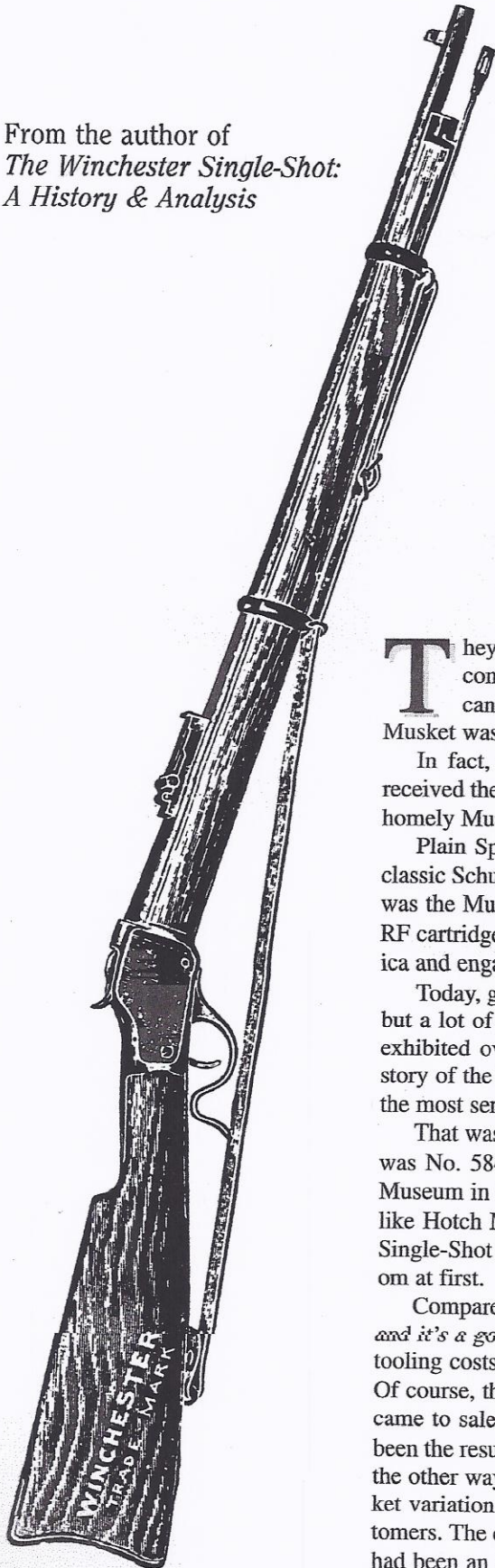


From the author of
*The Winchester Single-Shot:
A History & Analysis*



WINCHESTER'S SINGLE-SHOT MUSKETS

by John Campbell

They were not particularly attractive. They were heavy. And their design was completely unrelated to any general issue service rifle then in use by American troops. But despite these minor shortcomings, the Winchester Single-Shot Musket was one heck of a popular government and civilian training rifle.

In fact, if anyone were to determine the Winchester Single-Shots that actually received the most use in this world, the answer would most likely be the neglected and homely Musket.

Plain Sporting Rifles may have accounted for untold game in the larder, and the classic Schuetzens might well have been the scourge of 200-yard target matches, but it was the Musket that made riflemen. These Single-Shots fired literally millions of .22 RF cartridges downrange to help train military recruits, serve rifle clubs across America and engage countless young shooters in the wholesome sport of riflery.

Today, good specimens of the Single-Shot Musket are sought-after collector items; but a lot of them are still shooting with the same accuracy and satisfaction that they exhibited over three-quarters of a century ago. It's difficult to determine where the story of the Musket began. But for now, it seems as though February 16, 1886 makes the most sense.

That was when the first Winchester Single-Shot was made up in Musket "style." It was No. 584, chambered for the .45-90, according to records at the Cody Firearms Museum in Cody, Wyoming. The remarks column in the record book states "forearm like Hotch Musket." Eight months later, Winchester offered a Musket version of the Single-Shot in its catalog of October 1886. The reason why can be a little hard to fathom at first.

Compared to sporting or target Single-Shots, muskets didn't look particularly racy and it's a good bet that commercial musket sales would have barely made up for the tooling costs. Still, if you liked your Single-Shot in military dress, you could have it. Of course, the government contract Muskets were a different story altogether when it came to sales and profitability. Come to think of it, the military Muskets could have been the result of the commercial Muskets' availability. Then again, it could have been the other way around. Regardless, Winchester most likely decided to market the Musket variation in order to provide "teaser samples" of the Single-Shot for martial customers. The curious part was that they didn't make a lot of noise about it. The Musket had been an inglorious "line item" part of the catalog's price list for almost 20 years,



C.B. Winder at his roll top desk. Lieutenant Colonel Charles B. Winder was collaterally responsible for the development of Winchester's famous "Winder Musket." He was also a veteran of the Spanish-American War, a marksman of Palma Team stature, Inspector of Small Arm Practice of the Ohio National Guard, a rated military pilot and more. The rifles leaning against the edge of Winder's desk appear to be '03 Springfields, the service rifle that Winder's Single-Shot Musket was supposed to simulate.

Photo courtesy of the American Rifleman, National Rifle Association.

but was never illustrated or formally described until October 1905. Even at that time, the catalog was none too generous in its promotion:

Standard and only style made. Round barrel, 28 inches long, chambered for .22 Long Rifle cartridge. Weight about 8½ pounds. List price, Musket \$16.00; Sling strap, \$1.50 extra. Designed especially for military indoor target shooting and preliminary outdoor practice.

The rifle illustrated was a two-band high-wall Musket with what appears to be the Krag-style rear sight. Unfortunately, the catalog listing was a little behind the real world in this case. This rifle was actually introduced in January of 1905. It was initially offered in .22 Short and Long Rifle chambering and soon became known as the "Winder Mus-

ket" due to its association with Lt. Col. Charles B. Winder of the Ohio National Guard.

The Single-Shot's popular name, "Winder Musket," was never officially used by Winchester in any of its public sales literature. Internal use of the term was scant, but can be found in the W.R.A. Co. Sales Manual of 1938 as well as in a few pieces of inter-office memoranda. In the 1938 sales manual, it appears in Chapter One, *The Development of the Winchester*, and parenthetically under a photograph of a two-band Winder Musket with the Krag-type rear sight. But like "high-wall" and "low-wall," Winder Musket is a name that stuck.

In this case, however, the name adhered for a valid reason. The first tenuous link between Winder and this rifle occurred in April of 1904 when Winchester received an inquiry from Winder regarding the possible creation of a

.22 caliber military version of the Model 85. As it turned out, Winchester happened to be way ahead of Winder on this account. According to Winchester Arms Museum correspondence files, W.R.A. had apparently been working on just such a standardized rifle since late 1903.

In conjunction with this happenstance, they sent Winder a sample rifle, which had been assembled in January 1904. From Winder's description in a March letter to T.G. Bennett, the sample rifle had a 28-inch barrel, two barrel bands and 1892 sights. That was fine, but Winder saw ways to make the rifle even better and outlined his ideas in a letter to Bennett. The company was impressed and took Winder on as a consultant in April. His job for the next couple of months was to assist in the development of a refined Musket, one which would closely fit the needs of marksmanship training programs around the country.

Both Winder and Winchester achieved their goal. According to Winchester records, the first production example of the finalized Winder Musket, serial No. 96709, was shipped to Winder himself on November 21, 1904.

Shortly thereafter, an advertisement in the 1904 annual report of the secretary of the NRA stated that the new musket was introduced by C.B. Winder, who at that time held the rank of captain in his post as Inspector of Small Arms Practice of the Ohio National Guard. In January of 1905, a full year after the first Winder Musket was made, Winchester announced the production of a new .22 caliber Single-Shot, "designed specifically for indoor target practice by members of the militia organizations, as well as schools and colleges." More information was revealed in Circular No. 1, issued in 1905 by the office of the Adjutant General of the Ohio National Guard. Its author was none other than Capt. Charles B. Winder, Inspector of Small Arms Practice.

I believe that every one concerned is familiar with the various and continuous trouble we had trying to obtain results with the regulation gallery practice cartridges in the Krag, when firing on armory ranges last winter. And I sincerely hope that the buckshot load is a thing of the past, and that I may never again be called upon to instruct a company that is using it.

It was so inaccurate that satisfactory practice was impossible, and the interest of the men could not be maintained. It is useless to expect men to be painstaking in holding and sighting — which they must be to improve — when the ammunition will not shoot where they hold.

...After correspondence covering several months, I succeeded in interesting the Winchester people and they made up a .22 caliber musket for me.

Being aware that the Army and organized militia would, in the near future, discard the Krag for the New Springfield, I insisted that this new gun correspond as closely as possible in length, weight and balance, to the latter arm, and also have swivels for sling, full length wood stock, high front sight, and barrel tapped to take Krag rear sights. The

price to the Ohio National Guard is very reasonable, and the ammunition is very cheap.

The document concluded with a recommendation from Ohio Adjutant General A.B. Critchfield that:

...each company procure a sufficient number of the Winder model Winchester musket for the instruction of the command in target practice.

