

# RARE AMERICAN CARBINES: THE MORSE-MUZZY

by Jeff Goodson

Photos by Don Summers unless otherwise noted.

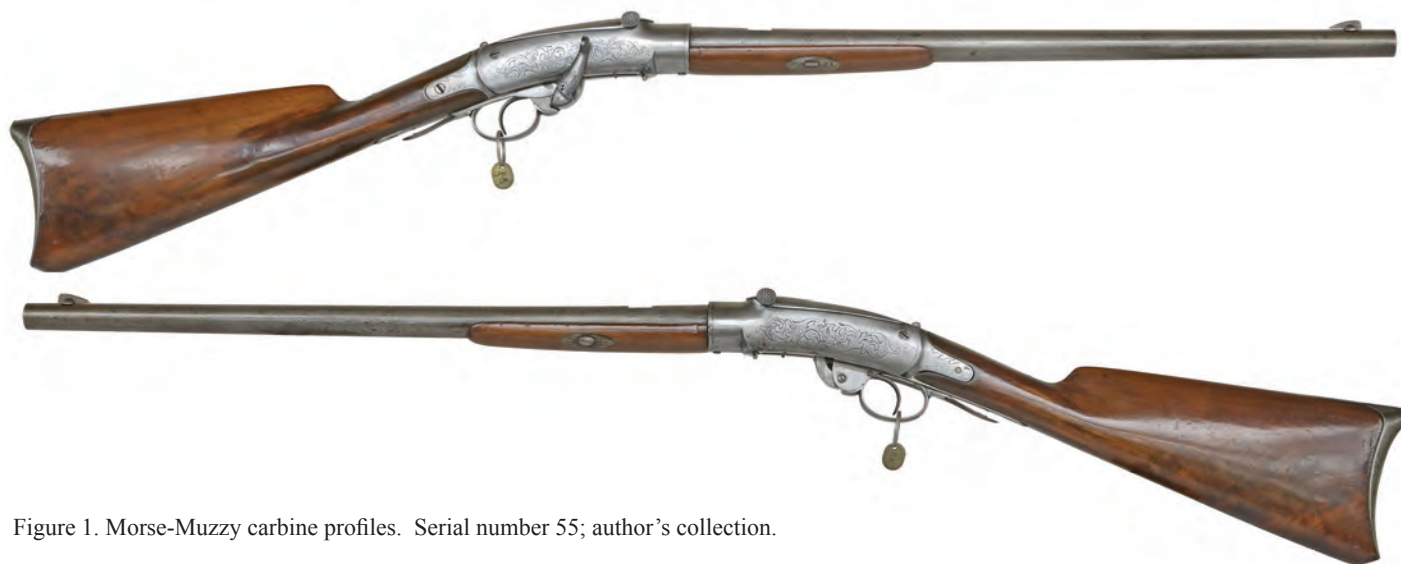


Figure 1. Morse-Muzzy carbine profiles. Serial number 55; author's collection.

One of the rarest and least known of the 19<sup>th</sup> century American carbines is the Morse-Muzzy (Figure 1). It was the first production firearm made by the famous inventor and gunmaker George Morse and the first practical commercial centerfire firearm in U.S. history. Except for a small handful made up by Morse for submission to the Army – the first metallic cartridge centerfire breechloaders ever tested by the U.S. military – the Morse-Muzzy carbines were part of 100 sets cased with rifle, carbine and shotgun barrels that were marketed to American civilians. Summary statistics on the Morse-Muzzy carbine are presented in Table 1.

## Background

George Woodward Morse (1812-1888) was a New Hampshire machinist who migrated to Louisiana in the late 1830s and later settled in Baton Rouge. He was employed as a surveyor and state engineer, and later became a successful businessman and plantation owner.<sup>1</sup> Morse became known as an inventive genius and prolific firearms inventor, with a special interest in breechloading technology. He had three patents for breechloading firearms by 1858, and three others for metallic cartridges.<sup>1,2</sup>

George Morse invented the metallic, centerfire, pre-primed, reloadable cartridge – the design upon which modern center-fire cartridges are based. Although not the first firearm to use proprietary ammunition, Morse's cartridge and breechloader were an inseparable system that were patented sequentially (#15,995 and #15,996) in the United States in 1856.<sup>1</sup> Two British patents, 1857-1357 for a sliding breechblock and 1858-1164 for a hinged breechblock, followed in 1857 and 1858. While his famous carbines demonstrated the fully functional combination of a successful breechloading firearm and a metallic cartridge, it was the concept of the expanding metallic centerfire cartridge rather than the firearm itself that became his legacy.<sup>2</sup>

