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ARMING THE MILITIA: SOUTH CAROLINA LONGARMS 1808-1903

By

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CHAPTER FOUR
THE PALMETTO ARMORY AND CIVIL WAR PERIODS

On November 12, 1849, South Carolina's governor paid Glaze and Radcliff (sic) $14.50 for 100 rifles, and a month later paid for 174 more rifles and a hundred muskets, bringing the total spent to $4,000. These are identified in a contemporary report as percussion arms, and the receipt of the last 760 flintlock muskets from the federal government is also noted, as is the presence of 3,500 muskets on hand which were never used, "but so injured by rust" as to require laborious cleaning.[1] This marked the first appearance of William Glaze as an arms supplier to the state of South Carolina, but he would remain prominent until the end of the Civil War. His partner at this time was Thomas W. Radcliffe of Columbia, who was active in the arms trade in the ante-bellum period, including importing Tranter revolvers from England.[2]

Apparently Glaze and Radcliffe contracted with the governor again in 1850 for 640 "stand of small arms" worth $9,280.00. The governor's contingency fund, which was to pay for these, was depleted unexpectedly by $9,000 spent on the funeral of John C. Calhoun, the state hero, and the arms debt was unpaid in 1853. In recommending payment, the General Assembly committee investigating the claim reported that

> The arms under this contract were not made by the Messr's Glaze and Radcliffe, but purchased under the direction of the Governor, and your committee are informed by the present Major of Ordnance, have been received and are of very good quality.[3]

Positive identification of these arms is provided by an accounting of the total due to William Glaze & Co. in 1853, including his Palmetto Armory project. Here we find "640 percussion muskets (B. Flagg & Co.) $14.50" after all his Palmetto Arms are accounted for.[4] This also answers the question raised by antiquarians for several years as to the origin of the relatively small number of model 1842 .69 caliber muskets marked "B. Flagg & Co./Millbury/Mass./1849" with an eagle and "U.S." on the lockplate. It had been known that no federal contract for them was made, nor had any state purchase been confirmed.[5] The earlier Glaze and Radcliffe muskets were probably a different type, as inventories at the Citadel in Charleston account for 379 (not 374) muskets, "Brown, percussion marked Ratcliff & Glaze [sic] (condemned)" in 1853, but in 1854 they are shown as "New Brown percussion" instead of as condemned.[6]

No more is known of Radcliffe and Glaze as partners, except for an advertisement in the Richmond Daily Examiner on June 8, 1861 seeking $1 million capital for the "C.S. Armory and foundary Co. to fabricate all types rifles, muskets, pistols, swords, bayonets, rockets and all munitions of war in Macon [Georgia] , Thomas E. McNeill, Acting Supt., Glaze & Radcliffe, agents."[7]

Benjamin Flagg's career in arms production was started at least 20 years earlier in the armory of Asa Waters of Millbury, Massachusetts, where he eventually became superintendent upon the death of Waters in 1841. As one of the reliable contractors, Waters had been repeatedly awarded contracts for arms to be distributed under the Act of 1808, including model 1816 muskets and model 1836 pistols. The last of his 36,650 muskets were delivered in 1837, when his pistol deliveries began, and the last of three pistol contracts was fulfilled in 1844 with the full 23,000 delivered. This left Waters without a United States contract, for the first time in thirty-five years, and Reilly speculates that Waters retooled for the then current model 1842 musket and pistol, in hopes of getting a large government contract.[8] This was an expensive gamble, as the strict standards for interchangeable parts in the 1842 musket would require an investment of at least $30,000 to tool up for its production.[9] No United States contracts were awarded to the Waters firm for any of the new arms. A very few model 1842 muskets dated 1849 exist with Waters markings, which must have preceded those marked with Flagg's name, and presumably Flagg took control of the musket (and possibly the pistol) machinery at that time. The orders from Radcliffe and Glaze must have been most welcome as Flagg and the Waters firm had both failed to get many orders. They tried hard enough, evidently making sample arms, which deviated slightly from United States patterns for prospective customers. The use of brass for bands and fittings was a prominent difference.[10]

William Glaze reportedly operated a jewelry store in Columbia in 1838, and expanded it to include firearms and hardware,[11] which would logically place him in contact with Mr. Radcliffe. It seems that Glaze and Flagg decided to go into arms making, probably in hopes of more business from South Carolina. In 1806 James Boatwright and Middleton Glaze had a factory making cotton gins in Columbia,[12] this Glaze was probably William's father. As competitors in Eli Whitney's cotton gin business, perhaps the Glazes, goaded by both business and sectional jealousy, aspired to set themselves up as his rivals in the firearms business as well. Whatever the reason, a member of the Boatwright family joined William Glaze in 1850 to establish the Palmetto Iron Works (ornamental iron, etc.) "Boatwright almost immediately disposed of his interest in the firm to Glaze," the name was changed to William Glaze & Co., and Benjamin Flagg and his machinery were incorporated. They became known as the Palmetto Armory, and operated a 3 story brick factory of 54,000 square feet (with six large chimneys) at Laurel and Lincoln Street in Columbia.[13]

During its one-year existence, the South Carolina Ordnance Board and the Major of Ordnance kept busy. They ordered 48 pieces of heavy ordnance from Joseph R. Anderson (of Richmond's Tredegar Iron Works) which were nearly completed. In addition, they had decided in February of 1851 to buy

> 6,000 muskets, 1,000 rifles, 1,000 pairs of pistols, 1,000 cavalry sabres, and 1,000 artillery swords, all complete, with the understanding that these arms should, if practicable, be manufactured in the State

Palmetto Iron Works.

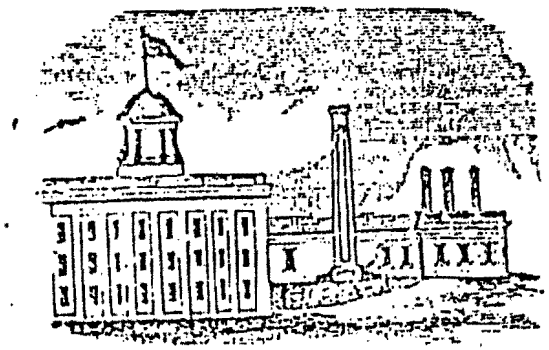
WILLIAM GLAZE,

MANUFACTURER OF

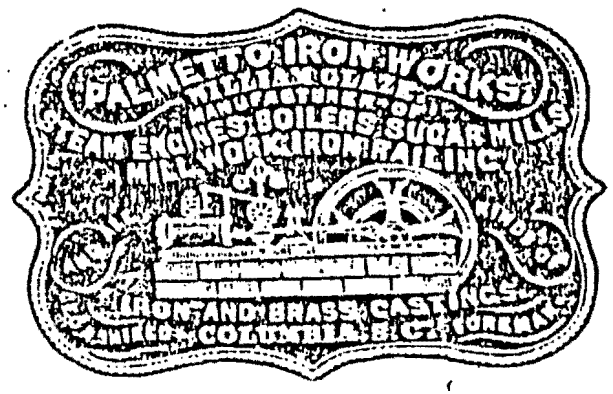
STEAM ENGINES, BOILERS, SUGAR MILLS, MILL WORK, IRON RAILING,

AND ALL KINDS OF

IRON AND BRASS CASTINGS.



TERMS CASH.



TERMS CASH.

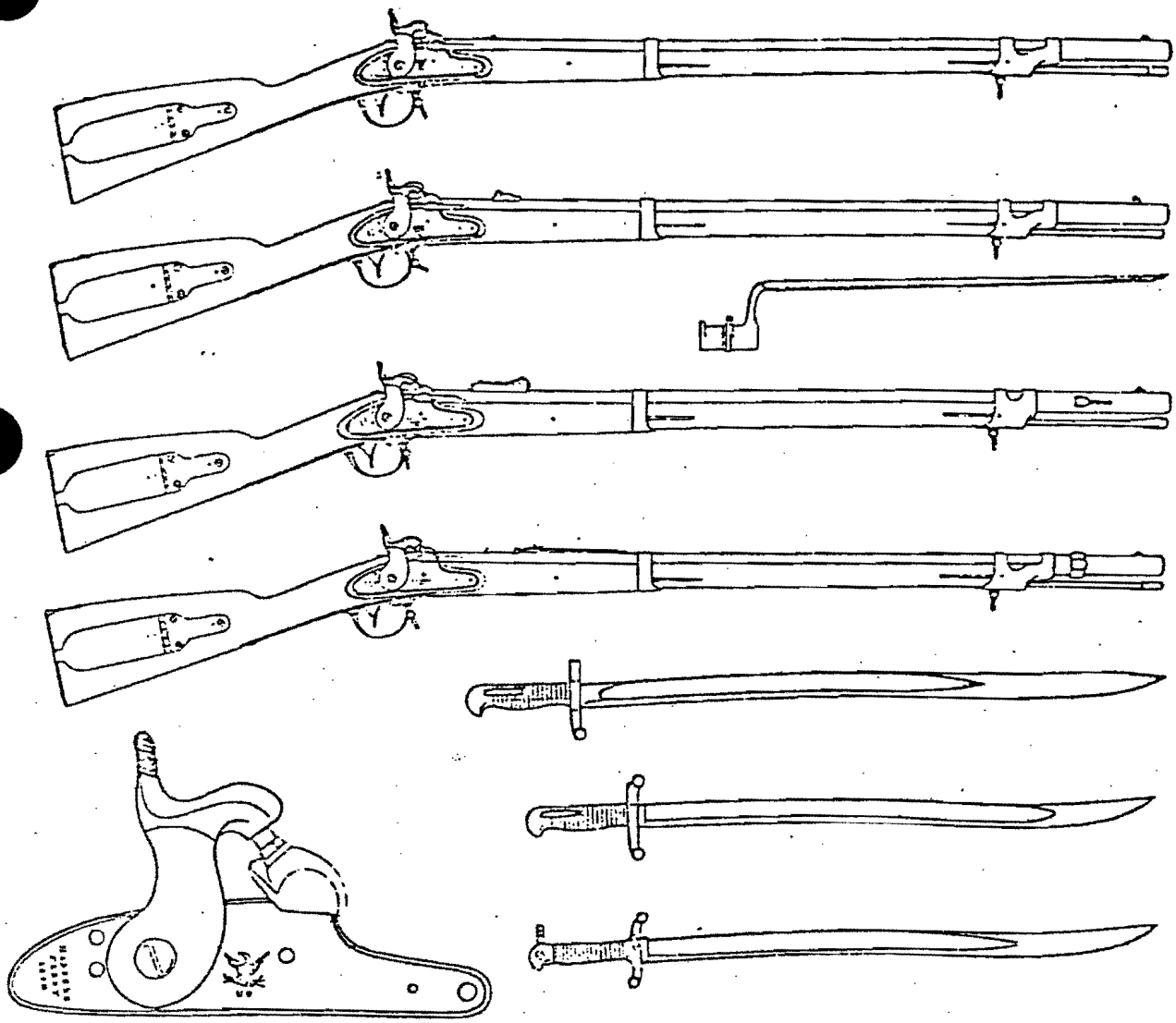
William Glaze to Colonel Edward Manigault, September 20, October 12, and November 14, 1861, MSS, Ordnance Department Papers 1860-1864, S.C. Archives.