Although his was a significant contribution, Winder did not generate the entire concept for this musket alone. He worked with George W. Chesley, Winchester's crack target shooter, and Ed Uhl and Henry Brewer, two of the company's top ballistics experts. It is said that Winder's talents were applied to the stock, sights and, later, action alterations directed toward easier loading. This loading solution may have eventually led to the "low-wall" Winder Musket, but more on that later. From all indications, Winder's involvement was most certainly important and evident in the evolution of this arm.

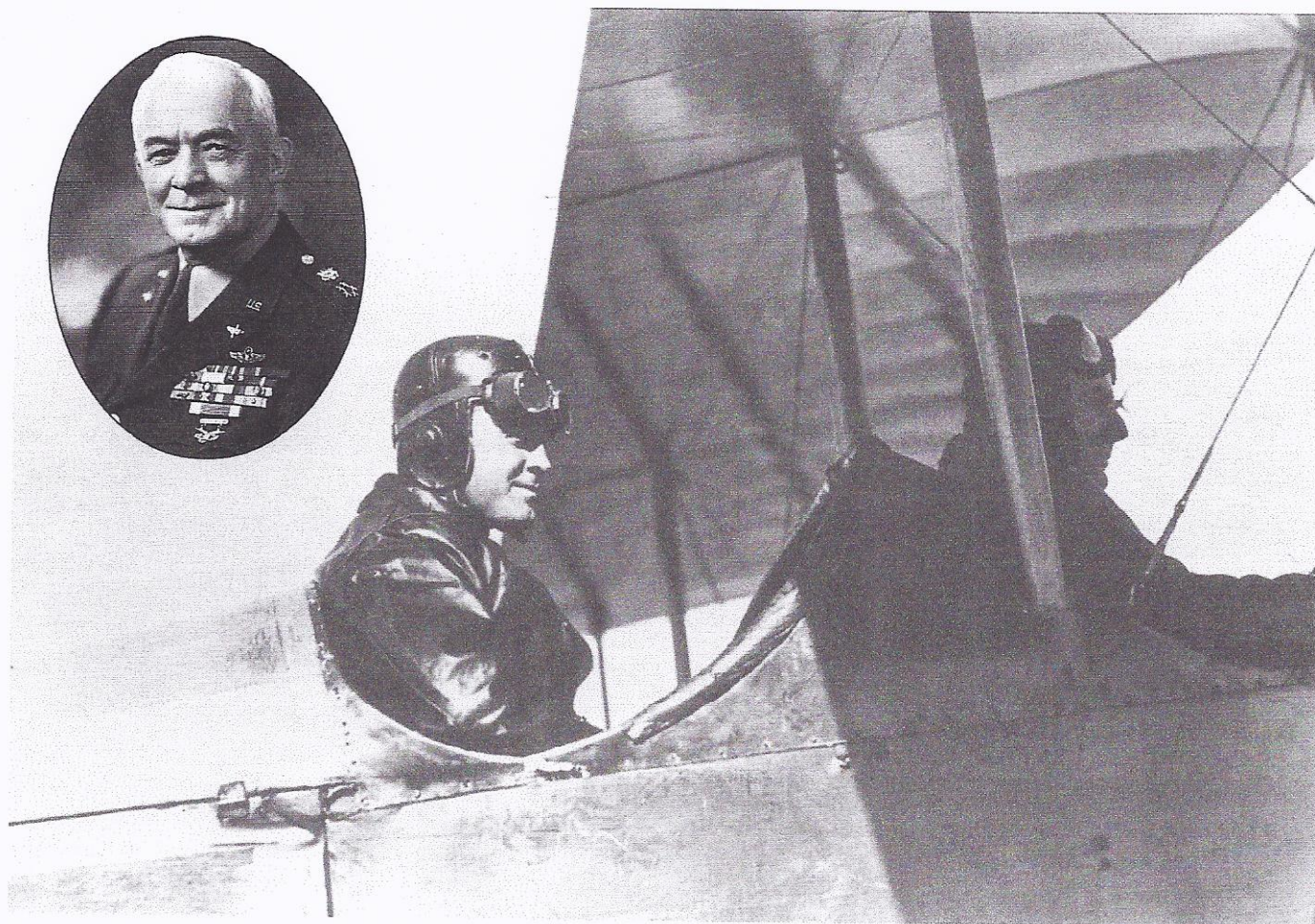
Although his name lives on today in relation to this rifle, Winder was a colorful figure even for the times in which he lived. Born in Champaign County, Ohio, in 1874, Winder enlisted in the Ohio National Guard in 1897 at the age of 23. He was a tall man and somewhat awkward in appearance. A swarthy complexion, straight black hair and a rather patrician nose set him apart from the crowd.

As an infantryman of Company H, Third Regiment, Winder served throughout the Spanish-American War. After the conflict, he fired in competition at the Ohio State Rifle Range in Newark, Ohio, where his performance caught the attention of a National Guard officer. It is not known for certain, but chances are the "brass" involved in this case was A.B. Critchfield, a man who managed to be Winder's mentor throughout his military career.

This colonel saw in Winder the opportunity to enhance the performance of his regimental rifle team. Under this officer's sponsorship, Winder fired the highest tryout score for the 1903 Palma Team and then went to England for the famous match. In 1904, Winder was commissioned a captain in the Guard and appointed Inspector of Small Arms Practice for the state of Ohio. The Palma Team of 1907 also saw Winder as a participant, and his cool shooting helped to bring home a victory from Canada.

Winder also held a number of patents on arms, sights, targets and ammunition. These included a tube sight for the '03 Springfield that he developed while attached to Army Ordnance in World War I. He also attempted to organize a sniper unit and a shotgunners unit for trench warfare in 1917, but failed to gain War Department approval for either. In 1918, Winder contracted tuberculosis and he died on March 4, 1921, in the Army hospital at Fort Bayard, New Mexico.

Another dimension of Winder's military career is far



Hap Arnold as a flight instructor at the Army's North Island aviation school, where this photograph was taken in 1916. It was there that he taught C.B. Winder how to fly military aircraft. The inset shows Arnold, who went on to command the entire U.S. Army Air Forces during World War II, as a General.

Photos courtesy of the United States Air Force Museum and the U.S. Army Military Academy, West Point.

less known, although it is probably far more momentous than his riflery: he was the first National Guardsman in America to earn a military pilot's rating. Therefore, one could say that C.B. Winder began the Air National Guard. He attended the Army Aviation School at North Island, Ohio, soloed May 20, 1912 and was rated two days later. His instructor at the school was a fellow named Henry H. "Hap" Arnold. About 30 years later, General Hap Arnold was the man who commanded the entire U.S. Army Air Forces during World War II.

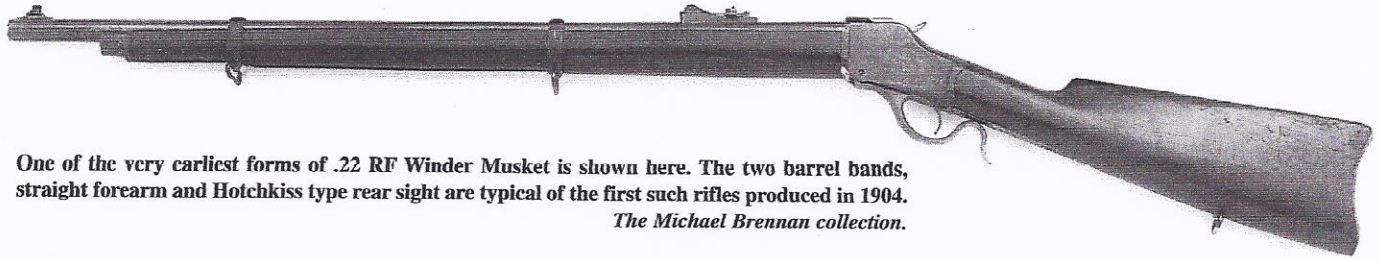
Still, it is Winder's involvement with the Single-Shot Musket that keeps his presence known to gun collectors. And in light of today's political climate and legislation, it is interesting to note that these Winder Single-Shots were quite popular with both the New York City public school system and the Harvard University rifle team. If it weren't for politics and the media, they might still be.

