



## AllTerra Carbon Rifle: Accuracy And A Whole Lot More

BY STEVE COMUS

**W**ant to be confident that future shots on game will hit the mark? Consider the AllTerra Arms Carbon rifle.

This is one serious hunting rifle by any and all standards. Precision is what some folks think AllTerra Arms are all about. In fact, they are that and a whole lot more. The company was founded by owner Andrew Foster in 2015, is located in Boise, Idaho and is making a name for itself among the most serious hunters.

As trends in hunting rifles swing more heavily toward longer range and higher performance, there are increasingly more new models on the market intended to address those requirements.

The folks at AllTerra Arms did their homework, focused on every little detail and came up with a product that combines both accuracy and mechanical performance in ways not imagined even a few years ago.

Although these rifles are designed and built for long-range work, I'll focus on why it is that hair-splitting accuracy, smooth and flawless function

and ease of handling are important at any hunting shot distance. Not all shots on game are long, but all are critically important.

Shooting effective hunting shots every time, over time and around the world hinges on repeatable performance and on the confidence it engenders.

A hunting career is not a single hunt but is a journey in the wilds that spans the globe and decades of dedication. When the hunter is totally confident in the rifle and the ammo it shoots, shots on game are both easier and more rewarding. After all, the ideal is to dispatch the game animal quickly and cleanly, regardless the situation.

Most kill zones on big game animals are several inches in diameter at least, so what's the big deal about extreme accuracy? Generally, there are other factors on hunts, especially mountain hunts. Like wind, less-than-solid hold, rain or snow that can turn a half-inch group on the bench into something much larger on the actual hunt.

Accuracy matters. It matters a lot, and the farther away the animal is, the more it matters.

All of the rangefinders, wind meters or other techy aids in the world don't mean squat if the rifle doesn't shoot straight or if the ammo fails. For dangerous game, the rifle also has to go bang every single time and it must cycle and function flawlessly.

Yet, it would be unfair to talk about AllTerra Arms rifles only for their accuracy. It is the way they get there that is the real story.

How accurate is accurate? Sub-half-inch, three-shot groups at 100 yards with premium factory ammo or quarter or sub-quarter-inch groups with AllTerra Arms handloads sounds like accuracy to me – that's what AllTerra Arms claims and they deliver it.

Perhaps it is best to begin with what the AllTerra Arms rifles are not. They are not high-performance rifles cobbled together with an

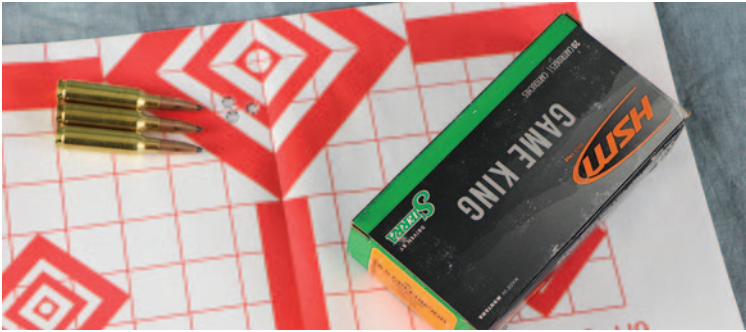
*continued on page 98*







Sub-half-inch group fired by author at 100 yards with AllTerra Arms proprietary load.



Group fired at 100 yards with HSM ammo.



The AllTerra rifle rig has all the right stuff for hard hunts.



Above: Nightforce scope worked great on AllTerra rifle.

Three-shot, 100-yard group shot with Federal Ammunition load.



amalgam of aftermarket parts. They are AllTerra Arms from the ground, up. Which means they do not get in their own way.

Sometimes a rifle has most of the right stuff but is lacking in one or more areas. This means the performance of the stuff that is right is inhibited by the lack of performance of the lesser parts. AllTerra Arms has designed and executed around such a scenario. Every little thing works, which means that as an entire unit, everything works. It is more than simply the sum of its parts.

AllTerra Arms explains how their actions are made: “An AllTerra Arms receiver begins as an eight-pound pre-hardened 416 stainless steel round bar with a two-inch diameter. This allows us to integrate the recoil lug right into the receiver. When the finished work of art is machined, it weighs-in at less than a pound,” AllTerra reported.