Morse had several U.S. government contracts in the late 1850s using his cartridge and breechloader designs. In late 1856 or early 1857, he asked U.S. Secretary of War Jefferson Davis to have one of his prototype guns tested for military use. After Davis declined, Morse turned to his successor John B. Floyd. In addition to field trials at West Point in both 1857 and 1858, Morse was in more or less constant discussions and negotiations with the Secretary of War until the outbreak of the Civil War. Those negotiations covered various configurations of long arms, including carbines, as well as contracts involving the manufacture of new weapons and alteration of existing guns.<sup>2</sup>

Nathan Mills Muzzy (1822-1885) was born in Worcester, Massachusetts. He worked as a blacksmith in the 1840s and is listed in the Worcester city directories as an armorer from 1851-1853. In 1853 or 1854, he teamed up with a Worcester gun barrel maker named Dexter Hitchcock to form Hitchcock, Muzzy & Co.<sup>3</sup> They made gun barrels and ammunition until 1857 when the company was dissolved. Muzzy started making Morse patent long guns in Worcester that same year.<sup>2,4</sup>

## Carbine development and sales

Around mid-1857, Morse decided to produce 100 sets of a sporting version of his gun and sell it on the commercial market to attract popular acceptance of his design.<sup>2</sup> The gun incorporated two of his U.S. and British patents. Each set consisted of a single stock/receiver and three threaded, interchangeable barrels – in .52-.55 caliber carbine; .49-.55 caliber rifle; and 14-24-gauge shotgun. Each barrel had its own front and rear sights. The cases included a full complement of accoutrements, reloadable cartridges and reloading tools, including bullet molds, anvils, bullet seaters, wad punches and the first instructions ever for reloading centerfire cartridges.<sup>2,4</sup>

**Table 1. Morse-Muzzy Carbine Summary Statistics.**

Maker:	Muzzy Rifle Barrel & Gun Manufacturing Co., Worcester, Massachusetts for George Morse.
Flayderman ID:	Not listed
Years Made:	~1857 to 1859
Total Estimated Production:	103 civilian and military carbines
Known Survivors:	17 carbines; Known Survival Rate (KSR) = 16.5% as of February 2024.
Length	41-1/4" (SN 55) - 42-3/4" (SN 46)
Loading Port:	Breech
Breech Action:	Sliding Block
Ignition System:	Cartridge
Ammunition:	.52, .54 and .55 caliber centerfire known
Shot Capacity:	Single shot
Rifling:	Rifled. Civilian carbines show five lands and grooves with left twist (e.g., SNs 55 and 86). Military carbine barrels (SNs 41, 54 and 60) have seven lands and grooves.
Barrel Form and Length:	Round. Documented from 21-3/4" to 25-5/8".
Front Sight:	Apparently made with either hood or blade sight.
Rear Sight:	Civilian carbines with folding ladder sight; military carbines with 2- or 3- leaf rear sight.
Attachments:	None standard. Saddle ring and bar on SNs 41, 54 and 60. Two sling bars on SN 47, an isolated receiver (Seigler).

