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

www.ssbpcrc.co.uk Affiliated to the N.R.A. – No. 1285

BLACK THUNDER

The Official Newsletter £3.50 No. 9 May 2004

Match season kicks off again with Sillywet shoot ... 17th March 2004

Some of the chicken shooters who turned out for the first of this year's matches. Pictured from front to back are: Brian Olding with his original and very potent Springfield Trapdoor, Martin Hinchcliffe with his Shiloh Sharps, Tony Purser with a Remington Rolling Block and new member, Keith Brown with a Sharps. Frank Pfeil scores while Sam Eagling looks on.

Full report inside...

Mid-week practice

Bisley

Wednesday 17th March 2004

Martin Hinchcliffe, together with the brightest socks seen on the range in a long time, takes aim with his Shiloh Sharps. Behind him, Nick Steadman rods out his Remington between shots. The white building at top left, is our watering hole, The London & Middlesex Club.

Nine of us turned out for the first of the mid-week practices, including new member Steve Bonfield. We hope he'll become one of our regulars and enjoy the variety of matches that make up our shooting calendar.

Shooting, from Left to Right are: Vic Nock, Nick Steadman and Martin Hinchcliffe. Steve Bonfield gets ready to shoot.

"This bit goes here and that bit goes under this bit and then I twiddle this bit and it should work!"

In order to avoid the nightmare of the M25 weekday traffic, a few of us came down the night before. This is also used as an excuse to get out of all sorts of responsibilities at home and to have a few beers! There, the secret is out.

The weather was pretty crap for most of the day and far too cold for my liking. I've often used this particular excuse on many occasions to explain poor performance and it does make you feel better!

Two targets were booked for the day, 300 yards in the morning and 500 yards after lunch.

Practices are usually very informal and relaxed. They are a chance to test ammunition, record sight settings for different loads and distances or even to try out a new rifle. This one was no exception.

Vic Nock enjoys his shooting whatever the occasion or weather.

Match Reports

Silhouette #1

Saturday 27th March 2004

Today was not the best of days, weather wise, however it did produce an amazing total of 9 "Master Class" shooters. Last year, the same competition generated 2.

Colin Buck and Jacko Jackson were the ultimate winners, both scoring a very respectable 34 points. Since we can't do shoot-offs, the fastest time declared Colin the winner. Worthy of mention is Colin's straight 10 hits on the turkey. In my experience, the hardest of the four silhouettes because the wind can so easily nudge the bullet left or right of that tall, skinny bird.

Not to be outdone, Nigel Dennis and Richie James both shot 10 pigs in a row, and John Grover managed 10 chickens. John took the "High Chicken" award back to Bristol with him.

And while we're on the award theme, young Sam Eagling and not so young Geoff Hoden both ended the day with the prestigious "Wounded Willy" award. Both had struggled to hit the silhouettes consistently during the day, preferring instead to surround them with near misses. Anyway, who cares when you're good enough to hit a ram's wotsit at 500 yards?

Vic Nock chatting to John Grover while watching the action unfold from his "throne". Jacko looks as if he's in the final stages of rolling a smoke.

Clive keeps an eye on things while the next detail of shooters get their kit together. Note that fantastic truck in the foreground.

Weapons expert, National Army Museum conservation Officer, TV star and Club wood working expert, Martin Hinchcliffe, tried out a new tactic for this match by changing outfits during the day. Must try this one myself sometime. By the way, for anyone who is interested, Martin makes the most amazing traditional pattern skinning knives. Not something that you need on a regular basis at Bisley, but nice to have anyway because you can't have too many

Martin Hinchcliffe waits for his strike to be marked while Tony Purser spots. In the background, new member, Keith Brown lines up for his first attempt at our very, very small chickens.

Another shot of Martin, this time in a natty little orange number. I think the philosophy is that changing clothes halfway through a match helps tighten those groups up. Hmmm .. that's where I'm going wrong!

Richie James deep in thought … "Shall I stay in the car and keep warm or shall I get out and shoot? If I stay in the car, I won't have to clean my rifle and I can save my ammo until next time ……..decisions, decisions". In the end, Richie shot 10 pigs straight off and went on to get a Master Class score.

knives. If you want one, ask him.

Brian Olding shot his original Springfield Trapdoor as usual and impressed onlookers when he "took out" 7 pigs.

After a good hot lunch at the L & M, we went back to 500 yards mark. It was only a matter of time before it stared to drizzle. Trying to write scores on wet paper is hard work but then I guess we shouldn't grumble too much. The weather is usually very kind to us, especially when Adrian is in attendance.

As for grading, Jacko got 1st Master, Richie James got 1st AAA, John Grover 1st AA and Colin Buck 1st unclassified.

Well, that's it for the first round but since this is a two part aggregate shoot, we're going to have to do it all again in August.

A general shot of the guys from the 300 yard firing point.

Silhouette #1 Results

Shooter	C	P	T	R	Total	Class
Buck	9	9	10	6	34*	Master
Jackson P	8	9	8	9	34*	Master
Andrews	7	9	9	8	33*	Master
Taylor	8	8	8	9	33*	Master
Grover**	10	6	7	8	31	Master
Dennis	6	10	7	7	30	Master
Berlin	7	9	9	4	29*	Master
Morgan	9	7	6	7	29*	Master
James	8	10	5	5	28	Master
Jackson L	2	6	8	6	22*	AAA
Haines	4	5	4	9	22*	AAA
Pfeil	8	7	1	6	22*	AAA
Goodacre	5	4	4	6	19	AA
Olding	4	7	3	4	18*	AA
Eagling A	5	4	2	7	18*	AA
Purser	3	9	4	2	18*	AA
Hinchcliffe	6	4	3	4	17	AA
Sutton	4	4	3	5	16	AA
Milchem	3	8	0	2	13	A
Eagling S♣	6	2	3	1	12*	A
Nock	3	3	1	5	12*	A
Hoden♣	2	3	1	6	12*	A
Brown	R	0	R	R	0	B

* Place decided on time
** Winner of High Chicken award
♣ Winner of The Wounded Willy award
R = Retired

Buffalo #1 Match

Saturday 24th April 2004

It turned out to be a full-house for the first Buff shoot of the year. Must be all those long Winter months, or maybe the fact that is one of our most popular matches.

The weather was great and, once the markers knew the scoring, shooting got under way at about 08:40.

From the outset, it was obvious that this was going to be a high scoring match and, throughout the morning, many 5s (heart zone) were recorded. It has become clear, and also very encouraging, that the standard of shooting is getting higher and higher every year. Whether it's because the targets are becoming more familiar or that shooters are taking more care over their reloading, I don't know. It's good to see, whatever the reason is.

Len Jackson helping out with the scoring. Watching those buffalo coming up over the horizon on Short Siberia range has got to be one of the best sights ever …

Colin Buck wisely records his own performance on the "Personal Score & Shot Checker" cards. It's the only way to analyse your group patterns and check how your loads are performing.

Adrian Eagling keeps score for Clive Taylor while James Barnard gets himself ready. Looks like Clive has lost his feather!

There were ties between Alan Berlin and James Barnard, both on 149 ex 200, Jake Gilpin and Gerry Haines on 143 and Colin Buck and Alan Stevens on

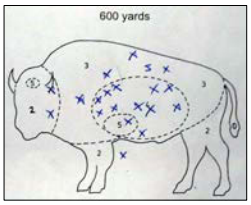
Sam Eagling had a smile on his face for most of the morning after scoring 82/100. This is one guy who needs watching out for!

If you wear those woosie skate-boarder pads again Bryan, you could get disqualimafied!

