



******* THE BEAR FACTS *******
March 2010

Southern California Golden Bears Highpower Rifle Club, Inc.
P.O. Box 1362
San Gabriel, CA 91778-1362

NEXT MATCH – CLUB MATCH – March 21– This will be a 50 shot club match on reduced targets. Meeting to follow.

Note: Annual dues are now being collected. This years dues are still \$35 (full) and \$17.50 (inactive). Please pay at the next match or mail to the address above. Make check payable to S. C. Golden Bears H.R.C.

OTHER MATCHES:

Gopher Flats Sportsman Club will have a high power rifle match on March 27th, the fourth Saturday of the month. Please mark your 2010 calendars with this date and we'll see you on the line. Check with Tom Temple.

Ojai Valley Gun Club - The April 4, 2010 match will be a 600 point – 60 round Medium Range course of fire, shot from the 600 yard line. February is a “club” event, open to OVGC members (\$5) and all non-members (\$15).

*******OTHER MATCH NEWS*******

**Gopher Flats, High Power Rifle Match Report, February 27, 2010
50 Round National Match Course**

No information at this time.

Ojai Valley Gun Club National Match Report - March 2010

The March 2010, OVGC Highpower Rifle Match had eight shooters under sunny, cool and muddy conditions. The rains from the previous few days left snow on the mountain tops, but plenty of mud on the range. The range warmed up somewhat with the sun, but overall a cool day, with the usual pick-up in breezes toward the end of the match. This month's contest was an NRA Approved 800 point - 80 round across-the-course ("XTC") match, with shots fired from distances of 200, 300 and 600s yards. Overall high score came from Nile Ragusin, using a Service Rifle and scoring 759-13X. Second overall was shot by Ron Wager with a 754-13X. The high Match Rifle score for the day came from Robert Coffey with a 753-18X. Overall, a good time was had by all, though the cleaning regimens this month will include mud removal, primarily from shoes, car floor-mats and shooting mats.

The April 2010 match will revert back to the 600 point – 60 round Medium Range course of fire, shot from the 600 yard line. April is a "club" event, open to OVGC members (\$5) and all non-members (\$15). The May 2010 match will be a club event 800 point - 80 round XTC event, just like the National Matches at Camp Perry. Course of fire will be 200 yard offhand, slow fire (20 rds); 200 yards seated, rapid fire (20 rds); 300 yards prone, rapid fire (20 rds); and, 600 yards prone, slow fire (20 rds). The May club event is open to OVGC members (\$5) and all non-members (\$15).

Dust off that old service rifle (1903 Springfield, M1 Garand, M1A, AR15, etc.), or that "tricked out" match rifle and come up and join the National Match Highpower shooters for a fun day on the range. The matches are open to both members and non-members. New shooters or beginners in the highpower discipline are welcomed and encouraged. We hope to see you there. Look for detailed fliers with information on all matches, both "NRA Approved" and "club" events on the OVGC website, under "National Match". The 2010 OVGC Highpower Calendar of Events can be found there as well.

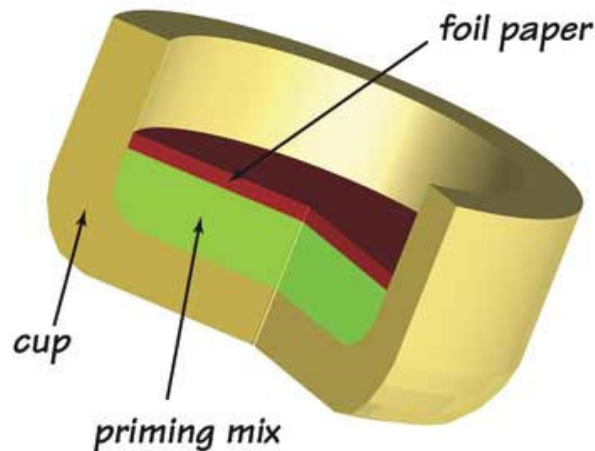
OVGC - National 800 or 500 Point March 7, 2010				
	Name	Rifle Type	Total Points	X
1	Nile Ragusin	Service Rifle	759	13
2	Ron Wager	Service Rifle	754	13
3	Brian Fisher	Service Rifle	743	17
4	Robert Coffey	Match Rifle	753	18
5	Mike Stern	Service Rifle	722	9
6	Blake Aaron	Service Rifle	709	6
7	Alan Harker (500)	Match Rifle (pending)	473	7