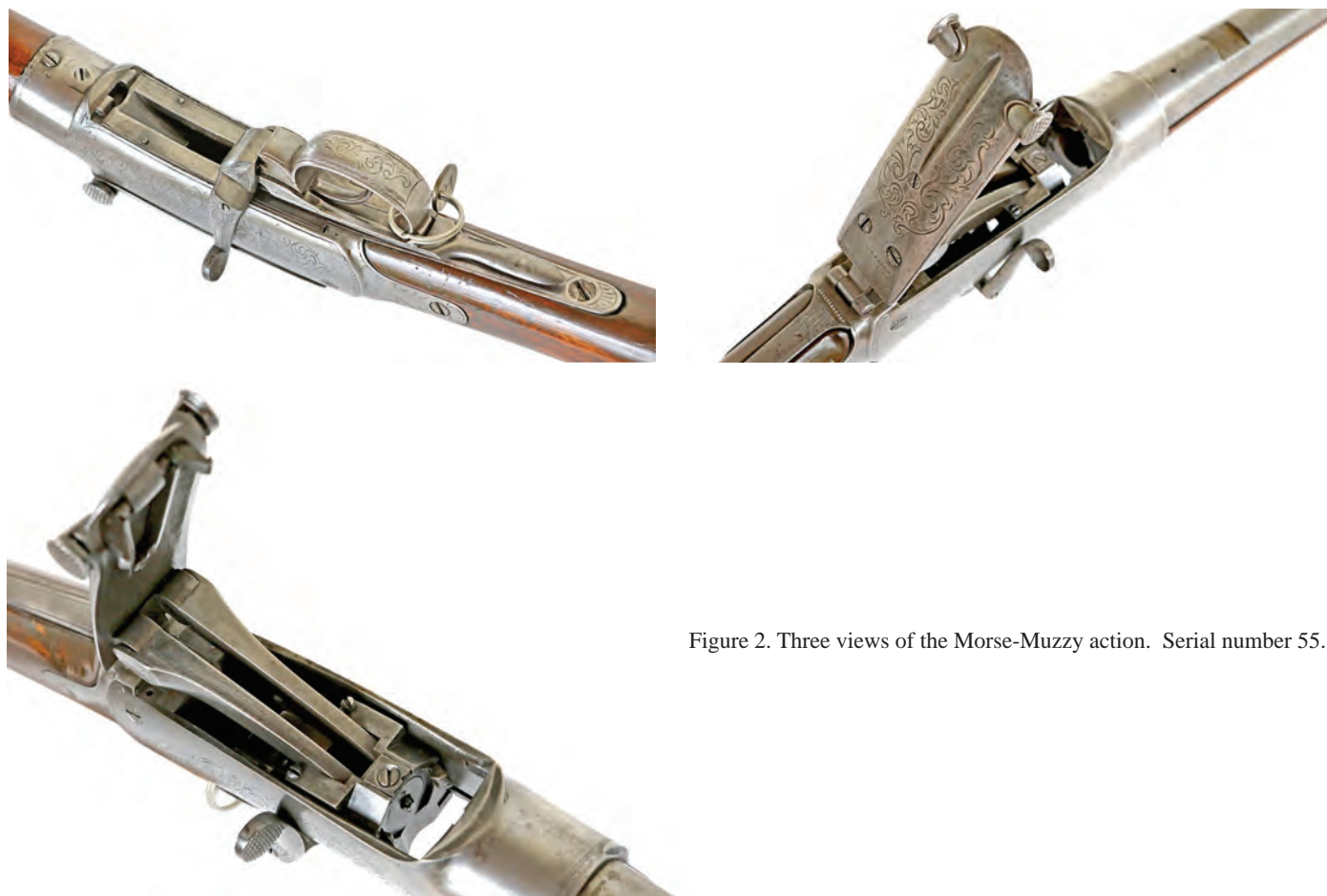


Figure 2. Three views of the Morse-Muzzy action. Serial number 55.

Morse approached Nathan Muzzy to help develop and manufacture the guns. Muzzy was probably already making the new Morse centerfire cartridges used with Morse's prototype carbines, including the carbine made by Daniel Searles that was entered in

the 1857 West Point breechloading trials.<sup>2</sup> There were major problems, however, with the manufacturing. A year later, on November 26, 1858, Morse's brother Isaac wrote a letter to George Wardner, a prominent attorney and business owner in Windsor, Vermont

complaining about the work, This letter strongly suggests that the 100 cased sets were not completed until at least 1859:

*“Manufacture of the original gun has been attempted at Worcester but by men who do not and cannot carry the manufacture on successfully for the want of machinery & means... Two years since we contracted with them for 100 guns & they have finished only about half the number...”*<sup>5</sup>

The Morse-Muzzy venture proved to be a financial failure due to cost, poor quality, delays, bad timing and other problems. Jones writes that:

*“(T)he cased sets were never popular on the commercial market, where their novel breechloading system did not appeal to sportsmen used to more familiar muzzle loaders. Even as the sets were being produced, Morse realized that his best market would be the U.S. Army where his system’s high rate of fire and durable, waterproof ammunition would be more highly valued.”*<sup>6</sup>

In December 1858, Muzzy started the Muzzy Rifle Barrel and Gun Manufacturing Company with George Morse as a stockholder.<sup>1</sup> The relationship didn’t last; the company was listed as insolvent in Massachusetts in January 1860<sup>7</sup>, ending professional collaboration between the two men.<sup>2</sup> At the outbreak of the Civil War in the spring of 1861, Morse left to join the Confederacy where he made the Morse carbines that he is most famous for today.

