- The Single Shot Black Powder Cartridge Rifle Club of Great Britain -

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BLACK THUNDER

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Christmas Fun Shoot gets a visit from Santa ... 7th December 2003

Christmas came early for Nick Steadman when he received his cash prize from the jolly red fellow at the Club's Christmas Fun Shoot which was held at Wedgnock ranges, just outside Warwick. Nick beat all the competition when he placed his winning single shot nearest to the yellow mark on the little buffalo target.

Full report inside...

Match Report

Christmas Fun Shoot

Wedgnock

Sunday 7th December 2003

Close up of two of the Skirmish clay target boards. These were now in the shade which made them easy to see. The ones still in the sun were tricky to say the least!

The Christmas Fun shoot took place at Wedgnock, the MLAGB's ranges in Warwickshire, on a cold but sunny day on Sunday 7th December. The sun was later to prove a real nuisance for anyone who entered the Skirmish Shoot. Read on.

As is now our custom, we arrived armed with gas burners, kettles, pots, pans, and all manner of stuff to make everything from hot lemon tea to a giant saucepan of gorgeous leak, potato and onion soup kindly supplied by Vic and Marie Nock.

Nearly everybody donated a prize to the prize pool. These ranged from a bottle of Southern Comfort to an adjustable wrist rest and mould handles expertly made by Guy Milchem. Adrian Eagling brought his son Sam along to watch and also to gently introduce him to our merry bunch of "compulsive lunatics".

A fine array of prizes including: Johnny Walker Black Label, Southern Comfort, various wines, mould handles, wrist rest, toffee, blank CDs, a cut of beef and the book "Getting a Stand"

The skirmish competition should consist of shooting at orange clays suspended like the 5 on a dice, on a BLACK target backing board. Imagine the frustration when the only backing boards we could find were natural ply and our even greater surprise when we discovered that orange clays on a ply backing in bright sunshine at 100 metres, become almost invisible!

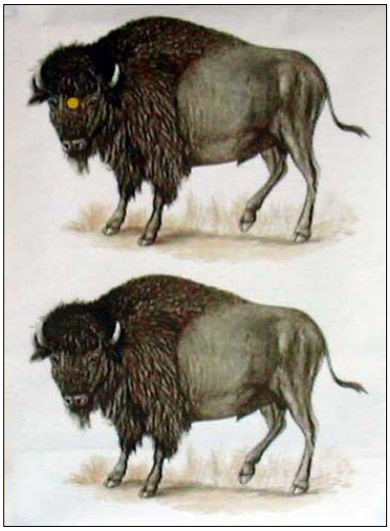
Despite the invisibility factor, some really good scores were achieved which resulted in an exciting 3-way sudden death shoot-off between Alan Stevens, Dennis Chambers and Colin Buck who all managed to break all 10 clays. Dennis went on to win despite shooting at the wrong target! We let him off which just shows how easy going the day's shooting was.

The other scores on the skirmish clays were: Malcolm Seller (9), John Brocklehurst (9), Mick Nash (8), Tony Purser (8), Nick Steadman (7), John Gilpin (7), Vic Nock (7), Nigel Dennis (6), Adrian Eagling (6), Chris Barnard (5), Guy Milchem (4), and Andy Boyle (2). Obviously thoughts of impending fatherhood has affected his aim.

Nigel Dennis introduced his exciting 3-shot group, "Sergeant York" competition, putting up a nice juicy joint of beef as a prize (wish I'd been shooting). Alan Stevens went on to win it with a very respectable group in the white, just where it should be. In fact, Alan had the ONLY qualifying group in the white. Shots in the black or touching the line disqualified the target.

One of Nigel's Sergeant York targets. This one's fresh .. All the shot ones disappeared before I could photograph them. All 3 shots had to be as close to the V without touching the black. Not that easy at 100 m.

Looking down the line, some shooting at clays or turkeys, others at buffalo or the Sergeant York target. It was nice and informal.



The little buffalo target barely 12 inches across … one of the trickiest to win. Sight up on the bottom buff with as many shots as you need but only ONE shot allowed at the top buff. Nearest to the yellow spot wins. This time it was Nick Steadman.

The turkey shoot was a draw between Mick Nash and Alan Stevens and since there was a "heavy money" cash prize involved, Mick suggested tossing a coin to decide. Alan won!

Finally, the most difficult target of all, the small buffalo with the yellow spot on its head. Sighters on the bottom buff, without hitting the main target then a single shot nearest the spot. The winner … Nick Steadman. Well done.

Down-range view of target changing between details … including hanging up new clays for the skirmish shoot. The standard of shooting was high despite the sun problem and after the shoot-off we had only one clay left over!

That's about my recollection of the day as well as I can remember.

Thanks to everyone who came along and supported our last shoot of 2003. If you had fun, let's do it again this year.

Alan Stevens collects his joint of beef from Nigel Dennis while Guy Milchem and Dennis Chambers look on enviously, wondering if he's going to have Yorkshire pudding with it.

And to round off, a picture of John Brocklehurst about to break yet another clay. He was one of the main culprits who nearly left us out of clays! Chris Barnard gets ready in the background.

Some memorable moments from 2003

The Great British - American Buffalo Match, 7th September. Definitely one of my personal favourites.

A warm, peaceful and serene afternoon during the 600 yard stage of the September Buffalo match. Shooting at its best...

... in contrast, a wet rainy afternoon for the Precision shoot in July.

Not strictly a club event but what the hell. A group of good friends just before the dinner to mark the end of the World Historical Rifle Long Range Championships in September. L-R: Vic Nock, Phil Morgan, Mon Yee, Clive Taylor, Linda Yee, Kelley Roos, Dorene Roos, Lee Shaver and Nancy Shaver.

"Family" picture taken at the October Quigley match, just minutes before the Shiloh Sharps raffle draw. That was an exciting day ... none of us knowing if we would be the proud owner of another rifle by the end of the day. Thanks Shiloh, you're a great company.

The two teams and markers at the Inter-Club Team Steel Challenge at Diggle range, East of Manchester. A proud moment for our boys having just won the new and prestigious cut glass trophy, to be competed for every year. Nice to be first, but the pressure is on to hold onto it this year.

Our good friend John Gilpin … always up for a laugh and a good rifleman too when he's pointing in the right direction.

The Annual Team Steel Challenge Trophy

Gerry Haines proudly displays the Shiloh rifle gift certificate which he won in the Quigley draw.

A time to relax and exchange stories with some of the American team.

BPCR Calibre Converter Units

Cheap practice with Black Powder Single Shot Cartridge Rifles

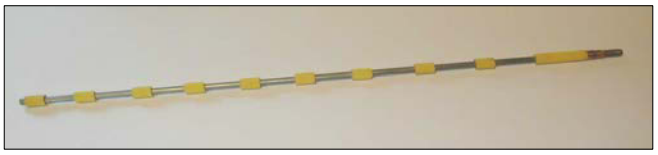
By Clive Taylor

If, for any strange reason, you get this uncontrollable urge to know what it feels like to be as popular as a fart in a spacesuit then follow these easy steps.

First join, or get invited to, a purist .22lr precision rifle club – preferably with an indoor range. Then on a club night, when you are surrounded by a goodly number of precision guys, clad in their multi coloured leather bondage garb, calmly pull your Sharps (or any other .40 or .45 cal. BPCR) out of it's slip and ask, with a straight face, "OK if I shoot this here, mate?"

After the ambulances have ferried off the heart attack cases, and those guys that tried to insert a box of Eley into your fundamental orifice are safely sedated and trussed up in straight jackets, then you can calmly show those remaining a very useful bit of kit – a .22lr converter barrel and cartridge adapter for your big boomer.

I have the Lee Shaver adapter. Lee is a specialist BPCR gunsmith in the States, a master at his craft, plus he is a top ranking shot and all-round good guy. There is another manufacturer/supplier of .22 inserts for BPCRs but I have no experience of them so I will concentrate on the Shaver.



The Converter - The full unit

The adapter enables you to shoot and practice with your big bore rifle in many more situations and locations – and if you shoot at Wedgnock, for a longer session during the day. Straight out of the box the barrel adapter and cartridge adapter can be used in any BPCR that is .40 or .45 cal. and has a .45 cartridge head. Therefore the full range of .45s (2.1" through to 3.25"), PLUS the 40/65 and 40/82 is accommodated. The out of the box range of calibres is restricted by virtue of the cartridge adapter. I understand Lee can, and will, make specials for other calibres (cartridge cases).

