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Current Issue of X-Ring



Technical Newsletter From
Your Ballistic Technicians
Volume 11, No. 2

2005 Sierra Bullets New Product Announcements

#1032 .20 Caliber, 32 grain BlitzKing

#1039 .20 Caliber, 39 grain BlitzKing

Sierra Bullets is proud to announce the addition of two new bullets to the popular BlitzKing line of bullets for 2005. The .204 Ruger and other .20 calibers are gaining in popularity for both varmint hunting and plinking. An overwhelming demand from shooters wanting an accurate .20 caliber Sierra bullet prompted the Bulletsmiths to make a pair of BlitzKings ideally suited to the .204 Ruger and other .20 caliber cartridges such as the .20 Tactical. The #1032 BlitzKing is a 32 grain flat base bullet sporting our legendary MatchKing jacket and a proprietary acetyl resin tip for superb accuracy and rapid expansion on varmints. The #1039 BlitzKing is a 39 grain boattail bullet which also sports the MatchKing jacket and acetyl resin tip. Both bullets are designed to handle the high velocities associated with varmint hunting. Regardless of whether you are hunting varmints or plinking, these two new Sierra offerings will fill your needs. Available in 2005 at your favorite Sierra retail location. Suggested retail price is \$16.13 per box of



100 bullets.

**#1975 7mm/ .284" dia., 175 grain
HPBT MatchKing**



The Bulletsmiths are pleased to announce our new 7mm 175 grain MatchKing. Prompted by the phenomenal success of our record setting 6.5mm 142 grain MatchKing, this new .284" diameter projectile utilizes the same refined design characteristics to enhance its long-range performance. With a longer ogive, smaller meplat and improved boat tail, the 175 grain MK provides improved downrange energy and accuracy, while reducing wind-drift compared to the old standard, our venerable 168 grain MatchKing. Designed for Rifle Silhouette competition, this bullet will be equally at home in HighPower and Long Range events as well.

This new HPBT MatchKing bullet has a suggested retail price of \$25.01 per box of 100 bullets.

Stock #	Dia. (inches)	Weight (grains)	Bullet Type	Sectional Density	Ballistic Coefficients and Velocity Ranges
1975	.284	175	Hollow Point Boat Tail MatchKing	.310	.608 @ 2100 fps and above .582 between 1530 and 2100 fps .532 between 1300 and 1530 fps .500 @ 1300 fps and below

2004 Competitive Season in Review:

NRA Rifle Silhouette Championships

The 2004 match was dominated by Agustin Sanchez as he captured both classes of the smallbore and HiPower, using Sierra bullets. Overall, 96 of the 116 competitors at this years' match were using Sierra.

Bianchi Cup

Sierra enjoyed a sweep at the 2004 NRA Bianchi Cup National Action Shooting Championships & NRA World Action Pistol Championship. The top three finishers, Doug Koenig, Bruce Piatt, and Carl Bernosky, were all shooting Sierra bullets.

NRA High Power Rifle Championships at Camp Perry

Again, Sierra displayed our domination at the National Championships as 35 of the 37 major match winners were using Sierra Bullets. Here is a listing of the match winners using Sierra and the matches they won.

Match - Match Winner

Appreciation Cup Match - Christopher Wyatt

Army Cup Match - Mitchell Maxberry

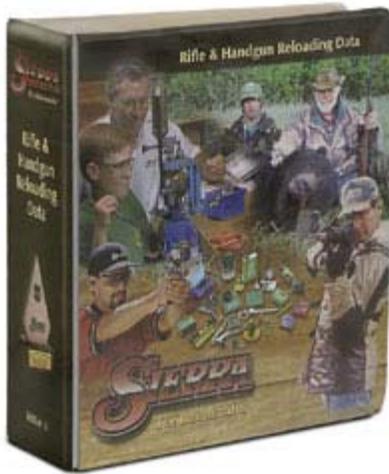
Calvary Cup Match - Curt Leister
Canadian Cup Match - David Tubb
Centenary Trophy Aggregate - Sheri Gallagher
Coast Artillery Trophy Match - Jerome Bostick
Coast Guard Trophy Match - Dennis Demille
Crescent Cup Match - Alexander Arrieta
Crowell Trophy Match - Sheri Gallagher
Edward D. Andrus Memorial Trophy Match - Kent Reeve
Enlisted Men's Trophy Team Match - USAMU Praslick
Erdman Trophy Match - Norman Houle
Farr Trophy Match - Grant Singley
Herb "Doc" Aitken Memorial Trophy Match - Kent Reeve
Herrick Trophy Team Match - Tompkins-Gallagher Family
Leech Cup Match - David Tubb
Long Range 600 Yard Match #1 - David Tubb
Long Range 600 Yard Match #3 - David Tubb
Marine Corps Cup Match - Paul Rademaker
Marine Gunner D.I. Boyd Trophy - Norman Houle
McCann Trophy Match - David Tubb
Members Trophy Match - Norman Houle
National NRA Match Rifle Championship - Norman Houle
National Service Rifle Championship - James Fox
Navy Cup Match - Karyn Manges
Nevada Trophy Match - David Tubb
NRA National High Power Rifle Champion - Norman Houle
Optical Sight Championship - George Tubb
Palma Individual Trophy Match - David Tubb
Porter Trophy Match - Karyn Manges
RNDC Trophy Team Match - Team Creedmore
Rumbold Trophy Team Match - Colorado Blue Sky
Sierra Bullets Trophy Award - Kent Reeve
The Roumanian Trophy Team Match - Tompkins-Gallagher Family
Tompkins Trophy Match - David Tubb
Vandenberg Cup Match - Norman Houle
Wimbledon Cup Match - Michelle Gallagher