### Total estimated production

Total production of the Morse-Muzzy carbine was about 100 cased sets, plus a handful of uncased military carbines. References to the gun, which are extremely limited, all list total production at 100 cased sets, each consisting of a single action and stock with interchangeable rifle, carbine and shotgun barrels.<sup>8,9,2,6</sup> A cased set with serial number 103 is also known, however, indicating that there was an overrun of at least three sets or individual guns.<sup>2</sup>

### Serial numbers

The 103 carbines, including the isolated receiver (serial number 47), are serial numbered sequentially from 1 on up. Numbers can be found under the forearm, wedge, front of the frame, inside of the lever, on the barrel in front of the threads and in other locations.<sup>2</sup>

### U.S. inspection marks

None of the known surviving specimens are documented as showing either a U.S. government inspection cartouche on the stock, or any sub-inspection or proof marks anywhere on the guns. This includes three military carbines and an isolated receiver with saddle ring and bars.

### Major variants

There are significant differences across the range of surviving carbines, including wide variations in caliber, non-interchangeable threading on the barrels, and differences in ammunition.<sup>2</sup> There are also differences in carbine rifling, barrel length, receiver engraving, the presence of a saddle ring and bar, and the front and rear sights (Table 2).

Twenty serial numbers are recorded among the surviving guns. One is an isolated rifle; two are in unknown configuration as reported in the literature; and seventeen are carbines. Of the carbines, ten are in complete or incomplete cased sets. The twenty

known surviving serial numbers occur in the following (Table 2):

### Configurations:

<b>Complete/Incomplete Cased Sets:</b>	<b>Serial numbers:</b>
	7
	9
	11
	35
	46
	60
	86
	91
	94
	103

### Individual Guns:

<b>Serial numbers:</b>
20 (carbine)
41 (carbine),
47 (receiver)
54 (carbine),
55 (carbine)
66/99 (carbine),
85 (rifle)
100 (carbine)

### Unknown Configuration:

<b>Serial numbers:</b>
4
87 (listed by Seigler)

The serial numbers of three additional surviving guns – two rifles and a cased set – are unknown. In addition, Seigler lists two non-production Muzzy guns. One is a single carbine, probably a pattern gun for an order of a hundred by the secretary of war in March 1858 that was never filled.<sup>10</sup> The second is a Muzzy patent firearm made in September 1858.<sup>2</sup>

The fifteen known surviving carbines include four guns (serial number 41, 47, 54 and 60) that were clearly made for submittal to the military – presumably by George Morse, who was known for aggressively marketing to the military for sales. These carbines have four common denominators that distinguish them from the civilian carbines: they have a saddle ring and bar (Figure 3); the receivers aren’t engraved; they are rifled with seven instead of five lands and grooves; and their barrels carry no “Muzzy & Co.” markings. Lewis writes that they also used a standard U.S. musket cap instead of the revolver-size percussion caps used by the cased outfits intended for commercial sale.<sup>11</sup> One major anomaly is serial number 47, an isolated receiver that appears to have never been fitted for either stock or barrel. It is especially peculiar because it has two ring bars, a standard bar and saddle ring on the left side of the receiver and a second nearly identical bar at the front of the receiver – the exact purpose of which is unclear.

The military carbine in the Don Dietrich collection, serial number 54, is the only Muzzy-made Morse gun known to have a patch-box (Figure 3). Of the others, serial number 41 has been restocked; serial number 47 is just an isolated receiver; and no photo of the right side of the stock of serial number 60 has been located. Serial number 60 is the only one that belongs to a cased set. But it’s the only known cased carbine that has a receiver that’s not engraved, a saddle ring, a barrel rifled with seven lands and grooves and a barrel without the maker’s mark.

