

The Connecticut Contracted '61 Springfield: The Special Model to the "Good and Serviceable" Arm

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One of my favorite authors of New England history, Eric Sloane, once wrote: "It takes only an instant for a person to be directed to a path that he will follow for the rest of his life." Sloane was personally referring to his interest in New England barns and architecture but I am sure that everyone can think back to a time where this is true for their personal life as well.

For me, my growing up in the small town of Scotland, Connecticut, surrounded by reminders of New England's colonial, agrarian past was a constant influence on my interests. For me, the "instant" that Sloane spoke of first came to me at a young age as my father allowed me to fire his 1863 Navy Arms "Zouave" rifle, sparking my interest in shooting and in learning more about American military arms, especially those of the Civil War. As I continued to learn about the War Between the States and as I joined the North-South Skirmish Association at the age of 15, after growing up around the organization with my family, I soon became fascinated with the Model 1861 Springfield rifle musket due to its distinction as the standard issue infantry arm of the Union, its heavy usage by the Confederacy, the many different contractors that produced the arm, and the fact that it was fun to shoot.

This piece of historic research presented here is an overview of research that began back in 1999 when I was hired by the Museum of Connecticut History to research the M.61 contracts awarded to Connecticut manufactures as background research for a future exhibit. Soon after researching primary source documents related to the nine different contractors and comparing the material to the existing volumes of research on the M.61, it was apparent that the full story had yet to be written. I continued working on the project at both the University of Connecticut and Tufts University.

The overwhelming majority of Springfield contract information in print today is derived from information found in Executive Document No. 1123, the *Report of the Commission of Ordnance and Ordnance Stores*, as well as Executive Document No. 99, *Contracts Made by the War Department from 1861 to 1866*. Although these documents have proven to be an invaluable resource to the Civil War his-



torian, much of the information contained in these congressional documents are incomplete and misleading at times. Evidence found in other primary sources, such as Government Documents 1131, 1136, and 1138, land records, probate records, company papers, period newspapers, oral histories, random material found in local historical societies, and some secondary sources, often add new information regarding the nine Connecticut contractors, their operations, and the numerous arms contracts they secured. In some cases, the information I rediscovered told a story completely different from the testimonies given to the Commission on Ordnance and Ordnance Stores and the conclusions reached by commissioners Joseph Holt, Robert Owen, and Major Peter Hagner.

THE CONNECTICUT CONTRACTORS

In the years preceding the Civil War, a gradual shift began from a New England agrarian lifestyle to a more industrialized economy. As early as 1770, Connecticut's industrial tradition began with the Colebrook iron forges, built by Richard Smith, whose steel was used to bore the barrels in more than 800 cannon for the Continental armies.¹ Industrialization accelerated with the growing profits of the States' textile, shipbuilding, consumer goods, and machine tool trades. The art of arms manufacturing and repair were two well-established industries in the State of Connecticut

by 1860, as many of the largest gunmakers of the day had their start in the Nutmeg State. When South Carolinian batteries sent the first shells screaming towards Fort Sumter on April 12, 1861, this signaled an end to failed attempts at diplomacy and the beginning of armed conflict. It was an act of war against the Union to which Connecticut belonged and the State was ready to enlist men, material, and manufacturers into the fight to preserve the Union.

In the early months of the war, the Federal and State governments found themselves lacking war materials of all kinds, ranging from gun carriages to uniforms. Federal and State agents scrambled to secure what goods they could find to supply the newly raised armies, and Connecticut industry was ready for this newly emerging wartime market. The State's manufacturers were easily able to make the transition from consumer products to weapons of war.

In terms of firearms, the State was home to some of the most advanced armories in the world, including the armories of Eli Whitney, Jr., Savage Repeating Arms Company, Colt Patent Revolving Firearms, Sharp's Rifle Company, and The New Haven Arms Company. One can only imagine the impact Connecticut arms, such as the Sharp's, Spencer's, or Henry's, would have had on the war if issued in large numbers early on. The focus of Colonel James Wolfe Ripley, Chief of Ordnance, and military minds in general in terms of small arms, was the single-shot, muzzle-loading, rifle musket. Arming the Union troops with rifle muskets of the "most approved pattern" was the main concern of Ripley, and the Model 1861 Springfield rifle musket was the point of Ripley's concern.

To meet the demands necessary to equip the thousands of volunteers, Secretary of War James Cameron authorized Col. Ripley to issue contracts for the M.61 to civilian manufacturers. A total of 25 Model 61 rifle musket contracts were awarded to various northern manufacturers with nine of these contracts being awarded to the following Connecticut manufacturers:

<i>Colt Patent Firearms</i>	
<i>Manufacturing Company,</i>	<i>Hartford</i>
<i>Connecticut Arms Company,</i>	<i>Norfolk</i>
<i>Eli Whitney, Jr.,</i>	<i>New Haven</i>
<i>Eagle Manufacturing Company,</i>	<i>Mansfield</i>
<i>James D. Mowry,</i>	<i>Norwich</i>
<i>Norwich Arms Company,</i>	<i>Norwich</i>
<i>Parker, Snow, & Company,</i>	<i>Meriden</i>
<i>Savage Revolving Fire</i>	
<i>Arms Company,</i>	<i>Middletown</i>
<i>William Muir & Company,</i>	<i>Windsor Locks</i>

The purpose of my research was to shed new light on the Connecticut Model 1861 contractors and to document their operations in depth. This project in its entirety encompasses a detailed history of Connecticut's Springfield manu-

facturers, their operations, and their contracts. This includes an overview of pre- and postwar operations, a discussion of each individual contract, the meets and bounds of factory property, and examples of arms as well as comparisons between 19th century and contemporary factory site photos. For the purpose of this article, I will focus on new unpublished information that was rediscovered in the course of this study. I will refrain from reiterating detailed histories of each contractor and will instead focus on five particular manufacturers.

What I will focus on is the true story behind the development of Colt's Special Model 1861; the previously unknown relationship between Eagle Manufacturing, James D. Mowry, and the Norwich Arms Co.; and details of Eli Whitney's Model 1861 derivative arms contracted by the State of Connecticut early in the war and their many variants.

COLT PATENT REVOLVING FIREARMS MFG. CO.

On April 21, 1861, Samuel Colt contacted Connecticut native Gideon Wells, the Secretary of the Navy, offering to produce 100,000 military arms that year alone. Colt's world-renowned armory began immediately to increase revolver production and Colt also hoped to manufacture other military small arms for the government (Figure 1). Colt undoubtedly wished to secure contracts for his Model 1855 Revolving Rifle, which he felt was superior to the government's standard rifle muskets. Although the government did place some orders for Colt's revolving rifles, he realized that if he wished to secure large government arms contracts, he would have to produce a single-shot, muzzle-loading arm. The government awarded Colt the first contract to produce rifle muskets. The contract called for 25,000 rifle muskets, M.1855, as modified in 1861. The arms Colt delivered to the



Figure 1. Colt's Armory location, built in 1855. It is found on the south central portion of the map.

government, however, known today as the “Special Model 1861” would be quite different than what the contract called for.

The Colt Special Model 1861 rifle musket can trace its roots to the prewar arms build-up of 1859 and 1860. It was during this time that Sam Colt also began considering opening an armory in the south to reap the profits from manufacturing arms for state sales. As the word spread that Colt Firearms was looking for an armory location, some southern states offered prospective sites. In January 1859, Virginia officials approached Colt, indicating that they were planning on renovating and opening the old Virginia State Armory and hoped to recruit his help.

Colt sent his company secretary, Major Hartley, to Richmond in December of 1859 to convince Governor Wise of Virginia that Colt Firearms “will do everything in our power to carry out his designs whether it be by creating a manufactory of arms for them at Richmond or employ my armory here on this service.”² Colt included a memorandum with Hartley containing four provisions to submit to the Governor for consideration. The memorandum detailed four offers in which the Colt Firearms Co. would agree to trade modern Colt revolving arms for the old U.S. flintlock and percussion muskets in Virginia’s armories, to employ the Colt armory under special contract for the exclusive production of revolving arms for the State, to furnish machinery and tools to convert flint arms to percussion and to rifle and sight them, and to supply machinery and tools to establish an armory capable of manufacturing 10,000 rifle muskets annually (Figure 2).³

The State of Virginia was most interested in manufacturing a rifle musket based on both the Springfield and the Enfield rifle muskets. Colt decided that it would be profitable to secure the Richmond Armory contract and directed Hartley to closely watch the matter in January of 1860. These hopes were all for naught as the Virginia legislature passed a bill authorizing the State to independently manufacture arms. Although Colt’s hopes of manufacturing a Virginia rifle musket were shattered, the legislature’s bill



Figure 2. The Virginia Armory, which would later become the CS Armory Richmond (Courtesy Paul Davies).

included the appointment of a committee to procure machinery to outfit the Richmond Armory. Supplying machinery to Virginia became Colt’s new priority, because as Hartley phrased the situation to Colt in June of 1860:

“Whoever gets that factory at Richmond will get an “inside of a track” for the arms required by the South for military purposes, and will have also facilities for bringing to their arms other arms than those they now seem to require.”⁴

The rifle musket is what the State of Virginia wished to manufacture at the newly proposed state armory and securing new rifle musket machinery was now a top priority. Throughout 1860 and 1861, the Old State Armory building in Richmond was renovated in anticipation of manufacturing a Virginia model rifle musket being developed under the direction of Virginia’s Master Armorer, Solomon A. Adams.

