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Rifled Guns Long Range Rifle Fire



*The Queen's Prize,
1860-1900*

Research Press Journal

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Firearms

- Long range rifle fire. Long range target rifles. British military longarms. Small arms trials. Ammunition. Accessories. Gunmakers.

Marksmanship

- Military marksmanship. The art of shooting. Long range muzzle loading. National Rifle Association. Creedmoor and the international matches.

19thC Riflemen

- Those who pioneered the sport of target rifle shooting from the muzzle loading and into the black powder breech loading era. Biography.

Rifle Volunteers

- The Volunteer Force was established in 1859. From 1881 territorial regiments included regular, militia and volunteer battalions.

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Prize badges from the Queen's Prize,
awarded in the 19th Century

See page 30, *The Queen's Prize, 1860-1900*

Research Press Library

Research Press has a library of free downloadable reference texts for students of firearms, target shooting and associated history.

English and Welsh Gunsmiths and Gunmakers, 1550 – 1850

- This document contains a list of English and Welsh gunsmiths and gunmakers from around 1550 to about 1850, but excluding London gunsmiths/gunmakers. The list has been compiled from free on-line sources such as County Record and Archive Offices and The National Archives, but it must not be considered a definitive list, as new information is added from time to time.

The Crossed Sceptres & Crown Mark

- Proof marks on English firearms made outside London and the developments which led to the establishment of the Birmingham Proof House in 1813, with its familiar “V” and “BPC” marks under crossed sceptres.

Why The Tombstone?

- Some arms proved in Birmingham after 1813 show additional stamps which take the form of “tombstone” shaped impressions with a variety of numbers and symbols enclosed therein.

English Provincial Makers’ Marks

- Provincial makers’ marks, i.e., those struck by gunmakers who were not members of the London Gunmakers Company. The fundamental question is whether these marks were struck merely to identify the maker of the piece, or whether they also signified that the item had actually passed a proof test successfully.

The Gunmakers of Oxford

- The development and growth of the gun trade in Oxford during the 17th and 18th centuries. Features: William Upton, John Nicholes, William Hawkes, William Emms, John Collis, Martin Brown (Browne), Samuel Sykes, Thomas Beckley, John & James Forrest, William Dupe, Frederick Rudolph Beckhusan, John Venables, Field, Pether, George Webb.

Ketland Guns in America

- A fresh look at the family of English industrialists who dominated the early American firearms trade.

A Pair of Early Samuel Nock Detonating Pistols

- This article documents a previously unknown and very rare pair of early detonating pistols by Samuel Nock. The pistols are designed to be fired by an early form and variant of the percussion system, known by collectors today as a pellet-lock, which uses a round detonating wafer. Samuel was the nephew of the celebrated London gunmaker Henry Nock. He was apprenticed to his uncle in 1791 and he opened a shop at 180 Fleet Street in 1806. In 1823 Samuel moved his business to the more upmarket and fashionable Regent Circus where he remained until his death in 1852.

The Probin Gunmakers of 18th Century Birmingham

- This article attempts to trace the fortunes of the Probins, a family (indeed, one might say, a dynasty) of Birmingham gunmakers.

John Townson and His Pistol

- The small flintlock pocket pistol that features in this article was once part of the collection of the late John Cooper, an authority on 17th century English pistols. The pistol is a magnificent example of the quintessentially English pistols that were produced during the middle decades of the 17th century and of which very few have survived. It was made by John Townson of London during the 1660s, a period when London was embroiled in a succession of the most dramatic and life changing events.

The English Snaphance Lock

- The English snaphance is not only one of the most innovative “flint-locks” but is probably one of the rarest gun mechanisms to have survived. Recent research has found that only about 80 English snaphance muskets, pistols and detached locks have survived worldwide, although this does not include excavated, converted or incomplete locks. Modern tests by the author have proved it to be a fast and reliable mechanism and it must have been a serious challenger to the matchlock and wheellock in the 16th century. This article looks at the history of the lock and examines two examples.

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Priming



Creedmoor is synonymous with the international long range rifle matches that occurred there in the 1870s, the first, between Ireland and America, in 1874. I realized in a few short years, the 150th anniversary of this match would be upon us (2024). A time that we as black powder enthusiasts, collectors and shooters have ONE chance to recreate the event – I doubt many of us will be around in 2084 for the 200th anniversary.

I have been hosting Long Range Muzzle Loading (LRML) matches for over 20 years and the anticipation to put Muzzle Loader (ML) vs Breech Loader (BL) as in 1874 was just something that needed to occur. The BOD at my home range, Oak Ridge, TN (ORSA) have always supported the shooting sports – even with rare muzzle loaders purposely made to shoot 1000 yards (Match Rifle). Each ML shared the 1 hour relay with another ML and each BL had 30 minutes to himself, then allowing the other BL his 30 minutes. This seem to work great, the ML were used to this time allotment and the BL seemed to nearly shoot rapid fire to get all scored shots at each distance on paper (and a few sighters).

Day one (Friday, March 22, 2019) at the clubhouse checking in and weighing rifles. The original match required rifles of 10 pounds or less – I expanded this to 12lb. (without sights, slings, etc.). We had a scope class, but it was not needed as we had no participants – everyone shot iron sights. Off to the range to fire round bullets at square targets (Colin Mullin phrase). The wind was fierce and many times throughout the day one could hear a gust approaching through the trees before blowing shooting equipment over on the line... the wind flags were straight out rippling at attention. The bright morning sun also was at 2 o'clock, just over the horizon (hill side). Al Roberts tuned in a tremendous

News, Events, People & Places

1st relay score at 300 yards, a 38-1x with his original George Gibbs ML, only to be outdone in the 2nd relay by Bob Boswell with his Pedersoli '74 Sharps posting a 40-4x. Perfect 10 shots into the 10" square bull and 4 into the 3" X-Square! Wow, are these too easy, when I built them to scale from 1000 – I certainly didn't think so. Dave Munch and Rod England both scored 1 point behind Al with their ML at 37 each. The BL also posted two 37's for 2nd & 3rd place at 300 by Ian Egbert and NMLRA President Joe Hill (yes, he shot a BL as he sold his Pedersoli Gibbs and didn't have time to work up another load for another ML).

600 yards the target size doubled from 300 (at least that's what I announced when we moved back). At least the wind didn't double in strength – it remained a force, but the sun was out and temperatures in the 50's, no one was complaining. Joe Hill posted the highest score with a 37-1x followed by ML Jason Lewis with a 35. 2nd place ML went again to Dave Munch 34-1x. BL 2nd going to Willard Lamb with a 36. 3rd places went to ML Brent Danielson and Ian Egbert with 34 & 33 respectively. The entire day of shooting activities took 6 hours.

Our usual catered dinner along with awards was performed at the clubhouse with some other notable original rifles, announcements of the Match's future, etc.. and went on for another two or so hours.

1000 yards! Is there anything to say about the impression one has looking well over ½ mile to a 36" square, not to mention shooting at it with open iron sights, shooting black powder and lead bullets – we were about to recreate history? By this I mean, shooting 1000 yards with no artificial support – that's what they did in 1874 (along with some other things that this match will get to in coming years). I allowed the shooters 1 relay with support, then to repeat the shooting unsupported. It's not as bad as you might think, but I knew the ML might tire. Although the sun was again bright, the wind had settled down over night to just a slight breeze, temperatures approached 60.

These scores were combined as one total score at 1000. Lee Shaver ML – tallied the two relay score of 69-2x, followed by 1st place BL – Ian Egbert with a 66-1x. 2nd places went to ML Art Fleener 60-1x and BL Joe Hill with a 54. 3rd gathered hardware both with 53's, ML - Al Roberts and BL - Jim Davis.



History at Oak Ridge has proven that 1000 takes all prizes (AGG) and only Jim Davis was out done by Willard Lamb to claim the 3rd place overall BL – AGG. ML – Lee Shaver, Art Fleener and Al Roberts took 1st-3rd. BL – Ian Egbert, Joe Hill & Willard rounded that division. Congratulations to Lee and Ian for taking top honours in each division – excellent shooting!

Looking at ML vs BL scores, the top 4 from each division ‘Team’ so-to-speak, I knew after day 1 (300 & 600) the BL had the advantage (Joe Hill 74, Willard Lamb 73, Ian Egbert 70 & Bob Boswell with a 67 = 284 points). The ML (Dave Munch 71, Al Roberts 70, Jason Lewis 68 and Jason Day 67 tallied = 276). The ML were 8 points down.

Low and behold the muzzle loaders pulled off the upset – I and many others erupted into excitement, laughter, etc.. when we tallied the final team scores at the closing award ceremony. The top 4 scores (TEAM) tallied the ML with 503 points vs the BL tally of 502. We couldn’t believe how close this match ended. What a way to end such a wonderful 1st inaugural ‘Creedmoor 150’ Rifle Match...

Rick Weber

Results are published overleaf

2019 "Creedmoor 150"
Oak Ridge, TN
March 22-23, 2019

	Name	State	Class	300 x	600	Combined			AGG	x		
						1000 x	1000 x	1000 x				
1	Ian Egbert	OH	BL	37	1	33	1	36	30	1	136	3
2	Joe Hill	IN	BL	37	1	37	1	25	29		128	2
3	Willard Lamb	TN	BL	37	1	36		32	17		122	1
4	Jim Davis	IN	BL	34	29		30	1	23		116	1
5	Ron Walters	MI	BL	35	31	1	25/22				113	1
6	Barb Walters	MI	BL	37	1	30	1	20	25		112	2
7	Bob Boswell	KY	BL	40	4	27		18	21		106	4
8	Kim Kelley	FL	BL	34	31			11	22		98	0
9	Steve Erwin	TN	BL	33	22			22	10		87	0
10	Ben Bateman	FL	BL	30	30			6	10		76	0
11	Eldridge Mount	NY	BL	31	6						37	0
12	John Schmidt	IL	BL	23			10				33	0

2019 "Creedmoor 150"
Oak Ridge, TN
March 22-23, 2019

	Name	State	Class	300 x	600	Combined			AGG	x		
						1000 x	1000 x	1000 x				
1	Lee Shaver	MO	ML	36	2	30		36	2	33	135	4
2	Art Fleener	IA	ML	34	32		32	28	1	126		1
3	Al Roberts	AL	ML	38	1	32	1	24	1	29	123	3
4	Brent Danielson	IA	ML	32	34		31	22			119	0
5	Dave Munch	OH	ML	37	34	1	24	16			111	1
6	Ray Hopkins	OH	ML	33	32	1	32	11			108	1
7	Rod England	SC	ML	37	29		21	19			106	0
8	Jason Lewis	IA	ML	33	35		20	17			105	0
9	Jason Day	IN	ML	35	32	1	19	18			104	1
10	Charlie Scott	OH	ML	35	28		19	22			104	0
11	Kenn Heismann	KY	ML	31	28		23	16			98	0
12	Rick Weber	TN	ML	27	1	17		24	1	21	89	2
13	Bob Wetzler	IN	ML	35	24		23				82	0
14	Karl Kuehn	OH	ML	30	24		24	2			80	0
15	Dave Goodrich	IN	ML	34	20		6	15	1	75	1	1
16	Dan Bredberg	IL	ML	25	13		17	17			72	0
17	Matt Swanson	IA	ML	23	15		18	11			67	0
18	Dean McKibben	MO	ML	34	1	14		8	5		61	1
19	Chris Christensen	MD	ML	26	18		14	1			58	1
20	Wietze Veenstra	CAN	ML	30	10		15	0			55	0
21	Craig Faubion	VA	ML	20	17		0	0			37	0
22	Ryan Thoreson	MO	ML	12	5		14				31	0
23	Carlo Diceglie	OH	ML				16				16	0
24	Richard Page	VT	ML	5			4				9	0

First shoot of the Season at Bisley

Muzzle Loaders Association of Great Britain (MLAGB) and Long Rang Rifles (LRR) Branch of the MLAGB

The first shoot in the Bisley calendar for the LRR and MLAGB took place over the weekend of Friday 5th April to Sunday 7th April, with competitions for the Asquith Cup and Volunteer Trophy for the LRR and the 200 yard shoots for Enfield, both prone and standing, and free rifle competitions for the MLAGB.

The Asquith Cup is a demanding competition for .577 percussion military muzzle loading rifles, comprising 15 shots at each distance, 600 and 800 yards. Shooting is from the prone position, with just the two point military sling for support. Friday's weather was challenging with some strong winds and torrential rain showers. However, 21 shooters braved the elements, fifteen of whom took part in the competition including a new member of the LRR, Richard Croft, who decided to jump in with both feet and go for the long distances as his first shoot; as a first time shooter at the longer distances his scores were something to be proud of. Jerry Womble was triumphant despite scoring a 4 on next doors target, with a combined score of 64, beating Paul Wolpe on count back, who also scored 64, and Henrie Van Koot third with a respectable 57.1.

The Volunteer Trophy is a rare chance to shoot military match rifles in their original configuration with open sights (the popular Parker-Hale 'Volunteer' being a generic version of this class of rifle). Firing the 15 shots at 600 yards again was challenging in the morning with some rain, varying winds and being freezing cold. John Whittaker took 1st place with a fantastic score of 58.2, Gary Evans was 2nd with 51.1 and Paul Wolpe 3rd with 49.2.

Complexities with range booking this year meant that the MLAGB 200 yard National Rifle Championship was held on Saturday afternoon and Sunday morning. There were three events, prone and standing for the Enfield rifle and prone for match rifle.

The 200 yard Enfield prone competition was won by Taco van der Vlist with a score of 35.2, Paul Wolpe came 2nd with 33 and Jerry Womble came third with 32.1. The 200 yard Enfield standing is not liked by some shooters and therefore only seven shooters took part in the competition. In 1st place was Fred Brouwer with a score of 22.1, 2nd was Taco van der Vlist with 20.1 and 3rd was Dave Craven with 18.1. Jerry Womble who usually puts in a good score in the standing competition only managed 4th place with a score of 18, partly due to the fact that he put a wonderful shot on someone else's target; most of the other shooters will say "been there, done that", but we are like a family and we all try to help each other in any way we can!! In the 200 yard match rifle Alan Beck was triumphant with a score of 43.2, with Taco van der Vlist close on his heels scoring 42.2 and Henrie van Koot not far behind on 42.1. Jerry Womble completed his hat trick by putting a 5 again on next doors target, ever the helpful guy.

I would like to say a big thank you to all the shooters for their participation in the first Bisley shoot of the season, especially with all the changes I had to make to squadding due to unforeseen circumstances. Everybody volunteering to undertake extra duties in scoring for the targets and Range Officer duties. I would also like to welcome our new member Richard Croft to the family and hope he enjoyed his first shoot with us.

