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MAY 2022

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**ALLTERRA**

MOUNTAIN SHADOW CARBON .308

SHOOTINGTIMES.COM \$5.99 USA // \$6.99 CAN







Founded by Andrew Foster in 2015 and located in Boise, Idaho, AllTerra Arms spent two years redesigning and patenting its rifle-manufacturing process. The company uses high-precision CNC milling machines and lathes, the finest materials available, and meticulous quality control.





# ACCURACY GUARANTEED

ALLTERRA'S MOUNTAIN SHADOW CARBON RIFLE IN  
.308 WINCHESTER WEIGHS 6 POUNDS AND COMES WITH  
A SUB-0.25-INCH THREE-SHOT ACCURACY GUARANTEE.

BY JOEL J. HUTCHCROFT

**I**T'S NOT OFTEN THAT I HAVE THE OPPORTUNITY to shoot a rifle that is capable of producing 0.25-inch groups at 100 yards. First, not many rifles are built to that exacting standard. Second, I'm not that skilled of a rifleman. I've always said I am a mediocre shooter at best, and I will stick to that. However, I am excited to report that with the AllTerra Arms Mountain Shadow Carbon rifle reviewed here I actually did shoot some three-shot groups that came as close to 0.25 inch as I have ever achieved. And if I can do that, then it's a pretty good bet you can, too.

## The Guarantee

AllTerra's mission is to produce rifles that bridge the gap between hunting rifles and benchrest rifles, by creating reliable,

lightweight guns that shoot like heavy, benchrest rifles. The engineers spent two years developing an innovative way of building bolt-action rifles, and they are so confident in their achievements that the company guarantees its rifles will shoot sub-0.5-inch three-shot groups with premium factory ammunition, will shoot sub-0.25-inch three-shot groups with AllTerra custom handloaded ammunition, will have no significant change in accuracy when shooting different bullet weights, and will cycle smoothly in all conditions. AllTerra allows a customer to shoot his rifle for 90 days, and if it fails to perform up to expectations, the company will replace the rifle or refund the customer's money.



ACCURACY GUARANTEED

The AllTerra Difference

AllTerra rifles are custom-made rifles in every way. Currently, there are five models, including the Mountain Shadow Carbon, the Mountain Shadow Steel, the AllTerra Carbon, the AllTerra Steel, and the tactical Arid 1760. All feature AllTerra’s patented receiver, which I’ll get to in a moment. I’m not going to detail each model, as AllTerra’s website does a better job of that than I can do. However, I will go over the Mountain Shadow Carbon rifle that *Shooting Times* received. Keep in mind, the customer chooses the features he wants on his rifle from a bunch of options offered by AllTerra. Several “standard” features are offered, but there are lots of options, too.

As with all AllTerra receivers, the Mountain Shadow Carbon’s receiver begins as an eight-pound, pre-hardened, 416 stainless-steel round bar with a 2-inch diameter. That allows the recoil lug to be integrated right into the receiver. When the finished receiver is machined, it weighs less than a pound.

Whereas other gunmakers drill to remove the center mass from the receiver and broach the raceways, AllTerra only drills a small pilot hole through the center of the receiver, then cuts away the metal to the concentric center of the receiver and bolt lug with an EDM machine. The company states this is done with 0.0005-inch accuracy and results in a “dead-straight” receiver for “supreme” accuracy. It has trademarked the process as true “Bolt-to-Bore Alignment.” Note, our rifle’s receiver is finished in Graphite Cerakote, but other colors are offered.

Speaking of the bolt, the AllTerra bolt is made from a one-piece steel billet, requiring innovative engineering and precision machining. The result is a perfectly aligned bolt that locks to benchrest tightness but never binds. The design keeps the firing pin exactly aligned to ensure a consistent center strike on the cartridge primer every time. The cases of the rounds I fired proved that.