On January 21, 1860, the Virginia legislature passed an act appropriating \$500,000 “for the better defense of the State,” \$320,000 of which was used to purchase armory machinery and \$180,000 for the purchase of arms.⁵ Unfortunately for Samuel Colt, none of the monies would be used to purchase his machinery as Virginia officials decided to purchase equipment from manufacturers within their own state. On August 23, 1860, the State of Virginia awarded a \$156,590.40 contract to rival bidder, Joseph R. Anderson, of the Tredegar Iron Works of Richmond, to provide the Virginia State Armory with all the gunmaking tools and machinery necessary to manufacture 5,000 rifle muskets annually.⁶ Although Virginian officials hoped to produce the armory machinery in their home state, Anderson decided to subcontract the stock-making machinery to the Ames Manufacturing Company of Chicopee, Massachusetts for \$74,667.90.⁷

In November 1860, Adams contacted Secretary of War John B. Floyd seeking permission to visit the National Armory at Springfield to continue work on the prototype arms and to examine armory machinery patterns to utilize at the Richmond Armory. In a letter to Floyd dated November 24, Adams asked that:

“Should the honorable Secretary see fit to grant the request of the petitioner, I wish a copy of the order sent to me at Springfield, Mass., as I shall be engaged here for a couple of months getting up a model gun for the State of Virginia.”⁸

Adams worked diligently on the creating a new arm and, by the end of 1860, two sample Virginia Rifle Muskets were produced at the Springfield Armory under his direction as well as the gauges for manufacturing the arm.

The rifle muskets were produced according to plans specified by the State and were inspected by U.S. inspectors before being sent to Virginia. On December 4, 1860, Secretary Floyd granted Adams’ request and Adams continued his work on the Virginia Model rifle musket and the Richmond Armory. Although Virginia now had two pattern

arms, and the facilities to manufacture arms, northern machinery and designs were desperately needed. On February 21, 1861, Solomon Adams exhibited the new model gun to the members of the Virginia Military Committee. The *Richmond Enquirer*, described the new design:⁹

“It is a combination of the United States musket, and the Enfield (British) rifle. The length of barrel is 40 inches; calibre 58-100. The bands are convex adjustable (English pattern.) It has a three leafed rear sight. The lock is without a primer. The stock is of walnut, (any quantity of which, fortunately, can be had in the State.) The barrel is bright; but we think the guns to be made here, ought to be browned. The gun will do good execution at 1,000 yards. It is a beautiful piece of workmanship, and has been constructed under the eyes of Mr. Adams. The probable const of those to be made at the armory, will be \$15.”

The Virginia Model rifle musket was a hybrid design combining the best attributes of both the Model 1855 rifle musket and the Enfield rifle musket, resembling more closely the latter than the former. The handle of the arm, drop of the stock, and curved butt plate resembled the U.S. Springfield design. Upon the recommendations of James H. Burton, the superintendent of Harpers Ferry, the Virginia Model arm adopted a brass butt plate, instead of iron, as the British had done for years.¹⁰ The lock, barrel, and bands were all based on the Enfield rifle musket. The simple three-leaf rear sight was likely similar to the U.S. Model 1855, instead of a graduated long-range rear sight. This weapon may have been viewed as inferior to the arms produced at Springfield due to the brass butt plate and absence of the Model 1855 Maynard primer. For the State of Virginia, this rifle musket design would be an acceptable shoulder arm for State troops.

On March 19, 1861, the Ames Co. received the barrel and stock of the Virginia Model Rifle Musket to conform with their gauges and machines.¹¹ With the beginning of the war in April of 1861 and Virginia’s secession that same month, the contracted armory machinery was never received but the Confederate capture of Harpers Ferry’s gun-making machinery guaranteed the success of the Richmond Armory. The Model 1855 based rifle muskets produced at the newly incorporated C.S. Armory Richmond in 1861 no longer resembled the Virginia Model rifle musket, but the pattern would live on by influencing the design of Colt’s Special Model 1861.

COLT’S RIFLE MUSKET

The rifle musket Colt produced resembled the 1853 Enfield rifle musket more than the M.1855 Springfield as did the Virginia Model rifle musket. The similarities between Colt’s rifle musket and the Virginia Model arm is more than

coincidental. Development of the Special Model 1861 began early in 1861 as the Ordnance Department consulted with Samuel Colt in the development of a new rifle musket design.

By 1860, the shortcomings of the Maynard priming system were evident and the Ordnance Department once again decided to rely only on the simple yet reliable percussion cap. Superintendent George Dwight of Springfield Armory began developing a new model percussion rifle musket for military service. In correspondences between Dwight and Colonel Ripley regarding the modification of the Model 1855, it is evident that the Ordnance Department was considering an Enfield, or more accurately, a Virginia Model rifle musket design (Figure 3).

As discussed earlier, in 1860 Colt was closely following Solomon Adam’s development of a Virginia arm hoping to manufacture either it or the machinery, and combined with the fact that two model Virginia Model arms and gauges were manufactured at Springfield, by Springfield Armory staff, the Virginia pattern arm surely influenced the new U.S. rifle musket design. Sam Colt kept in continual contact with Colonel Ripley regarding his U.S. rifle musket design, as not to waste precious time and money ordering nonapproved items. The Hartford gunmaker had a great deal of success persuading Ripley to incorporate the new changes into the new Springfield pattern arm as expressed in the following correspondence from Ripley to George Dwight at Springfield:¹²

Ordnance Department
Washington, D.C.
June 15, 1861
George Dwight, Esq.
Superintendent Springfield Armory
Springfield, Mass.

Sir:

It is deemed desirable to make some changes which, it is thought can readily be done at this time, and which will improve the rifle musket without materially altering the pattern or delaying work at the Springfield Armory. Omission of



Figure 3. Colt Special Model 1861 Rifle Musket (Courtesy Larry & David Holmes Collection).

the Maynard Primer arrangement will admit of bringing in the lock plate flush with the stock and of setting the cone further in so as to make a more direct communication of the fire from the percussion cap with the charge. The bands also may be improved, it is thought, by making them round after the fashion of the English bands. I desire that these modifications and any others that may suggest themselves as advantageous in any way may be taken into consideration and that the results may be embodied in a musket, to be made and sent to this office for examination. It need not be "finely" finished but only so as to exhibit clearly the changes, as Mr. Colt is about to commence the manufacture of muskets of the Springfield pattern, and it is essential that they shall interchange in all their part with the National Armory arms. Mr. Allen should confer with Mr. Root on the subject of modifications which it may be desirable to make and which can be made without too much inconvenience and delay, and use the result of their joint consultation in making up the new musket.

Send Mr. Colt a Harpers Ferry Rifle, calibre 54 with appendages, and also a set of appendages for the Springfield Rifle musket.

Respectfully your obedient servant
 (s) J.W. Ripley (N.A.)
 Lieut. Col. Ordnance

Shortly after, Colt Firearms completed a sample of the proposed rifle musket for Ripley, which was sent by express to Washington at the end of June. Colt's Special Model 1861 was approved by Ripley shortly after as a contract for 25,000 stands of arms was issued to Colt's Patent Firearms Mfg. Co. on July 5, 1861 (Figure 4).¹³

During the entire time Colt's design was supported by Ripley, Springfield Armory was manufacturing a modified version of the Model 1855 without the Maynard primer and

patch box, otherwise known as the Model 1861 that we are familiar with today. Even though Ripley approved, advised, and endorsed Colt's new arm, Superintendent Dyer at Springfield realized that invaluable time would be wasted converting Armory machinery to manufacture the Colt Model rifle musket, something that a nation at war could not afford. On April 16, 1862, Dyer expressed his concerns to Ripley in the following correspondence:¹⁴

"It will be impossible to change the model (musket) to that which was adopted last summer, while we are working to procure the greatest number of muskets, still some of the changes may advantageously be made in a short time. The open bands and the ramrod without the swell may be substituted for those we are now making. Shall I make those changes?"