In terms of firsts, we already know that Musket No. 96709 was shipped to Winder in November of 1904. Records turned up by Thomas Hall, a former curator of the Winchester Arms Collection while it was in New Haven,

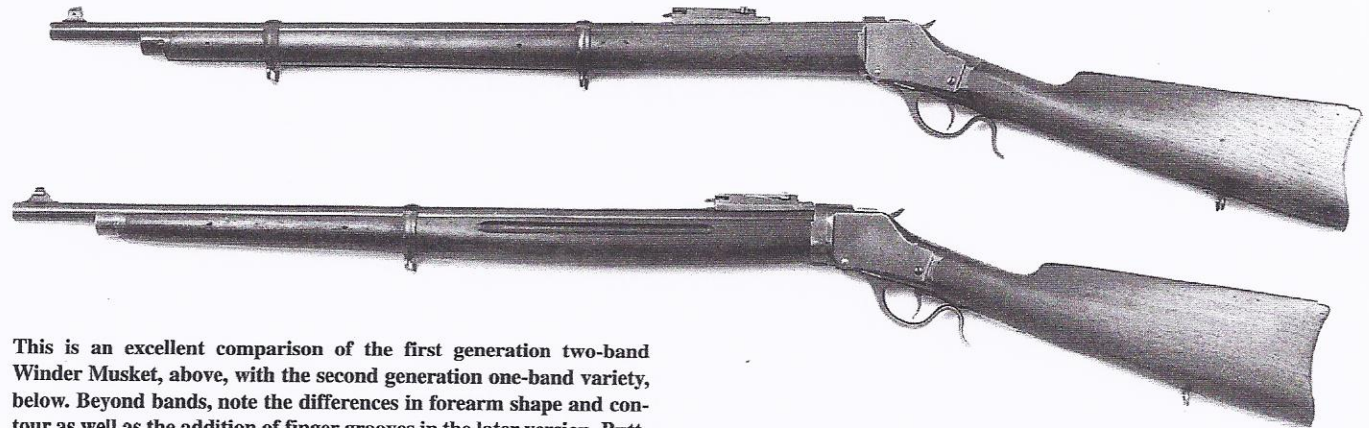
Connecticut, reveal that Musket No. 98178 was fitted with a common Hotchkiss-type musket rear sight and consigned to the warehouse on March 4, 1904. Later, on October 24 of the same year, No. 96701 was consigned to the warehouse. Its sighting equipment is unspecified. Then, Muskets 98177 and 98182 were fitted with Krag-type rear sights and consigned to the warehouse in January of 1905. Availability to the public began at this time. Although I own Musket No. 102246 (two-band) equipped with the Hotchkiss sight, Hall's records may shed some light on how early the Krag-type rear sight *could* have been fitted to these two-band Winder Muskets. The "grab bag" nature of these serial numbers also hints at why this chronology should be viewed with a grain of salt.

Now before we go any further, it is important to understand just what constitutes a Winder Musket.

A "Winder Musket" is *always* a .22 RF rifle (Short, Long or Long Rifle), made in the more-or-less standardized format introduced on the flat spring high-wall receiver in 1905, updated with the coil spring receiver in 1908 and finalized on the low-wall contour receiver in 1918. This



One of the very earliest forms of .22 RF Winder Musket is shown here. The two barrel bands, straight forearm and Hotchkiss type rear sight are typical of the first such rifles produced in 1904.
The Michael Brennan collection.



This is an excellent comparison of the first generation two-band Winder Musket, above, with the second generation one-band variety, below. Beyond bands, note the differences in forearm shape and contour as well as the addition of finger grooves in the later version. Buttstocks are identical. Also observe that both of these Single-Shots have the Krag-type rear sight, but in two different locations.
The Michael Brennan collection.

parameter includes just about every .22 RF Musket made from 1905 through 1920. However, it *does not* encompass those .22 RF Muskets made from 1886 to 1905. Although one of these Single-Shots may look just like a post-1905 rifle, Winder's influence on the arm is absent. Equally obvious is the fact that centerfire muskets from any era should *not* be viewed as Winder Muskets even though they may also have a virtually identical outward appearance. True Winders are .22 RF only.

As an overlay to this Winder situation, many collectors refer to Single-Shot Muskets as "one-band" or "two-band" Muskets in addition to (or regardless of) the fact that they may or may not be rimfire Winder Muskets. I'll admit it's a bit confusing. On the whole, there were three basic types of Muskets. Two of them were built on high-wall receivers and can be encountered with virtually any of the receiver styles: thin-wall, thick-wall, octagon-top, etc. The first version had two barrel bands to attach the forearm. The second generation, introduced in December of 1911, had but one band.

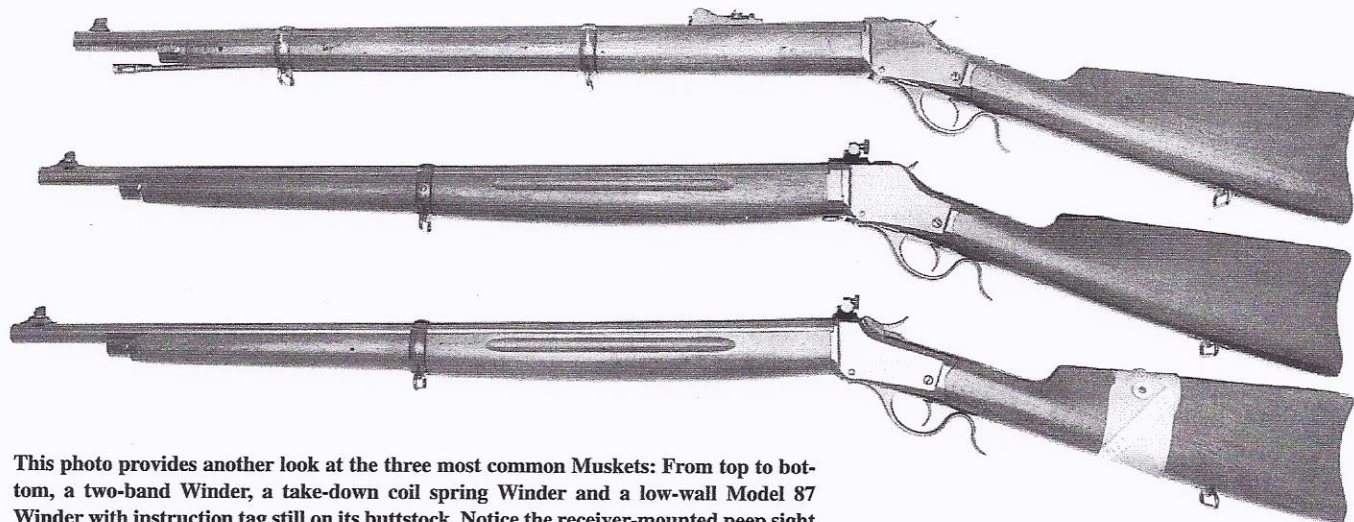
Technically, there is another type of one-band Musket, but it is quite rare. It may even be experimental. This Single-Shot utilizes a forend cap that doubles as a band. There is no other band between this point and the receiver. There were at least five *three-band* Muskets made up on true low-wall frames. One example is on display in the Cody Firearms Museum. It carries serial No. 119649 and is fitted

with a ".22" caliber barrel of 30-inch length and a straight forearm much like that of the common two-band muskets. The rear sight of this Single-Shot is unusual in that it is a stamped steel base version of the carbine rear sight with flip-up staff. I suspect the whole rifle was created for developmental sales promotion purposes and never manufactured in quantity.

Support for this suspicion comes from an October 1987 article in the *Bulletin* of the American Society of Arms Collectors. In "Variations of the Model 1885 Winchester," Lawrence Jones illustrates an identical Musket, except in *take-down* form. He claims that the rifle was submitted to the British government for evaluation as a weapon suitable for use by the English Home Guard during World War I. What logic precipitated this move on the part of Winchester or the British Government may have made sense at the time. It certainly seems a little ragged in hindsight, however.

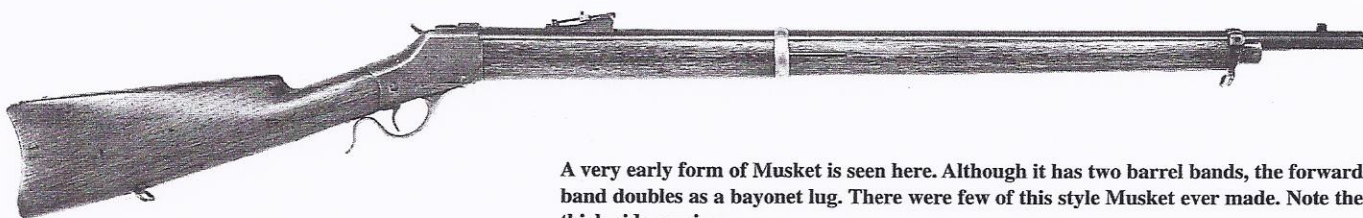
But according to Jones, the tests were eventually terminated and the low-wall .22 Short Single-Shot was not accepted. The rifles were returned to W.R.A. Co. and remained in the Museum collection for years. Mr. Jones has disclosed to me that at least two of them "were released" from the present Cody Firearms Collection some time in the late 1980s or early 1990s. He owns the take-down Musket illustrated in his article. Still, these examples of true low-wall Muskets must be among the very rarest of all Single-Shot Muskets.

Many high-wall Single-Shot Muskets were marketed commercially, although a sizeable number were produced



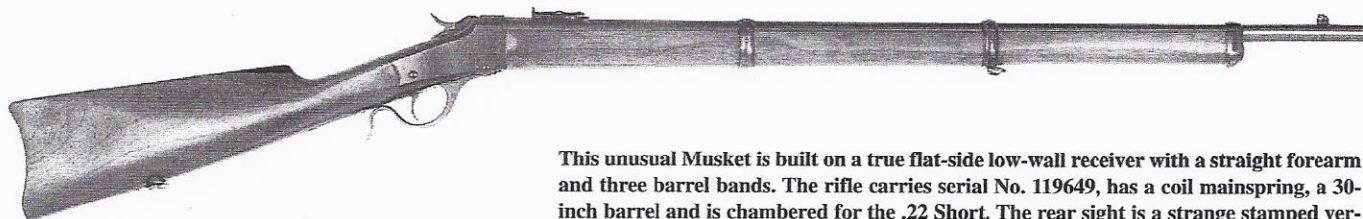
This photo provides another look at the three most common Muskets: From top to bottom, a two-band Winder, a take-down coil spring Winder and a low-wall Model 87 Winder with instruction tag still on its buttstock. Notice the receiver-mounted peep sight on the take-down high-wall Winder. It is the only high-wall Winder I have ever seen with this Lyman No. 41 type sight.

