTED RETAIL

**PRICE:** \$719

dovetail-mounted 0.125"wide, 0.135"-high ramped post in the front, and a fixed low-snag rear unit with a 0.105"-wide notch and fine horizontal serra-

tions on the sight face to

reduce glare.

While disassembly and reassembly of the M-5 generally follow standard Government Model procedures, the primary difference is in the removal





A wide magazine well accommodates the 14-round double-column magazine. Its mouth is flared for rapid reloading. The polymer frame has a steel insert with a cut to accept the gun's ramped bull barrel.

of the full-length guide rod and reverse spring plug.

We fired the Charles Daly M-5 at 25 yds. off sandbags using a Magtech 165-gr. JHP load, a Hornady Premium load with a 200-gr. XTP JHP, and Federal's 230-gr. Hydra-Shok JHP load. No malfunctions of any kind were observed. Accuracy results, shown in the accompanying table, are commendable. At 25 vds, groups averaged just over 2" with the ammunition tested.

The M-5 showed exceptional accuracy, with all loads averaging less than 3" (and no single group exceeding that dimension). Best was Federal's 230-gr. Hydra-Shok load, which averaged an ex-

traordinary 1.67". We were additionally gratified that the gun's sights almost perfectly coincided with the bullet impact point. Also contributing to accuracy was the gun's 4-lb. trigger pull, which, though occasionally showing a little creep, felt lighter than its measured weight.

Recoil was quite manageable with all loads, even the hot MagTech load, which generated nearly 450 ft.-lbs of muzzle energy. This was attributed to the shockabsorbing properties of the polymer frame, the extra weight of the ramped bull barrel—which helped to slow rearward slide velocity while the slide and barrel are locked

together—and the gun's excellent ergonomics that allowed a proper high. two-handed grip. The M-5 also perfectly fit into, and drew from, a number of popular carry and competition holsters.

Charles Daly backs the M-5 with a Limited Lifetime Warranty. Owners who want to modify their pistols, perhaps by installing an ambidextrous thumb safety, without voiding the warranty should contact Charles Daly's Custom Shop.

In sum, the Charles Daly M-5 represents an excellent value in a highcapacity, polymer-frame M1911-style pistol for IDPA or IPSC competition, or for self-defense.

AMERICAN RIFLEMAN

AMERICAN RIFLEMAN

as well as a Commander-

length gun, and an Ultra-X





he Knoxx Industries Sidewinder conversion kit turns any Mossberg shotgun into a detachable-box-magazine pump with quick reloading for three-gun competition or home defense. Additionally, the Knoxx topfolding COPstock provides a claimed 50 percent reduction in felt recoil.

The Knoxx Sidewinder conversion kit was designed with user-friendly installation in mind. The slide is aluminum, but other parts are constructed from steel and fiber-reinforced Zytel. We installed the kit on a Mossberg 590A1, which required an adapter to complete the conversion. This adapter is required for all 590s and those Mossbergs with nine-shot magazine tubes. Installa-

tion, while quite simple, required reaming the receiver with a supplied tool. Although Knoxx literature indicated that permanent modifications would not be required, using the supplied reaming tool required removing some material.

The Knoxx Sidewinder conversion kit is available with a 10-round drum magazine or a five-round box magazine. Both accept 23/4" and 3" shells. Changing the drop-free magazines is accomplished by pushing the magazine release just behind the magazine well. This allows the user to quickly reload or change from one type of ammunition to another quickly and effectively.

Also supplied was a grip that quickly screwed into one of four points on

the fore-end. Use of the kit did not require this grip, but it definitely increased cycling speed.

On the range, shot

recovery was aided by the Knoxx recoil-reducing system. Even with the stock folded, shooting buckshot and slugs proved to be easy. Squeezing the wire frame while rotating the stock over the top of the receiver stows it out of the way for storage or use in tight spaces. With the stock collapsed, our Mossberg measured just 29".

Measured just 29".

After installation, our
Knoxx Industries Sidewinder conversion kit
and COPstock folder
performed flawlessly. We
were pleasantly surprised
to discover the COPstock
did reduce felt recoil.
During the course of our

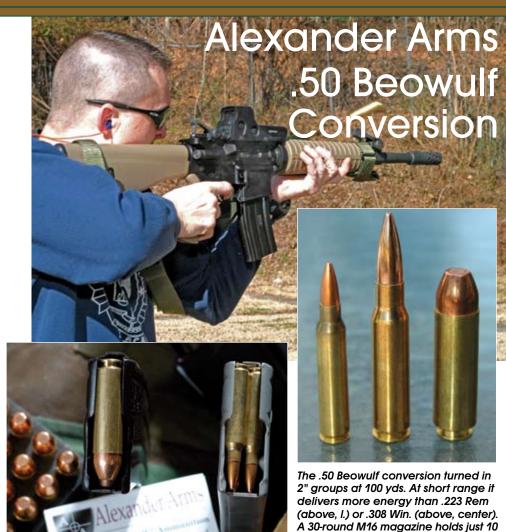
evaluation we removed the vertical fore-grip. Although useful, it wasn't missed after it was removed.