As we know, General Ripley agreed with Dyer's rationale, as the Model 1861 was produced until 1863. The only Colt design that was utilized was the Special's modified rear sight, which slightly differed from the M.1855's, as the standard rear sight of the M.1861.

Essentially due to the outbreak of war in April of 1861, Colt's pattern rifle musket could not be universally adopted at the national armories and a simplified Model 1855, the Model 1861, was manufactured instead. If not for the Civil War, the United States military forces would have undoubtedly been fully armed with Colt's "Special" Model 1861 rifle musket. In 1863, a steady flow of contracted Model 1861's was finally being delivered and the Ordnance Department now had the leisure of incorporating Colt's modifications at the Springfield Armory, resulting in the Model 1863 rifle musket.

THE NORWICH GUNMAKERS

The City of Norwich, located in New London County, has always had a reputation as the arms manufacturing capital of Southeastern Connecticut. Twenty-five different arms companies produced muskets, rifles, and pistols between 1770 and 1930, including Crescent Firearms, the Volcanic Arms Co., and Smith & Wesson, to name a few.

At the start of the war, Bacon Manufacturing Co. was the only arms company in Norwich, but this quickly changed as a group of local textile and businessmen began to transform idle factory space into a modern armory in hopes of securing lucrative government contracts. These men included Albert, John, and William Almy, William H. Tingley, T. Scott, James Dixon Mowry, Horace Whitaker, and A.G. Hammond as well as others. The men who influenced the operation most were Albert Henry Almy and James D. Mowry. A.H. Almy was the principal manager of the Eagle Mfg. Co. whose mill was located in the Eagleville area of Mansfield. Mowry was a paper manufacturer whose family owned factory space and machine shops in town.



Figure 4. A monument in Danielson, CT, whose sculptor modeled the statue's musket after not a M.1842 or M.1863 but a Colt Special Model rifle musket!

In 1861, both Almy and Mowry began to apply for arm contracts and used all the political power at their disposal. Both recruited middlemen to press Secretary of War Simon Cameron for contracts and Almy also enlisted the help of his brother, John H. Almy, the Assistant Quartermaster General of Connecticut, to lobby the Ordnance Department on his behalf. On December 26, 1861, Eagle Mfg. received a contract for 25,000 arms, while Mowry was awarded a contract for 30,000 rifle muskets.¹⁵ The men acted as mutual sureties for each other's contracts. After a few months, each contract was reduced per order of the Commission on Ordnance and Ordnance Stores.

It is unclear when the two contractors began working with one another but it is likely they searched for contracts together hoping to consolidate their operations and by early 1862 these men began searching for gunmaking machinery and factory space in addition to Mowry's machine shop in the Greenville area of town. In July of 1862, Almy paid \$15,000 to A.G. Hammond of Hartford to secure machinery of Eagle Mfg. Co., but not for their Mansfield factory.¹⁶ Almy arranged for the company to lease Horace Walker's Machine Shop, on Franklin Street in Norwich, which was to house the equipment temporarily until suitable factory space was purchased (Figure 5).

By August, Almy and Mowry purchased factory space once owned by the Norwich & Worcester railroad, known locally in Greenville as the "Car Property" because railroad passenger coaches were once made there. Almy purchased the factory space for \$12,250 for Eagle Mfg.¹⁷ In October, the first shipment of gun machinery was delivered the Cole & Walker machine shop and was likely tooled up as soon as possible (Figure 6).

By the close of 1862, the Eagle Mfg. Co. and J.D. Mowry were close to establishing a modern armory in Norwich. According to *The Norwich Courier*, the Eagle Mfg. Co. was able to produce some rifle muskets, or at least some



Figure 5. The Cole & Walker machine shop. Now a tenement on Franklin Street in Norwich, 2002.



Figure 6. The Eagle Armory, formerly the "Old Car Shops." Today used by the town crew of Greenville, Norwich, 2002.

parts of the arms, by January of 1863.¹⁸ In February, the company received their second shipment of gunmaking machinery and installed the tools in both the Cole & Walker machine shop and the former Car Property, which became known as Eagle Armory at this time.¹⁹

As detailed in Ordnance Department records, Eagle Mfg. made their first delivery of 500 muskets on April 14, 1863.²⁰ These Model 61 rifle muskets were all made in the Eagle Mfg. Co. shops on Franklin Street and in the Greenville section of Norwich but the lockplate of the arm was marked "U.S./EAGLEVILLE" dated either 1862 or 1863 behind the hammer. It is evident that the investors involved in both Almy's and Mowry's arms contracts made a decision to reincorporate the Eagle Mfg. Co., a former textile manufactory, into a modern arms and ordnance company, one that could rival any modern armory including the government armory at Springfield. In 1863, it was obvious that there was no quick end of the war in sight and more profits could be made in arms-making than textiles. The Norwich investors wasted little time and by May of 1863 the Norwich Arms Co. would be born, with the sole purpose of manufacturing weaponry for the Union army (Figure 7).

1863: NORWICH ARMS CO.

The Norwich Arms Co. was incorporated on May 27, 1863 by Albert H. Almy, Horace Whitaker, William H. Tingley, A.G. Hammond, C.L. Livermore, and James D. Mowry. The charter states that the company was created "for the purpose of manufacturing every variety of fire-arms and other implements of war, caps, cartridges, balls, and like munitions of war applicable to the use of fire-arms, and all machinery necessary for the construction thereof," leaving Norwich Arms open for producing a variety of possible products.²¹

During this time, the Norwich armories manufactured enough arms for Mowry to deliver his first shipment of 500 Springfield rifle muskets on June 1, 1863.²² These arms were all dated 1863 and marked "U.S./NORWICH." What desig-

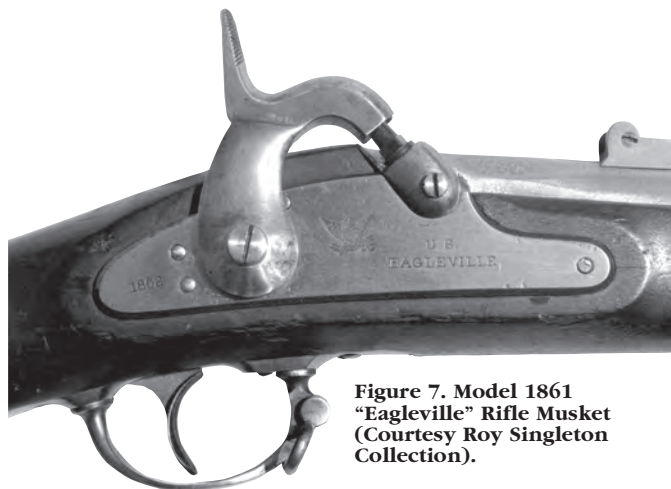


Figure 7. Model 1861 "Eagleville" Rifle Musket (Courtesy Roy Singleton Collection).

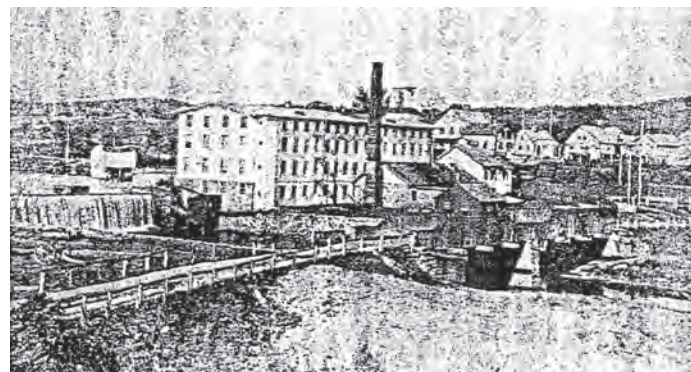


Figure 8. The Eagleville Mills, likely a postwar photo, Mansfield, Connecticut.

nates these arms as Mowry-contracted rifle muskets is an oval stamp on the flat of the stock, opposite the lock, which is marked "James D. Mowry/Norwich Conn."

Shortly after the incorporation of the new armory, Almy began taking steps to dissolve the old Eagle Mfg. Co. On July 24, 1863, Almy took the first step in dismantling the Eagle Mfg. Co. by turning over the property rights to the old car shops to the newly established Norwich Arms Co. for \$27,000.²³ Even though the Eagle Mfg. Co. was slowly being dissolved, the company continued to make arms deliveries until their shipments abruptly ended in the early fall.