Photos and Stories

Sierra is interested in stories and photos of game animals taken and matches won with Sierra bullets. If you have any nice photos and/or interesting stories using Sierra Bullets and would like to share them with Sierra and fellow shooters, please send or E mail (xring@sierrabullets.com) them to us here at Sierra Bullets. If we decide to use it, you can WOW your friends with being in Sierras X-Ring or on our web page. By sending the photo/story in, you automatically release it to us to use.

Christmas Special!!

Just in time for the Holidays, Sierra is offering our 5th Edition Rifle and Handgun



Reloading Manual for only \$24.95 on all orders placed by Dec. 15 for immediate shipment. Sierra will also pay the postage (USPS) on USA orders. There has never been a better time to get your new manual. Just mention the special code **X-Ring** when ordering. Call 888-223-3006 today and order your manual.

Christmas Tech Service Hours

Please note that from Dec. 17, 2004 through Jan. 3, 2005, the Sierra Ballistic Customer Service Toll-Free Hotline will be operating from 8:00 am to 5:00 pm, Monday through Friday (CT). On January 3, 2005, we will resume our normal business hours. The Factory Outlet will be closed for inventory from Dec. 18 through Jan. 3.



Short Shots

by Carroll Pilant

Q. Some cases chamber easily, others you almost have to crush them into the chamber and they are all the same batch of cases and all been full length sized.

A. The expander ball is pulling the neck / shoulder area up as it pulls out of the case. It usually squeaks as it comes out. Cure - Lube the inside of the case neck better, or slightly decrease the diameter of the expander ball (about .003 under bullet diameter at the most) and polish or both.

Q. I have a rifle that has a long throat and it doesn't shoot boat tail bullets very well at all.

A. Try a flat base bullet. They will often shoot better in a long throated or a worn throat gun than the boat tail bullets.

Q. My case necks have a lot of smoke residue all the way down the case neck.

A. This usually comes from a mild load that doesn't have enough

pressure to seal the case neck against the chamber wall or the case necks have work hardened and aren't sealing. Cure - Bump the powder charge up if it is a mild load and if the case necks have work hardened, either anneal the brass or replace it with new.

Q. I pick up a lot of brass at the range. Even after being full length sized, some of them will not even begin to chamber in my rifle.

A. You never know what range brass has been fired in, it could be a semi auto, pump, bolt action, etc. Cases that have been fired in a semi auto will not usually size down enough in just a regular full length die to chamber in a lot of bolt action rifles. Plus you never know how many times it has been fired or if it has been fired in a firearm with excessive headspace. Anything you intend to use for serious competition use new brass or brass that you know the origin of and how many times it has been fired. If you use the range brass be sure to inspect it carefully and discard anything that is suspicious.

Q. I have some assorted brass for my rifle that is once fired in my rifle and when I reloaded it, it shot all over the place.

A. So many shooters mix up different brands of brass and expect it to shoot well. Different brands of cases have different internal capacities which in turn gives different pressures and velocities. Neck thickness varies from brand to brand also and a case with a thick neck will have more tension after it has been sized than a thin neck case. Keep your brass segregated for better accuracy.

Q. I have 2 different rifles in the same caliber, should I keep my brass separated or can I just mix it up?

A. Definitely keep your brass separate for the rifle it has been fired in. You can use one brand case in one rifle and another brand in the other or if you prefer to use one brand, you can cut a small notch in the rim to identify them, just in case they should get mixed. Rifles don't have identical chambers and if one has a large chamber and the other a small chamber and you are mixing your brass, all the brass has to be sized to fit the smallest chamber to keep from having problems. If you keep the brass separate, you only need to size the brass just enough to function reliably in that firearm and your cases will last much longer from not being overworked plus you will gain in accuracy.

