

# The Los Angeles Silhouette Club

## Looking Back... The 22 Rimfire... (2004)

By: PACO

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Being curious about the early change over from black powder to smokeless powder in the 22 rimfire, I did some research. The cross over powder was called Lesmok, used by the Peters Cartridge Company. One powder producer *King's* called his product Semi-smokeless. But it was basically the same thing. It was used extensively in many different cartridges and calibers just after the turn of the 19<sup>th</sup>/20<sup>th</sup> centuries. These were the days when you could still buy 22 rimfire brass unloaded, so that you could make up your own un-crimped target loads, and of course they were mostly for single shot target rifles.

The surprising thing about crimped commercial 22 rimfires with Lesmok were the velocities, much the same as our standard velocity 22s today. The round nose, and the flat nose, long rifle rimfires back then were getting between 900 and 1000 fps. The hollow points were running 50 to 60 fps more, and the fore runner to Winchester's 22 Magnum Rimfire of today, was the .22 Winchester Rimfire it ran over 1100 fps with a 45 grain solid lead bullet, with a case about a quarter inch shorter than today's .22 Rimfire Mags. Also where the normal 22 rimfires used a healed bullet then and now, the Win/Rimfire used an inside the case bullet, like today's Win/Mag Rimfire.

The Winchester Rimfire is still being marketed today, but of course with modern powders. And the velocity from a rifle now is up near 1500 fps, still with the 45 grain bullet, hollow point or solid. It runs near 1200 fps from handguns and I use it for hunting small game like squirrels and eating birds. It doesn't destroy meat like the .22 Win Mag rimfire does on small critters. But yet it is 10 times more effective on small game than standard 22 rimfires. Since the kill zone on a squirrel is about the size of a quarter (not counting the head), and they lay flat on the branch making it even smaller, the win/rimfire with it's 45 grain solid will bark them right off the limb. And they will go through the wing of an eating bird and still get to the vitals. I have seen enough birds shot with even high speed 22 rimfires, in the wing area going for the lungs, and then watch them fly off.

At the 19<sup>th</sup>/20<sup>th</sup> era one of the more popular target rifles of the times was the No.45 Stevens Ideal single shot, it came with Lyman No.1 and 3 sights and a 28 inch heavy tapered barrel. The cost was around \$18 dollars, if you had it fit with Schuetzen double set triggers it was around \$22. Winchester also put out a very fine 22 target single shot, rimfire rifle, with a heavy barrel and the same sight set ups for around the same prices.

Winchester also produced what it called it's #3 and #5 telescopes. The numbers represented the magnification, C.S. Landis, a gun writer of the times, wrote in

*OUTDOOR LIFE* in 1914 that the Winchester scopes were very good for squirrel and other small game, but the cross hairs were much too coarse for real target work.

Landis firing 10 shot strings with Peter's Lesmok 22 rimfire rounds, five strings at a time without cleaning (that's 50 rounds), all would go into 2 plus inches at 100 yards. The only problem he found was the groups of 50 rounds would always have 2 or 3 shots out of the groups completely.

This is something not just attributed to Landis. Dr. Mann in his turn of the two centuries book... *THE BULLETS FLIGHT FROM POWDER TO TARGET*, also noted the same problem. And also at the time Lieutenant Whelen later to become the famous Col. Whelen reported the same phenomena with UMC, Peter's, and King's Semi-smokeless powder 22 rimfires.

Landis notes that all of his 'out of the group' shots, were slightly tipping. It could be the rifling twists of the times were on the edge of stabilization with 900 to 1000 fps 22 rimfire bullets so when a round would be slightly slower than the rest, it wouldn't completely stabilize.

### **Looking forward....**

With today's cartridges, if you take the measurement of the cartridge case's base against the rim and multiply that figure by the pressure generated by the round you have the back pressure of the round against the bolt. Example with today's 22 rimfires, running between 10,000 and 14,000 psi 22 rimfire cartridge base is .222 multiplied with 14000 psi, gives a back pressure of 3108 lbs. Our 22 rimfire magnums run around 24,000 psi, the case base is .242 times the pressure, gives 5808 lbs. When Ruger stated there was a pressure problem with the little Bearcat 22 rimfire single action, in the 22 rimfire magnum chambering I had to laugh. I have been re-chambering them since 1970 from standard rimfire to mag rimfire without a hitch. Even the so called tighter bore of the Bearcat didn't hurt accuracy. It's all in the re-chambering, if it's done right by hand it's fine, done sloppy and groups turn to patterns.

One of the unsung heroes of today's 22 rimfire rounds is the trend toward sub-sonic velocities from the 60 grain Aguila, whose bullet is so long they have to load it in a 22 short case to keep it at the standard overall length. Giving 965 actual fps from my little 24 inch CZ bolt rifle. To the lightest I have found, the 36 grain HP Lapua giving 945 fps, which personally for me, isn't worth the price tag.

My feeling is very critical of a hollow pointed bullet, in a sub-sonic 22 round. The only way I have gotten them to expand is by reforming the nose to the cone shaped Nasti-Nose with my Acu'rZR tools. When these bullets are run thru the Acu'rZR, they tend to give more resistance in the bore and give a small amount of increased velocity, with the new nasti-nose shape.

My Kimber 22RF autoloader made on the 45/1911 frame is made of all kinds of light weight metals, this is not the add on slide, barrel and magazine (clip). But the entire gun made for the 22 rimfire round. It loves the 60 grain sub-sonic Aguila, the velocity runs around 770 fps. All the other sub-sonic rimfires will not activate the entire reloading cycle of the Kimber but the 60 grain Aguila does. A good example of what mass will do over velocity.