On September 11, 1863, Eagle Mfg. delivered their final shipment of arms; they sent only 5,500 of their contract for 20,000 arms.²⁴ Although this seems to be the end of this particular contract, in actuality it was transferred to the new Norwich Arms Co.

The purchase reports of the Ordnance Department indicate that the Norwich Arms Co. delivered a total of 14,500 rifle muskets beginning on October 8, 1863 under a contract dated June 26, 1862. It would be impossible for the Norwich Arms Co. to secure such a contract, since they were not incorporated until May 27, 1863. After further investigation, it became evident that this contract is a modified contract, or at least an extension of the one awarded to the Eagle Mfg. Co. The Eagle Mfg. Co. was awarded their only rifle musket contract for 20,000 stands of arms on June 26, 1862. Based on the evidence from the Ordnance Department purchase reports, it seems that Norwich Arms fulfilled the Eagle Mfg. Co.'s contract and delivered the remaining 14,500 arms called for under their June 26 contract. These arms were likely delivered with "U.S./NORWICH" marked lockplates.

After the incorporation of Norwich Arms, the Eagle Mfg. Co. ceased to exist (Figure 8). By the beginning of October, production at Norwich Arms was increasing steadily. According to the October 20, 1863 issue of the *Hartford Daily Courant*, the Norwich Arms Co. paid their employees

\$28,000 for one month's labor, although it is unknown how many people were employed at the armory at the time. With little use left for the Eagleville mill property in Mansfield, the Eagle Mfg. Co. put the property up for sale. On November 5, 1863, the Eagle Mfg. Co. authorized their treasurer to sell the Eagleville property to the American Wool Co. of New York, for the sum of \$20,000.²⁵ This transaction marked the end of the Almy era of ownership of the Eagleville mills in Mansfield (Figure 9).

On November 20, 1863, James Mowry delivered the final shipment of arms under his first contract. Unfortunately, Mowry was only able to deliver 10,000 of the 20,000 arms that he was responsible for. An extension was not granted on the contract, but the Ordnance Office gave him an order for 2,000 more Springfield arms. This additional order served as the extension Mowry sought. All the arms produced under this contract and others that would follow were delivered with new "U.S./JAS d. MOWRY/NORWICH." marked lockplates to avoid being confused with the Norwich Arms Co. deliveries (Figure 10).

1864: NORWICH, THE GUNMAKING CAPITAL OF EASTERN CONNECTICUT

As the Civil War entered a third bloody year, the Norwich gunmakers were fully prepared to produce any and



Figure 9. A sketch of the armory buildings on Franklin St. by T. Addison Richards, *Harper's New Monthly*, 1864.

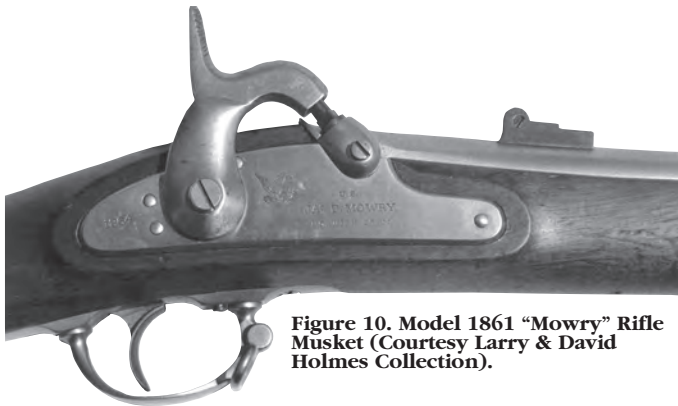


Figure 10. Model 1861 "Mowry" Rifle Musket (Courtesy Larry & David Holmes Collection).

all small arms the government may need. The new Norwich Arms Co. was a manufacturing marvel rivaling both the government armory at Springfield and the private gunmakers. The Norwich men led by Almy and Mowry successfully transformed the Eagle Mfg. Co. from a stagnant textile venture in Mansfield into a modern rifle musket armory situated in two separate locales within the city of Norwich. The fact that the Norwich Arms Co. was able to run the most successful new firearms operation in the State of Connecticut did not go unnoticed. Although Colt, Eli Whitney, Sharp's, and Savage Arms ruled the states' firearms industry before the war, the factories and output of the newly formed Norwich Arms could not be ignored.

The editors at *Harper's New Monthly Magazine* thought that the modern armory would be of interest to their readers and sent reporter T. Addison Richards to study the "craft of the armorer."

At the time that Richards described the Norwich armories for the March 1864 issue of *Harper's New Monthly Magazine*, the output of the armories was half as great as the Springfield armories. Richards described the Norwich armories as being "spacious and substantial," while noting that the buildings themselves made "no especial pretensions to architectural beauty." He observed that the Norwich works were producing 1,200 rifle muskets, 3,000 bayonets, and 2,000 locks on a weekly basis. As of March 1864, Richards noted that the Norwich Arms Co. was producing 200 finished rifle muskets per day, not to mention 200 breech-loading carbines per day (Figure 11). None of these carbines were recorded in deliveries made to the Ordnance Department, so these may have been produced for the State of Kentucky or another private contract.²⁶ The production run and final destination of these arms remain a mystery.

Richards wrote that the workers at the armories became extremely skilled at making what part they were responsible for and what machine they operated. Rifling of the barrel, the lengthiest operation, took 30 minutes for each barrel. Richards went into detail describing the rifling process as well as the history of rifled arms and their effect on warfare. In describing the brilliance, elegance, and utility

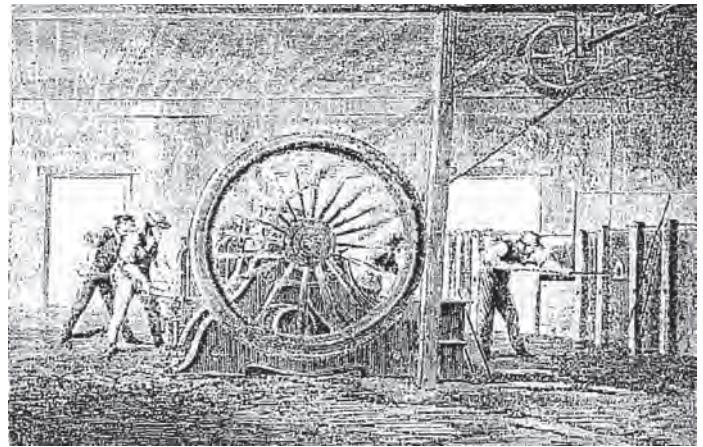


Figure 11. The Rolling Mills at Eagle Armory, *Harper's New Monthly*, 1864.

of the rifle musket, Richards poetically described how he felt the Civil War infantryman likely felt about rifling:

If only as a matter of artistic beauty, he will no longer wonder that the old "smooth bore" has become a bore indeed to all sensible soldiers, who, when they fire, like to fire effectively.²⁷

In the assembly room, the expert workers were able to assemble an entire arm in about 10 minutes. Richards wrote that the workers combined the separate parts "as easy a dispatch as that with which the compositor will assemble the types for the printing of this paragraph."²⁸ The armory employees were paid per piece they produced. The pay varied depending on the value of the part they were manufacturing. Barrel-makers were paid the most, since the value was about three dollars, while the workers who manufactured the ramrod spring-wire were paid the least, since the value of the spring was one mill, or one dollar for each thousand.²⁹ The workers were held responsible for any defects in a part they manufactured, be it a barrel or sear spring, and such defects would result in the price of the part being deducted from the employee's pay (Figure 12).

On March 31, 1864, the Norwich Arms Co. successfully completed the former Eagle Mfg. Co. contract. The following day, The Norwich Arms Co. entered a contract for 10,000 rifle



Figure 12. The Assembly Room on Franklin Street, *Harper's New Monthly*, 1864.

muskets with the Ordnance Department, authorized by the Secretary of War on April 1, 1864.³⁰ A few days later, James Mowry received his third and final arms contract of the war for 10,000 arms, dated April 6, 1864.³¹

In anticipation of the day that the war department would no longer need private contracts, Almy and the directors of the company decided to expand their charter and manufacturing capabilities. On June 16, 1864, the charter was amended in a way that authorized the company to “engage in the manufacture of engines, machinery, tools and other mechanical business, or manufacture from iron and other metals,” thus further diversifying their possible product line.³² Evidently, Almy, Mowry, and the other Norwich investors thought far beyond gunmaking and hoped to break into the city’s machine tool and metal manufacturing industries following the war (Figure 13).