*Annie Vause
Long Range Rifles Branch Secretary*

Full results can be accessed via the LRR web site at

www.longrangerifles.co.uk

Vickers MG Collection & Research Association

With the *Ordnance Society* the editor recently had the pleasure of visiting the Vickers MG Collection & Research Association (VMGCRA). It was formally incorporated in 2011 and established to ensure that the historical collection and research established since 1994, by Richard Fisher, would be safeguarded for the future.

The collection is staggering in its scope and the few photographs here cannot do it justice. Opportunity to see a belt loading machine in use, followed by live (blank) firing demonstration were highlights.

Richard recognised in 2009 that the collection had become significantly valuable with many pieces becoming nearly 100 years old. Furthermore, the amount of information that was being collated on the gun and its use around the world was not being disseminated as widely as was possible. Whilst the website was an excellent avenue and had helped many people research the use of the gun, it was only one-dimensional and the Vickers collection was a very physical asset that warranted more than just photographs and text.

After several events where some items from the Vickers collection were displayed, Richard received positive feedback on the collection and expressions of interest for more of the same! These were both static displays alongside lectures and museum events, as well as living history and reenactment events, where the public could see the guns and people portraying how machine gunners would have trained and lived at different points in history.

With the establishment of the Company, it is hoped that it will give the collection a formality that will enable others to take an interest in it and set it apart from the traditional private collection. It is hoped that the collection will be recognised as something of importance and opportunities for display and exhibition will be taken as much as possible.

Further Information:

VMGCRA www.vickersmg.org.uk
 www.facebook.com/VMGCRA
 www.twitter.com/vickersmg

Ordnance Society www.ordnancesociety.org.uk



Rifled Guns

from The Atlantic Monthly, October 1859

This article was originally published at an interesting time: unrest and apprehension as to the prospects of a French invasion had led to the formation of the Volunteer Movement in Great Britain and subsequently the National Rifle Association. This along with Joseph Whitworth's pioneering work was also to stimulate the British gun trade into a period of experimentation and development. The virtues of the American Kentucky rifle are extolled, while passing often disparaging remarks on other rifles. Just 2 years later, America was gripped by the Civil War and the grim reality of the merits of the military rifles dismissed by the anonymous author were evident.

Editor

When nearly fifty years ago, England was taught one of the bloodiest lessons her history has to record, before the cotton-bale breastworks of New Orleans, a lesson, too, which was only the demonstration of a proposition laid down more than a hundred years ago by one of her own philosophers [1], who would have believed that she, aiming to be the first military power in the world, would have left the first advantage of that lesson to be gained by her rival, France?

When the troops that had defeated Napoleon stopped, baffled, before a breast-work defended by raw militiamen; when, finding that the heads of their columns melted away like wax in fire as they approached the blaze of those hunters rifles, they finally recoiled, terribly defeated, saved from total destruction, perhaps, only by the fact that their enemy had not enough of a military organization to enable them to pursue effectively; when, in brief, a battle with men who never before had seen a skirmish of regular troops was turned into a slaughter almost unparalleled for disproportioned losses in the history of civilized warfare, the English loss being about twelve hundred, the American some fifteen all told; one would have thought that such a demonstration of the power of the rifle would have brought Robins's words to the memory of England, – "will perhaps fall but little short of the wonderful effects which histories relate to have been formerly produced by the first inventors of fire-arms." What more astonishing disparity of military power does the history of fire-arms record? twelve hundred

to fifteen! But this lesson, so terrible and so utterly ignored by English pride, was simply that of the value of the rifle intelligently used.

They tell a story which makes a capital foot-note to the history of the battle: – that General Jackson, having invited some of the English officers to dine with him, had on the table a robin-pie which he informed the guests contained twelve robins whose heads had all been shot off by one of his marksmen, who, in shooting the twelve, used but thirteen balls. The result of the battle must be mainly attributed to the deadly marksmanship of the hunters who composed the American forces; but the same men armed with muskets would not only not have shown the same accuracy in firing, but they would not have felt the moral force which a complete reliance on their weapons gave, a certainty that they held the life of any antagonist in their hands, as soon as enough of him appeared to "draw a bead on." Put the same men in the open field where a charge of bayonets was to be met, and they would doubtless have broken and fled without crossing steel. Nor, on the other hand, could any musketry have kept the English columns out of the cotton-bale breast-work; – they had often in the Peninsula stormed stronger works than that, without faltering for artillery, musketry, or bayonet. But here they were literally unable to reach the works; the fatal rifle-bullet drew a line at which bravery and cowardice, nonchalant veterans and trembling boys, were equalized in the dust.

We remember once to have met an old hunter who was one of the volunteers at Plattsburg, (another rifle battle, fought by militiamen mainly,) a man who never spoiled his furs by shooting his game in the body, and who carried into the battle his hunting-rifle. Being much questioned as to his share in the days deeds, he told us that he, with a body of men, all volunteers, and mainly hunters like himself, was stationed at a ford on the Saranac, where a British column attempted to cross. Their captain ordered no one to fire until the enemy were half-way across; "and then," said he, "none of 'em ever got across, and not many of them that got into the water got out again. They found out it wa'n't of any kind of use to try to get across there, and after a while they give it up and went farther down the river; and by-and-by an officer come and told us to go to the other ford, and we went there, and so they didnt get

across there either.” We were desirous of getting the estimate of an expert as to the effect of such firing, and asked him directly how many men he had killed. “I don’t know,” said he, modestly; “I ruther guess I killed one fellow, *certain*; but how many more I can’t say. I was going down to the river with another volunteer to get some water, and I heerd a shot right across the river, and I peeked out of the bushes, and see a red-coat sticking his head out of the bushes on the other side, and looking down the river, as if he’d been firing at somebody on our side, and pretty soon he stuck his head out agin, and took aim at something in that way; and I thought, of course, it must be some of our folks. I couldn’t stand that, so I just drawed up and fired at him. He dropped his gun, and pitched head-first into the water. I guess I hit him amongst the waistcoat-buttons; but then, you know, if I hadn’t shot him, he might have killed somebody on our side.” We put the question in another form, asking how many shots he fired that day. “About sixteen, I guess, or maybe twenty.” “And how far off were the enemy?” “Well, I should think about twenty rod.” We suggested that he did not waste many of his bullets; to which he replied, that “he didn’t often miss a deer at that distance.”

But these were the exploits of fifty years ago; the weapon, the old heavy-metalled, long-barrelled “Kentucky” rifle; and the missile, the old round bullet, sent home with a linen patch. It is a form of the rifled gun not got up by any board of ordnance or theoretic engineers, but which, as is generally the case with excellent tools, was the result of the trials and experience of a race of practical men, something which had grown up to supply the needs of hunters; and with the improvements which greater mechanical perfection in gun-making has effected, it stands at this day the king of weapons, unapproached for accuracy by the work of any nation beside our own, very little surpassed in its range by any of the newly invented modifications of the rifle. The Kentucky [2] rifle is to American mechanism what the chronometer is to English, a speciality in which rivalry by any other nation is at this moment out of the question. An English board of ordnance may make a series of experiments, and in a year or two contrive an Enfield rifle, which, to men who know of nothing better, is wonderful; but here we have the result of experiments of nearly a hundred years, by generations

No man who is not a first-rate shot can judge justly of the value of a rifle; and one of our back-woodsmen would never use any rifle but the Kentucky of American manufacture, if it were given him.

whose daily subsistence depended on the accuracy and excellence of their rifles, and who all experimented on the value of an inch in the length of the barrel, an ounce in its weight, or a grain in the weight of the ball. They tried all methods of creasing, all variations of the spiral of the groove every town had its gunsmith, who experimented in almost every gun he made, and who was generally one of the best shots and hunters in the neighborhood; and often the hunter, despairing of getting a gun to suit him in any other way, went to work himself, and wrought out a clumsy, but unerring gun, in which, perhaps, was the germ of some of the latest improvements in scientific gunnery. The different gun-makers had shooting-matches, at which the excellence of the work of each was put to the severest tests, and by which their reputations were established. The result is a rifle, compared with which, as manufactured by a dozen rifle-makers in the United States, the Minié, the Enfield, the Lancaster, or even the Sharpe’s, and more recent breech-loaders, are bungling muskets. The last adopted form of missile, the sugar-loaf-shaped, of which the Minié, Enfield, Colonel Jacob’s, and all the conical forms are partial adaptations, has been, to our personal knowledge, in use among our riflemen more than twenty years. In one of our earliest visits to that most fascinating of ateliers to most American youth, a gunsmiths shop, a collection of slugs was shown to us, in which the varieties of forms, ovate, conical, elliptical, and all nameless forms in which the length is greater than the diameter, had been exhausted in the effort to find that shape which would range farthest; and the shape (very nearly) which Colonel (late General) Jacob alludes to, writing in 1854, in these terms, “This shape, after hundreds of thousands of experiments, proves to be quite perfect,” had been adopted by this unorganized ordnance-board, composed of hundreds of gun-

makers, stimulated by the most powerful incentives to exertion. The experiments by which they arrived at their conclusion not only anticipated by years the trials of the European experimenters, but far surpass, in laboriousness and nicety, all the experiments of Hythe, Vincennes, and Jacobabad. The resulting curve, which the longitudinal section of the perfect “slug” shows, is as subtle and incapable of modification, without loss, as that of the boomerang; no hairs thickness could he taken away or added without injury to its range. Such a weapon and such a missile, in their perfection, could never have come into existence except in answer to the demand of a nation of hunters to whom a shade of greater accuracy is the means of subsistence. No man who is not a first-rate shot can judge justly of the value of a rifle; and one of our back-woodsmen would never use any rifle but the Kentucky of *American manufacture*, if it were given him. An Adirondack hunter would not thank the best English rifle-maker for one of his guns any more warmly than a sea-captain in want of a chronometer would thank his owners for a Swiss lepine watch.

The gun which we thus eulogize we shall describe, and compare the results which its use shows with those shown by the other known varieties of rifle, and this without any consideration of the powers of American marksmen as compared with European. The world is full of fables of shooting-exploits as absurd as those told of Robin Hood. Cooper tells of Leatherstocking’s driving the nail with unflinching aim at a hundred paces, a degree of skill no man out of romance has ever been *reported* to possess amongst riflemen. We have seen the best marksmen the continent holds attempt to drive the nail at fifty yards, and take fifty balls to drive one nail. A story is current of a French rifleman shooting an Arab chief a mile distant, which, if true, was only a chance shot for no human vision will serve the truest rifle ever made and the steadiest nerves ever strung to perform such a feat with any certainty. Lieutenant Busk informs us that Captain Minié “will undertake to hit a man at a distance of 1420 yards three times out of five shots,” – a feat Captain Minié or any other man will “undertake” many times before accomplishing, for the simple reason, that, supposing the rifle *perfect*, at *that* distance a man is too small a mark to be found in the sights of a rifle, except by the aid of the telescope

[3]. We could fill a page with marvellous shots *quos vidi et quorum pars*, etc. We have seen a bird no larger than a half-grown chicken killed off-hand at eighty rods (nearly fourteen hundred feet); have known a deer to be killed at a good half mile; have shot off the skull-cap of a duck at thirty rods; at twenty rods have shot a loon through the head, putting the ball in at one eye and out at the other, without breaking the skin; – but such shooting, ordinarily, is a physical impossibility, as any experienced rifleman knows. These were chance shots, or so nearly so that they could not be repeated in a hundred shots. The impossibility lies in the marksman and in human vision.

In comparing the effects of rifles, then, we shall suppose them, as in government trials and long-range shooting-matches, to be fired from a “dead rest,” – the only way in which the absolute power of a rifle can be shown. First, for the gun itself. There are two laws of gunnery which must be kept in sight in comparing the results of such trials: – 1st, that the shape and material of two missiles being the same, the heavier will range the farther; because in proportion to its momentum it meets less resistance from the atmosphere; 2d, that the less the recoil of the gun, the greater will be the initial velocity of the ball, since the motion lost in recoil is taken from the velocity of the ball. Of course, then, the larger the bore of the rifle, the greater will be its range, supposing always the best form of missile and a proportionate weight of gun. As the result of these two laws, we see that of two guns throwing the same weight and description of missile, the heavier will throw its missile the farther; while of two guns of the same weight, that one which throws the smaller missile will give it the greater initial velocity, – supposing the gun free to recoil, as it must, fired from the shoulder. But the smaller ball will yield the sooner to the resistance of the atmosphere, owing to its greater proportional surface presented. Suppose, then, two balls of different weights to be fired from guns of the same weight; – the smaller ball will start with the higher rate of speed, but will finally be overtaken and passed by the larger ball; and the great problem of rifle-gauge is to ascertain that relation of weight of gun to weight of projectile which will give the greatest velocity at the longest range at which the object fired at can be seen distinctly enough to give a reasonable chance of hitting it. This problem

Mr. Whitworth revived the old polygonal bore, and has succeeded in doing some very accurate shooting; but the pitch of his grooves is so great, that the friction and recoil are enormous, and the liability to burst very great.

the maker of the Kentucky rifle solves, by accepting, as a starting-point, the greatest weight of gun which a man may reasonably be expected to carry, say, – ten to twelve pounds, – and giving to that weight the heaviest ball it will throw, without serious recoil, for no matter what the proportion, there will be some recoil. This proportion of the weight of gun to that of projectile, as found by experience, is about five hundred to one; so that if a gun weigh ten pounds, the ball should weigh about 10/500 of a pound. Of course, none of these gun-makers have ever made a mathematical formula expressing this relation; but hundreds of thousands of shots have pretty well determined it to be the most effective for all hunting needs (and the best hunting-rifles are the best for a rifle-corps, acting as sharpshooters). By putting this weight of ball into a conical form of good proportions, the calibre of the gun may be made about ninety gauge, which, for a range of four hundred yards, cannot be excelled in accuracy with that weight of gun.

But in a rifle the grooving is of the utmost importance; for velocity without accuracy is useless. To determine the best kind of groove has been, accordingly, the object of the most laborious investigations. The ball requires an initial rotary motion sufficient to keep it “spinning” up to its required range, and is found to gain in accuracy by increasing this rotatory speed; but if the pitch of the grooves be too great, the ball will refuse to follow them; but, being driven across them, “strips,” – that is, the lead in the grooves is torn off; and the ball goes out without rotation. The English gunsmiths have avoided the dilemma by giving the requisite pitch and making the grooves very deep, and even by having wings cast on the ball to keep it in the grooves, – expedients which increase the friction in the barrel and the resistance of the air enormously.