The Knoxx COPstock folder is currently available for the Mossberg

500, 590, Maverick 88
and 835, Remington
870, as well as
Winchester
1300-series
shotguns. By
the end of the
year, Knoxx will
release a snap-on
rubber buttpad that is
claimed to reduce any
remaining felt recoil
by more than half.

The Knoxx Sidewinder conversion kit is currently available for Mossberg 500s, 590s, the Cruiser, the Persuader and Maverick 88s. Knoxx also recently released a conversion kit for Remington 870 series shotguns. Knoxx indicated that the conversion kit would require a permanent modification to the Remington 870. Also in the works is a 10-shot detachable box magazine. The Knoxx Sidewinder conversion and COPstock enhance the performance and ergonomics of any of these reasonably priced and widely available shotguns.

Contact: Knoxx Industries, LLC (Dept. AR), P.O. Box 2848, Paso Robles, CA, 93447; (877) GO-KNOXX; www.knoxx.com.Suggested retail pricing for the Sidewinder conversion kit with drum magazine is \$249.95. The kit with box magazine is \$199.95 and the COPstock folder is \$109.95. Available options include the Mossberg 590-series adapter priced at \$19.95; additional 10round drums are \$99.95 and additional five-round magazines are \$49.95.



he .50 Beowulf is the brainchild of Bill Alexander, a Briton whose AR-15-style rifles and upper conversions are manufactured at Radford Army Arsenal in

leased facilities. The lower chamber pressure of the .50 Beowulf results in a bolt velocity virtually identical to that of a rifle firing a .223 Rem. Recoil forces are only slightly higher. Cases are made by Starline and are essentially elongated .50 Action Express (.50 AE) cases with heads rebated to accommodate the smaller AR bolt. The case tapers from 0.539" at the head to 0.526' at the mouth. Rim diameter is 0.443". Overall case length is 1.655".

Alexander Arms offers loaded ammunition, including 300-gr. Speer Gold Dot, 325-gr. and 334-gr. hollow points and FMJs. It also has dies, components and reloading data for the .50 Beowulf.

At short-range, the heavy, .50-cal. bullet delivers greater energy than the .223 Rem. or .308 Win., but the .50 Beowulf is not a long-range round. By the time it has reached 300 yds., it has dropped more than 50". Its forte is closerange work at 200 yds. or less. The drop at 200 yds. is some 15", assuming a 100-vd. zero. At 100 vds. or less, the .50 Beowulf overshadows smaller calibers, although its ballistic performance comes at the price of reduced magazine capacity. It feeds from standard M16 magazines. Thirty-round AR magazines hold 10 .50 Beowulf cartridges, 20-round magazines hold seven and 10-round magazines hold only four.

.50 Beowulf rounds (I.).

All that is necessary to convert an AR-style rifle to .50 Beowulf is a .50 Beowulf upper receiver. Uppers are available from Cabela's or direct from Alexander Arms, which also manufactures complete .50 Beowulf rifles and carbines.

The .50 Beowulf carbine is made to military standard, with 7075T6 forged aluminum upper and lower receiver halves. The ejection port is enlarged to accommodate the fat .50

Beowulf cases, so it has no dust cover. The overall fit and finish on the examples received was excellent.

The .50 Beowulf comes without sights, so we installed an EoTech Holographic Weapon Sight (HWS). We found the .50 Beowulf upper receiver to be a perfect fit for lower receivers from ArmaLite, Bushmaster, Colt, DPMS and DSA. At the range. the .50 Beowulf delivered good accuracy during our function-firing at 50 yds. Recoil was about equivalent to a 20-ga. shotgun and was easily manageable. Accuracy was good; and while the .50 Beowulf is not a match rifle, it is not intended to be. It is a firearm for relatively short-range work and, as such, it excels, The .50 Beowulf functioned perfectly with 20- and 30round polymer, steel and aluminum magazines. We fitted our test gun with the optional muzzle brake, and recoil was not an issue.

In sum, the .50 Beowulf offers owners of AR-type rifles and carbines the option to quickly change from .223 Rem. to a larger caliber rifle or carbine that can be created by simply adding an upper receiver to an existing lower. The .50 Beowulf should prove useful for hunting bear, wild boar, deer or other game.

Manufacturer: Alexander Arms, LLC (Dept. AR), P.O. Box 1, Radford Army Arsenal, Radford, VA 24143; (540) 639-8356; www.alexanderarms.com. Available From: Cabela's (Dept. AR), One Cabela Drive, Sidney, NE 69160; www.cabelas.com; (800) 237-4444. Alexander Arms .50 Beowulf Entry Kit (upper reciever and one magazine) \$680.

AMERICAN RIFLEMAN