In October, the Norwich Arms Co. successfully secured a third government contract when such orders were becoming a rarity. The contract was made October 18, 1864 between “James D. Mowry, agent of the Norwich Arms Co., of Norwich, in the State of Connecticut . . . and the United States, Brigadier General A.B. Dyer, Chief of Ordnance, acting under direction and by authority of the Secretary of War.”³³ Albert H. Almy, James D. Mowry, and William H. Tingley all acted as sureties for the contract. The contract called for the Norwich Arms Co. to furnish 15,000 Springfield rifle muskets and appendages at the price of \$19 each. This was encouraging news for the directors of the company as well as the employees who could now count on having work well into 1865.

1865: PEACE AND POSTWAR PROBLEMS

By the beginning of 1865, the ordnance department had more than enough arms to equip the federal armies, and more importantly, it was obvious to military officials that muzzle-loading technology was a thing of the past. Furthermore, it



Figure 13. Model 1861 “Norwich” Rifle Musket (Courtesy Larry & David Holmes Collection).

was evident that the war was coming to a close and, in April, the Army of Northern Virginia would be the first of the Confederate armies to surrender, marking the beginning of the end of the Civil War. On August 3, 1865, Norwich Arms made their final arms delivery to complete their third and final contract. It is unclear what sort of business the company engaged in following their final contract but, in any case, 1866 marked the end of the Norwich Arms Co.

Evidence indicates that financial problems may have been the main reason behind the postwar failure of the Norwich Arms venture. From researching Norwich land records, it seems the Norwich Arms Co. refused to pay, or could not pay, on overdue taxes owed on the company property. James Ritchie, the tax collector for the City of Norwich, tried unsuccessfully to collect the \$696.19 owed by Norwich Arms. After a series of attempts to collect the monies, the Connecticut courts ordered the Norwich Arms Co. to pay their debt by selling company machinery and land at public auction. In three short years, Almy, Mowry, and the other Norwich investors transformed the idle Greenville and Franklin Street shops into a modern national armory in a sense. Unfortunately, Norwich Arms was a result of war, and the great trip-hammers, lathes, and rolling mills of the Norwich armories fell silent with the closing of hostilities.

ELI WHITNEY, JR.: STATE AND FEDERAL RIFLE MUSKETS

Eli Whitney, Jr., the son of the great American inventor and gunsmith, graduated from Princeton University and took over his father’s business in 1842. From that year until immediately preceding the Civil War, the Whitney Armories of New Haven produced a variety of arms, many of which were produced for Whitney’s lucrative southern markets. With the beginning of the war, Whitney lost one of his largest markets, the southern militia. He soon began preparations to secure state and government arms contracts. During the Civil War, a variety of M.1861 Springfield-type arms were produced at Whitney’s New Haven armory. Despite the many variations, all resembled the Springfield rifle musket. The majority of Whitney’s products found their way to the hands of Connecticut troops and others were issued throughout the Union armies.

CONNECTICUT STATE RIFLE MUSKET SALES

Governor Buckingham realized early on that war within the United States was inevitable and, in January of 1861, he authorized the Quartermaster General of the State to purchase enough knapsacks, accouterments, and firearms to equip 5,000 men.³⁴ The State of Connecticut quickly purchased 1,442 rifles from the Sharp’s Rifle Co., but it was evident that many more arms were needed. Connecticut State

sales were undoubtedly Whitney's most profitable venture as state quartermasters were much less strict with their inspections than the Federal government, which meant that money could be saved in a variety of ways. Being a shrewd businessman and ingenious gunmaker, Whitney would become famous for manufacturing "good and serviceable arms" by utilizing condemned, rejected, or surplus parts from government auctions. Prior to the war, large amounts of barrels, locks, stocks, and other parts, in various stages of manufacture, were routinely disposed of at auctions at the national armories. For example, on June 8, 1859, account books of condemned ordnance sales at Harpers Ferry show Whitney purchasing 1,175 ground barrels at 31 cents each, 466 ramrods at 12 cents each, and 84 Hall rifle screws at 4 cents each.³⁵ Items such as the ground barrels were most likely finished, polished, and rifled back at Whitneyville.

CONNECTICUT STATE SALES: MODEL 1855 RIFLE MUSKET

The Model 1855 rifle musket assembled at the Whitney Armories in early 1861 was a product of such practices. As the year 1860 drew to a close, Whitney hoped for large state orders amidst talks of war and began preparations to manufacture a musket similar to those produced at the government armories. In December, Whitney contacted the Ordnance Department requesting permission to purchase 1,000 Maynard primer musket locks but all the government was willing to sell were 350 condemned locks.³⁶ On December 20, the superintendent of Springfield Armory authorized the sale of any locks that were "damaged or otherwise unsuitable for the public service," not exceeding the 1,000 stipulated earlier.³⁷ Whitney purchased the 350 immediately but it is doubtful that the remaining request for 650 Maynard locks was ever granted. This is a reasonable assumption as the government armories ceased manufacturing Maynard locks in the early months of 1861 and that relatively few Whitney Model 1855 rifle muskets survive today (Figure 14).

The estimated 350 Model 55 Whitney rifle muskets were presumably assembled at the Whitney Armory by the



Figure 14. Model 1855 "Whitney" Rifle Musket (Courtesy Kevin Hagen Collection).

summer of 1861 and, with a new American arms race gaining momentum, the rifle muskets would not have to sit on the armory racks for long. In the fall of 1861, Whitney contacted the State of Connecticut knowing full well that Governor Buckingham needed all the serviceable arms he could find. Adjutant General of the State, J.D. Williams, accepted Whitney's offer and likely purchased the entire lot of arms. An estimated 350 rifle muskets were purchased by the State for \$18 each including appendages. Only two receipts regarding this transaction are known to exist which account for 240 of the 350 arms. The first receipt dated September 6, 1861 is for 100 "Minie Muskets with Maynard Primer" and a second dated September 17, 1861 is for 140 "Minie Rifled Muskets with Maynard Primer."³⁸

Although it seems the 350 "minie muskets with Maynard primers" delivered in September were a one-time deal, it is still unclear whether this shipment was part of Whitney's first Connecticut contract dating June 27, 1861. If so, the Whitney M.55 would have been part of the earliest shipments to the State. The Whitney Model 1855 arms purchased by Connecticut were immediately issued to State troops. Two examples exist today bearing the regimental markings "8 CV/A 18" and "11 CV," and the Whitney 55 undoubtedly saw combat in the hands of Connecticut troops during the campaigns of 1862. These rifle muskets were likely replaced and reissued to the State Active Militia as soon as a steady supply of Whitney and Government armory Model 1861 rifle muskets reached Connecticut's Quartermaster General in 1862 and 1863.

WHITNEY'S 1ST CONNECTICUT CONTRACT: JUNE 27, 1861

The Model 1855 rifle muskets delivered by Whitney were but a fraction of the number of arms needed by the Governor. Unlike other states in the Union, Connecticut did not have to send agents to Europe for firepower but was able to rely entirely on private armories within the state to supply the thousands of new volunteers. On June 27, 1861, Whitney entered a contract with Quartermaster General J.M. Hatheway to produce 6,000 rifle muskets at \$18 each (Figure 15).³⁹



Figure 15. Whitney's 1st Connecticut Contract Rifle Musket (Courtesy Museum of Connecticut History).

As with many of Whitney's previous production runs, the arms were manufactured below the federal standards at the Springfield Armory. Casting flaws, repaired with lead, are evident in some examples of the M.61 1st CT contract arms. The State was responsible for the expenses of crating and shipping the Whitney arms from New Haven to Hartford. Upon arrival in Hartford, state inspectors examined the arms and many of the Whitney arms could not even pass the loose state inspection. All the rejected arms then had to be crated back up and sent back to the Whitney Armory in New Haven. Apparently a large number of Whitney's rifle muskets were rejected and the costs of shipping them back to New Haven were beginning to mount up. Eventually some person at the capitol decided it would be more cost effective to send a state inspector to Whitneyville and inspect the arms on site.

Quartermaster General William A. Aiken stated in his 1862 report to the General Assembly that 1,959 "Whitney Rifle Muskets," and 4 with "Brown Barrels" were turned over to him by the previous Quartermaster General Jonathan B. Bunce, January 16, 1862.⁴⁰ These arms must have been the rifle muskets delivered by Whitney under his 1st CT contract. Aiken received another 880 Whitney rifle muskets up to April 1, 1862.⁴¹ Three hundred twenty more rifle muskets were delivered somewhere between March 31 and April 11. Aiken reported to the General Assembly on April 1, 1862 that he had on hand "2,929 Whitney Rifles, to complete a contract previously made for six thousand."⁴²

The arms delivered under Whitney's first Connecticut contract were essentially the Springfield M.1861 rifle musket, but these arms differed slightly. The lock is the typical M.1861 Springfield lock, although there is no date and no eagle on the locks. Marked between the hammer and the bolster are two lines "E.WHITNEY/N. HAVEN." There are no proof marks or "U.S." stampings on the butt plate or on the mountings. The barrel bands are stamped with the standard "U" but are smaller than those on typical Springfield arms. The rear site of Whitney's design resembles that of the 1863 Remington rifle, the nose caps are pewter, and the barrels utilize seven lands of rifling. These were made to socket Enfield-style bayonets, which cost Whitney less than the Springfield type. No CT state markings of any kind will be found to indicate state ownership other than regimental marks.