The scene in the afternoon during the 600 yard stage. And yes, there really are four buffs. in the distance ... see below.

140. With this being a zoned scoring target, the positions were decided on the number of 5s. You can see the outcome in the results table.

The highest afternoon score was Len Jackson's 69 ex 100. Not bad considering there was a cross wind that couldn't make its mind up whether to blow left to right or right to left. James Barnard got 2nd highest with 68.



Len's shot diagram for the 600 yard stage.

The new classification tables gave a certificate for 1st Master to Phil Morgan, 1st AAA to Len Jackson, and 1st AA to Geoff Hoden.

And finally, since changing scopes, I just had to test it with a "through-the-scope" picture. Seems to work OK. For those unfamiliar with the scoring, target 8 is a 4, targets 9 and 10 are both 3s.

Buffalo #1 Results

Shooter	200	600	Total	Place
Morgan	96	67	163	1
Jackson L.	90	69	159	2
Berlin	93	56	149*	3
Barnard J.	81	68	149*	4
Gilpin	85	58	143*	5
Haines	92	51	143*	6
Barnard C.	88	53	141	7
Buck	88	52	140*	8
Stevens	85	55	140*	9
Gautier	78	58	136	10
Andrews	86	49	135	11
Eagling S.	82	51	133	12
Steadman	76	56	132	13
Sutton	84	44	128	14
Taylor	92	35	127	15
Hoden	83	41	124	16
Hinchcliffe	84	39	123	17
Eagling A.	88	34	122	18
Pfeil	87	34	121	19
Milchem	79	39	118	20
Grover	60	44	104	21
Nock	76	24	100	22
Clareboets	72	19	91	23
Olding	54	36	90	24

Maximum possible score 200.
* Position decided on the most FIVES scored

Case stretching and separation

by

Lee Shaver

I was doing some load testing this summer with my 45-100 sharps, and decided to try out the new Swiss powder that so many shooters have been talking about. I was actually hoping I wouldn't like it because I'm too cheep to spend $14.00 a pound for it at the rate I use it up, but I needed more velocity for my long range loads than what I had been able to get out of the newer GOEX powders, so I was willing to give it a try. I actually didn't buy the powder I was testing. My son won it at the Black powder nationals at Raton. If he hadn't won it, I probably never would have tested it.

Anyway I used my usual load development technique of starting with minimal or no compression, shoot some groups, then add a couple of grains to the load, and shoot more groups to see what happens, and continue doing so till the groups start getting bigger again. As usual the groups got tighter as I added powder, then reached a point where the groups opened up again. For long range shooting I always want as much velocity as will shoot accurately, so all I have to do is back up to the load I used just before the groups started opening up, and it shoots better than I can read the wind.

I know that it is often said that you don't need to compress Swiss powder, but I find almost as many shooters that do compress it, and say that some compression works best for them. This was a test though, and was intended to learn just how the Swiss powder worked in this particular cartridge, so I treated it just as I would any other powder instead of trying to copy what someone else was doing.

I started at about 90 grains of powder, and kept shooting groups, and adding powder till I got the load up to about 95 grains, and it was shooting great. The velocity was almost exactly what I had received from GOEX Cartridge back in about 1996, which we all know was a great year for GOEX powder.

Unfortunately I was having case separation problems at these load levels. That's something I had never experienced before with this rifle, and can't say that I really enjoyed it this time. At one point I separated three cases in just 15 shots.

Each time the cartridge case separated, the front half would be pulled about a half inch into the bore, where the bullet would turn loose, and leave the front half of my case just setting there waiting for me to knock it out of the barrel.

If I had been using old worn out cases I might have assumed that the problem lie in the cases and not somewhere else, but they were Starline cases, less than two years old, and in great shape.

I was quite sure that the cases were not the problem since I had just fired these same cases with my regular load of GOEX cartridge powder, and everything had gone well, with no separations, or even stretching.

Since the only thing I had changed was the brand of powder, it was obvious that there was something about the powder that had caused the problem. To convince my self of that I went back and loaded the same batch of cases with my regular load and fired them with no problems.

I put it all away for the weekend, and kind of mulled it over in my head during the week, and came up with a thought as to how to get the velocity I needed for long range shooting and not have to use the Swiss powder to do it, but before I tell you what the answer was I'd like to explain what causes case separations, and for that matter excessive case stretching. This is a problem that arises fairly often among black powder shooters, and this particular problem is one of the least understood ones that the black powder shooter will face. The misunderstanding comes from the fact that case stretching with black powder usually happens in an entirely different fashion than with high pressure smokeless cartridges that most shooters are more familiar with.

With modern smokeless cartridges the stretching happens this way: First you must remember that the chamber is slightly larger, and longer than the cartridge that is fired in it, so when the firing pin contacts the primer it pushes the case forward, and at the same time it crushes the primer. When the primer is sufficiently crushed it ignites the fulminates in the primer, and as the primer gases expand into the powder column, it also forces the primer out of the primer pocket, and against the breech face like a hydraulic ram, which then completely pushes the cartridge against the front of the chamber. Unless you have the bullet set out far enough to contact the rifling, and enough neck tension to prevent the case from moving forwards in the chamber.

While the case is held forwards in the chamber the powder begins to ignite and as the gases begin to expand, and pressure builds, it swells the majority of the case up to fit the chamber. If all goes well the thin walls of the case will swell up and grab onto the chamber walls holding it quite securely in place. Then as the pressure continues to rise it pushes the bullet into the rifling, and it also pushed the head of the case back against the bolt face. Since the case walls

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Brooks' New Bullet Moulds

by

Paul A. Matthews

For years Steve Brooks has supplied custom base-pour bullet moulds for black powder cartridge rifle shooters whose competitive efforts take them all the way from 200 yards on out to 1000 and sometimes 1200 yards. These moulds have gained a reputation for casting bullets as near perfect as is possible to cast, and shooters everywhere treasure them. Now Steve has taken another step forward and is introducing a new line of bullet moulds to include hollow point, hollow base and nose-pour plain base. These are in addition to his existing line of base-pour moulds.

Brooks' moulds are machined from cast iron and normalized twice at 1100 degrees F. before the mould cavity is cut. This relieves stresses within the cast iron and helps prevent warpage of the mould when casting. The mould blocks measure a generous 1-1/2 x 1-1/2 x 1-5/8 inches and are held in perfect alignment with three 1/4 - inch diameter stainless steel alignment pins. Sprue plates are made from 3/16-inch thick plate steel ground to a smooth, perfectly flat surface.

The new moulds are designed with a bottom plate having each end attached to a mould block with a shoulder screw riding in a slot to provide a sliding fit as the mould is opened. The shoulder screws also secure the mould blocks to the handle. In the precise center of the bottom plate is an interchangeable bottom plug that forms the hollow point, hollow base or a perfectly flat plain base on the bullet involved. Thus, when the mould is opened the bullet is carried away from the cavity to be easily lifted or dropped off the bottom plug with no dents nor damage as is sometimes the case with conventional moulds.

Steve Brooks nose-pour mould

I am personally well pleased to see Steve Brooks come out with a line of bullet moulds of this design. For years I have been a strong proponent of the nose-pour plain base bullet for competitive purposes. I have had several favorite base-pour moulds converted to nose-pour, and have purchased a number of the old Pope-style nose-pour moulds from Dave Farmer.

Plain-base bullets cast in a nose-pour mould come out with an absolutely perfect base. And if you don't believe it, take the best bullet you have cast from a base-pour mould and place a steel scale on edge across the cutoff on the base of that bullet. Then do the same across the base of a bullet from a nose-pour mould. There is no comparison between the two.