The American gun-makers have solved the problem by adopting the gaining twist, in which the grooves start from the breech nearly parallel to the axis of the barrel, and gradually increase the spiral, until, at the muzzle, it has the pitch of one revolution in three to four; *the pitch being greater as the bore is less*. This gives, as a result, safety from stripping, and a rapid revolution at the exit, with comparatively little friction and shallow groove-marks on the ball, – accomplishing what is demanded of a rifled barrel, to a degree that no other combination of groove and form of missile ever has.

English makers have experimented somewhat on the rifling of barrels, but with no results which compare with those shown by the improved Kentucky. English hunting-rifles, and *all* military rifles, are made with complete disregard of the law of relation between the weights of ball and barrel. The former seems to be determined by dividing the weight of ammunition a soldier may carry in his cartridge-box by the number of charges he is required to have, and then the gun is made as light as will stand the test of firing, – blunders all the way through; for we never want a rifle-ball to range much farther than it is possible to hit a single man with it; and a missile of the proper shape from a barrel of sixty gauge will kill a man at a miles distance, if it strike a vital part. The consequence is, that the rifles are so light in proportion to their load that the recoil seriously diminishes the force of the ball, and entirely prevents accuracy of aim; and at the same time their elastic metal springs so much under the pressure of the gas generated by the explosion of the powder that anything like exactitude becomes impossible [4]. This the English gunsmiths do not seem to have learned, since their best authorities recommend a gun of sixty-four gauge to have a barrel of four pounds weight, and that is considered heavy, while ours, of sixty gauge, would weigh at least *twice* that. To get the *best possible* shooting, we find not only weight of barrel requisite, but a thickness of the metal nearly or quite equal to the diameter of the bore.

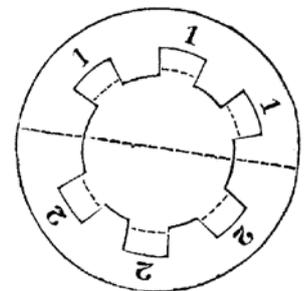
Mr. Whitworth, of Manchester, revived the old polygonal bore, and, by a far more perfect boring of barrel than was ever before attained in England, has succeeded in doing some very accurate shooting; but the pitch of his grooves requisite to give sufficient

rotation to his polygonal missile to enable it to rotate to the end of its flight is so great, that the friction and recoil are enormous, and the liability to burst very great. Mr. Whitworth's missile is a twisted prism, corresponding to the bore, of two and a half diameters, with a cone at the front of one half the diameter. Such a gun, in a firing-machine, with powder enough to overcome all the friction, and heavy enough to counteract torsion and springing, would give very great accuracy, if perfectly made, or as well made as American rifles generally; but no maker in England, not even Mr. Whitworth, has attained that point yet; and even so made, they would never be available as service- or hunting-guns.

The Lancaster rifle avoids grooves (nominally) altogether, and substitutes an elliptical bore, twisted to Mr. Whitworth's pitch (twenty inches). General Jacob says, very justly, of this gun: "The mode of rifling is the *very worst possible. It is only the two-grooved rifle in disguise.* Let the shoulders of the grooves of a two-grooved rifle be removed, and you have the Lancaster rifle. But by the removal of these shoulders, the friction, if the twist be considerable, becomes enormous." To compare this twist with the rifled bore, one has only to take a lead tube, made slightly elliptical in its cross-section, and, fitting a plug to its ellipse, turn the plug round, and he will see that the result is to enlarge the whole bore to the longest diameter of the ellipse, which, if it were a gun-barrel, unelastic, would be equivalent to bursting it. But this is exactly the action which the ball has on the barrel, so that, to use General Jacob's words, "the heat developed by the friction must be very great, and the tendency of the gun to burst also very great." Lieutenant Busk – who seems, if we may judge from the internal evidence of his book, to know little or nothing of good rifles or rifle-practice, and to have no greater qualification for writing the book than the reading of what has been written on the subject and an acquaintance of great extent with gunsmiths – remarks, in reply to the veteran of English riflemen: "Having given the matter the very closest attention, I am enabled confidently to state that the whole of this supposition [quoted above] is founded in error. . . . So far from the friction being enormous, it is less than that generated in any other kind of rifle. It is also utterly impossible for the bullet to act destructively on the barrel in the way suggested." Such cool assurance,

in an unsupported contradiction of experience and the dictates of the simplest mechanical common-sense, would seem to promise little real value in the book, and promises no less than it really has.

The same objection which lies against the Lancaster rifle (?) applies to the Whitworth in a less degree. If the reader, having tried the lead-pipe experiment above, will next hammer the tube hexagonal and try the plug again, he will find the same result; but if he will try it with a round bore grooved, and with a plug fitting the grooves, he will see that the pressure is against the wall of the groove, and acts at right angles to the radius of the bore, having only a tendency to twist the barrel in order to straighten the grooves, – a tendency which the barrel meets in the direction of its greatest stability. We may see, then, that, in theory at least, there is no way of rifling so secure as that in which the walls of the grooves are parts of radii of the bore. They should be numerous, that the hold of the lands (the projection left between the grooves) may divide the friction and resistance as much as possible, and so permit the grooves to be as shallow as may be. The figure represents, on one side of the dotted line, three grooves, 1, 1, 1, cut in this way, exaggerated to show more clearly their character. In the Kentucky rifle this law is followed, except that, for convenience in cutting, the grooves are made of the same width at the bottom and top, as shown at 2, 2, 2, which is, for grooves of the depth of which they are made, practically the same, as the dotted circle will show. Our gun-makers use from six to ten grooves.



To sum up our conditions, the model rifle will conform to the following description: – Its weight will be from ten to twelve pounds; the length of barrel not less than thirty inches [5], and of calibre from ninety to sixty gauge; six to ten freed grooves, about .005 inch deep, angular at bottom and top, with the lands of the same width as the grooves; twist increasing from six feet to three feet; barrel, of cast steel [6], fitted to the stock with a patent breech, with back action set lock, and open or hunting and globe and peek sights. Mr. Chapman,

whose book is the most interesting and intelligent, by far, of all hitherto published, recommends a straighter stock than those generally used by American hunters. Here we differ; – the Swiss stock, crooking, on an average, two inches more than ours, is preferable for quick shooting, though in a *light* rifle much crook in the stock will throw the muzzle up by the recoil. With such a gun, – the best for hunting that the ingenuity and skill of man have ever yet contrived and made, – one may depend on his shot, if he have skill, as he cannot on the Minié, Enfield, or Lancaster and whether he be in the field against a foe, or in the forest against the deer, he holds the life of man or deer in his power at the range of rifle-sighting.

Of all the variations of the rifle, for the sake of obtaining force of penetration, nothing yet compares with the Accelerating Rifle, invented some years since by a New York mechanic. In this the ball was started by an ordinary charge, and at a certain distance down the barrel received a new charge, by a side chamber, which produced an almost incredible effect. An ellipsoidal missile of ninety gauge and several diameters long, made of brass, was driven through thirty-six inches of oak and twenty-four inches of green spruce timber, or fifty inches of the most impenetrable of timbers. The same principle of acceleration has, it is said, been most successfully applied in Boston by the use of a hollow *tige* or tube fixed at the bottom of the bore with the inside of which the cap-fire communicates, – so that, when the gun is charged, part of the powder falls into the *tige*, and the remainder into the barrel outside of it. The ball being driven down until it rests on the top of the *tige*, receives its first impulse from the small charge contained in it, – after which, the fire, flashing back, communicates to the powder outside the *tige*, producing an enormous accelerating effect. But it is doubtful if the gun can be brought into actual service, from being so difficult to clean.

It is questionable if any greater range in rifles will be found desirable. With a good Kentucky rifle, we are even now obliged to use telescope sights to avail ourselves of its full range and accuracy of fire. The accelerating inventions may be made use of in artillery, for throwing shells, and for siege trains, but promise nothing for small arms.

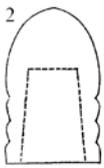
Then, as the secondary point, comes the form of projectile, that in which the greatest weight (and thence momentum) combines with least resistance from the atmosphere. In the pursuit of this result every experimenter since the fifteenth century has worked. Lautmaun, writing in 1729, recommends an elliptical missile, hollow behind, from a notion that the hollow gathered the explosive force. Robins recommends elongated balls; and they were used in many varieties of form. Theory would assign, as the shape of highest rapidity, one like that which would be made by the revolution of the water-line section of a fast ship on its longitudinal axis; and supposing the force to have been applied, this would doubtless be capable of the greatest speed; but the rifle-missile must first be fitted to receive the action of the powder in the most effective way. An ellipsoid cone would leave the air behind it most smoothly, but it would not receive the pressure of the gas in a line with its direction of motion and so of the hollow butt; the gas, acting and reacting in every way perpendicularly to the surface it acts on, wastes its force in straining outwardly. The perfectly flat butt would take as much forward impetus at the edge of the cone-base, where the soft lead would yield slightly. And so we find the best form to be a base which receives the force of the powder in such a way that the resultant of the forces acting on each point in the base would be coincident with the axis of the missile. And this, in practice, was the shape which the American experiments gave to the butt of the ball, the condition in which it left the air being found of minor importance, compared with its capacity of receiving the



force of the powder. The point of the cone was found objectionable in practice, and was gradually brought to the curve of the now universally used sugar-loaf missile or flat-ended picket shown in fig. 1.

This picket has but a single point of bearing, and is driven down with a greased linen patch, filling up the grooves entirely, and preventing “leading” of the barrel, as well as keeping the picket firm in the barrel. This is of vital importance for no breech-loading or loose-loading and expanding ball can ever fly so truly as a solid ball whose position in the barrel is accurately fixed. A longitudinal missile must rotate with its axis coincident with its line of flight as it leaves the barrel,

or else every rotation will throw the point into wider circles, until finally it becomes more eccentric than a round ball. It is a mistaken notion that a conical missile is more accurate in flight than a round; on the contrary, hunters always prefer the ball for short shots, and a "slug," as the longer missile is called by them, is well known to err more than a ball, if put down untruly.



The improved Minié ball (fig. 2) was intended to obviate the danger of the missiles turning in flight, by hollowing the butt, and so putting the centre of gravity in front of the centre of resistance, so that it flies like a heavy headed arrow, while at the same time the powder expands the hollow butt and fills the grooves, securing perfect rotation with easy loading. But the hollow in the ball diminishes the gravity and momentum; the liability of the lead to expand unequally, and so throw the point of the missile out of line, makes a long bearing necessary, producing enormous friction. This objection obtains equally with all pickets having expanding butts, and is a sufficient reason for their inferior accuracy to that of solid pickets fitted to the grooves at the muzzle with a patch. General Jacob says, – "I have tried every expedient I could think of as a substitute for the greased patch for rifle-balls, but had always to return to this"; and every experienced rifleman will agree with him. Yet both English and

American (governmental) experiments ignore the fact, that the expansible bullets increase friction enormously; and the Enfield bullet (fig. 3) is as badly contrived as possible, being round-pointed, expansible, and with very long bearings, without the bands which in the French and American bullets reduce the friction somewhat. The Harpers Ferry bullet (fig. 4) is better than either the English or the French, and is as good as a loose-loading bullet can be.



Besides all the objections we have urged against the bullet with long bearings, another still remains of a serious nature. No missile that has two points of bearing can be used with the gaining twist, as the change in the direction of the ridges on the shot formed by the grooves will necessarily tend to change the position of the axis of the shot; and the gaining twist is the greatest improvement made since grooving was

successfully applied, – to reject it is to reject something indispensable to the best performance of the rifle. The flat-ended picket complies with all the requisites laid down; and we will venture to say, that, if any government will give it a thorough trial, side by side with any loose-loading bullet, it will be found preferable to any other bullet, despite the disadvantage of slow loading from using a patch and a tight fitting ball.

To make the statement conclusive, we give the results of the United States experiments, and a statement of the European as compared with the United States firing, and then the results of Kentucky rifle-firing. With the new trial-rifle at Harper's Ferry, (a target 1 X 216 feet being put up at two hundred yards,) with the American ball, (fig. 4,) the best string of twenty-five shots averaged 3.2 inches vertical deviation, 2.4 in. horizontal deviation. At five hundred yards, the best string of twenty-five shots averaged 10.8 inches vertical deviation, 14 in. horizontal deviation. At one thousand yards, 26.4 vertical deviation, 16.8 horizontal deviation. In another trial with the new musket-rifle, the mean deviation at two hundred yards was 4.4 vertical, 3.4 horizontal.

In a comparison of the power of French, English, and American rifles, it was found that at two hundred yards the American gun averaged 4.8 vertical and 4.5 horizontal deviation. The Enfield rifle gave 7 in. vertical, 11.3 horizontal; the French rifle *à tige*, 8 vertical, 7.6 horizontal. A Swiss rifle, at the same distance, gave 5.3 vertical and 4.3 horizontal deviation. At five hundred yards, the following was the result: –

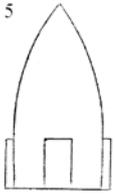
American gun,	13 in. vert. dev.	11.5 hor. dev.
Enfield,	20.4	19.2
Rifle <i>à tige</i> ,	18.5	17.1

At one thousand yards: –

American gun,	31.5 in. vert. dev.	20.1 hor. dev.
Enfield,	42	52.8
Rifle <i>à tige</i>	47.2	37.4
(874yds.),		

Rifled Guns

5



The only detailed reports of General Jacob's practice are at one thousand yards or over, at which his *shell* averaged 31.2 in. horizontal deviation, 55.2 in. vertical; not far from the range of the Enfield. His bullet is fig. 5.

But long ranges test less fairly the *accuracy* of a rifle than short ones, because in long flights they are more subject to drift of the wind, etc. We shall compare the government reports of shooting at two hundred yards with that of the Kentucky rifle at two hundred and twenty, the usual trying distance. At that distance, the American gun gave

	4.8 in. vert. dev. and	4.5 hor. dey.
Enfield,	7	11.3
French à tige,	8	7.6
Swiss,	5.3	4.3
Kentucky, (according to Mr. Chapman,)	1.06 absolute deviation.	

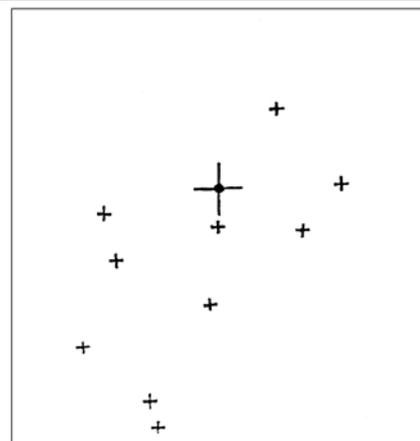
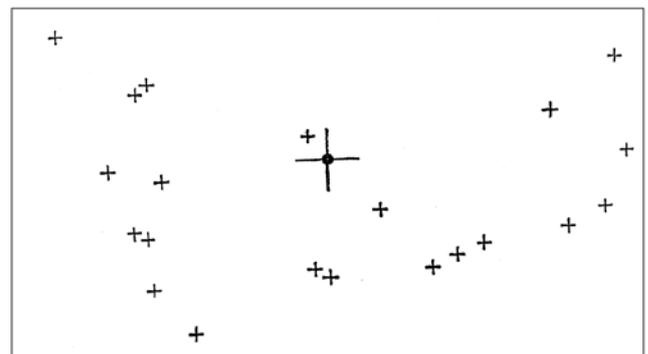
At 500 yards, the comparison stands, –

American, (government,) 13 in. vertical deviation, 11.5 in. horizontal. (About 17 in. absolute.)