Courtesy of Lawrence Jones.



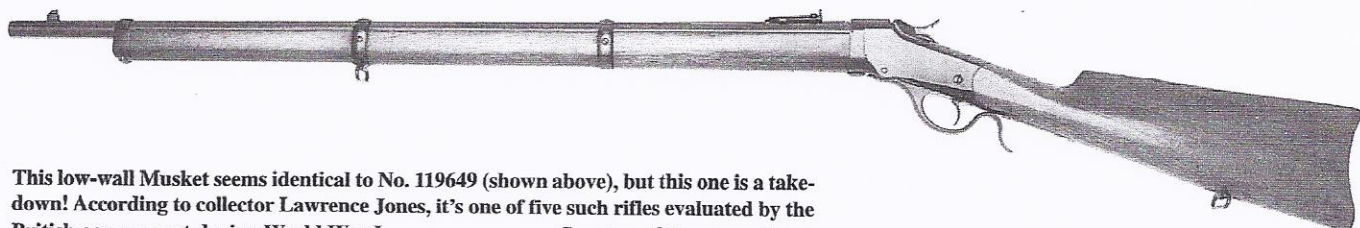
A very early form of Musket is seen here. Although it has two barrel bands, the forward band doubles as a bayonet lug. There were few of this style Musket ever made. Note the thick-side receiver.

*Courtesy of the Buffalo Bill Historical Center, Cody, WY.
Gift of Olin Corporation, Winchester Firearms Collection.*



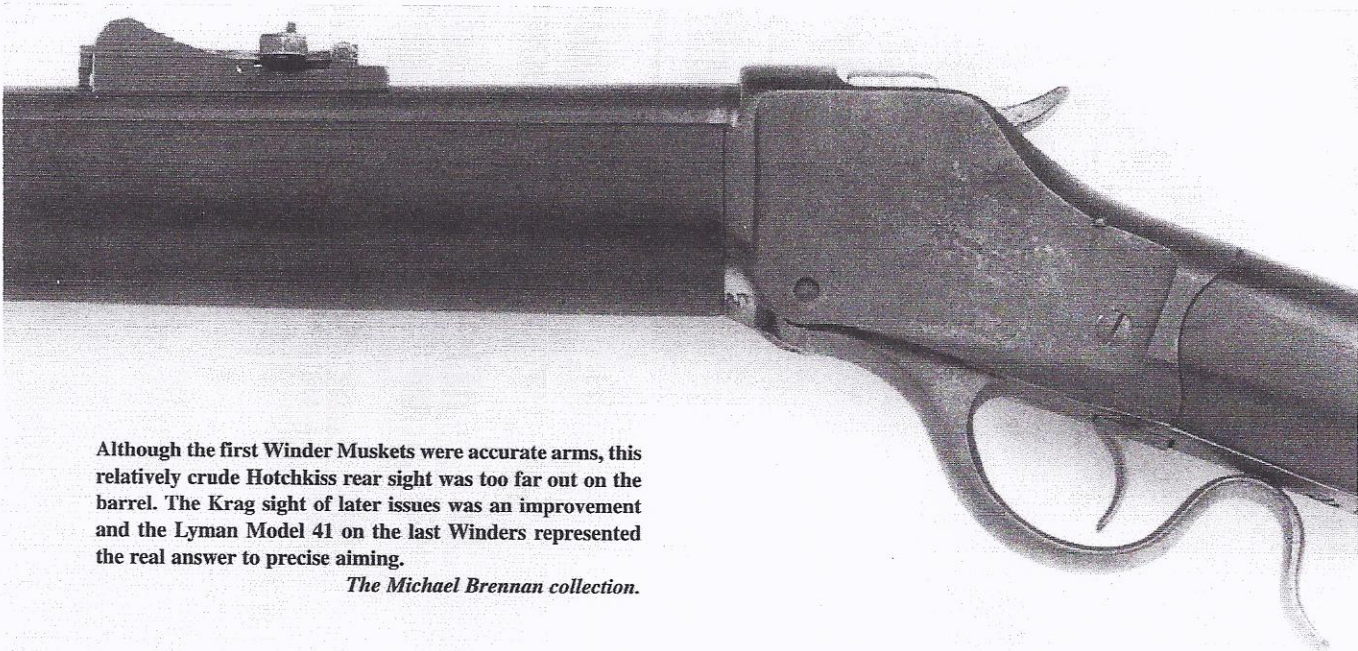
This unusual Musket is built on a true flat-side low-wall receiver with a straight forearm and three barrel bands. The rifle carries serial No. 119649, has a coil mainspring, a 30-inch barrel and is chambered for the .22 Short. The rear sight is a strange stamped version of the carbine sight. One collector claims that these Muskets were submitted to the British government for evaluation and possible use by the English Home Guard during World War I. The rifle was not approved.

*Courtesy of the Buffalo Bill Historical Center, Cody, WY.
Gift of Olin Corporation, Winchester Firearms Collection.*



This low-wall Musket seems identical to No. 119649 (shown above), but this one is a take-down! According to collector Lawrence Jones, it's one of five such rifles evaluated by the British government during World War I.

Courtesy of Lawrence Jones.



Although the first Winder Muskets were accurate arms, this relatively crude Hotchkiss rear sight was too far out on the barrel. The Krag sight of later issues was an improvement and the Lyman Model 41 on the last Winders represented the real answer to precise aiming.

The Michael Brennan collection.

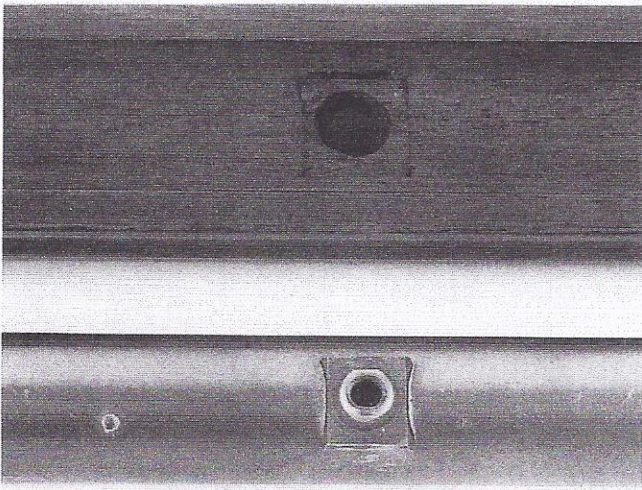
on government order. The third type of Musket was made on a low-wall *type* receiver and by virtue of its rimfire nature, is virtually always a Winder variation. It had a single-barrel band just like the second generation high-wall Winder Musket.

Let's take these rifles one at a time and identify their key differences. The first "pre-Winder" high-wall Muskets often had straight steel-capped forends that were held to the barrel by *two* bands. On some of these rifles, the forward band was actually the forend cap, which also served as a

sling swivel/bayonet mount. The rear sling loop was located in the buttstock or, alternatively, fitted to the lower receiver with a stud just forward of the finger lever. In this case, the buttstock sling loop was generally omitted. I've examined some Muskets like these in the Winchester Arms Collection. All have been in .45-70 caliber. Later, the forend cap was relieved of its barrel band/sling swivel duties and became a plain steel protective cap. A barrel band/sling mount was then added to the forearm arrangement. This created what is known to collectors as the classic "two-band" Musket, the most common of which are the first .22 caliber Winder Muskets. Some variations had both of these forward bands fitted with sling loops, depending on the specifications of their order.

Forends for these early Muskets were routed for a cleaning rod, and steel one-piece rods were generally supplied with the rifle. A bayonet was also part of the deal if the Musket was equipped with a lug for attachment. The rear sights of these Muskets were fancifully described as "wind gauge" and were identical to the military sight used on Winchester's 1883 Hotchkiss rifle. They had an open "V" ladder-type arrangement with a parabolic stepped ramp for elevation adjustment. The windage for this affair was rather crude and achieved by pushing the sight rack left or right with the fingers while trying to establish visual reference points between the scale and the edge of the ladder. This sight was attached to the barrel with screws. Buttstocks had the typical Musket contour and a wide, stamped steel butt plate. Some of these plates were blued. Others were color case hardened.

