

A Short History of Long Range Shooting in the United States

By

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Long range is, by definition, a relative term. When the earliest European settlers arrived on the east coast of what would become the United States of America they were armed with a collection of match, wheel lock, and snaphaunce actuated firearms that were, occasionally, more dangerous to the user than the intended victim. Among the immigrants were gentlemen adventurers on the prowl for quick riches, families looking to build a new life, and others who sought religious freedom; all who drilled with these firearms under the leadership of the likes of Captain John Smith, in the Virginias, and Captain Myles Standish, in the Plymouth Colony.

The separatist Puritans came from England and, with the possible exception of one or two men, had never used firearms. Firearms were a tool of the soldier and a plaything of the aristocracy, hunting being forbidden the common man. As much as the Pilgrims might have impressed the natives with the flames, explosive sounds and rolling smoke, they were far from effective marksmen. Even with a generous supply of powder, ball, and time to exercise themselves with their 16th and 17th century firearms, it took almost two years for the Pilgrims to become proficient. However, by the time they learned to hit what they aimed at, a hunting party of four could bring home enough game to feed the village for a week. Whether this is a comment upon the developing skill of the Pilgrim marksman or the quantity of game is left to the reader. In the early days of settlement long range might mean a distance of as much as 50 yards. The enduring myth that every American boy can drill out a gnat's eye at 100 paces was in the making.

As time passed, gunsmiths from continental Europe immigrated to the New World and set up shop. They brought a tradition of manufacture and knowledge that was soon adapted to the technical and economic realities of the colonies. The somewhat clumsy and large caliber rifles of Germany, Austria, and

Switzerland underwent evolutionary changes in the Lancaster region of Pennsylvania in the early 1700s at the hands of French Huguenot, Swiss and German craftsmen. The first American made rifles were manufactured in smaller calibers than its European antecedents to save precious lead and powder. The spherical bullet, between .32 and .45, weighed about 160 grains. The powder charge, of about 60 or 70 grains, left a minimum amount of fouling. The long barrel, about 40 inches, increased velocity making efficient use of powder and ball, as well as dampening the sound of the shot that might attract uninvited attention from four footed quarry or two footed enemy.

The rifle was equipped with what was the most reliable ignition system of the time-the flintlock. It had brass furniture and a recess built into the butt to hold a supply of grease or greased patches. Called a patch box, this is a distinguishing feature of the Kentucky rifle. Provided with a small, sometimes brass, blade front sight and a hickory ramrod, its graceful and comely shape, pleasing to the eye, made it easy to carry and employ in the forest.

A distinct disadvantage of the rifle, as opposed to the more common smooth bore musket, was that loading was slow and required a short metal rod and mallet to start the bullet into the bore. At some point in time an unknown marksman thought up the idea of using a slightly undersized ball and a greased patch and to ease the loading of the powder fouled rifle while insuring the tight fit necessary for the ball to engage the rifling. The American marksman now had a firearm that was capable at a range of 300 yards and deadly accurate at 100 yards. The technological advance of the patched ball made rifles capable of equaling the feat of James Fenimore Cooper's fictional Hawkeye, *La Longue Carabine*, who with his rifle 'Killdeer' boasted an astounding firing rate of three rounds a minute standing or two prone.

A good shooting rifle, hand made by a Pennsylvania craftsman, might cost a man half a year's wages. It earned its keep and repaid its owner by its daily use in hunting and, if need be, defense. Horace Kephart describes the so-called Kentucky Rifle as "...remarkable for its precision and distance it shot. It was generally three feet six inches long, weight about seven pounds, and ran about

seventy bullets to the pound of lead.” The artist’s belief that form follows function reached one of its highest evolutionary points with the development of this distinctly American firearm.

Oddly enough the rifle seemed to be almost solely a development of the Allegheny frontier and its German influence. That hotbed of colonial industry, the Connecticut River valley of New England, boasted firearms manufacturing but it was almost exclusively devoted to smoothbore muskets. It wasn’t until just prior to the Revolutionary War that rifles became more widely used and manufactured in what would become the center of the American firearms industry.

The rifle gained its fame and name from its use in what Native Americans called the "Dark and Bloody Ground". The land west of the Allegheny Mountains, populated by the Iroquois and Cherokee, was the site of continuous warfare, the ground stained dark by the blood shed in battle between these two tribes for possession of these rich hunting lands. In the years leading up to the Revolutionary War frontiersmen thought of the region as a hunter's paradise. John Findley traveled the Ohio River documenting the valley's beauty and abundance of game. A young adventurer and skilled marksman named Daniel Boone, explored the passage now known as the “Cumberland Gap” and followed Findley, rifle in hand, into what is modern day Kentucky.

Boone’s rifle, and its cousins, is more correctly known as a Pennsylvania Rifle. The more popular appellation, Kentucky Rifle, became permanent on January 8, 1815, two weeks after the Peace of Christmas Eve was signed at Ghent. The War of 1812 was already over when five thousand American soldiers and militiamen, including two thousand Kentucky and Tennessee frontiersmen armed with long barreled rifles, under the command of General Andrew Jackson, engaged 7,500 British troops along a drainage canal just south of New Orleans. The British forces grimly advanced into the fire of cannon manned by Jean Lafitte’s pirates. As the orderly lines of troops came into rifle range, Jackson ordered the cannons to lift their fire so that the billowing powder smoke would not obscure the Redcoats. In just a few minutes British General Edward Pakenham and 2,000 of his Redcoats were cut down by American

riflemen hidden in trenches and behind cotton bales in the pointless Battle of New Orleans. A popular song called "The Hunters of Kentucky" or "The Battle of New Orleans" was soon ringing throughout the nation's taverns hailing Jackson's victory. One couplet proclaiming "But Jackson he was wide awake, and wasn't scar'd at trifles, for well he knew what aim we take, with our Kentucky Rifles" was a public relations coup of gigantic proportions. To this day, few ever refer to this quintessential American flintlock as the Pennsylvania Rifle.