Kentucky, (550 yards,) 11 in. absolute deviation.

We give cuts of two targets (*right*), of which we have duplicates in our possession, made by rifles manufactured by Morgan James, of Utica, New York, that the reader may appreciate the marvellous accuracy of this weapon; the first was made by a rifle of 60 gauge, twenty-five shots being fired, the average deviation being 1.4 in.; the second by a 90 gauge, the average being .8 in.; both at two hundred and twenty yards, and better than Mr. Chapman's report. In the northern part of the State of New York, the practice at shooting- matches is, at turkeys at one hundred rods, (five hundred and fifty yards,) and a good marksman is expected to kill one turkey, on an average, in three shots, and this with a bullet weighing from two hundred and forty to one hundred and sixty grains, while the army bullet weighs five hundred and fifty-seven. The easily fatal range of the bullet of two hundred and forty grains is a thousand yards; and farther than that, no bullet can be relied on as against single men.

In breech-loading guns, much must be sacrificed, in point of accuracy, to mere facility of loading; and here there seems room for doubt whether a breech-loader offers any advantage compensating for its complication of mechanism and the danger of its being disabled by accident in hurried loading. No breech-loading gun is so trustworthy in its execution as a muzzle-loader; for, in spite of all precautions, the bullets will go out irregularly. We have cut out too many balls of Sharpe's rifle from the target, which had entered sidewise, not to be certain on this point and we know of no other breech-loader so little likely to err in this respect, when the ball is crowded down into the grooves, and the powder poured on the ball, – as we always use it. The government reports on breech-loaders are adverse to their adoption, mainly because they are so likely to get out of working order and to get clogged. We have used one of Sharpe's two years in hunting, and found it, with a round ball at short shots, perfectly reliable while with the belted picket perhaps one shot in five or six would wander. Used with the cartridge, they are much less reliable. They may be apt to clog, but we have used one through a days hunting, and found the oil on the slide



at night and we are inclined to believe, that, when fitted with gas rings, they will not clog, if used with good powder. The Maynard rifle is perfectly unexceptionable in this respect, and an excellent gun, in its way. The powder does not flash out any more than in a muzzle-loader. Of the other kinds of breech-loaders we can say nothing from experience, and should scarcely recommend using one for a hunting-gun. One who has used a rifle of James, of Lewis (of Troy, New York), Amsden of Saratoga, (and doubtless others in the West are equally famous in their sections,) will hardly be willing to use the best breech-loader. There is no time saved, when the important shot is lost and the gun that is always true is the only one for a rifleman, *if it take twice the time to load*.

In the rifling of cannon, there seems to be no reason why the same rules should not hold good as in small arms. The gaining twist seems more important, from the greater tendency of the heavy balls to strip and there being less object in extreme lightness, the gun may be made a large-sized Kentucky rifle on wheels and there is less difficulty in loading with the precision that the flat-ended picket requires. In the cannon, even more than in the rifle for the line, there is no gain in getting facility of loading at the expense of precision. If, by careful loading, we hit the given mark twice as often as when we load in haste, it is clear how much we gain. The breech-loader seems to be useless as a cannon, because that in which it has the advantage, namely, rapidity of loading, is useless in a field-piece, where, even now, artillery-men can load faster than they can fire safely. Napoleon III has made his rifled cannon to load at the muzzle, and practical artillerists commend his decision. The Armstrong gun, of which so much is expected, we confidently predict, will prove a failure, when tried in field-practice in the hurry of battle, if it is ever so tried. It is a breech-loader of the clumsiest kind, taking twice as long to load as a common gun, and very complicated. Its wonderful range is owing to its great calibre, – sixty-four pounds but even at that, it furnishes no results proportionate to those given by the Napoleon cannon, or by our General James's recent gun.

The great anticipations raised by the general introduction of the rifle, and its greater range, of such a change in warfare as to make the bayonet useless, seem

to have met with disappointment in the recent wars. No matter how perfect the gun, men, in the heat and excitement of battle, will hardly be deliberate in aim, or effective enough in firing to stop a charge of determined men; the bayonet, with the most of mankind, will always be the queen of weapons in a pitched battle; only for skirmishing, for sharp-shooting, and artillery, will the rifle equal theoretical expectations. Men, not brought up from boyhood to such constant use of the rifle as to make sure aim an act of instinct with them, will never repel with certainty a charge of the bayonet by rifle-balls. With men whose rifles come to an aim with the instinctive accuracy with which a hawk strikes his prey, firing is equivalent to hitting, and excitement only makes the aim surer and more prompt; but such must have been hunters from youth; and no training of the army can give this second nature. American volunteers are the only material, outside the little districts of Switzerland and the Tyrol, who can ever be trained to this point, because they are the only nation of hunters beside the Swiss and Tyrolese. The English game-laws, which prevent the common people from using fire-arms *ad libitum*, have done and are doing more to injure the efficacy of the individual soldier than all their militia-training can ever mend. In the hands of an English peasant, "Brown Bess" is as good as a rifle; for he would only throw the ball of either at random. Discipline is wonderful and wondrously effective; but, in the first place, it won't make a man a ready and accurate shot, in time of excitement; and, in the second place, it won't make his bayonet a shield for a ball from the rifle of a man who has learned, by the practice of years, not to throw away a ball or to fire at random; – it couldn't carry the bravest men in Wellingtons army over a cotton-bale intrenchment, in the face of a double line of Kentucky rifles. It is very well to sing,

"Riflemen, riflemen, riflemen, form!"

but where are the riflemen? Can Britannia stamp them out of the dust? or has she a store of dragons teeth to sow? God grant she may never have to defend those English homes against the guns of Vincennes! but if she must, it is on a comparatively undisciplined militia she must depend; – and then she may remember, with bitter self-reproach, the lesson of New Orleans.

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Notes

1. Robins (on Projectiles) said in 1748, "Whatever state shall thoroughly comprehend the nature and advantages of rifle-pieces, and, having facilitated and completed their construction, shall introduce into their armies their general use, with a dexterity in the management of them, will by this means acquire a superiority which will almost equal anything that has been done at any time by the particular excellence of any one kind of arms, and will perhaps fall but little short of the wonderful effects which histories relate to have been formerly produced by the first inventors of fire-arms." Words, we now see, how prophetic!
2. The technical name for the long, heavy, small-calibred rifle, in which the thickness of the metal outside the bore is about equal to the diameter of the bore.
3. A man, five feet ten inches high, at 1450 yards, will, in the back-sight of the Minié rifle, at fourteen inches from the eye, appear $\frac{1}{53}$ of an inch in height and $\frac{1}{185}$ in breadth of shoulders. If the reader will look at these measures on a finely divided scale, he will appreciate the absurdity of such a boast. A man at that distance could hardly be found in the sights.
4. Experiments have shown, that, with a barrel about the thickness of that of our "regulation rifles," the spring will throw a ball nearly two feet from the aim in a range of six hundred yards, if the barrel be firmly held in a machine.

5. There is much difference of opinion amongst gun-makers as to the length of barrel most desirable. We believe in a long barrel, for the following reasons: 1st, a longer distance between sights is given, and the back sight can be put farther from the eye, so that finer sighting is possible; 2d, a long barrel is steadier in off-hand shooting; 3d, it permits a slower powder to be used, so that the ball starts more slowly and yet allows the full strength of the powder to be used before it leaves the barrel, getting a high initial velocity with little recoil, and without upsetting the ball, as we shall explain farther on. The experiments of the United States government show that the increasing of the length of the barrel from thirty-three to forty inches (we speak from memory as to numbers) increased the initial velocity fifty feet per second; but this will, in long ranges, be no advantage, except with such a shape of missile as will maintain a high speed.
6. Hunters still dispute as to iron or steel; and we have used iron barrels made by Amsden, of Saratoga Springs, which for accuracy and wear were unexceptionable; though gun-smiths generally take less pains with iron than steel barrels. But give us steel.

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Enfield Rifle Team Shooting

David Minshall

A rambling story, research for which started with the acquisition of the modest pewter prize tankard for rifle shooting (picture right).

There was a hugely supported ‘simultaneous Enfield rifle match’ fired on 8 April 1865. Rifle Volunteer Battalions and/or Companies throughout Great Britain had opportunity to compete, shooting on their own ranges and submitting scores. Details of the competition were published in January 1865 and are included in the following newspaper article:

The Times - Wednesday 18 January 1865

THE VOLUNTEERS

A committee has just been formed for promoting a simultaneous “Enfield” rifle match throughout Great Britain. The committee, who consist of the metropolitan and provincial Volunteer officers, have issued the conditions under which the match will be shot off. They are as follow:— The competition to take place at any hour on Saturday, the 8th of April, at any butts. Arm – Long Enfield rifles, as in the first stage of the “Queen’s,” or short Enfield three-grooved rifles, Government pattern, to be used throughout; minimum pull, 6lb. Government ammunition. Targets – Wimbledon, 1863. Where the shots are obliterated separately, the marking to be checked by a responsible person in the mantelet. Where the shots are not obliterated separately, the target to be frequently washed out, the hits being recorded and verified by a commissioned officer at mantelet, whose record will determine the aggregate score, while the register kept at the firing point will determine the individual scores. Ranges – 200, 500, and 600 yards seven rounds at each range. No previous shots to have been fired by any competitor on the day of competition. No sighting shots. Position



at 200 yards, from the shoulder; at 500 and 600 yards, any position. Competitors – From battalion, 20 enrolled men; from a company, ten enrolled men – uniform optional. The scores of men selected for battalion 20, but shooting in a company ten, to count also for the battalion, in which case the members of battalion 20 need not shoot together. Company tens and battalion 20’s must be decided upon, and the names of the competitors entered on the register, before the commencement of the firing. Entrance Fees – Class A: For a battalion 20, £2. Class B: For a company ten, £1. All entries to be made by Saturday, April 1. The whole of the entrance money, less the cost of printing and postage, to be divided into prizes, the number and value of which will depend upon the entries, but the

Enfield Rifle Team Shooting

following scale to be adhered to as closely as possible:— Class A – The winning battalion, £50.; the second battalion, £25.; the third battalion, £10. Class B – The winning company, £25.; the second company, £15.; the third company, £5.

For the highest individual scores in Great Britain:— First prize, £10.; second ditto, £7.; third ditto, £5. Ties to be decided (1) by hits; (2) by fewest outers in the whole score; (3) by score at 600 yards; (4) by score at 500 yards. Scores to be entered on a form of register, which will be supplied by the committee of management. The score for each team to be certified by a commissioned officer present during the shooting.

One hundred and eleven battalions in squads of twenty members each, and two hundred and ninety eight companies of ten members each, entered the competition, so that in all, and allowing for some double entries, there would have been over 5,000 Volunteers engaged in this remarkable undertaking. Towards the end of April results were published.

Western Daily Press - Monday 24 April 1865

THE GREAT SIMULTANEOUS ENFIELD RIFLE MATCH

This match, for Battalion Twenties and Company Tens throughout Great Britain, was shot on the 8th inst., and the result has now been published. It will be seen by the subjoined that Bristol stands in a very proud position in the list. The following won prizes in Battalion Twenties:

<i>Prize</i>	<i>Corps</i>	<i>200 yds</i>	<i>500 yds</i>	<i>600 yds</i>	<i>Total Score</i>
£100	1st North York Administrative (Wensleydale)	373	367	317	1,057
£50	1st Gloucestershire (Bristol)	397	370	289	1,056
£25	1st City of Edinburgh	397	368	256	1,021
£20	1st Staffordshire Administrative	389	333	289	1,011
£15	1st Lanarkshire (Glasgow)	382	358	260	1,000
£15	Robin Hoods (Nottingham)	379	327	270	996
£15	Herefordshire Administrative	377	332	277	986
£10	1st Cheshire Administrative	387	335	261	983

The following exceeded 45 marks per man, but did not win prizes:

1st Dorsetshire Administrative	365	351	245	961
1st Somersetshire Administrative	365	301	269	935
2nd Somersetshire	374	314	221	909

The following won the prizes in Company Tens:

<i>Prize</i>	<i>Corps</i>	<i>200 yds</i>	<i>500 yds</i>	<i>600 yds</i>	<i>Total Score</i>
£50	8th Aberdeenshire, Echt	206	207	195	610
£25	12th North York (Wensleydale)	200	193	179	572
£20	3rd Ayrshire (Ayr)	183	197	159	540
£15	6th Inverness-shire (Kingussie)	200	176	157	533
£10	1st Gloucestershire (Bristol) 4th Company	204	175	139	518
£8	6th North York (Scarborough)	190	170	157	517
£5	6th West York (Huddersfield) 1st Company	176	182	157	515
£5	8th Staffordshire (Burton-on-Trent)	184	179	146	509

The following exceeded 45 marks per man this class:

12th Somerset (Wiveliscombe)	188	177	123	488
2nd Herefordshire (Ross)	180	161	145	486
8th Dorset (Blandford)	174	165	146	485
2nd Dorset (Wareham)	178	166	135	479
3rd Gloucester (Gloucester City)	187	145	125	467
3rd Somerset (Taunton)	176	149	126	451

The following won prizes for individual firing:

<i>Prize</i>	<i>Name</i>	<i>200 yds</i>	<i>500 yds</i>	<i>600 yds</i>	<i>Total Score</i>
£25	Ensign Coutts, 8th Aberdeenshire (Echt)	22	23	24	69
£15	G. Smith, 3rd Aberdeenshire (Cluny)	19	25	25	69
£10	Ensign Winn, 12th North Yorkshire (Wensleydale)	22	23	28	68
£10	Sergeant Whitehouse, 4th Staffordshire	26	24	18	68
£5	Sergeant Overton, 4th Staffordshire (1st Company)	22	23	22	67
£5	Sergeant W. Davidson, 1st Perthshire (13th Company)	23	22	21	66
£5	Colour-Sergeant Donaldson, 3rd Lanarkshire	23	21	22	66

Amongst the competitors who obtained a score equal to or exceeding 60 marks are the following:

Marsh, Bristol	64
Bingham, Bristol	63
Milsom, 1st Somersetshire Company (17th Company)	62
Schacht, Bristol	61
Young, W., 5th Somerset	61
Baker, J., Bristol (4th Company)	60
Bruford, 12th Somersetshire	60
Waite, 10th Gloucester	60

Enfield Rifle Team Shooting

A match has been arranged to take place between the Bristol Rifle Corps and the First Staffordshire Administrative. The Staffordshire battalion first threw out a challenge that twenty of their men should fire with twenty of the Bristol men. A reply was sent that it was the custom of the Bristol Corps to shoot with not less than forty men. After some negotiations it was agreed that thirty men should be selected from each corps, and that the competition should take place on neutral ground at Worcester.

