

Virginia Manufactory of Arms: The Original Operating Years From 1802 Through 1821

By Craig D. Bell

INTRODUCTION

Established in 1798 by the Virginia General Assembly as a State owned armory and arsenal, Virginia's Manufactory of Arms (Figures 1 through 7) produced muskets, rifles, pistols, swords, and cannon for the Virginia militia between 1802 and 1821. The Armory represented one of North America's earliest large and functionally integrated manufacturing establishment in the nineteenth century. Only the federal armories at Harpers Ferry, Virginia [now West Virginia following West Virginia's succession from Virginia in 1863], and Springfield, Massachusetts, produced more arms during the twenty year period that the Manufactory operated.

Later during the Civil War, the Commonwealth of Virginia made preparations to revive arms production at the Manufactory renamed as the Richmond Arsenal. However on April 3, 1865, four years to the month after the armory's revival, the manufactory was gutted by fire during the evacuation of Richmond. The Manufactory was never rebuilt. However, sections of the original building were later used by Tredegar Iron Works for their rolling processes. Ultimately, virtually all remains of the original structure were raised and buried in the early 1900s.



In 1978 the Federal Reserve Bank of Richmond completed construction of its new 26 floor headquarters building adjacent to the former Virginia Manufactory site and then paved over most of the former armory's grounds to create a parking lot for its federal employees.

Most recently, MeadWestvaco relocated its corporate headquarters to Richmond. The company completed construction of its new corporate headquarters building on the former Virginia Manufactory site in late 2009. Sadly, there are no trace remains of one of the United States' earliest

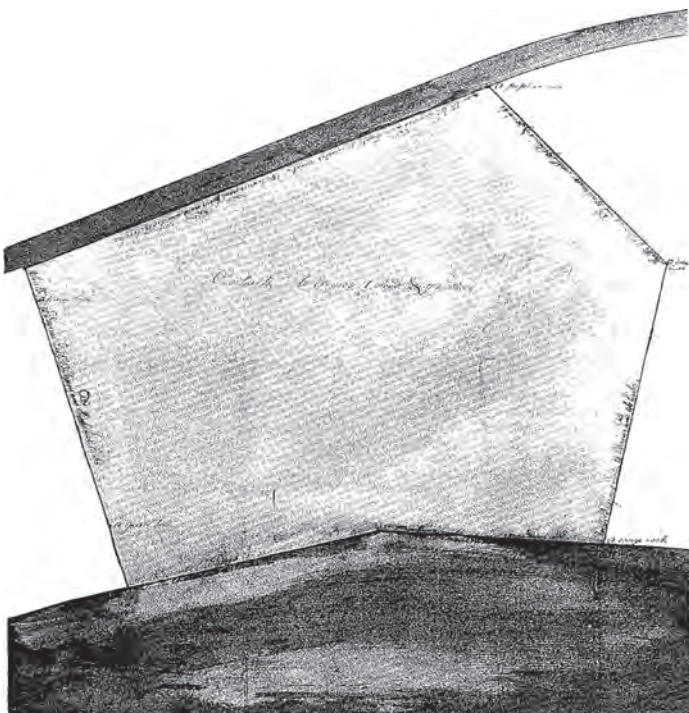


Figure 1. 1797 land survey of proposed site for the Virginia Manufactory made by John Clarke.

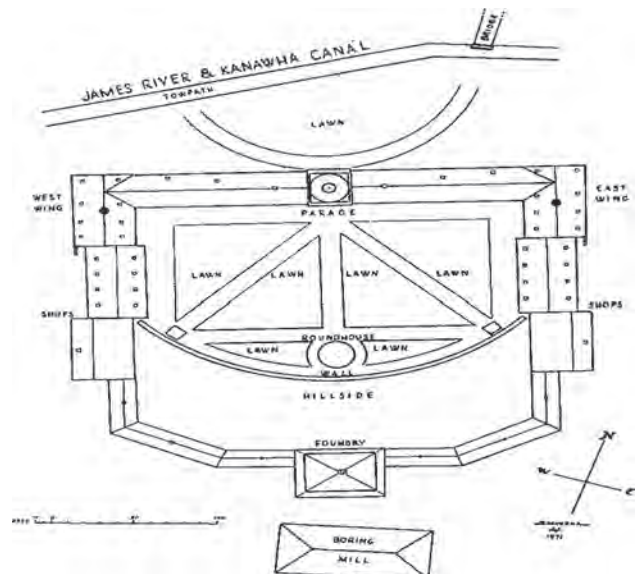


Figure 2. Site plan of the Virginia Manufactory of Arms in 1855, prepared by E.M. Sanchez-Saavedra (Richmond 1971).



Figure 3. A front view of the armory from the Kanawha Canal (Circa 1861). (Courtesy of The William Byrd Branch of the APVA).

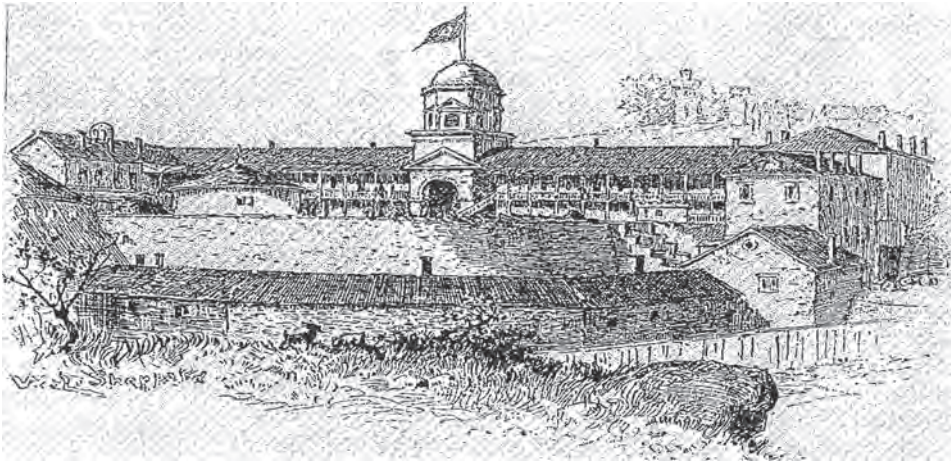


Figure 4. A rear view of the Armory from the James River by Shepherd (Circa 1861). (Courtesy of The Library of Virginia).

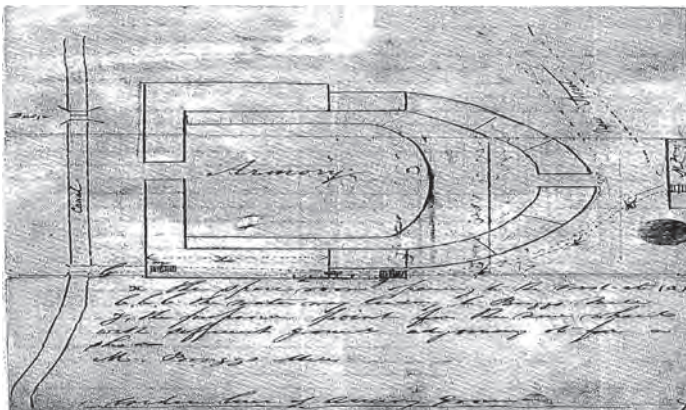


Figure 5. An 1846 sketch of the Armory by C. Dimmock depicting the position of the western race and breast water wheels (Courtesy of The Library of Virginia).

factories. For the most part, the Virginia Manufactory of Arms has been all but forgotten. Only those few arms collectors most fortunate to acquire a surviving musket, pistol, sword or rifle made at the former armory will keep the story of the Virginia Manufactory of Arms alive.

For the period of its manufacturing operations beginning in 1802 and running through the end of 1821, the Virginia Manufactory of Arms produced approximately:

- 58,000 flintlock muskets
- 2,000 flintlock rifles
- 10,000 swords
- 4,000 flintlock pistols
- 235 cannon

OUR NATION'S FIRST POST
REVOLUTIONARY WAR
STATE OWNED ARMORY

Soon after the American Revolution, the United States faced a number of uncertainties. France and England also continued to harass the new nation by boarding U.S. ships and disrespecting the independence earned as a result of the American Revolution. The U.S. federal government had difficulties in obtaining a regular supply of weapons to supply its army, with no certainty of what weapons would be made to arm its states. Many states were forced to seek arms from Europe on the open market. The federal government established its own armories to create a more regular supply of arms for its forces, and then to supply the states' militias. Most states contented themselves to rely on

what weapons the new federal armories would provide to the states when such distributions could be made. Virginia, on the other hand, was of a mind set that it would not wait for hand-outs from the federal government.

Virginia has always promoted a self-reliant attitude and strong desire to take care of itself. Virginia's early state government has always believed that states should largely take care of themselves and not be under the thumb of a strong federal government charter. Patrick Henry, Virginia's first Governor and one of its leading statesmen until his death in 1799, was probably the most important Virginian to pursue this line of thought. However, I think Virginia's desire to be able to dependably supply itself with arms was most eloquently captured by the first superintendent appointed to the Virginia Manufactory, John Clarke, in a letter he wrote to Governor James Monroe on June 12, 1801, shortly before the Manufactory was to begin operations. Superintendent Clarke wrote Governor Monroe . . . that . . .