The Battle of New Orleans may have raised public consciousness about the rifle but it was not the first conflict on American soil where the long-range capabilities of the colonial marksmen played an important part. Between 1689 and 1763, England and France fought a series of four wars on the continent that were mirrored in the colonies. The final conflict was The French and Indian War, known as the Seven Years' War in Europe, fought between 1754 and 1763. Among the young colonials blooded in the conflict was a young teamster by the name of Daniel Morgan. Morgan, Daniel Boone's cousin, survived the disastrous rout of General Edward Braddock's expeditionary force in July of 1755 along with two young lieutenant colonels who would have much to do with each other two decades later-British regular Thomas Gage and Virginia militiaman George Washington.

Twenty years after serving with the British the tables turned. In July of 1775 Washington found himself in command of the newly formed Continental Army and with it, ten companies of riflemen. In command of the company from Virginia was Captain Morgan. As proof of their capabilities the Virginians marched from Winchester, Virginia to Boston, 300 miles away, in just three weeks. New England was treated to displays of marksmanship that amazed the locals who were unfamiliar with the rifle. Morgan's men would demonstrate their skill by regularly hitting targets at twice the maximum range of the Yankee's muskets and fowling pieces.

Over the next several years Morgan would command troops under Benedict Arnold in his abortive expedition to Quebec and in the Hudson River Valley. One lesson he would learn was that, as good as the rifle was, it was still

slower than the musket and rifleman could not engage the enemy with out support. Morgan's riflemen would prove their worth at Saratoga where they functioned as skirmishers, going out in front of the main battle lines to use their skills with the rifle to disable gun crews, kill officers, and generally harass the enemy. The constant rain of accurate long-range rifle fire hampered the fighting efficiency and mettle of the British troops under the command of Braddock's Defeat *alumnus* General Thomas Gates.

It was here that one of the more famous long range shots of the war took place. The most celebrated of Morgan's riflemen was Pennsylvania rifleman Tim Murphy. Tradition has it that Murphy was ordered to kill a British officer astride a gray horse. Perched in a tree and steadying his aim on a strong limb he missed with his first shot. With his second he mortally wounded General Burgoyne's *Aide de Camp*, Captain Sir Francis Clerke, at a range of some 300 yards. Reloading, he next drew a bead and downed General Simon Fraser. Clerke and Fraser lingered for hours in agony before succumbing and were buried on the battlefield. In the end the British losses were twice that of the Colonial forces with rifle fire contributing greatly to the American dominance of the battlefield.

The British made several halfhearted attempts to establish a corps of rifleman to counter the colonial marksmen. The most noteworthy unit was under Major Patrick Ferguson of the Second Battalion of the 71st Highlanders, one of the finest marksman of his day and the developer of a breech loading flintlock rifle. Ferguson raised a company for deployment in North America to test his rifle. A colonial bullet shattered his right elbow on September 11, 1777 at Brandywine Creek, a battle where his riflemen contributed significantly to the British victory. After a lengthy convalescence he returned to active service but, ironically, before he could definitely prove the effectiveness of either his rifle or his troops, one of Morgan's riflemen killed 'The British Morgan' at the Battle of King's Mountain, North Carolina on October 7, 1780.

After the war was won the rifle continued to prove its worth as the new nation pushed westward. As a tool, it both protected and fed the immigrants.

On the occasional holiday it provided entertainment in the form of a rifleman's frolic or turkey or beef shoot. These matches were fired standing, or from a rest, at 100 yards, or so. The target might be an X drawn with the fire-blackened end of a piece of wood from a campfire on a blazed tree side or a trussed turkey partially hidden behind a downed log. As the condemned bird's head bobbed up and down the frontiersmen took turns trying to hit the moving mark. A successful shot earned the marksman the unlucky bird. If the prize were a beef then it might well be awarded in quarters, with each marksman taking his selection in the order of finish. Nothing went to waste with the "fifth quarter"-the hide, entrails, and bones-presented to the least successful of the five best riflemen.

The Revolution and the War of 1812 hinted that the rifle was the firearm of the future despite the disadvantage of slow rate of fire and cost. The new nation created two armories, one at Springfield, Massachusetts, and another at Harper's Ferry, Virginia, which produced both muskets and rifles for the Army. Harper's Ferry produced about 15,000 Model 1803 U.S. Flintlock Rifles while private contractors manufactured the Model 1817 U.S. Flintlock Rifle, often known as "The Common Rifle", under license from Harper's Ferry. John Hall's design of a breech loading flintlock rifle was adopted and produced at Harper's Ferry as the Model 1819 Hall U.S. Breechloading Flintlock Rifle. The Hall rifle bears several distinctions: it was the first regulation breechloader manufactured in significant numbers, over 19,000 rifles being made and it was the first firearm manufactured with totally interchangeable parts.

Noted firearms historian Norm Flayderman reports that it is also the only firearm ever presented in lieu of a medal or citation for gallantry. By Act of Congress fifteen were taken from the production of 1824 and prepared for presentation to schoolboys who had volunteered and, much like Horatius, bravely defended a bridge during the siege of Plattsburgh, New York in 1814. The rifles were furnished with engraved silver plaques that commemorated the event.

