

## **RIMFIRE RIFLE BENCHREST MATCH**

### **EQUIPMENT & TIPS**

#### **WATAUGA GUN CLUB**

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### **MATCH COMPETITION**

**You may have long familiarity with rimfire pistols and rifles, but new to rimfire rifle bench rest 100 yd competition. And you might hesitate to enter your first competitive match. Maybe, you're unaccustomed to shooting a rimfire at 100yd targets, perhaps you're unsure about match rules, or what rifle, sighting equipment, ammo you will need to be competitive. Maybe you're concerned about not performing as well as you'd like. Don't let any of that prevent your becoming a better shooter, getting the most from your rifle and enjoying the camaraderie and practical knowledge that fellow shooters offer.**

**Match rules are mostly safety-oriented and commonsense. Time-pressure is minimal – a flight is 20 record shots in 27 minutes. You may fire as many sighting shots as you wish during that time. Almost no one uses all his/her time. HINT: it helps to have zeroed your rimfire rifle at 100 yds ahead of time. If you've previously zeroed your rifle at 50 yds, you will need to come up 6-8 inches to be on target at 100 yds. More experienced match shooters are always willing to help you set up. Ask the match director questions about the rules or what to do in case you cross-fire – inadvertently shoot on a neighbor's target.**

**After getting some match experience, you'll probably find that increasing your X-counts and shooting ever smaller groups becomes an obsession. These goals are made difficult by the tricky winds on the WGC rifle range.**

**Here's some information sources about rimfire rifle accuracy and ammunition.**

- **Join: [www.RimfireCentral.com](http://www.RimfireCentral.com) – rim fire shooters discussing shared problems and solutions. All levels of knowledge and experience. Discussion of rifles, ammo, scopes, cleaning methods.**
- **Purchase (Kindle Version) Bill Calfee, THE ART OF RIMFIRE ACCURACY, <https://www.amazon.com/Art-Rimfire-Accuracy-Bill->**

[Calfree/dp/145679776X](https://www.amazon.com/dp/145679776X) - in depth, detailed, technical discussion of the elements (actions, barrels, triggers) of a “killer” rim fire bench rest rifle written by one of America’s best rim fire rifle builders. Candid, informal and entertaining, albeit his over-using “Oh man...!”

- Purchase Steven Boelter, THE RIFLEMAN’S GUIDE TO RIMFIRE AMMUNITION. The focus is ammunition, but the book includes lots of useful tips on shooting, increasing accuracy and gun care tips.  
[https://www.amazon.com/Zediker-Publishing-Riflemans-Rimfire-Ammunition/dp/B07C7DCTJR/ref=pd\\_lpo\\_sbs\\_14\\_img\\_0?encoding=UTF8&psc=1&refRID=1B85SDDSVEE7GZWP2EKA](https://www.amazon.com/Zediker-Publishing-Riflemans-Rimfire-Ammunition/dp/B07C7DCTJR/ref=pd_lpo_sbs_14_img_0?encoding=UTF8&psc=1&refRID=1B85SDDSVEE7GZWP2EKA)
- <http://bulletin accurateshooter.com/2019/09/most-comprehensive-rimfire-ammo-test-ever-55-ammo-types/>
- <https://www.shootingtimes.com/editorial/accuracy-and-the-22-long-rifle/326553>

## SAFETY

*Eye and hearing protection must be used whenever shooting on the Watauga Gun Club Rifle Range. No exceptions! Make it a habit to place a yellow or red chamber flag in your action to show observers that your uncased rifle is in a “safe condition.”*

WHEN YOU HAVE COMPLETED A FLIGHT, PROMPTLY AND SAFELY REMOVE YOUR RIFLE FROM THE FIRING LINE AND RE-BAG IT.

## THE RIFLE

You may use any mechanically safe rim fire rifle with any sights to compete in WGC Bench Rest matches. Choose a combination that will make the weight/sight restrictions that apply to the class you wish to shoot.

Light rifle class = <8.5 lbs including sights, scope or apertures; Heavy rifle class = >8.5 lbs including sights, scope or apertures. Magnum Rimfire Class, scope or aperture. Open sight class: no scope, no apertures, any weight rifle.

So the Classes are:

- Heavy Rifle Scope Class;
- Heavy Rifle Aperture Class;

- Light Rifle Scope Class;
- Light Rifle Aperture Class;
- Magnum Rimfire Class; Any weight, Scope or Aperture
- Open Sight Class, any rimfire rifle, no scope or aps.