"The establishment of a manufactory in the bosom of our State capable of furnishing an abundant supply of arms for its defense, without reliance on the precarious mode of obtaining them by importation from foreign states, upon whom we have been wholly dependent for our means of

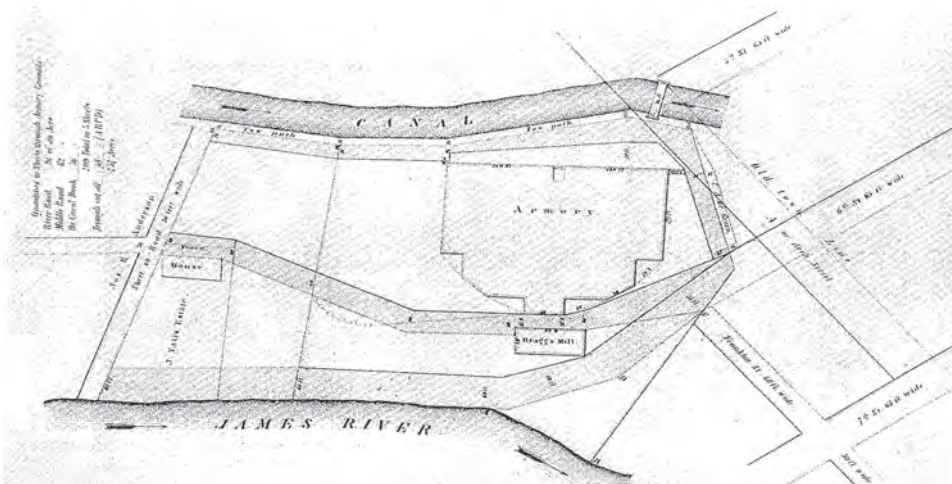


Figure 6. Dimensions and plat of the Armory and property, circa 1852 (Courtesy of The Library of Virginia).

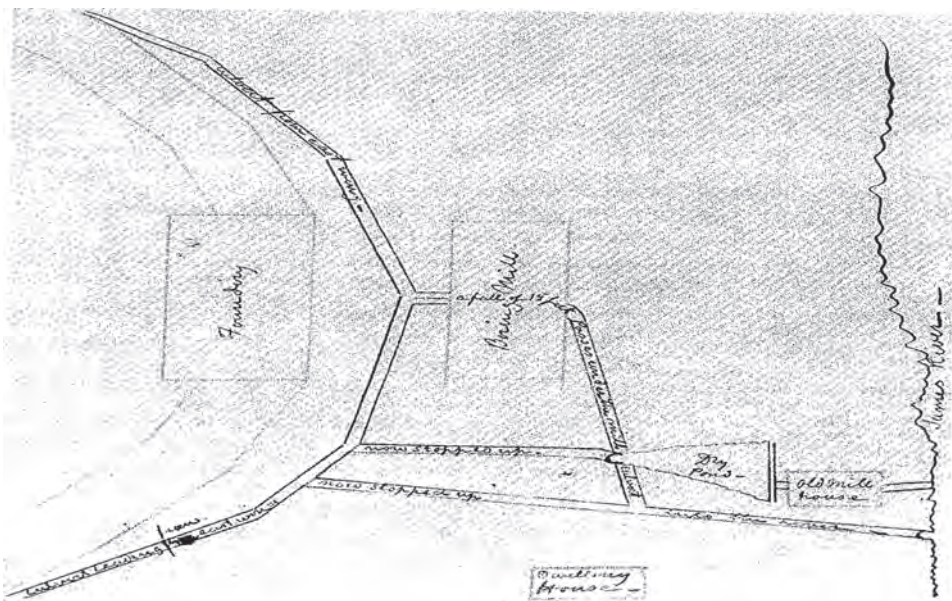


Figure 7. Sketch of a section of the Armory's culvert system, as originally constructed (Courtesy of The Library of Virginia).

defense, does honor to the wisdom and enterprise of our legislature. And greatly tends to the support of that independence so sacred to all true Americans; for without arms for our defense the Rights of the nation, however enlightened its councils, or numerous and brave its citizens are in a perilous condition and may be wrested from us by a combination of those foreign powers who are prepared for war, and who without regard to justice, but governed by interest and ambition, may not only injure and insult us with impunity, but make us again feel the scourge of tyranny: by such reflections I am led to think that our being prepared for war is the best guarantee or security for our liberty and happiness."¹

On January 23, 1798, the Virginia legislature enacted a law directing Governor James Wood to establish an armory near Richmond, Virginia. While few resources or documentation exist today to enable a researcher to discover what

criteria Governor Woods used to judge possible candidates for the position of designer, architect, contractor, and operator of the future Manufactory, he did select one John Clarke of Powhatan County, Virginia. At the time of his appointment as superintendent of the Virginia Manufactory of Arms in 1798, John Clarke (Figure 8) was 31 years old. Clarke was neither an architect nor engineer. He also was not a contractor and lacked experience in overseeing the design and construction of any major building projects, other than possibly mills. Despite these shortcomings, Governor Woods found his man.² John Clarke was considered to be a successful millwright who possessed a fine reputation as a respectable business man and citizen.³ Clarke did not have any experience in the manufacture of arms.

Upon his appointment as Superintendent of the Manufactory, Clarke scouted out several possible locations around Richmond, Virginia. Ultimately, Clarke selected a parcel of land consisting of about six acres in size, located just outside the city limits of Richmond. The property was bordered by the James River to the property's south and the James River Canal on the north border of the property. The land sloped from the higher canal side of the prop-

erty down to its James River border.⁴ It is believed Clarke selected this property because the slope of the land permitted the construction of several water fall aqueducts as part of the armory's infrastructure which would enable the reuse of the same water withdrawn from the canal, located on higher ground, before it reached the river, located on lower ground. The land's topography permitting the reuse of water would save the Manufactory a significant amount of water rental fees. Adjacent to the proposed armory site was the new State Penitentiary under construction. Several years later the Penitentiary would supply a source of labor to the Manufactory. Virginia paid a total of 550 pounds for the land (\$2,667).⁵

As the newly appointed superintendent of the armory, John Clarke made a number of trips to the northern states in his quest to learn lessons about the design and operation of the federal arsenals and several private gun manufacturing facilities. Of particular interest were the Springfield Armory and the



Figure 8. John Clarke, superintendent of the Virginia Manufactory of Arms, 1802-1809.

Cecil Iron Works in Maryland.⁶ Clarke also explored the purchase of contract arms manufactured in Philadelphia and considered the possibility of having arms imported from France until the Virginia Manufactory could begin production.⁷

By 1799 construction of the Manufactory was well underway. The construction process would take several years. During this long construction period, Clarke made good use of his time. Clarke thought out, organized and articulated his production methods and ideas. He also solicited information from David Ames, the superintendent of the federal Springfield Armory. Ames provided Clarke with details on both the manufacture of arms as well as accounting and bookkeeping methods required to run an armory. To a large extent, Clarke adopted the same methods Ames used at the Springfield Armory.

We are fortunate in that a treasure trove of information exists in the form of original records of the Virginia Manufactory of Arms, located at The Library of Virginia in Richmond.⁸ Many of these key documents and records were copiously studied and analyzed by fellow ASAC member Giles Cromwell. In 1975 Giles Cromwell completed his well written book on the Virginia Manufactory of Arms published in 1975 by The University Press of Virginia.⁹ Mr. Cromwell's book is thoroughly researched and based exclusively on primary source documents from the Virginia Manufactory, Virginia Auditor of Public Accounts, Governor's Official Papers, Records of the Virginia House of Delegates and Virginia Senate, and other official state records. Written as a researcher's tool, Giles Cromwell's book will save the reader many considerable hours of painstaking research going through archives and microfilm records to obtain an answer to most questions relating to the armory . . . and for those questions that still remain . . . The Library of Virginia archives are there for your searching pleasure.

To give the reader a flavor of the scope and size superintendent Clarke envisioned for the armory, one must read several of Clarke's most prolific letters to the Governor. In particular, on June 12, 1801, Clarke writes Governor James Monroe concerning the number of workman to be employed in the Manufactory (150 men) and the manner he proposes to use this work force to operate the armory after its construction is completed. Clarke's letter is elegantly written and demonstrates the considerable thought he has made concerning how he envisions the Manufactory will operate. In Clarke's own words he informs Governor Monroe about his ideas:

In forming this plan I endeavored to accommodate every advantage of the site, to the convenience of the establishment, both as to water works and houses, and finding that the building of habitations for the artificers separate from the manufactory, would be more expensive and not so eligible, I designed their barracks in the upper apartments of the Manufactory, which habitations will be commodious for those artificers who are unmarried: yet those who have families will probably prefer being accommodated in the manner I suggested to you in my last communication.

The works are constructed so as to be capable of making at least sixteen. Stands of Arms per day, And their being in a year three hundred and twelve days for labor, would make the number amount to four thousand nine hundred and ninety two stands per annum, which would be nine hundred and ninety two stands more than were required by the Executive; but as reasonable allowance should be made for the awkwardness of inexperienced workmen at the commencement of the business, as also for accidents, sickness, holidays, etc., I constructed the works capable of making four thousand stand per annum; taking into view such extraordinary occurrences; and there being at such works many Musket barrels refused on account of flaws and other defects, the sound parts of which would make good pistol barrels. And supposing that our Legislature would be inclined to arm our Cavalry as well as infantry, Artillerists, etc, I constructed the works (with very little additional expense) capable of making six pistols and seven Swords per day, in addition to the sixteen stands of arms, which will, beside arming the Cavalry, afford swords for the officers of the infantry and artillery. - The parts of the manufactory which are designed for making of Ordnance, will be capable of making all that may be required for the field and for fortifications.

Viz 2 Hammermen in two Trip-hammer forges to draw 16 skelps for musket-barrels, and the other Iron which will require the forge hammer for 16 stands of Arms.