****** FOR YOUR INFORMATION******

Nelson submitted this article for the newsletter. Thanks Nelson

Mysteries and Misconceptions of the All-Important Primer

By Allan Jones



Most component primers have a little disk of paper between the anvil and the priming mix. Called the foil paper, it covers a priming pellet and is simply a manufacturing expediency. The anvil is omitted in this view for clarity.

Yes, those pesky little things we can't do without are hard to come by at the moment. If this rush follows past trends, it too shall pass. Let's talk about some of the lesser-known facts about primers while we fret about whether we have enough.

I suspect most readers know that a primer has more than one job. In addition to providing a spark to ignite propellant, it gives an initial boost in pressure to help the propellant reach a self-sustaining burn. It is also part of the case-sealing system that keeps hot gases behind the bullet and out of your face.

U.S. handloaders have a choice of primer size and purpose. There are separate versions for rifle and handgun; within each category, there are two sizes.

Size Matters

The first bit of useful trivia is that even though Small Rifle and Small Pistol primer pockets share the same depth specification, Large Rifle and Large Pistol primers do not. The standard pocket for a Large Pistol primer is somewhat shallower than its Large Rifle counterpart, specifically, 0.008 to 0.009 inch less.

A number of handloaders found this out when one of the "mega-magnum" handgun cartridges appeared a few years back. Original cases were formed for Large Pistol primers. Some reloaders decided to switch to Large Rifle primers to better handle the high pressures, and they found the rifle primers stood proud of the case head, an unpleasant situation in a high-recoil revolver cartridge.

Primer Equivalency There have been reams written about how various brands of primers compare. Tests to compare the effects of primer substitution have been published for years. I've been a lab rat long enough to understand that road is fraught with potholes.

We heard a number of requests to add a primer chart in the Speer manuals I wrote showing what the various primer makers call their primer types. Note that there are no such charts in my books. Why? First, switching primer brands from what we used in the manual could create an unsafe condition. Second is accuracy of information. One of the last Speer manuals before I took over printed a nice chart of primer sizes and manufacturers' numbers. Almost before the first printing was sold out, one company completely changed its numbering system, and a foreign brand listed became unavailable. Hardcover books are almost like engraving stuff in stone, and I did not want a chart—that may be obsolete before the book ran its course—to create problems.

As for the “which is hotter/colder” discussion, a similar conundrum exists: primer specification change. CCI overhauled its entire primer line in 1989. We were careful to make certain that the new primers could share load data created with the older versions, but not every change is announced. Another time, shortly after a writer friend of mine had a lab shoot a complete series of rifle ammo with the only difference being the primers, another primer maker came up with a change that affected the outcome of that test.

Here's a classic example of a printed mistake being taken as gospel: Another company's reloading manual had a chart of primer numbers and types that incorrectly showed the CCI Benchrest primer as being interchangeable with the CCI Magnum primer. This was perpetuated over several editions of that manual before we convinced that company to correct it. People would call CCI and demand that our Benchrest primer was a Magnum because it was printed that way in another company's manual.

Bottom line: If I publish a primer performance equivalency chart today, it will soon be obsolete, and some poor sod will try substituting primers based on invalid information. I apologize to the nice person who recently wrote my editor suggesting I do a handgun primer equivalency test, but it can lead to too much grief. Stick with published and current load recipes.