The closing paragraph discusses a planned match between Bristol and Staffordshire to be held at Worcester. The match eventually took place though at Gloucester in May 1865.

Bristol Times and Mirror
Monday 29 May 1865

THE BRISTOL RIFLES v. THE FIRST STAFFORDSHIRE RIFLES

On Saturday last, a rifle match took place at Gloucester between these two celebrated battalions, long looked upon as champion battalions of the western and midland districts. The event was looked forward to with great interest; for though each battalion, having been uniformly victorious in its own neighbourhood, was naturally regarded as the favourite by its friends, the known strength of each battalion prevented the result being looked upon as anything like a certainty by either side. The contest, as was expected, proved a close one – so much so, that it was only the last round, or it may even be said the last shot, on each side which determined it.

Thirty men competed on each side, firing five shots at 200, 500, and 600 yards (Wimbledon target of 1864). The weather was most unfavourable for shooting, the wind veering continually from side to side, and at times increasing in strength, and at other times dropping. The average was accordingly very much less than was expected.

At the first range, the Staffordshire battalion headed the Bristol battalion by 15 points – contrary to general expectation, for the Staffordshire men were known to be more especially good at longer ranges. The Bristol men had hitherto been rather the favourites at Gloucester, but now the betting was a little against them.

At 500 yards the firing was rather more even, but still the Staffordshire men gained a little, and at the end of the firing at this range were found to have added 11 points more – making them 26 points ahead. The betting was now decidedly against Bristol. 600 yards was known to be the favourite range of the Staffordshire men, for in every one of the 13 battalion matches in which they had previously been victorious, they had distanced their opponents at this range; they felt, therefore, now nearly certain of victory. Still the

Bristol men were not discouraged; they remembered also having on more than one occasion turned defeat into victory at the same

range – they commenced, therefore steadily at 600 yards, determined to do their best.

In the first round they gained 9 points; but in the next the Staffordshire had recovered 5, still keeping 22 ahead. In the 3rd round Bristol gained 2 more, leaving them 20 to tie, with only 2 more rounds to fire. In the 4th round the Bristol men led off well, and the Staffordshire indifferently; the interest now became intense, for at the end of the 4th round Bristol was only 3 behind, having gained 17 points in that round. The 5th round commenced more evenly; still, in spite of everything, the Bristol men gained slowly on their opponents, and were finally declared by the umpire, Capt. Robertson, the winners by 5 points.

After the mutual expression of good will and a vote of thanks to the umpire, the whole party adjourned to the inn adjoining the range, where they partook of a hearty lunch. The return match will take place in Birmingham in the autumn. The following is the score:

	200 <i>yd</i>	500 <i>yd</i>	600 <i>yd</i>	Total
Bristol Rifles	390	321	272	983
First (A) Battalion Staffordshire Rifles	405	332	241	978

The top scorer for Bristol was Private J. Baker with 47 points, and for Staffordshire was Private Draycott with 48 points. In a separate report (*Bristol Times and Mirror*, Saturday, 3 June 1865) it was noted that “the contest was very exciting, the Staffordshire men leading up to the last range, when the shooting of Messrs. Baker, Bingham, and Marsh gained the victory for Bristol. At the last stage Sergeant Bingham made the splendid score of four bull’s eyes and a centre, and Private Baker three bull’s eyes and two centres.”

The return match referred to in the above article did not take place until May 1866, and the report follows:

Staffordshire Advertiser - Saturday 02 June 1866

RIFLE CONTEST BETWEEN THE FIRST STAFFORDSHIRE AND THE BRISTOL RIFLES

The return match between thirty members of the 1st Battalion Staffordshire Rifle Volunteers and thirty of the 1st Gloucestershire (Bristol) Rifles took place on Saturday last on the range of the 1st Warwickshire, at Bournbrook, near Birmingham, and resulted in the complete defeat of the 1st Stafford. It will be remembered that the first match came off at Gloucester this time last year, when the Bristol men beat their opponents by only five points. It was then thought that on the return match the 1st Battalion would be able to regain their laurels; but from the indifferent shooting they have made this season it was generally considered previous to the match that they had their work before them, and this has proved too true, for they were beaten by no less than 142 points. The contest took place at 200, 500, and 600 yards, five shots at each. Captain and Adjutant M’Innis was in charge of the ground, and acted as umpire. There were with the Bristol men Colonel P. W. Taylor, Captain and Adjutant Jones, Lieutenant Prichard, and Ensign Fussell. Captain Buchanan was in charge of the Staffordshire men. Colonel Mason was on the ground for a short time in the course of the afternoon. The following are the results of the shooting

	200 <i>yd</i>	500 <i>yd</i>	600 <i>yd</i>	Total
First Gloucestershire (City of Bristol)	434	363	318	1115
First (A) Battalion Staffordshire Rifles	410	332	231	973

Enfield Rifle Team Shooting

At the conclusion of the match the two sides dined together at an inn near to the range. After dinner several toasts were proposed and responded to, and Captain Buchanan, in replying for the Staffordshire team, said he was placed in position which he was not in the habit of holding, inasmuch as he had now to return thanks for their defeated selves. (Laughter.) On previous occasions he had had to do the glory; now it behoved him to do the modesty. (Renewed laughter.) In 13 matches they (the Staffordshire) had come off victorious, and their laurels were never wrested from them until they met the Bristol men. But he thought every Staffordshire man would say, and also the strangers and guests who were present, that if they were to be defeated at all, they could not be defeated by more worthy antagonists than had met them that day. (Cheers.) And when they found arrayed against them such men as Lane*, Gibbs, and Baker – names so well known in the volunteer shooting line – they could scarcely expect any other result than to be beaten; but he had hoped that his men would have made a better fight than they had. But it was one thing to be beaten, and another to be crowed over, and he thought they would all admit with him that not one of their antagonists had shown any tendency to crow over the triumph they had attained that day. (Cheers.) On his own part, he could not express his hope that they should meet again, because as long as he was captain of the 1st Battalion team he should take care not to meet again such formidable team as the Bristol, until, at least, they could put their shoulders to the wheel with much more equal effect than they had done that day, and until the attendance at the drills was much more satisfactory to themselves. He attributed their defeat mainly to their own shortcoming; and after thanking Captain M'Innis for the excellence of his arrangements, said, in conclusion, if they had been defeated, they would agree upon one thing – that they had had a pleasant day, and that they carried away with them only a feeling of good fellowship. (Loud cheers.)

By the terms of the arrangement, the Staffordshire men will have to present ten cups to the ten highest scores on the part of Bristol; and the latter will present one cup to the highest score made on the Staffordshire side. Sergeant H. Palmer (2nd Hanley) will take the cup, having made the highest score on his side (44).

* **Sergeant Henry Lane** (1825-1871), a plumber by trade, was a noted rifle shot in Bristol. In 1867 he won the Queen's Prize at Wimbledon.

The tankard that prompted this story is one of those presented to the top ten highest scores in the Bristol team. Those men and their scores are:

	200 yd	500 yd	600 yd	Total
Private Gouldsmith	14	17	18	49
Lieutenant Wright	16	13	16	45
Sergeant Lane	15	14	15	44
Private Brittain	14	14	15	43
Private Ridler	13	14	15	42
Private Baker	15	13	14	42
Sergeant Gibbs	14	12	15	41
Private Britt	15	11	15	41
QM-Sergeant Hutchinson	13	10	17	40
Private King	17	15	8	40

The tankard illustrated on the next page was awarded to 7th placed Armourer-Sergeant George Gibbs, the well-known Bristol gunmaker. The inscription on the tankard reads:

Staffordshire Match
27th May 1866
BRISTOL WON
BY 142 Mks.
Ar. SERG. Geo. GIBBS
7th score of 41 Marks

Enfield Rifle Team Shooting



George Gibbs died on 19 June 1884, at Clifton, Bristol, and the following obituary was published in a local newspaper:

Bristol Mercury - Friday 20 June 1884

DEATH OF MR. GEORGE GIBBS – Another aged and respected citizen has been withdrawn from amongst us by the death of Mr. George Gibbs, the well-known gun and pistol manufacturer, of Corn street and St. John's bridge, which sad event occurred yesterday, at his residence, Park place, Clifton. The deceased gentleman, who was in his 72nd year, had been ailing for some time, but the painful illness to which he succumbed was of comparatively brief duration. Few Bristolians have been more respected, and we doubt if we could name one who would be so much missed from Volunteer and sporting circles as Mr. Gibbs will be. He has been a capital shot through life, and took an early interest in the Volunteer movement, having been amongst the first to join the Bristol Rifle Corps, to which he remained faithful to the last, being at the time of his death armourer-sergeant of the regiment. Those who have been at all watchful of the National Rifle Meetings from year to year, at Wimbledon, cannot have failed to have been struck with his skill and success as a marksman. In one year he carried off the Rifle Derby, and very numerous money and other prizes have from time to time fallen to his rifle. As a gunmaker Mr. Gibbs had a high renown, and he has been the sole manufacturer of the famous Farquharson-Metford rifles. He was, too, the inventor and patentee of the first hammerless gun. The deceased citizen, who was much esteemed in private life for his kindly and genial qualities, has left a widow and three sons, two of the latter being in the business.



Long Range Rifle Fire

from *The Saturday Review*, 4 July 1885

JUDGING from some recent despatches and War Correspondents' letters, the expression "long-range rifle-fire" is acquiring a meaning more significant than that actually indicated by the words which make it up. In speaking of the target practice of the army and of match-shooting generally, the distance between 700 and 1,000 yards are usually called "long," just as those under 300 yards are called "short"; 400, 500, and 600 being middle, or intermediate. The French make very nearly the same distinction. But the expression we are noticing seems to suggest that not only is the distance (which may be any number of yards between 600 and 3,000) generally unknown, but also that there is more or less uncertainty on the side of those under fire as to the actual direction from which the bullets come. It gives, in fact, an idea of a harassing and annoying fire, delivered almost with impunity from a point all but vanishing.

It will be generally agreed by those who know anything of the matter that at the proper time and place long-range rifle-fire has its very great uses, but, if not good of its kind, it will be useless and expensive.

Just after Plevna a good deal was heard about long-range rifle-fire; but it is hardly too much to say that an idea of its probable power when skilfully applied was only definitely brought home to the great mass of Englishmen on the receipt of Sir Redvers Buller's reports, viâ Korti, on Saturday and Sunday, the 21st and 22nd of February last. The whole situation was, of course, intensified by the recent news of Sir Herbert Stewart's wound, by the reported death of General Gordon and the certain fall of Khartoum, by the withdrawal from Gubat, and, to some extent, by the departure of the Guards for the East. In addition to the uncomfortable feeling that things were going generally wrong, all England became for forty-eight hours exceedingly anxious. When, a day or two later, it was known how Major Wardrop had proved almost literally one too many for the Soudanese sharpshooters, the

feeling of relief showed how great the anxiety had been. Of course undue importance may be given to long-range fire, just as it can, and sometimes is, for example, to the value of the bayonet as a weapon; but it will be generally agreed by those who know anything of the matter that at the proper time and place long-range rifle-fire has, like lobs at cricket, its very great uses, but, also like lobs at cricket, if not good of its kind, it will be useless and expensive.

There is no precise record when rifles were first used in war. "The middle of the seventeenth century" expresses as well as limits the vagueness of the date. It is known, however, that in 1680 each troop of our Life Guards was supplied with eight rifled carbines; and that in 1800 the 60th Rifles were armed with the "Baker" rifle. Long-range rifle-fire, in its present sense, is of much more recent date. During the first half of the present century the distance to which a rifle-bullet would range must appear to the modern rifleman wholly insignificant. Indeed, so far as actual flight was concerned, old "Brown Bess" of the Peninsular War time would throw a bullet (if you could trace it) a good deal further than could the Baker rifle, which won for our rifle regiments a goodly string of "honours," from Roleia to Toulouse. In those days the difference in shooting between two hand-made arms of the same pattern was often considerable. But, whereas an average Baker rifle could make it very dangerous for a "head and shoulders" 250 yards off, the smooth-bore musket was so erratic that it was of little use trying to hit a single man at distances over a hundred yards. On the other hand, while the smooth-bore loaded easily, the loading of the seven-grooved Baker rifle was always troublesome, and, after a few rounds had been fired, generally very difficult. Many a time must those old rifle-men, while grunting and sweating over a weary load and under a Spanish sun, have envied the nimble business of the smooth-bore ramrod. In 1836 (already following foreign example) we gave the two-grooved Brunswick rifle, firing a belted bullet, to our rifle regiments. It loaded a little easier and shot a little better than the Baker, but the improvement was one of a few degrees only. The Brunswick, like the Baker, fouled very considerably; and the fumbling, especially in cold weather, to get the belt of the bullet into the groove at the muzzle was a horrid drawback. The most

In 1855 the “Enfield” took the place of the smooth-bore musket as the general arm of the infantry of the line, and the place of the “Brunswick” in our rifle regiments.

that could be said for it was that it was as good as other peoples, better than the Baker, and probably the best that could be got. Doubtless there were soldiers of a good old sort who voted both the “Brunswick” and the “Baker” more plague than profit. But, notwithstanding the plague of loading, those old rifles - meaning thereby both the men and their arms - had a profit all their own. There was a distinct speciality not only in name and in the jacket but in the arm and in its use. The brunt of that kind of fighting which comes under the general head of sharpshooting fell naturally to the share of the men and the arms who could do respectable business at distances treble as great as could the ordinary “firelock”; and well, parenthetically be it said, did the old 60th Rifles and old 95th (afterwards the Rifle Brigade) uphold their special and honourable rôle, demanding, as it taught, increased intelligence and greater self-reliance. We look now with wonder at the old pattern rifle, but the work done in the Peninsula, in the Punjaub, and in the old Cape wars was too good for either masters or workmen to complain much about the tool. It may be that the Baker-Brunswick tradition is still bearing fruit. But when all is said and done, there was nothing in those days of the nature of long-range rifle-fire. The whole combat was within easy view of the commanders on both sides. However carefully the good rifleman kept out of sight, the smoke of his rifle was plainly seen at the moment of firing. No bullets came humming over the zareba (nor now and again into it with a deadly pat) at uncertain intervals by day and night from an unseen enemy at an unknown distance. It was simply not in the rifle or musket of our own or any other army to do it. Fire at the longest range was too short to be called long-range rifle-fire as we now understand that expression.