8 Men to weld & float 16 musket & six pistol barrels.

8 Men to bore & hand-spindle 16 musket & six pistol barrels, & 16 Bayonet sockets.

8 Men to forge all the parts for 16 musket-locks, 16 Bayonets, 7 swords, & 6 pistol locks.

4 Men to forge mounting for 16 muskets & 6 pistols, 16 Ramrods for muskets & 6 for pistols.

2 Men to forge all the small arts viz screws for locks etc. Also springs and loops.

2 Men to fit temper the springs for 16 muskets & 6 pistols.

6 Men to grind 16 musket & 6 pistol barrels, 16 Bayonets, 16 Ramrods for Muskets, 6 for pistols, and 7 swords.

4 Men to grind & file mounting for 16 muskets and 6 pistols.

32 Lock-makers, to make 16 locks for muskets and 6 for pistols.

8 Men to case-harden & polish 16 musket locks, 6 pistol locks & 16 sets of mounting for muskets, 6 sets for pistols, 16 Bayonets and 7 swords.

20 Gunstockers to make 16 musket stocks and 6 pistols.

20 Finishers to finish 16 muskets and 6 pistols.

2 Men to hilt and mount 7 swords.

1 Man to make the wooden parts of 16 Cartridge boxes for muskets, and 3 for pistols.

8 Men to execute the leather work for 16 Cartridge boxes for muskets, 3 for Pistols, 3 pair of holsters, 4 sword-belts and scabbards, 16 Bayonet slings, and 16 brush-wipers & pickers.

And as the melting and refining of brass requires a furnace on a different construction from such as are required for Iron. And as bomb-shells and the various kinds of cannon shot, must be made for the mortars and other species of Ordnance, and as it may be expedient to make Iron as well as brass cannon, I have planned the foundery of these works, with two furnaces, so that brass, and Iron Ordnance may be made therein at the same time, which will require:

1 Moulder

4 founders

1 borer

2 turners, and drillers of touch-holes, and

4 makers of Gun-carriages.

So, that, when the works are in full operation in all the various branches above enumerated, they will require one hundred and fifty workmen, which number of artists may, after gaining experience, manufacture a greater number of arms than I have here stated; And the works are so constructed as easily to admit of extension, should it hereafter be found necessary.¹⁰

Later in 1801 Clarke makes another sojourn up north to locate trained and experienced arms workers and artificers. Clarke also met again with Springfield Arsenal superintendent David Ames. Their conversations included a discussion on the feasibility of employing various men to perform only a certain number of arms manufacturing tasks, such as

one person to make only locks, one man to make barrels, one man to make stocks, etc., as opposed to having one man accomplish all tasks for the manufacture of an entire weapon.¹¹ Clarke implemented this specialization practice at the armory when production began in 1802.

WHAT DID THE NEW VIRGINIA MANUFACTORY LOOK LIKE?

I made a diligent search to locate the original architectural plans of the Virginia Manufactory or any existing copies and came up empty handed. I suspect such plans are lost forever. However, there are a number of surveys, sketches, and some post civil war photographs of the armory. Unfortunately the photographs located depict the armory after it was burned at the time the Confederate Capitol was being evacuated on and after April 3, 1865. However, there are sufficient records from the Manufactory that enable us to “reconstruct” the exterior and interior of the facilities.

GENERAL LAYOUT DIMENSIONS OF THE VIRGINIA MANUFACTORY BUILDINGS:¹²

- 310 feet long (front) – adjacent to James River Canal
- First Floor: Housed 12 rooms (clerk, superintendent, master armorer, armory section, guards’ room, storage rooms)
- Second Floor: Living quarters for workmen
- Center of building had a cupola and belfry
- The area beneath the cupola was 12.5’ wide by 17’ high arch
- Two 172 foot long, two-storied, wings, perpendicular from each end of the main armory building. The manufacture of small arms occurred in these two-storied wings.
- Each wing contained 4 large water wheels (16’ x 5’)
- Each wing also contained 2 small water wheels to operate trip-hammers in the forge areas of the two wings

The East Wing (first floor) contained 15 rooms (18’ ceilings):

- trip-hammer forge
- 4 boring works
- large shears (cutting iron)
- a Smith’s forge
- a rifle shop
- a tilt hammer
- a buffing shop
- a large filing shop

The second floor of the East Wing contained an arsenal.

The West Wing (first floor) contained 10 rooms:

- Various forges
- A breaching shop
- A tilt hammer shop
- A buffing shop
- A trip-hammer forge
- At least one storage room

The second floor of the West Wing also contained completed arms storage and repair parts storage for the armory's machinery.

A separate independent building [40' wide by 55' long] located closer to the James River contained the Foundry.

Another independent building [40' wide by 95' long] located behind the foundry building to the south contained the Boring Mill.

Later constructions at the time of the Civil War added two small cannon houses and a circular one-story powder magazine that were built within the courtyard. I have not been able to locate any information concerning these three Civil War era building structures.

MUSKETS

A comprehensive review of the surviving original records from the Virginia Manufactory of Arms stored at The Library of Virginia leave little doubt that the primary mission of the armory was making muskets for Virginia infantry militia units. Almost 58,500 muskets were produced between the years 1802 and 1821. Weapons produced for Virginia Cavalry units were a considerable distant second to those produced for the infantry. The style of musket approved for manufacture at the armory was based on a compromise of the styles made at each of the federal arsenals located in Springfield and Harpers Ferry. In April 1802 the Virginia Council recorded the approval of the musket's features proposed by Superintendent Clarke when it described the features of the Virginia Manufactory musket lock:

"The Superintendent having presented to the Executive the model of a gun lock made at the public manufactory of arms, and the executive having compared the model with the various others, particularly the Charleville and British



Figure 9. Photograph of First Model musket.



Figure 10. Top view photograph of First Model musket lock and barrel. Barrel is regimentally marked "29th VA REG'T PRINCESS ANNE" County.

tower locks, advise the model proposed be adopted, and that the device be [marked] Virginia in Roman characters and manufactory in italics, and Richmond with the year."¹³
(bracketed word added)

Shortly after the musket model design was approved, production began.

Variations in the style and features of the muskets occurred over the years the Manufactory was open. Many times such changes were minor and subtle. Unlike the industry production methods of today where weapons are made to precise model specifications or types by machines, in the early nineteenth century, weapons were made by hand based on prototype "models". The "human element" led to subtle differences to the various components that went into the muskets. Again, such differences were usually very minor, many times reflecting the personal workmanship of the armory artificers who accomplished their various tasks to the musket components on which they worked.

GENERAL CHARACTERISTICS OF THE ARMORY'S MUSKETS (Tables 1 and 2)

A. First Model Virginia Manufactory Muskets (1802-1809) (Figures 9-11)

- Unofficial U.S. M-1795 musket style
- Lockplate characteristics and markings:
 - o Approximately 6 inches long by 1 3/16 inches wide;
 - o Lockplate has a flat face, beveled edges, and pronounced teat at the rear of the plate;
 - o "VIRGINIA" Roman capitals stamped between hammer (cock) and frizzen spring;
 - o "Manufactory" in script stamped below the word "VIRGINIA";
 - o "Richmond" small Roman characters stamped in a vertical curve to the rear of the cock;
 - o Date is stamped in straight vertical line between "Richmond" and rear of lockplate;
 - o Gooseneck cock (graceful and well proportioned) with flat face and beveled edges, terminates in a modified curl above the pierced and slotted cap screw;
 - o Iron flash pan, integrally forged to lockplate, with rounded bottom and fenced to rear of flash pan;
 - o Musket stock is usually walnut - no pronounced comb on stock;



Figure 11. First Model Virginia Manufactory musket lock.



Figure 12. Second Model Virginia Manufactory musket.

- o Barrel is .69 caliber smooth bore;
- o Bayonet stud, often stamped with a number, is braised on top of barrel one and three-eighths inches from the muzzle;
- o The three barrel-band springs are positioned behind the barrel bands;
- o Barrel lengths made to 36, 39, 42 and 44 inches; and
- o Shorter barrels were for "short muskets" a/k/a carbines (many times made from burst barrels originally made to a longer length).

B. Transitional Model Virginia Manufactory Muskets (1810-1811)

- Experimental period at the Armory;
- Lockplate and cock are different from First Model;
 - o Lockplate shortened by 3/8 inches and narrowed by 1/16 inch;
 - o Remaining characteristics of a lockplate the same as with First Model;
 - o 1810 Gooseneck cock, while about the same shape, now forged as a rounded shape on face (1st Model is flat);
 - o Slotted cap screw retained;
 - o 1811 Gooseneck cock is replaced with stronger reinforced double cock, that is forged with a rounded face;
 - o Stamping on lockplate is lighter;
 - o Frizzen tail loses its curled tail and ends in a thicker straight tail upon the frizzen spring;

- o Frizzen spring is larger and encircles the forward side lock screw;
- o Lower and middle barrel band springs are positioned behind the barrel bands;
- o Lower barrel band is usually dated 1810 or 1811; and
- o Ramrod has a flat or button head.

C. Second Model Virginia Manufactory Muskets (1812-1821) (Figures 12 and 13)

- Unofficial U.S. M-1812 musket style;
- Lockplate design conforms to U.S. M-1812 lockplate characteristics:
 - o Lockplate size increased back to 6 3/8 inches long by 1 1/4 inches wide;
 - o Lockplate has a flat face with beveled edges;
 - o Rear of lockplate comes to a point, not a teat;
 - o Strong reinforced cock (flat with beveled edges);
- For the years 1812-1815 an iron flash pan is integrally forged to lockplate, and has a rounded bottom;
- For the years 1818-1821, a brass flash pan (although not universal) is attached to the lockplate and represents a variation of the Second Model musket;
- Frizzen is forged without a bend or angle at its top;
- .69 caliber smooth bore barrel;
- Barrel lengths are 36, 39 and 42 (no 44 inch barrels like with First Model);
- The three barrel band springs remain behind the barrel bands as with First and Transitional Models;
- Walnut stock remains unchanged in design from earlier stocks;



Figure 13. Second Model Virginia Manufactory musket lock.

