

The Martini-Henry Rifle Part One

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When 'arf of your bullets fly wide in the ditch,
Don't call your Martini a cross-eyed bitch;
She's human as you are - yoo treat her as sich,
An' she'll fight for the young British soldier.

So wrote that champion of the common soldier, Rudyard Kipling, in *The Young British Soldier*. Of all the weapons used by the British Army, the Martini-Henry rifle immediately conjures up vivid images of a steadfast, back-to-the-wall soldier fighting on some sun-baked boundary of the Empire. It has come to symbolise the belief that a Martini-Henry and bayonet in the hands of a British soldier could withstand any onslaught from the heathen hordes.

Its origin came about because of the emerging might of the Prussian Army and the brief but victorious war against Denmark in early 1864. Armed with the new breech-loading Dreyse-Needle gun, the Prussian soldiers had a technological advantage over all other armies. Another overwhelming victory over the more formidable Austrian army in 1866 reinforced the urgency of the major powers to equip their forces with a reliable breech-loading rifle.

Moving with unusual speed, the War Office set up a committee to consider re-arming the infantry with breech-loaders. Having set out their requirements and technical specifications, they then hit upon the unusual idea of a prize winning competition to find the best weapon available. Although invited to participate, most of the large gun-makers declined to take part either considering the prize money too little or getting side-tracked by descending into petty squabbles and jealousies. The advertisement below was published in 1867.

ADVERTISEMENT TO GUN MAKERS AND OTHERS

I. The Secretary of State for War is desirous of receiving proposals from gun makers and others for breech-loading rifles, either repeating or not repeating, which may replace the present rifle in future manufacture.

II. The following are the conditions considered essential in military non-repeating rifles-

- A. Weight - not to exceed 9lbs 5ozs without bayonet.
- B. Length - to be 51 inches, with short stock, measured from the hollow of butt plate to muzzle.
- C. Weight of ammunition made up - must not exceed 6lb 4ozs for 60 rounds as packed for service.
- D. Cartridges - must carry their own ignition.
- E. Sights - the foresight must be such as to admit of a bayonet being fixed according to the present system.
- F. Stock - must be such as to carry a light metal cleaning rod, and allow a sling to be used.
- G. Recoil- must not exceed that of the Enfield rifle by more than 10 per cent.
- H. The arm as a whole - must be as little liable to injury by long-continued firing, rough usage, and exposure, as the naval rifle converted to a breech-loader on the Snider system. To be capable also of being used without accident by imperfectly trained men, and of being manufactured in quantity and of uniform quality.
- I. The ammunition as a whole - must be as little liable to injury by rough usage, damp, and exposure in all climates as the Boxer cartridge for Snider's converted Enfield rifle; also as little liable to accidental explosion as the same cartridge, and as being manufactured in quantity and of uniform quality.
- J. *left blank (Ed.)*
- K. Calibre - optional.
- L. The twist and form of groove - optional.
- M. The lock - optional.
- N. Rapidity of fire - capable of firing at least twelve rounds per minute without aiming, the cartridges being arranged on a table.
- O. Accuracy when fired from a fixed rest - the arm must give a mean figure of merit of not more than 36 inches at 1,000 yards.
- P. Trajectory - not to require at 500 yards an elevation of more than 1 degree 30 minutes.
- Q. Fouling - the shooting not to deteriorate more than 20 per cent at 1,000 yards after firing 250 rounds.

R. Penetration - the mean penetration of five shots not to be less than that of the present muzzle-loading Enfield rifle, viz, 12 half-inch elm planks, which should have been soaked 48 hours in water. Distance 30 yards.

S. Lubrication - wax on bullets is indispensable, but any other lubricant may be superadded or applied to the cartridge, if thought necessary by the competitor.

III. No arms will be received without the usual proof marks. Specifications and drawings of the methods proposed, stating the probable cost per arm, and accompanied by a finished specimen arm, with 20 rounds of suitable ammunition, should be sent to the 'Director of Ordnance, Pall Mall', on or before the 30th March 1867.