WHITNEY'S 2ND CONNECTICUT CONTRACT:
JULY 21, 1862

With the end nearing on Whitney's state contract, he offered to deliver 8,000 more arms of the Springfield pattern to Connecticut. Whitney offered to produce his rifle mus-

kets under the same terms of the first contract, at \$18 each including appendages. The State accepted Whitney's offer and, on July 21, 1862, Whitney's second contract with the state was finalized (Figure 16).⁴³

Sometime between April 1, 1862 and April 1, 1863, Whitney completed his second contract with the State of Connecticut.⁴⁴ According to Aiken's statement of Ordnance Stores, 11,238 Whitney Rifles with appendages were purchased from April 1, 1862 to April 1, 1863.⁴⁵ With the completion of his second contract, Whitney had supplied Connecticut with at least 14,000 of his M.1861 Springfield pattern arms.

With the 2nd Connecticut contract arms, Whitney began using M.1863-type barrels with three lands of rifling and a rounded bolster. These are similar to the barrels used on the "Flush Plate" arms. He also utilized the Plymouth Rifle type hammer instead of the M.1861. The Plymouth hammer was used because it was offset enough to strike the M.1863-type bolster, where the M.1861 hammer would not. The lockplate utilizes the unique Whitney eagle over a panalopy of flags marking, stamped between the hammer and the bolster. The single line "WHITNEYVILLE" is stamped in double-struck letters, beneath the eagle design. This eagle design is also found on Whitney's "Plymouth" Navy rifles and his "Flush Plate" rifles. Whitney's second model rear-sight design is found on the majority of the second contract arms. The second model sight utilized a single-step, "L"-shaped base with a single leaf sight graduated at increments of 100, 300, and 500 yards, similar to the single leaf sight of the M.64 Springfield, and was also modified employing the rounded "ears" to protect the 100-yard leaf, similar to the M.1861 Springfield arms. Some 2nd CT contract arms exist that utilize the typical M.61 rear sight, which suggests that these particular pieces were delivered at the end of the contract when he was tooling up for a federal contract. These arms were also fit to socket Enfield-style bayonets (Figure 17).

A "transition" model also exists that was likely produced just prior to Whitney's switch to the 2nd CT Contract



Figure 16. Whitney's 2nd Connecticut Contract Rifle Musket (Courtesy Museum of Connecticut History).

issued to some of these regiments or to regiments who were initially armed with the inferior smoothbore M.1842 musket.

WHITNEY "HIGH HUMP" RIFLE MUSKET

Another example of Whitney's M.1861 derivative arms is the Whitney M.1861 "High Hump" rifle musket (Figure 18). These arms resemble the M.1861 "Richmond" rifle muskets as these Whitney arms were produced with unmilled Maynard tape primers, that is, the primer recess was never milled into the lock, resulting in the "High Hump" where the M.1855 Maynard lock would otherwise appear. Exactly when these arms were produced remains a mystery.

Based solely upon the "High Hump" lockplates, they may have been produced after the 350 complete Maynard locks discussed earlier and were likely assembled sometime around the time of Whitney's first Connecticut contract in 1862. The lockplates of the arms are stamped with the same "E.WHITNEY/N.HAVEN" marking between the hammer and bolster that is found on his 1st CT contract arms, which would place the "High Humps" in the same time period because, as mentioned earlier, Whitney was stamping his locks with the large Whitney eagle above the words "WHITNEY-VILLE" by late 1862.

When examining the rest of the arm, the date of manufacture becomes even more mysterious. These rifle muskets employ the three-land rifling system, which Whitney did not use until mid-1863. This would indicate that the arms were not assembled until sometime that year. This rifling is also found on later shipments of Whitney's second Connecticut contracts produced in 1863. Another possibility is that Whitney purchased surplus or rejected barrels from Springfield or Harpers Ferry before the war, as he often did, and used these three-land barrels on this particular arm. This could place the "High Hump" arms in an 1861 or 1862 time-frame. The number of variations found on these arms further proves that Whitney was producing them out of various surplus parts he had. Examples are known to have the early-



Figure 18. Whitney "High Hump" Rifle Musket (Courtesy Kevin Hagen Collection).



Figure 17. Whitney's 2nd CT Contract "Transition" Model (Courtesy Museum of Connecticut History).

rifle. This arm resembled the 1st Contract rifle musket except Whitney employed the new Whitney eagle lockplate found on the 2nd CT Contract arms, utilized three lanes of rifling, and also employed a second pattern, "L"-shaped, single-leaf, rear sight. One example of this arm can be found at the Museum of Connecticut History and three others can be found at the Beverly, MA Historical Society. This arm was manufactured prior to utilizing the Plymouth hammer- and M.63-style bolsters.

The Whitney first and second contract arms were all issued to Connecticut regiments and Connecticut Active Militia. It is definitely known that the 22nd and 27th Regiments of Connecticut Volunteers were issued Whitney CT contract rifle muskets. As these two regiments were mustered into service, the Federal government supplied them with M.1853 Austrian "Lorenz" rifled muskets that were in need of repair. These 4,400 arms released to Connecticut were considered inferior arms and Governor Buckingham refused to issue such unserviceable weapons to the State's fighting men as indicated in Aiken's report to the General Assembly in 1863:

The Whitney Rifled Muskets intended for the 22nd and 27th regiments were consigned to Col. J.H. Almy in New York, for transportation and delivery. The Austrian Rifled Muskets sent from Washington for Connecticut volunteers were not issued, and, on account of their inferior quality, others were substituted by order of the Governor, except in the cases of these two regiments. They were furnished with the Austrian Rifled Muskets only because our stock of superior arms had been exhausted and no more could be procured at the moment.⁴⁶

Other regiments certainly obtained Whitney arms either on a company level or as replacement arms. During the time of Whitney's deliveries, Connecticut raised the 14th through 28th regiments of volunteer infantry. It is certain that the 22nd and 27th regiments were fully armed with Whitney rifles and Springfield rifle muskets were issued to the other six regiments: the 14th CVI (except Company A and B who were armed with M.58 Sharps rifles); the 15th CVI; the 16th CVI; the 18th CVI; the 20th CVI; and the 21st CVI. Whitney's first and second Connecticut contract arms were likely to have been

stepped rear sight, while others are known to be furnished with the late “L”-shaped, single-leaf rear sight, with and without the rounded protective “ears.” This is the same sight found on the 2nd CT contract arm. Although the butt plates of these arms were iron and unmarked, examples of the arm survive that are fitted with brass butt plates like the CS Armory Richmond rifle muskets. Whatever the case, the “High Hump” arms undoubtedly had a small production run.

The 21st Connecticut Volunteer Infantry was at least partially armed with the M.1861 Whitney “High Hump.” On display at the Museum of Connecticut History in Hartford is a Whitney “High Hump” arm along with a photograph of Pvt. George T. Meech of the 21st CVI posing in full marching gear, including a Whitney “High Hump” rifle musket. The “High Hump” lockplate, early Whitney “L”-shaped two-leaf sight, brass-headed ramrod, and Enfield bayonet are unmistakable in the photograph. A New Hampshire Colonel, inspecting the 21st CVI at Julian Creek, Virginia September 14, 1863 reported:

“I next inspected the arms, accoutrements and clothing. Having examined carefully every musket in the line, I found none but what were in the best possible order. Some of the muskets are of the “Whitney” pattern, consequently difficult to keep in as good order as the “Springfield” on account of the softness of the metal and the poor finish they received at the hands of the maker.”⁴⁷

Private Meech’s “High Hump” rifle musket must have been among the Whitney pattern muskets examined. In the eyes of the U.S. Army, the Whitney arms may not have been considered an equal to the M.61 Springfield, but they were good and serviceable and were just as deadly in the hands of a determined Connecticut infantryman (Figure 19).



Figure 19. Pvt. George T. Meech of the 21st CVI (Courtesy Museum of Connecticut History).