Table 1. General trends and design changes in musket production at the Virginia Manufactory of Arms, 1802-21.¹⁴

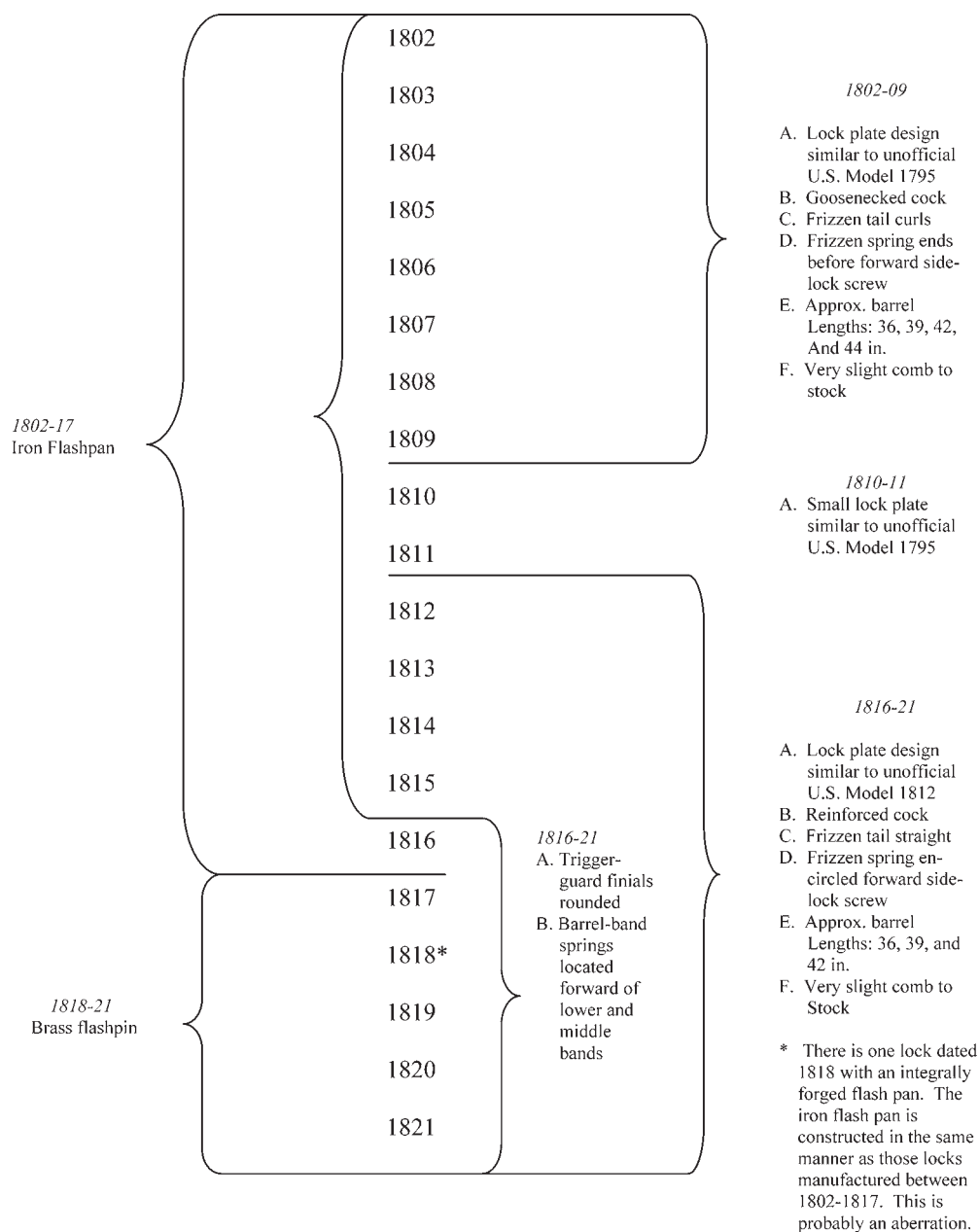


Table 2. Approximate number of Virginia Manufactory muskets made yearly¹⁵

<i>Date</i>	<i>Number finished</i>	<i>Date</i>	<i>Number finished</i>
1802	336	1812	3,715
1803	2,032	1813	3,185
1804	2,007	1814	2,804
1805	2,135	1815	4,609
1806	1,330	1816	4,104
1807	1,680	1817	4,536
1808	1,470	1818	5,292
1809	3,177	1819	3,348
1810	3,435	1820	3,024
1811	3,701	1821	2,508
Approximate total			58,428

- Frizzen's straight tail ends upon frizzen spring; and
- Frizzen spring encircles the forward side lock screw.

BAYONETS

The Virginia Manufactory of Arms bayonet is one of the most difficult items to identify as it has virtually no markings. Rather the collector must become familiar with several of the telltale manufacturing characteristics that all Virginia Manufactory bayonets possess. A review of the Virginia Manufactory's original records and correspondence from the Armory's superintendent indicates that bayonet manufacture underwent its own evolutionary process.

Bayonet manufacture began simultaneously with musket production. The first Virginia Manufactory bayonets



Figure 14. L-shape transverse locking slot on bayonet socket.

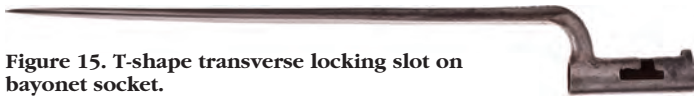


Figure 15. T-shape transverse locking slot on bayonet socket.



Figure 16. Socket with reinforcing ring added to the base of the socket (circa 1815).

made between 1802 and 1804 generally conform in socket design and blade length to the unofficial U.S. Model 1795 bayonet, according to Giles Cromwell's book on the Virginia Manufactory, as supplemented by a number of conversations I had with Mr. Cromwell and coupled with a close examination of about 20 different Virginia Manufactory bayonets. The bayonet socket measures approximately 2 3/4 inches long with an L-shaped transverse locking slot, or mortise. The socket does not have a reinforcing ferrule or a bridge. Usually a number is stamped forward of the transfer locking slot.

The earliest version of the bayonet blade is approximately fifteen inches long and triangularly shaped with the top, or face, of the blade flat, whereas the two sides or back flutes are likely to be deeply hollow ground. The blade usually has a number of flaws or hairline imperfections. The entire bayonet is finished bright.¹⁶

The first design change in the bayonet took place in 1805. At this time some bayonets were made with increased blade lengths; this resulted in some bayonets having an overall length of two feet. By the end of 1806 most of the earlier shorter bayonets had been phased out and the longer two foot blades became the standard by 1807. The socket design remained unchanged.¹⁷

Complaints over the longer blade, however, prompted an armory committee investigation in 1808. The committee reported that the very long bayonets will probably be found inconvenient in service and recommend the blade length be shortened to a moderate length similar to those bayonets made at the two U.S. arsenals. The state's armory committee directed the superintendent to examine model bayonets produced by the federal arsenals. Apparently the process to examine the bayonets made at the U.S. arsenals took some time to accomplish as the November 1808 inventory of bayonets indicated 3,210 long bayonets were on hand.¹⁸ Even as late as April 1809 the new Virginia Manufactory superintendent, John Staples, inquired to the Virginia Governor as to the proper length for bayonets.¹⁹

In 1809 the length of the Virginia Manufactory bayonet was reduced to about 16 3/4 inch blade. Few changes were made thereafter except for the addition of a reinforcing ring or band added to the base of the socket in 1815.²⁰

Figures 14 through 19 depict representative Virginia Manufactory bayonets and selected features on several variations of the shorter blade style.

RIFLES



Figure 17. Close up view of shank connecting blade to socket. Note the flat surface on inside of shank.



Figure 18. Another bayonet example depicting flat surface of shank connecting socket to blade.

After musket production was well underway, Superintendent John Clarke was directed to begin rifle making at the Armory (Table 3).²¹ By May 1803, the Virginia Governor approved the production of a rifle model based on the plans submitted by Clarke.²² Several months later, October 8, 1803, the Council of Armory also approved the rifle model presented by John Clarke.²³ By the end of October 1803, 24 rifles were completed. Between October 1803 and December 1804, 72 rifles were made. Each of these rifles had plain brass patch boxes and an octagonal 46 inch barrel.²⁴ No surviving examples of these first rifles are known to exist. Based on the very limited production of these initial rifles, coupled with the fact that none have survived, noted Virginia Manufactory expert Giles Cromwell declined to categorize this small batch of rifles with their own model designation. However, many of the elements from these first few rifles were carried over to a larger group of rifles made between 1805 and 1809. The



Figure 19. Close up view of cipher stamped base of blade. Note hairline imperfections evident on blade.

most identifying characteristic of the second group of rifles is the design of the patch box for each of the rifles, as described below.

First Model Virginia Manufactory Rifle (1805-early 1809)

The rifles produced by the Armory between 1805 and early 1809 were largely the same except for the shape of the barrel and the material used to make the hardware for the rifle. In 1805, the 46 inch long barrel was fully octagonal. Between 1806 through 1808, the 46 inch long barrel started as octagonal at the breach and then changed to round construction as it approached the muzzle. By early 1809, the

Table 3. Approximate Number of Virginia Manufactory Rifles Made Yearly²⁵

<i>Date</i>	<i>Number Finished</i>	<i>Date</i>	<i>Number Finished</i>
1803	26	1813	122
1804	46	1814	73
1805	32	1815	174
1806	84	1816	204
1807	74	1817	292
1808	49	1818	405
1809	22	1819	197
1810	0	1820	200
1811	0	1821	74
1812	19		

Approximate total rifle production 2,093

barrel went back to being fully octagonal and was shortened by one inch to 45 inches in length.