As the new nation moved westward, the rifle would begin to replace the smoothbore musket. Technological advances would begin to redefine long range beyond the 200-300 yard distance that seemed to be the limit of the Kentucky rifle. The first major employment of rifles by the United States was the Model 1841 U.S. Percussion Rifle. This muzzle loading 54 caliber rifle was used by Jefferson Davis' Mounted Mississippi Rifles in the Mexican War, hence its nickname, "The Mississippi Rifle". This rifle is historically important because it was one of the first massed produced military rifles that employed the percussion ignition system, which had been perfected by Joshua Shaw around 1825. The percussion cap was a great improvement over the venerable flintlock. The new improvement was unaffected by wet weather and provided a quicker and more certain ignition under all circumstances. This innovation brought the round ball muzzle-loading rifle to its apogee.

All that was left was to improve the bullet. The round ball had limited efficiency because its small bearing surface's inability to fully engage the rifling. Claude Etienne Minié, a captain in the French Army, made a major innovative step in firearms technology in 1853 with the creation of the bullet that bears his name. The misnamed Minié ball is actually a conical cylinder made of soft lead with an iron cup at the base. When fired the force of the rapidly burning powder forces an iron cup against the base of the bullet expanding it against the rifling causing a tight seal. The aerodynamically shaped Minié ball had a spin imparted upon it by the rifling making the bullet more stable in flight. The Minié ball was manufactured slightly smaller than the caliber of the rifle in which it was used and, as such, made it easier to load, overcoming the most important objection to muzzle loading rifles. It was a great improvement on the patched rifle ball used by earlier rifles.

The new bullet was more accurate and capable of flying further than the traditional spherical ball it replaced. Such was the impact of the new bullet that Secretary of War Jefferson Davis, ordered all Springfield muskets returned to the armories to have their barrels rifled. However, tradition dies hard in the world of

firearms and, to this day, any cartridge with a solid bullet is still referred to as ball ammunition.

The definition of long range was about to be rewritten for the first time since the introduction of the Kentucky Rifle. The Minié ball ammunition consisted of a bullet wrapped in a paper pouch filled with powder. The soldier only had to tear open the base of the cartridge with his teeth to begin loading. Incidentally this brought about the first serious medical examination of infantry recruits and with it a physically disqualifying condition for a new soldier. Up to this time about the only physical requirement for a recruit was that he be breathing. Now he was required to have two fully usable opposing teeth for without teeth with which to tear open the paper cartridges he was useless for as an infantryman.

The paper cartridge was torn open and the powder charge poured down the barrel. A steel ramrod then seated the bullet and the paper, which formed a wad between powder and ball. The last step was to place a percussion cap on the nipple of the lock and the rifle was ready to be fired. Each soldier was now armed with a rifle that was accurate to about three times the distance of previous rifles, and had a maximum range of 1,000 to 1,200 yards. An additional advantage was that the speed of reloading with paper cartridges was much faster than with ball and powder flask thereby increasing the volume of fire that might be delivered in a period of time.

As military rifles developed, the recreational use of firearms also progressed. Around the beginning of the 19th Century some gunsmiths had begun to produce a rifle used for competition. These flintlocks were heavy, mounting octagon barrels of 38 to 40 inches in length, had full stocks, double set triggers, and used metallic tube sights. The competition rifle would continue to develop with such innovations as the addition of cap locks; pinhead front sights coupled with adjustable micrometer rear sights, and improved types of rifling such a gain twist. The later match rifles were equipped with false muzzles and bullet starters to allow a paper patched bullet to be loaded with out deformation. Attention to this small detail could double the accurate range of a particular rifle.

After about 1840, according to no less an authority than Captain Ned Roberts, matches began to be fired at ranges of 100 to 200 rods, a rod being 16.5 feet, or 550 to 1100 yards with some regularity. When the Civil War began these rifles, and riflemen, would figure prominently in the selection of sharpshooters to serve under Colonel Hiram Berdan.

As the smoke in Charleston Harbor cleared and the defeated Union garrison of Fort Sumter marched out of the battered fortress, thousands of men flocked to the colors, be they the 'Stars and Bars' or 'Stars and Stripes'. Of all the men, just a small proportion were skilled marksmen, experienced at hunting or competition, and willing to put their particular skills at the service of their respective governments.

The Confederacy, while long on martial spirit and outdoor and hunting skills, lacked manufacturing capability and the rifles used by southern sharpshooters were largely Whitworth and Kerr rifles that were slipped past the Federal naval blockade. The soldiers designated to use the expensive British rifles were chosen from those who had demonstrated superior marksmanship skills. They were not organized into bodies, as were the sharpshooters of the Union. By early November of 1863 the *Richmond Daily Examiner* would boast "We have a wonderful gun in our Army, the Whitworth rifle. It kills at 2,000 yards, more than a mile." Hundreds of the British target rifles found their way into the hands of Confederate troops.

Originally designed as a 45-caliber rifle, with a polygon bore, the Whitworths were rifled at a rate of one turn in 20 inches and shot a hexagonal bullet. However, the Confederate troops used a 530-grain cylindrical bullet. The British Government never adopted the percussion cap muzzle-loading rifle for military purposes but 40 of them were manufactured for use in the 1860 meeting of the British National Rifle Association where they proved their worth. The rifle was equipped with metallic leaf sight that was graduated to 1200 yards and many were fitted with a 14.5-inch low power Davidson telescopic sight mounted on the left side of the rifle. Rifles similar to these were manufactured and

shipped to the Confederacy where the sharpshooters generally relied on the globe sights, as the telescopic sights were easily damaged.