For all intents and purposes everything but the recoil (and price per round) is the same – weight, sighting, trigger pull, technique etc. Which means that cheap and easy practice is the order of the day. One important skill that can be practiced with the insert is reading the wind. My 100 yard sight setting for the .22 is just lower than my 300 yard sight setting for .45 x 3.25" and I would estimate that wind affects the .22 bullet at 100 yards about as much as the .45 at 300. According to Lee, the similarity remains at longer distances making this a very serious addition to a BPCR shooters arsenal. In the States there is an increasing following of "Long Range" and silhouette for the .22lr - and what happens over there eventually happens over here!

Fitting it couldn't be easier although care, and a few more minutes, should be taken on setting it up for your rifle – this needs only be done once. The 24" lightweight barrel is fitted with numerous "sponge" washers that are very similar to the yellow ear plugs that many of us use. Because these "washers" regain their original shape very quickly they can be used in .40s and .45s consecutively (if you own both), they are not restricted to only one rifle (but that *will* mean re-adjusting head spacing every time). The insert is gently pushed into the barrel from the breech end and head spaces on the first of two adjustable nuts on the threaded end of the barrel. This is where the first off care needs to be taken. You adjust the position of the front nut to stop against the leade at the front of the chamber such that the cartridge adapter seats snugly up against it when the breech block is brought back into battery. Too loose or too tight a fit will seriously affect accuracy so care is not wasted. Once the front nut is in place lock with the second one. I found that some nut locking fluid helped as, in my case, the nuts did vibrate loose after about 50 rounds. From then on it's a matter of slide it in to use it and slide it out to remove it – a matter of seconds! Don't forget to remove every last vestige of oil in the barrel though. You may find that your "sponge" washers become contaminated and damaged (spares can be bough from Lee). I wipe the barrel through with a patch dampened with acetone to remove all oil.

The fact that there will be between 4" and 10" of "normal" barrel left on your rifle beyond the muzzle of the 24" adapter may worry you – the possibility of gas cutting. It did me to begin with so I spoke to Lee about it and he assured me that he's put thousands of rounds through his and there is not a sign of "gas cutting" or other damage in his Sharps barrel. It certainly didn't affect his performance at the recent World Historic Championship! I find that a quick wipe through with a Hoppes damped patch will remove any evidence of the adapters presence.

Fitting it - Nothing could be easier, just slide it in. Note the threaded end with the 2 knurled nuts to adjust head spacing.

The cartridge adapter has an internal transfer bar that converts the centre fire strike of your BPCR to a rimfire strike on the .22lr cartridge. Fitting the .22lr cartridge into the adapter is no more complicated than sliding it into the retaining slot (just like the shell holder of a loading press). Then load the whole unit as you would a "normal" cartridge. Here a word of warning. The part of the transfer bar that your firing pin hits HAS to be softer than your firing pin to avoid damage to the pin. Therefore the transfer bar head will crater and eventually to such a depth that a full strike on the rimfire cartridge won't be achieved – light strike time! To overcome this natural progression Lee provides replacement "heads" to the transfer bar that simply screw on and off. The frequency that you will have to do this depends on the shape of the nose of your firing pin and the strength of the hammer spring. Lee provides these replacement heads in a variety of materials, the choice of which is suck it and see until you've discovered which one lasts the longest (or is the most economic) in YOUR rifle.

Sublime to the ridiculous - Before, during and after. The mighty .45 x 3.25" of the author's Sharps on the left. The miniscule .22LR on the right in comparison. In the middle the .22LR adapter cartridge used in the converter.

So, how does it shoot? A damn sight better than I can! I did some tests on different ammunition makes and found the adapter (mine anyway) to have a finicky appetite. I had every intention of publishing the photos of groups (or lack of) for 5 different .22lr rounds at 100 metres. All were 15 consecutive rounds fired off a bench over x-sticks.

Unfortunately just as I finished the last target the heavens opened and we had the whole of the summer's rain in 15 minutes. This left the targets a sodden mess, no good to man nor beast, and certainly no good for scanning or photographing! (And no time to repeat)

I tried 2 flavours of PMC (Match & Sidewinder), Remington Target, Geko and SK. Some of these were selected as I had used them before in the adapter. Others I didn't include in the test, again because I'd used them before in the adapter and their performance was abysmal. The following comments are not intended to besmirch or recommend any particular maker. They simply reflect how they performed in this particular adapter – classic "your mileage may vary".

Both lots of PMC gave a shotgun pattern. The Sidewinder managed a 7" "group" with the Match being marginally tighter, but this only highlighted the number of fliers. The Remington gave a good circular group of about 2.5" (this ammunition was the only one to not have an obvious flier). The Geko gave a main group of 1" with 5 fliers opening it to 1.5". 3 of the fliers I called and the other 2 were horizontal so could have been me, the wind or the ammo. The best group of the day was, without doubt, the SK. 12 shots into a thumbnail (9 one ragged hole and 3 just off), with 2 called fliers and a 3rd uncalled flier (again horizontal) opening the full group up to just over 1".

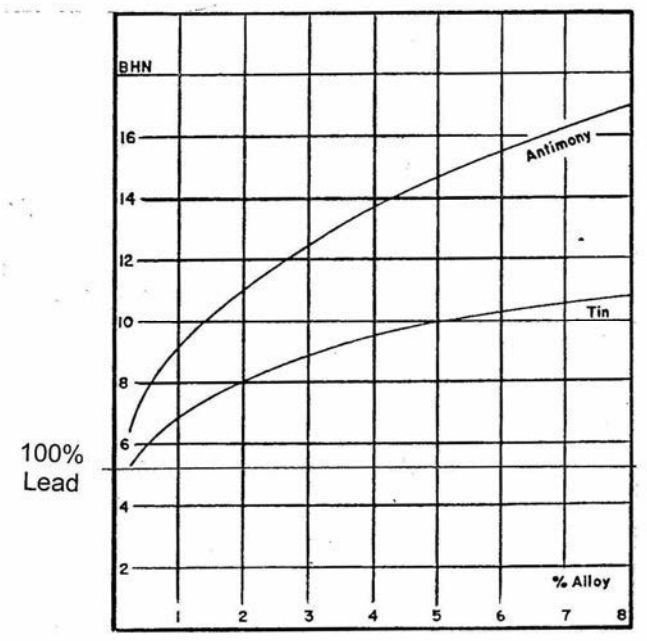
So you tell me – ***how does it shoot?*** Well, mine's going to continue to give me good service providing off season, indoor and outdoor, cheap practice – and those of you who know me know I need it!

If you want to purchase one of these then you can contact Lee Shaver by phone or email. Available on the links page on the website www.ssbpcrc.co.uk. It comes with a good instruction guide (and scaled down silhouette targets!). On a legal note the adapter is on my FAC as a ".22lr barrel insert" (Warwickshire Police is Issuing Authority). As the adapter was sent direct to me I entered it myself on my FAC. Should I ever wish to sell it on (no chance!) then I will need to get it proofed. All perfectly legal and above board.

Do you think you're hard enough?

Pb, Sn and Sb or in layman's terms .. Lead, Tin and Antimony

An article by Vic Nock



The graph above shows the hardening effect of tin and antimony used separately for the hardening of lead.

As shown, the effect of adding 4% tin is about as hard as one needs to go. The hand loaders of the 1880 – 1890's used very little tin, in the ration of 1:30, 1:40 or even 1:60.

The formula for determining the amount of tin required for a given hardness of lead is calculated by:

$$\frac{\text{Lead – Kilo} \times 2.2 \times 16 \times \%\text{ of tin required (e.g. 3\%)}}{100}$$

i.e. $\frac{5 \text{ kg lead} \times 2.2 \times 16 \times 3}{100} = \frac{528}{100}$

= 5.28 oz. tin required

Days	Brinell Hardness No. BHN
0	13
3	14.5
6	15.5
9	20
20	16
15	20
18	19.5

This table shows the hardening effect of tin/antimony mix over a period of time. Maximum hardness develops after 9 days. The % of hardening agent is not stated but assumed to be greater than 8% of antimony and tin. As one can see from the previous graph, the maximum hardness is approximately 16.5% on the Brinell scale.

Days	Brinell Hardness No. BHN
4	9.5
8	10
12	12.5
16	13
20	16

This table shows the ageing hardness of a softer alloy. The full hardness being achieved after day 20. This may be the more usual time for hardness to develop.