Muskets could be had in any of the calibers offered for the Plain Sporting Rifle, although the .45/70, .38-55, .32-40, .22 Long Rifle and .22 Short appear to be runaway



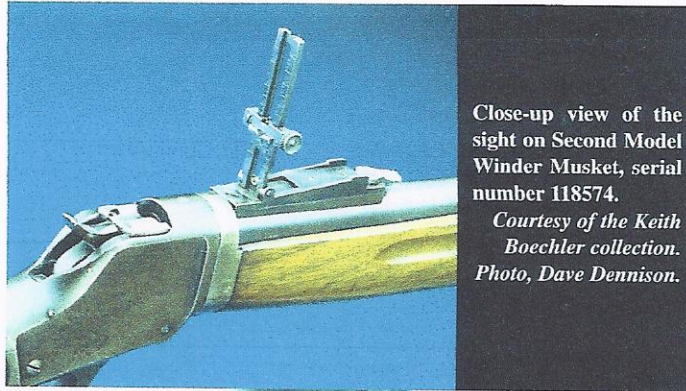
All of the Muskets I've seen are fitted with the standard sporting type forend attachment stud, and their forearms are inletted for it as well...with a blind hole. Since the barrel band or bands held the Musket forearm securely in place, the stud was completely functionless.

favorites. Some early centerfire guns had standard 32-inch barrels, while later issues had standard 28-inch barrels, as did virtually all of the .22 rimfires.

It is a curious aspect of the Muskets that all of their barrels were apparently dovetailed for and fitted with the small cone-shaped forend attachment stud commonly used to retain the forends on sporting and target rifle barrels. Musket forearms were also inletted for this stud, but no hole was ever bored for an attachment screw. Barrel bands, of course, held the long musket forearms in place, so this stud went unused. Thus, the whole half-hearted arrangement was superfluous and served no purpose whatsoever.

Many of the flat-spring two-band Winder Muskets I've examined have a "17" stamped on the bottom of the receiver just ahead of the finger lever pivot. Exactly what this denotes is unclear, although I own a centerfire Plain Sporting Rifle with a "16" stamped in the same location. From serial number/production year records, these numbers do not appear to be correlated with the year of manufacture. They might be some sort of inspector's mark. Regardless, these basic attributes pretty much sum up the first style of Musket.

In December of 1911, a change of manufacture notice was issued at the Winchester factory. This altered the Musket's forend to a perchbelly-style contour with longitudinal finger grooves. Only *one* barrel band was used to hold it in place. Although no concrete proof exists, we might assume this change was spurred by Winder's drive to make the Musket's stock more like that of the '03 Springfield's. Routing for a cleaning rod was omitted for the forestock and no rod was supplied with the rifle. However, the butt and buttplate could be specified with a trap door provision for a cleaning rod. In that case, a multi-piece rod was provided. The 1912 annual report of the



Close-up view of the sight on Second Model Winder Musket, serial number 118574.

Courtesy of the Keith Boechler collection. Photo, Dave Dennison.



The most noticeable thing about the first generation Winder Musket, right, and the second generation, left, is the position of the rear sights. Placement closer to the eye afforded more accurate aim. The lower Musket is a take-down and, on the whole, more rare than the standard rifle.

The Michael Brennan collection.

National Board for the Promotion of Rifle Practice illustrates this one-band model variation, although Winchester's own catalog did not show it until 1914.

The rear sight on this one-band rifle differed from the early variation's Hotchkiss type, although the new style can also be found on some late production two-band Muskets. This sight was nothing more than the Krag "wind gauge" type, with a thumb tab protruding from the front. Loosen-

ing it released tension on the entire upper sight plate assembly and allowed the rear of the unit to be swung left or right for windage. There are precise marks on the moveable portion of the sight and "0" locations for reference. Elevation was achieved by loosening a knurled set screw and moving the sight rack forward or back along a straight-angled ramp. If desired, this sight's ladder could be flipped up vertically and a sight picture gained through an aperture in the sight rack. But because it was so far from the eye, this aperture created a poor "peep sight." Nonetheless, it was certainly an option that was unavailable with the sight used on the earlier two-band Musket.

For the most part, these late high-wall Muskets were coil spring guns. That meant they could also be made up as take-down models, utilizing a system patented by Winchester designer Thomas C. Johnson in 1907. This type of Musket is not uncommon. And whether standard or take-down, many of these late Single-Shot Muskets were also equipped with the stand-at-half-cock hammer fly. Those chambered for .22 rimfire cartridges also had the spring-loaded ejector. Otherwise, the actions were virtually identical to those supplied for sporting rifles.

As far as I can determine, most receivers for high-wall and low-wall Winder Muskets in .22 rimfire calibers were very casually hardened. By this I'm not saying that they received no heat treatment at all, but compared to most centerfire receivers and particularly the early case hardened receivers, they appear to be mild-steel soft. It's a little difficult to conclusively demonstrate how widespread this characteristic is unless a large number of actions are actually checked with a Rockwell hardness tester. I know for a fact that a file will generally skip across a cased receiver and hardly bite into a blued "commercial" centerfire receiver. On the other hand, any decent file will cut effortlessly into most any Winder Musket frame.

Just why this trait exists is anyone's guess, but it is probably safe to assume that if the condition was intentional, the incredible design strength of the Single-Shot action did not require extensive heat treatment in order to safely handle .22 RF cartridges. Savings in time and cost could have been realized here. Perhaps these frames were merely pickle-hardened for their application. Still, this is nothing but speculation based on my experience with these later Winder Muskets.

At this point, a couple of asides seem in order. First, it appears as though a number of these second model Winder Muskets made their way to England and some portions of the British Empire. Not too surprising, considering the quantity of Single-Shots noted in the Winchester record books as being shipped to Britain. I have examined a few of these export Muskets. These exhibited British proofs as well as a stamped cartouche on the right side of the buttstock. Within an oval about 1½ inches long are the words "A.G.P. Parker & Company Birmingham." Parker may have been the importer for these rifles and required by

British law or company policy to stamp them with their name. And just in case you're wondering about connections (forgive me, James Burke), the answer is "yes." This particular "Parker" is a direct ancestor of the present Parker-Hale Co. But back to Single-Shot trivia.

In March of 1932, the R.F. Sedgley Co. of Philadelphia, Pennsylvania, advertised a custom Single-Shot in .22 LR and .22 Hornet, allegedly built on the last high-wall rimfire Muskets available from Winchester. I now believe that there were also some low-wall Winders thrown in for good measure. Nonetheless, it is said that Sedgley had purchased about 200 rifles — all the company had left. Sedgley then fitted them with a Lyman 17A target sight and a Lyman 5A scope. The tangs were altered to a pistol grip shape, the lever given a ball form at its end, and a custom stock of imported walnut was included. They sold for \$109 each. In a depression economy, that was a small fortune.

I have seen one of these Sedgley high-walls myself, and it was a very nice rifle. I have also seen and examined one of the low-wall Winder Muskets that this firm converted to .22 Hornet. It was a bit more utilitarian, looking virtually the same as the issue Musket from which it sprang.

It is virtually unknown to Winchester enthusiasts that W.R.A. Co. would itself convert a Winder Musket to .22 WCF (the centerfire parent cartridge of the .22 Hornet) for the extra fee of \$3.50. Shooters with a technical bent might be interested to know that this little operation involved a curious disregard for barrel bore and groove sizes. The groove diameter of a .22 RF round is .223/.224, and that of a .22 WCF is .228. A simple rechambering job would require the .22 WCF bullet to squeeze down about .004 of an inch upon firing. There was probably no real danger in this, but it's a novel situation to contemplate. Apparently, very few of these .22 WCF conversions were done, but this alteration and price are stated on page 103 of the custom (or model) shop book on file in the Cody Firearms Museum. It is interesting to note that the book refers to this Single-Shot by the name "Winder Musket." It is only the second time I've ever seen the term in Winchester documents.

Now let's flash back to 1918 and continue the story of the production model. Winchester records show the third type of Winder Musket was authorized for production on December 8, 1917, and introduced in the following year. This Single-Shot was unique in that it was made up on a receiver that had a low-wall *contour*. Like the second model Winder, it also featured a perchbelly forearm and single barrel band. This third model Winder Musket was also known as the Model 87 and is referred to as such in internal W.R.A. memoranda as early as February 1918. Why they chose the Model 87 name is anybody's guess, especially when Winchester still had a lot of Model 87 shotguns floating around to foster confusion. But whether you refer to it as a Model 85 or 87, this Single-Shot was made primarily under government contract, although it was also offered for commercial sale.

ing it released tension on the entire upper sight plate assembly and allowed the rear of the unit to be swung left or right for windage. There are precise marks on the moveable portion of the sight and "O" locations for reference. Elevation was achieved by loosening a knurled set screw and moving the sight rack forward or back along a straight-angled ramp. If desired, this sight's ladder could be flipped up vertically and a sight picture gained through an aperture in the sight rack. But because it was so far from the eye, this aperture created a poor "peep sight." Nonetheless, it was certainly an option that was unavailable with the sight used on the earlier two-band Musket.

For the most part, these late high-wall Muskets were coil spring guns. That meant they could also be made up as take-down models, utilizing a system patented by Winchester designer Thomas C. Johnson in 1907. This type of Musket is not uncommon. And whether standard or take-down, many of these late Single-Shot Muskets were also equipped with the stand-at-half-cock hammer fly. Those chambered for .22 rimfire cartridges also had the spring-loaded ejector. Otherwise, the actions were virtually identical to those supplied for sporting rifles.