Q. How can I tell if my case necks are getting too thick?

A. After a case has been fired, before it is sized, a bullet of that caliber should slide easily into the case mouth.

Q. I hear talk of Ballistic Coefficient and I see it listed as numbers but I don't know if the higher or lower number is best.

A. The higher the number, the better the Ballistic Coefficient .

Q. I hear of inside neck reaming and outside neck turning. Why and when do you do it?

A. They are used when case necks are too thick either from necking it down from another larger caliber or from brass flowing from repeated firings. Tight-neck firearms will also have to be turned down and some shooters just want to uniform neck thickness. Inside neck reaming is

done after firing before it has been sized and follows the inside of the case neck and takes the excess material out of the inside of the mouth. It is of a set diameter and has no adjustment. Outside neck turning is done after sizing and has a pilot which goes into the case mouth and an adjustable cutter on the outside, where you can control how much material is removed. Like a small lathe, you can remove however much neck material is necessary.

Q. What are the differences in primer pocket dimensions?

A. SAAMI specs for large rifle depth is .125" to .132". Small rifle and both large and small pistol are .117" to .123". Flash hole diameter is .080" on most cases and PPC cases are .060".

Q. I turned my case necks and they worked fine for the first firing, but when I went to reload them, after they had been sized, bullets just fell into the cases.

A. You removed too much brass from the case necks. The inside diameter of the case before it was neck turned was sufficient to hold the bullet firmly, but after neck turning too much brass off, after the case had expanded, when you size it back, the inside diameter of the case mouth is larger because the neck is so much thinner. The brass is pretty well worthless now, because even if you used neck bushings to get the neck sized down where it will hold a bullet, it will probably split when fired.

Q. I have fired some corrosive ammo in my rifle and cleaned it good like I normally do. A couple of days later it was rusty.

A. Regular solvents won't usually work on corrosive ammo. Use hot, soapy water to clean it first, then normal cleaning and finally a light layer of oil. Check on it daily for a few days to make sure it doesn't rust. Better yet, don't use corrosive ammo.

Q. I have some once fired steel cases, can I reload them?.

A. No, just discard them. They are probably berdan primed anyway.

Q. I just bought a bunch of steel jacketed bullets for almost nothing at a gun show. Can I use them in my rifle?

A. Yes, but I wouldn't unless it was a clunker gun or something I didn't care about. I definitely wouldn't use it in a good firearm. They are definitely rough on your barrel.

Guesstimation?!?

One incident that often comes around as we receive requests for a trajectory is that the customer does not know the actual muzzle velocity of their rifle/load. Trajectory is a result of velocity, ballistic coefficient, and several environmental factors. With an exterior ballistic program it is essential that muzzle velocity be as accurate as possible in order to provide for a very accurate result. There are several reasons that we can see wide variations in velocity from firearms chambered for the same cartridge. These include variance in chamber and throat dimensions, different brands or lots of cases, primers, and powders. Barrel length can also be a contributing factor. The combination of these variables that exist in the firearm and components that we are using can

cause a wide range in velocities. What does this mean? Well, to the competitor, this can be a minimal thing as long as they are shooting at known distances and have had opportunity to verify their scope or sight settings at the distances that they are competing at. If there are unknown distances and/or no opportunity to check zeroes then we will not accurately be able to know what type of sight adjustment is needed. To the hunter, who always has to deal with unknown ranges that shots will be taken, an accurate trajectory is vital for success. This is even more true as distance increases. An example that can help us to understand this: 7mm-08/ 140 SBT at two different velocities will have the following results:

	Velocity		
	2650 fps	2850 fps	difference
200 yd.	0.00	0.00	0.00
300 yd.	-9.02	-7.62	-1.40
400 yd.	-26.18	-22.17	-4.01
500 yd.	-53.05	-44.94	-8.11
600 yd.	-91.60	-77.53	-14.07

This is a very simple example of the differences that can cause us problems when we are afield. We will be glad to help you with any trajectory questions that you might have. Call us at 1-800-223-8799. Remember though, if we have to guess at your velocities, we will only be able to guesstimate at the trajectory.

Testimonial photos & articles:



Steve Comus of Safari Club Int'l took this nice buck with his .30-06 classic by David Miller. He used the Sierra .30 caliber, 165 gr. SBT GameKing. The shot was "132 yards and the bullet entered the back in the chest, went at an angle through both lungs, messed up the far shoulder, and was recovered just under the skin on the far side".

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