Referring to the previous graph, this hardness was achieved with a 7% mix of antimony/lead.

Generally a 50% increase in hardness can be anticipated if storage is maintained for approx. 20 days, giving a constant hardness to the bullets for a period of time.

Linotype has a Brinell hardness of about 22

	% Tin	% Antimony	% Lead	BHN
Monotype	9	19	72	28
Linotype	4	12	84	22
Ideal No.2	5	5	90	15
1:10Tin:Lead	9	-	91	11.5

Further examples of hardness

Metford's formula, as near as I can ascertain, for the hardening of bullets was:

1.5% Tin + 1.5% Antimony + 97% Lead

because he only required the bullet to expand 1/3 of its length (in muzzle loading rifles).

These tables and graph appear in various publications which I have referred to over the last 20 years and may be out of date concerning certain products. If anyone has further information, corrections or updates, I would be interested to receive their comments. I only offer this information as a guide not a definitive statement.

Vic Nock – September 2003

A SHARPS BUFFALO RIFLE?

by

Dale Murphy

Mention the word Sharps to most shooters, and it will not be long before "Buffalo" and "Creedmoor" are mentioned.

Read old books and articles, and you would be forgiven for thinking they were all one the other or both. In reality only 6,441 sporting rifles of the 1874 model were ever produced. This of course, does not include the many gunsmith frontier and "Meacham" conversions, dedicated target or true Creedmoor rifles.

Most of the 1874 rifles produced, were in large enough calibres to kill big game, including buffalo. Exceptions to this would be the short .40 calibres, such as the .40 1 11/16".

The rifle we are looking at here is as near as they come to a real Buffalo rifle. I MAKE NO CLAIMS THAT IT EVER KILLED ONE! But on paper and in the hand it sure as hell fits the bill.

Luckily, most of the records of the Sharps Rifle Co. still exist for the 1870's, albeit in private hands. For a fee, you may be able to obtain the record for your rifle. The previous owner of this rifle did exactly that. The letter giving the details of the rifle is eminently frameable, being produced as a facsimile of an original Sharps factory letter.

The Model 1874 Hartford Sharps with its original Sharps moulded leather rifle case still in excellent condition. The case fits the rifle like a glove.

Sporting rifles, and to some extent (except the true Creedmoor) target rifles could be ordered in most any specification. This means that there are some wonderful combinations of features and fascinating variations in original rifles; rifles up to 25 pounds in weight in fact. This is a 13 pound gun, made at Hartford in 1871 and is typical of this period. Sharps of course starting production of cartridge sporting rifles in 1869, the 1874 tag being applied only at the end of 1875, to separate the old model from the new model Sharps hoped to introduce.

Armory of Sharps Rifle Company

E.S. Wescott, President

Hartford Conn. September 1, 1995 187

Dear Mr.

Sharps Rifle serial number C53544 has been located in the original Sharps Rifle Manufacturing Company records of Hartford, Connecticut.

This gun was initially invoiced November 16, 1871, to G.W. Yale who was Superintendent of the Sharps Company at the time. On this occasion, it is noted as an original metallic cartridge Sporting Octagon Rifle of .50 caliber using the 1 3/4" shell. It also had a full 30" octagonal barrel, globe and peep sights, oiled finished stocks and double set triggers. The list price was $47. There were fifteen rifles in this order of varying characteristics and it is a possibility that these guns were used for some display or shooting match.

This gun was again invoiced September 13, 1872, to Sharps dealer, Nathaniel Curry and Brother of San Francisco, CA. On this occasion it had the same above noted characteristics.

I trust the above factory data to be of value. Nice to hear from you again.

Sincerely yours,

R.L. Moore, Jr. M.D.

R.L. Moore, Jr. M.D.

RLM/jmt

OLD RELIABLE (TRADE MARK)

R. L. MOORE, JR., M. D.
310 MAGNOLIA STREET
PHILADELPHIA, MISSISSIPPI 39350

ANTIQUE GUN COLLECTOR AND OWNER OF THE ORIGINAL Sharps Rifle Co. RECORDS

The Sharps factory letter ...

Being produced in 1871 means it was right there at the start of the buffalo hunting. Later on, it did go West, but interestingly, it was invoiced on 16th November to G. W. Yale who was Superintendent of the Sharps factory. A total of 15 rifles were in the invoice to Mr. Yale on that day. Dr. Moore who

The Hartford 3 line barrel address.

researched this rifle thinks they were probably used for a shooting match or to promote the company.

Nearly a year later on 13th September 1872, it was invoiced to famous Sharps dealer Nathaniel Curry of San Francisco. Curry and brother being one of the major suppliers of SHARPS rifles to hunters. Where it went after Curry sold it, I have no idea. I would like to think it was used and enjoyed by a real hunter and made him a fortune in hides, tongues and meat but I suppose I will never know. By the way, if you think that last statement is totally politically incorrect, you would be right, but then all the Native Americans in Dances With Wolves are greenpeace warriors aren't they?

MODEL 1874 HARTFORD SHARPS
WEIGHT 13 POUNDS
BARREL 30" OCTAGONAL
BUTTSTOCK ARMY TYPE STEEL BUTTPLATE
CALIBRE 50/70 1¾"
OILED FINISH STOCKS
DOUBLE SET TRIGGERS
GLOBE FRONT SIGHT
SHARPS GERMAN PETTERN TANG SIGHT

Sharps German pattern Hartford tang sight.

The opportunity to test a rifle like this does not happen every day, so I suppose I approached the experience I a more reverential manner than I would a modern copy.

I started by reading as much as I could about the .50/70, it's history and development from a military round to it's variations produced by different manufacturers as a hunting round. Sharps offered two standard loads in the 1 ¾" case, 457gn grooved bullet and 500gn paper patched, both backed by 70gns powder. In 1876, these loads were changed to 425gn grooved and 473gn paper patched. Which way to go? Being a bit of a traditionalist, it had to be the paper patched route for me. I had some cases which I'd used a couple of times in an old Allin conversion Springfield and, as they dropped straight into the chamber of the Sharps, I thought they would do. Before going on, I MUST STRESS I had this old rifle gone over with a fine tooth comb by a gunsmith and, as I was only going to use standard black powder loads and none of that silly new fangled powder whose name escapes me, we both decided it would be fine. If you decide to do the same, on your own head be it, and don't forget the regulations relating to shooting a firearm, they DO apply.

You all, I will assume, know the basics of black powder cartridge reloading and, as paper patching is really an involved subject all of it's own, I will just stick with the loads tested, and their results.

I still intend to test more when time permits. Initial tests were very encouraging and I also hope to try 200 and 300 yards in the near future.

ALL SHOTS FIRED OVER CROSS STICKS AT 100 YARDS

<u>LOAD 1</u>

BELL BRASS 60 GRAINS SWISS No.4 DROP-TUBED NO COMPRESSION
PRIMER CCI STANDARD LARGE RIFLE
BULLET ALLOY 99% PURE
BULLET WEIGHT 480 GN PAPER PATCHED
VEG FIBRE WAD .030 THICK
0.200 GREASE COOKIE BETWEEN POWDER AND BULLET
(ALL POWDER CHARGES WEIGHED)

<u>LOAD 2</u>

BELL BRASS 65 GRAINS SWISS No.4 DROP-TUBED NO COMPRESSION
PRIMER CCI STANDARD LARGE RIFLE
BULLET ALLOY 99% PURE
BULLET WEIGHT 425 GN PAPER PATCHED
VEG FIBRE WAD .030 THICK

0.200 GREASE COOKIE BETWEEN POWDER AND BULLET

BULLETS WERE PATCHED TO BORE DIAMETER, BULLET BEFORE PATCHING BEING 0.488 AFTER PATCHING IT WAS 0.498, BORE DIAMETER BEING 0.500 GROOVE DIAMETER BEING 0.510. THE HIGHER POWDER BEING USED WITH THE

Both weights of patched bullet and grooved Government bullet from original mould, together with a loaded round.

SHORTER LIGHTER BULLET MEANT THAT OVERALL CARTRIDGE LENGTH WAS KEPT THE SAME FOR BOTH LOADS AT 2.488 INCHES.

