

The Percussion Target Rifle for Single and Double Rest Matches

by Richard Hummel (photographs by Eric A. Bye)

Part I: Evolution and partial history of muzzleloading target shooting

All rifles are “target” rifles in the sense that they are used to strike a distant target as close as possible to the point of aim. Our focus here is on the clan of percussion rifles designed to be shot from a bench, with a single or double rest, with iron or telescopic sights, at distances far beyond those encountered in the hunting field.

While target shooting with hunting rifles was part of frontier social life, the more specialized rifles we meet here are from more prosperous times and places, not the developing frontier.

In my collecting I have found specimens of percussion target rifles from over a dozen states, leading me to conclude that bench rest target shooting appealed to shooters everywhere! I hypothesize that such local target competition groups flourished most vibrantly from the 1840s through the 1880s. The rest of that story is worth pursuing another time.

I suspect that target rifles are more likely to have survived than have hunting rifles. Target rifles were more likely handled, cleaned, and stored more carefully than their hunting cousins. The target/hunting rifle dual purpose rifle (i.e. provisions for installing a lollipop tang sight) is an important segment of this clan. The extra weight of the target/hunting rifle barrel would

reduce its attractiveness for hunting unless stand hunting was practiced.

A note on the specimens arrayed for your inspection is in order. I have collected my examples of the geographically far-flung points of origin without considerations of physical condition. I always convinced myself “When am I going to find another specimen from Michigan/Iowa/ Missouri?” So each encounter was a target of opportunity and I pulled the trigger. Any target rifle has a likely story to tell, though most of it is ir retrievable. But, I will share the wanderings of my imagination for your assessment.

The physical condition of these specimens varies widely. Condition closely correlates with collector market value. I love high-condition pieces, cased, with all accessories present. How do such items survive in that condition? Unused? Inaccurate and therefore uninteresting? A firearm type may have been birthed late in its epoch and therefore not campaigned on the target ranges to any great extent because the target ranges/events headed toward extinction.

The well-used examples seem more likely to have held the attention/interests of their owners through the years. Of course, the bedraggled condition of a specimen may testify to its ultimate fate as children’s plaything.





Unsigned, G.E. Hilliard, D. Hilliard

Makers' names are important and relevant, but have always been of dim interest to me. Of course, where they worked, moved to and from are important in suggesting local market conditions for hunting/target-shooting arms. Their dates of gun making activity are also relevant and fascinating to me because I am interested in establishing how late/long the crafting of percussion arms, especially target arms continued. (We will visit one specimen, a "slug" gun, from Iowa displaying an 1898 date on its barrel.)

Let's go to the classic text, delivered to a grateful audience by Ned Roberts, *The Muzzle Loading Caplock Rifle* (1952 edition). For the complete versions of Roberts' explanations and specifications regarding muzzle loading target rifles see pp. 119-127.

About 1835 a muzzle-loading percussion lock rifle with heavy, full octagon barrel 30 to 36 inches long, using the flat point picket bullet with linen patch, with the end of the muzzle turned cylindrical to fit the guide starter or bullet starter, usually called a "turkey rifle" or "match rifle," became popular in the eastern part of the United States. These were usually 36, 38, 40 or 42 calibre, although some were 45 or 50 calibre; were fitted with single 'or double set trigger, fine shaded pin-head front, and open rear sight on the barrel with a rear peep sight screwing through the upper tang, and gave considerably finer accuracy at 40 to 60 rods than any other rifles before in use. These usually weighed from about 9 to 15 pounds and were designed for men who wanted a rifle principally for use in turkey shoots and "shooting matches," but which would also be suitable for shooting deer, bear and similar big game. The most widely known makers of these turkey or match rifles were Wm. Billinghurst, N. Lewis, Edwin Wesson, James & Ferris, D. H. Hilliard and P. A. Reinhart.

The Billinghurst rifles were largely used in the Mid-West and Western parts of the country, while those of Edwin Wesson, N. Lewis, James & Ferris, and Hilliard were used in large numbers in New York State and the New England States. P. A. Reinhart of Loudonville, Ohio, learned rifle-making under Wm. Billinghurst and after becoming a master rifle-maker, returned to Loudonville, re-established his business there and made hunting and target rifles that were used chiefly by Ohio and Pennsylvania riflemen.

Ned Roberts details the invention of the false muzzle by Alvin Clark in 1840 and the advent of the picket (conical) bullet. These two innovations greatly improved rifle accuracy.

Since the so-called "picket," or conical bullet has such a short bearing on the lands and grooves of the rifle, it is especially difficult to load it perfectly and uniformly every time even by the use of the guide can be done with a rifle having both the false muzzle and the bullet starter with which the target rifle is equipped. If the bullet can not be loaded as perfectly in any rifle without the false muzzle, it is simply impossible to secure as fine accuracy-make as small groups-at 40 rods or more with any rifle that does not have both these very essential parts.

