

*“Afterward, the only question should be where to find fur for the bullets to part, and that’s another challenge I enjoy.”*



Repeat trips to the range can eat up a lot of time, and that’s why I reload at the range. I started doing this a few years back, after I had spent days fine-tuning a new .204 Ruger. I loaded at home, tested at the range, loaded again at home ... you know the drill. In the end, the flat trajectory and pinpoint accuracy were even more than I had expected—but so was the pelt damage whenever one of those blazing .204 bullets blew out the backside of a coyote.

I was also hunting for a dwindling supply of bounty money, but shooting the .204 through the end of the season meant more fur damage than I was willing to take. My next fur check went for a .17 Rem. Fireball, even though I knew I would be running back and forth to the range again.

I decided to try reloading at the range to save time, and it turned out to be a great idea. I was able to take the essentials with me and eliminate variables systematically, one at a time.

In less than two hours I had a load that printed 1/2-inch groups at 100 yards from the Fireball. The very next day, I collected three prime coyote pelts with that combo.

I have done the same with each new gun since, including my current pet, a

## Make more time for hunting by **Reloading at the Range**

**By Garhart Stephenson**

.17 Mink. The Mink is an interesting little round, basically a shorter version of the .17 Hornet. My fur load uses only 8.4 grains of powder to propel a 25-grain Berger target HP at 3,100 feet a second. I see little if any pelt damage, and the noise level is rimfire-like, which I am sure has helped me call in a second coyote after putting one on its side, something louder cartridges generally don’t allow.

Reloading at the range is a bit different than at home. Fewer items are used, and, of course, easy portability is required. Essential items include press and dies, powder measure, priming tool, loading block, components and bore cleaning supplies. Notice I didn’t mention a powder scale. Any breeze will mess with scale readings.

A good game plan also makes a world of difference. Doing as much as possible at home helps. I resize cases, find the max

overall cartridge length, and may prime some cases before leaving home.

The press is bolted to a thick piece of hardwood lumber that is long enough to be clamped to a shooting bench with a pair of large “C” clamps. Easy on, easy off.

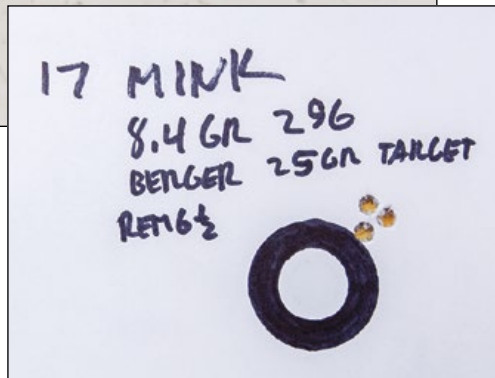
The powder measure is mounted to a 4-inch-long oak 1-by-2, which is then screwed to the board that holds the press. Measures that include a metal mount can be affixed in the same manner. However you do it, be sure there is room to cycle the measure.

Using a powder measure solves that scale-in-the-wind problem when loading powders of fine to medium coarseness that meter accurately (plus or minus .1 grain).

At home, I measure out a range of charges that I wish to try, recording the marks and numbers on the measure’s micrometer adjustment stem in a simple chart. Then, at the range, I use the chart to quickly select charges. This kind of organization is paramount.



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Not only must the equipment be easy to access, it also needs to leave enough elbowroom to not interfere with the shooting. I am right-handed and find it easier to clamp the press on the right side of the bench. The loading block for holding cases prior to bullet seating can be placed anywhere handy. Mine is just a block of wood with holes drilled an inch or so deep. A drill press with appropriate diameter bits made that easy. All it has to do is hold cases upright so they don’t tip over when full.

If I am working up a load for, say, coyotes, I first select a bullet or two with a reputation for quick kills and minimal fur damage. The ideal bullet penetrates deep without exiting.

After selecting a bullet or two, I limit

powder choice to two, again with careful research. The idea is to get results without lengthy experimentation, and so far, I have only needed to try a third powder in one rifle, and then I was working in the 500- to 600-yard range.

Generally speaking, a powder that yields the highest velocities for a given bullet weight possesses optimum qualities for that bullet/cartridge combo. It also never hurts to consult an accomplished reloader who shoots the same cartridge.

I do bring a selection of primers. Every rifle barrel has its own vibrational tendencies, which is what makes them shoot well with one load and poorly with another. Primer ignition being the first link in the chain reaction when a round is fired, I consider it an important variable.

Different brands and types of primers make a difference. The majority of rifles I have owned exhibited strong preference here.

