

TRIALS AND TRIBULATIONS OF MAKING THE LONG SHOT

By Members Elmer Laitala And Ken Heupel

In 1994 my friend Jack Quisno took me on my very first prairie dog shoot on his Montana ranch. I always had enjoyed hunting and shooting and found this to be an enjoyable alternative from sitting in a duck blind or deer stand at 5:00 a.m. I decided right then that I wanted to learn more about prairie dog shooting.

The next season, my shooting partner Ken Heupel and I started shooting prairie dogs in earnest. Like most beginners we started out with stock, factory .22 centerfire rifles like the .223 and the .22-250. We shot at ranges from 100 to 400 yards. Without a doubt, it was the most fun we had with centerfire rifles in our whole life — at least up until that time!

We learned almost immediately that most varmint hunting rifles could shoot circles around a standard deer rifle and we developed a passion for accuracy and ballistics. During the next few years our interest in prairie dog shooting increased and we learned more about interior and exterior ballistics. In 1996 I purchased an Oehler Research Model 43 Personal Ballistics Lab. The M43 is an amazing piece of equipment. It includes a muzzle velocity chronograph, a down-range acoustic target (for measuring ballistic coefficient [BC] out to 400 yards), a breech pressure measuring system, and an exterior ballistic program called *Ballistic Explorer*. We set up some test rifles with pressure strain gages and developed a healthy respect for pressure-versus-velocity. At about the same time, an in-depth study of exterior ballistics made us realize that centerfire rifles could reach amazing distances with high BC bullets. This sparked our interest in long-



The new rifle is built on a trued Remington Model 700 action with a Jewell trigger and uses a Krieger barrel, 34" long by 1.25" diameter. The caliber is .308 with a 9" twist to handle 240-grain Sierra MatchKing bullets, and is chambered in .300 Winchester Magnum. The aluminum bedding block supports the free-floated barrel and action. The block was fluted on all four sides to increase the surface area by 500 percent for heat dissipation. The stock is a benchrest style with a 3-inch wide fore-end and a raised cheekpiece. Elmer Laitala designed and made the adjustable mount for angling the Leupold scope.

range shooting. It was time to experiment with larger bore rifles at longer distances.

The next step in our journey to longer shooting was my purchase of a .243 Remington 700 Varmint and a .25-06 Savage BVSS. Ken also purchased a Remington Sendero .300 Winchester Magnum. These rifles were fitted with Leupold 6.5-20x scopes and the bases were shimmed so the rifles could be zeroed at 100 yards at the bottom of the vertical reticle travel. We intended to dial in the scopes for every shot. With *Bal-*

listic Explorer to give us minutes of elevation at any given distance, we have it made now, right? Wrong! We don't know how far away the objective (prairie dog) is! There goes another \$3,000 for a Leica Geovid laser rangefinder.

We headed to Montana to test our system. My version of *Ballistic Explorer* did not have the capability to create a variable distance range chart so we purchased a laptop computer to take with us. We set up on a butte with portable benches, shooting at a town 400 yards

to 1,000 yards away. Shooting south, we had a 90-degree crosswind which varied from 10 to 25 mph. Rangefinding a dog, entering the data in the laptop, and taking the shot was a slow process. We made three trips to Montana that season and we concluded that the .243 and the .25-06 did not have the wind bucking properties we needed. But the .300 Winchester Magnum with Sierra 175-grain MatchKings did. At the limit of our range (1,000 yards), in spite of the crosswinds, the .300 did a very respectable job of dropping round after round on the mound.

By now the shooting season was over for another year and we determined that bigger is better and faster is best. We decided to try the .50 BMG with sabots, shooting .30 caliber MatchKings at 5,000 fps in front of 250 grains of powder. Since I own a machine shop, Harbor Engineering, many things are possible. Shooting a .50 BMG with sabots with any degree of accuracy, however, was not one of those things. That winter we built a single-shot .50 with a 44-inch barrel and performed pressure and velocity tests. Accuracy problems soon forced us to scrap this idea and the rifle was loaded for the 750-grain Hornady A-Max instead. A monster was born.