Confederate snipers and their Whitworth rifles accounted for a large number of Federal troops and officers. Perhaps the most famous long-range sniping incident of the Civil War occurred at the Battle of Spotsylvania on May 9, 1864. With his troops ducking for cover because of sporadic small arms fire, Union General John Sedgwick, demonstrated his bravery by remaining standing as he rallied his men by gently chiding them. 'Uncle John', as he was fondly known to his troops because of his unselfish and warmhearted character, called out, "They couldn't hit an elephant at this distance!" They would be his final words. Sergeant Charlie Grace of the Fourth Georgia, some 800 yards away, had Sedgwick in his sights and squeezed the trigger of his Whitworth rifle. The dead general, shot in the head, fell into the arms of an aide

The Confederate sharpshooters proved to be a valuable and potent asset. While taking off Federal officers and troops at long range was good for the moral of the southern troops, the real worth of the sharpshooters was in keeping opposing troops under the constant threat of well aimed fire. The southerners often used its limited assets of skilled marksmen to try to neutralize the overwhelming strength of northern artillery by harrying the Federal gun crews with well aimed rifle fire.

While the south employed its sharpshooters in small independent teams the north took a more traditional approach in application but an innovative view of equipment. With the advantage of its industrial might the Federal forces formed two large units, the 1st and 2nd United States Sharpshooters under the command of Colonel Hiram Berdan. Berdan's Sharpshooters were armed with mass produced rapid fire breech loading rifles and placed as skirmishers ahead of the main line of battle.

Just as the southerners had issued its precious Whitworth and Kerr rifles only to shooters of known quality the requirements of the United States Sharpshooters required a man to demonstrate a high level of skill. The prospective sharpshooter had to be capable of shooting, "...a string of 50 inches

in 10 consecutive shots at 200 yards with globe or telescope sights from a rest....". Shooting a string was a traditional scoring method by which a wooden peg was inserted into each bullet hole on the target. A string was then stretched from the center of the aiming point around each peg and back again, each shot in turn, with its total length determining the winner of a match. A group meeting the 50-inch standard would be about five inches across, some two inches larger than the X-ring on the present National Rifle Association short-range target. When a company of 100 New Hampshire sharpshooters under a Captain Jones reported for duty the best string recorded was a phenomenal ten inches, shot by Jones, while the average string was 30 inches.

Many of Berdan's men came with their own competition rifles and were paid a bounty for bringing them. These personal rifles, along with some purchased by the government, would be used for special sniping activities that required long range accuracy. The troops would be issued a standard shoulder arm for day-to-day work, their favorite being the Sharps Model 1859.

Berdan's command became one of the most famous units of the war. They were effective as both skirmishers and sharpshooters, feared by the enemy, and established the primacy of breechloading small arms. Berdan's men boasted they were responsible for killing more of the enemy than any other unit in the Federal army.

By the time of Lee's surrender of the Army of Northern Virginia at Appomatox Courthouse the definition of long range had been altered by technological advancements. From the early 1700s until the Civil War, a shot at 200, perhaps 300 yards, was the ultimate in long-range accuracy. As the states were reunified and began its westward expansion, a successful shot of 600 yards, or more, was the new standard. The first to take advantage of the advancement in firearms technology were the competitor and the hunter.

For the better part of the first half of the 19th Century the hunters and trappers who began the economic exploitation of the far west needed a reliable firearm and a good knife. If one were to believe popular fiction, not one of those hearty souls that ventured into the vast expanses of Indian country went without

a Green River knife on his hip and a 50-caliber rifle made by Saint Louis Gunsmith Jake Hawken in the crook of his arm. True as we may wish it to be it seems that Hawken Rifles, fine pieces that they were, were usually sighted in for 125 yards and fiction has far outstripped fact in the case of the knife and rifle of choice for that breed of adventurers that would become generically known as “Mountain Men”.

The true long-range rifles of the old west were those used by the generation of hunters to follow the Mountain Men, the buffalo runners. Using carefully handloaded ammunition, both for accuracy and economy, and a telescopic sight mounted on a Sharps or Remington rifle, these professional hunters were consistently deadly out to 500 yards. In several documented cases these rifles were capable of hitting a target in excess of 1,000 yards. This seems to be no small feat for a rifle with a bullet size in the range of 40 to 50 caliber. Experts of the time swore by the .45-120-550 Sharps with paper patched bullets. A .45 rifle with a black powder charge of 120 grains was capable of pushing a 550-grain lead slug with good accuracy. The Ballard, in .40-70 and .40-90, was also held in high regard.

Noted buffalo runner Frank H. Mayer recorded that a retired fellow runner of his acquaintance made a habit of shooting 10 rounds a day at a measured 1,000 yards each day for recreation. He alternated between two Sharps, one .40-90-420 and the other .45-120-550. After shooting 350 groups sworn evidence, perhaps with a demijohn in one hand and Bible in the other, indicated that not one group was larger than 26 inches while the majority averaged about 20 inches.

The buffalo runner needed a heavy rifle of large caliber to kill the animals swiftly at long range as well as handle the high rate of sustained fire needed to fell enough buffalo to make the time spent economical. He employed it with crossed rest sticks, the forerunner of the bipod. The popular rest was nothing more than two stout staves about 40 inches long joined together about four inches from one end. The rifle was placed in the short apex while the longer ends, which had been previously sharpened, were planted into the ground.

From this rest the hunter could assume the sitting position and begin his harvest.

Sitting, while shooting from rest sticks, was the preferred position for several reasons. First, and probably most importantly, of all it allowed an alert hunter to keep his eye on his surroundings and have early warning of approaching hostiles. The rifle, perched a yard or so above the ground, was very steady and made less noise and dust, as would be the case with the prone position. The greater distance between the rifle and the ground lessened the rifle's report, reverberation, and vibration through the ground while allowing the breeze to carry away the powder smoke. The buffalo were less likely to be spooked and this allowed the hunter to get within 250 or 300 yards of a herd and to stay there while he killed the day's quota.

Perhaps the most fêted long-range shot by a buffalo runner was that of Billy Dixon at Adobe Walls in June of 1874. Dixon was staying north of Amarillo, near the site of the abandoned Bent Brothers trading known locally as Adobe Walls, with some two dozen hunters and teamsters.

