

Cooper Firearms Of Montana

In 20 VarTarg

By Thomas C. Tabor



The author sometimes swears at the wind, but in this case he used a few more expletives than normal when the wind accounted for drifting one of the five bullets. This particular group was shot while initially fireforming the 221 Fireball brass at 100 yards. The loading was Load No. 1 with CCI BR-4 primers.

Cooper Firearms of Montana is well recognized, particularly by varmint hunters, for building some of the finest custom-made rifles found anywhere in the world. Cooper rifles are excellent examples of both workmanship and tack-driving performance, but they also are an exceptional work of art. Depending upon the customer's personal preferences their custom rifle can be built with an exhibition grade figured walnut stock, checkered in a beautiful western fleur pattern, metal engraved, and even adorned with gold inlays. All of these options are available upon request, or you may prefer a less fancy rifle, maybe equipped with a synthetic stock and a plainer overall basic



Redding Reloading Equipment makes some of the best reloading items in the business and typically maintains many of the more popular wildcat dies in their inventory.

appearance. The choice is strictly up to the customer and his or her wishes.

While Cooper's main focus historically has been on designs specifically with varmint and small bore target shooters in mind, in recent years the company has branched out to encompass a broader range of calibers that are of interest to other shooting disciplines, like big game hunting. These larger calibers include such cartridges as the 30-06, 308 Winchester, 338-06, 35 Whelen, and many more.

IN THE BEGINNING

Historically, Dan Cooper has his roots in Kimber of Oregon, where he was employed within their gun manufacturing business until 1989. Financial problems had taken their toll



The Sierra and Berger brands test bullets covered a range of weights suitable for the 20 VarTarg.

at Kimber, resulting in the layoff of many of the company's key employees, including Dan. Eventually, this situation culminated in Kimber closing their plant doors, followed by bankruptcy. I remember well those days because I was awaiting one of Kimber's new big bore rifles chambered for 505 Gibbs for a testing project for an article for *Guns Magazine*. After not hearing from the company for several weeks I called the plant to inquire as to the status of the rifle, but was quite surprised when a security guard answered the phone. He relayed the unpleasant news to me indicating he was the only person on site and the company had gone out of business and now was bankrupt.



The author conducted his range testing of the Cooper Firearms of Montana 20 VarTarg rifle on his private rifle range.



Some of the competitors of the 20 VarTarg include: 220 Swift, 22-250, 204 Ruger, (20 VarTarg), 19 Badger, and 17 Remington Fireball.

Kimber's problems spread quickly throughout the Oregon financial community and when Dan tried to secure financial backing for a new firearms manufacturing company no one in that area was willing to listen. In order to defray engineering and design expenses for his new prototype it became necessary for him to sell his motorcycle and a restored 1949 Lincoln. In hopes of finding a more favorable investment climate he headed to South Dakota, but was unsuccessful there as well. Undeterred, he then headed to Montana where a meeting was set up with the Montana Economic Development Council. Dan essentially was broke by this time. There was little money for food and none for a night stay in a motel. In a drenching downpour he took refuge for the night under a picnic table. By using a piece of plastic as a rain fly stretched over the top of the table he was able to catch a few winks of sleep prior to his morning meeting. When the sun came up he took a quick dip in the bone chilling waters of the lake, put on a tie, and headed to the meeting that would result in establishing his gun-making destiny. From this severely challenging and meager start came a deal to locate in the small town of Stevensville, Montana.

Almost before the ink had a

chance to dry on the legal documents Dan was back in his truck and headed to Oregon in hopes of convincing some of his friends and former Kimber colleagues to join him in his newly planned company. Not even knowing where Stevensville was the three, consisting of a secretary, a gunstock worker, and an assembly man, agreed to join Dan. With not much more than faith in a friend, three sight-unseen houses were rented, followed by the addresses scrawled out on tiny slips of paper and thrown into a hat. One by one each of the new employees drew to find out where they would be living.

Recently I had the pleasure of touring the Cooper facility and was pleased to find that the company was still producing extremely high quality firearms, or in Dan Cooper's own original words, "The world's finest bolt action rifles, based on the premise that they should look as good as they shoot." In some cases there had been some changes and improvements made in some of the designs; the company had expanded their lines into more models to select from. A wider range of calibers and more customer choices also were available, but high quality still was the order of the day. I took advantage of that second visit to pick up a custom Model 21 rifle chambered in the very

popular 20 VarTarg wildcat cartridge for testing and evaluation.