You will want an accurate rifle that enables shooting a competitive score in your Class - most commonly this will mean a bolt action rifle with a light, clean-breaking trigger, inherently capable of keeping 20 consecutive shots inside 2 inches @ 100 yds when fed with good quality ammo. The Ruger 10/22 (and other semi-autos) are also popular. Here's a link to the target we use: [https://www.nationaltarget.com/index.php/official-nra-rifle-targets-smallbore-rifle-targets-c-22\\_34](https://www.nationaltarget.com/index.php/official-nra-rifle-targets-smallbore-rifle-targets-c-22_34)

Your rifle should enable confidence that it was your hold, judgment about shooting conditions and trigger control that determined the result on target. The winds at WGC are ruthless, unpredictable equalizer. Sudden shifts in direction and/or velocity has ruined many potentially outstanding targets.

When purchasing a rifle for bench rest competition, buy the best you can afford. This does not require spending a fortune. Factory production rifles commonly found on the firing line include: Anschutz, CZ, Kimber, Remington, Ruger, Savage and Winchester. Prices vary from \$400 up. "Recycled/re-purposed" surplus target-rifles from the 1940s-1980s are common. Custom-made rifles also appear. Some of these may cost several thousand dollars.

**Please Note: An accurate rifle is necessary to win. An expensive rifle is neither necessary nor sufficient to win. It's the competitor on the trigger.**

**At WGC, 199/200 and 200/200 scores in scope and aperture classes are not uncommon. A perfect score is 200/200/20Xs/20 "center shots". Since the Rimfire BR Program began at WGC in 2012, only two shooters have achieved a 200/20X score. These were recorded in June and again in July 2020. No one has ever achieved 20 consecutive "center shots" (shots contained completely w/in the X-ring, not breaking the 10-ring line).**

## SCOPES

Economizing on sighting equipment is unwise. Buy the best scope you can afford. A bad scope won't hold zero, its adjustments are unpredictable and

unstable, its sight picture shifts when you move our head, its image is fuzzy at the edges. With such a scope, you'll have no idea what accuracy your rifle can achieve.

A good scope enables you to observe a subsonic 22 LR bullet's flight from the muzzle to the target and to see the bullet hole it makes. A good scope resolves the bull's X-ring clearly, with high contrast, will be parallax correctable and be mechanically reliable. The cross hairs should be fine, so as not to obscure the bull's X-ring, but not so fine as to be hard to find or that disappears when light dims. Reticles with a central-dot are popular. Sale prices on target-grade scopes are common. Budget at least \$350-\$450.

How much magnification? 16X-18X minimum. Most shooters use variable scopes capable of 20-25 magnification. A few competitors use scopes that provide 40X or more. Popular brands: Burris, Bushnell, Leupold, Nikon (discontinuing), Nightforce, Vortex, Weaver (discontinuing), Zeiss. A solidly mounts scope is important. Don't cut corners on rings/bases.

### **Ammunition**

Ammunition is the most important and one of the most difficult to control variables in rim fire bench rest rifle shooting. There are huge accuracy differences between inexpensive, bulk-pack ammunition and subsonic, match quality ammo. Your challenge is to find the specific match-grade ammo that your particular rifle likes best. Each rifle is an individual. Some can be very finicky. CCI Standard Velocity is a good place to start your search. However, you will soon get used to buying higher quality ammo made by Eley, RWS, SK, Lapua, and Wolf. Each maker offers a variety of grades. Use [www.ammograb.com](http://www.ammograb.com) to locate good deals.

### **RESTS AND BAGS**

You will need a solid front rest and a separate rear bag to support and help control vibration while executing your shots. These vary in price and complexity. See what other shooters use. Ask for advice. Also you'll want a piece of carpet and an elbow pad to protect you from concrete bench abrasions.

## **CLEANING**

**Bad cleaning technique will ruin a barrel, especially its chamber and crown. There are many good solvents. Use a coated-rod and rod guide. Your rifle will not shoot its best when it's just been thoroughly cleaned – cleaned sufficiently to remove all trace of the carbon-combustion ring that tends to form in the leade, just ahead of the chamber. At the same time, you need a not-excessively tight carbon-combustion ring for best accuracy. A clean barrel may require 10 – 30 rounds to begin shooting at its best. It's good practice to record how many shots you put through your barrel after a cleaning. Generally, don't clean your barrel until you start getting fliers.**