

An AR-15 makes a superb coyote rifle, because quick repeat shots are often needed.



Pressing Accuracy

Save money, increase accuracy, and make your AR-15 as versatile as can be—start rolling your own!

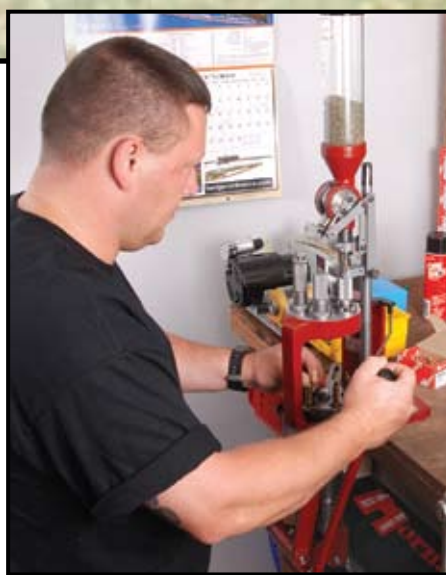
• By John Barsness •



Two useful tools for producing lots of AR hunting ammunition are the powder measure and a precise bullet-seating die like this Redding Competition die.

» A typical AR-15 in .223 Remington is a great hunting firearm for certain kinds of varmints, but also works as a light big-game rifle with the proper bullets. Only after buying a Bushmaster carbine, primarily for coyote hunting, did I discover how well it also works for prairie dog shooting and smaller big game. Handloading not only makes shooting more fun and less expensive but increases hunting versatility.

In some ways handloading for an AR-15 is like handloading for any other .223 Remington, but in some ways it isn't. First of all, in most AR-15s the cases must be full-length sized, instead of merely neck-sized as they can be in bolt action .223's. Otherwise rounds won't always chamber, and even if they chamber they might not extract, because an AR-15 doesn't have the camming power of a bolt action.



For producing lots of accurate .223 ammunition you'll have to look into setting up a complete shop with quality dies and presses.

GETTING STARTED
Some shooters even advise using "small base" full-length dies when loading for any autoloader. These size-down the base of the case more than conventional full-length dies, but in my experience in loading for quite a few autoloading rifles (not all AR-15s) most autos will function just fine with ammo loaded in standard full-length dies—as long as we perform the basic housekeeping of cleaning the chamber regularly.

The only problem with many conventional dies is neck concentricity. With most full-length dies the case is first resized when pushed up into the die, then the neck is re-expanded by being pulled back over an "expander ball" (not actually a ball but a cylinder with tapered ends). The reason for the expander ball is variations in the neck thickness of various brands of brass. Expanding



The expander ball is necessary in standard sizing dies because different brands of brass vary in neck thickness, but can cause accuracy problems.

A correctly loaded .223 Remington is perfectly adequate for pronghorns at moderate ranges.



the neck provides a consistent inside-neck diameter to properly hold the bullet.

However, when the neck is pulled over the expander ball the case isn't supported by the die, so the neck can be pulled a little out of line from the case body. When the bullet is seated it tends to be slightly crooked, and starts down the bore slightly out of line. This doesn't help accuracy, believe me, especially with short varmint-weight bullets. So our goal when making really accurate ammo for small varmints like prairie dogs is to make sure each bullet is seated reasonably straight.

The only way to tell if this is a problem is to use a "concentricity gauge." Several companies make these, including NECO, Sinclair International and RCBS, and in my experience all work well. They feature a V-block arrangement where the sized case can be rotated to measure neck "run-out" with a dial gauge. Any variation of more than about .002 inch in neck concentricity pretty much guarantees that your handloads won't shoot tiny groups, no matter how many different powders and bullets you try.

If the cases that come out of your dies show .003 inch or more neck run-out, then the dies either have to be fixed or you should buy dies designed to minimize neck run-out. I use a lot of standard Redding and RCBS full-length dies. In most instances they do make straight cases, but they can also usually be fixed by polishing the expander ball and, sometimes, by slightly bending the decapping rod that holds the ball.

The other option is to buy dies that don't use an expander ball. The most versatile is the Lee Collet Die. This presses the outside of the neck against a mandrel of the correct diameter, and works very well with a wide

variety of brass. Redding also makes their "S" die, featuring an interchangeable bushing inside the neck of the die that (like the Lee Collet Die) only sizes down the outside of the neck. The bushing can be changed to precisely match the neck thickness of whatever brand of brass you're using. Both systems work very well.

If you already own a set of .223 Remington dies, the first thing to do when load-

ing for a new AR-15 is to determine if your sizing die will size brass so that it both sizes the cases adequately and straightly. If it does, fine. If not, then you may want to invest in another kind of die.