No matter how good the bullet is from a base-pour mould, it is unbalanced -- however slight -- on the base. It is unbalanced because as the bullet cools within the mould it shrinks endwise as well as diametrically, thus leaving a pillar of bullet metal extending from the base up through the hole in the sprue plate. While this pillar of bullet metal may or may not be in the exact center of the bullet, it is definitely bent or smeared off center when the sprue plate is swung to one side to cut off the sprue. And although this area of the base may appear perfectly flat, laying the steel scale across it proves otherwise.

While almost all black powder cartridge rifle records and championship scores have been set with bullets cast from base-pour moulds, it is evident from the scores being fired today that the bar is being raised higher and higher. On the silhouettes, as always, matches are being won on the chickens and lost on the rams. Thus, it is my opinion that if the perfect base on a nose-pour bullet will reduce the **average** diameter of your cone of fire at 547 yards by one inch or even a fraction of an inch, the nose-pour bullet with its perfect base is the way to go. And using one of these new Steve Brooks' moulds is the way to get it there!

Steve's moulds for the hollow-point and hollow-base bullets will probably find most interest among those wanting to use their black powder cartridge rifle for hunting. For this purpose, these moulds are extremely versatile in that the bottom plug that forms the hollow point or hollow base can be made to any infinite number of shapes, diameters or depths. With one mould and various interchangeable bottom plugs, you can go all the way from a deep, large diameter hollow point to a solid, flat-nose bullet. In order to assure that the hollow point or base cavity is perfectly centered with the bullet, there is a large alignment diameter on the lower part of the bottom plug that engages a corresponding precision bored recess in the bottom of the mould blocks. This makes certain that the cavity forming plug is rigidly secured and perfectly concentric with the axis of the bullet. With a mould like this, one could cast exact replicas of the old government cavity-base 405 and dish-base 500 grain bullets as shown in the government drawings on pages 125 and 129 of the first edition of J.S. and Pat Wolf's book **Loading Cartridges For The Original .45-70 Springfield Rifle And Carbine.** One could also find out if a fine hollow point or small cup base on your regular bullet would enhance accuracy.

Casting with a bullet mould having a bottom plate, base plug or hollow point pin usually requires a somewhat

Steve Brooks hollow-base mould

hotter melt and a bit longer warm-up time to get and keep the bottom plate and fixtures up to casting temperature. When testing one of the new Brooks' moulds, an RCBS lead thermometer was kept in the metal at all times and the temperature held at 790 - 800 degrees F. I used one of Bill Ferguson's one-pound capacity Rowell ladles and brought the mould up to casting temperature by casting and rejecting the first dozen or so bullets.

Once I started getting premium quality bullets, I maintained a steady casting rhythm that minimized the amount of time between bullets. This is vitally important. You do not want the bottom plate and fixtures to cool between castings, thus causing an improperly filled out base cavity or hollow point, or rounded edges on the base.

These new moulds drop the bullet with unbelievable ease. As soon as the sprue is set, swing the cut-off plate to one side and rap the handle joint once or twice with a rawhide mallet (I use a 15-inch length of one-inch PVC pipe) to jar the bullet loose from the cavity. Then you can open the blocks and pick the bullet off the bottom plug or turn the blocks over and let the bullet fall free. I should tell you that two or three times during each casting session I lubricated the top of the bottom plate on each side of the slot by touching it with beeswax. This helps prevent any binding when opening or closing the mould.

I don't know how many bullets I have cast nor how many different bullet moulds I have used since that day in early 1949 when I cast my first bullet from an old Ideal No. 3118 .32-20 mould. I do know that I have cast many hollow-point and hollow-base bullets, and that I have cast and shot in competition several thousand plain-base nose-pour bullets. In this process, I have used moulds with removable hollow-point pins and hollow-base plugs, and I have now used four different design nose-pour plain-base bullet moulds. After all this, I wish I could spend another fifty years casting bullets from one of Steve Brooks' new bullet moulds. Their design is unique and the craftsmanship is of diamond quality.

These new bullet moulds are priced at $175 plus $10 shipping and handling. If this seems a bit pricey to you, consider the number of premium quality competition bullets you will use in the next five years. Then check the current market price for similar cast bullets. At these rates, the price of one of these new bullet moulds is a bargain. More than that, with reasonable care, the bullet mould will serve you a lifetime.

If you are considering the purchase of a new bullet mould, you can do no better than to call Steve Brooks at 406-782-5114.

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are securely held in place towards the front of the chamber by the pressure in the case creating friction between the outer case wall, and the chamber interior surface, the front half, or two thirds of the case will not slide backwards with the case head as it moves towards the bolt face, so the case is stretched in length with each firing.

If you have any oil in the chamber when you fire a high pressure cartridge the case will flow back in the chamber, and prevent case stretching to some extent but it also builds very high pressures against the bolt face. That is one reason why it is recommended that you never have any oil in a rifle chamber. A cartridge that is loaded near the upper limit for that particular cartridge, and rifle combination may become dangerous if there is oil introduced into the chamber, so never oil the chamber of a high pressure rifle in an attempt to prevent case stretching.

With typical black powder loads it doesn't work quite the same way. It is possible that you can have the exact same type of case stretching cycle happen with black powder, but it is not very likely, because the black powder gases don't usually build enough pressure in the chamber to stretch the heavy part of the case walls near the head of the case. Which is what is required for the same type of stretching to occur.

If you have a head space problem with a high pressure cartridge, the case will usually last only a few reloadings before the head will separate because it is being stretched excessively with each firing. If you have a head space problem with a black powder rifle it is very possible that the only thing you will notice is that the primer sticks out of the case a little bit after firing. That does not mean that if the primer sticks out a bit that you have a head space problem either, but if it protrudes more than about .010" you can figure it might be a bit excessive, but it still may not need correction.

Any way, back to the black powder loads and case stretching. What happens with the black powder cartridge is basically the same as high pressure cartridges to a point. The case is shoved forwards in the chamber by the firing pin, the primer ignites forcing the primer back against the breechblock like a

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What's A Creedmoor?

by

David Minshall

In the February issue of ***Black Thunder*** Dale Murphy made reference to Creedmoor rifles in his article on a Sharps 'buffalo' rifle. Today, the name 'Creedmoor' is used by numerous shooting sports goods companies for shooting jackets, shooting mats, rifle sights, rifles, etc, and a note as to why 'Creedmoor' has become synonymous with shooting sports might prove of interest.

In the latter part of the 19th century the Creedmoor Rifle Range, Long Island, New York, USA, was the venue for a number of international long range rifle matches that received widespread public interest and much press coverage. The Palma Trophy Team Match, still run today, was first held at Creedmoor on 13-14 September 1876 (although the trophy was then known as the Centennial Trophy) and competed for by Australia, Canada, Ireland, Scotland, and the United States. Ranges shot at were 800, 900 and 1,000 yards, with muzzle loading and breech loading black powder rifles used by the teams of eight. Today the team numbers have increased to 16 members, but the distances shot at are unchanged.

The NRA in America

To trace the origins of the range one needs to go back to the immediate post Civil War years in America. Understandably, at the time there was little interest in marksmanship or military matters from the general public, and although the US National Guard received plenty of drill and marching instruction there was little, if any, marksmanship training.

The impetus for the development of marksmanship skills within America's National Guard units came from the pages of the *Army and Navy Journal*. The editor was William Church, and a kindred spirit was George Wingate, whose "Manual for Rifle Practice" appeared in six instalments in the *Journal* in late 1870 and early 1871. Reprinted in book form in a number of editions the manual became the standard work upon which rifle practice was developed in America.