As far as I can determine, most receivers for high-wall and low-wall Winder Muskets in .22 rimfire calibers were very casually hardened. By this I'm not saying that they received no heat treatment at all, but compared to most centerfire receivers and particularly the early case hardened receivers, they appear to be mild-steel soft. It's a little difficult to conclusively demonstrate how widespread this characteristic is unless a large number of actions are actually checked with a Rockwell hardness tester. I know for a fact that a file will generally skip across a cased receiver and hardly bite into a blued "commercial" centerfire receiver. On the other hand, any decent file will cut effortlessly into most any Winder Musket frame.

Just why this trait exists is anyone's guess, but it is probably safe to assume that if the condition was intentional, the incredible design strength of the Single-Shot action did not require extensive heat treatment in order to safely handle .22 RF cartridges. Savings in time and cost could have been realized here. Perhaps these frames were merely pickle-hardened for their application. Still, this is nothing but speculation based on my experience with these later Winder Muskets.

At this point, a couple of asides seem in order. First, it appears as though a number of these second model Winder Muskets made their way to England and some portions of the British Empire. Not too surprising, considering the quantity of Single-Shots noted in the Winchester record books as being shipped to Britain. I have examined a few of these export Muskets. These exhibited British proofs as well as a stamped cartouche on the right side of the buttstock. Within an oval about 1½ inches long arc the words "A.G.P. Parker & Company Birmingham." Parker may have been the importer for these rifles and required by

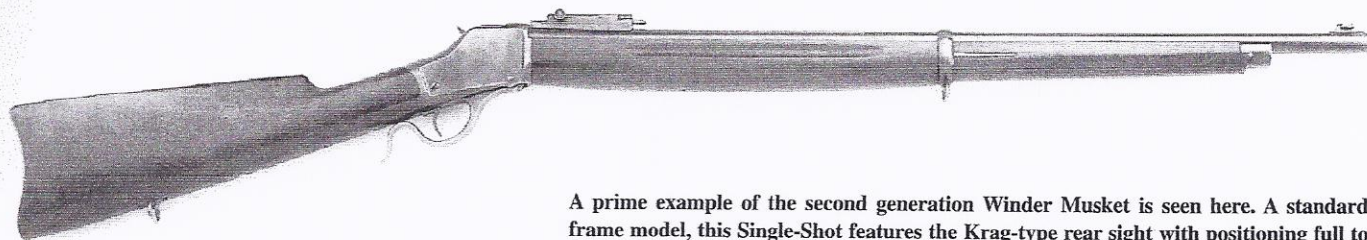
British law or company policy to stamp them with their name. And just in case you're wondering about connections (forgive me, James Burke), the answer is "yes." This particular "Parker" is a direct ancestor of the present Parker-Hale Co. But back to Single-Shot trivia.

In March of 1932, the R.F. Sedgley Co. of Philadelphia, Pennsylvania, advertised a custom Single-Shot in .22 LR and .22 Hornet, allegedly built on the last high-wall rimfire Muskets available from Winchester. I now believe that there were also some low-wall Winders thrown in for good measure. Nonetheless, it is said that Sedgley had purchased about 200 rifles — all the company had left. Sedgley then fitted them with a Lyman 17A target sight and a Lyman 5A scope. The tangs were altered to a pistol grip shape, the lever given a ball form at its end, and a custom stock of imported walnut was included. They sold for \$109 each. In a depression economy, that was a small fortune.

I have seen one of these Sedgley high-walls myself, and it was a very nice rifle. I have also seen and examined one of the low-wall Winder Muskets that this firm converted to .22 Hornet. It was a bit more utilitarian, looking virtually the same as the issue Musket from which it sprang.

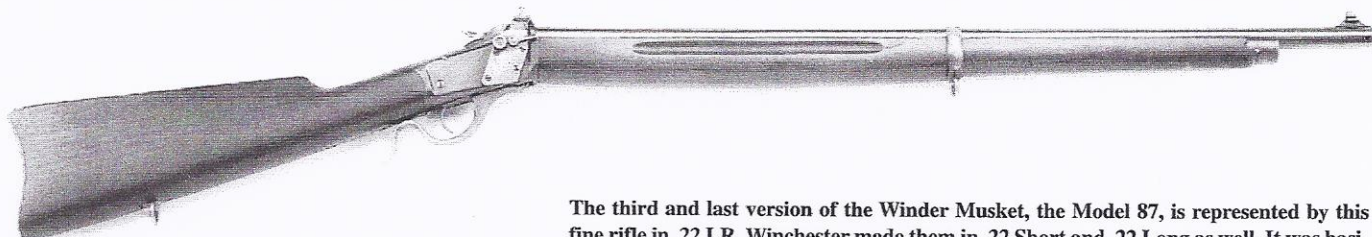
It is virtually unknown to Winchester enthusiasts that W.R.A. Co. would itself convert a Winder Musket to .22 WCF (the centerfire parent cartridge of the .22 Hornet) for the extra fee of \$3.50. Shooters with a technical bent might be interested to know that this little operation involved a curious disregard for barrel bore and groove sizes. The groove diameter of a .22 RF round is .223/.224, and that of a .22 WCF is .228. A simple rechambering job would require the .22 WCF bullet to squeeze down about .004 of an inch upon firing. There was probably no real danger in this, but it's a novel situation to contemplate. Apparently, very few of these .22 WCF conversions were done, but this alteration and price are stated on page 103 of the custom (or model) shop book on file in the Cody Firearms Museum. It is interesting to note that the book refers to this Single-Shot by the name "Winder Musket." It is only the second time I've ever seen the term in Winchester documents.

Now let's flash back to 1918 and continue the story of the production model. Winchester records show the third type of Winder Musket was authorized for production on December 8, 1917, and introduced in the following year. This Single-Shot was unique in that it was made up on a receiver that had a low-wall *contour*. Like the second model Winder, it also featured a perchbelly forearm and single barrel band. This third model Winder Musket was also known as the Model 87 and is referred to as such in internal W.R.A. memoranda as early as February 1918. Why they chose the Model 87 name is anybody's guess, especially when Winchester still had a lot of Model 87 shotguns floating around to foster confusion. But whether you refer to it as a Model 85 or 87, this Single-Shot was made primarily under government contract, although it was also offered for commercial sale.



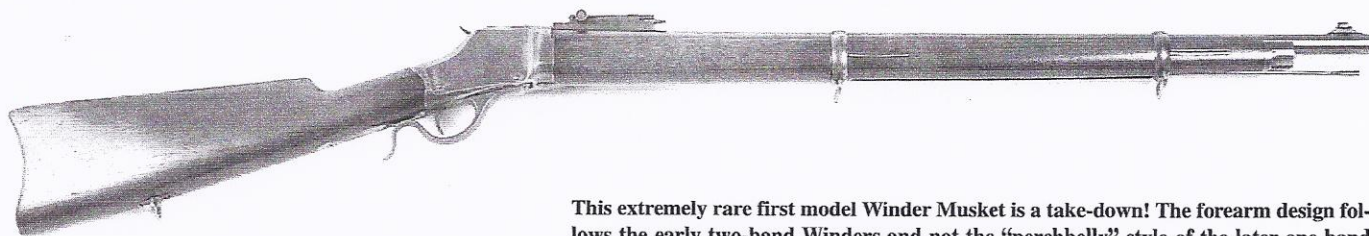
A prime example of the second generation Winder Musket is seen here. A standard frame model, this Single-Shot features the Krag-type rear sight with positioning full to the rear. This provided a longer sight radius and brought the staff's rudimentary peep sight closer to the shooter's eye.

The Michael Brennan collection.



The third and last version of the Winder Musket, the Model 87, is represented by this fine rifle in .22 LR. Winchester made them in .22 Short and .22 Long as well. It was basically the second generation Winder with receiver walls reduced to low-wall contour and the addition of a reversed Lyman 41 receiver sight.

The Walt Jablonski collection.



This extremely rare first model Winder Musket is a take-down! The forearm design follows the early two-band Winders and not the "perchbelly" style of the later one-band types. The rear sight is the Krag-type. The serial number of this coil spring action is 111342 and it is chambered for .22 Long Rifle.

The John Mullen collection.

The first Ordnance Department order called for 2,000 Muskets and was let on December 5, 1917, according to Winchester records. The specifications called for a 28-inch barrel and chambering in .22 Short caliber. I have also examined many low-wall Winder Muskets in .22 Long Rifle and one (Ser. No. 135,172) in .22 Long. On the other hand, there were no standard centerfire options at all. And as you'd expect from the time frame, this Winder Musket is always a coil spring gun. But despite that fact I have never seen a take-down third model Winder, although there is no mechanical reason why one shouldn't exist.

This rifle's stock outwardly resembled the previous high-wall coil spring Muskets. The only nuance some collectors might notice is that many Muskets produced after May 1918 have a lateral screw rather than a snap clip to hold the barrel band in place. However, I own a Model 87

Winder serial No. 135765, that has a clip and a cross screw. A friend of mine owns a Model 87, serial No. 137391, with just the cross-screw through its barrel band. There was obviously some transitional period between the clip rifles and the cross screw variety.