Figure 8.
WILLIAM GLAZE LETTERHEADS

> of South Carolina. The board is already November, 1851 in possession of the fact that the contract for furnishing them was taken by Messrs. Glaze and Flagg, with an express stipulation that they and all their component parts were to be manufactured in this state; and also, as far as practicable by native mechanics, and of materials produced in this state. The contractors have, accordingly, erected an armory in the town of Columbia, which it is confidently expected, will be in operation by [November 15, 1851].[14]

The contract between South Carolina and Glaze and Flagg was dated April 15, 1851 with a delivery deadline subsequently extended to December 1, 1853. The arms were to be "after the pattern adopted and now in use in the Army of the United States; but that the State reserves to herself the right to alter all or any of said patterns" and the contractors were to "furnish appropriate patterns and gauges for verifying the principal dimensions and form of the different parts of the arms." Prices were similar to those on comparable federal contracts.[15]

The arms did have some changes made from the patterns. The muskets differed from the United States model 1842 in that they had brass instead of iron barrel bonds, a ramrod with a cupped head instead of flat, and a bayonet stud on top of the barrel instead of on the bottom. The latter change allowing use of the Model 1816 bayonets on hand rather than the models 1840/1842 which used a bottom mounted stud. Some musket barrels were browned instead of being polished bright. The otherwise regulation Model 1842 pistols omitted the rear sight. Except for markings, the rifles were the standard model 1841. Barrel marks were V/P/palmetto tree, and the lockplates were marked with "PALMETTO ARMORY.S*C." surrounding

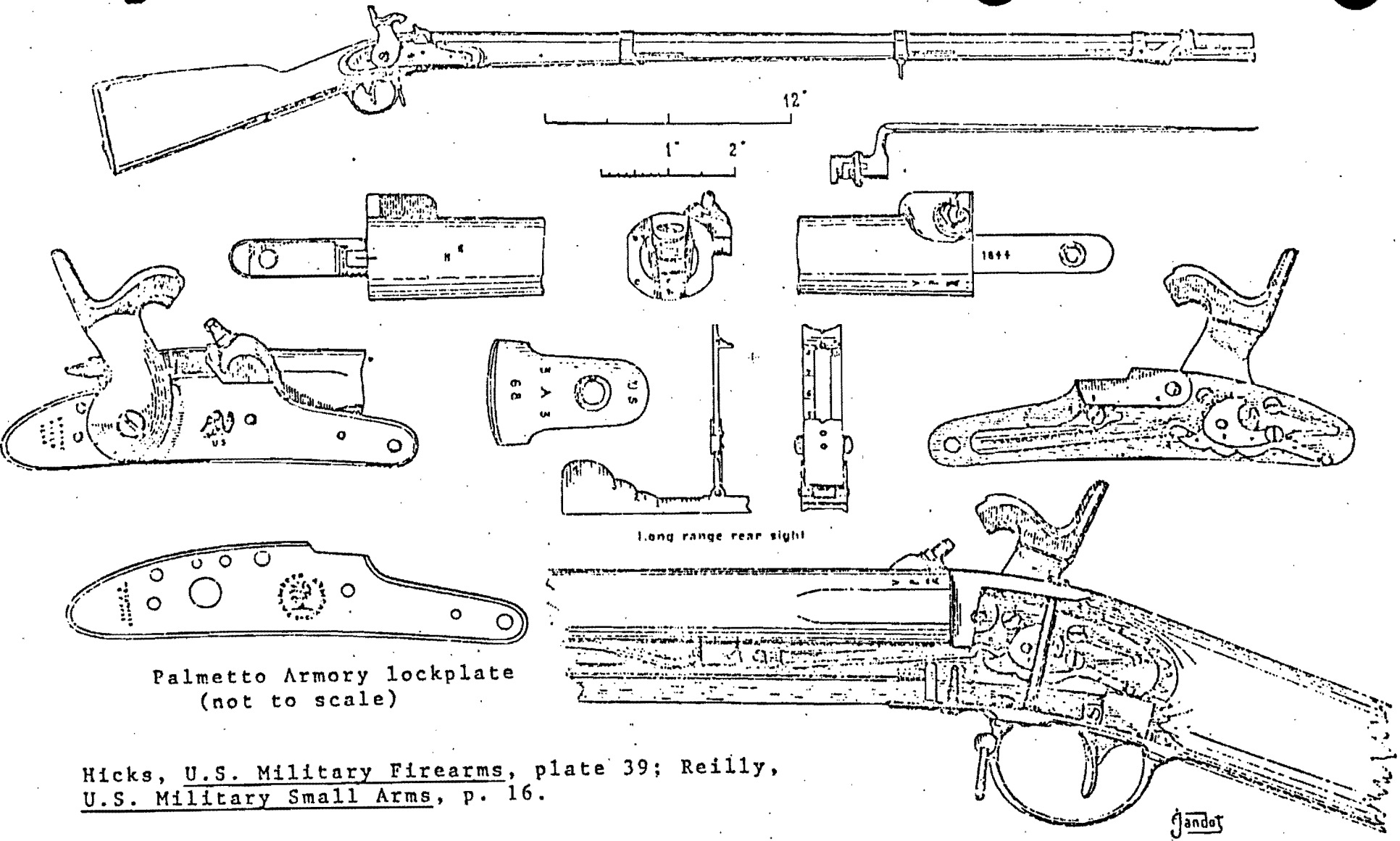


Top: original form
Lower: modified for socket and sabre bayonets as shown below, and fitted with "long range" sights

Palmetto Armory lockplate

Reilly, U.S. Military Small Arms, pp. 33, 35.

Figure 9.
U.S. RIFLE, MODEL 1841
(Mississippi rifle)



Palmetto Armory lockplate
(not to scale)

Hicks, U.S. Military Firearms, plate 39; Reilly, U.S. Military Small Arms, p. 16.

