

THE SEARCH FOR BETTER ACCURACY

Getting a good rifle with a good scope and a good load to shoot sets of five 5 shot groups into averages under 1 1/2" at 100 yards is not difficult.

Reliable averages under 1" are somewhat more difficult to achieve.

What follows are sets of steps that have, or have been claimed to, improve accuracy.

I always perform the following steps because these steps are easy, cheap and just might increase accuracy.

Adjust the trigger to reduce pull weight and/or over travel and take-up.

Uniform primer pockets

De-burr flash holes

Clean inside case necks after firing with a bronze or (I use) nylon brush. The brush may be chucked in a drill for more speed.

Clean primer pockets

Clean the barrel as necessary during shooting. With some load, alloy and lube combinations, accuracy will degrade after some number of shots. I have experienced group size increases after as few as 13 shots; I have also seen accuracy remain constant over 100 shots. Some experimentation is required to tell when cleaning is needed.

Turn or inside ream case necks.

Powder

Change the powder. I have seen substantial changes in group size averages associated with changes in the powder used.

Weigh each powder charge. Some powders, such as SR 4759 and Unique, don't come out of any powder measure I've used with consistent weights. I weigh and dribble each charge of such powders to get consistency, and suspect that this step increases accuracy.

Change the powder charge in .1-grain steps. For charges above ~ 15 grains of powder, it is my belief that charges in .5 grain steps are as precise as required. Charges of XX.1 or XX.2 produce no accuracy difference from charges of XX.0. Charges of XX.3 or XX.4 produce no accuracy difference from charges of XX.5. Some contend otherwise, data is sadly lacking.

Bullets

Try another bullet

Weigh and segregate bullets. This step is time consuming, but serves to identify the oddball low or high weight bullet that may be a flier.

Change bullet sized-to diameter.

Change the bullet hardness

Anneal the gas checks.

Shoot bullets in the order cast. This is recommended by some single shot rifle shooters, although it has never made sense to me.

Primers

Change the primer.

Bullet Lubricant

Change the bullet lubricant. There are many lubes used by good CB shooters, reinforcing my belief that "reasonable" lube choice has little or no effect on accuracy.

This does not mean that one cannot concoct a lube that adversely affects accuracy. I have done so. Hence "reasonable".

Vary the number of lube grooves filled. Decreasing the number of lube grooves filled makes cleaning easier and may increase accuracy. With some bullet/lubricant combinations only the groove between the top of the gas check and the bottom of the bottom band need be filled with lubricant.

Cartridge Cases

Weight segregate the cases. By making sets of cases with little weight variation and eliminating weight outliers we have made the interior case volume more nearly the same, and accuracy may/should be improved.

Use "better" cases. In modern jacketed bullet bench rest, "better" cases such as Norma or Lapua are said to be more accurate than domestic cases. Some contend that the same is true with cast bullet shooting.

Make cases that more precisely fit the chamber. For example, making .308 Winchester cases from 30/06 Springfield cases, fire forming, trimming to a precise length and turning the necks to a precise thickness produces cases that fit the chamber precisely and into which cast bullets fit precisely. This may increase accuracy, I certainly hope so.

Make the cartridge case length = chamber length $-.005"$. It has been claimed that minimizing the distance in the rifle chamber from the end of the cartridge case to the end of the chamber will increase accuracy. $.005"$ is frequently mentioned as the safe minimum.

Ream the flash holes to a uniform diameter.

Cartridges

Check and improve cartridge concentricity.

Size the case necks in a Redding or Wilson replaceable bushing style neck sizer

Seat the bullets with a precision micrometer adjustable sizing die

Vary OAL

Orient the case in the chamber.

Orient the bullet in the chamber.

Orient the bullet in the case and the case in the chamber.

The Rifle

Glass bed the rifle action.

Ream the chamber throat.

Make a die to match the reamed chamber throat and swage/taper the bullets.

Re-crown the barrel.

Lap the barrel.

Replace the barrel.

Shooting

Use wind flags and learn to shoot in the wind.

Get a better bench rest and set of bags