On the other hand, the receiver of the Model 87 Musket was significantly different. Visually it was a "low-wall," or so it seemed. It did have the reduced sides of the low-wall sporting rifle and was fitted with the same type of scalloped low-wall breech block. This allowed very convenient loading of the small .22 rimfire cartridges — something that was a bit tricky with high-wall Muskets, especially in .22 Short. But this advantage was as far as any low-wall characteristics went. Everything else about the third model Winder action was high-wall through and through.

Both the upper and lower tangs are the same depth as a

(below) A substantive piece of evidence for low-wall Winders being milled from high-wall frames is this document. It also confirms the factory's view of the standard Musket barrel size.

(right) I cannot reference the author of this document or explain its informality, but it does offer some believable rationale for making government high-wall Winder Muskets as low-walls.

Both documents from the Buffalo Bill Historical Center, Cody, WY.
Gift of Olin Corporation, Winchester Firearms Collection.

A-26

500,031

ORDER & SHIPPING DEPARTMENT

DEC. 8, 1917.

W. A. Thiel,
Supt. Gun Dept.
From A. Hall.

Please have processed sufficient parts to make up a total of 1500 Single Shot Muskets 22 Short Round 28" #3, no rear sight slots or threads foresights in barrel, sights to be determined later. (Receiver to be cut down)

When these parts have reached the assembling state, kindly refer to the signer for disposition.

Head, Order Department.

high-wall. The receiver ring is cut for the "large shank" barrel thread. The receiver sides are paneled in the common high-wall thin-side format. Even high-wall buttstocks will interchange. These characteristics have led many observers to conclude that these Winder Muskets were actually made with milled-down high-wall receivers, which is probably true.

The first of these third model Winder Muskets resulted from instructions issued on December 8, 1917, from A. Hall, head of the Winchester Order Department, to gun superintendent William A. Thiel, who had assumed the post only five months earlier.

Please have processed sufficient parts to make up a total of 1,500 Single-Shot Muskets 22 Short Round 28" #3, no rear sight slots or threads foresights in barrel, sights to be determined later (Receiver to be cut down).

This points to the probable use of a milling fixture to create special frames for these rifles (Winchester had built this fixture way back in July, 1885). Three days after Hall's note was issued, a change of manufacture order was written (No. 6446) on December 11, 1917, that validated the above instructions. A note in the Winchester Arms Museum archives (author unknown) provides some insight into the

C/m 6446 Dec. 11/1917
Single Shot Model 87 = .22 cal
Musket Receiver

Regular #3 size receiver was objected to by U.S. Government for guns on their orders. 22 cal Short

The C/m #6446 was issued to reduce the walls in rear of breech block to obviate their criticism that there was not room enough to insert thumb ^{between walls} when inserting the cartridge into the barrel chamber

The breech block shape was altered at this time to accommodate the change in receiver shape.

To fill U.S. Govt. Orders for 22 cal Muskets for training purposes

reasoning for this Musket's reduced sidewalls:

Single Shot Model 87 = .22 cal Musket Receiver.

Regular #3 size receiver was objected to by U.S. Government for guns on their orders. .22 cal. Short. The C/M #6446 was issued to reduce the walls in rear of breech block to obviate their criticism that their [sic] was not room enough to insert thumb between walls when inserting the cartridge into the barrel chamber.

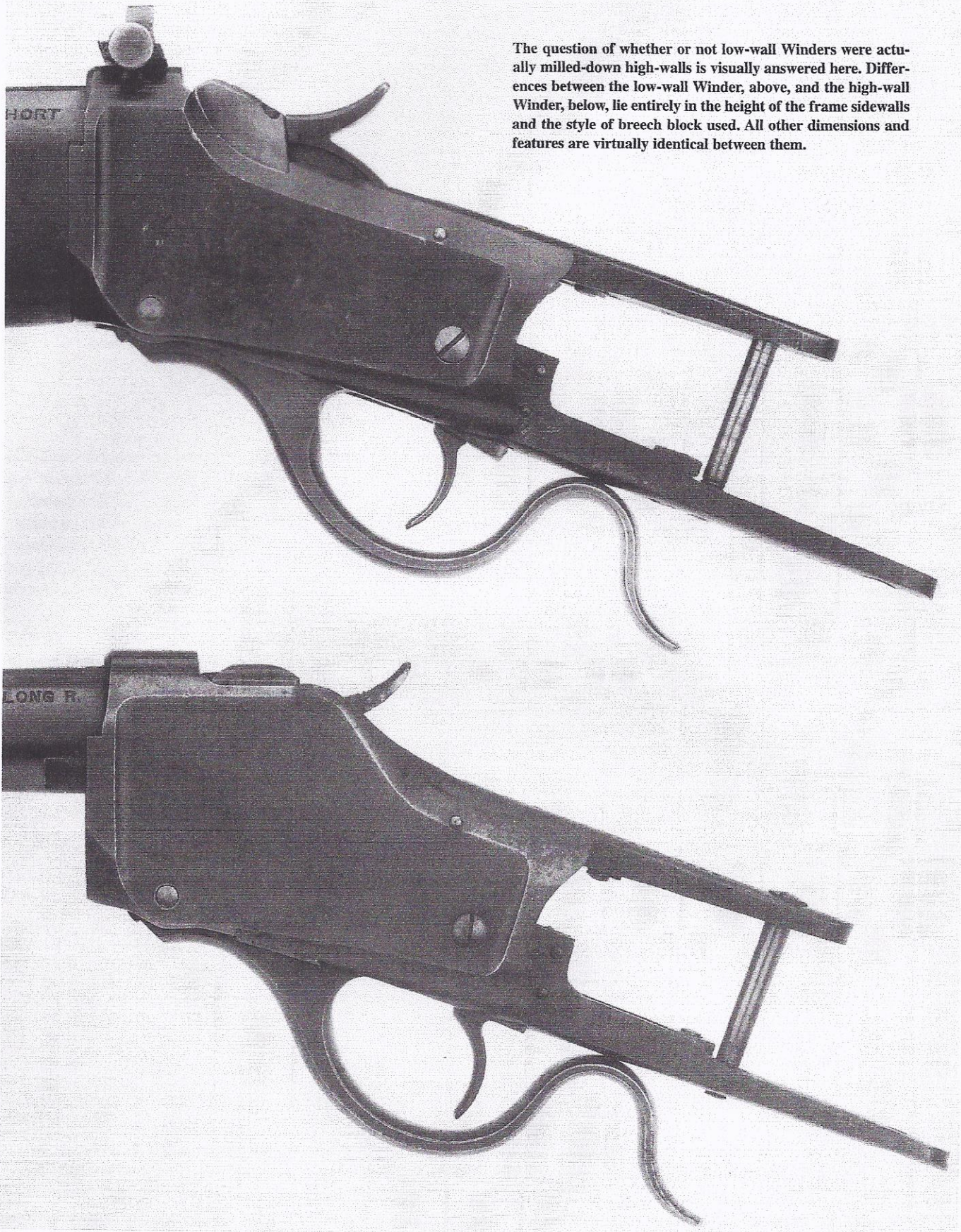
The breech block shape was altered at this time to accommodate the change in receiver shape.

To fill U.S. Govt. orders for .22 cal. Muskets for training purposes.

Some ancillary support for the practice of altering high-walls is offered by a rather constricted view of a Winchester contractor's book page, reproduced in George Madis' *The Winchester Era*. Under the handwritten title "Single Shot Rifle," this production specification is entered:

Receiver, No. 3, existing model to be cut down at top, front end to present gauge. Also to be slabbed down to thickness on side and fillets at front & rear made to standard radius, same as 92 - 94.

The question of whether or not low-wall Winders were actually milled-down high-walls is visually answered here. Differences between the low-wall Winder, above, and the high-wall Winder, below, lie entirely in the height of the frame sidewalls and the style of breech block used. All other dimensions and features are virtually identical between them.



Although this certainly sounds like a description of the low-wall Winder Musket, it is impossible to tell for certain. I could not find this particular book on file at the Cody Firearms Museum library. Visible dates near this entry note the year "1905." I do not know just how that fits into the scheme of things.

In a further search for the truth about cut-down high-wall frames, I've checked Winder receivers against those of coil spring high-walls with a dial caliper and can find no significant dimensional differences outside of the low-wall upper contour. To put it another way, one low-wall Winder receiver differs as much from the next as the entire category of frames differ from high-wall receivers and that isn't very much at all (maybe a thousandth or so in outside specifications).

Another distinguishing feature of the last Winder Musket is its rear sight. Instead of the previous barrel-mounted open sights, this Winder was equipped with a receiver-mounted fully-adjustable aperture sight. It was a mirror image Lyman No. 41 and obviously supplied by that company to Winchester under contract. In its new orientation, this sight was termed the No. 53. From a practical standpoint, this was far and away the best sight ever fitted to a Single-Shot Musket. It was closest to the eye and had easy and quick adjustment capability. All the shooter had to do was push the locking lever forward and adjust elevation with the large knurled head screw on the right side of the sight. Windage could be dialed in with the knurled adjusting screw on the sight's left-facing arm.