Throughout his editorials Church urged for marksmanship training, and in September 1871 he held a meeting for New York National Guard officers interested in developing marksmanship skills amongst their troops. From this initial informal meeting and nucleus of interested parties, seeds were sown for the formation of a new association. The men set to work and progress was rapid. Just two months after the original meeting, on 17 November 1871, "the National Rifle Association", was granted a charter by the state of New York, "to promote rifle practice, and for this purpose to provide a suitable range or ranges in the vicinity of New York … …"

The first year of the National Rifle Association (NRA) existence passed by quietly. Real progress began in 1872 when, under President William Church and Secretary George Wingate, the New York Legislature was induced to appropriate $25,000 for the purchase of a range near New York City, the Association agreeing to raise $5,000 on its part.

Creedmoor Range Origins

After a protracted search for a suitable piece of land at a reasonable price, the NRA was able to purchase a plot owned by the Central and North Side Railroad of Long Island. Seeing that the Association's plans were likely to stimulate rail travel, the railroad company had agreed to sell the seventy acre plot at low cost. This farmland had formerly been owned by the Creed family.

The gentleman credited with naming the new range was Colonel Henry Shaw, a member of the range committee of the NRA. On arriving at Creed's Farm and observing the open, desolate field, with coarse scanty grass and brambles he declared it a veritable moor, Creed's Moor. Hence by a happy inspiration and coincidence "Creedmoor" became the name of the new range.

The 1200 yard oblong strip of land was able to accommodate ranges up to 1,000 yards. Construction work began in 1872 but it was not until 25 April 1873 that the first shot at Creedmoor was fired. An inaugural rifle meeting was held on 21 June 1873. This was essentially a short range affair, with a rapid fire 100 yard match and two 200 yard matches (military and 'any rifle') for individuals. The main event was a regimental team competition shot at 200 and 500 yards. The winners by a wide margin were the 22nd Regiment, New York National Guard.

Amateur Rifle Club

Contests and rifles during the first year were almost exclusively military and confined to members of the militia or men shooting with their rifles. The few "any rifle" competitions were offhand at 200 yards. Public support afforded of Creedmoor as long as it remained a military institution was slight. The first season, however, witnessed the formation of a small club of enthusiasts, an offshoot of the parent association, which was destined to create a revolution within a single year.

Colonel George Wingate with a few other clear-sighted

individuals organized the "Amateur Rifle Club" of New York City in 1873. It was designed to cultivate the use of the sporting rifle, and to develop marksmanship as an amusement, with no ulterior military purpose. The Club fired their first match at the Creedmoor Rifle Range on 12 July 1873. There were twelve entrants and shooting was at 500 yards. The winner was J. Bodine of Highland, N.Y. A noted crack shot in his neighbourhood, he used an English made muzzle loading match rifle by George Gibbs of Bristol. While the Club's inaugural match may have gone unnoticed by many, the names of John Bodine and another competitor, Henry Fulton, were to be on the lips of the nation a year later.

The Irish Challenge

The establishment in 1859 of the Volunteer Movement in Great Britain and subsequent formation of the British NRA that year generated a massive growth of interest in rifle shooting. In Ireland in 1861 enthusiasts founded the Ulster Rifle Association and Maj. Arthur Leech was instrumental in founding the Dublin Shooting Club. That same year a challenge published in a Scottish newspaper that Scotland would shoot against England was taken up. The match was limited to Volunteers, in teams of eight, and was fired at 800, 900 and 1,000 yards. To perpetuate the match the chairman of the NRA, Lord Elcho, presented the Elcho Shield for annual competition. The first match took place in 1862, with England emerging the winners.

The Volunteer movement was to the exclusion of Ireland, who, not having any Volunteers was not eligible to take part in the Elcho Shield match. After many applications to the NRA to allow the Irish to enter for this prize, the strictness of the rule was relaxed and an Irish team was allowed to compete in 1865. At Wimbledon between 1862 and 1872 the Elcho Shield match was won eight times by England and three times by Scotland, then, finally, in 1873 Ireland won.

Buoyed by their success in beating England and Scotland, Ireland wanted further laurels. Having enlisted the support of several of the best Irish rifle shots, Major Leech addressed a challenge to America. Not aware of the existence of the NRA in American, the Irish challenge to the 'Riflemen of America' was sent to the editor of the New York Herald. It was published on 22 November 1873. The challenge was for a team match to be fired at ranges of 800, 900, 1000 and 1100 yards. The Irish were to shoot with muzzle-loading rifles made by Rigby, of Dublin, and the Americans were required to use rifles of a *bonâ fide* American manufacture.

Challenge Accepted

The fledgling NRA in America obviously became aware of the challenge, but was not keen to accept. It was the Amateur Club of New York City that came to the rescue and volunteered to meet the Irish champions in a match at Creedmoor. There was however one proviso; the 1100 yards range should be removed from the terms of the match. This was objected to simply because they had no range of that extent at Creedmoor. This range was duly removed from the match conditions, no doubt with some disappointment for the Irish, who considered it their strongest range.

Keenly aware of their 'greenness' in long range shooting, in March 1874 the Amateur Club circulated an appeal to the riflemen of America. This appeal was published in newspapers throughout the country. Native-born Americans interested in rifle shooting, and desiring to be considered for the team, were requested to forward scores of fifteen consecutive shots made at each distance named in the programme, on or before the 1st July 1874. Despite the publicity, the renowned 'riflemen of the plains' failed to materialise.

Since the frontiersmen, with all their vaunted skill, could not be induced to attend, it became evident that the Club would have to fight single-handedly. Six competitions were held at Creedmoor during July and August 1874 to shoot for places in the team and less than thirty men took part. Those finally being selected for the American team were; Col. Bodine, Gen. Dakin, H. Fulton, Col. Gildersleeve, L. Hepburn and G.W. Yale. The team captain was G.W. Wingate.

The American Team at the 1874 rifle match.

The Irish had experienced their own difficulties with final team selection, primarily due to the time involved in attending such a trip to America. Finding riflemen of sufficient eminence and in sufficient numbers, who were able to conclude business affairs adequately to be absent for the trip, was becoming quite a task for the team captain, Major Leech. The Irish team eventually selected was Dr. Hamilton, E. Johnson, J.K. Milner, J. Rigby, Capt. Walker and J. Wilson.

Continued on page 16 ...

MON YEE'S BUFFALO HUNT 2003

recounted by

Mon Yee of Dodge City, Kansas

Part 1

This bull buffalo was 71/2 years old and free to roam on about 15000 acres of prairie ranch land. I had made arrangements with the owner this past summer for this hunt. A pre hunt scouting trip in September let me get a feel for the lay of the land and the herd. Being a free-range herd finding them took some time and effort. Once located with the aid of the Toyota pickup and binnocs a 300-yard sneak was in order. The closer I got to the herd numbering approx 75 cows 50 1 to 2 year olds and the BULL the more restless they became. At 75 yards the cows and young ones all started to pay attention to the guy with the camera. Twenty-five yards later all of buffs except the Bull headed for the hills. The Bull paid extreme indifference to me. He was a true monarch of plains. Many close up photos were taken of the herd. At twenty-five yards I felt relatively insignificant to such a mighty beast. After a few portrait photos of the BULL I began to wonders if it was truly prudent to remain in such close proximity to an animal with a history of disdain towards all things human or domestic. The hunt was only possible because the BULL completely refused to cooperate with the rancher's plans to take him to market. Wrecked people, vehicles, sorting pens, corral, and gates start to get expensive.