Magnum Primers: Use As Directed

Most primer makers offer a standard and a Magnum primer in each size and application. The Magnum primer offers more power for challenging ignition scenarios. A large-capacity case, a heavily deterred propellant, or extremely cold weather (less than 20 degrees Fahrenheit) typically makes the Magnum primer desirable.

There are two ways to make a Magnum primer—either use more of the standard chemical mix to provide a longer-burning flame or change the mix to one with more aggressive burn characteristics. Prior to 1989, CCI used the first option in Magnum Rifle primers. After that, we switched to a mix optimized for spherical propellants that produced a 24-percent increase in flame temperature and a 16-percent boost in gas volume.

Mysteries And Misconceptions Of The All-Important Primer

Literature from some propellant manufactures often says that their products do not require Magnum primers. This is perceived as a good thing because Magnum primers are made in smaller quantities and require more chemicals; therefore, they are more expensive. However, I had to take a different view, one based on real-world issues.

We tested loads at both maximum normal pressures and at the starting loads (some labs calculate start loads—we shot them). Standard primers caused no ignition issues at the max load but posted higher extreme variations in pressure and velocity in the lower pressure regimes of the start loads. In extreme cases, the start loads produced short delayed firings—probably in the range of 20 to 40 milliseconds but detectable to an experienced ballisticians. Switching that propellant to a Magnum primer smoothed out the performance across the useful range of charge weights and completely eliminated the delays.

If I've recommended a Magnum primer in reloading data I've developed, it's because my lab results show it's needed.

A Myth-Conception

Like others who reloaded in the 1950s and '60s, I heard the old mantra, "CCI primer cups are hard." I used CCI primers long before I dreamed I'd be working for the company, and I never had problems. I had talked to other hand-loaders who claimed to have had some trouble. Arriving at CCI/Speer in 1987, I found out the real story.

The metal cups were neither harder nor softer than any other brand. However, the early noncorrosive primer mixes that Dick Speer and Dr. Victor Jasitis developed had one difference from many other primer products at the time—the dried pellet was rather brittle. This was not a problem unless the loader tried seating primers too deeply; in that case the anvil was forced almost to the cup, and the brittle pellet broke away from the anvil. With little mix under the tip of the overseated anvil, a misfire was lurking. I decided the reason I never had a problem was that I seated off-press with hand tools that let me feel the seating.

The mix that did not like overseating was retired years before I arrived in Lewiston. It just goes to show how old perceptions can linger even in the face of data and facts.

Too Much Primer

You can have too much primer. When the output gas volume of the primer approaches that of the cartridge case, sometimes special handling is required. I remember when CCI was working with some experimental primers for 9mm Luger, and we started seeing odd time-pressure curves on the computer. Instead of the normal single peak, we saw two. One QA tech commented that it looked like the dual humps of a Bactrian camel.

It was a classic case of high gas volume but too little temperature. The primer's extra gas unseated the bullet while still trying to light off the main charge, producing one peak. Then the bullet retarded as it engaged the rifling, creating the second peak. Although a shooter would never notice this in a production firearm, that double hump was worrisome, and we abandoned that mix.



We have a classic case study in the .22 Hornet. For years Speer used Small Rifle primers in the Hornet. When I shot some of the data for Speer Reloading Manual Number 12, I found too many propellants that were so rangy they would not meet my standards for publishable loads. As a result, we did not show very many propellants for the Hornet, and the velocities were rather modest.

While I was developing the .22 Hornet 33-grain TNT HP bullet, I tried Small Pistol primers, knowing from the 9mm experience above that such a light bullet could be unseated by primer power alone. I'd talked to a number of handloaders who were getting better accuracy with Small Pistol primers, and I wanted a look at the

concept in a lab setting. Sure enough, switching to Small Pistol primers reduced the variations in pressure and velocity and also reduced average pressure. The latter let us safely run the charge weights a little higher for velocities more appropriate to the Hornet. Manual Number 14 shows many more Hornet loads with better velocities, thanks to Small Pistol primers.