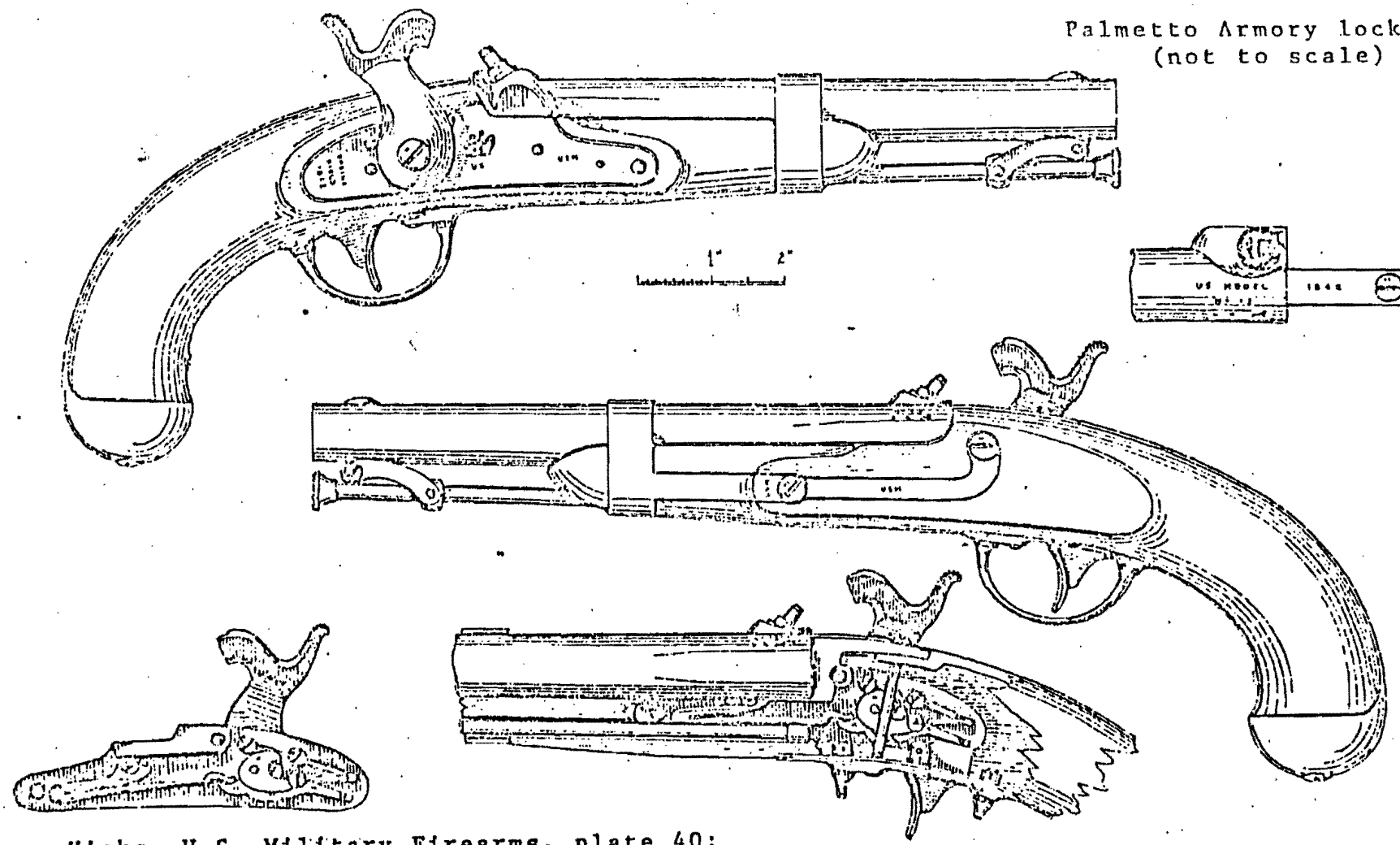
Figure 10.
U. S. MUSKET, MODEL 1842

a palmetto tree in front of the hammer, and "COLUMBIA/S.C. 1852" behind the hammer. Buttplates and barrel tangs were marked "S.C." and some barrels bore a date of 1853.[16] However, there were delays in delivery due to a fire in the shop of the supplier of the lockplate machinery, and difficulty getting the brass bands cast. This was overcome by purchasing 500 or 600 lock plates and brass barrel bands outside of the state.[17]

By November 1852, Glaze and Flagg had completed an additional contract to alter 5,960 muskets to percussion "which were at the same time cleaned, and are now in excellent order." Musket production was about half complete, and of the 3,365 offered for proof firing only 75 burst in proof and 139 more were rejected. Rifle production lagged behind, probably due to problems in getting all the machinery needed.[18] The rifle machinery very likely was the same that Tryon of Philadelphia had used on its earlier Texas and/or federal contracts for model 1841 rifles.[19] Glaze completed his contract on time, and the settlement of his account on November 28, 1853 credits him with[20]

Altering 5,960 muskets to percussion @ $2.00	$ 11,920.00
Arms manufactured	
6,020 percussion muskets @ $14.50	87,290.00
301 cases @ $3.75	1,128.75
640 percussion muskets (B. Flagg & Co.) @ $14.50	9,280.00
2,000 cavalry sabres @ $6.50	13,000.00
526 artillery swords @ $6.50	3,419.00
1,000 rifles, percussion @ $15.50	15,500.00
1,000 dragoon pistols @ $7.25	7,250.00
plus boxes, etc.	776.35
TOTAL	$149,564.10

Palmetto Armory lockplate
(not to scale)



Hicks, U.S. Military Firearms, plate 40;
Reilly, U.S. Military Small Arms, p. 182.

Figure 11.
U. S. PISTOL, MODEL 1842

The adjustment in numbers of edged weapons was caused by changes in the state's preferences, and the cancelling of 1,000 pistols was needed to keep the Ordnance Department expenses down. This also was the motivation for the abolition of the Ordnance Board, and reduction in salary for the Major of Ordnance by the 1851 legislative session, and the elimination of his job effective July 1854.[21]

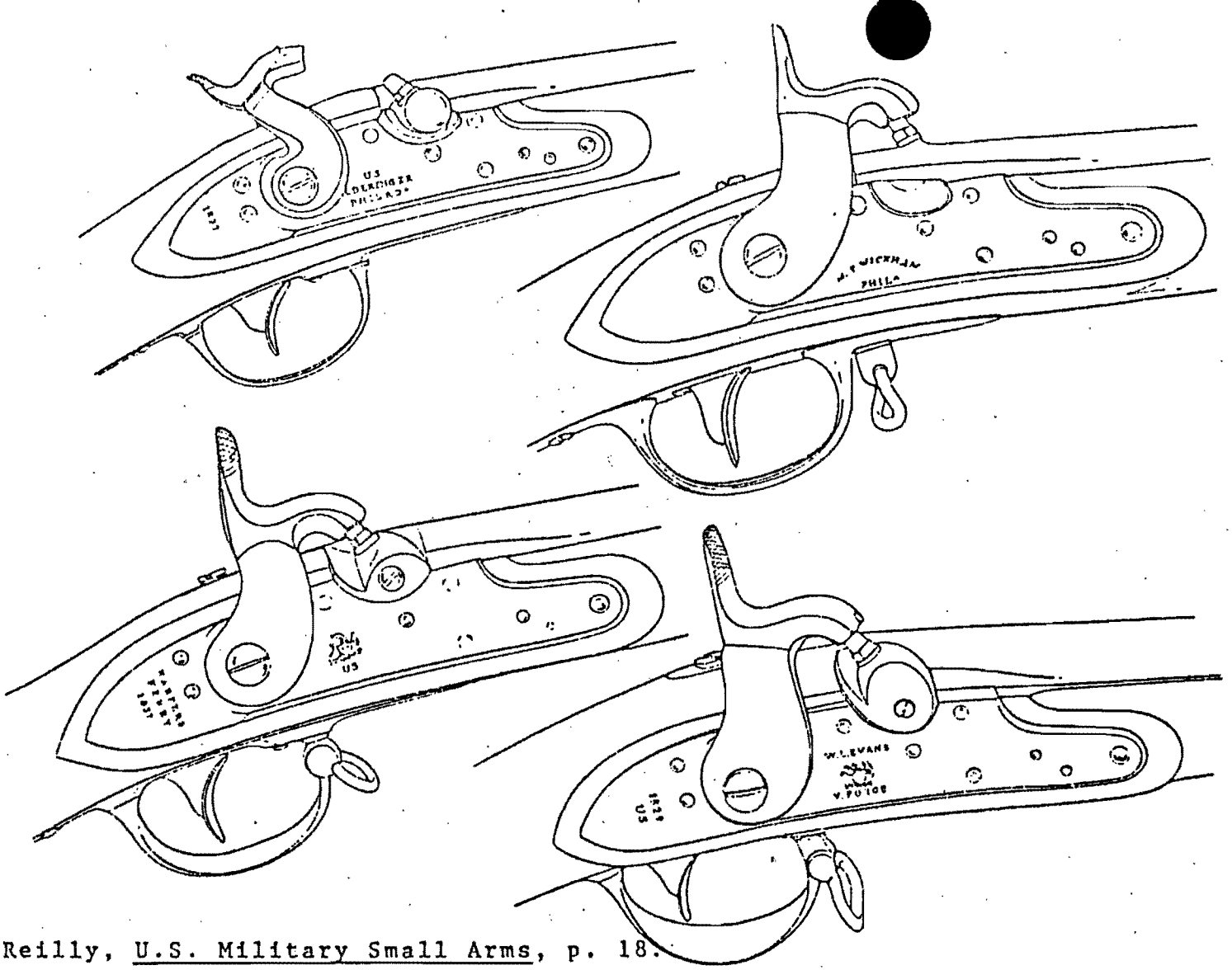
The Palmetto Armory was a major arms manufacturer, and its daily operations must have closely resembled those of Springfield Armory. Visitors were impressed with the forging, grinding, shaping, filing, milling and inspection processes at Springfield, and the wondrous capabilities of the many machines used.[22]

Neither Glaze nor Flagg is known to have done any more significant arms making after 1853, and the Armory's successor, the Palmetto Iron Works could not have used much of the machinery. All known contractor-produced model 1842 muskets were made on the same machinery under Waters, Flagg and finally Glaze's name, but it was probably far from worn out. Its disposition remains a mystery, especially as the era of contract musket making was over. The only exception was the firm of Robbins & Lawrence, of Windsor, Vermont, who introduced interchangeable parts to British arms, when it made 1853 pattern Enfield rifle-muskets during the Crimean War, but went bankrupt when large orders failed to materialize.[23] Other than the timing, however, there is little to support this theory as to the disposition of Glaze's equipment.

In 1854 South Carolina had enough firearms of the very [illegible]st pattern to arm over 8,000 men with Glaze's products and nearly a thousand more with recently supplied federal arms. If about 1,500 artillerymen, musicians, officers and others not normally equipped with guns are included, the South Carolina militia becomes fully capable of arming the same number of men as were then in the United States Army, some 10,745 strong.[24] Not all of the state arms, however, were of high [illegible]lity. The Citadel reported as unserviceable 53 carbines, 36 cadet muskets and 146 English muskets, then in a new category "Reliques" included 28 spears, 15 pikes and 250 spare bayonets.[25]

Compared to some southern states, South Carolina was extremely well armed. Virginia still had large numbers of arms but they were rapidly becoming obsolete. In 1852 the inventory showed only 81 percussion muskets, 3,496 brown United States flint muskets, 13,286 bright United States flint muskets and 10,160 bright Virginia muskets (these at least 30 years old). A proposal to sell 15,000 unserviceable muskets to get money to alter others to percussion failed in 1854, 1856 and again in 1859. Finally, in 1859, Virginia traded 2,135 flint muskets to the federal government at $1.00 each to get percussion arms.[26]

The South Carolina militia during the 1850's continued on the old 1792 mass militia scheme, despite a trend away from it elsewhere, and despite derisive newspaper articles locally.[27] The final effort in 1859, which would have



Reilly, U.S. Military Small Arms, p. 18.