LIFE OF A FIREARMS MANUFACTURER

The very first rifle produced under the Cooper name became earmarked for presentation to the then governor of the state of Montana, Stan Stevens. Dan rushed it through production, cased it up, and then headed to Helena, the state capital, to make the presentation. He introduced himself to the governor's secretary who told Dan that the governor would see him, but he had come down with a case of flu. Flu or no flu, Dan hadn't come all that way to turn back, so the secretary showed him into the governor's office to make the presentation. This was just after the Desert Storm Operation had really begun to escalate. Looking back on it now I suppose everyone in the capitol building was a bit on edge at the time. I'm guessing that someone must have seen the gun case and feared that a problem was in the making, because just as Dan pulled that very first Cooper rifle from its case the state police rushed in. Before Dan knew what was happening he was forcibly pushed down on the couch and his hands handcuffed behind his back. After the initial scuffle had come to a halt the necessary explanations were made and things settled down a bit. After that the governor accepted his

gift and Dan quietly retreated back to Stevensville.

THE 20 VARTARG

The 20 VarTarg has been around only for a little more than a decade and rifles chambered for this cartridge currently are being produced only by custom rifle builders and a handful of firearms manufacturers like Cooper Firearms of Montana. Nevertheless, the popularity of the 20 VarTarg is growing dramatically, particularly with both varmint hunters and small-bore target shooters. The cartridge is the brainchild of Todd Kindler, owner of The Woodchuck Den shooters supply store in Ohio. Kindler dreamed up the cartridge in 1995 and soon thereafter it began to excel in popularity, especially with varmint hunters who were looking for an effective, small caliber cartridge capable of accurate and devastating performance.

The somewhat unusual sounding name "20 VarTarg" stands for "20 caliber diameter," "Var" for VARmint and the "Targ" for TARGet. Of course, as a wildcat cartridge, there is no factory-loaded ammunition available, but if I had to guess, I would say that this cartridge has a good chance of being picked up by the mainstream firearms manufacturers in the future. The benefits associated with such a great little cartridge are simply too good for firearms and ammunition manufacturers to continue ignoring. In the meantime, 20 VarTarg owners must make their own cases by reforming 221 Remington Fireball brass. And, even though I haven't tried it yet, I am quite confident that the new 17 Remington Fireball cases could also be substituted, and may even be a better choice of a parent case over that of the 221 Fireball.

One thing that any varmint hunter or target shooter learns to appreciate is a lack of recoil, and the 20 VarTarg has a lot going for it in that area. I will acknowledge that the felt recoil of the VarTarg is a bit more than produced by my 17 Mach IV, or the comparable



The combination of the Leupold VX-7L 4.5-18x56mm and the Cooper 20 VarTarg rifle made a great Montana ground squirrel rifle. It accounted for Tom reducing by a significant number one rancher's problem ground squirrels.

production-made 17 Fireball, but it certainly is very moderate when compared with most other varmint rounds. In many cases you actually can see your bullet strike a ground squirrel while watching through the scope.

Wildcat cartridges sometimes come with a lot of problems for the shooters. In many instances producing useable cartridge cases can be both difficult and time consuming. Multiple stage forming dies frequently are used to change the case dimensions; necks sometimes need to be turned down in order to reduce the thickness of the brass; cases have to be cut to length and fireformed before a person can ever load their cases for real. On the other hand, making cases for the 20 VarTarg is relatively easy.

MAKING 20 VARTARG CASES

Outside of your normal reloading equipment you will need only two things to form the 20 VarTarg cases: 1) a bunch of new 221 Remington Fireball brass and 2) a set of full-length reloading dies for the 20 VarTarg. For me, I personally prefer the dies made by Redding Reloading Equipment. Redding produces many different dies for wildcat and proprietary cartridges

and usually maintains an inventory of 20 VarTarg dies in stock. Redding is a bit unusual in this manner and has a reputation among shooters for both the quality of their reloading products and a willingness to work with shooters who prefer to shoot something a bit different from the norm.

Starting with new 221 Fireball cases, you simply run the brass through the Redding full-length resizing die. In this resizing step the neck is squeezed all the way down to accept the 0.204" diameter bullet, after which the cases can be immediately loaded with no need to turn down the neck thickness. But because you will be squeezing the neck of the case down $\frac{2}{100}$ inch it is important that you lube the case sufficiently to prevent the brass from becoming stuck inside the resizing die.