In addition to these four types of arms manufactured for the State of Connecticut, Whitney manufactured a number of other Springfield variants that were sold on the open market and to state troops. These arms include Whitney’s M.1861 “MANTON” Derivative, which until recent years was thought to be a Federal- or State-contracted arm of English manufacture. The characteristics of the arm prove otherwise and it is obviously another Whitney firearm, although the purpose behind the “Manton” name still remains unclear. Although the arms are dated 1862, they were probably not assembled until 1863. Howard Michael Madaus affirms that possibly 1,074 “MANTON” arms were sold in 1863 to the firm of Fitch & Waldo of New York City. During the draft riots in New York City, the New York adjutant general reactivated the state militia and 9,664 Enfield rifle muskets and 8,000 Springfield rifle muskets were purchased to arm the recruits. These Springfield arms were purchased from a number of different arms merchants and a number of Whitney “MANTON” arms may have been mixed in with the variety of “Springfield” rifle muskets that were sold to the State of New York (Figure 20).⁴⁸

Another notable arm was Whitney’s M.1861 “Flush Plate” Derivative, which seems to be made of surplus parts from Whitney’s various state and federal contracts and has an appearance similar to that of a Model 1863 Springfield or Plymouth Rifle. The lockplate is flush with the stock, similar to the Enfield rifle musket, and behind the hammer is the date 1863, found either vertically or horizontally stamped. The hammer and lockplate are the same as those employed on the Plymouth rifle and examples of the flush plate exist in both rifle and rifle musket length. It is obvious that this arm was not intended for sale to the government, as it would never pass the government inspection. Eli Whitney, Jr. was not one to waste surplus parts when they could be easily assembled into a production run of a few hundred arms (Figure 21).

Finally, Whitney was among the many private parties scrambling to receive a federal arms contract during the opening months of the war and was awarded one in December of

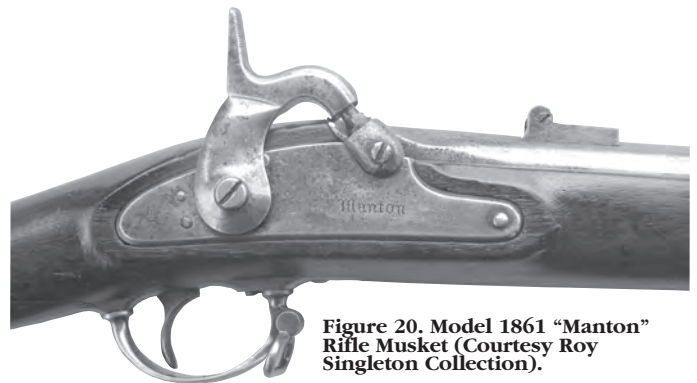


Figure 20. Model 1861 “Manton” Rifle Musket (Courtesy Roy Singleton Collection).

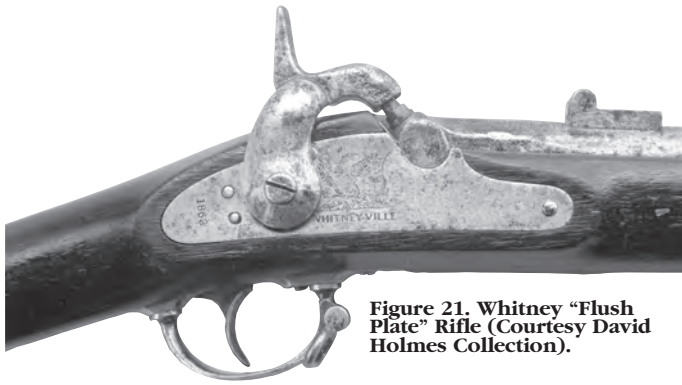


Figure 21. Whitney "Flush Plate" Rifle (Courtesy David Holmes Collection).

1861. Then the Commission on Ordnance and Ordnance Stores slashed the amount of arms called for and, either due to the reduction or because of his involvement with the Connecticut contracts, Whitney chose not to accept this new contract. For Whitney to refuse a federal contract for 25,000 arms, he must have been making a higher profit margin securing pistol contracts and delivering on state contracts. No arms were delivered under this first federal contract.

Whitney spent most of 1862 and 1863 tending to his pressing Connecticut and Plymouth Rifle contracts. In addition to this work, Whitney decided to try to obtain a second contract from the Ordnance department after forfeiting on his first and was awarded a second federal contract on October 17, 1863.⁴⁹ Whitney must have anticipated securing a second contract, because three days after signing the contract, he delivered his first shipment of 500 arms on October 20, 1863. He was able to totally fulfill his contract with no apparent difficulties (Figure 22).

The quality of the rifle muskets was vastly improved from the arms delivered to the State of Connecticut, mainly because similar work would never have passed government inspection. When forced to, Whitney was fully capable of producing first-class arms equal to those manufactured at Springfield and Colt's armory.

OTHER INTERESTING ITEMS

Research on every contractor yielded new and interesting information when looking at material at historical societies as well as land and probate information. Locating the



Figure 22. Model 1861 "Whitneyville" Rifle Musket (Courtesy David Holmes Collection).

factory sites, reconstructing the meets and bounds of factory space, and comparing period photographs to the sites today helped to understand and appreciate the scale of the operations, the trials involved in building an armory from scratch in many instances, and the postwar uses of the armories. Many other interesting details of the four remaining contractors were uncovered that could not be discussed here in detail but a couple stand out that deserve a brief mention.

For years, arms historians have often attributed "Windsor Locks" marked Springfield rifle muskets that exist to William Muir's rifle musket contract. Authors have also speculated about a link between the Denslow & Chase machine shop of Windsor Locks and the William Muir & Co. contract. While researching Muir's contract, Windsor Lock land records indicated that on February 15, 1862, Denslow & Chase mortgaged their land, shops, and machinery to Oliver T. Burt who was Muir's partner.⁵⁰ Burt was not only Muir's partner but had financial interests in the Hodge-Burt "Trenton" contracts, in which his brother A.M. Burt was a partner.⁵¹ Following another mortgage, Burt purchased the land, water privileges, parts in progress, and the machinery of Charles W. Denslow and John Chase, Jr., of the firm Denslow & Chase of Windsor Locks on October 6, 1862 (Figure 23).⁵²

All of the arms produced for the Muir & Co. contract were manufactured in the Denslow & Chase machine shops now owned by Burt. From looking at the machinery lists included in the purchase and recorded in the town land records, it is evident that Muir & Co. had the capability to produce nearly the entire arm, including bayonets. According to the report of the Commission on Ordnance and Ordnance stores, they also produced some parts for other contractors, most notably for Burt's brother and the Trenton contract.⁵³

One other particularly interesting case was that of the Savage Revolving Fire Arms Co. located in Middletown, CT. The Savage Arms Co. is well known for producing their "Figure 8" Revolvers that saw some wartime use. The company was also the recipient of two rifle musket contracts. Savage



Figure 23. A Sketch of the Windsor Locks Canal Denslow & Chase Shops are centered, DeBeers Map, 1889.

Arms was able to partially fulfill their first contract for 25,000 arms and completely fulfilled their second contract for 12,000 Springfield rifle muskets; it was done with a great deal of difficulty. Poor management and a lack of company inspectors resulted in 8,000 of the 12,000 M.61 rifle muskets being condemned by government inspectors.⁵⁴ The firm was also facing growing financial problems partly due to manufacturing an additional 8,000 arms to replace the condemned weapons.

This interesting information was found at the Middlesex County Historical Society in the papers of E.A. Russell, a stockholder in the Savage Revolving Fire Arms Co. Russell often refers to “condemned muskets” but none of the correspondence indicates exactly when the arms were inspected and condemned. It is evident that problems began for the company in early 1864. A financial statement dated August 1, 1864 mentions the unwanted revolvers on hand, but it was not until December of 1864 that the stockholders finally received word that 8,000 arms did not pass government inspection. It must have come as a great shock to all of the interests involved that such an established gunmaker could produce such a large amount of flawed firearms.

At a December stockholder meeting, the company secretary, James Wheelock, informed the stockholders that more money was needed to keep the company running, that no new federal contracts were forthcoming, and that a contract was being negotiated with Remington to produce a “new kind of arm,” which was likely their breech-loading, rolling-block carbine. The money was appropriated.

In a correspondence from Joseph Alsop and to his brother, H.W. Alsop, Joseph was concerned about the situation of the company and wished to know how much money Savage Arms had so far wasted. After the meeting, Russell wrote H.W. Alsop detailing Wheelock’s report and his personal feelings about the situation of the company. In regard to the condemned M.61 rifle muskets, Russell reported:⁵⁵

“I find the number of muskets on hand condemned by the Government amounts to 5000, which the company is not allowed to sell in other states, or to ship abroad out of the Country. The Secretary says he thinks the Gov’ may take off the embargo this winter.