The characteristics of these four military carbines suggests that



Figure 3. Saddle ring and patchbox on Morse-Muzzy military carbine serial number 54 in the Don Dietrich collection. This exceptional example is one of just three known military carbines, and the only known Morse-Muzzy carbine with a patchbox. Photos by Don Dietrich.

at various times in the middle of production, George Morse had Muzzy make up at least three receivers for submittal to the military – plus the isolated receiver with two saddle rings. Muzzy numbered these sequentially along with the rest of the guns in the 100-gun contract. While there is no definitive record of which of the three complete carbines (serial numbers 41, 54 and 60) were actually tested and when, Morse carbines using his centerfire metallic cartridges were tested in both the 1857 and 1858 West Point trials. Seigler writes that:

*“Morse used a Searles-built gun in the 1857 trials because the Muzzy-built guns were not yet made, and he probably used a Muzzy-built gun in the 1858 trials”*<sup>2</sup>

For some reason, perhaps it was either never submitted by Morse to the Army or he retained it after submittal, serial number 60 was later included in a cased set for civilian sale. It’s unknown whether serial numbers 41 and 54 were ever integrated into cased sets like serial number 60, since no rifle or shotgun barrels with those serial numbers have been located. The most likely scenario is that Morse had these as well as serial number 60 made up unmarked, with no intention of ever including them in cased sets. Who made the barrels for the military carbines is also unclear, since in addition to having different rifling none of the barrels carry Muzzy & Co. markings.

### Survival and rarity

The biggest factor affecting the rarity of the Morse-Muzzy carbine is its extremely low production at only about 103 guns. Thirteen surviving sets or individual guns were reported by Seigler: serial numbers 4, 7, 9, 11, 20, 46, 47, 60, 87, 91, 94, 103, and a cased set with an unknown serial number. Not listed by him are an incomplete cased set (serial number 35) with carbine and shotgun barrels and no receiver in the Bob Holter collection; a re-stocked carbine (serial number 41) now in the collection of Jim Kaplan; a military carbine (serial number 54) in the Don Dietrich collection; an engraved but uncased Muzzy carbine (serial number 55) in the author’s collection; an uncased rifle (serial number 85) in the Bob Carlson collection; a complete set (serial number 86) in the Ralph Spears collection; and an uncased carbine (serial number 100) in the Maine State Museum. This brings the total number of known surviving Morse-Muzzy carbines to seventeen, a known survival rate (KSR) of 16.5%.

Known U.S. military use of the Morse-Muzzy carbine is extremely limited. One set, serial number unknown, was reportedly used in April 1858 on the Utah Expedition or Mormon War. The U.S. government later reimbursed Morse \$125 for it, the retail price that he and Muzzy finally established for the sets.<sup>2</sup>

Another specimen of unknown serial number may have been carried by Hugh Milton Stackhouse, a member of W.P. Emanuel's South Carolina Volunteer Cavalry, in the battle of Trevilian in Virginia in 1864.<sup>2</sup> A third specimen, cased set serial number 7 which survives today, belonged to Robert Crenshaw, captain of Company F, Second Mississippi Cavalry. Crenshaw was killed in action in July 1864 near Clinton, Mississippi, but given the fine condition of his cased set it is unlikely that it was used in combat.<sup>6</sup>

Poor quality no doubt contributed to the low survival of the Morse-Muzzy carbines. Jones writes that:

*"Morse's first attempt at applying his breech-loading system was surprisingly modern in concept, but faulty in execution. Its many moving parts made the entire mechanism prone to jam, especially if clogged with dirt or dust"*<sup>5</sup>

Morse was later quoted by Seigler as saying that:

*"When the first hundred arms were turned out, they did not find ready sale, and the company soon failed...It was found when they were completed that they were so inferior in workmanship that parties who had given me orders for them would not accept them, and in point of fact, I did not wish them to go out, fearing that their failure would injure the value of my patents"*<sup>2</sup>

Today, among the seventeen known surviving carbines are a broken cocking device, missing cocking device, missing firing lever, missing firing pin, missing sights, missing hinged door on the bottom of the receiver, non-functioning action, and a replacement stock.