Despite the fact that this sight was a functional wonder, it had one aesthetic downside: four very ugly 6-48 holes had to be drilled into the right side of the receiver in order to mount it. If a Winder Musket shooter happened to prefer a tang sight, removal of the factory-installed receiver sight left a parallelogram-hole pattern. This is probably why a lot of third model Winder Muskets stayed muskets instead of being converted to light caliber varminters in the 1950s and 1960s.

Winder Muskets purchased for federal issue, as well as 2,000 ordered through the Ordnance Dept. by the NRA in June of 1918, were stamped on the upper surface of the receiver with the initials "U.S." and the ordnance department's flaming bomb cartouche. However, I've examined a few that were simply marked "U.S." without the flaming bomb. These marks appear between the hammer cut and the plugged tang sight screw hole. Incidentally, I've never seen a *high-wall* musket stamped with such ordnance department marks, although many of them were also used by National Guard units for marksmanship training at the time of World War I. In a similar vein, Winder Muskets sold through commercial channels do not have Ordnance Department stamps. Another stamp detail to be aware of is that some take-down Winder Musket barrels carry the patent date of "MAY 28, '07". This refers to the patent date for T.C. Johnson's take-down arrangement (patent no. 855,181).

By 1919, World War I was over and Winchester faced some overstock problems regarding third model Winder Muskets, as well as some unforeseen vacancies in projected production schedules. For example, the government cancelled its 32,612 rifle order, leaving a substantial stock of parts on hand. Winchester's business solution for this was to: (a) purchase these parts from the government at "scrap" prices, (b) use them to fill the government's remaining small orders for the Musket and (c) drum up some public demand for this Single-Shot through advertising and promotion and try to recoup losses.

In regard to this last idea, the W.R.A. Co. created the Winchester Junior Rifle Corps to promote marksmanship for those under the age of 18. Coincidentally, this involved the encouraged use of Winchester Model 87 Single-Shot .22 Muskets. It was a fine idea and organization, but it did not succeed in ushering the Single-Shot Musket out in a wave of black ink. In 1923, Winchester still had a supply of 87s in stock and sold many of them to Junior Rifle Club members for \$15 each.

These last Single-Shot Muskets were made up from many government surplus parts, churned out under the duress of war. As a consequence, the internal finish quality of many components cannot be compared to that of earlier Muskets and certainly not to the finish level of commercial Single-Shots. I've seen Model 87s with out-of-round pin holes, crudely finished taper pins, incomplete half-cock notches, incorrect links and more. None of these character flaws interfered with any rifle's function, but their existence seemed to underscore the old refrain, "good enough for government work."

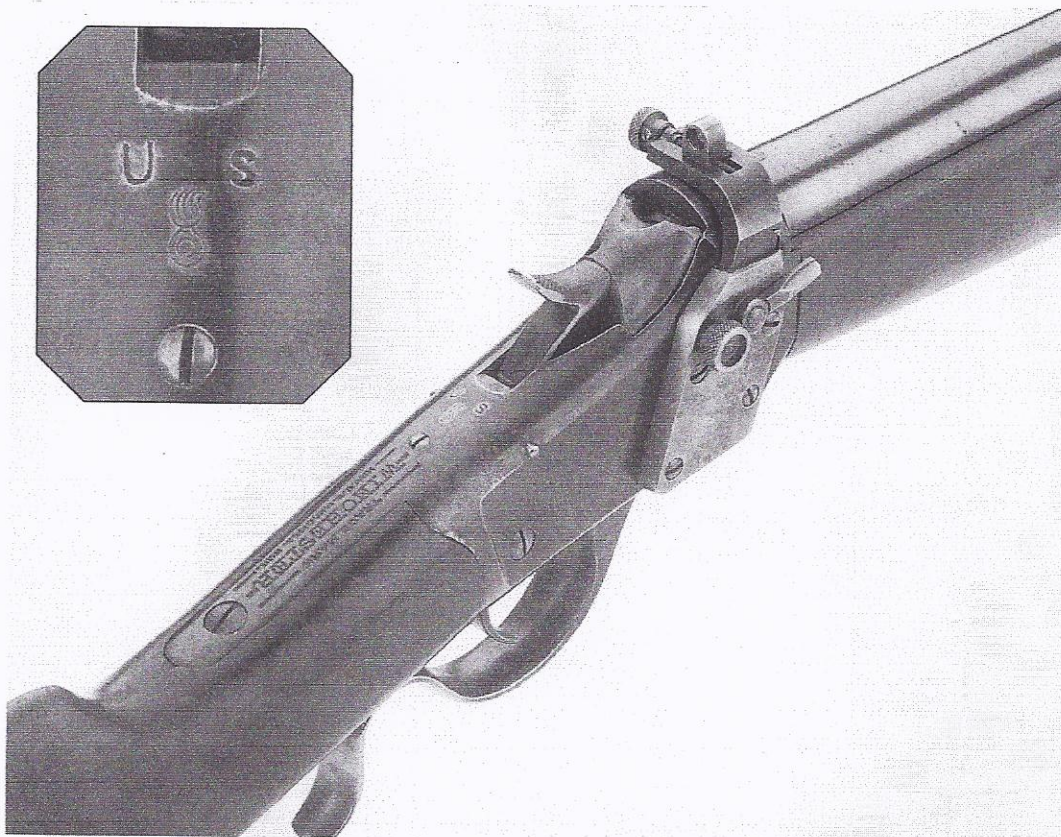
It's interesting to note that the Director of Civilian Marksmanship announced the availability of *new* Model 87 Muskets, chambered for the .22 Long Rifle, in February 1924. The price was \$18.80 each. Later, an announcement in the June 1929 *American Rifleman* revealed that the DCM would begin disposing of government-purchased Model 87 Winchesters (Winder Muskets) as they had recently been made obsolete by the M-1922, M1 Springfield. These Single-Shots were to be offered to NRA members at \$7.50 each. DCM-affiliated clubs that already had government-issued Model 87s in the rack could purchase them outright for \$2.50 each. Think about that the next time you check the price of one of these Single-Shots at a gun show.

Actual production of the Model 87 Single-Shots ceased in 1920. These low-wall Winders were the only Single-Shots that were being offered at the time. Altogether, over 28,576 Winder Muskets were made, according to records compiled by Herbert Houze. From 1904 to 1908, when coil mainsprings were introduced, production totalled 7,418. From 1908 to 1918 when the first "low-wall" Model 87s appeared, 8,423 additional Muskets had been made. From 1918 until the last rifles were assembled from parts in 1923, Winchester built 12,735 more Winder Muskets than can be accounted for. Figures for the year 1920 are unavailable. A

(right) One of the very best features of low-wall Winder Muskets was this Lyman No. 53 receiver sight. Actually, it was a No. 41 changed over for right side mounting. This sight is fully adjustable for elevation and windage.

The Walt Jablonski collection.

(inset) All of the low-wall Model 87 Winder Muskets sold to or through the government carried the U.S. Ordnance Department's "U.S." and flaming bomb cartouche. Model 87s sold commercially or outside the sphere of government purchasing did not have such stamps.



word of caution here: my experience has shown that figures such as those just quoted should not be interpreted as cut-off points for particular model variations. Some flatspring Winders may have been made after 1908, and some coil-spring types before then, and so on. It's best to view this kind of information in an "interest-only" light.

Still, throughout all of its development, the Winder Musket was known for its outstanding accuracy and "customer satisfaction." No greater authority could substantiate those qualities than Col. Townsend Whelen. An article in the November 1956 issue of the *American Rifleman*, written by James E. Serven, includes Whelen's assessment of this Single-Shot variation:

I remember the Winder musket very well. It was produced by Winchester largely at the suggestion of Colonel Winder, and also because Winchester believed there would be demand for a military type .22 rifle in military organizations for gallery shooting and inexpensive marksmanship training... I had one of these rifles myself, and shot it a lot, and it was quite an accurate and dependable rifle. Mine had the Krag type rear sight.

As with other Winchester Single-Shot models, a Musket customer could apparently specify most any Single-Shot option that was in keeping with the Musket's style. I own one rifle and have seen a few more with what could be viewed as XX wood in their buttstocks and "extra finish."

This may have been deliberate on the part of the factory, or it may have been the luck of the draw for those particular guns, but this is doubtful. I've also examined one musket with factory-fitted, close-coupled, double-set triggers. Another had a trap door buttplate for a sporting-type cleaning rod. Records in Winchester's custom shop book note a Musket built with a palm rest and mid-range vernier sights. About the only thing I haven't bumped into is a Musket with Schuetzen triggers...but I haven't stopped looking either.

Although they are ungainly, the Muskets are an interesting variation of the Single-Shot and well worth some attention. But unlike the Remington rolling block, the Winchester Musket never elicited huge foreign military orders. Its timing was a little bit late for that. From the 1890s through the turn of the century, any nation with a whit of common sense would never consider arming its troops with a single-shot weapon when the age of the bolt action, high-velocity rifle was dawning. Tensions were mounting very quickly in Europe, the far-flung British Empire, the Philippines and Mexico, just for starters. The problems in all of these locations called for 20th century weapons, not "single stuffers" from a bygone era.

Fortunately for democracy, John Browning, the same genius who had dreamed up the Single-Shot, was busy creating an array of firearm designs ready to fill the bill for this dangerous new age.