



# AR Rifles And Optics

By Bryce M. Towsley

Anytime you buy an AR-15 rifle that you plan to use with an optical sight, it's a good idea to get the "flat top" model, which has a Picatinny rail on top of the receiver as opposed to the standard style with a carrying handle and sight. This rail allows you to mount a scope or other sighting device. With a standard model having the non-removable carrying handle, you are limited to iron sights or at the very least forced to mount an optic on top of the carrying handle. This is awkward to use and is not as strong as a rail mount.



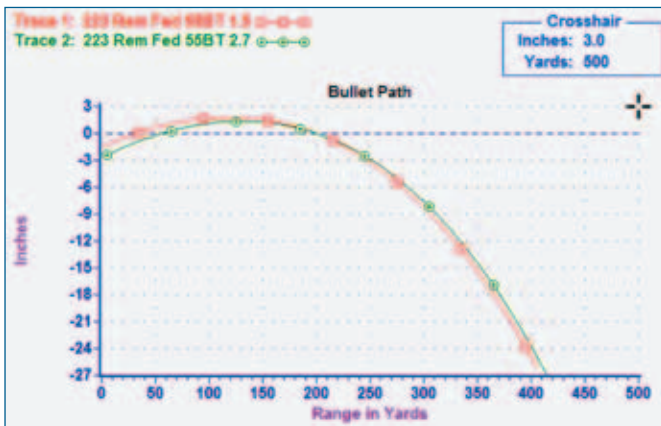
When you mount a scope on an AR-15 you will need high mounts designed for AR-style rifles. The standard scope rings that you might have kicking around will be too low, even though they may fit the rail just fine. Because the recoil buffer and spring are in the buttstock, they must stay in alignment with the bolt. As a result, the stock is higher relative to the line of the bore than with conventional rifles, which means the optic will need to be mounted higher for proper eye alignment. Also, most AR rifles will require that the scope be mounted with the front mounting ring forward of the receiver. The two ring system often falls short, but there are plenty of one-piece mounts made just for the AR-style of rifles that have the optic at the correct height for eye alignment and have the forward ring extended to allow for proper eye relief.

Shooting with a scope on an AR-type rifle is also a little different, particularly at close range. With a traditional bolt action hunting rifle the optical center of the scope is typically about 1.5 inches above the center of the bore. With an AR-type rifle it's much higher, usually about 2.7 inches. That makes changes in the point of impact. Not so much at long range, although it does make a difference, but primarily when shooting up close.



With the high mounted optics of an AR-type rifle, the close range impact will not follow the line of sight. A lot of new shooters are surprised by the results when they try to shoot at close targets. The gun will impact low at close range; enough to make a difference if you have a critical target. It can cost you points in a match, problems in a self-defense situation or, as happened to me, cause you to shoot under a bobcat that came in too close to the dying rabbit call.

An AR-15 in .223 Remington shooting a 55-grain bullet and with a 200-yard zero will impact 2.13 inches low at ten yards, while a bolt action in the same cartridge will be .99-inch below the line of sight.



That changes as the distance increases and begins to favor the AR. At 100 yards the AR is 1.13 inches above the line of sight while the bolt gun with the lower scope is 1.47 inches high. At 300 yards the AR hits 7.58 inches low while the bolt gun is impacting 8.18 inches below the line of sight.



Any serious student of the AR rifle will tell you that it's critical to understand the holds or "offsets," as they are commonly called, for every distance you plan to shoot.

Ballistic programs can produce data that is very close to correct. The more data you input such as true muzzle velocity and true ballistic coefficient, the closer they can come.

But, there is only one positive way to know the exact impact points for your rifle, optic and ammo. You must shoot your rifle at each distance. Start with ten yard increments out to 100 yards and then use fifty yard increments past that. Only bullet holes in the target can provide 100% correct data on where you will hit at any given distance.