After the mid September pre hunt scouting trip and photo session many plans had to be made. Just what exactly does one do with a 2000 plus pound buffalo? As any one who has ever had dealings with such an animal can tell you the buffalo KNOWS he can do anything he wants. Being an avid hunter and target shooter the selection of weapons was paramount. Living in Dodge City Ks and my number one recreational interest being the shooting of black powder cartridge rifles competitively I knew that a buffalo rifle of yesteryear was in order. While I own many single shot rifles the decision was made early on to shoot a sharps. A reproduction 74 straight grip, double set trigger, heavy barrel rifle was to be the weapon of choice. Cartridges loaded with the traditional 70-grain charge and a large lead projectile were proposed. The Classic Bullets 475 gr Flat Point was chosen and load development began. Several trips to the range confirmed that the Classic Bullet Flat Point lubed with Lee Shavers B P Moly lube, with a 70 grain charge of 3ff Swiss compressed .200 with a John Walters .60 vegetable fiber produced a respectable three inch group at 200 yards. Load development and practice on a full size buffalo silhouette was done at a private range (known locally as the Big Woody Rifle Range) owned by my friend and shooting partner Kenneth Miller. The full size buffalo silhouette allowed a more realistic practice session.

The first week in October a package arrived from Steve Brooks containing samples of his new line of hollow point bullets. New possibilities were now available for consideration. A phone call to Steve and yet another mold was on its way to Classic Bullets. Well built high quality molds are a Steve Brooks trademark and this new mold was no exception. Bullets were immediately cast weighing in at 465 grains with a massive hollow point extending to nearly the first driving band. Several trips to the range showed this new bullet to be as accurate as the 475-grain flat point. A further plus was discovering both bullets have nearly the same point of impact to 200 yards with the 70-grain 3ff swiss charge. After discussion with my friend James Linthicum who is a sculptor with a great eye for spatial relationships a plan was formulated as to the preferred target zone on the BULL. Practice went well with various types of shots and presentations.

Any buffalo in the 2000 pound range is going to present many challenges to the hunter. With the average beef steer weighing 800 to 1000 pounds most of the packing plants in the local area were simply not up to the task of processing an animal with a live weight exceeding 2000 pounds. Arrangements were finally made with a local processor at a cost of .30 per pound based on the carcass hanging weight. Butchering and packaging of such an animal are well beyond the capability of the hunter who typically harvests few small game animals and the odd deer.

As this would probably be my only opportunity to

harvest a true trophy quality American Bison preservation of the head and hide was of great concern. Art Albro with Mid Kansas Tanning was selected to preserve and tan the robe. A bison shoulder mount will require a substantial amount of wall space and unobstructed viewing area. Having lived in my current home for many years my possessions and belonging have expanded to fill nearly all of the existing space. What a dilemma. Fortunately several years ago a friend introduced me to European style skull mounts. I have had two deer mounted in this fashion and was very pleased with the results. Getting two trophies a spectacular buffalo robe and a skull with horns mounted to a walnut shield certainly appealed to me. So another portion of the planning was finished.

The troublesome bull, photographed during the pre-hunt scouting trip.

Arrangements were made with the owner of the BULL for the use of a front-end loader, large trailer and truck to transport the BULL to the processor on the day of the hunt. Nobody has enough friends to load a dead 2000-pound animal on a trailer. Due to the size of the BULL and the proximity of the processor the decision was made to skin and dress the BULL at the facility. A vet would need to be present to record and attest to the BULLS health and demise. Since the bull was not to be killed at the processor the meat can only be processed as not being for sale.

With the pre hunt planning nearly finished a date when all the participants would be available was set. The big hunt was on for December 29 2003. Several months of planning and I was finally ready.

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

Rifles & Stuff

PAUL MATTHEWS' RIFLE "OLD FAITHFUL"

Paul sent in a couple of pictures of his favorite rifle, which he lovingly refers to as "old faithful". The rifle is better described in his own words:

Betty, my wife, had this rifle made for me by Ron Snover. The Hepburn action was made by Oklahoma Territory Arms -- they only made twelve of them and the barrel and sights were made by Ron Snover. The barrel is chambered for the .45-70, has Metford rifling in 18-inch twist, full octogon 1-1/8 inches across flats and 30 inches long. The barrel is engraved as being made by Ron for me as a gift from Betty. The bridge of the action has my monogram while the left hand panel has the Matthews coat of arms. The right hand panel has some decorative engraving. The first group fired from this rifle was fired by three different shooters at 100 yards, each shooter firing two shots. The entire group measured 1-3/16 inches center to center. This was February 20,1999. This is shown on page 32 of Black Powder, Pig Lead and Steel Silhouettes.

The Master and "Old Faithful"

Editor's note: It is important that all wives read this article, especially the line under the rifle picture!

NEED A BED FOR THE NIGHT?

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In the bad old days . . .

Houses had thatched roofs . . . thick straw, piled high, with no wood underneath. It was the only place for animals to get warm, so all the dogs, cats and other small animals (mice, bugs) lived in the roof. When it rained it became slippery and sometimes the animals would slip and fall off the roof-hence the saying "It's raining cats and dogs."

There was nothing to stop things from falling into the house. This posed a real problem in the bedroom where bugs and other droppings could really mess up your nice clean bed. Hence, a bed with big posts. And a sheet hung over the top afforded some protection. That's how canopy beds came into existence.

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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.

Don't forget the Creedmoor 900 yards and 1000 yards long range shoot on Saturday 26th June and the Precision 300 yards and 600 yards shoot on Saturday 31st July…

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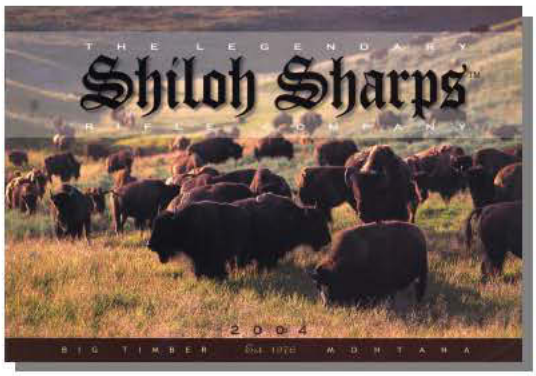

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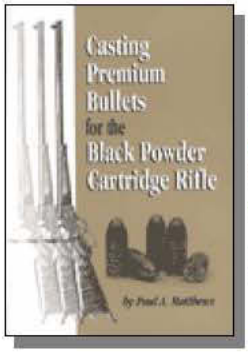

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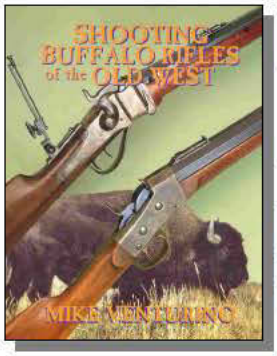

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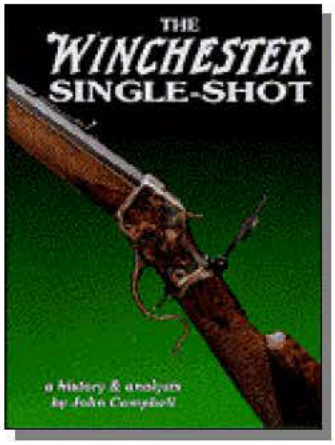

