

The Los Angeles Silhouette Club

Observations from 30 Years of Loading the .44 Magnum

By John Ross

I have been doing a tremendous amount of load development with the new .500 S&W Magnum. One shooting enthusiast named Casey on a gun board asked me to back up and offer any insight I might have on the .44, as he did not see a .500 in his future. He wanted to know if there was anything to add to the information found in the typical loading manual, or the gun magazine that referred to "time tested Keith loads." He wanted to know about best and worst powders, bullets, alloys, etc. Here is what I told him:

Casey, you are right, you can do a lot better than just repeating the mantra of "22 2400 250 Keith."

Here are some observations that I've had while working with the .44. Many are applicable to other calibers.

Worst powders: I don't like light charges of fast powders in any cartridge. In general, I like using the slowest powder that will give the desired velocity. You cannot get a dangerous overload with this practice. Leading is less likely, for reasons I'll explain later.

The single best powder for full .44 loads is WW296/H110 or other surplus equivalent. This ball powder was designed for the .30 Carbine and magnum handgunners have adopted it with good reason. Of the over 100,000 .44 Mag loads I have fired, over 80% of them have been 25 H110/296 and a 250 Keith, the Hensley & Gibbs #503. This bullet goes out to the front of a S&W cylinder. 25 grains of this powder might be too hot for a "Keith Style" bullet with a shorter nose and more shank in the case, or a jacketed slug. My load goes 38,500 CUP in the Super Vel pressure gun.

While the Keith bullet is accurate, it is not the MOST accurate .44 cast bullet style. I use it because it is accurate and I have 8-cavity H&G gang molds for it. H&G went out of business before I got heavily into mold design. If I were going to shoot a cast bullet in the .44 for absolute best accuracy, I would make it a design with a bore riding nose section, an ogival or truncated cone nose, and multiple thin grease grooves. (We have better lube than we did 70 years ago.) I'd put the crimp groove where it would give an overall length as long as possible for the gun I was loading for (.44 mags are not all the same cylinder length.) The JD Jones SSK designs are good examples of the kind of bullet I'm describing. They shoot about 25% tighter on average than Keiths in my guns, about 3 to 4 MOA vs 4 to 5.

You do not need gas checks in the .44 (or any other revolver) unless you are trying to correct a condition and you aren't willing to actually address the root cause of the problem.

Leading is most often caused by gas cutting. Gas cutting happens when your bullet is smaller than your chamber throat (front of the cylinder or the throat section in a rifle.) When the round is fired, hot gas gets around the bullet as it exits the case and enters the throat and bore, ruining the desired gas seal and causing leading, especially at the back of the barrel. Sometimes, leading will be made WORSE by going to a harder bullet

(since it won't deform at all) and may actually be IMPROVED by a softer alloy that "slugs up" and seals off the gas. I don't shoot the super-hard alloys in revolvers; most revolver loads don't generate enough pressure to slug up the bullet.

However, IF you like faster powders, you may get leading and think you need a harder alloy, which may or may not cure the problem. This often happens with loads like 10 grains Unique for 1000 FPS. It can lead badly, because (I believe) of the fast pressure spike of the expanding gas ball in the half-filled case hitting the base of the bullet. Before changing the alloy, change the powder. Try 25-28 grains WC680 for 1150-1250. This much slower powder fills the case entirely and the pressure builds more slowly. Leading will disappear, unless something is REALLY wrong.

I never tried H335, BLC-2, etc, in the .44 because I prefer full loads in that caliber. In the 500, you get almost 1400 FPS with a case full of these rifle powders and a 450 grain bullet. Although this is 400 FPS below maximum, a 450 @ 1360 (or even less) still might be all you want.

I recall a Du Pont manual from around 1975 (8 1/2 x 11, 20 pages, paper, brown cover, tan pages, mostly shotshell data) that listed loads for ALL their IMR powders in various metallic cartridges, like 4350 and 4831 in the .44 Magnum. Peak pressure with a full case was something like 14,000 CUP IIRC. This was VERY interesting.

If you want a 900 FPS .44 load (I don't) and have a chronograph, try loads at 100+% loading density using WC680 and slower powders, like Accurate 2015, H322, and H335. Pick dense powders like the ones above. If the load is uniform and of the velocity you want, try it on paper. Uniform loads tend to be accurate ones.

BTW bevel-base cast bullet designs are much-loved by commercial outfits for the ease with which they go through automated lubricators, and reloaders like the ease with which they enter case necks, but they make gas cutting WORSE for obvious reasons. I avoid them.

Find a machinist with a set of plug gages or better yet buy a complete set .251"-.500" (250 gages) for \$85 or so from a machine tool supplier. Buy a micrometer while you're at it.

Measure your chamber throats. They probably go at least .431" and maybe .432". You need bullets that are no more than 1/2 thousandth smaller than your chamber throat. Ideally you want a bullet sized such that you can push it through your tightest throat with moderate finger pressure.

With some guns and certain loads you can shoot pure lead un-lubricated bullets without leading IF they are the right size.

If you shoot commercially cast bullets you're limited to your choices. Try to find a supplier that can provide you with .431" (or whatever) sized bullets in a non-bevel-based style.

Failing that, buy some NECO P-wads. These are .065" PVC discs you put in the case before you insert the bullet. Buy them for about \$7 a thousand. I make my own with a .432" hand punch and sheet PVC for \$2/thousand. P-wads form a gas seal and are

effective to some extent at reducing gas cutting with undersized bullets. So are slower powders, as mentioned above.

I measured the throats of two 329s and a .428" gage was the largest that would enter. Same with a PC 629 7 1/2" slab side, the one with Mag-na-ports (I think it's called the "Magnum Hunter".) ALL my old Model 29 throats go .431"-.432". The new guns are tighter.

Heavy loads with the ball powders need high neck tension and heavy crimp. Polish down the expander plug until it does not expand the neck AT ALL after sizing. Adjust it so that the case mouth is belled just enough to start the bullet in the case and no more. This keeps the brass from being overworked. Use a heavy crimp. You may need to try different make crimp dies to find a good one. I use Star dies, so that doesn't help you. My loads in the .44 NEVER pull, not even 320s @ 1225 in a 329.

There are only two problems with H110/296, neither of which I have experienced:

1. Less-than-full charges may leave a bullet in the barrel. Don't load too low, like 19 grains. If you want less velocity, use a full charge of a slower powder, like WC680 (Accurate 1680.)
2. Erratic results in VERY cold weather. If you regularly shoot in such conditions (I don't), Blue Dot is the powder you want, from what I've read of others' experiments.

Hope this helps.

John Ross 9/10/2003

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