Foiled Again

Most component primers have a little disk of paper between the anvil and the priming mix. There are many “campfire” rumors concerning this item. First, it’s called “foil paper,” not because it’s made of foil but because it replaces the true metal foil used to seal early percussion caps. (See the illustration on page 12.) The paper is chemically treated to burn ash-free.

The reason this little disk exists is strictly a manufacturing convenience. Wet primer pellets are smaller than the inside diameter of the cup when inserted and must be compacted to achieve their proper diameter and height. Without the foil paper, the wet mix would stick to the compaction pins and jam up the assembly process. The absorbent paper soaks up some of the moisture and binding agent from the wet mix and stays with the pellet when the pin is lifted at the end of the operation. It’s the same reason you put wax paper between hamburger patties—it prevents sticking.

Pre-Stressing Primers Does Not Apply

Occasionally, a person who has a bad experience with a dropped cartridge invokes the theory of primer pre-stressing. They are moving a civil engineering concept and practice to a technology where it does not apply.

The theory is that the act of seating a primer stresses the priming mix to the point where its chemistry is on the ragged edge of gross instability. Not so. Were this true, every cartridge dropped, regardless of how it lands, would discharge. Come on—thousands of cartridges get dropped each year, and few actually activate.

The real story is that Boxer primers leave the factory with the anvil higher than it would be when seated in a cartridge case. Seating so anvil legs touch the bottom of the pocket lets the anvil tip penetrate into the pellet of mix. The nearly universal recommendation of having the primer cup bottom 0.003 to 0.005 inch below flush with the case head exists to set the proper amount of priming mix between the cup and the anvil tip.

This critical distance is known as the bridge thickness. Establishing the optimum thickness through proper seating means the primer meets sensitivity specifications but does not create chemical instability. However, failing to set the bridge thickness through proper seating depth is the number one cause of primer failures to fire. The bridge thickness is too great with a high primer, even one whose anvil legs touch the bottom of the pocket.

I hope this helps you understand some of the more esoteric aspects of primers. They are amazing little gadgets, and few people fully realize the intricacies of their manufacture and use.

Find this article at:

http://www.shootingtimes.com/ammunition/ST_mamotaip_200909/index.html

****** ITEMS FOR SALE******

Tom Temple has the following item for sale:

For sale: Creedmoor Hardback Cordura Jacket size 46 straight cut
Color is olive drab. Price \$150. Condition like new.
Check with Tom at tmtemple@pacbell.net

Robert Coffey has the following for sale:

<p>B Jones Rear Sight Diopter/Lens Inserts for AR Hooded Match Sights http://www.bjonesights.com/AR15.ht</p>	
<p>Bob Jones price for ONE LENS kit = (1) Lens \$28.00 (2) O-Rings</p> <p>HIGH SIDE OF DOME TOWARD FRONT SIGHT</p>  <p>Hood and Leaf for display Only</p> <p>For information or any questions, email: robert.coffey@netzero.net</p>	<p>PRICE FOR 5 (FIVE) LENSES AND 5 O-RING SETS = \$50.00</p> <p>ALL ARE + (PLUS) DIOPTERS: +0.25 +0.375 +0.50 +0.625 +0.75</p> <p>http://www.bjonesights.com/power.html</p> <p>If you can see the <u>TARGET</u> OK, but</p>

***** DATES TO REMEMBER!!*****

January 15 - Club Match - 50 shot

February 21 - Club Match - 50 shot

March 21 - Club Match - 50 shot

April 18- NRA Approved Match - 80 shot

May 16- Club Match - 50 shot

June 20- NRA Approved Match - 80 shot

July 18- Service Rifle Match and pot luck- 50 shot

August 22- Club Match - 50 shot

September 19- NRA Approved Match - 80 shot

October 17- Club Match - 50 shot

November 21- Turkey Shoot - 50 shot

December 19- Club Match - 50 shot

October 16 - 24 - CMP Western Games and Creedmoor Cup, Phoenix, AZ.

Don't forgetDues are now being collected!