In order to keep locktime as short as possible, which can affect accuracy in the advent of a shooter flinching or moving in that split



All AllTerra rifles feature the company’s innovative receiver that undergoes precision engineering and careful manufacturing. It starts as an 8-pound one-piece stainless-steel billet and ends up weighing less than a pound.

second, AllTerra builds a faster firing pin, starting with the spring. The AllTerra spring doesn’t snake; it floats inside a “dead-center” pilot hole at all times.

Furthermore, AllTerra solved the bolt-binding problem of benchrest rifles by machining relaxed tolerances between the bolt and the receiver during cycling. This allows debris to be sent out of the way so it can’t jam the gun. Also, the entire bolt body is coated with Nickel Boron for durability and “slippery” cycling.

In addition, the Mountain Shadow Carbon’s fluted bolt features patented conical lugs that engage and lock into a patented elliptical raceway, which are “self-cleaning” with every cycle. They’ve patented the process and

MOUNTAIN SHADOW CARBON	
MANUFACTURER	AllTerra Arms allterraarms.com
TYPE	Bolt-action repeater
CALIBER	.308 Winchester
MAGAZINE CAPACITY	5 rounds
BARREL	20 in.
OVERALL LENGTH	41.0 in.
WEIGHT, EMPTY	6.0 lbs.
STOCK	AllTerra Carbon Hunter
LENGTH OF PULL	13.5 in.
FINISH	Cerakote receiver, carbon-fiber-wrapped barrel, Arctic camo stock
SIGHTS	None; receiver is drilled and tapped for scope mounts
TRIGGER	TriggerTech Primary, 2.38-lb. pull (as tested)
SAFETY	Two position
MSRP	\$6,240 (as tested)



## ACCURACY GUARANTEED



The rifle's bolt is also made from a billet. Combined with the receiver, AllTerra's process guarantees consistent "Bolt to Bore Alignment" and "No-Fail Cycling."



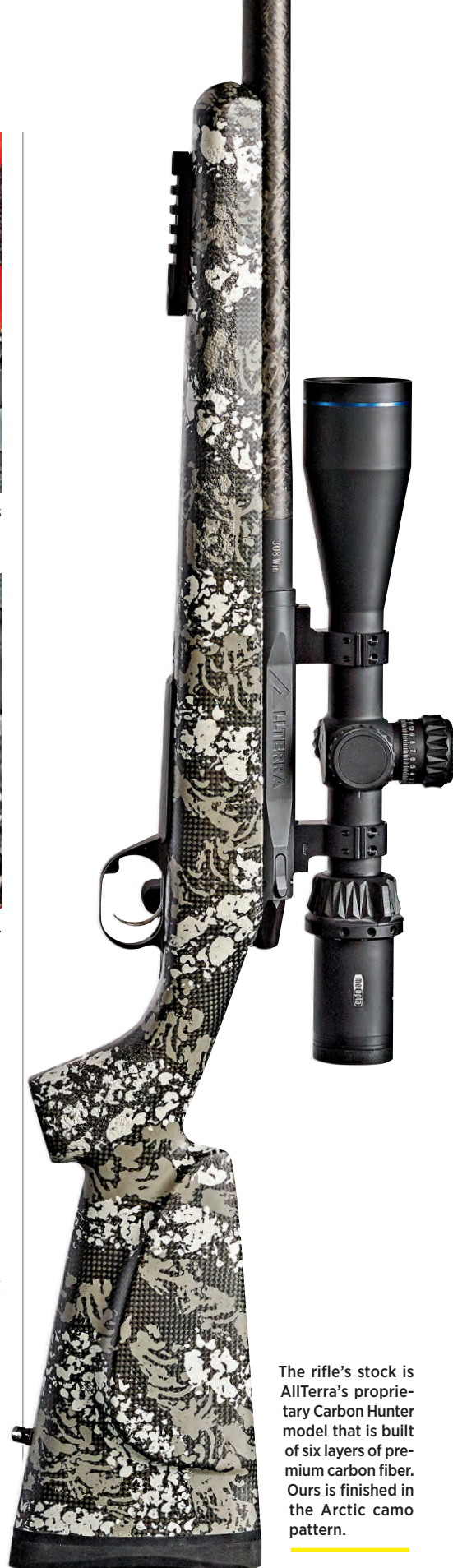
The Mountain Shadow Carbon rifle came with a TriggerTech Primary trigger that broke incredibly consistently at a pull weight of 2.38 pounds.

trademarked it as "No-Fail Cycling." The bolt uses dual ejectors and a mini M16 extractor, and the bolt handle is skeletonized.