Before dawn approximately 400 to 600 Comanche, Kiowa, Arapahoe, and Cheyenne warriors, surrounded and attacked them. The surprised hunters dropped what they were doing and, grabbing up their rifles, made for the saloon. The experienced buffalo runners set up shop and methodically shot into the charging masses just as calmly as they would a herd of milling buffalo. By noon the mass charges had ceased in the face of the accurate fire and the attackers took to individual action, crawling in close under the cover of the tall grass.

For almost two days the Indians kept the hunters besieged. When the Comanche Chief Quanah Parker was wounded, they abandoned the battle. The survivors of the siege were forced to remain for several more days as their horses had all been killed or run off. From time to time small bands of Indians would appear to silently scan the battle site from a safe distance.

Dixon spotted just such a group on a bluff nearly a mile away. Picking up his 50 caliber Sharps, he checked the conditions, ran up his sights, steadied the rifle, and squeezed off a shot. The smoke had cleared by the time the heavy

bullet and sound reached the mounted Indians, pitching one of them from his horse. His startled companions scattered but returned to recover their fallen comrade. Later a government survey team, who happened to be in the area, measured the distance at 1,538 yards. The feat would become known as “The Shot of The Century”. Given the conditions, rifle, ammunition, and distance, it might also be appropriate to call it the luckiest shot of the century. The modest Dixon accepted the praise but insisted he was just firing at the group and was just lucky to get a hit.

Noted firearms writer Mic McPherson enlisted the aid of Bill Falin, chief ballisticsian at Accurate Arms and, in 1996, they attempted to duplicate the fabled shot. Noting the 1,538 yards is 0.87 miles they prepared a Sharps rifle and powder charge that was as close to authentic as possible. For a target they constructed a like size silhouette of an Indian astride a horse. After zeroing the rifle for the distance they commenced a series of record shots using a single aiming point. The mean radius of the shots was such that if the target had been the center of a group of mounted men it is a certainty that someone would have felt the sting of a heavy bullet after its 5 second flight through the hazy and dust laden atmosphere. Almost a century and a quarter separated the real shot from the reenactment but both were impressive examples of long-range marksmanship.

Around the same time that the Indians were dragging off their surprised comrade and Billy Dixon was swabbing out his barrel, long range shooting was a hot topic of conversation accompanying the post dinner brandy and cigars at various gentlemen’s clubs in the New York City area.

General George Wingate and some of his associates were concerned about the poor level of marksmanship evidenced by the recruits to the Union Army during the late Civil War. In an attempt to bolster national defense and encourage marksmanship they formed the National Rifle Association of America on November 21, 1871. They were able to enlist the aid of the New York State Legislature and on June 21, 1872 the newly constructed range, just 20 miles from New York City on at Creedmoor on Long Island, was opened with a major

match pitting teams from the National Guards of various states and the regular army. Events in Great Britain would soon thrust the new facility into the international spotlight.

For some years eight man rifle teams from England, Scotland, and Ireland had vied for the Elcho Shield. The contest required the teams to fire at ranges of 800, 900, 1,000 and 1,100 yards. When, in 1873, the Irish won the match for the first time they were so enthused that they issued a challenge to the United States to engage in a world championship. Not knowing of the existence of the NRA, the Irish directed the challenge to The Amateur Rifle Club of the United States. The president of the Amateur Rifle Club happened to be General Wingate who picked up the gauntlet for the NRA. Considering that the club had barely five-dozen members and no experience at ranges beyond 500 yards it was a bold reply. The match was fired on September 26, 1874 at Creedmoor. It would be more than a contest between nations; it would also be one of competing technologies.

The American team fired breechloading cartridge rifles made by Sharps and Remington while the British Empire preferred Rigby or Metford muzzleloaders. The Remington rolling block rifle became known as the "Long Range Creedmoor Rifle." It was designed, and its manufacture supervised by noted marksman L.L. Hepburn. The rifles were chambered in .44 with 90 grains of black powder pushing a massive paper patched 550-grain lead bullet.

The rear sights, copied from the English, were of a vernier tang style that mounted just behind the receiver, or near the heel of the butt stock, depending if the competitor was shooting either the prone or supine position. The front sights were of the wind gauge style. In original form they were dovetail blocks that were lightly tapped with a tool for windage adjustment, later a more accurate and easier to use horizontal vernier was employed for left or right changes. The rifles of both sides used heavy loads of black powder that required them to be wiped clean after each shot, a necessity with paper-patched bullets.

The competitors took the line to shoot 45 record shots apiece at cast steel targets with a four point square bullseye. Each man would discharge 15 shots at

each of 800, 900, and 1,000 yards. There were no sighters. The match was tight all the way to the finish with just three points separating the victorious Americans from the Irish.

In a splendid example of sportsmanship, Major Arthur Blennerhasset Leech presented an ornate Victorian standing cup to the host team who placed it in national competition the next year as the Leech Cup. It has always been a long range trophy except for 1951 and 1952 when it was awarded to the highest scorer using the service rifle in the 600 yard Marine Corps Cup Match. The Leech Cup is the oldest trophy presented in shooting by the NRA. After the 1913 National Matches the Leech Cup went missing and was not found until 1927. The NRA responded by requiring that all trophies would be held at NRA headquarters and keeper awards would be given to the match winners.

The Irish again challenged the Americans in 1875 and invited them to compete at Dollymount, Ireland. The visiting team repeated its performance of the previous year, only opening the margin of victory to 39 points. The Americans then traveled to Wimbledon, the British range just outside of London, to compete for the prestigious Elcho Shield. It turned out that the rules excluded the American team and caused some hard feelings. To assuage the visitors the British National Rifle Association prevailed upon Queen Victoria's daughter, the Princess Louise, to present a large three-footed silver tankard to the Americans for competition amongst themselves.