They drill a small pilot hole through the center of the receiver, then use an EDM machine with an electrified wire that cuts the metal to the concentric center of the receiver and bolt lug with .0005-inch accuracy. The result: A receiver built dead-straight for supreme accuracy.

After the EDM process, AllTerra Arms machining technology sculpts the receiver interior to consistent .0005-inch tolerances, ensuring true Bolt-to-Bore Alignment™ and No-Fail Cycling™.

The AllTerra Arms bolt is made dead-straight from a one-piece steel billet. Precision machining creates a perfectly aligned bolt that locks to bench-rest tightness while also eliminating bolt binding. The firing pin is exactly aligned to ensure a consistent, powerful center strike on the cartridge primer every time.

“We build smarter, faster firing pins. It starts with the spring. You want it ‘floating’ inside the bolt center, instead of ‘snaking’ under tension and rubbing against the inner surfaces. An AllTerra Arms spring doesn’t snake. This ultimately pushes the fluted firing pin ferrule faster and provides superior cold-weather performance,” AllTerra Arms reported. “We coat the entire bolt body with nickel boron for added durability and more ‘slippery’ cycling.”

Most rifle barrels attach to their receivers using 16 pitch threads. In addition to more generous 20 pitch threads, AllTerra Arms barrels have two precisely machined tenons – machined fore and aft of the threads. The tenons “nest” into receiver mortises, and together they form the solid union between the receiver and barrel – creating a significantly reduced and balanced harmonic pattern with every shot. It’s invisible technology when looking at the finished rifle.

To form a rifle’s chamber, AllTerra Arms begins the chambering process with a drill followed by a boring bar that always cuts concentric to the bore. It removes most of the steel for the chambering, but not all of it.



Author takes the AllTerra Carbon rifle for a ride on the range.

Then they go in with a chamber reamer to finish the job for the exact bullet casing geometry, with .0001-inch of concentric and axial tolerance to the bore.

AllTerra Arms uses match-grade barrels, both cut rifled and button pulled, that are then lapped.

Even if the whole rifle is aligned, the final variable lies at the bore crown. If not perfectly perpendicular to the bore, 360-degrees, it will impart more pressure on one edge of the bullet than the other as the bullet exits the barrel, resulting in unwanted bullet yaw.

“At AllTerra Arms, we demand 100 percent control over the design, materials and craftsmanship of every stock. We build with six full layers of premium carbon fiber for strength, light weight and vibration dampening. Every aspect of the stock’s geometry is designed to put the shooter’s body and eye in harmonious alignment with the bore line. It also manages recoil beautifully by routing the energy straight back,” AllTerra Arms reported.

Even with a variety of cartridges and bullet weights, accuracy remains consistent, giving hunters and shooters the freedom to feed the rifle a mixed menu of munitions.

AllTerra Arms rigorously tests the entire shooting system to weed out any component or tolerance variations that don’t measure up.

“We break in every rifle and validate it to perform to our ‘as-close-as-you-can-get-to-perfect’ benchmarks,” AllTerra Arms explained. “Anything that doesn’t meet our rigorous standards is changed out and tested again until it’s right.”

That’s all very interesting, so we took an AllTerra Arms Carbon model in 6.5mm Creedmoor for a ride.

Mounted atop the AllTerra Arms rifle was a Nightforce NX8 2.5-50 F1 scope. Ammo included: Federal Premium Gold Medal Berger 130-grain Hybrid Open Tip Match, HSM 140-grain Sierra Gameking, Swift

140-grain A-Frame Bonded, Norma Match 130-grain, SIG Elite Hunter Tipped 130-grain and SIG Elite 120-grain all copper, and some proprietary handloads from AllTerra Arms.

Best three-shot groups at 100 yards ranged from 0.260-inch with the proprietary handloads and 0.266-inch with the Federal load to 0.474-inch with the Swift A-Frame load. It is comforting when a hunting rifle will shoot just about anything you feed it into less than a half-inch at 100 yards. Builds confidence.

Even though my weathered eyes couldn’t quite get to a quarter-inch groups, my repeated .26s with two different kinds of ammo tells me that the test target supplied with the rifle at under a quarter inch is an accurate reflection of this rifle’s inherent accuracy.

Just for kicks and giggles, I waited for a really blustery, windy day with steady 20 to 25 mph winds and gusts to 30 and 35. It was windy enough that the effects of the wind on the rifle even on sandbags at the bench were more than my heartbeat.