Another patented element of the AllTerra rifle is the "Dual-Lock Barrel Seat" (again trademarked). A lot of rifle barrels attach to their receivers using just 16-pitch threads. AllTerra Arms pioneered and patented an alignment system that combines 20-pitch threads with two precisely machined seating rings machined fore and aft of the threads. The rings "nest" into two seating sleeves machined into the receiver, and together they form the solid union between the receiver and barrel. AllTerra says this creates a "significantly reduced and balanced harmonic pattern with every shot."

AllTerra forms the barrel's chamber first with a drill followed by a boring bar that cuts concentric to the bore, then the chamber is reamed, with 0.0001 inch of concentric and axial tolerance to the bore, ensuring the receiver, bolt, and chamber are precisely aligned. As I said, our Mountain Shadow Carbon is chambered for .308 Winchester, and it has a 1:9.4 twist rate. This model also is offered in 6mm Creedmoor, 6.5 Creedmoor, 6.5 PRC, 6.5 SS, 6.5 SST, 7mm Rem. Mag., 7 SS, 7mm SAUM, 28 Nosler, .300 PRC, 33 Nosler, and others upon request.

The match-grade barrel's bore is both cut-rifled and button-pulled and then lapped to "virtual perfection." Our rifle has a 20-inch carbon-fiber barrel (you can choose 22 inches if you prefer) with AllTerra's ultralight directional muzzle



The rifle's stock is AllTerra's proprietary Carbon Hunter model that is built of six layers of premium carbon fiber. Ours is finished in the Arctic camo pattern.

ACCURACY GUARANTEED

brake that has four chevron-shaped ports on each side. The company says a carbon-fiber barrel such as ours gets all that same match-grade innovation wrapped inside a lightweight shroud. And every AllTerra Arms rifle is fine-tuned at the bore crown for balanced ballistics.

About the riflestock, AllTerra Arms exercises 100 percent control over stock design, materials, and craftsmanship. It uses six full layers of premium carbon fiber for strength, light weight, and vibration dampening. And every aspect of the stock's geometry is designed to put the shooter's body and eye in harmonious alignment with the bore line, to manage recoil, and to minimize recoil jump and torque. Features include negative cheek comb, above centerline heel, tilted palmswells, optimal grip-to-trigger reach, subtle beavertail fore-end, molded-in texturing, and optional molded-in camo patterns. Our rifle wears AllTerra's proprietary Carbon Hunter stock in Arctic camo. It is pillar bedded and free-floated and has CNC-machined floorplate bottom metal and an extended-length internal box magazine for VLD bullets. Other colors and camo patterns are offered.

Our Mountain Shadow Carbon came with a TriggerTech Primary trigger that averaged exactly 2 pounds, 6 ounces of pull. I measured our rifle's trigger pull with my RCBS trigger pull scale, and there was zero variance over a series of five measurements. Other TriggerTech triggers are optional.

After all the careful engineering and manufacturing, AllTerra tests the rifle to weed out any component or tolerance variations that don't measure up and validates its performance. In fact, our sample came with a very impressive test target.



As shown here, the AllTerra Mountain Shadow Carbon in .308 Winchester retails for \$6,240, including the scope rings but not the scope. The very cool fitted hard case is an extra \$325.

The Proof

As you can see from the photo of the test target that came with the rifle, the Mountain Shadow Carbon in .308 Win. produced a 0.264-inch three-shot group with Federal Premium ammunition. That's well under the company's sub-0.5-inch guarantee with premium factory ammunition. The folks at AllTerra used a Schmidt & Bender scope for that group, and it is certainly impressive. I sent them a Meopta riflescope to install on the rifle, and when they sent the rifle to me, they included two boxes of the Federal ammunition they had used for the test target. I used it and four other .308 factory loads for my shooting session.