The first winner of the massive trophy, now known as the Wimbledon Cup, was Major Henry Fulton. Fulton himself was honored with a trophy when, in 1987, International Shooting Hall of Fame member and Palma Alumnus Arthur C. Jackson presented a trophy to be awarded to the high scoring individual in the International Palma Team Competition in Fulton's memory. The Wimbledon Cup returned to the United States with the team and was placed in competition by Fulton. It has become the premier long-range prize for marksman in the United States, as it has never been contested over any distance other than 1,000 yards.

'The Great Centennial Rifle Match' was fired at Creedmoor the 13th and 14th of September 1876 as part of the celebration of the 100th anniversary of the

independence of the United States. The fledgling National Rifle Association of America hosted eight man teams from Australia, Canada, Scotland, and Ireland for the first meeting of what would become the longest continuously running international rifle match in history. The target was a six by ten foot frame of canvas that had a 36 inch black five ring, or bull's eye, and a 54 inch four ring printed upon it. The remainder of the inner six by six foot section, outside of the rings, was worth three points. A two-foot wide panel ran down each side and was valued at two points. The teams fired twice across the 45 shot course in two days and when the billows of black powder smoke had cleared, the home team had won the first Palma Match.

The Palma Matches quickly became the preeminent long-range international shooting event. However, it would be a misnomer to refer to these early events as prone matches as most of the shooters fired from the popular back or 'Texas' position. Lying supine, with their feet pointing towards the target, the shooters would rest the rifles upon their legs or feet and blast away. The long barreled rifles and the tall vernier sights of the time favored this seemingly ungainly, but strong, position making it a less formidable task to shoot than it looks. The 32 to 34 inch long barrels and sights mounted close to the butt gave shooters an incredibly long sight radius.

The Palma has evolved into the "The World Long Range Shooting Championships, Individual and Palma Team Matches". It has gone through many changes since 1876 and has developed its own set of rules and requirements in regard to target, rifle, and cartridge. The United States has, overall, experienced great success in this special match that is held at three to five year intervals. Teams consist of 16 firing members and two alternates along with a support group of a team captain, adjutant, five coaches and a non-firing armorer, with total team size not to exceed 26 members. The current rules allow for the use of a manually operated rifle using .308 Winchester or 7.62mm NATO ammunition loaded with the Sierra 155 grain Palma bullet or its equivalent. The rifle must mount metallic sights and not weigh more than 6.5 kilograms. It is interesting to note that the rules state that the use of a sling is not mandatory.

The match is fired at 800, 900, and 1,000 yards or 700, 800, and 900 meters depending on the range available to the host nation-the distances being almost identical-and at the National Rifle Association of America's Long Range Target. The Palma is a match of great distinction, so much so that nations, or rifle associations, that are celebrating special events or anniversaries apply to host the match to add extra glamour to the occasion.

The advent of smokeless powder did not spell the end to long range black powder shooting. It is very much alive today. The NRA conducts a series of black powder competitions with the Castle Trophy awarded to the winner of the Creedmoor Match. This trophy, which first came to the United States in 1873, and was awarded to Colonel John Bodine as the 1874 International Champion at Creedmoor, is now awarded to the competitor who bests all comers over a 30 shot match, ten shots each at 800, 900, and 1,000 yards. The rifle must be a single shot black powder cartridge arm with period sights and be shot from the supported prone position. The trophy was originally a gift of Lord Elcho, the patron of the Elcho Shield, to the 25th Lanarkshire Volunteers to commemorate their victory over England and Ireland in a match in 1871. The trophy went missing sometime after 1879 and eventually found its way back to the NRA, by purchase, in 1985. For those that say that mysterious things come in threes, the loss of three major long range trophies, the Palma, Leech, and Castle, certainly fits into this category.

United States Army Lieutenant Colonel C. J. Shaffer, who served as the Director of Civilian Marksmanship, Executive Officer of The National Matches and later as a member of the NRA competitions staff, donated a highly engraved German schützen rifle as a trophy to be awarded to the high scorer in a match demanding the use of a single shot black powder cartridge arm with period sights. To win the Shaffer Trophy one must shoot twice across a course of fire that requires ten shots standing at 200 yards, ten shots sitting with crossed sticks at 300 yards, and a final stage of ten shots prone at 600 yards with crossed sticks.

While high power held the competitor's and public interest at the end of the 19th century, and into beginning of the 20th, 22 caliber rimfire smallbore was beginning to make some inroads into outdoor shooting and would add another meaning to the lexicon of long range. At this time the use of .22 rifles was looked upon as primarily an indoor sport for distances up to 25 yards. During World War I Army Captain Edward C. Crossman saw that the smallbore rifle was the perfect tool to teach recruits the fundamentals of marksmanship at much less cost and without the need of extensive outdoor range facilities. During planning for the 1919 National Matches "Ned" Crossman suggested that it was time to schedule some smallbore competition to run in conjunction with the service rifle shooting.

The National Rifle Association thought it a good idea and wasted no time appointing Crossman to set up just such a program. Time was short, the NRA gave Crossman the go ahead in June and the matches were scheduled for August, so Crossman enlisted the aid of some of his friends. Having never organized a smallbore tournament of this scale, Crossman relied upon a British officer, Captain E.J.D. Newitt, who had experience organizing the "miniature" rifle matches at Bisley, England. W. H. Richard of Winchester, Captain Grosvenor L. Wotkyns of the US Army, and Frank Kahrs of Remington Arms Company were also pressed into service preparing the tournament. The program included a slow fire 200-yard stage fired on a reduced military 1,000 yard bull's-eye with a 7.2 inch five ring surrounding a 4-inch V ring. Unfortunately torrential rains washed out the 200-yard firing line and the match was cancelled.