The other distinction within the First Model classification was the material used to construct the rifle furniture and patch box. In 1805, the patch box was shaped as a coiled rattlesnake and made of brass. All of the rifle furniture was also constructed of brass. In the years between 1806 and 1808, the coiled rattlesnake patch box was made of iron. Additionally, the rifle furniture was also made of iron. In early 1809, the rattlesnake patch box and furniture went back to being made of brass. The 45 inch rifle barrel went back to being fully octagonal in shape.

There are several distinctions between the First Model Manufactory Rifle classification described above and as it was described in Giles Cromwell's fine book. First, I have extended the date from 1808 to 1809 during which First Model rifles were made at the Armory. The sole reason is due to the recent discovery of an original all armory made First Model snake patch rifle containing an 1809 lock and a brass rattlesnake patch box. A close examination of this rifle leaves no doubt that the lock is original to the arsenal cut mortise and stock. Second, the hardware and the engraved rattlesnake patch box are in brass, not iron. Third, the barrel is fully octagonal and not octagonal to round as the Armory's rifles made during 1806 through 1808. The discovery of this 1809 brass snake patch rifle has, in my mind, allowed me to lengthen the period of time when the First Model snake patch rifle was made at the Manufactory. Additionally, the recent discovery could be called a second variation to the original 1805 snake patch rifle if I follow on with the nomenclature used by Mr. Cromwell in his book. The first variation is the switch from brass furniture, brass snake patch box, and fully octagonal barrel in 1805 to iron furniture, iron snake patch box, and an octagonal to round barrel manufacture between the years 1806 and 1808.

The salient features of the First Model rifle (excluding the lock description) are set forth below:

First Model Virginia Manufactory Rifle (1805)

- The stock is usually made of walnut, although maple and sugar tree stocks were also used.
- The stock has a slight comb to it.
- The rifle barrel is in .45 caliber, rifled fully octagonal, and 46 inches in length, with a slight swell at the muzzle.
- The rifle barrel has a brass front sight and a rear iron sight (located about one-third of the barrel length forward of the breach).
- The brass furniture consists of butt plate, patch box, side plate, trigger guard, two ramrod thimbles and a tail pipe, and a nose cap.

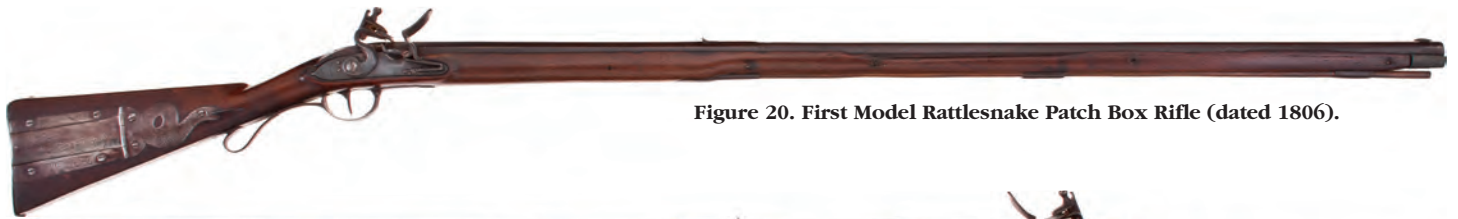


Figure 20. First Model Rattlesnake Patch Box Rifle (dated 1806).



Figure 21. Reverse side of the same First Model rifle depicted in Figure 20.



Figure 22. Close up view of iron engraved rattlesnake patch box.

- The brass patch box head is designed in the form of a coiled rattlesnake complete with engraved scales and a wire forked tongue inlaid into the stock.
- The motto "Don't Tread on Me" is engraved on the lower and upper plates of the patch cover.

Variation One (1805-1808) of First Model Rifle

Everything described above under the First Model rifle is the same for Variation One except for two variations. First, the barrel changes from fully octagonal to octagonal to round and has no swell at the muzzle. Second, the rifle's furniture is made of iron for variation one, as opposed to brass for the First Model rifle produced in 1805. Figures 20 through 22 depict an example of this variation of First Model rifle.

Variation Two (1809) [New Variation] of First Model Rifle

Everything described in the First Model rifle produced in 1805 is the same for Variation Two except that there is no muzzle swell to the fully octagonal barrel. The length of the barrel is shortened to 45 inches in length. Unlike Variation One, Variation Two returns to a brass snake patch box and all brass furniture on the rifle.

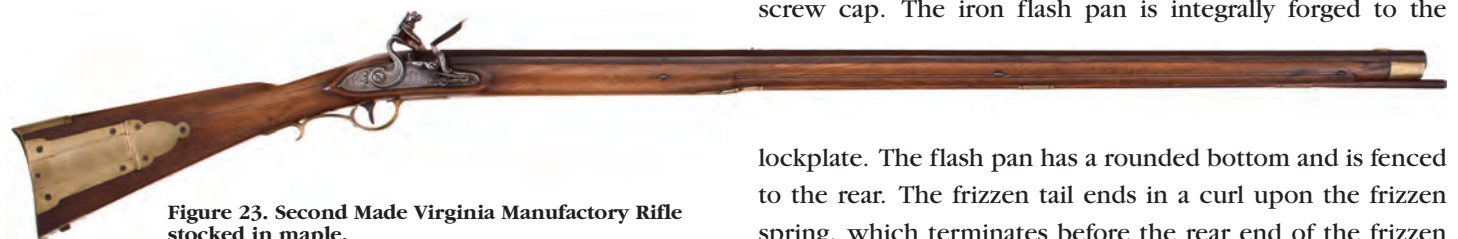


Figure 23. Second Made Virginia Manufactory Rifle stocked in maple.

Second Model Virginia Manufactory Rifle (1812-1821)

- The rifle stock is predominantly made of walnut, although maple stock rifles were also made.
- The stock has a slight comb to it.
- The rifle barrel is .50 caliber, rifled, fully octagonal, and 39 inches in length.
- The rifle barrel has a brass front sight and an iron rear site, located about one-third forward of the barrel's breach.
- The rifle's furniture is all brass and consists of butt plate, a heel plate, a patch box, a side plate, a trigger guard, two thimbles and a tail pipe, and a nose cap.
- The Kentucky styled trigger guard has flat finials.
- The brass patch box is unengraved and relatively plain.

Figures 23 through 25 depict an example of the Second Model Rifle stocked in maple by the Armory.

Salient Features of the Virginia Manufactory Rifle Locks

The rifle lockplate is 5 1/2 inches in length by 1 inch wide. The lockplate has a flat face, beveled edges, and a pronounced teat at the rear of the plate. The markings on the rifle lockplate are the same as those on the musket lockplate. The word "VIRGINIA" is stamped in Roman capitals horizontally on the lockplate face between the cock and frizzen spring. "Manufactory" in script is stamped horizontally below the word VIRIGINIA. "RICHMOND" in small Roman characters is stamped in a vertical curve to the rear of the cock. The date is stamped in a straight vertical line between the word "Richmond" and the rear of the plate. The rifle lock has a goose necked cock with a flat face and beveled edges that terminate in a modified curl above the slotted screw cap. The iron flash pan is integrally forged to the

lockplate. The flash pan has a rounded bottom and is fenced to the rear. The frizzen tail ends in a curl upon the frizzen spring, which terminates before the rear end of the frizzen

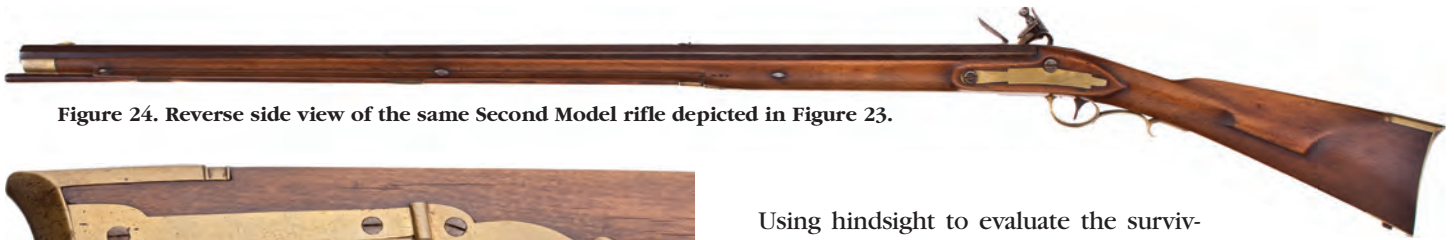


Figure 24. Reverse side view of the same Second Model rifle depicted in Figure 23.



Figure 25. Close up view of unengraved brass patch box.

spring. The toe of the frizzen usually rests upon a friction wheel at the rear end of the frizzen spring. Not all rifle locks have the friction wheel.

To better visualize the rifle lock, the two photographs below, Figures 26 and 27 depict the exterior and interior of a Virginia Manufactory rifle lock with each of the lock's parts identified.

SWORDS

During its twenty years of operations the Virginia Manufactory produced Cavalry and Artillery swords (Table 4).