IF THE ABOVE BULLET DIMENSION WHEN PATCHED COMPARED TO GROOVE DIAMETER SEEM STRANGE, THAT IS BECAUSE MOST PAPER PATCHED BULLETS WERE PATCHED TO JUST UNDER BORE DIAMETER ORIGINALLY, SO THEY WOULD CHAMBER IN A DIRTY BORE, ALSO, THE REASON MOST ORIGINAL PAPER PATCHED BULLETS HAVE A LONG TAPERED NOSE OR OGIVE.

BY USING VERY SOFT LEAD, WHEN FIRED, THE BULLET WOULD EXPAND INTO THE RIFLING. THE MOLD I HAVE IS A STRAIGHT SIDED BULLET WITH A NOSE PROFILE ALMOST EXACTLY LIKE THE ORIGINAL U.S. GOVERNMENT GROOVED BULLET.

AS WITH ANY OTHER RIFLE WHEN WORKING UP AN ACCURATE LOAD, ALL THE ABOVE COMPONENTS CAN BE CHANGED AROUND UNTIL THE RIGHT LOAD IS FOUND. WHICH IS EXACTLY WHAT I WILL DO IF I GET THE TIME.

NO VELOCITY TESTS WERE PERFORMED, TIME DID NOT PERMIT. ONCE AN ACCURATE AND CONSISTENT LOAD IS ARRIVED AT I WILL CHRONOGRAPH IT MAINLY TO SEE HOW IT COMPARES TO THE ORIGINAL LOADS. DETAILS OF MOST FACTORY/ORIGINAL LOADS CAN BE FOUND IN “CARTRIDGES OF THE WORLD” BY BARNES, AND OF COURSE ALL THE INFO YOU COULD WANT ON ALL MODELS OF SHARPS RIFLES AND LOADS ARE IN “SHARPS FIREARMS” BY SELLERS.

RESULTS

Load one was used to get the rifle an approximate zero. Very surprisingly, it took only three shots to get in the black! Even more surprising considering there is no windage adjustment on the tang sight, and the front only being adjustable by tapping either direction within the barrel dovetail. This rifle just shot straight! Well, about 2” left of centre to be truthful.

Unfortunately the rest of the shots did not group so well. A barely damp patch was pushed through the bore followed by a dry patch after every shot to eliminate any fouling contributing to any inaccuracy between shots. Once a load is established as fairly accurate, I always test it for efficiency of keeping the fouling soft, main thing here was to see if the test load showed any promise at all. Best group achieved with the 480gn bullet was 3 shots into about 3½”, and there was not even a breeze blowing, in fact it was a bright day so I could not blame the weather. Recoil was hardly noticeable, in fact, it was a pleasure to shoot.

The second load shot absolutely central but about 3” higher than load 1, probably due to the increase powder load and lighter bullet. Best group with this load was 5 shots just under 3”, 4 of which were touching. Some more load testing when I get time and I THINK I may be able to improve on that, but

A final look at the Model 1874 Hartford Sharps in .50/70 1¾”.

even if I can’t, I will still every shot, probably accompanied by a big silly grin.

THE SNOVER DEEP-HOLE EYECUP

By

Paul A. Matthews

There comes a time in almost every man's life when his vision starts down that long slope of deterioration. It is often so gradual that we fail to recognize it for what it is, but accept it as an off day or off shooting season. Then the day finally arrives when we realize our shooting eye, after a few seconds of intense concentration, will abruptly shift its point of focus, or the target which at first was sharp and black suddenly fades to a less definitive grey. In either case, if the shot is made without starting all over again, it is a miss.

It makes no difference that your vision with corrective lenses is 20-20, the muscles in your eyes are no longer young and strong, they can no longer hold a sharp focus on that front sight and distant target for more than a few seconds at a time. And no matter how good the sight picture appears, if your target and/or front sight have faded from a sharp definitive black to a less definitive grey and you make the shot without starting all over again, you will miss that target.

Late in 1997 Ron Snover of IXL Enterprises began experimenting with different eyecups to see if something within the design could effectively help the shooter maintain a sharp definitive sight picture for a few seconds longer – long enough to hold the sight picture and squeeze off the shot.

Most of us are aware of the fact that the smaller the rear sight aperture is, the sharper the front sight and target will be when you look through that aperture. Unfortunately there is a limit on just how small a rear aperture the individual eye will tolerate before that aperture fills with "cobwebs", and this limit varies widely among shooters. In 1997 with the usual standard eyecup, the smallest aperture my shooting eye would tolerate was 0.070 inch diameter. A 0.060 inch diameter eyecup was laced with "cobwebs" and anything smaller was out of the question. Yet, as our eye muscles weaken and our vision deteriorates, it is the smaller aperture that we need.

Once in a while in the quest for the Golden Fleece or Holy Grail, we come upon something that works. At the time of the discovery we may not know why it works, but the very fact that it does work is sufficient to keep us going. This was Ron's experience in 1997 when he extended the stem on an eyecup and drilled in from each end of the stem leaving a thin partition in the center through which he drilled a 0.070 inch diameter aperture.

When I first tried this deep-hole eyecup, I was amazed at how much sharper and blacker my front sight and target appeared, and how much easier it was for me to maintain a focus on the target. But the big surprise came when Ron made me another eyecup of the same design, but with a 0.060 inch aperture and then a 0.056 inch aperture and finally a 0.052 inch aperture. I could see through all of these without any "cobwebs"!

Basically these eyecups measured 5/8 inch from the inside face of the cup to the end of the threaded stem, thus providing for a "deep hole" to be drilled in from each end about 9/32 inch deep leaving a thin partition between. On the first eyecup, the deep hole on the cup end was ¼ inch diameter and that on the threaded end was 3/16 inch diameter. While this was an improvement, Ron's next attempt was to make both deep holes 3/16 inch diameter, and finally decided that a 1/8 inch hole on each end of the eyecup produced the optimum result. This was the final eyecup that Ron made for me – a 1/8 inch diameter deep hole on each end with a 0.052 inch diameter aperture in the partition – and with only one or two brief exceptions is the only eyecup I have used on the O.T.A. Hepburn that Ron delivered on February 20, 1999.

What makes the deep-hole eyecup so exceptional? What is it about Ron Snover's deep-hole eyecup that makes the targets sharper and makes it easier for the eye to hold them in focus for a longer time?

As explained to me by nephew Mark, who has more than average knowledge relative to the subject, it all has to do with the control of light rays. As Mark puts it, light rays are chaotic. That is, in a lighted room or outdoors light rays travel in all directions and are bounced about by the reflectivity of the hundreds of thousands of objects within our view. But in a deep-hole eyecup the light rays are funneled (or tunneled) so that they travel parallel to one another and are thus more concentrated to give longer focus and sharper definition with less eyestrain. This directional concentration of light rays makes small apertures clear and sharp, free of "cobwebs".

Can you imagine what this deep-hole eyecup did for my shooting? Allowing me to reduce the size of my rear aperture by eighteen thousandths of an inch? It is quite possible – indeed, quite probable – that I could go to an even smaller rear aperture in the 0.045 inch range if I wanted. But I have been so pleased with the present 0.052 inch diameter aperture in a deep-hole eyecup that I never pursued the idea of anything smaller.

Like almost everything else we suddenly "discover", the deep-hole eyecup is not new. For those who have a copy of that little publication **Manual of Rifling and Rifle Sights** edited by Lieut.-Col. Viscount Bury, M.P., printed in 1864 and reprinted in 1971 by Ray Riling Arms Books Company, what appears to be a Swiss-made deep-hole eyecup is illustrated on page 40 figures 117 and 118, and again on page 31 figures 21 and 22. Figure 21 clearly shows the reverse end of the deep hole and the aperture within, while figure 22 shows the ocular end of the deep

hole with just a hint of the aperture within. Figures 117 and 118 show both ends of the deep hole, but do not show the aperture.

Whether or not these early eyecups were designed with the same objective Ron Snover had in mind is unknown, for while the small booklet gives a brief general description of the sights involved, there is no discussion of the eyecups used with those sights. However, I am firmly convinced that no designer or machine craftsman would spend the extra time and labor involved in producing such an eyecup if he did not perceive a significant advantage to the design.

While I can not speak for those who have superb eyesight, I can say without any hesitation or reservation that the Snover deep-hole eyecup has helped me hit more silhouette targets than would have ever been possible with a standard eyecup. And anytime you can design something that makes a pair of 77 year old eyeballs ravaged for years by reading three books a week plus writing and typing for 8 to 10 hours each day, and for just a few seconds on the firing line help one of those eyeballs see sharply and clearly, then you have obtained the objective you started out for!