While the traditional ranges for outdoor smallbore prone are 50 and 100 yards, during the years between World Wars there were two long-range smallbore courses of fire that were quite popular. The first was the Palma-fashioned after its high power brother-that allowed two sighters before 15 record shots at each of 150, 175, and 200 yards. The second match was known as the "Swiss Match". The target was a 1/5th reduction of the standard six foot by ten foot 1,000 yard 'C' target, designated the 'C5" for smallbore matches. The black bull's-eye was a 7.2 inch five ring with a four-inch V ring. After the allowed two

sighters, the shooter could continue firing for record as long as the shots stayed inside the five ring. Any shot straying out of the black meant an instant end.

These long-range any sight smallbore matches were most popular in the Middle Atlantic States. Popular venues were Sea Girt, New Jersey, Camp Ritchie, Maryland, and Peekskill, New York. From time to time a 300-yard match was held in conjunction with the more common Palma and 200 yard courses of fire. The standard military "A" target, with its ten inch black five ring, was used in this ultra long range smallbore match.

Limited to just two sighting shots a wise long-range smallbore competitor would have taken the time to obtain a good 100 yard zero for both elevation and windage with quality match ammunition. From this point it was simply a matter of clicking up the Winchester 5A, or it's successor the Lyman 5A telescopic sight a matter of 20 minutes from 100 to 200 yards and 21 minutes more for 300 yards, assuming the bases were 7.2 inches on center. In the mid 1930s, when Lyman, Unertl, and Fecker introduced scopes with larger diameter objective bells and higher magnification, shooters had to go to taller bases to keep the scope clear of the barrel as the externally adjusted scopes were elevated.

At a time when the quality of ammunition and rifles was such that perfect scores at 100 yards were worth space in shooting publications some of the runs of consecutive fives and Vs at 200 yards are phenomenal. Famed belly shooter Thurman Randle, of Texas, and his Winchester 52 rifle "Bacon Getter", established a national record in 1933 of 196 bulls that would stand for seven years.

During the summer of 1940 the grandly titled "Smallbore All Range Championship" was held at Poughkeepsie, New York. This anysight event called for ten record shots at 50, 100, 150, 175, and 200 yards with sighting shots allowed only at 50 yards. Military style pit service was provided at 150 yards and beyond to insure that the shooters might see shot location. The final match of the day was the Swiss Match. A young Art Jackson lay down at 4 PM with half of a box of Western Super Match ammunition to try his luck. Four and a half hours after he started, the setting sun made it difficult to see the cross hair reticule of

his scope and, finally out of ammunition, light, and feeling in his left arm, he was forced to stop with an unofficial count of 325 bulls. The scorekeeper's official tally marks showed one less and his scorecard declared he had fired a new record of 324 consecutive fives with 238 Vs. The feat stands as a monument to both the endurance of the shooter and the generosity of the bystanders who donated some six boxes of Super Match ammunition to keep him going when his scanty supply gave out.

The Second World War all but shut down competitive shooting for the first half of the 1940s. The war had both a positive and negative effect upon long range shooting. When the standards for the award of the Distinguished Rifleman Badge were reviewed after the war, the 1,000-yard stage was dropped. As a result, for almost two decades shooting at distances beyond 600 yards were pretty much restricted to the National Matches. It would not be until the Palma resurgence in 1966 that attention would be focused on long range shooting other than the Leech and the Wimbledon matches shot at each year at Camp Perry.

On the other hand, troop ships had disgorged hoards of the returning veterans with marksmanship skills that they wished to continue to hone on rifle range and in the hills. With them also came an unknown number of souvenir rifles of all makes and descriptions, as well as a desire to see just how well they might shoot. In formal competition the numbers of people participating in NRA events soared.

However, there were those who were not interested in National Match Course shooting. What they sought was one hole accuracy based upon experimentation with powder, ball, and rifle. As early as 1881 William Wellington Greener had written about a special class of target rifle that he described as “ a sort of scientific toy” with which the end is absolute accuracy by use of any artificial aid that an active mind can conjure. Today we know such a firearm as a bench rest rifle. Starting with informal activities by the Puget Sound Snipers Congress in 1944, on the west coast, and some matches in Machias, Maine on the Atlantic side these varmint hunters and accuracy fanatics soon met at the Pine Tree Rifle Club in Johnstown, New York on Labor Day weekend of 1947.

By the end of the weekend the assembled men had elected officers and the National Bench Rest Shooters Association was born. Harvey Donaldson, Townsend Whelen, Sam Clark, Ray Biehler, Al Marciante, Warren Page, and Lucian Cary were some of the legendary firearms experimenters who laid the foundation for the development of bench rest competition as it is known today.

Center fire bench rest competition is usually shot at 100 and 200-yard distances, with an occasional 300 yard match added if the range construction permits. In this game the group size, not placement, is the criteria for success. The bench rest community has been responsible for many of the developments that have improved the overall accuracy of target rifles used in both NRA and international competition. As far as long-range bench rest is concerned the ultimate came about in 1967 when William Theis, George Reeder, and David Troxell put together the first 1,000-yard benchrest match across the lands of the Lynn and Waltz farms in the Williamsport area of Pennsylvania. The first match, held on October 1, 1967 was won by James Barger who wielded a 7mm Remington 40X and banged out a 16 inch group.

Within a year "The Original Pennsylvania 1000 Yard Bench Rest Club" was incorporated and had obtained a 99-year lease to land from shooter Gene Plants. Construction followed and pits and a concrete pad were soon in place to be followed, eventually, by ten covered firing points and a clubhouse. The club runs a series of matches each year from May to November with a hundred or more shooters attending each shoot.