Figure 12.
ALTERATIONS FROM FLINTLOCK TO PERCUSSION

nominally included all white male adults, but exempted most on payment of a tax, left about one out of seventeen men in the militia, essentially reducing it to the volunteer companies.[28] As 1859 closed, the militia counted 24,840 privates in rifle and infantry units; 8,526 muskets and 2,310 rifles were owned by the State to arm them.[29]

While South Carolina's militia continued on its earlier course, significant changes were taking place elsewhere. The notoriously inaccurate militia returns, which formed the basis for arms distribution under the Act of April 23, 1808 were tactfully bypassed when a new distribution system was adopted in 1855. The Ordnance Department had advocated such a change since 1842, and proposed a shift from proportional militia strength (under which South Carolina got 461 muskets), to population (523 for South Carolina), or to Congressional representation. The latter system was adopted, which reduced South Carolina's annual share to about 433 muskets.[30]

The adoption in 1855 of the .58 caliber rifle-musket as the standard infantry arm was such a revolutionary advance that huge stocks of smoothbore muskets (percussion as well as flintlock) were rendered obsolete. This advance was made possible by the "Minie ball" with its hollow base and conical nose, which made it easy to load from the muzzle (without a patch as had been used with rifles up until then) and stable in flight. Their increased accuracy made them effective out to five hundred yards, while the old smoothbore muskets were not much good past a hundred and fifty yards. Less important

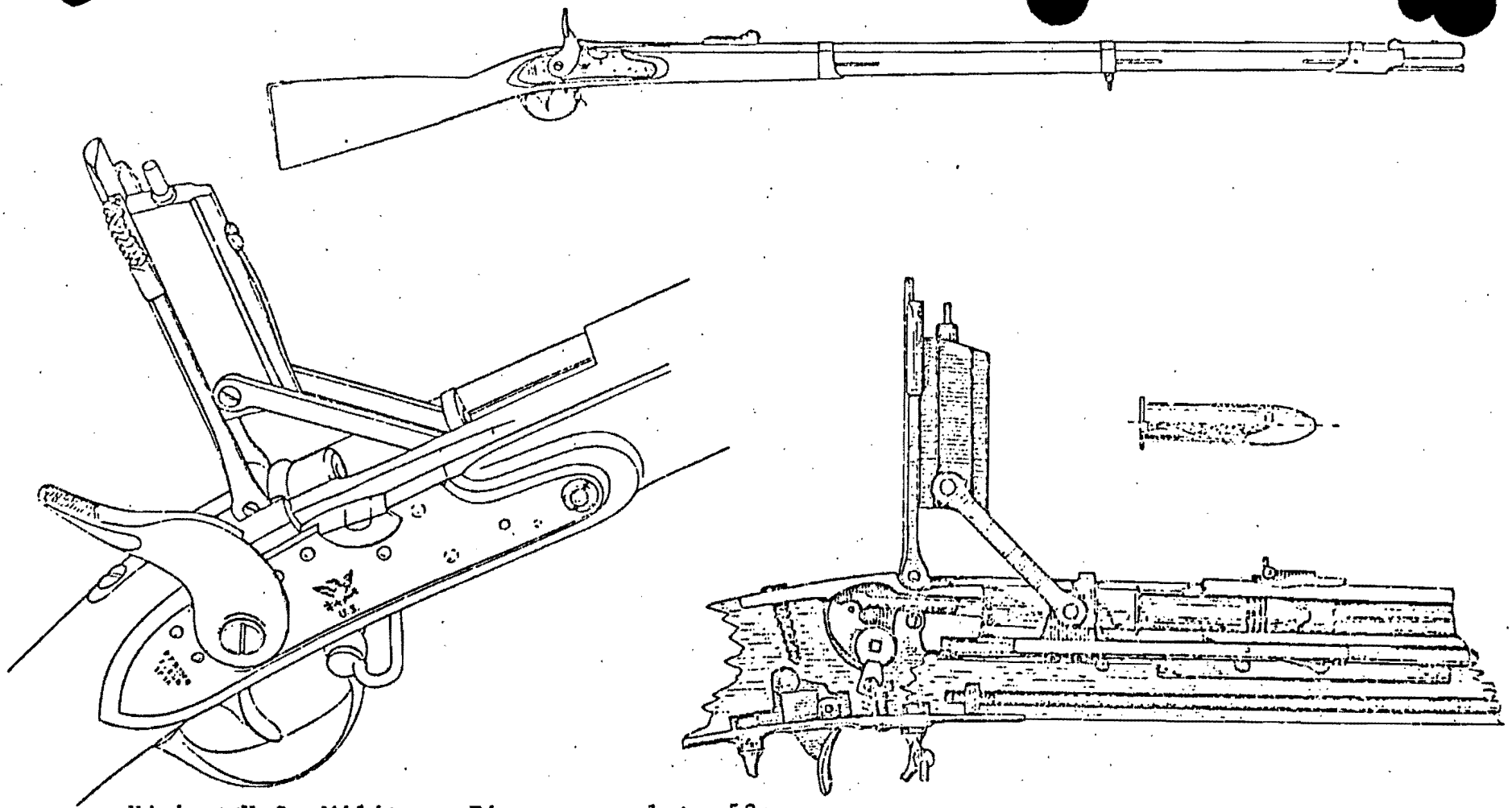
factors also influenced the final form of the new model 1855 series of arms. Colorful brass furniture such as that of the model 1841 "Mississippi" rifle was used again on the model 1855 rifle, as it was felt that it "would lend a martial air to the various state militia regiments."[31] There was no intent to revive the contract arms business, for in 1853 Secretary of War Jefferson Davis had heaped praise on the national armories for their interest in improving arms, but criticized the contractors for their desire to keep costs down (and profits up) by continuing older models.[32]

The need to switch over to the improved weapons was widely recognized, and an obvious solution to the problem was to modify as many arms as possible to the new system. On July 5, 1855 orders were given to modify the model 1841 "Mississippi" rifles by reboring them from .54 to .58 caliber, to take the new size ammunition, and to fit them for sword bayonets. In 1859 the simpler socket type triangular bayonet was substituted. During these alterations adjustable sights were often added, creating a "long-range rifle".[33] The .69 caliber muskets could not be adapted to take .58 caliber ammunition, so .69 caliber Minie balls were made, and the better muskets were then rifled, and usually fitted with "long range" sights. The alterations of roughly 17,500 muskets in this manner kept both Springfield and Harpers Ferry busy during 1856-1858, so that quantity production of the model 1855 arms did not start until 1859.[34]

A more complicated conversion was done under contract by the Remington factory in Ilion, New York. This consisted of rifling and sighting 20,000 model 1816 flintlock muskets, and altering them to the Maynard tape primer system. This involved an entirely new lock assembly and a breech piece for the barrel so that the Maynard tapes (much like a roll of cap gun caps), or regular percussion caps could be used.[35] Except for the larger caliber these were comparable to the model 1855 rifle muskets with their Maynard primer systems. The distinction between the 1855 and later "rifle muskets", and the modified smoothbores which were termed "rifled muskets" is a significant one.

Another attempt to utilize the stockpiles of older muskets was based on the 1858 patent of George W. Morse, a native of South Carolina. His invention was a breech mechanism set into the barrels of .69 caliber muskets allowing them to use center-fire .69 caliber cartridges. The government paid $10,000 for the right to alter 2,000 arms using his system, but only 54 were finished before several factors halted work. These were the first breech-loading cartridge arms produced by the United States. Morse's later arms made in Greenville, South Carolina were of entirely different design.[36]

Nearly as quickly as the improved rifle muskets and altered rifled muskets and long range rifles were made, they were distributed in the 1808 allowances. In 1856, some 50 long range rifles were issued, and nearly four thousand more went to various states by July 1860. Rifled .69 caliber