Ron Snover has never promoted his deep-hole eyecup. In his words, "It didn't seem to do that much for me." From this observation I have to believe that if you are not having problems with maintaining a focus on your target, or having the target fade from a sharply defined black image to a less distinct grey image, then there is little point in trying to fix something that ain't broke! But if you are experiencing such problems, it is my opinion that the deep-hole eyecup will help you considerably as it has helped me. There is no way today that I would go back to the standard eyecup, because I believe that Ron Snover's deep-hole eyecup simply has a lot to offer. And I also believe that this technique should not be set aside or lost to the black powder cartridge rifle shooter as it apparently was sometime in the late 1800s.

Editor's note:

Thank you for another interesting article Paul.

Don't forget the first of the Silhouette shoots starts on Saturday 27th March

Bisley dates for 2004

Silhouette #1	300/500	27 March
Buffalo #1	200/600	24 April
Quigley #1	300/600	22 May
Creedmoor	900/1000	26 June
Precision	200/600	31 July
Silhouette #2	300/500	28 August
Buffalo #2	200/600	25 Sept.
Quigley #2	300/600	30 Oct. *

* *This match may have a slightly reduced number of rounds due to shorter daylight hours.*

Wednesday Practices:

300/500	17 March
900/1000	16 June
600/200	15 Sept.

Inter Club Match against Diggle at Bisley - Team to be announced - Saturday 5th June

Inter Club Match against Diggle at Diggle - Team to be announced - Sat. 14th. August

2003 GRADINGS

Name	Matches								Matches Reqd.	Averages & Grades				Name
	Silhouette	Buffalo	Creedmoor	Quigley	Precision	Silhouette	Buffalo	Quigley	5	No Adjustment - All Matches Shot		Adjusted for Minimum Matches		
	29-Mar-03	26-Apr-03	3-May-03	14-Jun-03	27-Jul-03	23-Aug-03	27-Sep-03	25-Oct-03	Matches Shot >=5	Average	Unadjusted Grade	Average	Adjusted Grade	
Jackson, "Jacko"	33	28.6			31		32	29	5	30.7	Master	30.7	Master	Jackson "Jacko'
Morgan, Phil	27	32.8	8.6	28	33.2	28	28	34	8	27.5	Master	30.0	Master	Morgan, Phil
Taylor, Clive	24	29	17.2	35	33.2	25	31	24	8	27.3	Master	28.4	Master	Taylor, Clive
Andrews, Roger	27	30.8	23.5	27		19	26.8	33	7	26.7	AAA	27.0	Master	Andrews, Roger
Boyle, Andy	17	29.8			28		26.8	28	5	26.3	AAA	26.3	AAA	Boyle, Andy
Jackson, Len	22	26.4		32	26.3	16			5	25.0	AAA	25.0	AAA	Jackson Len
Gilpin, John	18	27.2		18	26	29	31.8	24	7	24.9	AAA	24.8	AAA	Gilpin, John
Haines, Gerry	20	16.0	13.4	19		27	30.0	24	7	23.1	AAA	23.0	AAA	Haines, Gerry
James, Richie	19	19.4		17	20.2		26.8	26	6	21.6	AAA	22.5	AAA	James, Richie
Grover, John	16	18.2	14.4	20		18	22.6	29	7	19.7	AA	19.0	AA	Grover, John
Goodacre, Perry	16	17		7	18.2		20.6	20	6	16.5	AA	18.4	AA	Goodacre, Perry
Pfeil, Frank	13	23	4.2	13	17	15	21.8	22	8	16.1	AA	17.8	AA	Pfeil, Frank
Eagling, Adrian	9	18.8	8	15		15	26.6	27	7	17.1	AA	16.9	AA	Eagling, Adrian
Hoden, Geoff	15	22				12	23	12	5	16.8	AA	16.8	AA	Hoden, Geoff
Milchem, Guy	15	19	3.8	12	20.4	13	16.6	19	8	14.9	A	16.5	AA	Milchem, Guy
Steadman, Nick	18	22.2		27			26.8		0	23.3	AAA	0.0	UnGraded	Steadman, Nick
Bennion, "Sid"	22								0	22.0	AAA	0.0	UnGraded	Bennion "Sid"
Murphy, Dale									0	0.0	Un Graded	0.0	UnGraded	Murphy, Dale
Stevens, Alan				17					0	17.0	AA	0.0	UnGraded	Stevens, Alan
Brocklehurst, John				27	31				0	29.0	Master	0.0	UnGraded	Brocklehurst, John
Farey, Pat	6	16		8				16	0	11.5	A	0.0	UnGraded	Farey, Pat
Dennis, Nigel	25	31.2				30	33		0	29.8	Master	0.0	UnGraded	Dennis, Nigel
Purser, Tony	17		4.8				26.8		0	15.9	AA	0.0	UnGraded	Purser, Tony
Nock, Vic	10						20	17	0	15.7	AA	0.0	UnGraded	Nock, Vic
Hincholiffe, Martin	1	23.6		19					0	14.5	A	0.0	UnGraded	Hincholiffe, Martin
Barnard, Chris		27.2		30			21.2	30	0	27.1	Master	0.0	UnGraded	Barnard, Chris
Barnard, James							23.2	21	0	22.1	AAA	0.0	UnGraded	Barnard, James
Clarebcets, Dave		20.6							0	20.6	AA	0.0	UnGraded	Clarebcets, Dave
Seller, Malcolm									0	0.0	Un Graded	0.0	UnGraded	Seller, Malcolm
Sutton, Bryan				15.1			27	15	0	19.0	AA	0.0	UnGraded	Sutton, Bryan
Mnes, Roger					9.4	2			0	5.7	B	0.0	UnGraded	Mnes, Roger
Kam, Steve					2.4			8	0	5.2	B	0.0	UnGraded	Kam, Steve
Oulding, Bian							20.4	15	0	20.7	AA	0.0	UnGraded	Oulding, Bian
Starley, Peter								22	0	22.0	AAA	0.0	UnGraded	Starley, Peter

A brief explanation of how these Gradings were arrived at is in order. For no other reason that the figure seemed right it was decided that a minimum of 5 scores were needed to achieve a Grade. If more than 5 results were available the lowest, then the highest, then the lowest etc. scores were disregarded to remove possible fluke lows and highs. The actual grading—Master, AAA etc have been awarded using the US NRA Silhouette bands. These may be changed by us in future years if Grades seem imbalanced.
(Creedmoor and Precision scors have been “adjusted” to emulate our more common 40 point matches)

Caption Competition

Don't miss another exciting chance to waste some more valuable time by thinking up a witty caption for our cover photograph.

As usual, the winner (if anyone bothers to enter), will be announced in the next issue of Black Thunder and will be suitably rewarded with a bottle of really cheap plonk.

Send your entries to the Editor: phil@ssbpcrc.co.uk

RATON 2005

If any members would be interested in competing as part of a team at Raton in New Mexico around August 2005, please make yourselves known.

This is only an idea at present and we are trying to see if it's worth organising

The Black Powder Cartridge News

One hell of a good read!

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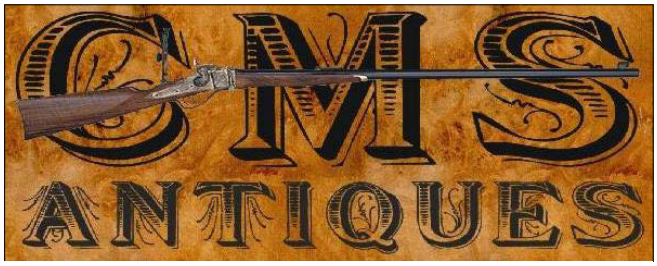
For a small charge, we can deliver most powders to our Bisley shoots. This should help members who have trouble getting hold of powder, especially Swiss.

To place your order, phone Clive Taylor or Phil Morgan or E-mail clive@ssbpcrc.co.uk or phil@ssbpcrc.co.uk

You will need to supply a copy of your current RCA – POMSTER document and Form COER 3 – CERTIFICATE TO ACQUIRE AND KEEP EXPLOSIVES and pay by cash or cheque on the day.