The Secretary of State offers a reward of £1,000 for the arm, which, on combination of all qualities, is considered by the committee to be the best submitted.

A second reward of £600 for the arm, which, while attaining a satisfactory degree of excellence in other particulars, is selected for merit in respect of its breech mechanism.

A third reward of £400 for the best cartridge.

It is clearly to be understood that under no circumstances will a competitor be entitled to more than one prize; but such a prize will be irrespective of any reward which may be given to the inventor of the arm finally adopted into the service.

The following companies took part in the competition; Albin & Braendlin, Burton, Fosbery, Henry, Joslyn, Martini, Peabody, Remington, Snider Naval.

In the meantime, the Committee had selected the American Snider mechanism which could be used to convert the old muzzle-loading muskets into a stop-gap breech-loader until a new purpose designed weapon could be found. The Snider-Enfield came into service during 1865 until replaced in 1871, although the carbine version was still in use with the Colonial mounted troops during the Zulu War.

The Prize Competition finally commenced in 1867. Amongst the short list of competitors were a Mr. Frederick Chevalier de Martini of Frauenfeld, Switzerland and Mr. Alexander Henry of Edinburgh. After lengthy trials in which none of the competing weapons was truly outstanding, the prize of £600 was awarded to Mr. Henry. The competition, from the point of view of finding an acceptable breech-loading rifle for the British Army, was officially regarded as a failure. Because of the rigid conditions imposed by the Committee, many promising designs were not considered. It was decided to continue the trials but to standardise the calibre and size of the bullets.

During the following trials it emerged that Henry's barrel and Martini's action were superior to all others and it was decided that they should combine into one arm. From this hybrid was born one of the most enduring of British arms.

After several modifications, the Martini-Henry Mark II, as carried in the Zulu War, had the following specifications. It was 4 ft-1½" in length and weighed 9 lbs. It fired a black powder 0.45 calibre, 480 grain, centre fire Boxer cartridge in a flatter trajectory, which gave it considerable stopping power. (1)

The weapon's accuracy can be attributed to Henry's rifled seven groove polygon barrel, while Martini's distinctive enclosed all-steel breech gave it robustness and protection. The hammerless action was simple compared with the complexities of muzzle loading. The breech-block was hinged at the rear and opened when the lever behind the trigger guard was lowered. An ejector would throw out the expended round and a fresh cartridge laid on top of the grooved block, thumbed into the chamber and the lever raised. This action also automatically cocked the weapon and a tear-shaped indicator on the right showed if the gun was cocked. The rifle was sighted up to 1,000 yards but only in a marksman's hands was it accurate at this range. The average sighting for volley firing was 600 to 800 yards. A well-trained infantryman could fire off twelve rounds per minute, but five was the norm. (2) As with all rifles of this period, the stock and fore-end were fashioned from European walnut. The rifle was soon followed by carbine equivalents for the Cavalry and Artillery. (3)

The 1853 pattern equi-angular bayonet with three hollow ground faces had been the standard issue. With so many in service, it was decided to have them bushed to fit the Martini-Henry. In 1876, the specially designed socket bayonet, which looked similar to its predecessor, was 4½" longer at 21½". Fitted to the end of a Martini-Henry, it gave its handler an imposing reach and was most effective against native foes.

Another bayonet was designed especially for the Martini-Henry by Lord Elcho and was known as the Pattern Sword Bayonet. This was also carried in the Zulu War and eventually took the place of the socket bayonet.

The Martini-Henry was subjected to more trials during 1873 when it was issued to the 4th, 46th Regiments and 60th Rifles. Some of their findings found echoes in 1879.

Barrels heat with quick firing...may prove a serious drawback to rapidity of fire. A barrel cannot be touched after five or six rounds on some occasions. A leather shield attached to the fore-end may be found a necessary addition.