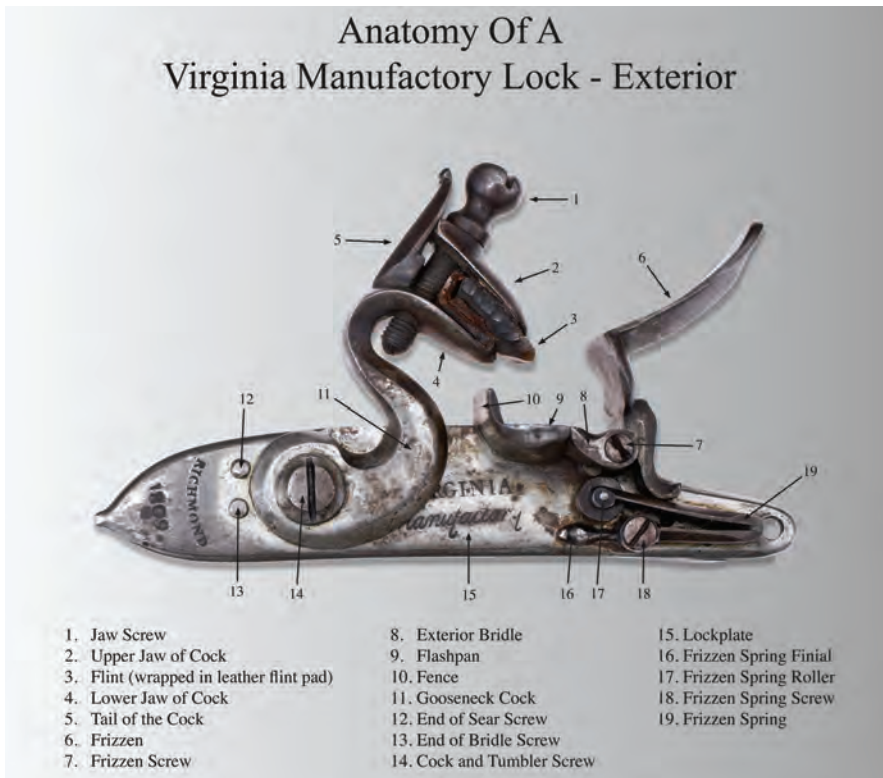


Figure 26.

Using hindsight to evaluate the surviving cavalry swords and copious review of surviving records from the Armory enabled Giles Cromwell to categorize the cavalry swords into three different models in his book on the Virginia Manufactory. The salient characteristics and years of manufacture for each of the three cavalry sword models are set forth below.

First Model Cavalry Manufactory Sword (1804-1806)

- The sword hilt is an iron half-basket guard that contains seven slots.
- The five-inch grooved walnut wood grip is covered by leather and wrapped by either a single or double twisted strand of brass wire.
- The blade is very curved and measures 15/16 inches wide by 40 inches long.
- The blade has two fullers on each side:
 - o a narrow fuller running along the top portion of the blade.
 - o A wider but shallower fuller runs directly beneath the top fuller.
 - o Workman's stamp of a number usually appears on the right-hand side of the ricasso of the blade near the hilt.

o Top edge of the sword blade, near the hilt, is sometimes stamped with a regimental number indicating distribution to one of the four Virginia regiments.

- The sword blade tang is secured to the half basket guard with a nut located on the flat pommel head.
- Between 1804 through February 1806, the First Model sword had a leather scabbard with iron mountings.
- Iron scabbards were made for these swords beginning in March 1806 through the end of 1806.

There is a variation to the First Model Cavalry Sword made during the same three years that First Model swords were made. The variation calls for a wider blade in width; 1 1/2 inches as opposed to the normal blade width of 1 5/16 inches. The sword variation also does not have the same extreme curvature of the blade.

Anatomy Of A Virginia Manufactory Lock - Interior



- | | |
|--|---------------------------------------|
| 1. Frizzen | 8. Lower Bridle and Sear Screw |
| 2. Interior of Flashpan | 9. Sear |
| 3. Mainspring | 10. Sear Spring |
| 4. Stamped Initials of Thomas Humes – Name of Lock maker | 11. Sear Spring Screw |
| 5. Tumbler | 12. Upper Bridle Screw |
| 6. Part of Spindle of Tumbler | 13. Threaded Hole for Rear Lock Screw |
| 7. Interior Bridle | |

Figure 27.

**Table 4. Total Virginia Manufactory
Sword Production (by type)**

Approximate number of Virginia Manufactory
swords made yearly²⁷

Date	<i>Cavalry Swords</i>	<i>Artillery Swords</i>
	<i>Finished</i>	<i>Finished</i>
1804	56	-
1805	699	-
1806	852	161
1807	1,277	99
1808	1,382	73
1809	540	533
1810	723	693
1811	400	-
1812	544	-
1813	976	299
1814	760	152
1815	-	-
1816	-	-
1817	-	-
1818	-	-
1819	-	-
1820	-	-
1821	60	30
Approximate totals	8,269	2,040

Second Model Cavalry Virginia Manufactory Sword (1806-1808)

- The iron hilt, grooved walnut grip, and leather wrapping with brass wire are the same as on the First Model swords.
- The pommel on the Second Model sword is rounded (bird's head style). The iron hilt also has an additional slot cut through the upper strap of the knuckle bow to accommodate a sword-knot.
- The blade dimensions are the same as those of the First Model swords (40 inches in length by 1 5/16 inches wide).
- The blade has the same two types of fullers on each side of the blade as on the First Model swords.
- The Second Model sword was carried in a polished iron scabbard attached by a frog stud to a leather cross-shoulder belt.

Figures 28-30 depict several aspects of a typical Second Musket sword.

Contained within the Virginia Manufactory records archived at the Library of Virginia are ledgers, correspondence and other records documenting a general unhappiness by



Figure 28. Second Model Cavalry Sword with Armory shortened blade.



Figure 29. Third Virginia Regimental marking on sword depicted on Figure 28.



Figure 30. Iron hilt as found on all three models of Virginia Manufactory Cavalry swords.



Figure 31. Side view of grip for Third Model Virginia Cavalry sword.

many militia men with the great length and curvature of the Second Model sword blade. A review of monthly production records notes that the concept of a shorter blade with less curvature is on record as coming on line by the fall of 1808.²⁶

Third Model Cavalry Virginia Manufactory Swords (1808-1814, and 1821)

- The iron hilt, grooved walnut grip, and leather wrapping with brass wire are the same as the First and Second Model swords.
- The pommel is the same as on the Second Model sword (rounded bird's head style).
- The sword blade is only slightly curved and measures 1 5/16 inches wide by 36 inches in length.



Figure 32. Third Model Virginia Cavalry sword with jappaned iron scabbard.



Figure 33. Second Virginia Regiment marking to sword depicted in Figure 32.

- The blade has two fullers, both of which are the same as appear on the First and Second Model swords – a narrow deep fuller running along the top portion of the blade and a wider but shallower fuller running directly beneath the top fuller.
- The blade has a clipped point.
- The quality of the blade is much improved from earlier sword models, having few casting flaws and imperfections.
- The blade has a number stamped on the right hand side of the ricasso near the hilt.
- The scabbard is made of iron, but is jappaned coated to prevent rust. Earlier sword iron scabbards were polished when first made.

Figures 31 through 34 depict several examples of the Third Model sword.

Artillery Model Virginia Manufactory Sword (1806-1810, 1813-1814, 1821)

- The hilt of the artillery sword is made of an iron reverse P-guard, and a sword knot slot is present in the upper knuckle bow.
- The walnut grip is grooved, covered with leather and a single or double strand of brass wire along the grooves of the grip.
- The pommel is rounded, and the sword blade tang is peened rather than attached by a nut.
- The shape of the pommel is a rounded bird's head design similar to the pommels found on the Second and Third model swords.
- The blade is only slightly curved and measures 1 5/16 inches wide by 30 inches long.
- The blade has two fullers on each side, a narrow deep one running along the top portion of the blade and a wider but shallower fuller running directly beneath the top fuller.
- The blade usually had a number stamped on the right side of the ricasso near the hilt.
- The top edge of the blade was also sometimes marked with a regimental number indicating to which of the four Virginia regiments the sword had been distributed.

- The artillery sword was outfitted with a leather scabbard with iron mountings. The author has only seen two surviving leather scabbards for the artillery sword. Only a few artillery swords are known to still exist.



Figure 34. Third Model Virginia Manufactory Cavalry sword with silver foil applied to hilt and iron scabbard. This sword is attributed to an officer assigned to the Richmond Light Infantry Blues. (This unit used silver in color accoutrements).



Figure 35. Virginia Manufactory Artillery Model sword. The leather scabbard is a period replacement.

Figures 35 and 36 depict the Virginia Manufactory Artillery Model sword.



Figure 36. Virginia Manufactory Artillery Model sword hilt.

PISTOLS

In 1804, the Virginia Manufactory explored making pistols from burst musket barrels, provided no flaws or other defects existed in the shortened sections. The pistols would be the same caliber as the muskets: .69 caliber. Pistol making began in earnest in 1805. The pistols were made in two models. The First Model pistol was produced between 1805-1811 and the Second Model pistol was produced between 1812-1815.

The First Model Virginia Manufactory pistol was produced between the years 1805 and 1811. The pistol was unusually large compared to other flintlock pistols manufactured in the United States at the time. The lockplate for the First Model pistol measured 4 3/4 inches long by fifteen-sixteenths of an inch wide. Markings and characteristics of the lock are very similar to those of the musket, except for its smaller size. The lockplate was marked with the word "VIRGINIA" in Roman capitals stamped horizontally on the lockplate face between the cock and the frizzen spring. The word "Manufactory" in script was stamped horizontally below. The word "RICHMOND" in smaller Roman characters is stamped in a vertical curve to the rear of the cock. The date is stamped in a straight vertical line between the word "RICHMOND" and the rear teat of the lockplate. The iron flash pan is forged integrally to the lockplate, has a rounded bottom, and is fenced to the rear of the flash pan. The frizzen tail ends in a modified curl that rests upon the frizzen spring. The lockplate and gooseneck are flat with beveled edges.