For some of the finest original rifles and accessories you're likely to come across, check out Dale Murphy's web site:
www.cmsantiquearms.com
Tel: 01530 813540 ***Mobile:*** 07887 853490

Dale Murphy sponsors the Silhouette Trophy

Increase in range fee

The NRA has notified us that we must purchase our own target frames at a cost of £10 each. This is because our "irregular shaped" targets make it difficult for conventional Bisley targets to be pasted over them. Our requirements are likely to be 32 frames although, once purchased, the targets will only be used by our Club. The good news is that we'll be able to leave targets pasted up and not have to provide new targets for every shoot. Obviously, when the faces become worn they will be replaced.
To cover this unforeseen expense, it is necessary to increase the range fee by £2. Sorry, but this is out of our control.

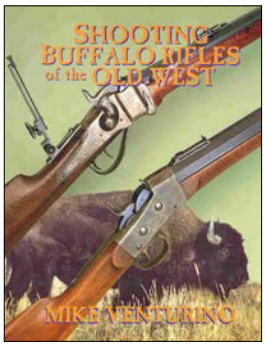
In the bad old days . . .

Those with money had plates made of pewter. Food with a high acid content caused some of the lead to leach onto the food, causing lead poisoning and death. This happened most often with tomatoes, so for the next 400 years or so, tomatoes were considered poisonous.

Most people did not have pewter plates, but had trenchers, a piece of wood with the middle scooped out like a bowl. Often trenchers were made from stale bread which was so old and hard that they could be used for quite some time. Trenchers were never washed and a lot of times worms and mold got into the wood and old bread. After eating off wormy, moldy trenchers, one would get "trench mouth."

Bread was divided according to status. Workers got the burnt bottom of the loaf, the family got the middle, and guests got the top, or "upper crust."

Reading & Viewing



SHOOTING BUFFALO RIFLES OF THE OLD WEST

by Mike Venturino

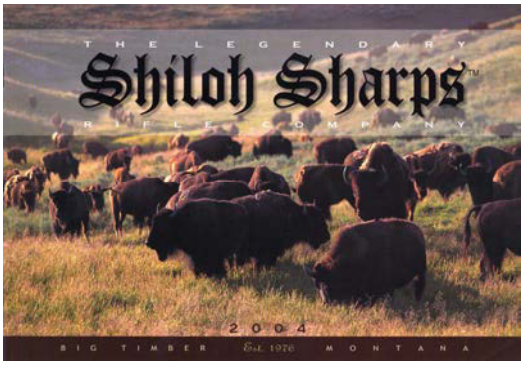
Published by MVL Enterprises, PO Box 914, Livingston, Montana 59047, USA

Priced at $30 + p&p.

Sample of contents and order form on-line at: www.ycsi.net/users/mlventurino/

Also available from Buffalo Arms Co.
Tel: 001 (208) 263 6953

And always one of my personal favourites … Shiloh's 2004 catalogue. This one happens to feature my son Charlie, being introduced to the pleasures of a Sharps at age eleven.



To see Shiloh's full product range, go to: www.shilohrifle.com or try the link on our own web site: www.ssbpcrc.co.uk

NEED A BED FOR THE NIGHT?

The Exhibition Hut is the Bisley club house of the Muzzle Loaders' Association of Great Britain and has 6 heated bedrooms with 2-4 bunk-beds in each. There are mixed toilets and showering facilities, and whatever time you get there, you'll be able to make a hot drink.

Open from March to September

Rates £11 (non MLAGB members £13)

Book through: Roy Ricketts, Beggars Roost, 70 Victoria Road, Bidford-on-Avon, Warcs. B50 7AR Telephone: 01789 490076

The Exhibition Hut, in all its colonial splendour, is the clubhouse of the Muzzle Loaders' Association of Great Britain. You'll find it just up from the NRA offices.

Rifles & Stuff

In this "Rifles & Stuff" we look at a simple DIY project …

MAKE YOURSELF A PAIR OF MATCH-WINNING CROSS STICKS … IN UNDER AN HOUR

This little project is designed for those days when you feel the urge to tinker and potter about getting stuff ready for the coming shooting season. All shooters get this urge from time to time and it's nothing to feel guilty or ashamed about.

It is also an attempt to regularise the way in which rifles are supported at the firing point during matches. The days of the spiked or pegged-down bench rest cross sticks are over. That's not to say that they can't be used in matches any more .. They can, but securing them to the ground will not be allowed for our regular matches. They have gone down this route in the States and it makes good sense to adopt a similar rule over here.

The Club rules have been amendment thus:

Crossed Sticks shall be constructed of 2 wooden legs, no greater than 1 inch by 2 inches in thickness and width or 1½ inches in diameter, and bolted or tied so that the two legs are hinged and capable of pivoting. The end of the legs may be equipped with spikes no more than 3 inches in length and no wider than the edge of the crossed stick. They may be inserted into the ground by hand pressure only to aid in retention of an upright position. This may be waived by the Match Director to fit local conditions. One layer of protective material may be suspended or inserted in the "V" of the crossed sticks to protect the rifle.

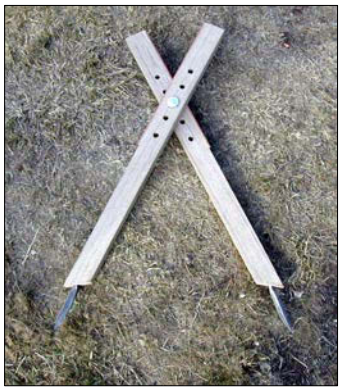
Crossed sticks which are connected and hinged to a wooden base plate may be used however they may not be spiked or pegged into the ground nor may they be weighed down by sand bags etc. The size of the base plate shall not be excessive in the opinion of the Match Officials.

So, onto the project …

The top photograph almost says it all. I made these sticks up for Clive last year. It was a great way of getting rid of the piece of wood I'd been tripping over in my garage for years. You know, those bits you keep "just in case".

The wood just happened to be 2 inches x 1 inch in section. I made them 24 inches long, cutting an angle at the bottom so they would sit flat on the ground. If you put the 2 sections together in a vice, you'll cut the same angle on both. The angled foot isn't compulsory .. it just makes sense.

Next, with the bits still in the vice, decide where you want the adjustment holes. I reckoned 5 holes gave enough adjustment for any occasion and I drilled them at 2 inch intervals. Use a drill about the same diameter as the bolt. I used about 10 mm. A washer and wing nut will make for easy adjustment and keep tight during shooting.



Clive's cross sticks complete with fancy spikes.

Once you know what you'll be using as spikes, drill a hole lengthways into the wood, deep enough to securely hold the spike. Use a drill slightly smaller so that you hammer the spike up into the wood, it will be a nice tight fit. I used a couple of heavy duty tent pegs but Clive has since replaced them with some posh "blades". Whatever you decide to use, they can't be longer than 3 inches or be wider than the wood.

Since I don't like anything "soft" under my barrel, I cut up an old belt (my wife's) and stuck it to the inner edge. It protects the barrel nicely.

Over to you now ….

My own cross sticks are made from beech wood off- cuts found in a skip outside a furniture factory. I don't make it a habit to scavenge in skips but any savings made on accessories means more to spend on rifles!

Phil Morgan

THE KERMIT HOKE TANG SIGHT

By

Paul A. Matthews

In this game of black powder cartridge rifle silhouettes, when it comes to sighting equipment, you get what you pay for. If you purchase a new tang sight that costs about half the price of the higher quality sights, you can bet your bottom dollar that by the end of the shooting season – and perhaps before – you will be in the market for a new rear sight.

One can take a modestly priced replica rifle, put quality sights on it, and become competitive. I know, because I have done it with a Pedersoli rolling block. But the best custom rifle you can buy will not give you the high scores you need if that rifle is not equipped with quality sights. When you are on the firing line and your spotter tells you that your last shot was just over the back or just under the belly of the target, you have to **know** that if you make a half-minute or full minute adjustment to your sight, your cone of fire out on the target is going to respond accordingly. You **have** to know that and you **have** to be able to make that adjustment quickly and precisely. That is when quality manifests itself.

The Hoke tang sight is of the traditional style used in the late 1800s. It is a rugged, heavy duty, easy-to-read, fast-to-adjust sight that would be the pride of any BPCR shooter fortunate enough to have one mounted on his rifle. The sight is offered in three different heights: a 4-inch staff for long range; a 3-inch staff for mid-range, and a 2-inch staff for short range. Various bases are available, one for each make of rifle, so that you can mount a base on each rifle and switch the staff from one rifle to another. The sight is mounted on the forward part of the base leaving ample room to comfortably wrap your thumb around the grip of the stock with no sight interference. And speaking of comfort, there are no sharp corners or edges on the base that will "bite" you when the rifle recoils. Wherever the base comes in contact with the shooter, it is well rounded and smooth as grease.