The Inspector General of Musketry wrote in his report,

I can only account for the inferior shooting of the 4th and 46th Regiments with the Martini-Henry rifle, by the fact of the recoil being so great; the men in most instances fire with less confidence, and consequently at a great disadvantage; the shortness of the stock also frequently causes a smart blow on the cheek, particularly at the short distances and this naturally increases the chances of bad shooting.

Although some modifications and improvements were made, the barrels still grew hot with rapid fire and the kick remained fearsome. This was less to do with the weapon itself but rather the black powder propellant. After a few rounds, the barrel became fouled with residue which reduced the bore slightly. This was enough, however, to produce a greater velocity and backward force when fired, thus causing the gun to kick fiercely. Bruised shoulders and cheeks, torn firing fingers and bloody noses were often the result and much of the poor marksmanship observed during the Zulu War was certainly attributed to flinching by young recruits at the moment of firing.

The overheating of the barrel was caused by the same source and only frequent cleaning could reduce the problem. This was not an option the defenders at Rorke's Drift had and there were instances of their barrels glowing dully in the dark. The suggestion of leather shields, which had been recommended at the trials, was shelved for later consideration. This was small comfort to the Rorke's Drift men whose hands became blistered at the touch of a scorching barrel and had to resort to wrapping their hands with rags. Soldiers subsequently followed the Boer example of stitching wet rawhide around the fore-end and allowing it to dry and shrink to form some protection.

The Boxer cartridges caused additional problems. As the barrels heated so the cartridges were prone to 'cook' and prematurely discharge the round. The thin rolled brass became soft and stuck to the chamber while the ejectors tore off the iron rim. The soldier had to remove the empty case with a knife or try and knock it out with the cleaning rod.

The Boxer cartridge was also found wanting in other respects. If carried for any length of time in an ammunition pouch, rounds became deformed, causing the bullets to loosen and to shed black powder. They were also prone to dampness.

Colonel Redvers Buller VC wrote a memo after the Zulu War in which he was heavily critical of the Boxer cartridge compared with the Snider; he wrote,

My men carried their service ammunition in bandolier belts. This did very well for the Sniders, but the Martini-Henry ammunition is more delicate. It becomes unserviceable far more rapidly than the Snider -

- i. By becoming bent in the front of the swell.
- ii. By getting bruised more easily.
- iii. The bullet is far more apt to drop out.
- iv. It is far more liable to get damp. This I consider very important.

I found that Snider cartridges hardly ever became unserviceable from this cause, but a good shower of rain would spoil at least one-third of the ammunition (Martini-Henry) exposed to it. I could not account for this to my satisfaction, though I made many experiments. The result was always the same; Snider remained good, Martini-Henry carried in the same bandolier became damp." (4)

Maj. Gen. Newdigate also wrote to the War Office, "Numerous complaints were made about the ball-bags; the weight of the cartridges makes the bags open, and when the men double the cartridges fall out". (5)

The net result of the experiences in the Zulu War was the change to a solid case cartridge and a great reduction in ammunition failure.

Despite its critics, the new rifle was a most effective weapon, especially when used for volley firing. At Gingindlovu, Kambula and finally Ulundi, the British squares, bristling with Martini-Henrys, kept the determined charges of the Zulus at a distance. Such shoulder to shoulder firing created its own perils; a volley would produce thick acrid smoke which stung the eyes and parched the throat. A pause was required to allow the smoke to disperse before another volley could be fired. Lieutenant E.O.H. Wilkinson of the 3rd Battalion 60th Rifles wrote of the Battle of Gingindlovu;