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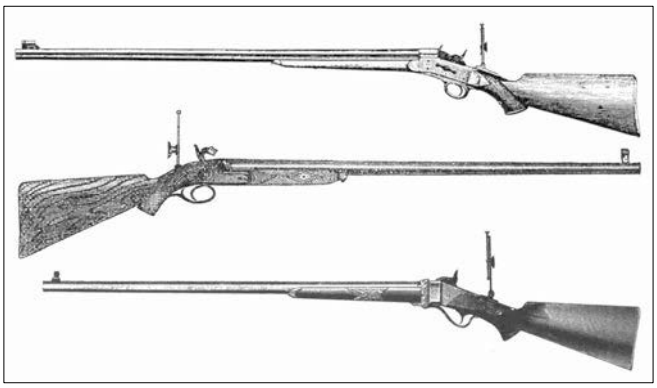
... Continued from page 11

The Irish Team at the 1874 rifle match

Rifles

The Irish had their muzzle loading match rifles manufactured by John Rigby and Co., of Dublin. These rifles, along with the Gibbs-Metford, were the ultimate development of the muzzle-loading small-bore match rifle, and were superbly accurate. However, by far the most part of American shooting was at short range. Long range shooting was seldom practiced and consequently the specialised rifles that had developed in Great Britain were absent. With the acceptance of the Irish challenge, eyes turned to American manufactures for a suitable rifle: both Remington and Sons of Ilion, N.Y., and the Sharps Rifle Company of Hartford, Connecticut, rose to the occasion and designed breech loading rifles suitable for long-range marksmanship. Each rifle found favour with the Americans and their use was evenly distributed through the team; Bodine, Fulton and Hepburn used the Remington and Dakin, Gildersleeve and Yale used the Sharps.



Centre, Rigby muzzle-loading match rifle with above, Remington 'Long Range Creedmoor' and below, Sharps 'Model 1874 No.1 Creedmoor'breech-loading rifles.

The Rifle Championship of the World

The Irish team arrived in New York Harbour on 16 September 1874. On 26 September, the great match took place before an estimated audience of five thousand people. The riflemen were each to fire 15 shots at 800, 900 and 1000 yards. No sighting shots or artificial rests were permitted. The targets were as per those used at Wimbledon in 1873; the three feet square 'bull's eye' was in the middle of the 'centre', measuring six feet square, with a three feet wide by six feet high 'outer' at each end of the target, the whole measuring six feet high by twelve feet wide. Scoring was 'bull's eye' 4, 'centre' 3 and 'outer' 2.

The Americans made a strong start at 800 yards, taking the lead on 326 points against the Irish team on 317. As the ranges increased in distance, so the Irish began to claw back points. At 900 yards the Americans scored 310 whilst the Irish finished on 312. The Americans lead was gradually eroded further at 1,000 yards, where the Irish finished on 302 points for a total of 931. The Americans were still shooting. By the time it came to the last shot to be fired, the Irish were leading by one point.

John Bodine was the last man to shoot. He approached the firing point with a bloody hand wrapped in a handkerchief having shortly before his last shot cut himself whilst opening a bottle. The pressure must have been tremendous, with thousands of spectators straining to see the shot on which American victory depended. Bodine pulled the trigger, then there was the four second wait for the bullet to travel the thousand yards to the target. "Clap!" That welcome sound as the lead bullet flattened on the iron target, indicated a hit. Then came the marker indicating a bull's eye! The American's had won and Bodine was carried off in triumph.

The final scores were America 934 and Ireland 931. The American team win gave the art of long-range shooting a considerable boost in the country, and assured its future as a sport within the US. At least for a decade.

In 1875 a return match was held between Ireland and America on Irish soil to the same conditions as the 1874 match. The match took place on 29 June at Dollymount, near Dublin, and, according to the *Illustrated London News* before an audience of between forty and fifty thousand people! The Americans again won, scoring 967 against Irelands 929.

The American Centennial

In the American centennial year of 1876 the 'riflemen of the world' were invited by the NRA to compete at Creedmoor for the Centennial Trophy. The trophy, commissioned from Tiffany's by the NRA, was a replica

of a Roman legionary standard. Beneath an eagle clutching a wreath of palm leaves was a plaque bearing the word PALMA. It is by this word that the trophy later became known. The match was for teams of eight and to be held over two days, 13 and 14 September, with shooting at 800, 900 and 1000 yards. Competitors were to fire fifteen shots at each distance upon each day.

The final line-up of nations accepting the invitation to compete in the Grand Centennial Rifle Match was: America, Australia, Canada, Ireland and Scotland. Once again the American team were to use breech loading rifles while their rivals were to contest the match with their trusted Rigby and Gibbs-Metford muzzle loading match rifles.

Targets at the Centennial Match underwent a change from those previously adopted. The old square bull's eye was now replaced by a new circular one, as had been adopted by the NRA of Great Britain in 1875. The target used was six feet high by twelve feet wide, and was divided as follows: Bull's eye, 36 inch circle, signal, white disc, counting 5; Centre, 54 inch circle surrounding the bull's eye, signalled by a red disc and counting 4; Inner, 6 x 6 feet enclosing the centre, signalled by a white disc with a black cross, counting 3; Outer, the remainder of the target, being a strip 3 feet wide on each edge, signalled by a black disc and counting 2.

After the two day battle, the grand aggregate results were America 3,126; Ireland 3,104; Scotland 3,062; Australia 3,062; Canada 2,923. The most outstanding shooting was made by J.K. Milner of Ireland who shot fifteen bull's-eyes at 1,000 yards for an unprecedented maximum score of 75 x 75. When one considers that this was achieved without the benefit of sighting shots it makes the achievement all the more remarkable! The Centennial Trophy was presented to the American Team by General Hawley at Gilmore's Gardens on 15 September in the presence of 15,000 people, as much as the Gardens could accommodate. Further crowds, unable to gain access to the Gardens, lined Madison Avenue.

A week after the Grand Centennial Rifle Match, on 21 September, there followed another international match at Creedmoor which is seldom reported today. This was a return match between the old adversaries, America and Ireland. The teams of six fired at 800, 900 and 1,000 yards and the match was another victory for the US, scoring 1,165 against Irelands 1,154.

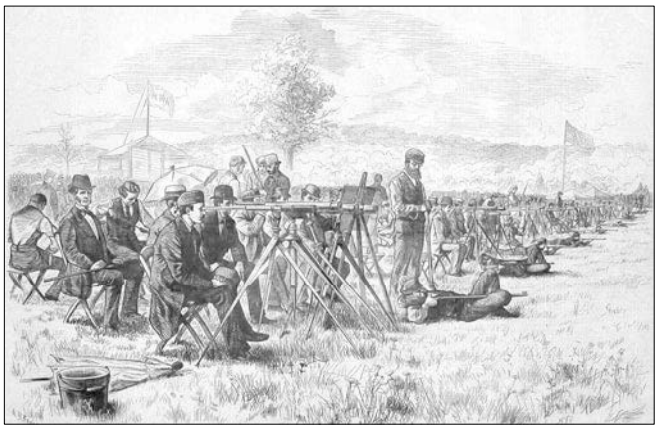
America vs Great Britain

In May 1877 the NRA of Great Britain received an invitation from New York to compete for the Centennial Trophy the following September. Sir Henry Halford was appointed captain of the British team and organisation was left entirely in his hands. The team was chosen following a three day trial shoot held at Cambridge.

On 25 August the British riflemen arrived at New York. Booming cannon and an American reception party aboard the steamer Nelson K. Hopkins greeted them. The fifth annual fall prize meeting of the NRA opened on 9 September. As these opening individual matches drew to a close so attention shifted to the great international rifle match. Scheduled for two days shooting, on 13 and 14 September, this was to be the first time that a Great Britain rifle team had competed against an American team.