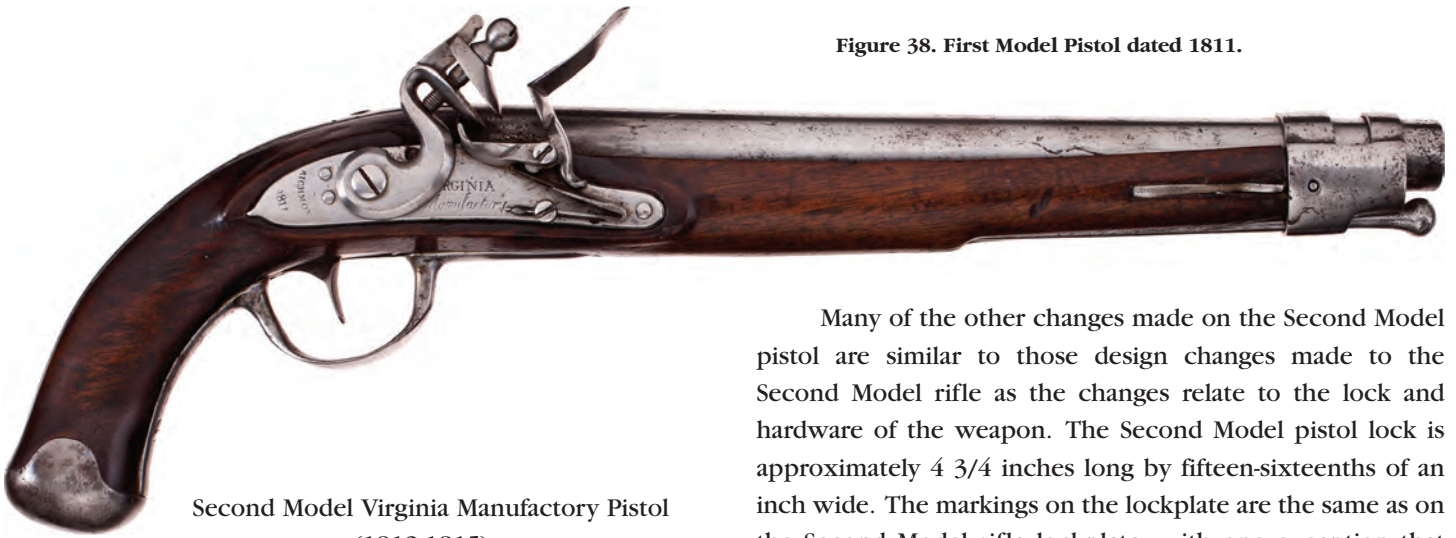
The smooth bore barrel of the First Model pistol is .69 caliber. The stock is made of walnut and is outfitted with iron furniture including an iron butt cap, trigger guard, side plate, and a front double barrel bank. Overall length of the pistol is a whopping 17 inches. The ramrod is made of steel and has a bulbous head. Markings on the pistol usually include matching assembly numbers (single or double digit) and a "W". The "W" stands for George Williamson who was the master armorer at the Virginia Manufactory for its entire 20 year operations history between 1802 and 1821. The W mark is usually found on the inside of the lockplate between the rear lower flash pan area and the tumbler. The W is not always present on the interior lockplate.

Figures 37 and 38 depict an example of the First Model Virginia Manufactory pistol.



Figure 37. First Model Pistol Lock.

Figure 38. First Model Pistol dated 1811.



Second Model Virginia Manufactory Pistol
(1812-1815)

The Second Model Virginia Manufactory pistol conforms to the pistols made at Harpers Ferry arsenal during the years 1812-1814. The overall length of the pistol is between 15.5-16 inches. The barrel length stands at about 10 inches in length, a full two inches shorter than the barrels made for the First Model pistols. The smoothbore barrel is made in .54 caliber.

Many of the other changes made on the Second Model pistol are similar to those design changes made to the Second Model rifle as the changes relate to the lock and hardware of the weapon. The Second Model pistol lock is approximately 4 3/4 inches long by fifteen-sixteenths of an inch wide. The markings on the lockplate are the same as on the Second Model rifle lockplate, with one exception that applies only to the pistols made in 1815. Only the word "Richmond" in Roman letters is stamped in a horizontal curve in the center of the lockplate between the cock and the frizzen spring. Only the date "1815" is stamped in a straight vertical line to the rear of the cock. The reinforced cock is used on the Second Model pistol. It has a flat face with beveled edges. The integrated flash pan is still made of iron, with a rounded bottom and fenced rear. There are no front or rear sights on the Second Model pistol. The steel swivel ramrod is attached to an iron rib that is welded onto the bottom of the barrel. The pistol's butt cap, trigger guard, side plate, tail pipe, and a band near the tail pipe are all constructed of brass.

Figures 39 and 40 depict a Second Model pistol.



Figure 39. Second Model pistol lock.

Important Second Model Variation (1812-1813)

For a period of about 4 1/2 months, a hickory ramrod in lieu of the steel swivel ramrod was used. As of today only 7 known hickory ramrod pistols survive. Figure 41 depicts an example of the very rare Second Model pistol with the wooden hickory ramrod. This pistol is dated 1812.

Summary Table 5 below identifies the key characteristics of the First and Second Model Pistol described above.

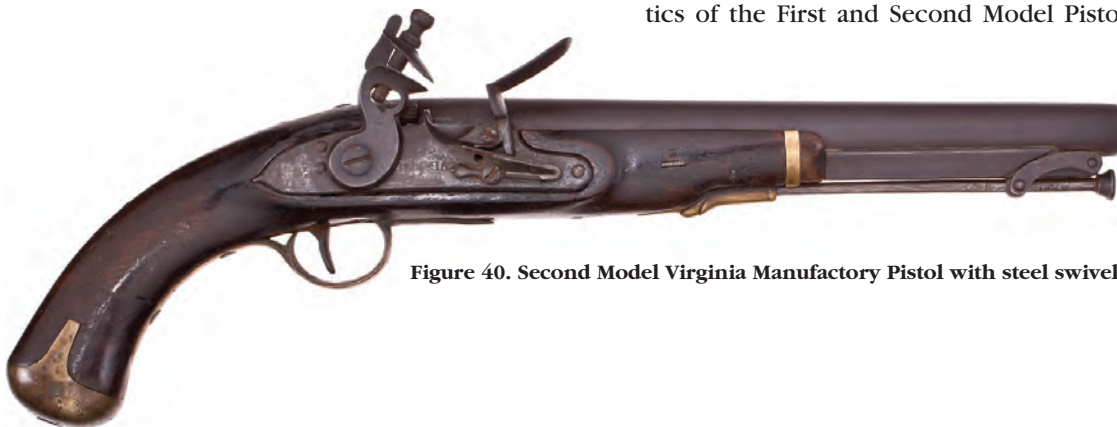


Figure 40. Second Model Virginia Manufactory Pistol with steel swivel ramrod.



Figure 41. Very rare Second Model Virginia Manufactory Pistol with wooden hickory ramrod. Only seven examples are known to still exist.

Table 5. General trends and design changes in pistol production at the Virginia Manufactory of Arms, 1804-21²⁸

This table was prepared by ASAC member Giles Cromwell and is in his book on the Virginia Manufactory. The pistol production figures, by year, appear in Table 6. This table was also composed by Mr. Cromwell.

The Virginia Manufactory pistols were not made as pairs. Only one pistol was issued to a cavalry man due to the limited supply of pistols and the fact that the sword was a cavalryman's primary weapon.

CLOSING OF THE VIRGINIA MANUFACTORY

By act of the Virginia legislature, the Virginia Manufactory of Arms closed on January 1, 1822. The Commonwealth of Virginia spent a huge amount of resources on the second war with England now commonly referred to as the War of 1812. Virginia's economy was suffering as a result of the war and a burgeoning recession that had taken effect by 1820. The demand for the Commonwealth to outfit its militia troops with Virginia produced weapons lessened greatly. Additionally, the federal arsenals were able to produce and distribute arms to the states on a much more regular basis. While not perfect, Virginia decided to stand down its Manufactory before it needed to invest additional significant capital to refurbish the Armory and its equipment.

The Virginia Manufactory facilities were later used as a repository to store and repair state arms. With the advent of the Civil War looming, the Armory was ultimately resurrected by the Confederate States of America to manufacture weapons for the Southern cause. The facility was called the Richmond Arsenal. Many original Virginia Manufactory weapons were altered to percussion and reissued to Virginia troops by the Arsenal for use during the U.S. Civil War. I will save this story to be told at another time.