While straight case necks help precise bullet seating, the seating die also has an effect. When loading accurate varmint ammunition we're looking for bullet run-out of no more than .003 inch, when mea-

MAX OUT YOUR RIG... Triggers, Mags & Coats!

TRIGGER TIME: Since hunting with an AR-15 involves precise aiming of single shots, rather than the full-auto fire of military use, a better trigger can really help. The triggers of most commercial AR-15's are adequate but usually not outstanding, the reason a number of aftermarket triggers are available. My own Bushmaster became much more shootable after I switched out the factory trigger with a Timney. John Vehr of Timney is an AR-15

enthusiast, the big reason he made sure Timney's extensive line included this model. It took about 15 minutes to remove the factory trigger and install the Timney—yes, I did read the instructions—and the end result was a clean, single-stage trigger pull of 2.5 pounds. This makes shooting prairie dogs at 400 yards a lot easier. (Timney Triggers; 3940 W. Clarendon Ave., Phoenix, AZ 86019, 866-484-6639, www.timneytriggers.com).



One thing that helps a hunting AR-15 is a shorter magazine, no longer than the pistol grip. This makes it easier to shoot off a bench or from prone.



These three powders meter easily, burn cleanly and are temperature resistant, perfect for hunting loads in the .223.

sured about 1/8-inch ahead of the case mouth on the same concentricity gauge used to measure neck run-out. Some seating dies don't support the case or the bullet sufficiently to guarantee that sort of precision. If you aren't finding that 99 percent of your bullets are seated straighter than .004 inch, then you have to invest in another seating die. I really like the Redding Competition die, but other companies also make fine seating dies.

POWDER POWER

The type of powder is also much more important in an AR-15 than in other rifles. Obviously we're not only trying to create accurate ammunition but large quantities

“So our goal when making really accurate ammo for small varmints like prairie dogs is to make sure each bullet is seated reasonably straight.”

For the best accuracy it really helps to use a concentricity gauge, such as the RCBS Casemaster.



also more rugged than the typical sheet-metal, 30-round magazine and all of my handloads have fed perfectly from them.

WEAR A COAT: The final touch on the Bushmaster was the installation of Ultra Bore Coat, a ceramic-based permanent coating that vastly reduces metal-fouling. UBC comes in liquid form, as microscopic ceramic particles floating in quick-drying liquid glue. After cleaning and degreasing the bore thoroughly, the UBC is "installed" by swabbing it through the barrel with a bore-mop on a cleaning rod.

After the glue dries, the rifle is fired a few times quickly. This both heats and presses the ceramic into any tiny imperfections in the bore, smoothing it so much that copper fouling is sometimes completely eliminated. I've been using it for several years, and now consider UBC essential in my varmint rifles (or any other rifle that's shot a lot). When combined with a clean-burning powder like TAC, UBC has virtually eliminated field-cleaning even during a two to three-day prairie dog shoot. And yes, it works in chrome-plated barrels, like the one on my Bushmaster. (Ultra Coatings Inc., 425 S. Kansas Ave., Olathe, KS 66061, 913-764-7707, www.ultracoatingsinc.com).



Some varmint hunters think the .223 is the perfect prairie dog round.

FAVORITE MAGS: Another change soon found necessary was a shorter magazine. The standard 30-round magazine that comes with most AR-15s is too tall for use when shooting prairie dogs over the typical rest, whether shooting prone or off a bench or pickup hood. I purchased several 20-round PMAGs from Magpul Industries Corp. (P.O. Box 17697, Boulder, CO 80308-0697, 1-877-4MAGPUL, www.magpul.com). They extend below the action just about the same distance as the pistol grip. They're

of ammunition, so small-grained powders that meter easily and accurately through a powder measure save a lot of time and hassle. The various fine-grained ball powders are an obvious choice, but until recently all also burned pretty "dirty," leaving a black residue that had to be cleaned out of the bore every 50 to 100 rounds in order to maintain accuracy. Additionally, in a typical gas-impingement AR-15 this powder fouling can eventually interfere with the rifle functioning reliably, due to powder fouling build-up in the bolt assembly and chamber.

Luckily, these days there are newer ball powders that vastly reduce powder fouling. The Ramshot line of rifle powders offered by Western Powders (P.O. Box 158

Miles City, MT 59301, 800-497-1007, www.ramshot.com) includes TAC, one of the finest .223 powders ever made. I've shot as many as 1,000 rounds of TAC-loaded .223 rounds through a barrel without cleaning. Even then cleaning wasn't really necessary, because three to four cotton patches soaked in Hoppe's No. 9 removed all traces of the slight amount of powder fouling.