About 10 o'clock on the 13th the British team, consisting of Sir Henry St. John Halford, H.S. Evans, Lieut. G. Fenton, Lieut.-Col. J. Fenton, Sergt. Ferguson, A.P. Humphry, J.K. Milner and W. Rigby, arrived from their quarters in Garden City. After visiting the butts and examining the targets, they proceeded to the tent of the American team captain, General Dakin, where they met the American riflemen. The American team of Maj. Gen. T.S. Dakin, I.L. Allen, C.E. Blydenburgh, L.C. Bruce, F. Hyde, W.H. Jackson, Maj. H.S. Jewell and L. Weber appeared in their neat brown shooting costumes. In the tent, the captains of the respective teams drew lots for position, the Americans winning the choice. The British team used Metford and Rigby muzzle loading rifles, and the American team Remington and Sharps breech loading rifles.

The day did not go as the British would have wished, and it closed with aggregate scores of 1,655 for the Americans and 1,629 for the British, leaving the latter with a daunting 26 point deficit to make up in the next day's shooting and the Americans in buoyant mood.



The Grand International Rifle-Match At Creedmoor 1876 – Second Day – Shooting At A Thousand Yards

On the second day, the Americans finished shooting at 5:35 p.m., and ten minutes later the British completed their shooting. The British team had floundered and with grand

aggregate totals of 3,334 to the Americans and 3,242 to the British the great match was over. Both teams had in fact shot astonishing scores, bettering those made in other matches to date. America's team score on 14 September 1877 of 1,679 was, however, an outstanding achievement.

Long Range Demise

The 1877 match marked the end of an era. Waning public interest in match shooting had nothing to inspire it in the following two years. In 1878 no invitations were accepted for another international long range match, and the United States fired the Palma Match without competition. Invitations were again declined in 1879.

GB vs USA. 1877. General view of the range during the final contest

In an effort to revive public interest in long range shooting, Ireland extended an invitation to America for a friendly competition in 1880. The match took place on 29 June. Five of the Irish team used new Rigby breechloaders and the sixth man a Metford. Similarly, five of the American team used Sharps-Borchardt rifles and the sixth a Ballard. The Americans won the match with a total score of 1292 to 1280. On 29 July a self appointed American team, under Frank Hyde, fired a long range match at Wimbledon against a British team captained by Sir Henry Halford. The match, fired at 800, 900 and 1000 yards, was a disaster for the Americans. They lost by 79 points, scoring 1,568 against the British score of 1,647.

At this time the NRA of America suffered severe blows to its activities. The Army decided not to send further teams to matches sponsored by the NRA. Additionally, the newly elected governor of New York, Alonzo B. Cornell, made stringent cuts in National Guard funding particularly focusing on rifle practice. Another invitation to compete for the Palma Trophy in 1881 was declined by the NRA of Great Britain and the match now faded away until it was revived in 1901.

Military Matches

Despite the demise of the Palma Match, a competition with military rifles between the Volunteers of Great Britain and the National Guard of America was agreed to for 1882. On 14 and 15 September teams of twelve representing the British Volunteers and the American National Guard met at Creedmoor. The match fired at 200, 500 and 600 yards on the first day, and at 800, 900 and 1000 yards on the second. The rifles used were of military pattern, although not necessarily one authorised for service. Each man fired seven shots at each distance, and no cleaning between shots was permitted. The British team won scoring 1975, against the American team score of 1,805 out of a possible 2,530.

In 1883 the American National Guard team had a return match against the British Volunteers at Wimbledon, on 20 and 21 July. The British team was again victorious scoring 1,951, against the American team score of 1,906.

Great Britain was invited to send a team of British Volunteers to shoot at Creedmoor in 1885. With Britain on a war footing due to the Sudanese rebellion the NRA felt that they were unable to accept the invitation.

NRA Decline

With the lack of an international match to revive public interest, the Long Island Railroad facing bankruptcy and sponsors withdrawing support, the NRA was fighting for survival. In 1890 Creedmoor was deeded back to the state of New York although the NRA match program was permitted to continue at the ranges. When in 1892 the new Inspector General of Rifle Practice, Capt. B.M. Whitlock, gave free use of Creedmoor to state troops a further source of income was removed from the NRA.

The NRA now placed its records in storage and moved its matches to the new ranges at Sea Girt, New Jersey. In effect, the NRA became dormant until 1900 and the New Jersey State Rifle Association fulfilled its role.

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piston, the thin part of the case walls swell up as the pressure builds till they grab the chamber walls, which holds the case in place while the bullet, wad, and unburned powder slide out of the end of the case and on into the barrel.

If the whole process works as it should the cartridge case will be fitted to the chamber by the pressure. It will then shrink a bit in diameter as the pressure falls off, so that it will slide easily out of the chamber when the breech is opened. The case should not show any signs of stretching or separation, but as I mentioned before, the primer may be exposed a few thousands of an inch.

If the process does not work properly you get case stretching, and sometimes even separations, but what causes it?

It is really simple. The case is held in place in the chamber by the friction of the two surfaces being pressed together by the pressure inside the case, and then you have to take into account the actual strength of the brass in the case itself, that will help resist stretching. At the same time the bullet, wad, and the unburned portion of the powder column is being compressed, and wedged in the case mouth as it is being pushed out of the case and into the bore. This column of stuff is being bumped up so that it causes friction on the inside of the case. If anything happens to change the balance of friction, strength, and resistance that is at work inside the chamber and cartridge, the cartridge case can move. If at any point the internal friction reaches a point where it is greater than the resistance to moving on the outside of the case, and the strength of the brass itself, the case will stretch. If the brass does not have much elasticity, or ability to stretch, it may separate.

This does not mean that if a case separates that you should immediately blame the brass, and assume it is too brittle. What you should realize is that you either have too much friction inside the case, or you have too little on the outside.

In the worst case scenario as in my total case failures during my load tests. The friction inside the case is so much more than on the outside of the case that it was able to separate the case near the middle of it's length, and pulled the front half of the case up into the bore almost a half inch before the friction once again was greater on the outside of the case than it was on the inside, and the bullet went happily on down the bore leaving me with a case removal project. I never assumed that the problem was with my cases though, because I hade been shooting them successfully with other loads as I pointed out early in this article.

So it is safe to say that there are a number of things that affect the friction on the case, both inside and outside. I think the most important difference between black powder, lead bullets loads, and high velocity modern cartridges when it comes to case stretching is that the black powder loads have a soft lead bullet, a wad, and powder granules that are generally more apt to bump up and grab the inside of the case walls. Where the high velocity cartridges usually have a jacketed bullet, that does not bump up to grab the case neck, and powder granules that are generally more cylindrical in shape, and less apt to pack up.

So how do we help prevent case stretching and separation. It's easy; you just have to eliminate anything on the outside of the case that might reduce friction between the case wall and the chamber wall, and reduce as much as possible the friction caused by the bullet, wad, and powder on the inside of the case.

Let's start with the outside of the case, and list a few things that might reduce friction that would need to be eliminated. First and most obvious would be, "Do not leave bullet lubricant on the outside of the cartridge case." Less obvious might be the use of a short blow tube that deposits a bunch of water in the chamber, or putting a loaded cartridge in a hot barrel, and then attempting to take it out after a few seconds. If the barrel is warm enough it will melt about any black powder lubricant, and when you pull the bullet out of the bore it will leave a mess of lubricant inside the chamber that must be removed before you load the next cartridge.