Before I give a recap of my results (which are listed in the accompanying chart), here are the details of the scope. It's Meopta's Optika6 scope with a variable power range of 4.5-27X with the reticle located in the second focal plane. My scope has the BDC reticle, but you can have a BDC 3, 4D Dichro, 4C, 4K, Z Plex 1, .223 RD, 6.5cm RD, or .308 RD reticle if you prefer. You also can have a first focal plane reticle if that's your preference. The Optika6 4.5-27X has a 30mm main tube and a 50mm objective lens. It is 14.2 inches long and weighs 31.1 ounces. The eye relief is 3.94 inches, and the field of view is 21.9 to 3.6 feet at 100 yards depending on the magnification setting. It has 88 inches of windage and elevation adjustment at 100 yards, and the turret

ALLTERRA MOUNTAIN SHADOW CARBON ACCURACY & VELOCITY					
AMMUNITION	VEL. (FPS)	E.S. (FPS)	S.D. (FPS)	ENERGY (FT-LBS)	100-YD. ACC. (IN.)
.308 Win., 20-in. Barrel					
HSM Low Recoil 150-gr. Tipped	2185	17	9	1590	0.42
HSM 165-gr. GameKing SBT	2510	30	11	2308	0.44
SIG SAUER Elite Hunter 165-gr. CET	2753	29	13	2777	0.35
Federal Gold Medal 168-gr. MatchKing	2630	47	18	2580	0.32
TrueVelocity 168-gr. HPBT	2743	11	6	2807	0.47
NOTES: Accuracy is the average of three, three-shot groups fired from a sandbag benchrest. Velocity is the average of five rounds measured 12 feet from the gun's muzzle.					

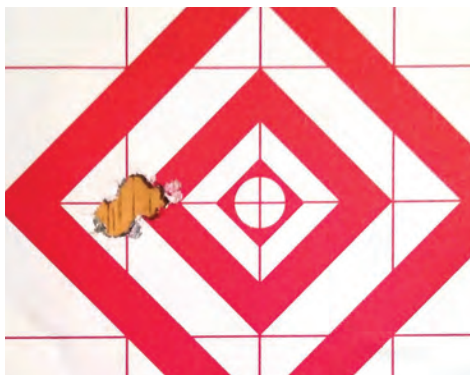


adjustments are 0.25 MOA at 100 yards per click. Parallax is adjustable from 25 yards to infinity via the side adjustment knob. The scope features MeoBright 5501 and MeoShield lens coatings, and the retail price is \$799.99.

Now for my shooting results. With me behind the trigger, three shots of the Federal Premium 168-grain MatchKing factory ammunition averaged 0.32 inch at 100 yards. That's the average of three, three-shot groups.

Like I said at the beginning, I am a mediocre shooter, but even I was able to achieve AllTerra's promise of the Mountain Shadow Carbon shooting sub-half-inch groups with premium ammunition.

The other four loads averaged 0.35, 0.42, 0.44, and 0.47 inch. Overall average accuracy for all five loads was 0.40 inch. In deference to AllTerra's guarantee, I fired three-shot groups instead of our standard five-shot group protocol.



A test target also came with the rifle, and it shows a three-shot group at 100 yards with Federal Premium 168-grain MatchKing factory ammo that measured a very impressive 0.264 inch.



This 0.317-inch three-shot group was fired by the author with the same Federal factory ammunition, demonstrating that the AllTerra Mountain Shadow Carbon meets and surpasses the company's accuracy guarantee, even in the hands of a mediocre shooter.

As with all things related to firearms, you get what you pay for. The AllTerra Mountain Shadow Carbon rifle is expensive. As shown here, the rifle's price tag is \$6,240, including the scope rings but not the scope. The hard case shown in some of our photographs, which is cut out to fit the rifle and is very cool indeed, is an extra \$325. For that kind of money, a mediocre shooter like myself really can shoot like a benchrest champion with a rifle that's lightweight and ready to take afield.

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