The Morse-Muzzy is in very high demand among antique fire-arm collectors, a factor which has helped ensure the survival of newly identified specimens and limited further modification of the guns. The main factors driving this demand are its extreme rarity; its lack of availability to the collector; the *cachet* of the Morse name; the beauty and uniqueness of the gun; its role in the evolution of the Morse cartridge; its role in the evolution of the famous Confederate Morse carbine and its role in pre-Civil War firearms history. Most importantly, the Morse-Muzzy guns were the first commercial metallic cartridge centerfire arms in U.S. history, and the Morse-Muzzy carbine was the first metallic cartridge centerfire breechloader ever submitted to the U.S. military.<sup>2</sup>

### Acknowledgements

The author gratefully acknowledges the help of Don Dietrich for his detailed assistance on this article, including biographical information on Nathan Muzzy and access to serial number 54; to Benjamin Stickney at the Maine State Museum for his assistance on serial number 100; to Ed Hull for permission to use his 1858 file letter from Isaac Morse and his comments on multiple drafts of the piece; to Robert Seigler for researching and compiling the best history of these carbines in his book *The Best Gun in the World*,<sup>2</sup> and for his review of a late draft of the article; to Ralph Spears for access to his cased set serial number 86 and review of the article; to Jim Reid for information on serial number 41; to Bob Holter for information on serial number 35 and serial number 47; and to Chris Hale for editorial review of the final draft.

### End Notes

- <sup>1</sup> Hull, Edward. "Reverse Trapdoor" Musket Conversions". *Bulletin of the American Society of Arms Collectors* 122:60-80. 2020.
- <sup>2</sup> Seigler, Robert S. *The Best Gun in the World; George Woodward Morse and the South Carolina State Military Works*. The University of South Carolina Press. 2017.
- <sup>3</sup> Worcester City Directory. Worcester, Massachusetts. 1854.
- <sup>4</sup> Holter, Robert M. "The Morse-Muzzy Connection". *The Gun Report*, Vol. 46, No. 12. May 2001.
- <sup>5</sup> Letter from Isaac Morse to George Wardner of Windsor, Vermont, seeking a partnership to manufacture 1000 guns for the government and discussing poor manufacturing performance on the Morse-Muzzy carbine. November 26, 1858. Courtesy of Edward Hull; e-mail communications of June 2021.
- <sup>6</sup> Jones, Gordon L. *Confederate Odyssey; The George W. Wray Jr. Civil War Collection at the Atlanta History Center*. University of Georgia Press, Athens and London. 2014.
- <sup>7</sup> Phillips, Stephen H. *The Monthly Law Reporter (1849-1867)*. Little, Brown, Boston.
- <sup>8</sup> Schiffers, Peter. *The Confederate Morse Carbine*. Andrew Mowbray Inc., Woonsocket, R.I. 2017.
- <sup>9</sup> Hill, Richard Taylor and William Edward Anthony. *Confederate Longarms and Pistols; A Pictorial Study*. Taylor Publishing Co., Dallas. 1978.
- <sup>10</sup> Fuller, Claud E. *The Breech-Loader in the Service 1816-1917*. N. Flayderman & Co., New Milford, CT. 1965.
- <sup>11</sup> Lewis, Col. Berkely R. "Morse Arms and Ammunition". *The American Rifleman*. March 1955.