There are some other minor problems on the outside of the case that might aggravate a problem you have and they would include a chamber that is polished too smooth, or some chamber designs themselves can aggravate the problem. But these things, and a few others are beyond the capability of most shooters to do anything about, and therefore are beyond the scope of this article. I do want to state here for the record though that reasonably tight fitting, so called match chambers will not by themselves cause a problem with case stretching, but if you choose to use a chamber that is dimensioned tight, then you must also except the responsibility of keeping that chamber clean, and your load stresses balanced.

Now then, inside the case is a different matter. There is so much stuff inside of the case that is trying to wedge its way out, that there is a tremendous amount of friction involved there. If any one of those items trying to come out causes a bit more friction than it should, it can result in a damaged case. For instance the loads I mentioned in the first of this article were fine with one brand of powder, but not with another faster burning powder. I have seen the same thing happen to shooters who switch to FFFg powder for a rifle such as a 45/70, in an attempt to get more velocity out of it.

What happens is simple; the powder is hotter and ignites with more force than the other batch of powder and created a higher chamber pressure while the bullet and powder column is still in the case, so it caused more friction on the inside, and ripped my cases in half.

I think it is true that every single component in the cartridge can and does affect the friction involved inside the case. For instance a softer bullet will bump up easier than a harder one, and therefore may cause more drag. A poly wad will have more drag than a card wad, and for that matter a low density poly wad will probably drag harder than a high density one, or a thicker wad, or larger in diameter and tighter wad will drag more than a thinner, or smaller one. By the same token if you use multiple wads they will of course drag more also.

Some powder granulations may pack more easily, and drag more, or some powder is harder than others so it will bite into the case walls more as it tries to slide by. It's possible that a hotter primer will cause more pressure in the case, and have a similar effect as the hotter powder situation already mentioned only in a lesser amount.

There is also the matter of case preparation, which I have found to be one of the more often encountered problems. If your cases get dirty inside, and begin to get a creosote build up on the inside, the powder granules will embed into it as the powder packs under pressure, and it will really create some serious friction.

Well, before I get too carried away trying to explain every little thing that might cause a change in friction, and therefore increase the chance of case stretching or separation let me just say this. If you have a properly designed chamber, and you keep your chamber as clean and dry as possible, your cases clean and free of oils or lubricants on the outside and free of any powder residue build up on the inside, and use a bullet of proper hardness, proper fitting wads, and a powder charge that is correct, you should never stretch or separate a cartridge case with a black powder load.

The load I mentioned in the first part of this article was in my 45/2.6" sharps. The bullet was a 540 grain Paul Jones "Creedmoor" cast 25-1, under that was a .060" lube cookie, and a .060" low density poly wad cut to be about .006" larger than the mouth of a fired case, a Winchester large rifle primer, Starline brass, and 100 grains of Swiss 1 F powder. As I mentioned before this load would rip as many as 1 out of 5 cases in half.

Let me go through this load, and tell you where the possible problems lay. First off the bullet could be a little harder for a load of this magnitude, but I like casting with 25-1 alloy so I stick with it. The difference in drag I would get with a slightly harder bullet would be very minimal anyway so I will not be changing it any time soon.

Secondly is the fact that I use a grease cookie which makes it harder to keep the chamber clean, and dry. The grease cookie is prone to leaving more lubricant in the front of the chamber area than a load without it, but I like to use a grease cookie in this large cartridge because it helps deal with the fouling in the bore and throat area. So here again we find something that I am not willing to give up or change.

Next is that the wad diameter is probably a bit tight, so I slacked the diameter back down to just .002" over the size of the mouth of my fired case. I could also switch back to vegetable fiber wads for less drag if I wanted too, and I do use them quite often, but I hate to use a load that just changing a wad type could make enough difference that it might damage my cases.

My cases are clean inside to the point where you can see shinny brass when you look into one of them, so the obvious problem was the 100 grains of fast burning Swiss powder. It's a pity too because this load gave me the velocity I was looking for, and great accuracy except when the cases broke. Then of course there was that little problem of having to knock half a case out of the bore every so often.

I finally decided after some thought that what I really needed was a powder that lit up a little softer, and gave a lower initial chamber pressure, but then burned at a higher rate as the bullet, and powder column went up the bore. Basically I wanted to stretch out the pressure curve a little and move the peak pressure to a point where the bullet was further up the bore. I decided to go back to my good old GOEX cartridge powder that I had been using with one small difference. I only put in two thirds of my normal charge, and then topped it off the other third of the powder charge with GOEX FFFg powder because the finer granulation will burn faster. The idea was that the Cartridge grade powder would get the load started nice and easy, and then the finer grade powder would kick in as the bullet moved on up the bore where it needed the higher burn rate.

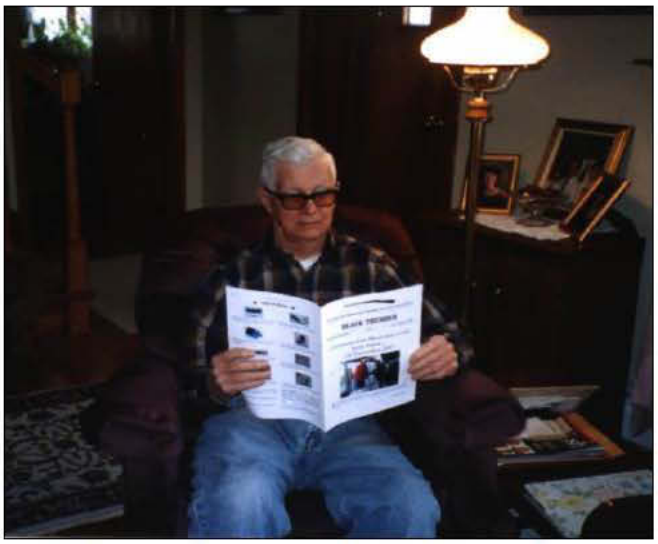
The results were excellent accuracy, the exact same velocity I was looking for, and no more separated cases. On top of that I get to use the powder I already have on hand, and save money too. The point of this whole story though is that since I understood what affects the friction inside and outside of the case, I had the ability to make a change in my load that got me where I wanted to go, and without damaging cases. My hope is that you can take some of this rambling and do the same thing.

Black Thunder travels the globe ... where do you read yours?

In this issue, our good friend Paul Matthews has taken up the "*where do you read yours?*" challenge.

Paul, who is well known for his many books on all aspects of shooting with Black Powder Cartridge Rifles, lives in Pennsylvania and has received a copy of our humble little newsletter since its early days. And, as far as I can recall, he has contributed interesting and informative articles to almost every issue, for which I am most grateful.

From the picture below, it is clear that Paul reads his Black Thunder in the comfort of his home. Nice lamp , Paul.



Paul Matthews reading his copy of Black Thunder at his home in Athens, Pennsylvania.

Peter Starley sponsors the Quigley Match.

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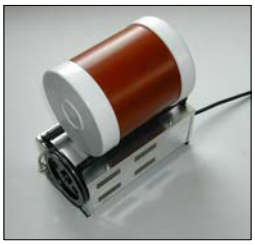

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BLACK THUNDER is the official newsletter of The Single Shot Black Powder Cartridge Rifle Club of Great Britain, 27 Yardley Close, Woodloes Park, Warwick CV34 5EX, England, UK and is edited by Phil Morgan. Contact: phil@ssbpcrc.co.uk with articles, letters, pictures or ads. for future issues.

Deadline for next issue is 1st July 2004