We therefore find that the "match rifles" which were made before 1840, regardless of who made them, never gave as fine accuracy, or made as small groups at 40 rods or more, as those made after that date and fitted with the false muzzle. Also, after the invention of this false muzzle we find that the accuracy of the best target rifles was increased to more than twice that of the best rifles without the false muzzle. This increase in the accuracy range was the result of the use of the long cylindrical, and cylindro-conoidal, bullets using the oiled

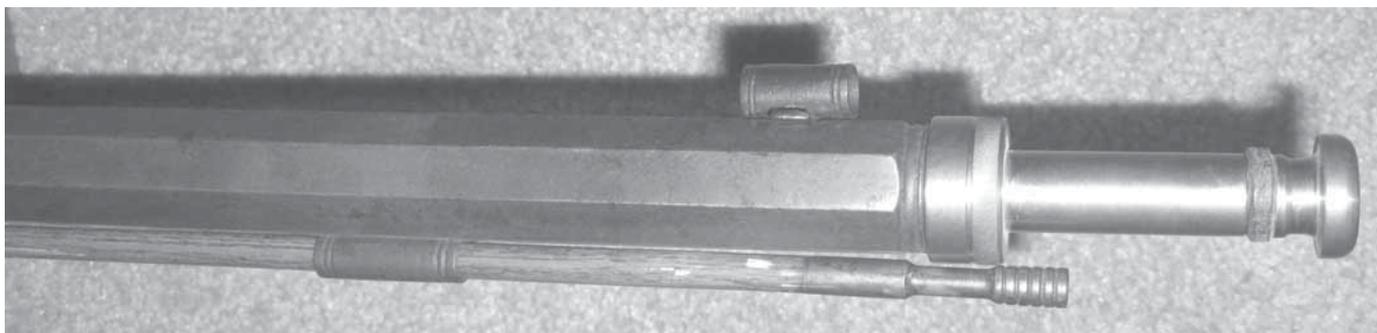
paper patch 'of various types, combined with the further improvements in the manufacture of gunpowder, improved percussion caps and the ability to load these long bullets with their paper patch perfectly by means of the false muzzle and bullet starter.

In addition to the above improvements, we had in this country from about 1840 to 1890 a large number of riflemen who used the muzzle-loading target rifle for their target shooting and who made a very careful study of these rifles, developed the compound type of bullets, improved the moulds for casting the parts of these bullets and the swages for perfectly shaping them in order to improve the ballistics, range, and accuracy of these rifles.

Roberts shares a few generalizations about the types of matches conducted:

Soon after the close of the Civil War, Norman S. Brockway was elected secretary of the National Rifle

Club and held that office as long as the club was in existence. In 1868, as near as I can learn, the place for holding their annual match was changed to Vernon, Vermont, and continued to be shot there until the close of their last match in September, 1896. In these matches the rules of the club stated: "Match to be 5 strings of 10 shots each. Any style rest allowed that does not confine the rifle or add weight to it. Sights, Any. Time Rules. String Measure: Distance 40 rods." Their "standard" weight of rifle was 20 pounds; all over that weight had 1/8 inch per pound deducted from each 10-shot string, while rifles under 20 pounds weight had 1/8 inch per pound added to each 10-shot string, in order to equalize the weight of the rifles above or below their "standard," and appears to have been a perfectly satisfactory method of handicapping competitors in rifle matches of this kind. The club and its members un-



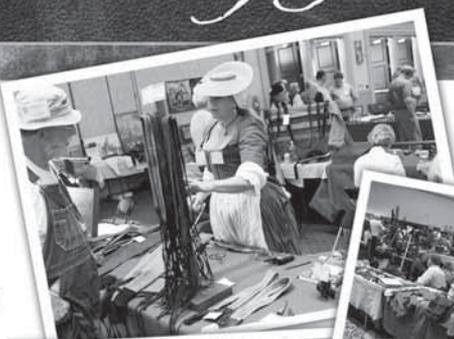
Bullet guide with starter in place

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doubtedly did more to promote interest in the development of super-accurate rifles for shooting at 40 rods than any other rifle club in this country. The members of the Massachusetts Rifle Association, at the famous "Walnut Hill Range," near Boston, almost without any exception, used breech-loading rifles of various calibres and makes, and the first time I visited that range, in 1883, I did not see a single muzzle-loading rifle in use by any member or shooter. While this club has undoubtedly done more in years past to develop the super-accurate, single shot breech-loading target rifle, and the Walnut Hill Range is more widely known both in this country and abroad than any other rifle club in the United States, they have not accomplished nearly as much in improving and developing the most accurate shooting muzzle-loading rifles as the old National Rifle Club at Vernon, Vermont, accomplished during its existence.

The "string measure" method of scoring the groups in rifle matches [involved the following:], It was customary in the shooting matches of pioneer days for each man to provide his own "mark," "board," or target as we call it today. This was usually a charred piece of board-charred by burning as that makes an especially black color-about a foot square, with a piece of white paper in the center having a cross marked in the square, with a piece of white paper in the center, having a cross marked in the middle of it.