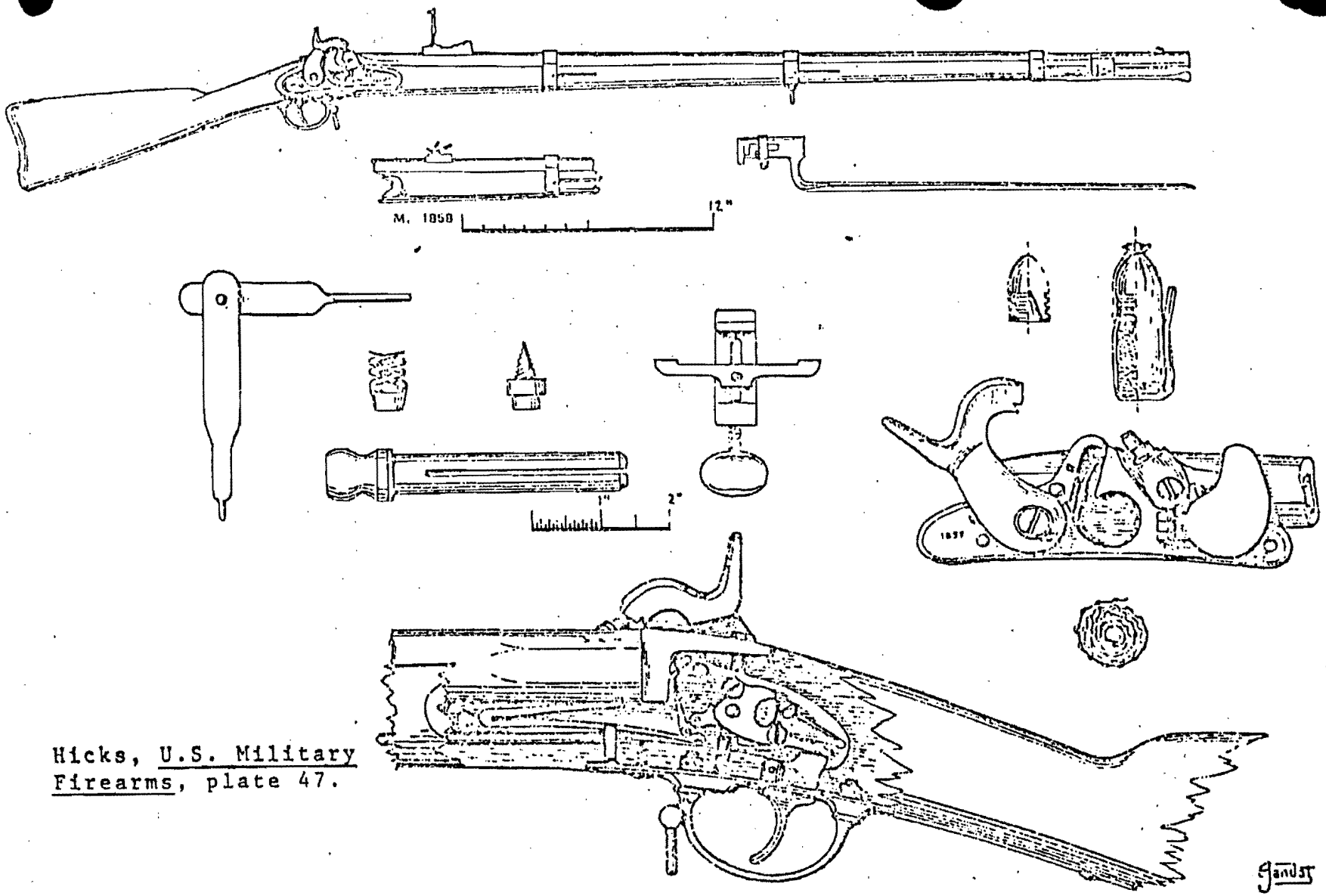


Hicks, U.S. Military Firearms, plate 50;
Reilly, U.S. Military Small Arms, p. 70.

Figure 13.
GEORGE W. MORSE'S BREECHLOADING SYSTEM

askets (with or without the Maynard primer) issued between 1857 and 1859 totaled 2,828. The new .58 caliber rifle muskets were first issued in fiscal year 1858 with two thousand going to Massachusetts and 431 to other states, and 11,966 more followed by July 1860, along with 1,259 of the model 1855 rifles. These issues were equitably distributed among the states, and even in 1860 about a third of the most modern arms ent to the soon-to-be Confederate States. Included in the latter were 311 model 1855 rifle muskets to South Carolina.[37] Between the Palmetto Armory episode and 1860, South Carolina also received from the federal government 415 cadet muskets (probably model 1851), 605 percussion pistols (probably model 1842, similar to the Palmetto product), 192 percussion rifles (probably model 1841 "Mississippi") and 202 of the modified long range rifles. In addition, six Colt "belt revolvers" (probably model 1851 "Navies"), and various edged weapons, accoutrements and artillery harness were received.[38]

Besides its normal 1808 issues, the federal government sold 24,110 muskets to states and individuals (from both North and South) in 1860, in lots of 80 up to one lot of 10,000. While South Carolina did not purchase any, Alabama obtained 1,000 flintlock muskets at $2.50 each and 2,500 altered to percussion at the same price from the Baton Rouge Arsenal. Virginia paid the same price for 5,000 from Washington Arsenal.[39] This left Virginia on the eve of the Civil War with a total reported amount (in storage and in the hands of the militia) of some 5,000 percussion arms and 50,000 flintlocks.[40]



Hicks, U.S. Military Firearms, plate 47.

Figure 14.
U. S. RIFLE-MUSKET, MODEL 1855

Aware of the uselessness of most flintlocks, Virginia authorized the refurbishing of the Virginia Manufactory facility in 1860. Even then the national armories were quite willing to share their technology with the state armories. To help pay for improved arms, Virginia planned to sell 50,000 (nearly all) of her flintlock muskets at $1.50 each to J. R. Anderson of Tredegar Iron Works fame. He in turn would sell them to Cooper and Pond of New York and in fact had shipped 8,000 to them when hostilities began.[41]

During 1860 South Carolina was actively engaged in seeking additional arms. A leading participant was Roswell S. Ripley, later to be a Confederate Brigadier General, and commander of Fort Sumter after its seizure by Southern forces. In addition to a reputation as a "red-hot and indefatigable Rebel", Ripley was nephew of James W. Ripley, the reputedly conservative Chief of Ordnance for the United States Army.[42] In March, 1860 the rebel Ripley had written to Governor Gist of South Carolina, noting

> My attention has lately been called to the subject of the armament of the Militia and Volunteers of the Southern States, by several gentlemen holding military office . . . one problem is . . . the time required for properly manufacturing arms, after the required quantities are designated, no matter where the work is to be executed. Another, and a greater is the almost entire absence of persons having experience or knowledge in that branch of industry in the South. . . .

To rectify the situation, Ripley proposed the establishment of an armory to serve South Carolina, Alabama and Georgia, to make about 8,000-12,000 stands of arms per year. The arms "would of course be up to a standard model to be determined

upon and to be at prices fixed by competent authority and subject to proper military inspection." Within a few weeks, favorable replies were received from the governors of Alabama and Georgia, but they did not firmly commit their states to the plan.

In November, Ripley was still trying to get Governor Gist to agree to his scheme, but this time wrote from Philadelphia where he was searching for arms, perhaps from Tryon. He commented

> Good arms are scarce in this country outside of the National Arsenals, and for a rush we should have to go abroad. France will do as a market, but the arms are not so good as English or others. Meantime there are about 14,000 Stand (altered) at Charleston. They are serviceable weapons, though not good, and should be looked to, that they are not taken from the State. Lincoln is elected beyond a doubt, and I suppose the matter will soon be settled. . . .

He noted that he would return to South Carolina soon, and suggested "no overt act . . . until Lincoln comes in."[43]

Several orders were placed in 1860 for arms, possibly by Ripley during his trip, or by other persons. One thousand Remington-Beals Army revolvers were sold to the state in that year (out of less than 2,000 total ever made),[44] but it is not known if they were actually delivered. An order may have been placed with Colt's for Army revolvers (model 1860) with fluted cylinders, to reduce the weight; as this idea "is believed to have been the suggestion of Wade Hampton of South Carolina."[45] The Palmetto Hussars demanded that 63 of the 200 Smith carbines expected in January 1861 be delivered to them, claiming "documentary evidence in the possession of

pt. C. K. Huger shews [sic] that two hundred of these carbines were ordered by his late excellency."[46]

The Palmetto Hussars demand was made under the terms of a November 13, 1860 resolution allowing the governor to furnish arms to Volunteer Companies of 64 men who were inspected and equipped.[47]

The problem of arming troops for the expected struggle as being given serious study in the final weeks of 1860. Shortly before the state's Ordinance of Secession was passed on December 20, a quasi-official report by G. Manigault, chairman of a sub-committee of the "1860 Association" entitled Suggestions as to Arming the State presented a very realistic evaluation. Its preliminary observations are particularly interesting:

> Under these circumstances, for the Southern States to be unarmed is to be imminent peril, - to continue unarmed is to commit political suicide.
>
> We are indeed accustomed to hear that the militia is the safe guard of the country. But who, that knows anything of the present state of the militia of these Southern States, dare look to it for any efficient service. . . . there is not a regiment which could be called out without immediately finding itself deplorably destitute of the means of remaining in the field, without even the shadow of an enemy to oppose it.
>
> But there is at this time an especial cause why the ordinary militia is completely inefficient. Within the last ten years an immense change has taken place in the construction of fire arms, and especially in the weapon of the infantry soldier. Infantry armed in the best manner known ten years ago, and sent out to oppose an equal number armed as well-equipped infantry are now, would be simply led forth to slaughter. The improvements in the old musket alone, not to speak of those in artillery, are so great as to necessitate material changes in the tactics of battles.[48]

The committee suggested that from the 54,000 eligible militia men in the state, each battalion form a volunteer company,

yielding a 10,730 man force. They would enjoy benefits in exemptions from certain taxes and from routine militia patrol duty. They would be armed, and fully equipped by the state, attend an annual ten day encampment, there to actually conduct target practice with their arms, thirty rounds to be allowed for longarms and fifty for artillery. After listing the assets available, it was decided that "9,000 rifle muskets and bayonets, or sabre bayonets" worth $144,000, 82 pieces of artillery and all sorts of other military equipment and ammunition totaling $384,510 was needed, in addition to $123,000 for encampment expenses each year.[49] War, or preparation for war has never been cheap. An attempt by the governor to get more .58 caliber rifle muskets as an advance on the next year's quota due from Washington failed.[50]