On my inquiring about the pistols they state that 2200 of them are seized by the Government, and they don’t know [if] they shall ever get them back.

I learn that 8000 muskets were condemned out of the contract with [the] Government, and W Hotchkiss sold 3000 before he left, leaving 5000 on hand.”

It is interesting that Russell mentions that 3,000 of the condemned arms were sold, but there is no indication of who bought them. The purchaser of these 3,000 condemned M.61 rifle muskets may have been the State of New Jersey. Numerous examples of Savage Revolving Fire Arm

Co. contract rifle muskets exist with a distinct “NJ” cartouche, designating New Jersey ownership; they are stamped both on the stock on the opposite side of the lock and on the left barrel flat. These examples also have “VP” (viewed and proofed) inspector’s marks on the barrel. Either this means that the barrels of the guns were not the reason that the arms failed inspection, or Hotchkiss had the “IC” (inspected and condemned) marks removed.

Wheelock would later report that the condemned rifle muskets were valued at \$60,000 and the 2,500 unwanted “Figure 8” pistols were valued at \$5,000.⁵⁶ This was more than the company’s real estate was worth and the stockholders squarely placed the blame on Wheelock. They tried unsuccessfully to obtain a statement of affairs of the company following the December 1864 meeting but it seems that business was so bad that Wheelock did not release any information about Savage Arms financial problems. H.W. Alsop became so frustrated he began asking fellow stockholders if they knew any good lawyers should legal action be taken to secure financial information. Wheelock eventually conceded to the demands of the stockholders, but not until February 22, 1866.⁵⁷ Alsop responded by asking if Russell felt that they should sell their stocks and further admitted that he probably would if he could receive at least \$35 per share (Figure 24).

With no government contracts forthcoming in 1865, Wheelock tried diversifying the Savage Arms product line to include sewing machines, even though the company charter did not authorize such work. Wheelock entered a contract with the Finkle & Lyon Sewing Machine Co. of Chicago in the summer of 1865 to produce industrial-sized sewing machines but stockholders soon forced him to stop this practice.

The year 1866 marked the end of the Savage Arms Co. and the firearm tradition that began with Simeon North more than a half-century earlier. Savage Arms was never able to recover from the rejection of 8,000 rifle muskets; the company’s financial situation never improved, and Savage Arms sold all its real estate to Edward Savage by the summer.



Figure 24. Model 1861 “Savage Arms” Rifle Musket with New Jersey markings (Courtesy David Holmes Collection).

CLOSING

Connecticut's firearm industry steadily declined in the years immediately following the war. As early as 1864, it was evident that the arms market was overflowing with all types of small arms. Government arms contracts were hard to obtain in the final years of the conflict and ceased altogether with the end of hostilities. By 1865, the number of surplus firearms totally ruined the arms markets. Companies were forced to cut back operations and had to innovate by investing time and money into the new cartridge and repeating arms technology that proved its worth on the Civil War battlefield. Many gun-makers were not able to make the transition to peacetime operations profitably and were forced to close their operations.

Of the nine Connecticut contractors, six would close their arms operations within 10 years after the end of the Civil War. Only Colt Firearms, Eli Whitney, Jr., and the Parker Brothers were able to successfully manufacture arms in the postwar years and beyond.

Connecticut's firearms industry achieved an unrivaled degree of success during the Civil War, manufacturing enough firearms to equip a large portion of the Union armies. The State could easily be considered an arsenal in itself by the volume of arms and munitions manufactured. New firearms concepts and revolutionary designs produced in the state would also have far-reaching effects, influencing future firearms as well as the manner in which wars would be fought.

NOTES

¹Kevin Canfield, "Unraveling Revolutionary Ties", *The Hartford Courant*, July 2, 2000.

²Mitchell, James L., *Colt: the Man, The Arms, The Company*, The Stackpole Company: Harrisburg, Pa, 1959. p. 87.

³Ibid.

⁴Ibid. p. 97.

⁵Davies, Paul J., *C. S. Armory Richmond*, Paul Davies: Ephrata, Pa., 2000. p. 317.

⁶Ibid. p. 318.

⁷Ibid. p. 320.

⁸Mitchell. p. 203.

⁹*Richmond Enquirer*, February 22, 1861. Courtesy William O. Adams.

¹⁰Davies. p. 39.

¹¹Ibid. p. 320.

¹²Mitchell. p. 133-134.

¹³Executive Documents of the Senate of the United States, 1123 S.exdoc.72, Case No. 13. p. 59.

¹⁴Mitchell. p. 182.

¹⁵*Eagle Mfg.*: Executive Documents of the Senate of the United States, 1123 S.exdoc.72, Case No. 77. p. 350, *J.D. Moury*: Executive Documents of the Senate of the United States, 1123 S.exdoc.72, Case No. 76. p. 346.

¹⁶Norwich Land Records (NLR). Vol. 67, p. 664.

¹⁷NLR. Vol. 66, p. 639.

¹⁸*Norwich Courier*, January 9, 1863.

¹⁹NLR. Vol. 67, p. 699.

²⁰1123 S.exdoc.72. p. 746.

²¹Private Acts and Resolutions passed by the General Assembly of the State of Connecticut, November, 1863, January 1864, and May Session, 1864. p. 511.

²²1123 S.exdoc.72. p. 829.

²³NLR. Vol. 67. p. 218.

²⁴1123 S.exdoc.72. p. 746.

²⁵Mansfield Land Records (MLR). Vol. 31, p. 76.

²⁶Harper's New Monthly Magazine, March 1864. p. 462: It is unclear what type of carbines were being produced by the Norwich Arms Co. or when they received an order to do so, but the arm was described as:

A new invention of Messrs. Armstrong and Taylor of Augusta, Kentucky . . . adopted to the use of the metallic cartridge . . . The breech is opened by pressing the thumb upon a spring on the small of the stock. This spring half cocks the piece, and at the same time raises a latch and permits the barrel to be turned over to the right, thus exposing the chamber into which the cartridge is inserted . . . after discharging the piece, and detaching the barrel to reload, a further turn moves the segment and at the same time carries out the shell of the cartridge.

²⁷Ibid. p. 459.

²⁸Ibid. p. 461.

²⁹Ibid.

³⁰1123 S.exdoc.72. p. 844.

³¹1123 S.exdoc.72. p. 830.

³²Private Acts and Resolutions passed by the General Assembly of the State of Connecticut, November, 1863, January 1864, and May Session, 1864. p. 511.

³³Ordinance Contracts, 1338 H.exdoc.99. p. 279.

³⁴Frederick P. Todd, *American Military Equipage 1851-1872*, Charles Scribners' Sons: New York, 1980. p. 685.

³⁵National Archives, RG 217, Entry A-1, E-523B, Box 27, "Settled Claims and Accounts." p. 3.

³⁶National Archives, RG 156, Entry 21, Box 180, 1860-W.

³⁷Ibid.

³⁸National Archives, RG 156, Entry 21, Box 180, 1860-W.

³⁹Reports of the Quarter-Masters-General, to the General Assembly, May Session, 1862 (Hartford, 1862), p. 25.

⁴⁰Ibid. p. 37.

⁴¹Ibid. p. 42.

⁴²Ibid. p. 25.

⁴³Ibid. p. 51.

⁴⁴Ibid.

⁴⁵Reports of the Quarter-Masters-General, to the General Assembly, May Session, 1863 (New Haven, 1863), p. 21.

⁴⁶Ibid. p. 13.

⁴⁷Courtesy Museum of Connecticut History, on display.

⁴⁸Madaus, Howard Michael, *The Percussion Martial Longarms of Eli Whitney, Jr.*, ARMAX, Vol. II, No.1, Andrew Mowbray Inc., Lincoln, RI, 1988. p. 56.

⁴⁹Ordinance Contracts, 1338 H.exdoc.99. p. 277.

⁵⁰Windsor Locks Land Records (WLLR), Vol. 1, p. 496.

⁵¹Edwards, William B., *Civil War Guns*, Castle, Secaucus, NJ, 1982, p. 52.

⁵²WLLR, Vol. 3, p. 334.

⁵³Executive Documents of the Senate of the United States, 1123 S.exdoc.72, p. 366.

⁵⁴This is the conclusion of the author after researching documents of the E.A. Russell Collection, of the Middlesex County Historical Society. Russell was a stockholder of the Savage Revolving Fire Arms Co. and all of his correspondences and company reports are included in collection. Various correspondences discuss the condemnation of so many arms and the financial loss that would accompany it. It is evident that the stockholders held Wheelock responsible.

⁵⁵Russell Collection, December 7, 1864.

⁵⁶Ibid. February 22, 1866.

⁵⁷Ibid.