There are 84 minutes of total windage on the sight, 42 minutes on each side of zero. The windage slide is dovetailed into the windage table and has a gib on the backside that is easily loosened or tightened to regulate the tightness of the dovetail. With this design, the windage slide is never loose or sloppy in the dovetail as it is the tightness of the slide that is adjusted, not the tightness of the windage adjustment screw.

The design of the windage adjustment screw is unique in that it has a left-hand thread on the end that screws into the windage table, and a right-hand thread on the end that runs through the windage slide. What this double-thread design does is to double the movement of the windage slide for any given adjustment of the windage screw. That is, for each complete revolution of the windage adjustment screw, you move the windage slide a full five minutes instead of the usual two and one-half minutes. If you think this is insignificant, then ask yourself how many times have I had to make a fast last-few-seconds windage adjustment to compensate for a sudden wind shift? To help make such windage adjustments even quicker and easier, there are ten small holes around the knurled circumference of the windage adjustment screw knob, each hole located one-half minute from its neighbor. This lets you make a quick minor adjustment without having to study the calibration marks on the windage slide or table. Like other vernier scales, the calibration marks on the windage slide are 0.040 inch apart while those on the windage table are 0.050 inch apart. The calibration marks are easy to read, making windage adjustments fast, simple and deadly accurate.

The sight staff is a full 3/16-inch thick and wears the calibration marks on both sides of the staff to accommodate either a right- or left-handed shooter. To make the vernier scale exceptionally easy to read, the inch and half-inch marks are engraved across the full thickness of the staff. The hundred-thousandths (0.100) inch marks are engraved halfway across the thickness of the staff, and the fifty-thousandths (0.050) inch marks are engraved one quarter of the distance. This makes every other calibration mark a different height and helps prevent confusion or misreading of the adjustment. The inch-numbers on the staff and the vernier numbers on the slide are as large as is practical and are easy to read, again promoting fast precise adjustments.

Similar to the windage adjustment screw, the knurled knob on the elevation adjustment screw has five equally spaced holes about its circumference, each hole being one-half minute from its neighbor. Again, this is to help make fast elevation adjustments when time is running out.

The eyecup furnished with the Hoke sight is what Kermit refers to as a "five-hole adjustable eyecup." That is, the shooter can quickly and easily select any one of five different apertures simply by sliding a ball-and-detent spring steel plate, pivoted on one end, to the position desired. This is a fast way of selecting the desired size aperture and being assured that the generous proportioned ball and detent positively maintain that aperture in a precise position. The aperture sizes are 0.03, 0.04, 0.05, 0.06 and 0.07 inch diameter and are cut with a wire EDM to assure that the holes are perfectly round. Drilling such thin pieces of tough metal with a standard twist drill is difficult at best and does not always result in a perfectly round hole.

The eyecup itself is 1-1/4 inches in diameter and has a 1/4 -inch wide knurled rim for loosening or tightening the eyecup. While this wide a rim may not seem significant to

many younger shooters, I can assure you that it is a godsend for some of the more mature shooters whose hands are wracked with arthritis and who can not easily grasp a smaller diameter eyecup having a much narrower rim. A rubber O-ring imbedded in the face of the rim prevents damage to the shooter's glasses due to recoil of the rifle.

Since the eyecup also serves as a locking device for the elevation slide, a 0.067 inch thick washer made of graphited plastic is slipped over the threaded stem of the eyecup to prevent the eyecup from loosening under recoil and to make it unnecessary to excessively tighten the eyecup. All you have to do is to snug the eyecup up against the washer and everything is locked into place. However, we want to emphasize that with or without the eyecup, the elevation slide will not change position due to rifle recoil or backlash on the adjustment screw.

The various parts of the sight are blued – or more accurately blackened – and then the calibrated faces of the staff, elevation slide, windage slide and windage table are subjected to a very mild abrasive thus removing the blacking from the high surfaces and leaving the blacking within the calibration marks. This results in black calibration marks against a subdued silvery metallic background as is common with most tang sights. As an option, Kermit will leave the black finish on the calibrated surfaces and fill in the calibration marks with white, thus giving white calibration marks against a black background.

In summation, the Kermit Hoke tang sight is an outstanding work of craftsmanship that exudes precision quality in every respect. If you are building a new rifle or searching for a replacement sight for an existing rifle, a Hoke tang sight is certainly one you should consider. The long range sight weighs 5 ounces; mid-range 4-3/4 ounces, and the short range 4-1/2 ounces.

Contact Kermit Hoke at 001 (717) 846-8665 or e-mail him at: info@kermitool.com. Web site: www.kermitool.com

Editor's note: The current listed prices are:-

Short Range 2" staff	$405
Mid-Range 3" staff	$415
Long Range 4" staff	$425

And don't forget to allow about $75 Tax, etc. !!

Watch out, the "Cheater Blocks" are coming!

Last year, we had 8 Matches, not counting the USA-GB buffalo match. Between us we fired in the region of 5,840 rounds of ammunition to count for score. Not even allowing for sighting shots, that's a hell of a lot of lead flying down range.

One of the things that's guaranteed to be heard at each and every match, without fail, are the words: *"Did you fire 20 shots or only 19?"* or *"That's your last shot ... no it's not, I've got two left!"* We've all been there. It's frustrating for the scorer and frustrating for the shooter. The last thing we need is any dissent or disagreement.

So, when Club member Martin Hinchcliffe offered to make up some ammo blocks, or what the Americans call Cheater Blocks, we gladly accepted his offer. Everyone on the firing point will be able to see at a glance how many shots have been fired.

Martin has made the blocks up in a variety of different woods as you can see from the photograph. He doesn't want anything for his efforts, but did suggest that all shooting members might like to buy a block for £1 with the proceeds going towards club costs. With this year's NRA request that we purchase our own target frames, we thought that this was a brilliant idea, especially as an alternative use was spotted straight away … yes you've guessed, ammo reloading blocks! You can never have too many.

The blocks will be available at the first shoot of the year and will have to be used to hold all scoring rounds (not sighters). It is hoped that everyone who shoot the competitions, will accept this as a good idea. We'll see how well the blocks work during the year and if they prove to be not such a good idea, we'll review it.

Two samples of the "cheater blocks", each holding 20 rounds. They can also double up as useful reloading blocks.

The Hunting Trail

By Steve Garbe

Thoughts on Bullet Alloys and Shapes for Hunting

Many times the success or failure of a hunting trip comes down to one simple thing: bullet performance on the game animal sought after. This holds true for the muzzle-loading round ball rifle, the black powder cartridge rifle, or the high velocity jacketed bullet rifle. Second only to correct bullet placement, bullet performance on the tissue and bone of a game animal is paramount to the successful outcome of any hunt.

There has probably been more debate among riflemen over proper bullets for hunting big game than any other shooting topic short of the proper calibers to be used. Many successful hunters have their opinions, backed up by experience in the field, concerning proper alloy for the cast lead bullet when used on game. I'm no different; my experiences have led me to form some hard and fast opinions. I'd like to share them with you now, hopefully helping those who are about to harvest big game with the black powder cartridge rifle to do it successfully.

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Let me qualify my remarks somewhat. My cast bullet hunting has been limited to North American big game, which is classified as "thin-skinned" by those gun writers having experience with African game. I haven't killed a charging cape buffalo or rampaging bull elephant with a cast bullet and can offer no expertise along those lines. I've also not shot any of the feral hogs that range the Southeast and Southwest. I've heard these varmints require more penetration than your average whitetail buck, but I've no personal experience with them. However, if you are after antelope, deer, elk, or black bear (with one lonely buffalo thrown in for good measure), then I can share some of my observations with you.