Aguila also loads their 38 grain bullet to sub-sonic velocities. Though I like the 60 grainer better, the little 38 grain bullet is very accurate at near 950 fps. Again the hollow point feature is wasted unless Acu'ized. For years we have had the 22 Rimfire Longs at sub-sonic velocities but the 29 grain bullet has never been very accurate. CCI makes all kinds of 22 rimfire ammo, one of their sub-velocity offerings is the 22 short with a 27 grain bullet, and it has a little spit behind it, running around 1075 fps for the solid from the rifle. I found that the hollow point version actually gave lower velocity. Different than most rounds that are the same except for the HP feature with the hollow points, 22s usually give higher velocity. CCI also makes a CB/29 grain long (no powder) that runs very slow, hardly breaking 600 fps in my CZ. The last one I fired at the range two weeks ago still hasn't gotten to the 100 yard target.

Remington makes a 38 grain HP at 960 fps and it is very accurate. The one feature the Remington hollow point has, it is very soft lead and actually gives a little expansion, though I think the softness has more to do with the accuracy. It slugs up nicely in the bore. Where many sub-sonic 22s are loaded with the companies standard copper washed, or hard lead bullets, they don't slug up at only 7000 to 8000 psi.

I shot a sitting upright rabbit at 20 feet, from my truck window with a Remington standard round twice, from my old Colt 22 rimfire on the big 357 magnum Trooper frame. I saw the fur fly from the opposite side. Both times he never moved. Same reaction, then I shot him in the head with a hyper velocity round (forget which), Lights out. The other two rounds left an entrance hole that was hard to find, the exits were about the size of a dime, inside damage was straight thru but minor compared to some standard velocity 22s.

PMC also has a very nice 38 grain solid Sub-S at 870 fps. And it gives very nice accuracy in many of my 22 rimfire rifles and handguns. One of the most accurate 22 rounds I ever fired was PMC's Zapper, the name makes one think it would be a high velocity round but it is closer to standard velocity breaking 1150 fps, it goes into groups the size of a dime at 100 yards, it's bullet is copper, but soft and with a neat wax coating, you have to run your finger nail across to find. The wax probably helps the loading machines flow better.

Aguila, CCI/Speer, Fiocchi, PMC, Remington, Federal, and Lapua all make sub-sonic loads. All are very special purpose rounds. I like them out of my 29 inch barreled CZ-Super 22 rimfire rifle because the sound is way down by the time the bullet gets to the muzzle. After around 16 inches 22 rimfire bullets begin to slow down in the barrel, we tested it years ago using a 24 inch barrel on an old

Winchester single shot that had seen better days, mayhaps decades before, but was now a wreck. Cutting the barrel and inch at a time you could see the progression up in velocity, and after 16 inches down again in velocity.

As an aside PMC's 22 rimfire Magnum Predator ammo is also very good. I use a lot of the *40 grain jacketed soft point*, that's what PMC calls the stuff. But the bullet in the soft nose is a flat nose not a point. Soft lead inside a real jacket, not a copper washed or plated bullet. PMCs ammo is never the hot shots in velocity, but it is for me in the top two or three brands for performance on small critters, and with accuracy. My Ruger 77 in 17 Mag/Rimfire has to be one of the most accurate rifles and ammo combinations I have, but the ammo doesn't impress me with killing power, the little Hornady 17 grain bullets went right thru 3 liter plastic bottles at 25 yards, in and out, just small holes. Hyper velocity 22 rimfires do more damage. That's why I stick with the 22 Rimfire Magnum rounds for small game.

The definition of sub-sonic was to my mind anything below 1100 to 1120 or so fps. Below the breaking of the sonic barrier and not causing a sonic boom. I know the velocity changes with altitude and thinning air. But it seems the ammo makers are keeping their sub-sonic loads below 1000 fps or so. To stay out of the standard velocity levels of 1000 fps plus, usually around the 1030 to 1150 levels.

One of the fastest *standard loads* in 22 rimfire is the RWS 40 grain. It will break 1300 fps. I don't know why RWS rates it standard, that velocity is into the high velocity levels. RWS rates it's 40 grain 1200 fps load in the low velocity range. Obviously this company is using a very fast powder.

The High velocity and Hyper velocity range is from 1400 thru 1750 fps. The Aguila 30 grainer breaking that in my CZ at 1810fps, that is sizzling!

I will be doing a review of the standard, high, hyper velocity 22 rimfires next. But I have to add one thing here, 22 rimfires from handguns just are not self protection level rounds, the exception being the 22 Rimfire Magnum, all the little guns made for the standard 22s, are neat, fun to shoot and surprisingly accurate. This nonsense I see written, along the lines of... *if you use a 22 rimfire for self protection shoot for the face*. I probably have been in more gunfights than a thousand average lawmen, don't believe that crap, shoot for the face, ugh!. Did you know the national average hit rate in gunfights for police officers and federal agents (survey done by the FBI years ago) is less than 3 shots out of ten fired at SEVEN FEET!!!! That was the highest level, the next highest, Honest, Was no hits!!!! Can you imagine some poor older person at night with a burglary suspect in his house, mostly dark, fear and anxiety running out of control... shoot for the face ...??

Now saying all this and knowing any hand gun that goes bang is better than nothing, and for some people a 22 rimfire is all they can handle, or want to handle. Then buy a small handgun, a revolver, in 22 rimfire magnum. I know from personal experience from two shootings, one I observed the results of right after

it happened, and one I was in, using the 22 rimfire Mag in the 22 Automag, the damage at close range, is way beyond what someone would expect from a rimfire. Our undercover Agents in DEA used to carry the H&R two shot 22 rimfire Mag derringer, it proved numerous times to be very effective up close and personal. Take care my friends, your life and those of your love ones are very valuable. But I have to admit the 22 rimfire handgun with hyper velocity CCI Quik-Shok ammo is better than a broken bottle.

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