In addition to TAC, some newer extruded powders from Hodgdon are very fine-grained and burn very cleanly. Hodgdon's Benchmark and Varget both meter well, and provide top accuracy in various .223 loads. (Hodgdon Powder Company,



With the right bullets the .223 is quite adequate for whitetails, but isn't legal in some states. Check your regs!

6231 Robinson, Shawnee Mission, KS 66202, 913-362-9455, www.hodgdon.com)

Another factor to consider is temperature. I live in Montana, where hunting temperatures can vary from over 100 degrees during July prairie dog shoots to well below zero during midwinter coyote hunts. A powder that doesn't create excessive pressure in hot weather and maintains muzzle velocity in super-cold weather is not just a luxury, but a necessity. This temperature resistance is one of the finer traits of TAC, Benchmark and Varget, and the reason I use all three so much in the .223.

BULLETS WITH BITE

Today we also have a marvelous selection of .224-inch diameter hunting bullets. This wasn't true just a few years ago, and one of the reasons was the rather slow rifling twists of most .224-inch barrels, usually one turn in 12 inches or sometimes even 1:14 or 1:16.

The reason for these slow twists was that until the 1980s many hunting bullets simply weren't all that well-balanced. This meant that the rifling twist had to be just enough to stabilize the bullet; otherwise the bullet would be over-stabilized, spinning so fast its imperfect balance would affect accuracy. This is why lighter bullets in many calibers had a reputation for so-so accuracy.

These days, however, even most hunting bullets are almost as well-balanced as target bullets. Consequently they'll shoot quite accurately even from a (theoretically) too-fast rifling twist. Luckily most AR-15's have a sufficiently quick twist to take advantage of this variety. My Bushmaster carbine's 1:9 twist will shoot any good varmint bullet down to 40 grains into sub-inch, 5-shot groups at 100 yards, and do the same thing with 60-plus grain bullets or the 53-grain Barnes Triple Shock X-Bullet, which is

about as long as most 60-plus grain lead-cored bullets. This means I can go prairie dog shooting in July with an explosive, plastic-tipped 40-grain bullet like the Hornady V-Max, coyote hunting in January with a quick-killing but deeper-penetrating 50-grain Nosler Ballistic Tip, or take a whitetail doe for the freezer with a 53-grain Barnes TSX or 60-grain Nosler Partition.

The only disadvantage of shooting really light bullets in a twist faster than required is that the nose of the bullet tends to ride pointing slightly up and to one side. This reduces ballistic coefficient a little, but when shoot-

PICKING YOUR POISON

When after animals bigger than coyotes, whether feral pigs or deer, we now have a selection of .224 bullets specifically designed for the task. The two I have the most experience with are the 53-grain Barnes Triple-Shock X-Bullet and 60-grain Nosler Partition. These normally shoot very well in rifling twists of 1:9 or faster, and provide consistent penetration and expansion on animals of 200 pounds or even more.

Such bullets have changed the way some hunters look at the .223 Remington. All .22 centerfires were generally considered inadequate for any sort of big-game hunting until the advent of bullets like the .224-inch TSX and Partition, but the big problem wasn't the caliber so much as the fact that all .224-inch bullets were designed to



Suggested Loads

Bullet	Powder	Charge (grains)	VELOCITY	
			16" barrel	24" barrel
40 Hornady V-Max	TAC	28.0	3518	3738
50 Nosler Ball. Tip	TAC	26.0	3157	3364
53 Barnes TSX	Benchmark	26.0	3101	3309
60 Nosler Partition	Varget	25.0	2890	3056

ing 40-grain bullets in a .223 we're looking more for explosive expansion on small rodents out to 300 or 400 yards, and the extra muzzle velocity gained from the little bullets is more important than a few points of BC. If we want to shoot beyond 400 yards (whether at rodents or coyotes) it makes more sense to use a heavier bullet anyway.

I almost always shoot plastic-tipped bullets at varmints anymore, since the sharp nose increases ballistic coefficient and enhances expansion. Even a 40-grain Hornady V-Max has a higher BC than a typical soft-point 50-grain bullet, and on impact works better as well. The plastic-tips also feed superbly in the typical AR-15.

expand rapidly and violently on small varmints. However, many hunters, including those who write the game regulations in many states, haven't accepted the fact that bullets, not bore diameter, were the problem with using .22 centerfires on big game. Consequently some states still outlaw their use on pronghorn and deer, so check the local regulations before taking your AR-15 after deer.

Today's bullets and powders make an AR-15 one of the most versatile hunting rifles available. Handloading not only takes advantage of that versatility but makes shooting cheaper, something almost all AR-15 shooters appreciate! ☺