..and we followed suit, firing volleys by sections in order to prevent the smoke obscuring the enemy, and we had repeatedly to cease fire to allow the smoke to clear off, as some young aspirants out of hand paid little attention to section firing." He concluded; "One lesson we learnt in our fight was, that with the Martini-Henry, men must fire by word of command either by individuals, or at most, by sections: independent firing means in firing in twenty seconds, firing at nothing; and only helped our daring opponents to get close up under cover of our smoke. Officers had to be everywhere, and to expose

themselves to regulate the fire within bounds, and I feel sure that for the future, only volleys by sections will be fired. (6)

The rifle was a real man-stopper. The soft lead slug flattened on impact causing massive tissue damage. If it did not hit a vital organ, then the victim would almost certainly die of trauma. There is evidence, however, that the Zulus were sometimes able to lessen the impact. This is supported in various letters relating to the Zulu War which mentioned the Zulus bravely advancing under sustained volley fire. At Gingindlovu, the British volleys commenced when the Zulus reached the 800 yard markers yet the Zulus were still able to get to within yards of the British lines. There are several reasons for this including the fact that the Zulus were in vast numbers and many soldiers fired inaccurately or too high. However, Capt. Wyatt-Edgell of the 17th Lancers noted that, after the battle, there were few Zulu bodies further than 300 yards from the British line.

At 300 yards a thin boundary of black bodies and white shields might be traced; at 200 yards and 100 yards from our lines their walls of dead were more thick. (7)

When advancing on the scattered companies of the 24th at Isandlwana, some Zulus held their shields at an angle in order to deflect the bullets. This tactic certainly appears to have had some success at ranges beyond 300 yards and may well have accounted for the Zulu warriors' belief that their sangomas (8) indoctrination against British rifle fire was, indeed, effective.

Rifles and ammunition taken by the Zulus after their Isandlwana victory were subsequently used against the British and, if the Zulus had mastered the use of the leaf sight, there would surely have been many more casualties. By the end of the War, in which the Martini-Henry had been subjected to sustained heavy rain, mud, dust and rough handling, it had emerged as a solid and reliable arm. It was acknowledged, however, that there were now more superior weapons in service with other armies. Although it appeared that its days were numbered, the Martini-Henry proved adaptable to modernisation, it could even be fitted with telescopic sights. It was converted to .303 ammunition but by then it was evident that the barrel developed by W.E. Metford was superior. Thus the Martini-Metford was born. A later improvement towards the end of the century found the venerable Martini married to Enfield. The bolt action magazine-fed Lee-Enfield became the standard British Army weapon but the Martini was still in use with Colonial forces well into Edward VII's reign. The average cost to the government of each Martini-Henry rifle, including bayonet and cleaning kit, was £14/1/8d.

Even today, this legendary action is still used by the shotgun manufacturer, Greener, proving that Frederick de Martini's breech action is indeed a truly classic design.

Acknowledgements.

A Treatise on the British Military Martini -The Martini-Henry 1869-1900 B.A.Temple & I.D.Skennerton (1983)
Weapons & Equipment of the Victorian Soldier by Donald Featherstone (1978)

References.

1. The cartridge was named after Colonel E.M.Boxer (Royal Artillery) who developed this projectile at the Royal Laboratories. Fired at a target of 500 yards, the bullet rose 8.1 feet from a Martini-Henry compared with 15 feet from the old Enfield muzzle loader.
2. Whilst averaging rates of fire is highly imprecise, the figures in the following article make interesting reading when considered in the context that the British infantry had been trained to fire 12 rounds per minute, (according to the *Treatise on the British Military Martini 1869-1900* by Temple and Skennerton).
3. Not all mounted troops were armed with carbines. The Mounted Infantry under the command of Lieutenant Edward Browne VC carried Martini-Henry rifles.
4. Col. R.Buller VC Memorandum 11-6-1880 to the Royal Laboratory.
5. *Précis of the Zulu War Intelligence* Division War Office Appendix 1.
6. *The Red Soldier* Frank Emery (1977)
7. Personal letter to Maj. Ashe at the War Office.
8. Zulu witch doctor or medicine man/woman.