In the quarter of a century between 1825 and 1850 men, generally Frenchmen, went to work to invent

a military rifle which should combine accuracy of shooting with ease and rapidity in loading. The names of the inventors, the dates, methods, and reasons of the failure of each speciality (are they not written in the Hythe text-book?), make a story as dull as any other about still-born inventions. At last, in 1847, Captain Minié, of the School of Vincennes, hit upon the right thing, and gave his name to a system. This, as almost everybody knows, was an elongated bullet which went easily down the barrel when loading, but was made through self-expansion to fit the grooves tightly at the moment of firing. Our own “Minié” rifle of 1851, and then our “Enfield rifle,” pattern 1853, though improved again and again both in barrel and ammunition, were on the lines of Captain Minié’s principle. In 1855 the “Enfield” took the place of the smooth-bore musket as the general arm of the infantry of the line, and the place of the “Brunswick” in our rifle regiments. Here, then, we may date the beginning of long-range rifle-fire. It was applied with good effect in India during the Mutiny, and afterwards in the hill fights with the frontier tribes. Presently, with the introduction of small-bores, the range grew longer. A short time ago there was a sort of controversy in the Times as to the credit due on the one hand to the first inventor, and on the other to the later improvers, of small-bore rifles and ammunition. Apparently the question lies in a nutshell. When the body of the pack is going on hard, all honour to the two or three hounds who are racing for the lead; but none the less does the observant master, particularly if he carries the horn himself, make a note in his mind, and possibly in his diary, of the grand point made ten minutes back; if it had not been for that capital hit at the cross-roads, a brilliant run would have been lost altogether. That, about 1857, Sir Joseph (then Mr.) Whitworth, not at that time a gunmaker, showed a line to the riflemakers of the world is beyond dispute. Anyhow, all who had any pretension to note followed him in his rapid twist and in the .450-inch bore. It is equally true that since that date several leading gunmakers, in developing their particular systems under the same general principle, have vastly improved the shooting of the small-bore rifle and made themselves names more or less famous. It is generally difficult to count, with any degree of exactness, the points made on the one hand by an inventor, and on

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.40-inch bore Martini-Enfield
gives results as good as
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present condition of science*

the other hand by those who may have improved on the invention; but as between Sir Joseph Whitworth who once led the van, and those who have since followed in his wake, the long-range honours appear to lookers-on to be pretty evenly divided.

Just at present there is very little to choose between the different patterns of rifle carried by the several armies of the chief European Powers - perhaps the Russian "Berdan" is, if anything, slightly in front of the rest - but, if one may hazard an opinion about the future, there will before very long be a considerable and general increase in the reach and accuracy of long-range rifle-fire. Whether our own service rifle is to be replaced by the .40-inch bore, designed at Enfield, appears to be still uncertain. Between the respective merits of the two patterns-namely, the "Martini-Henry" and the "Martini-Enfield" - some comparison was made in the Saturday Review of the 16th of February of last year. It is certainly unfortunate that the new Martini-Enfield, though it has a lighter bullet, has a heavier barrel than the Martini-Henry. Any one who is used to carrying a gun knows that a little extra weight is highly objectionable, and every one used to soldiers knows how strongly as well as rightly all ranks would object to one unnecessary ounce. If the designer of the Martini-Enfield could, without losing any of its hitting power, make the arm a little lighter instead of a little heavier than the service rifle, he would (as they say at Lord's) score grandly to the "on" and to the "off" in one over. As the case stands now, the Martini-Enfield has been so long in emerging from the experimental stage, and there has been so much discussion about the extra weight of metal, that people begin to wonder whether the new rifle will ever get off the stocks at all. Lately, as everybody thought, we were within an ace of having to cross a considerable, river, and, if our troops are ever to have a better rifle, it would be just as well to get the .40-

bore question settled and the proverbial swap made before we are actually in the ford and on the point of swimming. To give our infantry a rifle which, as regards hitting power, is as superior to the English "Martini-Henry" and to the Russian "Berdan" as those rifles are to the Snider seems to be a point worth securing in a match which, sooner or later, is pretty certain to be played. In war, as in sport, there is a good deal of truth in the old adage, "A match well made is already half won." There is, of course, the question of quickness of firing as well as that of long-range with accuracy, and, no doubt, at this very moment all military Europe is looking this way and that way for a perfect magazine action; but when-ever it drops from the clouds or turns up from America or else-where, it will be time enough to adopt it. In the meantime, let us decide, if we can, upon our barrel of the future. Hereafter, if desired, it can be combined as easily as any other barrel with a magazine action.

In all probability the new .40-inch bore Martini-Enfield gives results as good as can be obtained under the present condition of science; for, so long as the shoulders of men, the winds of heaven, vile saltpetre, and so forth remain what they are, power to range with becoming accuracy must be limited by the considerations of recoil, length of bullet, fouling, and so on; and, again, given by supposition unlimited range, the power to apply fire with useful effect is practically limited by the ordinary scope of man's eyesight and by the natural features of the battle-ground.

And here in the middle of our long-range we venture to let off this practical question for what it is worth. When inviting fresh competition, or when considering the merits of any new rifle, it might be well to lay down beforehand the extreme distance at and up

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to which excellence of grouping of the shots shall be considered a sine qua non, and beyond which it would not, in a comparative trial, be taken into account. This particular distance, which, we take for granted, could be easily determined by our superior officers used to war, would probably lie between 1,500 and 2,000 yards. The restriction, in the best sense arbitrary, would at all events have the effect of clearing the ground satisfactorily, both for competitions and judges.

After all, long-range is, in itself, the foundation only of good long-range fire. To get the full value out of a superlative arm there must, of course, be added the capability to find the correct distance of the object, and the possession of much skill in shooting. A good range-finder is absolutely necessary. One, the use of which is difficult, to learn and easily forgotten, which requires delicate manipulation, which soon gets out of adjustment and not seldom out of order, is, however accurate at times, of no use whatever. An instrument the reverse of all this, but always accurate, handy, light, and requiring a very short base, is the one for the field. (The babbling hound, right once in a way, is the one of all others you should draft.) Since the first Wimbledon Meeting in 1860 people have been gradually learning that, in order to make a string of bull's-eyes, motionless holding and perfect aiming must be preceded by great care and judgement in the matters of "elevation" and wind-gauge, and accompanied by close observation throughout the practice. But for good long-range firing in the field there must be more than this. To be able to pelt the enemy from a distant vantage-point, through inter-vening dust and smoke, and perhaps after sundown, means an acquaintance with the craft which, by means of the proper adjustment of stakes or cairns or dark lanterns, establishes during clearer intervals a part of the "line of sight" which for purposes of aiming is equal to the whole. This theory of thus seizing betimes a portion of the "eyeline" (well called so by the Americans) is taught in our own and some Continental manuals of musketry instruction. We are not certain how far theory is put into practice; but firing at extreme ranges being one of those many things where a grain of showing goes further than a bushel of telling - being, also, something of greater consequence than *feux de joie* - it would be as well not to put off the showing in question until early in the morning of the day on which

the reality may be wanted.

About machine-guns there still hovers a small cloud, partly, perhaps, of Egyptian sand. But when the difficulties of jam-ming, of locomotion, and of tactical disposition have entirely dis-appeared, the Nordenfelt or some other pattern is sure to come to the front in long-range rifle-fire. It will probably take one or more European campaigns, with a siege or two (giving time and opportunity for crucial trial), before the value of the game of infantry long-bowls is fully recognized. This will be a case where there can be no challenge about a fair or an unfair delivery. The only thing will be to learn how to play and reply to the long-range bowler whose "popping crease" is a mile and a half away on the other side of a hill. Given the specification of his arm and ammunition, and a simple system of screens (not easily disturbed by wind) to catch and show the drop of his bullet, science should be able to find first the direction and the distance, and thence infer, with the help of a carefully-contoured map, the height above the sea level of the hostile firing-point. Then, to say nothing of defilading or moving a little out of his way, a very good shot might (weather permitting) be made with a .40 bore at the enemy's whereabouts.

For contemporary discussion of military rifles of 1886, see 'Old English and Modern Foreign Rifles', published in Research Press Journal No. 4, Autumn 2018.

Editor



The Queen's Prize, 1860-1900

Nick Leaper

The formation of the Volunteer movement in Great Britain in 1859 drew support from Queen Victoria and the Prince Consort. Following the forming of the National Rifle Association (NRA) that year the Queen offered a sum of £250 as a prize for best shot in a competition to have her name. To this the Council of the NRA added a gold medal. The Queen and Prince Albert attended the first meeting on Wimbledon Common in July 1860, with the Queen firing the inaugural shot from a rifle mounted in a rest, both designed by Joseph Whitworth.

The medal was designed by G.F. Watts RA a noted artist and Volunteer himself, the engraving of the medal was carried out by C.C. Adams who designed the Great Exhibition medal of 1851, and the medals were produced by the firm of Elkington, who formed an early association the NRA. The obverse of the medal has an archer of the Plantagenet era and a Volunteer rifleman

of 1860. The motto being "Sit Perpetuum," or let it live for ever.

The NRA Council decided that only two medals would be awarded for the Queen's Prize, the Gold medal for the winner and a Silver medal for the winner of the first stage.

The first stage of the Queen's Prize comprised a three range shoot at 300, 500 and 600 yard, 5 shots with Long Enfields at each range (in subsequent years 200 yards replaced 300 yards). The winner was Corporal F. Sharp of the 9th Sussex with a total score of 17 out of 35.

Nearly the whole of the Volunteers were armed with the Long Enfield, and selecting this rifle for use placed the competitors on equal terms. The second stage of the Queen's Prize was to comprise 10 shots each at 800, 900 and 1000 yards, however the Long Enfields were considered insufficiently accurate for these ranges.



The Great Rifle-Shooting Match on Wimbledon Common
Her Majesty Firing the First Shot
Illustrated London News, 7 July 1860

Based on a competitive trial open to gunmakers to submit their rifles, the Whitworth rifle was selected for use in the final. The top 40 riflemen from the Queen's Prize first stage qualified for the second stage. The top 20 were awarded a new Whitworth rifle, while the next 20 were 'loaned' a rifle for use in the final.

The winner was Edward C.R. Ross a 19 year old Trinity College Cambridge undergraduate, shooting for the 7th North Yorkshire who qualified 20th and received the last Whitworth prize. Son of Horatio Ross (see *Research Press Journal No. 5, Winter 2018/19*) a noted sportsman of his day and a godson of Horatio Nelson. Edward scored a total of 24 out of 60. A photograph of Ross and one with his father, by Roger Fenton, exists in the Royal Collection.

Only 38 shot the final. To open the competition and encourage more men to join the Volunteer movement in November 1860 the Queen made it known she wished that all Volunteers belonging to her Indian Empire and Colonies should be allowed to shoot for her prize and by 1866, over 2,100 Volunteers entered!

Over the years the competition and its prizes have changed to suit new weapons and the number of entrants, but the ethos and format of the competition have remained the same. Recorded below are changes and the main events that have occurred during the first 40 years of the Queen's Prize.

1863 The NRA Council decided the final would be between the top 60 shots in the first stage and to award a "pretty" badge to be given to each. The badge to comprise the word "Wimbledon" and the year; these badges were to be made retrospective for the previous three years to the 40 (*Picture 1*) Subsequent appearance would attract a small lozenge bar badge with the year (*Picture 2*). The practice appears to have died out shortly after with all finalists receiving the full size badge.

The badge also changed in design. A Gold Badge was also to be awarded to the winners and made retrospective. This badge being slightly larger and with a single gold line within the margin.



Picture 1
1863 Queens 40 Badge



Picture 2
1867 Queens Year Bar

The Queen's Prize

A similar Silver Badge to the winner of the first stage being added in 1864 along with £50 and a Whitworth rifle (Picture 3).



Picture 3
1867 Queens 1st Stage Silver Badge

1867 The question of what rifle to use arose and the NRA asked the War Office to lend sufficient Snider's (breech loading conversions of the Enfield) for the first stage, and for the second stage 60 military Whitworth's (muzzle-loaders) which were held in Government storage. The Secretary of State agreed to lend 60 Whitworth's, but not the Snider's as some 2000 would have been required and at that time they had insufficient for the Regular troops. As a result, no rifles were awarded to the top 30 (the Government rifles being issued on loan), so prize money increased instead.

1868 The matter of Corporal Peake has been covered in a previous article (*see Research Press Journal No. 4, Autumn 2018*). Corporal Peake of the 6th Lancashire Rifle Volunteer Corps was disqualified from winning the Queens Prize, when he was accused of replacing the wadding within the cartridge with his own. He always claimed innocence and was cleared by a regimental court of wrong doing, following which his supporters and friends in the north raised funds to the same amount (£250) as if he had been awarded the Prize.

1869 Corporal Peake having been denied the Queen's Prize the previous year, went on to win the Prince of Wales Prize in 1869. Unfortunately, however, bad luck befell him again. Being in a tent manipulating a breech-loader with dummy cartridges, one turned out to be live round and he discharged the rifle in a horizontal position, the bullet proceeding through several tents. Luckily no one was injured but several near misses were reported and he was disqualified from taking any further part in the meeting.

1871 The first year the Queen's was shot throughout with breech loaders. The first stage with Snider's and the second with Martini-Henry's. 2050 entries.

1873 The "any position" entered into most competitions.

1874 The Government authorised issue of the Martini-Henry as the standard arm to the British Army. The decision gained much criticism as the breech action was considered awkward and badly designed requiring excess pressure to extract the cartridge and sometimes requiring several attempts to do so. The Metford shallow grooving was considered superior. The recoil of the Martini-Henry was fierce and the rifle ill fitting. One witty nobleman likened it to firing with a barge pole in one hand and a bible in the other.

1876 The second stage had to be altered as the top 60 only received their Martini-Henry's a day or two before the final. Complaints were made that insufficient time existed to get used to the rifle. As far back as 1863 the Duke of Cambridge had said it was out of the question to have different rifles for the Regulars and Volunteers if they were expected to fight in the line if required. It had been assumed that once the Martini-Henry was issued to the Regulars they would be issued to the Volunteers within a short period. The NRA Council thought it reasonable to request that the Martini-Henry rifle should be issued to all in the first stage. They were astonished to be told that their request was denied, not because of shortage but that the Secretary of State said the "Snider" was the arm of the Volunteers and no possibility existed of the Martini-Henry being issued to them at least not in the short term.