The final words of the report recommended reinstatement of a Board of Ordnance, much like the one which had functioned ten years earlier. A week after secession was approved on December 20, 1860, the governor appointed Edward Manigault as "Colonel of Ordnance in the Service of the State",[51] although the balance of the Board had held its first formal meeting on December 22, 1860.[52]

The seizure of the United States Arsenal in Charleston on December 30, 1860, greatly increased the supply of arms available to the state, and was a major source of arms for the remainder of the war. Despite diligent efforts, importation and domestic manufacture were not successful in meeting expectations. The arms on hand on December 31, 1860, exclusive of any in the hands of the militia, amounted to:

Type	Charleston Citadel	Columbia Arsenal	From U.S. Arsenal	Total
Muskets				
Percussion, model 1842	736	0	11,693	13,429
altered to percussion	0	4,850	5,720	10,270
"mfg by W. Glaze, Brown, percussion 1851"		4,592		4,592
flintlock	610		18	628
flintlock, brown			484	484
Rifles				
Percussion, brown, .54 cal. (model 1841)			2,814	2,814
percussion	66	145		211
yager (flint and steel)	68			68
Hall's patent, flint-lock, with bayonet			500	500
Carbines, cavalry/Hall's perc./HF perc.	45		14	59

In addition, the United States arsenal was the source of 225 model 1842 percussion pistols and 50 flintlock pistols for Wade Hampton's Legion.[53]

From the start, the Ordnance Department was bombarded with requests for specific arms. Besides the one mentioned earlier seeking Smith Carbines, the Charleston Zouave Cadets complained that the 75 rifles with sword bayonets they had been issued "were considered totally unfitted" for their unit, and demanded either "Minie Rifled muskets with sword bayonets" or the "Minie muskets with Maynard primer." They got neither, as the board informed them "The State has not the arms solicited." Ten weeks later the "1st Infantry Regulars" asked for 60 Enfield rifles, but had to settle for 60 model 1842 muskets instead. But surely the patience of Colonel Manigault must have been stretched when an officer tried to exchange eighty browned

muskets because they did not match the twenty bright ones he already had.[54] Knowing the assets which were available, it is not surprising to see that nearly all the small arms issued up until late 1861 were model 1842 or modified forms of this and earlier .69 caliber muskets.[55]

While attempting to cope with the immediate demands for arms, the state was engaged in three efforts to insure an adequate supply: first to encourage manufacture, second to repair and modernize existing arms, and lastly to purchase arms both within and outside of the state. It must be remembered that each of the other states, as well as both the Federal and Confederate governments were competing for the very limited resources available.

William Glaze was a very early (and frequent thereafter) correspondent with the Ordnance Department of the state. He proposed to establish an armory and re-enter the arms manufacturing business if the state would provide the capital. However, he was eager to cast shot and shell at his iron works immediately. Glaze commented unfavorably on Roswell Ripley's armory scheme, and predicted a two year lag before any arms could be made, and that each of the states involved would want their arms first, as well as the honor of being host for the armory. He neatly lined out this section of his letter, but this was probably calculated to increase its effect.[56] A third armory proposal under George W. Morse was more successful and will be discussed later.

Apparently Glaze was successful in getting orders for shot and shell, as they are frequently mentioned in his letters after early April 1861. In a burst of patriotism, Glaze adopted a new letterhead for his stationery, featuring a cut of a flag bearing the state's crescent and palmetto tree devices and emblazoned with "1860-1776, Palmetto Armory, Columbia, S.C." This replaced a cut depicting a steam engine. Both, however, were headed "Palmetto Iron Works, William Glaze, Manufacturer of Steam Engines, Boilers, Sugar Mills, Millwork, Iron Railing, and all kinds of Iron and Brass Casting." Glaze must have received a contract to perform small arms work, as units were being assigned arms in April, to be delivered directly from Glaze, who was rifling them. In August he reported to Colonel Manigault

> I have closed the rifling of all the guns that was encluded [sic] in the order given by Gov. Gist. I have rifled, sighted and put in good order 3720 of the guns made hear [sic] that is the guns with brass bands of date 1852 this is all that is hear of them.[57]

In September he offered to sell the state 200 "old style bayonets," apparently mostly old model 1816 types and about fifty suited for the Palmetto Armory muskets. After South Carolina rejected some of the bayonets, Glaze wanted them returned immediately, as he could "dispose of them to Georgia." Sword, or sabre bayonets were repeatedly promised, but seldom delivered, and even though he had a contract from Georgia for 5,000, he promised the first ones to South Carolina. He finally finished some, for in June 1862 he was paid $550.00 for the 110 he had delivered to the Citadel, as well as $1,210 for small arms appendages made a few months earlier.[58]

Two other gunsmiths received considerable state work. J. H. Happoldt of State Street, Charleston was paid for the following:[59]

July 25, 1861--cleaning and rifling 100 percussion muskets model 1842
July 30, 1861--(received 20 Remington "Mississippi" rifles, purpose not stated) probably for fitting of bayonets
October 23, 1861--to provide 20 rifled muskets caliber .69--without elevating sights, with bayonets and all appendages complete for special service.
February 21, 1862--fitting 71 sabre bayonets: $145.25
clean and repair 28 muskets, fit 6 bayonets to 85 rifles and repair 8 muskets, make 1 ball mold: $239.00
fit 72 sabre bayonets to rifles: $144.00
repair and fit bayonets to 28 muskets: $28.00
repair 1 Enfield rifle and fitting 5 bayonets to rifles: $12.00
rifling 12 muskets: $24.00
August 7, 1862--repair to rifles: $9.00
repairing one double barrel gun for Capt. McKeen: $2.50
fitting 100 sabre bayonets to rifles: $200.00
altering 120 flintlock muskets to percussion: $600.00
September 24, 1862--for browning 82 muskets for Sumter Guards: $132.50

B. P. Bicaise was recorded as repairing and cleaning shotguns, pistols and rifles, and repairing 36 double barrel guns and altering 20 carbines to percussion. He also provided 40 imported Enfield rifles.

One man, Jules Martiny, solicited employment by South Carolina as an armorer, and cited his prior service in the French Army and his capacity to repair and clean arms of every description as qualification, but his later employment is not noted. Thomas E. McNeill had greater ambitions, and sent offers to rifle cannon, or set up a small arms factory if $25,000 was advanced.[60]

Purchasing arms looked easy at first, with offers from many suppliers, such as D. deGoiconia and Company of New Orleans who offered 1,000 Enfield rifles in January 1861, only to report them sold to Mexico a month later. In March a Petersburg, Virginia firm offered 110 "Windsor Enfield rifles" with United States style bayonets at $24.00 each, 320 "Mississippi Rifles" with sabre bayonets at the same price, and 300 "Large Weapons, six shooting revolvers, about the size of Colt's Navy pistol" at only $12.00 each. The company assured inspection equal to that given the 600 Enfield rifles with British bayonets which had already been shipped to Charleston. They also boasted of their ability to import any description of arms required within fifty days; and the expected availability of Colts pistols "at manufactory prices." A gentleman from Columbus, Georgia, one A. H. DeWitt, was introduced in November 1861 by the governor as a sword maker, and possible source for sabre bayonets.[61]

Sometimes the Ordnance Board had its burden eased, as when Plowden C. J. Weston donated $5,000 for arms, which paid for many things, including a wrought iron rifled six pounder for his battalion. Weston was elected Captain of Company A, 10th Regiment South Carolina Volunteers (Georgetown Rifle Guards) on May 31, 1861. He then "proceeded to outfit his company at his own expense with English Enfield rifles, all gear, as well as summer and winter uniforms, treating his men somewhat as feudal retainers." He added to the company four slaves as pioneers, three black drummers and a fifer, all uniformed.[62]

Later procurement included specialized arms, including revolving cannon of 1.25 inch bore, designed by Asa George, and built by William Glaze and George A. Shields, who was foreman for Glaze. Wade Hampton actually received one of these guns, but no more is known of their history.[63]

Purchase of arms within the state was not very successful. Individuals, military units, other states and the Confederate government all combed the various markets thoroughly. One such expedition was reported by Thomas B. Mills while in Charleston on a trip from Augusta, Georgia to Columbia, South Carolina in July 1861. This was part of a rifle buying trip for the Confederate Navy through the Carolinas "and perhaps Tennessee again." He had already shipped nearly 400 rifles, and expected to procure at least fifty in Charleston. He complained that his chief problem was that everywhere he went there were others in the market buying rifles at even higher prices and suggested that gold instead of banknotes would be better accepted.

This was vastly different from the situation a few months earlier when Washington merchants telegraphed Richmond offering 10,000 Colt pistols, 2,000 Sharps rifles and powder by the ton.[64] Captain Raphael Semmes' first assignment was an arms-buying trip to New York, during which he procured some items before the war started, but Caleb Huse was most successful in purchasing arms and ammunition in Europe for the Confederacy.[65] Although other states sent their own agents abroad, none are known from South Carolina.