Once I have the components selected, I do one last thing before heading to the range. I find a maximum cartridge length. Basically, I want to know how deep to seat a bullet into the case so that it just touches the rifling when chambered. Different bullet weights and profiles often need different depths. Unfortunately, some rifle magazines may not allow this. In that instance, it’s best to just find what will fit in the magazine and make that work.

There are many methods and tools for this step; entire articles have been written about it, so I will not go into detail. But a bullet comparator is one easy method, if one is available for the cartridge.

My game plan with a new rifle is to first find the maximum safe working load. Published data is only that, and individual rifles will vary. I’ve owned rifles in which indications of excessive pressure were obvious before the published maximum loads were reached others that did not show

any until after the published max was exceeded. With small capacity cartridges like the Hornet or Mink, I work up in increments of one tenth of a grain when near max. Larger rounds get half-grain increments.

Telltale signs of pressure include fired primers flattened around the edges and increased resistance when opening the bolt on bolt-action guns. A raised ring around the firing pin mark usually indicates excessive pressure, also.

First finding the max can save loading a bunch of test rounds that can’t be used.

Once pressure signs begin to show, back down to the last powder charge that did not show any and consider that absolute maximum. Bear in mind that if a load is at maximum on a cold winter day, summer heat may raise the pressure significantly.

After finding the max powder charge, I start tuning, preferably with bullets seated at the rifling and a powder charge 5-10 percent below my established maximum.

I load groups of three with each primer for test firing. I should also mention that I always use a handheld priming tool, such as the one made by LEE. This greatly speeds the process and also prevents primer damage. If two primers show really close results, I fire five-shot groups. If it is still



too close to call, I double the distance to the target. That usually reveals a winner.

With short or midrange cartridges, I start at 100 yards. Larger rounds with long, slender bullets are initially fired at 200 or 400 yards, depending on the intended purpose. Once the ideal primer is found, buy them by the case. Too many times I have suffered not having a just-right primer available when I needed it most.

After selecting the primer, it is time to move on to bullet seating depth. Many rifles shoot best with the bullet touching the lands; others do better a bit shorter. A few like bullets seated so they jam the rifling lands tightly when the bolt is closed. The bad thing about that is the bullet may stick in the lands and pull loose from the case when an unfired round is extracted. Inconvenient, at best. Anyway, try different seating depths for best accuracy.

Now is the time to try a different brand, type or weight of bullet, if desired. Once again, remember that the new bullet may require a different seating depth.

After establishing primer and bullet choice, it is time to tweak the powder charge. The previous steps lay the groundwork for fine-tuning work that should be thought of as just that, fine-tuning. Trying a new powder when the gun is not happy with the primer or bullet seldom accomplishes much.

At this point, the rifle should be shooting fairly decent, but accuracy is still likely to show improvement with a specific amount of powder. I follow the same incremental increases as I did when finding the max load. A .17 Hornet may show improvement with as little as .1 grain of change. But .5 grain increments are usually fine with a .30-06. In my experience, a .1 grain change in a large case is essentially imperceptible on the target.

One final note on powder charges: plus or minus .1 grain is generally considered sufficiently uniform even by benchrest shooters. Cutting individual kernels with a razor blade for a perfectly exact charge will gain absolutely nothing.

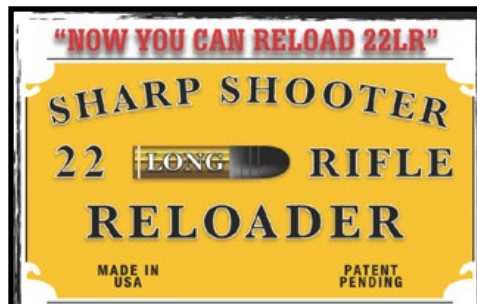
If accuracy and velocity are within expectations, I usually call it good. But if I think I can do better with a different powder, now it the time to load a few rounds and try it. Some firearms are fussy that way, others aren't.

Cleaning the barrel at the range is an often overlooked but critical stage in all of

this. As a barrel becomes fouled point of impact changes, and that invalidates test results. When doing load work I clean the bore every 20 rounds, even a benchrest-quality barrel. By clean, I mean no trace of copper whatsoever. I then fire a shot to "season the bore" before resuming the testing. The first bullet fired from a clean bore typically has a different point of impact, and the extent of that also varies from gun to gun.

Working up a great load is always rewarding. The confidence that comes from knowing the rifle is up to the task can't be understated when the moment to part hair arrives. I know of no more efficient way to get there than developing a load on site at the shooting bench. It sure beats heading home with more questions than answers.

Afterward, the only question should be where to find fur for the bullets to part, and that's another challenge I enjoy. ■



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