<p><i>1805-11</i> First Model Pistol Lockplate marked "VIRGINIA" and "Manufactory" between the cock and the frizzen spring, "Richmond" and the date to The rear of the cock</p>	<p>1805 1806 1807 1808 1809 1810 1811</p>	<p><i>1805-11</i> First Model Pistol A. Iron Mounted B. Gooseneck cock C. Full walnut stock D. .69 caliber E. Steel ramrod F. Over length 17 in.</p>
<p><i>1812-14</i> Second Model Pistol Lockplate marked "VIRGINIA" between cock and the frizzen spring, "Richmond" and the date to the rear of the cock</p>	<p>1812 1813 1814</p>	<p><i>1812-15</i> Second Model Pistol A. Brass mounted B. Reinforced cock C. Half-walnut stock D. .54 caliber E. Ramrods: 1) 1812-13 hickory or steel swivel ramrod 2) 1814-15 steel swivel ramrod F. Overall length 16 in.</p>
<p><i>1815</i> Second Model Pistol Lockplate marked "Richmond: in a curve between the cock and the frizzen spring. Only the date stamped to the rear of the cock</p>	<p>1815</p>	

Table 6. Approximate number of Virginia Manufactory pistols made yearly²⁹

<i>Date</i>	<i>Number Finished</i>
1805	211
1806	579
1807	343
1808	390
1809	260
1810	334
1811	91
1812	386
1813	689
1814	603
1815	366
Approximate total	4,252

ENDNOTES

1. Virginia Governor's Office, James Monroe Executive Papers, 1799-1802 (bulk 1800-1802). Accession 40936. State Records Collection, The Library of Virginia. Clarke letter to Governor Monroe, dated June 12, 1801.

2. Virginia, Governor's Office, James Wood Executive Papers, 1796-1799 (bulk 1797-1799). Accession 40844. State Records Collection, The Library of Virginia. Address to the General Assembly on December 23, 1797. *See also*, Wood letter dated April 7, 1809.

3. Filmore Norfleet, *Saint-Memin in Virginia* (Richmond: Dietz, 1942), p. 155; *Enquirer* (Richmond), April 7, 1809).

4. *Calendar of Virginia State Papers, 1652-1869*; 8:455-7; *Examiner* (Richmond), July 10, 1802.

5. Shepperd's *Statutes at Large*, 2:99; Journal and Documents of the House of Delegates, 1852, doc. No. 89, p. 3; Richmond Legislative Petitions, Dec., 5, 1798; Virginia Manufactory Papers, 1810-1821, box no. 3 (Library of Virginia).

6. Virginia Governor's Office, James Wood Executive Papers, 1796-1799 (bulk 1797-1799). Accession 40844. State Records Collection, The Library of Virginia. Clarke Letters to Gov. James Wood dated March 7, 1798 and April 10, 1798.

7. Clarke Letter to Gov. James Wood, dated March 10, 1798.

8. Virginia. Manufactory of Arms. Record Book, 1802-1815. Accession 36903. State Government surviving records include correspondence, reports, contracts and statements of arms created at the Manufactory of Arms from 1808 until 1815. While the record book appears to have been created in 1808, it includes reports of arms manufactured in 1802. This record group also contains correspondence of the Virginia Governor and the superintendent of the armory. This records group is also available on microfilm (Miscellaneous Reel 982) at The Library of Virginia. Another large group of Virginia Manufactory of Arms records are included in the Virginia Auditor of Public Accounts found at The Library of Virginia. Over 26 cubic feet of records from the Virginia Manufactory of Arms are contained in the Auditor of Public Accounts Inventory entry number 175 (call number APA 175). These records include operational records of the armory, records on the Armory Building; construction and maintenance vouchers, 1799-1811 (almost two feet of records), the Foundry, annual weapons reports, list of Artisans and records relating to their payrolls, receipts and vouchers, etc.; records of the office of the superintendent, including ledgers, vouchers, etc. (over 10 feet); and other Armory records. The records are organized into sub-series by subject or form, and generally arranged chronologically thereunder.

9. Giles Cromwell, *The Virginia Manufactory of Arms*, The University Press of Virginia (Charlottesville, 1975). (Hereinafter referred to as the "Cromwell Book").

10. Virginia. Governor's Office, James Monroe Executive Papers, 1799-1802 (bulk 1800-1802). Accession 40936. State Records Collection, The Library of Virginia. Clarke letter to Governor Monroe, dated June 12, 1801.

11. *Ibid.* Clarke letters to Governor Monroe, dated July 6, 1801; July 23, 1801; September 25, 1801; October 31, 1801; and November 13, 1801.

12. The general description of the Armory's physical layout is based chiefly on portions of Chapter 4 from Cromwell's Book. I vetted the sources and citations by Giles Cromwell for this portion of his book and also confirmed dimensions, layout and descriptions from my personal review of various records of the Virginia Manufactory files located at The Library of Virginia. *See endnote 7 above.*

13. Virginia. Council of State. State Government Records Collection, The Library of Virginia. Call No. 36912 (also available on microfilm at Miscellaneous Reel 5383). April 24, 1802.

14. Cromwell Book, Table 2 at p. 57.

15. Cromwell Book at p. 66-67

16. Cromwell Book at p. 67.

17. Cromwell Book at p. 67.

18. Virginia. Governor's Office, John Tyler, Sr. Executive Papers, 1808-1811. State Records Collection, The Library of Virginia. Letter from Superintendent John Staples to Governor John Tyler, dated April 24, 1809.

19. Virginia Manufactory of Arms, Record Books, Staples Account Book, July 15, 1815. State Government Collection. The Library of Virginia. Virginia Manufactory of Arms. Record Books 1802-1815. Accession 36903. State Government Collection, The Library of Virginia. Virginia Manufactory Papers Box 1, Oct. 31, 1803; December 31, 1803; Dec. 31, 1804.

20. Virginia. Council of State. State Government Records Collection, The Library of Virginia (all No. 36912 (also available on microfilm at Miscellaneous Reel 5383). January 26, 1803.

21. *Ibid.*, February 19, 1803; May 14, 1803.

22. Virginia. Council of State. State Government Records Collection, The Library of Virginia. Call No. 36912. (also available in microfilm at Miscellaneous Reel 5383). October 8, 1803.

23. *Ibid.*; December 31, 1803; and December 31, 1804.

24. Cromwell Book, Table 4, at p. 93.

25. Virginia. Manufactory of Arms, Record Book, 1802-1815. Accession 36903. State Government Collection, The Library of Virginia Manufactory Papers, Box No. 2, August 1808; *Also see* Cromwell Book at p. 104; and Executive Letter Book, Letters dated June 18, 1812 and September 13, 1812.

26. Virginia. Manufactory of Arms, Record Books, 1802-1815. Accession 36903. State Government Collection, The Library of Virginia. Virginia Manufactory Papers, Box No. 2, August 1808; *See also* Virginia Governor's Officer James Barbour 41557, Executive papers, 1812-1814. Accession, State Records Collection, The Library of Virginia, Richmond, Virginia. Letter from Governor Barbour, dated June 18, 1812 and September 13, 1812 (also available on microfilm at Miscellaneous Reel 5505); and Cromwell Book at pp. 104, 107-108).
27. Cromwell Book, Table 6, at p. 109.
28. Cromwell Book, Table 7, at p. 118.
29. Cromwell Book, Table 8, at p. 128.

BIBLIOGRAPHY

Banks, Henry. *A compendious view of the establishment and operations of the Manufactory of Arms, and of the late public investigation from the commencement to the expulsion of the officers in February 1809*. Published privately for the author, Richmond (1809). A copy is located at the Virginia Historical Society, Rare Books Collection, Richmond, Virginia.

Cromwell, Giles. *Discoveries relating to the Virginia manufactory of arms that have been made since 1975*. American Society of Arms Collectors. Bulletin. Cincinnati, Ohio, No. 44 (Fall 1979), pp. 23-32.

Cromwell, Giles. *Reproving the early first model Virginia Manufactory muskets*. The Gun Report. Aledo, Illinois, Vol. 28, No. 9 (Feb. 1983), pp. 14-17.

Cromwell, Giles. *The Alteration of Virginia Manufactory Weapons 1813-1863*. American Society of Arms Collectors. Bulletin. Cincinnati, Ohio, No. 52 (April 1985), pp. 25-45.

Cromwell, Giles. *The Virginia Manufactory of Arms*. Charlottesville, University Press of Virginia (1975).

Fisher, H. Garrison. *The archaeological investigation of the Virginia Manufactory of Arms*. Prepared for the

William Byrd Branch of the Association for the Preservation of Virginia Antiquities. Richmond, Virginia (1988).

Fisher, Herb *The Virginia Manufactory of Arms*. Notes on Virginia. Richmond, Virginia. No. 41 (Winter 1988-1989), pp. 25-30.

Flanagan, Edward R. *Virginia Militia Long Arms*. American Society of Arms Collectors Bulletin. Cincinnati, Ohio, No. 34 (Fall 1976), pp. 2-17.

Foster, Charles L. *Confederate Arms are Not Rare*. American Society of Arms Collectors. Bulletin. Cincinnati, Ohio, No. 89 (May 2004), pp. 48-56.

Michel, Benjamin *The Richmond Armory*. American Society of Arms Collectors. Bulletin. Cincinnati, Ohio, No. 33 (Spring 1976), pp. 65-74.

Murphy, John M. *The Story of Confederate Carbines*. American Society of Arms Collectors. Bulletin. Cincinnati, Ohio, No. 32 (Fall 1975), pp. 2-36.

Poteet, David C. *The Armory Scandal: An Embittered Journalist Carried his Slanders into the General Assembly*. Virginia Cavalcade. Richmond, Virginia, Vol. 15, No. 4 (1966), pp. 38-43.

Poteet, David C. *Arms for the Militia: the Virginia Manufactory was Intended to Foster "Native" Manufacturers*. Virginia Cavalcade, Richmond, Virginia, Vol. 15, No. 3 (1966), pp. 30-35.

Virginia Manufactory of Arms. Account Books, Records, Vouchers, Papers, Ledgers, Letter Books, and Miscellaneous Documents from the Virginia Manufactory of Arms. State Government Records, Archives Division, The Library of Virginia, Richmond, Virginia.

PHOTOGRAPHY

All photographs depicted in this article were taken by Jack W. Melton.