1878 However, 2 years later Martini-Henry Rifles were issued by War Office to all competitors in the first stage. 200 rounds of ammunition were given for practice with each rifle. The decision was influenced by Col. Lloyd Lindsay, a member of the Council and Financial Secretary at the War Office. The issue was conditional on the rifles being returned to the Tower. The Government then relented and allowed 2500 to be retained by various Corp with the proviso they be returned in time of need.

Target dimensions changed and the "magpie" introduced. Entries 2498 the highest it ever reached.

1882 What was known as the first stage of the Queen's Prize, became Part I of the first stage, and the 300 highest scores in it were entitled to fire in Part II. This consisted of ten shots at 500 and ten at 600 yards. The places of these men for the Silver Medal, and the "Sixty," decided by their aggregate scores in Parts I and II.

Queen's Prize Winner: Sergeant Alexander Lawrence, 1st Dumbarton. Score 65.
Range: 800, 900, 1000 yards.
Number of shots per range: 7.
Rifle used: Martini-Henry.

1883 1000 yard abandoned, and the number of shots at 800 and 900 yards increased from 7 to 10. This was in part due to the fouling accumulation and hardening in the deep grooves of the Martini-Henry which affected the accuracy. Entries 2435.

Winner: Sergeant Robert Mackay.
Rifle used: Martini-Henry.



Picture 4
Gold Badge 1883 Won by Segt Mackay

The Queen's Prize



Picture 5
The Queen's Prize Gold Medal to Sgt Mackay



Picture 6
The Queen's (King's) Prize First Stage Bronze Medal

1884 The number of shots at 800 and 900 yards increased from 10 to 15

The NRA were confronted with a notice to quit Wimbledon Common as the venue for their annual meetings and this was to continue to bear upon its deliberations to find a new home for the next 6 years. The Duke of Cambridge (the President of the Association) owned property bordering the Common and was becoming concerned at bullets going over the butts onto his property.

1885 The Queen's Prize became a three stage competition, instead of the first stage being broken into two parts. All scores carried forward to the final. The Silver badge being awarded to the winner of the 2nd Stage.

1886 A Bronze Medal (Picture 6) and distinctive Bronze Badge (Picture 7) was awarded to the highest aggregate scorer in the first stage, and the competitors for the third and final stage was increased from 60 to 100. This increase, however, necessitated the reduction of the number of shots at 800 and 900 yards, from 15 to 10, to complete the firing within reasonable time.

A Committee appointed by the War Office had been considering a replacement to the Martini-Henry and had looked at a .408 bore with Metford grooving, but a different grooving developed by Enfield had been introduced in place of the Metford. A few of these rifles had been issued for trial by expert shots, and Sir Henry Wilmot put up £5 for a 15 shot match at 1000 yds which was won by Captain Lamb 1st Lancashire Regiment. The rifle did not show any great improvement over the Martini-Henry, so, after the meeting Wilmot asked 70 of the best marksmen to experiment with the new rifle in order that they could inform the War Office of their findings. The rifle was never issued to troops, as meanwhile the small calibre and lighter ammunition with high velocity afforded by a magazine system was gaining a foothold.



Picture 7

The Queen's (King's) Prize First Stage Bronze Badge

1887 Consideration to allowing “retired” volunteers to compete were discussed but denied.

Again, the matter of the danger area beyond the Common rose its head during the Winter NRA meeting. The Duke of Cambridge, whose rights were not affected by the Wimbledon and Putney Commons Act which gave the NRA occupation of the common, raised the question of bullets landing on his property risking injuring his tenants. On hearing of proposed spending of the Association on improving and enlarging the butts he felt he ought to give the Association notice to quit at once. He had however no wish to hurry the Association.

1888 The Council offered to purchase 120 acres running up to Combe Wood from the Duke of Cambridge but his Solicitors turned this down on the grounds it would cause serious injury to his estate and any future development, so the hunt for a new home started in earnest. Sites on the Berkshire Downs, Cannock Chase in Staffordshire, Dunstable, Runemede, and Bisley were all considered but the preferred site was Richmond Park, however this was turned down.

1889 After much debate a vote was made in favour of Bisley, much to the disappointment of Lord Wantage who was prepared to gift the NRA a square mile on land on Compton Downs in Berkshire. This was to be the last meeting to be held on Wimbledon Common.

1890 This was the year of the first Bisley meeting. Sergeant Henry Bates of the 1st Volunteer



Picture 8

Sgt Henry Bates, Queen's Prize Winner 1890

The Queen's Prize

Battalion Royal Warwickshire Regiment was the first Queen's Prize winner at the new home. He was already a holder of 7 final badges. The Silver Badge (*Picture 9*) and medal was won by Private Murray of the 3rd V.B. Gordon Highlanders.



Picture 9

1890 Queen's Silver Badge and First Meeting at Bisley

- 1892 Veterans were allowed to compete in the Grand Aggregate, and Queens first stage only but not to take any prize.
- 1892 Major James Pollock (3rd Renfrewshire) became the first man to take both the Gold and Silver medals in the same year.
- 1894 Veterans allowed to enter all competitions except the Queen's.
- 1894 Entries fell to 1931, the first time in 23 years it fell below 2000.
The Lee-Metford began to be introduced on loan by the Government.
- 1895 Queen's Prize won for the first time by a overseas competitor, Private Thomas Hayhurst of Canada. Hayhurst was born in Kirkby Lonsdale, Westmorland, England, in 1867, and settled in Canada in 1893. He returned to England to shoot for Canada, representing the 13th Regiment, Hamilton, Ontario.
- 1897 The Martini-Henry had now disappeared, with the Lee-Metford becoming the "Service Rifle" in Volunteer competitions.
- 1898 1000 yard reintroduced in the final, the .303 round and rifle having proved their accuracy. Consideration was given to reducing target sizes but the decision was made to leave as is with the exception of 200 yard from 8 inch to 7inch bull and the inner reduced from 20 inch to 16 inch diameter. Entries down to 1719.
Winner: Lieutenant David Yates, 3rd Lanark Rifle Volunteers, scoring 327.
- 1899 A bad failure in Mark VI hollow-nosed ammunition at the Edinburgh Meeting in June (which in some cases proved dangerous), lead the NRA Council to seek assurances from Woolwich about ammunition to be supplied for the Bisley meeting. Woolwich assured Council that the meeting ammunition was being specifically made in May and June for the NRA. But when used in the Meeting it was found to be a complete failure; blown out caps, nickel jackets left in barrels and worst of all a bolt blown out and driven through the rim of the firer's hat. Fortunately, the NRA had retained a batch of Mark II solid nosed bullets and these were issued for the rest of the meeting. The Country being on the eve of the South African War an officer from Woolwich was assigned to observe the behaviour of the ammunition throughout the meeting. The war broke out in the autumn and hollow-nosed

ammunition could not be used, which was just as well as it would probably have infringed the Hague Conference which had been agreed the same year. The shortage of ammunition meant a temporary draw had to be made on stores of Volunteer stocks.

Entries were up at 1750.

1890 The first Bisley Meeting Entries down to 1399. The Queen's being won by Private William Ward, 1st Volunteer Battalion Devon Regiment, who became only the second man to win the prize twice. The first being Angus Cameron of Inverness in 1866 and 1869. Cameron had lost the sight in his right eye in the intervening years and won the second time using his left eye.

Sources consulted:

- The History of the National Rifle Association 1860-1909 by Humphry and Fremantle.
- Proceedings of the National Rifle Association 1860-1900.



Picture 10
King's 1922 Silver and 100 Badge

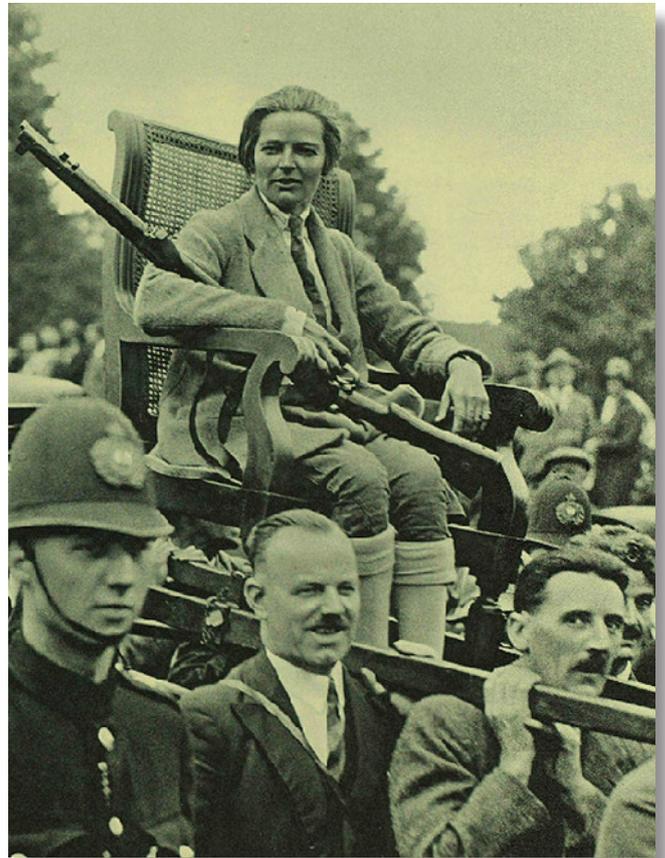
The Queen's Prize

Additional information; Post 1900

1930 Miss Marjorie Foster (*right*) became the first woman to win the Queen's Prize and it was not until 2000 that Miss J. Hossack became the second.

Today it would sound unbelievable but in 1930 Miss Foster should have received the Medal for Champion Shot in the British Army as at that time it was linked to the Sovereigns Prize. But, allegedly, she was summoned to the War Office to be told that as a woman she was not eligible. It was reported at the time that the Officer Commanding had allegedly said he was not prepared to see a woman wear the "Kings" Medal. At the conclusion of the match, and traditional "chairing" through the camp to the sound of "See the Conquering Hero Comes," she was returned home on the local fire engine and later presented with a sports car funded by a collection by the people of Frimley.

1953 Silver and Bronze Badges awarded to 2nd and 3rd runner up in the final.



Four men have now won the Queen's Prize 3 times.

- A.G. Fulton – 1912 / 26 / 31
- A. Marion (Canada) – 1980 / 83/ 96
- A. Ringer – 1992 / 97/ 01
- D. Calvert – 2010 / 15 / 16

In 2019, the NRA are celebrating their 150th Annual Rifle Meeting.

<https://nra.org.uk/imperial/>

The Volunteers in Being

W.S. Curtis

Continued from *Research Press Journal*, Issue No. 5, Winter 2018/19

Their Own Newspaper - The Volunteer Service Gazette

In October 1859 Mr. William John Johnson of 121 Fleet Street, London, commenced an entirely new weekly newspaper especially for the Volunteer Movement. Priced at fourpence, or fivepence if bearing the newspaper tax, it became very soon the principal organ of communication to the Volunteers. At the Ordinary General Meeting of the Metropolitan Commanding Officers, held at the Volunteer Service Club, on 4th June 1861, Lord Grosvenor's proposal to establish the Volunteer Service Gazette as the Official Organ of the Volunteer Movement was carried unanimously.

This newspaper is, perhaps, the single most important series of sources for information about the Volunteers, Rifle Shooting, technical developments and arguments about them in the copious correspondence columns, Unit Orders, results, book reviews and finally, although without by any means exhausting the

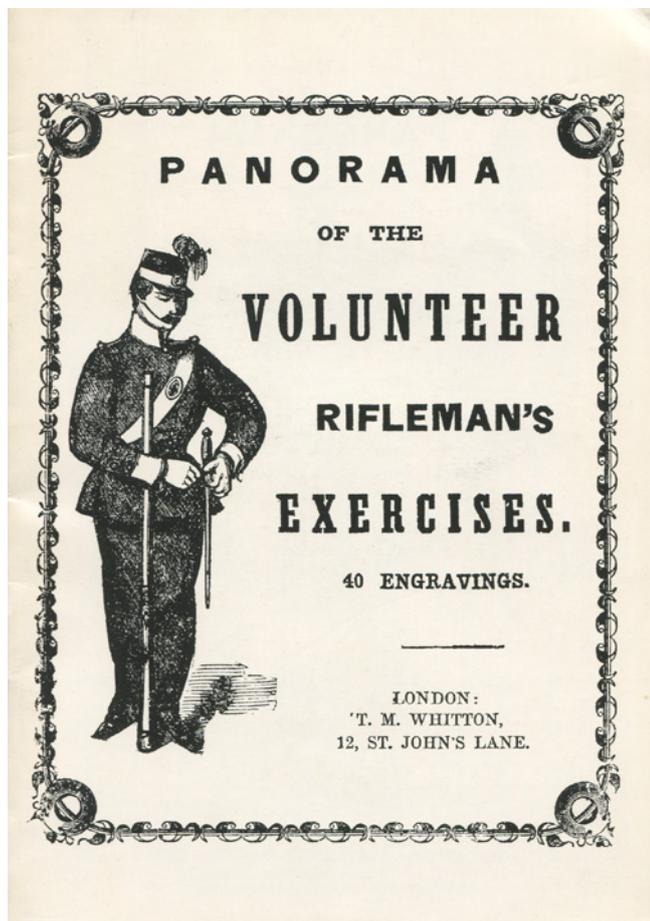
list, Trade and Private Advertisements. The paper was sold by Smiths at railway station bookstalls and sent by post to virtually every Corps Headquarters throughout the country. Sadly, this circulation has not resulted in a high survival rate and copies are, today, as good as impossible to find anywhere.

Pictorial Drill Books

On the principle that one look is worth ten hearings, there were a number of illustrated books and pamphlets showing the drill as well as the manual and platoon exercises. Ray Westlake has published a facsimile version of the 1860 booklet PANORAMA OF THE VOLUNTEER RIFLEMAN'S EXERCISES. 40 ENGRAVINGS (ISBN 0 9508530 3 8). This consists entirely of engravings illustrating the positions (*see illustration overleaf*).

Another, and very splendid, item is entitled THE COMPLETE DRILL SERJEANT OR RIFLEMAN'S POCKET MANUAL by Serjeant B. Clayton of the 28th Middlesex (London Irish) Rifles. This is not a book although, superficially, it looks like one. When opened it turns out to be a long continuous linen





backed panorama in colour illustrating not only all the positions but also all the variations of different Units' uniforms in some 200 figures. There is no date but the style is of 1860.