**Table 2**  
**Known Surviving Morse-Muzzy Long Arms**  
*(As of January 2024)*

Serial Number	Surviving Elements	Side-Mounted Cocking Device*	Carbine Barrel Length	Carbine Front Sight	Carbine Rear Sight	Military Test Carbine Diagnostic Indicators			Notes
						Saddle Ring and Bar	Carbine Barrel Rifling	Marked "Muzzy & Co." Receiver	
4	unknown								
7	Cased Set	Yes		Hood	Folding ladder	No	Yes	Yes	Referenced by Seigler. Privately owned in 1974.
9	Cased Set		25-5/8"	Blade	"Adjustable folding combination"	No	Yes	Yes	Referenced by Seigler. Atlanta History Center. .52 caliber carbine. Also discussed and photographed (pp 297-298) in Jones, where it's attributed to Robert Crenshaw (see text).
11	Cased Set		25-5/8"			No			Referenced by Seigler. Sold at Bonhams June 2006. ~.52, .54 caliber carbine. Checkered grip.
20	Carbine only		21-3/4"			No			Referenced by Seigler. .55 caliber carbine (also cited as ~.52 caliber). Privately owned in 1961.
41	Carbine only	Yes	22"	Pinched block (replacement)	Absent (vacant dovetail)	Yes	7 lands/grooves left twist	No	Referenced by Siegler. At Buffalo Bill Center of the West. .54 caliber centerfire carbine. Cocking lever broken off. Left thumb piece missing.
46	Cased Set	Yes	22"			No	Yes	Yes	Restocked carbine. Has saddle ring and bar. No "Muzzy & Co." markings. Barrel original. Data provided by Jim Reid and Don Dietrich. Former Jim Reid collection sold 2022. Now in Jim Kaplan collection.
47	Receiver Only (with saddle ring)	Yes				Yes		No	Referenced by Seigler. .54 caliber carbine. Photos in Hill & Anthony (1978).
54	Carbine only	Yes	22"	Blade	3-leaf	Yes	7 lands/grooves left twist	No	Referenced by Seigler (photographed p. 74). Receiver only, no barrels or stock. "It has the unique feature of two sling bars, one on the lower forward end of the receiver and another on the left side of the receiver to which a saddle ring is attached." Ex-Andrew Lustyik Collection, now in Bob Holter Collection.
55	Carbine only	Yes	22"	Blade	Absent (vacant dovetail)	No	5 lands/grooves, left twist	Yes	7 land and groove rifling. Has saddle ring and bar. No "Muzzy & Co." marking. Barrel and receiver serial numbers match. The only surviving carbine known to have a patchbox on right side of stock. Don Dietrich Collection.
60	Cased Set	Yes	21-15/16"	Blade (replacement)	2-Leaf	Yes (missing)	7 lands/grooves left twist	No	Has a cut toe. Missing rear sight. Jeff Goodson Collection.
66/99	Carbine only	Yes (missing)	22"	Hood	V-notch folding ladder	No		Yes	Referenced by Seigler; photographed on p. 31 and Plates 3 and 6. Also photographed in Schiffers page 16. Original saddle ring bar missing. Bought in Europe in 2013. Now owned by Museum and Library of Confederate History in Greenville, SC. Carbine ~.50 caliber.
85	Rifle only	Yes	see notes	see notes	see notes			Yes	.54 cal. carbine. Missing side-mounted cocking device, and thin spring lever that extends from that device to behind the trigger guard. Rear sight unusual. "MD" monogram stamp on buttstock. Sold at RIAC May 2019. See Ian McCallum's presentation on this gun in <i>Forgotten Weapons</i> of April 28, 2019.
86	Cased Set	Yes	25-5/8"	Hood	Folding ladder	No	5 lands/grooves, left twist	Yes	Auctioned at Lewis & Grant in November 2023 (Lot 152). Muzzy marked. .54 caliber rifle; 31" octagonal barrel. Engraved receiver. Appears manufactured without thin spring lever on right side that connects to the side-mounted cocking device. Hooded front sight; "specially made rear barrel sight".
87	unknown							Yes	Ralph Spears Collection. Carbine is .52 cal. centerfire. Sold October 2010 at Little John's.
91	Cased Set								Referenced by Seigler. "Mentioned in a letter in Wray-Morse File 002 at the Atlanta History Center."
94	Cased Set	Yes		Hood	Folding ladder	No	Yes	Yes	Referenced by Seigler. At the Confederate Memorial Hall in New Orleans. "Reportedly given to Louisiana Representative Sanford as a gift."
103	Cased Set	Yes	22"	Hood	Folding combination		Yes	Yes	Referenced by Siegler. At the Atlanta History Center. .52 caliber carbine. The receiver, stock and three barrels are also pictured in Jones, p. 297.
Unknown	Cased Set							Yes	Referenced by Seigler as "privately owned cased set". Sold at Bonham's June 2006. .54 caliber.
Unknown	Rifle only	Yes						Yes	Referenced by Seigler. "Privately owned." No additional information.
Unknown	Rifle only	Yes						Yes	Rifled. ~.54 caliber centerfire. Sold November 2018 at Amoskeag (Lot 391).
Unknown	Rifle only	Yes						Yes	Sold by Collectors Firearms (AL 3221).

**Notes:**

Vacant cells indicate no data. Shaded cells indicate not applicable.  
 What Seigler refers to as the "side mounted cocking/de-cocking device" (p. 27) is called the "side-mounted firing lever" by Jones (p. 297). Found on all receivers.  
 Variation in barrel lengths likely attributable in part to measuring error/failing to include the threads.  
 Total Serial Numbers Known: 18-15 carbines, 1 rifle, + 2 in unknown configuration (SNs 4 and 87).  
**Red Carbines:** Three (SNs 41, 54 and 60). All have saddle ring and bar; 7 land and groove rifling, unengraved receivers; and no "Muzzy" markings on barrel. Plus isolated receiver (SN 47) with double saddle ring/bar that's unengraved.