Once the initial forming has been completed the cases will need to be fireformed by shooting them in the 20 VarTarg chamber. In the fireforming process the shoulder will be blown out to an improved 30 degrees angle from the 23 degrees of the 221. The end result is a case that bears a striking similarity to a miniature PPC cartridge. Fireforming the cases is an important step, but

my personal experience with the 20 VarTarg has shown that there is little difference in the performance between the pre-fireformed and the post-fireformed cases. I don't think I would immediately load the pre-fireformed brass to the maximum recommended levels, but I see no need to buy special powders and load to unusually low levels just to fireform your cases. I typically load to a level near the minimum performance standards and as long as they shoot to the same point on paper I usually shoot those shells in the same manner as I do my normal loads.

THE COMPETITION – 204 RUGER

I personally believe that much of the popularity that the 20 VarTarg has experienced can be directly attributed to the interest in 20 caliber cartridges spawned by the 204 Ruger. But, in my opinion, the 20 VarTarg is a superior cartridge in some ways to the 204 Ruger. The logic behind that statement is at least partly based on the fact that the VarTarg is considerably more efficient. But because the 204 Ruger typically takes a slower burning rate powder than the 20 VarTarg, it isn't fair to draw a performance-based conclusion solely on the powder charge weight. However, when talking about shooting costs, a point worth considering is that the VarTarg likely may be using anywhere from 25 percent upwards of 50 percent less powder to send the same bullet on its way out the barrel. That certainly amounts to a significant cost saving for the shooter, but possibly even more important is the fact that a larger powder charge often means shorter barrel life.

The proponents of the 204 Ruger surely will be quick to point out that in some instances their cartridge of preference has the potential of 200 or 300 fps higher muzzle velocity. On the surface this may seem impressive, but I believe the major limiting factor in any 20 caliber cartridge is not so much based on a difference of a potential muzzle velocity of 4,000 fps as compared with 3,800

fps. In my way of thinking the chief hurdle to overcome for all small-diameter/lightweight bullets, including the 20 calibers, lies in their lack of ability to overcome the negative effects of gravity and wind. Tiny bullets simply can't resist those conditions as well as the larger, heavier projectiles. For this reason I place both the Ruger and the VarTarg in the same category of being 250-yard cartridges. Possibly when the conditions are right with no wind maybe you could stretch that out to 300 yards. I've done so, but both cartridges will pretty much be on an even keel at that distance. The few extra pounds of energy and the few extra fps produced by the 204 will not be distinguishable at that point.

THE COOPER VARTARG

Cooper Firearms of Montana first began chambering for the 20 VarTarg late in 1998 and in January of 2006 began offering it in the company's Model 38. My 20 VarTarg test rifle was a Model 21 Montana Varminter. This model was intended as an intermediate step between the company's Varminter and a Varmint Extreme rifle. It is a single-shot bolt-action design and was topped off with one of Leupold's new VX-7L 4.5-18x56mm scopes. I replaced the scope bases that came with the Cooper rifle with a set manufactured by Warne in order to accommodate the Leupold rings.

Before leaving the Cooper Firearms plant each rifle is tested in the company's tunnel range at 50 yards. Of course this environment provides the absolute perfect shooting conditions to judge a rifle's capabilities. With no wind to contend with and a perfect rest this environment differs substantially from those conditions normally encountered by hunters. Nevertheless, each rifle is shot a minimum of three times at 50 yards in order to produce a target that accurately depicts the rifle's capabilities. That target then accompanies the rifle to its new owner. My target showed the rifle, cartridge, and shooter

did a superb job on this test, producing a single ragged hole only slightly larger than a single bullet would have made.

On the other hand, my own testing took place on my private outside range, which almost always is dramatically influenced by wind. My loads consisted of Sierra and Berger bullets of various weights. The Sierra bullets were of plastic tip design and weighed 32 and 39 grains, and the Berger bullets were their typical hollow-points and weighed 30, 35, and 40 grains. In every case I could not find a load that shot poorly. Understandably, some loads shot slightly better groups than others, but after a couple of hundred rounds consisting of various powder charge weights, a couple of different types of powder, varying bullet styles and weights, and two different primers, none of the groups exceeded 1 1/2 inches at 100 yards, and that included times of gusty winds ranging from 8-10 mph. Several three-shot 100-yard groups depicted the effect of "that @#%^&* wind!" In at least one instance of little wind the three-shot hole cut in the paper was only slightly larger than a single bullet would produce.