State owned arms were nearly depleted by September, 1861 and Governor Gist sought permission to raise another regiment of riflemen, as he was confident that he could fill it with men who would provide their own arms.[66] Later that month the governor asked to retain 3,000 Enfield and German rifles recently arrived in Charleston on the steamer Bermuda in exchange for those provided to regiments then in Confederate service. This was not approved, as most of the arms on the ship were private property. Barely a month later the governor had no better luck getting arms from another large vessel which had arrived at St. Mary's, at that time he claimed to have issued the last 4,000 arms in the state supply.[67] In November, however, the steamer Fingal arrived in Savannah with 1,100 Enfield rifles for Georgia and 9,000 for the Confederacy. Half the latter went to arm General Robert E. Lee's troops in the region, including five regiments of South Carolinians who were awaiting arms.[68] This seems to have been typical of the remainder of the war years, with the state unhappy at the number of its arms sent out of the state (e.g., some 6,000 to Florida, 1,000 to Tennessee and another 1,000 to Lynchburg, Virginia in 1861 alone) and Confederate supplies dependent largely on the blockade runners.[69]

South Carolina did purchase some arms in Europe, through Fraser, Trenholm & Company, under the direction of the Military Department. In 1862 this department was headed by former United States Senator James Chesnut, who reported receipt of most of the equipment, medicine, ammunition and rifles ordered

from England, including 2,535 Enfields which were in the arsenal in Columbia. He had declined to comply with a Confederate request to turn arms over to them, and recommended "that we shall never again strip the State of the means of self-defense."[70]

Another source of arms was the return of those previously issued. Several thousand came back from disbanded companies and more from citizens, who produced rifles and shotguns too. The less patriotic citizens presented problems, as the commander of the arsenal reported in June 1862:

> Individuals are constantly offering to me for sale State Rifles, Muskets &c., which doubtless in many cases are already the property of the Government: Can you furnish me with information by which means, what is probably public property may be identified?--especially State Rifles.

Unfortunately, no reply has been located.[71]

The fragmentary nature of ordnance returns from South Carolina precludes any sophisticated quantification. A very unscientific review indicates that Enfield rifles or rifle muskets (which were equivalent to the .58 caliber Springfield rifle muskets for military purposes) were the primary arm of South Carolina troops, probably on the order of 70% or greater, with percussion .69 caliber muskets (smoothbore or rifled) and Springfield .58 caliber rifle muskets each arming about 10% of the troops, and the remainder filled by Austrian, German or other odd arms. The arsenal at Columbia was eventually restocked to a small degree with about 2,500 .69 caliber percussion muskets, 1,500 Enfield rifles, and a few hundred arms of assorted types.[72]

The Confederate regulations affecting ordnance matters dealt mainly with such things as keeping Confederate arms when troops left the service, and purchase (or seizure) of private weapons. One order, dated January 14, 1864 stated

> The use of the sword-bayonet having been generally disapproved by boards of officers in the field, to whom the question of its usefulness was referred, its manufacture has been ordered to be discontinued. The triangular bayonet will be substituted.[73]

Otherwise, the states were left to their own resources.

South Carolina did attempt to manufacture its own arms during the Civil War, first at the Columbia State Armory (in the old penitentiary in that city) which ended up as a mere storage area, and also on the State House grounds where pikes were made, and arms repaired. Some repairs were made on Confederate arms, and the government also bought some 197 pikes at $3.00 each in 1863. Mr. David Lopez was appointed "General Superintendent for manufacture and repair of small arms" to head these operations, and the State Works at Greenville, South Carolina. These are all distinct from the state arsenal in Columbia, and the Confederate-run Columbia Arsenal which included the Columbia Armory (which made crude copies of Enfield Rifles), and the Columbia Powder Mill.[74]

The story of the State Works is really that of George W. Morse, the inventor. Early in 1861 Jefferson Davis sent Morse north to seek arms and especially arms-making machinery and employees from Harpers Ferry. Morse was annoyed when he met Raphael Semmes doing much the same job, without Morse's being informed. Virginia acquired most of the Harpers Ferry

machinery when the place was captured, and "loaned" much of to other states. By July, 1861 Morse was Superintendent of the Tennessee Armory, in Nashville, and made a successful request for some of the Harpers Ferry machinery. In February 1862 Nashville fell and by April Morse, his tools, machinery, and stock were moved to Greenville, South Carolina, where David Lopez had just established the State Military Works. More of the Harpers Ferry machinery was then obtained, and baugh and Simmons suggest the possibility that some Palmetto Armory equipment was also obtained.[75] Some sort of repair work must have been underway there by the end of 1862.

The General Assembly authorized the ordering of "1,000 of Morse's patent breech-loading Carbines made at the State Works, for the use of the State." This was done on the basis of a committee report which recommended the carbines at a cost of $13.00 to $15.00 each, and pointed out that salvaged musket barrels could be used in them.[76] By October 1, 1863, one hundred Morse carbines were completed, three hundred more were in progress, and more than 3,000 long arms had been repaired. In addition, $181.00 worth of "repairs of small arms for civilians" had been done. In anticipation of completion of the carbine contract, the governor was authorized to "make use of them as he shall think best for the defense of the state."[77] Of the 75 men employed at the State Works, only 20 were in the small arms shop, the rest worked in the foundry, machine shop, carpenter shop, etc. However, carbines were produced regularly including two hundred in the third, and

one hundred in the fourth quarters of 1864. Assuming a similar rate for the three quarters for which figures are not available, it appears all 1,000 might have been made by the end of 1864. Enough were on hand that it was possible to sell the governor "1 Model MBL Carbine with Cartridges, Implements &c. complete" at the inflated price of $345.00.[78]

Apparently arms making ceased in late 1864 and the works turned from making carbines to plowshares and other agricultural and domestic implements. Morse hoped for favorable recommendations to Richmond, where he expected to gain the support of General Lee and President Davis in making either Morse carbines or muskets which were, according to Morse, "the best weapons in the world for the defense of trenches". He also pointed out that many of the carbine tools were his personal property and he wanted to get the others, which belonged to the state, sent to Richmond for Confederate use. Apparently the tools for altering muskets to the Morse system were captured at Harpers Ferry and "loaned" to Morse, for he explicitly stated "I have all of the tools for this alteration of muskets, and the work could progress rapidly." Even considering the problems of the Confederacy obtaining and drawing copper for cartridges,[79] it is surprising that more Morse arms were not made, especially the musket conversion.

The history of the State Works is summed up in a protest against its potential seizure as Confederate States property in an 1866 letter which began by stating that everything made there was kept by the state, except for a few items which were sold to the Confederate government, and continues

> The few arms manufactured, were kept exclusively for State Service, and the Governor has always positively refused to allow them to go into Confederate service. Captain Boykin's company obtained about 100, and when mustered out of State Service, these arms were all, by order of the Governor, returned to me. These works have been employed most of the time in the manufacture of tools, and in assisting farmers, and have turned out, in three years, 1000 guns, which were deposited in 'State Arsenal' at Columbia, where they were destroyed by General Sherman's Army. In the fall of 1864, the shops were advertised for sale, but at the suggestion of myself and others, the legislature determined to convert them into agricultural works for the purpose of supplying the country with the necessary implements for farming. . . . [And continued in this field until raided by a mob, which carried off everything portable.][80]

As the fortunes of war turned against the South Carolinians, Sherman took Columbia, and a few days later on February 18, 1865, Charleston was finally subdued after nearly four years effort by Naval forces. As military forces were defeated, their arms, whether provided from state or Confederate sources, were seized by the victors, and a year and a half later the official report declared that "The balance of the ordnance and ordnance stores belonging to the State of South Carolina were left in the Arsenal in Columbia, South Carolina and there destroyed by Sherman's Army."[81]

Notes

CHAPTER FOUR

[1]Accounts of Gov. W. Seabrook 1848-1849, MS, Military Affairs, 1830-1859, General Assembly, S.C. Archives. Between the two purchases from Radcliffe and Glaze the Governor spent $1,000 for two presentation swords from an unidentified source. Undated draft report, MS, ibid.

[2]Todd, American Military Equipage, 1:175.

[3]Reports and Resolutions, 1853, pp. 271-273.

[4]State of S.C. Account with William Glaze & Co. for Alteration and Manufacture of Small Arms November 28, 1853, MS, Military Affairs 1830-1859, General Assembly, S.C. Archives.

[5]Reilly, U.S. Military Small Arms, pp. 15-16.

[6]Return of Ordnance Stores, Charleston, 1853, 1854, MSS, Military Affairs 1830-1859, General Assembly, S.C. Archives. Browned arms had most of their iron or steel parts finished with an iron oxide (rust) coating, originally brown in color, later the process was changed to produce the familiar blue used on guns. The U.S. model 1816 type II muskets and the model 1841 "Mississippi" rifles had this rust brown finish. Hall arms were finished with a lacquer preparation to produce a brown finish.

[7]William A. Albaugh and Edward N. Simmons, Confederate Arms (New York: Bonanza Books, 1957), pp. 77-78.

[8]Reilly, U.S. Military Small Arms, pp. 9, 17, 179-181.

[9]Deyrup, Arms Making in Conn. Valley, pp. 120-121.

[10]Reilly, U.S. Military Small Arms, pp. 17, 100-101, 180-181.

[11]Samuel E. Smith, "South Carolina Ante-Bellum Pistols," American Rifleman 104 (November, 1955):36-37.

[12]Hennig, Columbia, pp. 319, 330.

[13]Smith, "S.C. Ante-Bellum Pistols," p. 36; Albaugh and Simmons, Confederate Arms, pp. 251-252.

[14]Report of Major of Ordnance November 1, 1851, MS, Military Affairs 1830-1859, General Assembly, S.C. Archives.

[15]Contract between William Glaze and Benjamin Flagg and the State of South Carolina April 15, 1851, MS, Military Affairs 1830-1859, General Assembly, S.C. Archives.

[16]Reilly, U.S. Military Small Arms, pp. 16, 35, 183.

[17]Proceedings of the Board of Ordnance April 27-29, 1852, MSS, Military Affairs 1830-1859, General Assembly, S.C. Archives.

[18]Report of Major of Ordnance J. H. Trapier November 20, 1852, MSS, Military Affairs 1830-1859, General Assembly, S.C. Archives.