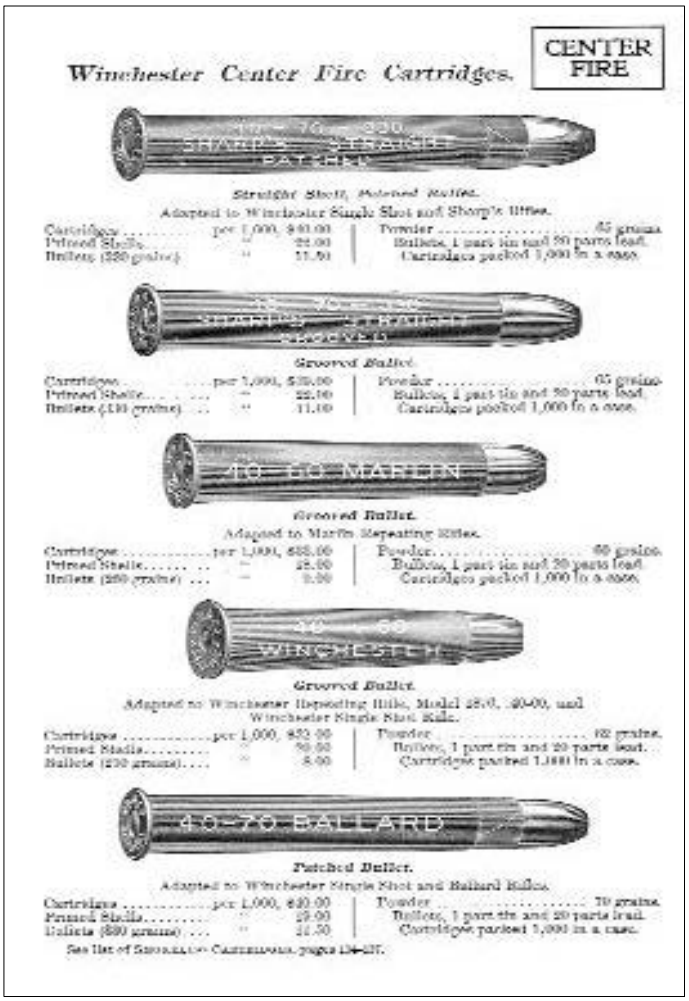
First off, let's talk about something that is directly related to proper hunting bullet alloy and that is proper bullet shape. For my money I've pretty well discarded spitzer and round-nose cast bullets as being unsuitable for hunting. Even in a soft alloy they just simply do not transfer energy nearly as effectively as a flat-nose or hollow-point bullet. They may shoot great and buck the wind better, but their terminal performance is most times very disappointing. Of course, if one places any bullet in the brain or spine of an animal the results are going to be spectacular. I'm not talking of these shots; it's the average heart/lung shot that represents 90% of the shots taken at big game that we need to discuss.

Flat-nose bullets have a lot of "swat." You can hear it when you hit a game animal with one and you can see it when you gut that same animal. The flat-nose bullet immediately begins to transfer shock and trauma to tissue whereas the round-nose needs to upset in order to effectively impart energy. The first shot is of critical importance on bigger and tougher animals such as elk, bear, or buffalo; once these animals survive a first shot and kick in their adrenalin, a simple hunt turns into a long follow-up. To make a clean kill one must hit a game animal hard with the first shot. Follow-up shots are almost always at a moving animal and shot placement is going to suffer. A well-placed first shot that nearly immobilizes, or better yet kills outright, is what we are really after.

I used to think that "softer was better" when it came to alloy for hunting cast bullets. Indeed, it is better to err on the side of "too soft" rather than "too hard," but lately some experiences have shown that one can have bullets too soft and compromise performance. Early in my "paper-patch" phase I used pure lead, paper patch bullets on a couple of different bull elk. Caliber was .45-110, bullet weight was 450 grains, and velocity was approximately 1475 feet per second. Both bulls were shot at about 125 yards in the shoulder heart/lung area and each required a second shot. Now, both bulls were made sick enough from the first shot that they didn't leave the area, but when I gutted them I noticed that the bullets did not penetrate in any thing like a straight line. After penetrating shoulder blades or ribs both these bullets veered off course; one exited the top of the shoulder on the near side of the backbone and the other turned and lodged in the paunch. Needless to say, I wasn't impressed with the performance of either shot or at that point switched over to grease-groove, 1-40 alloy flat-nose bullets. The paper patch bullets had been cast in a "home-made" mould that was cut with a ball end mill. Consequently their noses were as blunt as a round ball and this might have contributed to their

"dodginess" (New Zealanders will know what that means). By nature of their pointed noses, spitzers may have penetrated better, but their lack of shock transfer would be even less desirable.

On this year's annual Antelope and Poker Expedition, the Rev. Robbie Robinson shot an antelope (in the presence of the writer) at roughly 190 paces. The rifle was a .38-56 shooting a pure lead 250 grain bullet. Velocity was about 1450 fps. The shot struck a rib on entry, penetrated the right lung, and exited the top of the back in almost identical fashion as the bull elk I shot years previously. It would seem that with an alloy that is too soft one couldn't be sure that the bullet won't "ricochet" after being deformed on bone. John Hansen, who guided us on a buffalo hunt this year in Nebraska, has said he's seen the same problem with his pure lead paper-patched bullets on buffalo. Apparently, there is a happy medium between adequate expansion and good penetration as is related to bullet alloy.



On the above mentioned buffalo hunt we used a 420 grain Lyman flat-nosed bullet (457193), cast 1-40 at about 1400 feet per second in a Ballard .45-70. A buffalo cow was shot at 117 yards, broadside, with the first shot. The bullet penetrated the brisket, cut the bottom of the heart, and exited the off side. This shot took immediate effect on the cow and she staggered a few steps; the next shot entered in front of the fore leg, clipped the heart and stopped under the hide on the far side. With that shot she was down for the count. Both bullets penetrated in a straight line and there was an obvious amount of energy and trauma transmitted to the cow. Bullet performance was perfect. I want to tell you that a buffalo's brisket is a cast-iron affair consisting of bone and gristle that does a great job of protecting the low-lying vital organs. (We will have more on this great hunt that John made possible in the next issue of the *News*.)

The old buffalo hunters' journals frequently make mention of using "soft lead, as soft as we could get" for their bullets, but let us examine that statement. Most hunters used paper patched, somewhat undersized bullets and relied on the soft lead to upset and take the rifling. Also, because lead was an expensive commodity on the frontier, the hide hunters wanted to "re-cycle" as much as they could. The skinners would find the soft lead slugs under the hide and save them to be re-melted. I think the pure lead was used foremost because it was accurate in a wide variety of paper-patch rifles and was more easily recovered.

The Winchester catalog of 1899 lists bullet alloy used in their cartridges. Most of the center fire rifle cartridges, with the notable exception of the .25-20 Single Shot, .25-25 Stevens, .32-40, .38-Bullard, .38-55, and .38-90, are all cast 1-20 or even as hard as 1-16. Many of the paper patched cartridges are cast 1-20 also. Flat-nose bullets are the rule, even on cartridges that weren't adapted to lever-actions, so the argument that flat-nose bullets we re only for tubular magazine rifles doesn't hold water. It would seem that given the flat-nose bullet to insure performance many riflemen preferred a somewhat harder alloy.

Understanding that the black powder cartridge rifle is not a "high velocity" item, I am going to state that one needs to aim at 1300 feet per second as a minimum for good "shock factor" in cast bullet hunting loads. I think it's easy to use heavy bullets based solely on accuracy and forget that even at low relative velocity there is a big difference in the "swat" of a 400 grain bullet at 1400 feet per second and a 550 grain bullet at 1200. Two hundred feet per second may not sound like much but it can make a big difference in bullet upset and transmitted shock. Another obvious advantage is flattened trajectory; where some would argue that lighter bullets are more affected by the wind, I would say that, given the average field shot of slightly over 100 yards, wind drift is pretty well minimized.

As I said before, there has probably been more discussion among black powder shooters concerning bullet type and proper alloy for hunting than anything short of calibers for the same. My opinions are based on personal experiences in the field and I'll be the first to admit that they shouldn't be struck in stone. If there are riflemen out there that have had different experiences, write in and we'll air your views. Developing a good hunting load for big game is just as big a challenge as perfecting a target load. In ways, maybe more so as the hunter carries the added responsibility of making a clean kill. Hunting ammunition must be accurate, adequately powerful, and reliable under adverse conditions. That's a pretty tall order and one that needs more than just casual attention.

Hold Center. ♣ **the Black Powder Cartridge news**

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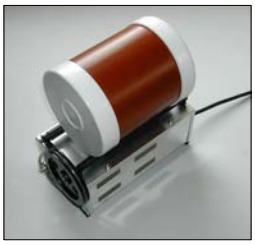

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