Such conditions are not uncommon on hunts and it was comforting to see that the groups at 100 yards measured, center-to-center, 0.556-inch, 0.636 and 0.698, which logically reflects the effects of the wind on both shooter and bullets.

Which brings up one of the things I think about when dealing with an extraordinarily accurate rifle. Such rifles are so accurate that they measure the ability of the shooter and the quality of the ammo more than their own inherent accuracy.

So, I consider what are the worst groups that are shot. This is because, when considering hit probability at distance, you can really count only on the worst as being a real possibility.

*continued on page 123*



## AllTerra

continued from page 99



Muzzle brake on AllTerra rifle works great, even for 6.5 Creedmoor.

Okay, the worst group that was shot during the various range sessions was under  $\frac{3}{4}$ -inch and all were amazingly concentric. There were no fliers.

What this tells me is that under all conditions, I can count on that rifle delivering at least that level of accuracy in the field. That makes it a totally credible rig at any reasonable hunting shot distance. Which, again, is what it is all about – well-placed hit that puts the animal down quickly.

A quick look at the rifle tells that it features a carbon-wrapped barrel. An effective muzzle brake at the business end of the barrel is a nice touch.

Even though this rifle is chambered for the mild 6.5mm Creedmoor cartridge, the muzzle brake serves two really important functions. First, it tames even the Creedmoor recoil enough to watch the animal's reaction to the impact of the bullet.

Secondly, muzzle brakes provide what I coined years ago as "audioflage," meaning that they help camouflage the report of the shot in a way that it is harder for the animal to know exactly where the shot came from.

This isn't so much a factor when bullet placement is perfect, but for missed shots, etc., it allows the hunter to follow-up quickly with an effective kill shot as the animal stands there, wondering where the crack of the bullet came from.

This particular rifle sports a 24-inch barrel with a rifling twist of one turn in 7.5 inches and a muzzle brake. Overall length, including muzzle brake, is 45  $\frac{1}{2}$  inches. Nominal weight is 7  $\frac{1}{2}$  pounds and with the scope mounted, the rifle weighs 8.7 pounds.

The AllTerra Arms rifle cycles deliciously – smoothly and decisively. No wobble, no drag, no nothing but slick. And the trigger pull is outstanding. The sear broke cleanly at two pounds pull, maybe just a tiny tad more, with no discernable over travel. These are the kinds of things one expects from a premium hunting rifle, and the AllTerra Arms rifle delivers in spades.

The bolt handle deserves mention. First, it is long enough to afford effortless lift and is ergonomically correct. These kinds of seemingly little things actually end up being big in the overall picture when it comes to this kind of rifle.

continued on page 124

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*continued from page 101*

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AllTerra rifle bolt features double plunger ejectors — nice touch.

## AllTerra

*continued from page 123*

Stock finish is Damascus Desert (also available in basic black, Damascus Ice, Damascus Zombie, Damascus Winter, Damascus Chill, Everglade and Sahara).

The Cerakote metal finish looks nice and makes it impervious to a lot of the environmental factors on hunts. The receiver features an extended length magazine for VLD bullets and has a lengthened ejection port.

The bolt features dual ejectors for improved ejection angle and Mini M16 extractor that is nickel boron coated. The stock features pillar bedding and a free-float barrel channel.

In use, this is a thoroughbred hunting rifle, ready for whatever the world throws at it. It carries nicely and the stock design is such that it is easy to get into the rifle from any of the normal field positions.

And, consider that such a rifle is a form of hunt insurance. If the rifle fails to perform for any reason at the moment of truth on a hunt, all bets are off and the hunt is a bust. Hunters may not be able to control everything on a hunt, but there are things that can be controlled, and one of them is the rifle.

The bottom line is that when performance and reliability are combined in a single rifle, all is well with the world. 🐾

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| 6.5 Creedmoor        | Short Magnum       |
| 6.5x284 Norma        | .300 RUM           |
| 6.5 PRC              | .30 Nosler         |
| 6.5 SST              | .340 Weatherby     |
|                      | Magnum             |
| 6.5x47 Lapua         | .33 Nosler         |
| .280 Ackley Improved | .338 Winchester    |
| 7MM Remington        | Magnum             |
| Magnum               | .338 SS            |
| 7MM SAUM             | .338 Edge          |
| 7 SS                 |                    |
| .28 Nosler           |                    |
| .308 Winchester      |                    |