Much of firearm development has been a by-product of military necessity. The relative short distances and massed troops of World War One brought about the formalized training of soldiers to insure competent marksmen to use specially manufactured or modified rifles for sniping. As a rule the distances were somewhat short, some 100 to 300 yards, but from time to time there was a need for a hard-hitting rifle at longer ranges. The British used what was known as "African Rifles", large bore high shock power firearms that would otherwise be used to take down elephants, rhinos, and hippos.

The Germans developed the bolt-action 13mm Mauser anti-tank rifle while the United States called upon John Browning and Winchester to devise a firearm to meet the challenge. What would become the classic heavy machine gun of the 20th century-and perhaps beyond, the .50 Browning Machine Gun was ready to be tested but developed too late for employment in France. During the years between wars the .50 BMG would undergo further development and develop into the classic M2 familiar. The M2 was employed, on a very limited basis, in a sniper role during the Second World War. The Perfex Corporation of Milwaukee, Wisconsin manufactured the 3.25X M1 telescopic sight for use on the BMG and, in good conditions, the gun and sight combination were accurate to over 2,000 yards in single fire mode.

The long-range capabilities of the .50BMG cartridge would begin to be fully exploited during the Korean War by two innovative and inventive soldiers, Frank Conway and Bill Brophy. Conway, who won back-to-back Wimbledon Cup victories in 1955 and 1956, lead the way in 50-caliber employment. As early as 1946 he was championing the BMG long range concept. He adopted a German PzB39 anti-tank rifle to the big fifty and demonstrated during the course of its development its effectiveness at 1,400 yards, with 2,800 yard shots being feasible.

The war in Korea eventually reached a stalemate that was reminiscent of the trenches of World War One, setting the stage for a rebirth of sniper activity. Brophy, a Distinguished Rifleman and Ordnance officer, found that the state of the sniper program within the Army in Korea was poor. The equipment, mainly M1Ds and M1903A4s, were in poor repair, the infantrymen assigned them were not trained, and the supply and maintenance system was incapable of providing adequate support. Brophy reached into his own pocket and purchased a Winchester Model 70 and a 10X telescopic sight. Within short order he made effective use of the combination and believers of the Army snipers. However, there were many targets of opportunity that were far outside of the range of the 30-caliber Winchester's 1,000-yard capability.

While rummaging around a cache of captured enemy equipment Brophy came across a Soviet 14.5mm PTRD1941 anti tank rifle. Building on Conway's pioneering work he had it fitted with a BMG 50 caliber aircraft barrel and attached a skeleton stock, cheekpiece, and bipod. A Unertl 20X telescopic sight was mounted upon it and this particularly homely looking collection of welded pipe and spare parts was soon making distances between 1,000 and 2,000 yards most uncomfortable for the enemy. Brophy would go on to even greater fame in a second career in firearms when, after retirement, he served as Marlin Firearms Company's Senior Technical Manager, author of seminal books on the L.C. Shotgun, .30-40 Krag, 1903 Springfield, and the Springfield Armory, and competitor with the Palma Team.

Within the shooting community there exists a less formal, but no more intense group of competitors, who are very much cut from the same bolt of cloth as the benchrest shooter-the varmint hunter. Not as formally organized, but no less fanatical about accuracy, these long-range hunters often deal in distances that certainly would be considered long range. Varmint hunting may best be described as a cross between bench rest and hunting. The major differences being that the distances are longer than bench rest's traditional 200 yards and the targets are smaller than the average deer hunter's quarry.

Varmint shooters consider distances in excess of 850 yards to be ultra-long range. To be successful they quite often are involved in customizing rifles, ammunition, and optics. Armed with a truck loaded with gear that might include a bench rest table, sand bags, a mechanical rest, range finder, and an array of long-range optical gear the varmint shooter seeks out rockchuck and prairie dog colonies. After scouting out an area the truck is unloaded, quite often in the dark hours before dawn to take advantage of the most favorable shooting conditions of the day, the quiet time just after dawn. After setting up shop the shooter and spotter spend some time observing and becoming familiar with the target area and the calm conditions at day break.

May 31, 2000 dawned as a perfect morning on a mesa near Pueblo, Colorado as Kreg Slack and his spotter Nadine Parry peered out at a prairie dog

town some distance away. The light was coming up, the air was clear, it was still too cool for mirage to build, and there was not a breath of wind. Slack was very familiar with the area as he and his regular shooting companion, Bruce Artus, had been working up an Dillon/McMillian stocked Obermeyer barreled Winchester Model 70 action in .308 Ackley Improved for some long range shooting at the site. He was shooting at a 16-inch metal gong that the pair has earlier set as a target. As Kreg peered through the Leupold scope, modified to 40X by Premier Reticules, he noticed a prairie dog lounging in the sun near the gong. Taking up the slack on the two-ounce Jewell trigger he broke the shot.

Pushed by 85 grains of IMR 7828, a 338-caliber 300-grain Sierra bullet was in the air at a muzzle velocity of 2,750 feet per second and quickly struck near the unsuspecting varmint. Making a quick adjustment Slack fired another round that kicked up another column of dust just a foot or so from the now curious, but not alarmed, animal. While his target looked about to investigate the source of the strange dust spouts Slack made a quick adjustment to the scope knobs, squinted through the scope, and fired a third shot.

Much like General Sedgewick the fearless dog was taken unawares by a long-range shooter. The distance was ultra long range not just by varmint shooter standards, but also by anyone's reckoning. A laser range finder measured the distance at an astounding 3,125 yards! The shot at, 1.78 miles, is the world's longest successful, recorded, and verified aimed rifle shot to date.

The history of long range shooting in the United States is fast approaching 400 years. Since European explorers and colonists first brought gunpowder to these shores the definition of long range has grown along with the nation. While the United States may have reached the extent of its physical boundaries the imagination, ingenuity, and success of those living there who seek to hit a target at further and further distances has not.