After the required number of shots had been fired by a man at his own board, it was brought to the

firing point, a wooden plug was placed in each bullet hole, a piece of string was held by one end at the center of the cross mark, the string carried around the wooden plugs in the bullet holes, back to the center spot and cut off. This string was then measured and the man whose string measured the shortest was the winner.

This was the old, pioneer method of string measure, but at some later period the method was changed and thereafter they measured with a piece of string from the center of the cross mark to the center of half of a round ball which each man provided and which was placed in each bullet in his board. The string was measured, the length set down on a piece of paper, the distance of the center of each half bullet from the center of the cross was measured in the same way and set down; then by adding these measurements the total length of the string was ascertained and the man having the shortest total was the winner. I believe this second is the method still in use by the riflemen in the mountain sections of Kentucky, Tennessee and the Carolinas today.

The third method of "string measure" as practiced in most parts of this country since about 1840, or earlier, is as follows: After a shooter has fired the required number of shots on his own target, it is brought to the firing point where some man who has been chosen as the "Measurer of targets," places the target over a piece of paper, pricks a hole with a small "scriber" through the center of the "bud," or center spot, and in the same way marks the center of







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each bullet hole. Then a pair of dividers are used in measuring the distance from the center of the "bud" to the center of each bullet hole, these distances recorded in inches, eighths and sixteenths, these measurements are added and the total is the "string measurement" of the group of shots.

This is the most accurate method of measuring, or scoring, groups shot with any calibre of rifle, but is too slow in operation to permit using it in matches where there are many contestants who each fire five shots or more, and is only occasionally used today by the men who shoot the muzzle-loading rifles.

The target that affords the most accurate method of scoring is, undoubtedly, the German Ring which has a center ring 1 1/2 inches in diameter counting 25 in the center of a black bull 12 inches in diameter and surrounded by rings 1/2 inch apart to the circumference of this bull, counting 24, 23, 22, 21, 20, 19 and 18 respectively. Thus by the use of this target, if a bullet cuts the 23 ring the shooter knows that his bullet is approximately 2 1/4 inches from the exact center of the bull, or if it cuts the 22 ring it is 3/4 inches from the center. This target was very popular during the 1880's and 1890's in the Schuetzen rifle matches with those fine single shot target rifles, and is, I am glad to note, again being adopted by clubs whose members have again taken up the shooting of these single shot breech-loading rifles. It should be adopted today by the National Muzzle-Loading Rifle Association for use in their outdoor rifle matches, as it is a far more equitable method of scoring than the National Rifle Association Targets now used in their matches.



The targets used in the matches of the National Rifle Club, as well as in nearly all the other muzzle-loading rifle matches, consisted of a piece of cardboard about a foot square with a black, or other color, circular paster called the "bud" in the center and having diagonally crossed lines indicating the center of the "bud," which was usually one inch in diameter. When you consider that the range was 40 measured rods from the muzzle of the rifle to the target, it will become apparent that in order to sight accurately on such a small spot, the old, long telescopes then in use certainly gave excellent definition even though they had a quite small field of view. Experienced riflemen today know that one cannot do really fine shooting on such a small bull with our present 8 power, modern telescopes having 11-4 or 1 1/2- inch objectives that give much wider field than the old-time, full length telescopes in use before, during and for some time after, the Civil War. Therefore, these old-time telescopes could not have been as bad and deficient optically as some of our present day "authorities" and "experts" would have one believe, else the marksmen could not have sighted accurately on such a small diameter bud or mark.

Ned Roberts was most familiar with the arms of the New England target matches/ranges. Our sample includes these, but also ranges to the west as far as Iowa and Missouri. I am not a target shooter. The assortment of rifles and their accessories may be flawed, altered, incomplete in ways I have not discovered. I will reveal what I can see and note. Don't hesitate to communicate any overlooked features of flaws you identify. *(This is a test!)*

Two bases for sorting the specimens confront me: weight class, suggesting target matches of specific distances; and state of origin, suggesting that percussion target rifle matches were held north, south, east, west, wherever men who liked to shoot, compete, and possessed the disposable income necessary to purchase these more specialized arms. In the remaining installments of this study we will take a close look at numerous grand old rifles. **MB**

- To be continued -

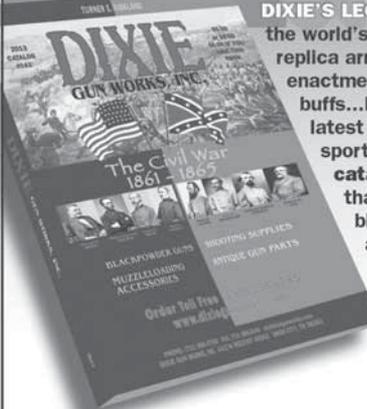


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