[19]Reilly, U.S. Military Small Arms, p. 36.

[20]State of S.C. Account with William Glaze & Co. for Alteration and Manufacture of Small Arms November 28, 1853, MSS, Military Affairs 1830-1859, General Assembly, S.C. Archives.

[21]Report of Committee to Whom was Referred the Report of the Major of Ordnance for 1852 , MSS, Military Affairs 1830-1859, General Assembly, S.C. Archives.

[22]A most interesting account of Springfield Armory operations appeared in July 1852 Harpers New Monthly Magazine, reprinted as "Making Muskets at Springfield," American Rifleman 108 (August, 1959):40-44.

[23]Marius B. Peladeau, "Crimean War's End Also Ended American Arms Firm," American Rifleman 118 (January, 1970):42-44.

[24]Prucha, Military Posts, p. 144.

[25]Return of Ordnance Stores on Hand, Charleston November 16, 1854, MS, Military Affairs 1830-1859, General Assembly, S.C. Archives.

[26]Cromwell, Virginia Manufactory, pp. 61, 75.

[27]Flynn, "S.C. and Militia Act of 1792," p. 39.

[28]South Carolina General Assembly Military Commission, Plan to Improve the Present Militia System, Submitted at [illegible] Session of 1859 (Charleston, S.C.: Walker, Evans and Company, 1859).

[29]Reports and Resolutions, 1859, p. 259; Annual Return of the Militia for 1859, December 7, 1859, MS, Military Affairs 1830-1859, General Assembly, S.C. Archives.

[30]NA, RG 156, Entry 118; Fuller, Springfield Muzzle-Loading Shoulder Arms, pp. 160-163; 10 U.S. Statutes at Large, 659.

[31]Reilly, U.S. Military Small Arms, p. 39.

[32]Green, Whitney, p. 141.

[33]Fuller, Springfield Muzzle-Loading Shoulder Arms, p. 104. The model 1855 rifle was also called long range rifle. Todd, American Military Equipage, pp. 118-119.

[34]Fuller, Springfield Muzzle-Loading Shoulder Arms, pp. 142, 167-169; Brown, Harpers Ferry, pp. 132-133; Reilly, U.S. Military Small Arms, p. 72.

[35]Ibid., pp. 21-23.

[36]Ibid., pp. 69-70.

[37]Another report indicated South Carolina was issued 646 of these in calendar year 1860. War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies, 128 vols. (Washington: Government Printing Office, 1880-1901), Series 3, Vol. 1, p. 28. Hereafter cited as ORA.

[38]Issues to other states included extremely rare arms such as Colt revolving rifles and carbines, Colt revolvers with "attachments", Adams pistols, and musketoons for Artillery, Cavalry and Sappers and Miners, etc. Excellent annual summaries are in NA, RG 156, Entry 118.

[39]ORA, Series 3, Vol. 1, p. 29.

[40]Ibid., Series 4, Vol. 1, pp. 386-387.

[41]Deyrup, Arms Making in Conn. Valley, p. 119; Cromwell, Virginia Manufactory, p. 62.

[42]Robert V. Bruce, Lincoln and the Tools of War (Indianapolis: Bobbs-Merrill, 1956), pp. 97, 128; and Roswell S. Ripley, roll 212, Record Group M331, Confederate Military Service Records, National Archives, Washington, D.C.

[43]Ibid.

[44]Reilly, U.S. Military Small Arms, pp. 193-194. Reilly fully describes these, and the next two types of arms, so their description will not be repeated here.

[45]Ibid., p. 210.

[46]Langdon Cheves to Board of Ordnance January 2, 1861, Ordnance Department Papers 1860-1864, S.C. Archives.

[47]Reports and Resolutions, 1860, p. 306.

[48]1860 Association, G. Manigault, Chairman, Suggestions as to Arming the State (Charleston, S.C.: Evans and Cogswell, 1860), p. 4.

[49]Ibid., pp. 6-12.

[50]ORA, Series 3, Vol. 1, pp. 5-6.

[51]1860 Association, Suggestions, p. 12; Gov. Pickens to Edward Manigault Dec. 27, 1860, MS, Ordnance Department Papers 1860-1864, S.C. Archives.

[52]Report of E. Manigault Nov. 21, 1861, MSS, Ordnance Department Papers 1860-1864, S.C. Archives.

[53]Statement of Small Arms and Accoutrements on Hand in the State Arsenals Dec. 31, 1860; Small Arms Captured in the Late U.S. Arsenal, Cannonboro, Charleston, Aug. 1, 1861, MSS, Ordnance Department Papers 1860-1864, S.C. Archives.

[54]Application for Arms for Charleston Zouave Cadets Dec. 27, 1860; Application for Arms by QM of 1st Infantry Regulars March 3, 1861; James H. Taylor to Col. Manigault Nov. 1, 1861, MSS, Ordnance Department Papers 1860-1864, S.C. Archives.

[55]Ordnance Department Papers 1860-1864, S.C. Archives.

[56]William Glaze letter Dec. 4, 1860, MS, Military Affairs 1860-1865, General Assembly, S.C. Archives.

[57]William Glaze letters; Glaze to Col. Manigault August 26, 1861, MSS, Ordnance Department Papers 1860-1864, S.C. Archives.

[58]William Glaze letters; Ordnance Accounts of S.C., MSS, Ordnance Department Papers 1860-1864, S.C. Archives. The sword bayonets could be among those unidentified specimens shown in Albert N. Hardin, Jr., The American Bayonet, 1776-1964 (Philadelphia: Riling and Lentz, 1964), pp. 132-145.

[59]Ordnance Department Papers 1860-1864, MSS, S.C. Archives.

[60]Jules Martiny to Ordnance Board Jan. 2, 1861; Thomas E. McNeill to Col. Edward Manigault letters January 1861, MSS, Ordnance Department Papers 1860-1864, S.C. Archives.

[61]Ordnance Department Papers 1860-1864, MSS, S.C. Archives.

[62]South Carolina Military Department, James Chesnut, Chief , Report of the Chief of the Department of the Military of South Carolina (Columbia, S.C.: Charles P. Pelham, 1862), p. 54, hereafter cited as Mil. Dept. 1862; George C. Rogers, The History of Georgetown County, South Carolina (Columbia, S.C.: University of South Carolina Press, 1970), p. 391.

[63]Ordnance Department to Asa George February 1863, MS, Ordnance Department Papers 1860-1864, S.C. Archives.

[64]ORA, Series 4, Vol. 1, pp. 210-217, 423; Reports and Resolutions, 1863, pp. 402-403. The revolving cannon is not mentioned in Warren Ripley, Artillery and Ammunition of the Civil War (New York: Promontory Press, 1970).

[65]J. W. Mallet, "Work of the Ordnance Bureau of the War Department of the Confederate States," Southern Historical Society Papers, 37 (January-December 1909):2; ORA, Series 4, Vol. 1, pp. 106-107.

[66]Ibid., Series I, Vol. 6, p. 269.

[67]Ibid., Series 4, Vol. 1, pp. 614; Series 1, Vol. 6, p. 292.

[68]Ibid., pp. 318-322.

[69]Ibid., Series 1, Vol. 53, p. 285; Series 4, Vol. 1, p. 635.

[70]Mary Boykin Chesnut, A Diary from Dixie (Boston, Mass.: Houghton Mifflin Company, 1961), p. 278. Mil. Dept. 1862, pp. 22-24.

[71]Ibid., pp. 21-22; ORA, Series 1, Vol. 6, p. 367; Captain F. L. Childs to W. G. Eaton June 12, 1862, MS, Ordnance Department Papers 1860-1864, S.C. Archives.

[72]Ordnance Department Papers 1860-1864, MSS; Military Affairs 1860-1865, MSS, General Assembly, S.C. Archives. See Appendix C for Returns of Ordnance and Ordnance Stores at Columbia Arsenal September 30, 1863. The best descriptions of foreign arms of the Civil War era are in Todd, American Military Equipage, pp. 125-152.

[73]ORA, Series 4, Vol. 1; Vol. 3, pp. 27-28.

[74]Albaugh and Simmons, Confederate Arms, pp. 198, 210-211; Mil. Dept. 1862, p. 22; Ordnance Account, State of South Carolina October 1-December 31, 1863, MS, Ordnance Department Papers 1860-1864, S.C. Archives.

[75]ORA, Series 4, Vol. 1, pp. 131-132, 489-490; Albaugh & Simmons, Confederate Arms, pp. 82, 247-248, 265; Reports and Resolutions, 1863, pp. 154-156.

[76]Report of the Committee on Military on Resolution as to Morse's Patent Breech-Loading Carbine, MSS, Military Affairs 1860-1865, General Assembly, S.C. Archives.

[77]Reports and Resolutions, 1863, pp. 154, 190-191, 402-403.

[78]Abstracts of Articles Fabricated at State Works, 3rd and 4th Quarters, 1864; Vouchers for State Works July 15, 1863; Abstract of Account of Acting Superintendent State Works 4th Quarter 1864, MSS, Ordnance Department Papers 1860-1864, S.C. Archives.

[79]George W. Morse to Gen. Garlington November 7, 1864, MS, Ordnance Department Papers 1860-1864, S.C. Archives.

[80]J. Ralph Smith to Colonel C. J. Elford January 6, 1866, MS, Military Affairs 1866-1877, General Assembly, S.C. Archives.

[81]Report of Public Property on Hand at Evacuation of Columbia November 20, 1866, MS, Military Affairs 1866-1877, General Assembly, S.C. Archives.