The following spring we wanted to haul it out to Montana and test it. Our immediate problem was that we wanted to shoot at 5,000 yards but our ballistic program went out to only 2,500 yards. After much searching we found an invaluable program called *Silhouette Ballistics*, out of Taylor, Michigan, that gave us all the features we wanted at any range we wanted to shoot — all for \$38.50. Our next problem was the 450 minutes of elevation we needed to shoot that far. So, I went to my machine shop and designed and built a scope mount system that tips in 1-degree increments up to 7 degrees.

Next I bought a Leupold 8.5-25x50mm scope, had a 20- to 50-power boost installed by Premier Reticle, assembled this whole mess, and we were off.

After driving 900 miles one-way to our shooting spot, we discovered that rain the previous night left us with no dust at bullet impact. This was a bad situation but we couldn't control the weather. I had created a range chart in 25-yard increments out to 5,000 yards, so we set up our target (40-inch square day-glo orange) at 4,500 yards. I dislike recoil so I built an adjustable mount for this rifle, bolted to the truck frame with outriggers to stabilize the truck. Consequently, the truck, rifle, and bench became one integral unit. The range chart indicated we needed 431 minutes of elevation — broken down by 420 minutes on the base and 11 minutes on the scope. Ken went downrange to act as FO (forward observer). When all was ready and radio communication was established, a 750-grain A-Max was sent on its way. I waited what seemed like a long, long time without a response from Ken so I called him to find out what happened. His response was, "Nothing. It's not here yet, but I hear it coming." I missed the target, which was not a surprise, but I was right on windage and about 10 yards short. All in all, not a bad first shot! Ken said that when the dogs heard the sound of the incoming bullet they went down their hole and never came back up. I didn't blame them! By the way, as best we could time it, the bullet flight time was around 16 seconds. Several more shots were sent downrange but the damp conditions made the impact location difficult to determine and shooting was stopped.

During the trip home, we discussed the "50 project" and determined that while the .50 BMG was a promising caliber for long-range work, it had some problems. The dogs didn't care for the

sound, we didn't care for the recoil, and it was just too expensive to shoot at rodents. I needed to buy a .300 Winchester Magnum.

That winter (1999) I purchased a Savage single-shot Model 112 BVSS in .300 Winchester Magnum, developed a 175-grain Sierra MatchKing load, and began preparing for the summer shooting. By now, our attitude was that if we could see the prairie dog with the naked eye we were too close. We decided to try to make The Varmint Hunters Association 500, 1000, 1500, and 2000 Yard Clubs. Ken had some vacation conflicts and could not join me that year but I had reasonable luck and qualified for the 1000 and 1500 Yard Clubs. Accomplishing this feat made me realize that I was at the end of my scope travel with existing equipment. If I wanted to continue at greater ranges the scope was going to have to be tipped. Fixed mounts were out of the question because I also wanted to use the rifle at 100 yards for testing and load development. Consequently, that fall I built the first prototype SLR Scope Mount System. This unit tipped the scope from 0 to 200 minutes in an infinitely variable manner, measuring the angle with a precision micrometer head. The system attracted so much interest from my fellow shooters that I was encouraged to take it to market. The first ad was placed in *The VARMINT HUNTER Magazine*® in January 2000. The very first calls I received were from fellow long-distance shooters Bruce Artus and Gregg Slack, from Pueblo, Colorado. They congratulated me on developing the most innovative scope system they had ever seen for long-range shooting.

Now that we had a practical aiming system that would take us out to 3,000 yards, Ken and I both decided to try for the 2000 Yard Club. We thought that if at least one of us could accom-

plish this, it would lend credibility to the SLR system. Using out-of-the-box varmint rifles, we found this to be a very tough job. Our main problem was barrel heat and distortion. As the barrels heated up, the top would cool faster than the bottom, causing the point of impact to constantly rise. The heat was being trapped by the stock and the varmint-weight barrels would overheat in eight or nine shots. We determined that only two or three of those were quality shots. It was a frustrating experience. It took five trips to Montana, 1,000 rounds of ammo, and Ken's excellent spotting and coaching before I finally got the job done, shooting a dog at 2,110 yards. This shot also qualified me for the 2001 Varmint Hunters Association Longest Shot of the Year Award.