GROUND SQUIRRELS AND THE 20 VARTARG

As was expected, the 20 VarTarg was an exceptional performer on ground squirrels. Out to 250 yards both the cartridge and rifle were deadly accurate. I did make a few kills at 300 to 350 yards, but clearly this is exceeding what I would call the ideal range of this cartridge. I did notice that the accuracy started to wane after about 35 rounds through the bore, but a few passes through the barrel with a solvent-saturated swab quickly brought the accuracy back to where it should be. This was more a problem caused by powder fouling and not related to copper buildup. In fact, after a couple of hundred rounds I detected no copper buildup inside the bore.

In many cases when the squirrels were struck by the 35-grain Berger hol-

low-point it resulted in flinging the critter into the air, sometimes to a height of 3 or 4 feet. Other times they were blown back or fell back into their holes where the scavenging ravens had a more difficult time getting at them. Hit in the mid-section, the squirrels were almost cut in half or turned inside out.

LOADING FOR THE 20 VARTARG

Reloading data frequently can be difficult to obtain when dealing with wildcat cartridges. Generally speaking, the best performance in the 20 VarTarg is achieved with fast, high-energy powders. There are several sources of reloading data on the Web and I have listed some of those below under the heading Sources of Reloading Data. A word of caution may be in order here. In several instances I detected signs of high chamber pressure starting to develop well before I'd reached what the published data had termed as "maximum loads." This may not be the case with all loads, in all rifles, or under all conditions, but I would strongly recommend that you begin your load development by starting at powder levels well below those listed as maximum and gradually work up from there in small increments.

In my estimation, the 20 VarTarg is one of those rarities in the world of wildcat cartridges that seems to outperform the vast majority of the production cartridges. Sadly, sometimes it takes a long time for manufacturers to recognize such things. A case in point is the 17 Remington Fireball. For decades wildcat shooters touted the benefits of this high performing cartridge known as the wildcat 17 Mach IV, but it took

many years before Remington finally decided to take heed and start producing the cartridge commercially. My fear is that the 20 VarTarg may suffer the same fate.

THE FUTURE FOR COOPER

It is always difficult to predict what will be in the future for any company. The economy, changes in shooter interest, new-to-the-market cartridges, and internal desires to progress are all factors in determining what direction a company will go in. I can't envision that any of Cooper's current models will be going away in the near future. I discussed with the Cooper management some of their ideas for potential future products, several of which carried a very well-pronounced and understandable label of "classified" or "top secret." I also asked about the possibility of the company making a bolt-action pistol and was told that one is scheduled to be in the offering in 2009. In all likelihood these will be built on the company's Model 21 and Model 22 and will be offered in a range of cartridges.

Right now Cooper Firearms of Montana simply cannot keep up with customer demands. Their rifles are backordered longer than the officials would like. As a means to solve the problem Dan Cooper currently is spending the vast majority of his time in Ohio setting up a second manufacturing operation. He told me that the new facility would be an addition to their present Montana plant and that there are no plans to change that arrangement in the future.

As with many companies, the owners and founders often are cred-

ited with the success of the company, but Dan told me he wanted to make it perfectly clear that he isn't the one who deserves the admiration. He told me that he doesn't build the rifles, they are built by the exceptional craftsmen who work at Cooper Firearms of Montana; the employees who produce the parts that go into the fine trigger and bolt assemblies; the women who do the excellent checkering work on the stocks and the delicate details that make the stocks appear flawless; the craftsmen who fit the barreled actions and other parts to the stock in errorless manner; the people who test each rifle before it leaves the factory; the engraver who turns a plain metal floorplate into a true work of art; and the staff people who do all the little things that make customers happy. Dan wanted it understood that these are the people he owes for making Cooper Firearms of Montana what it is today — one of the foremost producers of exceptionally accurate and fine quality rifles for the real shooters of the world.



BEST HANDLOADS

Load No. 1

Bullet: Berger 40-grain
Powder: AA 1680, 16.0 grains
Primer: CCI SR 450 or CCI BR-4

Load No. 2

Bullet: Sierra 39-grain
Powder: AA 1680, 16.0 grains
Primer: CCI BR-4

Load No. 3

Bullet: Berger 35-grain
Powder: H4198, 18.0-grains
Primer: CCI SR 450

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SOURCES OF RELOADING DATA
www.6mmbr.com/index.html
www.ramshot.com/powders/load.php
www.loaddata.com

Note: This is a membership site, but it has a lot of reloading data including the 20 VarTarg.