The Light Hearted Side

Humour was also catered for by cartoons in *PUNCH*, and other comic papers such as the long forgotten *ALLEY SLOPER'S HALF-HOLIDAY*. There were, as well, books of cartoons and one such was *A VOLUNTEER'S SCRAP BOOK* of 1860. The Victorian taste for punning jokes was harnessed in the *RIFLEMAN'S BOOK OF JOKES* published by Abingdon in 1861. The theatre also produced burlesques or comic plays involving Volunteers or riflemen. *THE RIFLE AND HOW TO USE IT* by J. V. Bridgeman sounds like a plagiarisation of Hans Busk's best known book but it was, in fact, the name of a farce performed at the Haymarket Theatre on 20th September 1859, at the moment of maximum

interest in the new Movement. Other light hearted aspects were not neglected and singing around the camp fire was a popular diversion. *RONDEAUS OF THE BRITISH VOLUNTEERS*, a book of songs, was produced by Nugent Taillefer and published by Stanley Lucas Weber and Co., of 84 New Bond Street. This had reached a 5th Edition by 1878.

Hythe

Central to the Rifle Volunteers and the National Rifle Association was The School of Musketry at Hythe in Kent. The training given and the proficiency certificates gained at Hythe were crucial to the Movement and as many officers and senior NCOs as possible were expected to attend. Candidates for the paid Adjutant positions were excused a year of their prescribed service with the colours if they had the Hythe Certificate. Some of the textbooks used at the School were locally produced and did not bear the "By Authority" imprint. One such is the *CLASS BOOK FOR THE SCHOOL OF MUSKETRY HYTHE. PREPARED FOR THE USE OF OFFICERS*. By Colonel E. C. Wilford, Assistant-Commandant and Chief Instructor. This was published by W. S. Paine, Stationer, Post Office, High Street, Hythe in 1861. It is in a large quarto format and has 126 pages. The work is an abridged collection of extracts from larger works of the period put together in a form suitable for a short course for students. The subject matter covered is very wide and, of necessity, not entered into deeply.

Another Hythe textbook of which we have encountered two examples is *FOUR LECTURES ON MUSKETRY* written anonymously and published by the same Mr. Paine of the Post Office at Hythe. This was intended for the use of officer instructors rather than students. The first of these is a simple paper bound booklet of 14 pages with no date and no price. The second copy is similar but has green paper instead of white for the outer cover and is priced at sixpence. This copy bears a print order suggesting that it was set up in January 1877 but has only ten pages. The earlier copy bears the signs of hard work and is marked H. Goulburn, School of Musketry, Hythe, in ink on the front. This copy is filled with copious notes and aide memoirs for the user in his own hand. It is interleaved with pages of handwritten reminders of what to bring

to the lectures and what to put up on the blackboard. Instruction is given in both the Snider and a rifle referred to as "The H-M". This was the Henry-Martini as it was called before becoming the Martini-Henry.

At a later date there was the official "By Authority" TEXT BOOK ON THE THEORY OF THE MOTION OF PROJECTILES; THE HISTORY, PROPERTIES, MANUFACTURE, AND PROOF OF GUNPOWDER; THE HISTORY OF SMALL ARMS. FOR THE USE OF OFFICERS SENT TO THE SCHOOL OF MUSKETRY. This was revised and reissued at intervals. The 1880 edition that we have seen is published by H.M.S.O. and distributed by a number of well known booksellers amongst whom we find our friend Mr. Paine at Hythe Post Office. Riling gives this the number 1015 and cites earlier editions of 1868 and 1877. It is, in fact, a later but official version of the CLASS BOOK mentioned earlier.

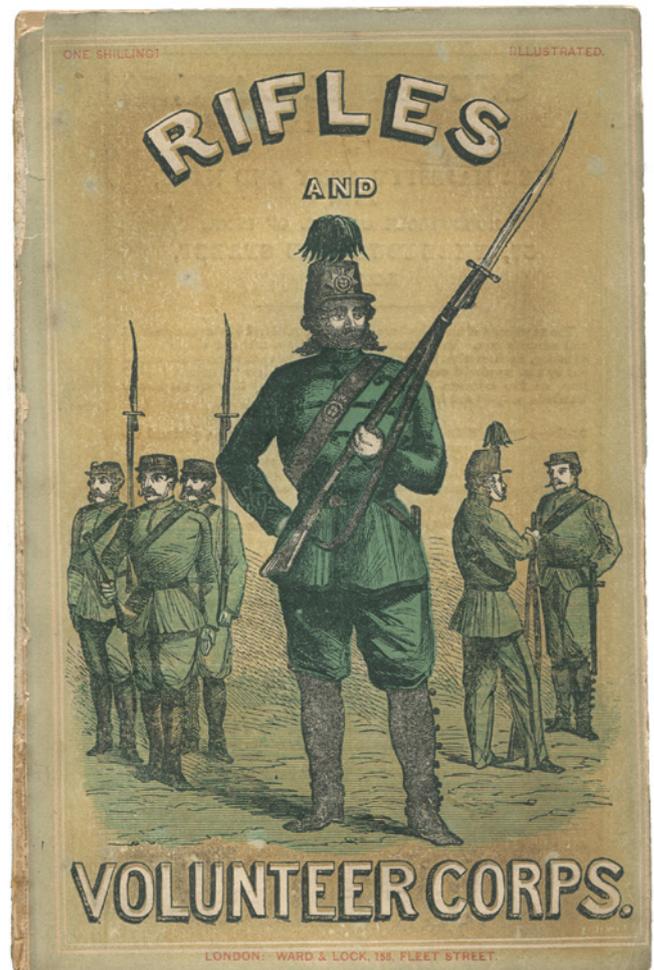
Volunteer Writers

Amongst the numerous ranks of the citizen soldiery, there were those with a taste for writing and many books about rifle shooting in particular were to appear. Others dealt in a more general way with the whole subject and one quite delightful example is RIFLES AND VOLUNTEER CORPS THEIR CONSTITUTION, ARMS, DRILL LAWS AND UNIFORM WITH DESCRIPTIONS OF RIFLES, REVOLVERS ETC., ETC., (Riling 739) by "Llewellyn Jewett, F.S.A. of the First Derbyshire Volunteer Rifle Corps - Profusely Illustrated." It was published by Ward and Lock, of Fleet Street, in 1860. This is a book with a very poor survival rate owing to its paper back binding and use of wood pulp paper with a high acid content. In 110 pages the author deals with the background to the Volunteer Movement and gives a lot of detail of the Napoleonic period. His tabular specification of all the Derbyshire corps in 1806 is unique and gives the name of the unit, its Colonel, the number of men and details of the uniform. The county had no less than 33 separate regiments totalling 6,619 men. Unit sizes varied from 1,166 for the Scarsdale Regiment of Infantry down to 62 for the Alvaston &c. Infantry.

Jewett then gives virtually the whole of the text of the 1859 Circular to Lords Lieutenant and goes at

length into the equipment, uniform and organisation necessary. He devotes a great deal of space to arms and examines, amongst many others, Adams and Colt Revolvers, and the rifles of Enfield Pritchett, Terry's, Prince's, Westley-Richards Breech Loaders, Colt's Revolving Rifle and the Lancaster Oval Bore. Jewett must have been able to persuade many people in the trade of the potential of his book as he has been able to obtain a good deal of advertising support. There are advertisements from George Daw, Parker Field, E. M. Reilly & Co., Robert Adams, Needhams, and pride of place occupying the back cover is that of Colt's London Office. Other advertisers of band instruments, music, etc., will not be so well known today. The book is, as the title page claims, profusely illustrated.

The well known Liverpool gun and rifle maker, W. H. Blanch, was a very keen Volunteer, serving as a member of the 1st Lancashire R.V., and his contribution to the invention and supply of shooting accessories is



well catalogued in the GAZETTE. In 1861 he devised the idea of producing an annual compendium which he called THE VOLUNTEER'S BOOK OF FACTS: AN ANNUAL RECORD. This was priced at two shillings in paper-back and was intended to appear on 1st January 1862. In his Preface he discloses that the work involved was so great that the January deadline could not be attained. A 2nd Edition was advertised in the GAZETTE of 30th August 1862 as being due on 1st January 1863 at the lesser price of one shilling and sixpence. It was still being advertised in 1864 but seems to have disappeared by 1866. The first issue of 236 pages is a mine of information. Included in the history of the movement are accounts of the early Volunteer Organisations, The Honourable Artillery Company which traced its origins to the reign of King Henry VIII, The Victoria Rifles who were formerly the Duke of Cumberland's Sharpshooters of 1803, The 1st Lancashire R.V.C. of 1853, The 1st Surrey R.V. from an 1849 club turned into riflemen by John Boucher in 1852, and The Exeter and South Devon Corps from 1852. Full details are given of all the rifle ranges in use together with range drills and procedures. In some cases there are also maps of these ranges. There is much on rifles and associated equipment, good shooting scores attained, unit statistics, a Record of Events for 1861, and finally a series of extremely interesting advertisements.

As the 1860s went by, the volume of literature that was being produced continued to grow as can be seen by reference to THE VOLUNTEER SERVICE GAZETTE where new books were advertised and frequently reviewed. One such was THE RIFLE: ITS THEORY AND PRACTICE. (Riling 820) by Arthur Walker of the 79th Highlanders who was a staff instructor at both the Hythe and the Fleetwood Schools of Musketry. This was published in 1864 by J. B. Nichols and Sons of Westminster and by the well known military book sellers W.O. Mitchell of Charing Cross. This is a hard bound book with a nicely decorated and embossed cloth cover. It is essentially a recap of much that had gone before. The author states in his Preface that "It may almost appear a superfluous under-taking to add, however slightly, to the large amount of printed matter which has lately been published on the subject of Musketry." He goes on to say that he feels that something still needs to be supplied and that his experience and the many

lectures that he has given justify his publishing them for the use of Musketry Instructors. The book is divided into nine Lectures taking 311 pages. This is serious stuff and is obviously aimed, as the author suggests, at the specialist. Its validity today is as strong as ever for the shooter of muzzle loading rifles.

1864 also saw the arrival of the famous little book NOTES ON RIFLE SHOOTING (Riling 812) by Captain Heaton of the Third Manchester Rifle Volunteers. His small treatise is a mine of useful information. One of the reasons it is so well known to this day is his list of all the small-bore (.451) makes of rifle in use at the time. However, the book deserves recognition for far more than this. It ran to three editions and was reproduced in New York by Shooters' Publications in 1946. An entirely new Edition was produced here in 1993 (ISBN 0 948216 13 1).

With the ending of the muzzle loading era the need for new works arrived and one such is THE CRACK SHOT; OR, YOUNG RIFLEMAN'S COMPLETE GUIDE: BEING A TREATISE ON THE USE OF THE RIFLE (Riling 858) by Edward C. Barber. Although an American work this book is mentioned because it was also published in London by Sampson Low in 1868 and deals with the latest British, European and American arms. Sporting shooting is covered but there is much on target and volunteer work. British authors and practices are extensively cited.

HINTS AND ADVICE ON RIFLE SHOOTING is a very small booklet written in 1886 by Robert McVittie, a modest Scot of the 7th Dumfries Rifle Volunteers in which he was a private. His publication is a very small 48 page booklet, priced at One Shilling, and published at the office of THE VOLUNTEER SERVICE GAZETTE in Fleet Street. McVittie's modesty concealed a veritable tiger in the target shooting world. His name appears at or near the top of winners' lists throughout the 1870s and 1880s and he shot for Scotland and Great Britain here and at Creedmoor. His practical advice on the Martini-Henry and the various forms of the Military Breech Loader as well as competitive team shooting are as valid today as when they were written. This book has also been recreated in an entirely new edition (ISBN 0 948216 12 3).



**Muzzle Loaders
Association of Great Britain**



The MLAGB was formed in 1952 and is the Governing Body for muzzle loading within the UK.

Its objectives are to encourage an interest in muzzle loading firearms, to promote, regulate and safeguard their use and to preserve their freedom of collection.

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**Historical Breechloading
Smallarms Association**



The HBSA was founded in 1973. The fundamental aims of the HBSA are to encourage the Preservation of Historic and Heritage Breechloading firearms and to foster the research and study of all aspects of the subject, from the aesthetics of sporting guns and the engraver's art to the functional aspects of firearms used by the soldier, target shooter and the sporting shooter.

www.hbsa-uk.org

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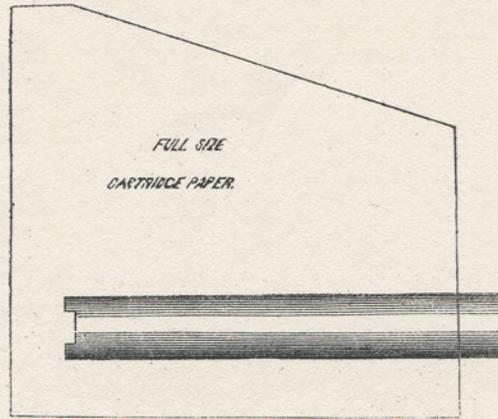
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These arms combine simplicity of construction, rapidity of firing and extraordinary range, with perfect accuracy and unequalled safety. They prime themselves from twenty to forty times, by once charging the magazine, and can be loaded and fired, in target practice, ten times per minute. The lock is constructed with a set trigger, and by adjusting the screw in the trigger, it can be made to pull hard or easy.

To PRIME—Cock the arm, press back the sliding cover under the cup of the hammer and insert the charging tube, with the recess over the primers facing the nipple, until the recess passes below the surface; then press the button (which is in front of the hammer,) back, which causes a point to enter the recess over the primers and retains them in the magazine; then withdraw the charging tube and let down the hammer and the arm will be primed. The common percussion cap can also be used on this arm the same as on any other.

To LOAD—Move the lever or guard forward, insert the cartridge and press it in smartly with the thumb, then return the lever to its former position, and the arm will be loaded. If desired, insert the ball at the breech, force it to its seat with a rod and charge with loose powder.

To CLEAN—Move the lever forward, turn the lever pin half around and withdraw it, then the sliding breech can be readily taken out and cleaned. The sliding breech and all the movable parts must be kept well oiled to insure their perfect action. After shooting, the barrel should be cleaned and oiled, especially in the powder chamber to keep the self adjusting bushing from corroding.

To MAKE THE CARTRIDGES—Cut the papers after the Cut above represented, then place the cartridge stick on the paper and roll the paper in a tubular form, with the end projecting over the stick enough to admit the ball as far in as the first collar; then put a little gum arabic paste in the end of the paper tube and insert the ball and choke it around with a cord: then withdraw the stick and charge with powder and fold in the ordinary way. The cartridge must be of sufficient length to cause the end to project and allow it to be cut off by the gate rising to close the breech. The Bullet must be well greased with tallow or bayberry tallow, to keep the barrel from leading and insure good shooting.

Guns and Pistols will be made to order, under the eye of the Inventor, at the above Manufactory.