That was a year of evolution for us, an extremely frustrating process. Ken decided he was not going to go though another year like that. We started designing a new rifle. That winter we salvaged the 700 action from the Sendero and started over from scratch. A new 34-inch by 1.25-inch diameter .308 barrel with a 9" twist was ordered from Krieger Barrels Inc., Richfield, WI. Ken and I knew that if we were going to shoot more than a mile we needed to throw the highest BC bullet possible. We decided to use the 240-grain MatchKing. After truing the action, we chambered the barrel to .300 Winchester Magnum with a tight neck (0.337"). The action could not support the heavy barrel, so we barrel bedded it and free floated the action. The bedding block was made out of aluminum: 2" x 2.25" x 8". The block was fluted on all four sides to increase the surface area by 500 percent for heat dissipation. The stock was a benchrest style with a 3-inch wide fore-end, bottom of buttstock flat and parallel, with fore-end for tracking. If you think we were build-

ing a 1,000-yard benchrest rifle, you're right. A flat surface was machined on the fore-end of the stock, removing the barrel channel back to the action area to create an area to mount the bedding block. A draw plate was recessed into the bottom of the fore-end to attach the bedding block. Note: There was no stock material at the sides of the block or barrel because we wanted free-flow air-cooling. With the addition of a Jewell trigger set at 8 ounces, the rifle was assembled and ready for barrel break-in. A load was developed for the 240-grain MatchKing that would shoot a group in the mid .4s at 100 yards. We were ready for our next trip to Montana.

The first trip with the new gun was made in August 2002. At 8:00 a.m. we were on the range waiting for the prairie dog town to wake up, about 2,200 yards away. It was a perfect, windless day and we were eager to start testing the rifle. The first two shots were fouling shots and served to dial in the dog. After that, Ken started firing off shot after shot. The rifle never overheated and didn't distort. The air cooling system worked beautifully. And best of all, the shots landed again and again right on the mound.

By 9:30 Ken had fired about 50 rounds and finally had a kill — at 2,222 yards! By the time we had measured the distance, the mirage forced us to quit for the morning. In the late afternoon, the mirage factor started to drop and we could start shooting again. Our goal for that afternoon was to get Ken into the Varmint Hunters 1500 Yard Club. A small wind had developed. After about 60 shots, with similar rifle results as in the morning, Ken finally shot a dog at 1,546 yards. We were amazed at how well the rifle performed at those long ranges. Again and again Ken dropped the bullet right on the mound. Instead of the two or three quality shots out of nine that

we were getting before, we now were getting accuracy with every shot. It was time to head back to Minnesota with our successes under our belt.

In September, with our rifle problems solved, we headed back to Montana. We'd had a good season and decided to try for The Varmint Hunters Association Longest Shot of the Year Award. The two of us thought a shot in excess of 2,500 yards might qualify. We set up a shot for 2,800 yards and again the weather cooperated — no wind and no mirage. The dogs came out around 8:00 a.m. to feed. We focused on a dog feeding about 6 yards from the mound and Ken started shooting. Forty-five shots later a kill was confirmed at 2,784 yards, and Ken qualified for 2002's Longest Shot of the Year.

Ken and I proved that the rifle worked. One kill might be considered luck, but not three consistent kills. I can't tell you the number of people I've talked to who don't believe shooting accurately from this distance is possible. Most think we decided to try shooting long distance on a whim and the next thing we knew, we had a confirmed kill at more than 2,000 yards. Unbelievable — if that's how we did it. The fact is we have spent the last five years and more than \$15,000 systematically experimenting with ways to get bullets to go farther, faster, and with more accuracy. It was by no means an easy process, but it also was not as impossible as it might seem.

Ken and I now are in all The Varmint Hunters Association Clubs (500, 1000, 1500, and 2000 Yards) and have each made Longest Shot of the Year. So what's next for us? The 2-mile shot, of course! We'll keep you posted on our adventures. 🐾