

## The Confederate States Armory at Asheville: A Study in Confederate Defeat

By Gordon L. Jones

As far as I can learn, the tools and machines, before Mr. King arrived at Asheville, were makeshifts and the work carried on almost at the discretion of the men employed. Consequently the guns were made worthless and the labor performed (at the expense of the Department) worse than thrown away.

- Major William S. Downer, Commanding C.S. Armory at Richmond, to Chief of Ordnance Josiah Gorgas, November 22, 1862<sup>1</sup>

As soon as the Barrel department gets under headway again, there will be nothing to prevent the production of from 150 to 200 rifles monthly. Twelve months ago there were no tools and but little machinery at this armory. Since that time, all the tools necessary for the manufacture of that arm have been fabricated and with the exception of a few pieces, the stock of machinery on hand has also been fabricated here.

- Captain Benjamin Sloan, Commanding C.S. Armory at Asheville, to Chief of Ordnance Josiah Gorgas, June 2, 1863<sup>2</sup>

The Confederate States Armory at Asheville, North Carolina, is one of the great success stories of the Confederate war effort: beginning with virtually no specialized arms-making machinery or industrial infrastructure and situated 60 miles from the nearest rail head, by mid-1863 the tiny armory was making its own locks, stocks, and barrels on steam-powered machinery patterned, built, and scrounged entirely in the South. The Asheville Armory is also one of the most colossal failures of the Confederate war effort: the Ordnance Bureau pumped at least \$210,000 into the armory (probably much more) between August 1861 and October 1863, receiving in return nearly 1,000 rifles before its men and machinery were moved to Columbia, South Carolina, where production never resumed. It was a price in time, labor, and materials the young nation could ill afford to pay. At every turn, the armory was beset by shortages of raw materials and skilled labor, poor transportation infrastructure, internal dissent, and the ever-present threat of Union armies and unionist guerillas. In short, the success and ultimate failure of the Asheville Armory perfectly embodies the trials and tribulations that doomed the slave-based pre-industrial southern economy and the Confederate war effort as a whole. The story of the Asheville Armory is the story of Confederate defeat.



For 150 years, that story has languished in obscurity behind the better-known and more prolific Confederate government armories at Richmond, Virginia, and Fayetteville, North Carolina. And with good reason: using the interchangeable arms-making machinery captured at the United States Armory at Harpers Ferry, the Richmond and Fayetteville armories together fabricated some 48,500 muskets, rifle-muskets, rifles, and carbines over four years.<sup>3</sup> Today, hundreds of Richmond and Fayetteville arms survive, most of them marked as such on their lockplates. By contrast to this, only 14 complete Asheville Armory rifles and four lockplates (but no sword bayonets) have so far been identified, making these arms among the great rarities in Confederate collecting.<sup>4</sup> Eight Asheville Armory rifles from six collections were assembled for the Chattanooga meeting of the American Society of Arms Collectors in June 2016.

There is a corresponding dearth of primary source evidence regarding the Asheville Armory. With the notable exception of the Asheville Armory letter book (mostly copies of the superintendent's outgoing correspondence) which is housed at the Library of Virginia in Richmond, there is no single collection of documentary source material and only scattered references to the armory in the Confederate service records or citizens' files, all of which are housed at the National Archives and Records Administration. Thankfully, these National Archives records are today digitized on the website Fold3. Even so, there is no complete or

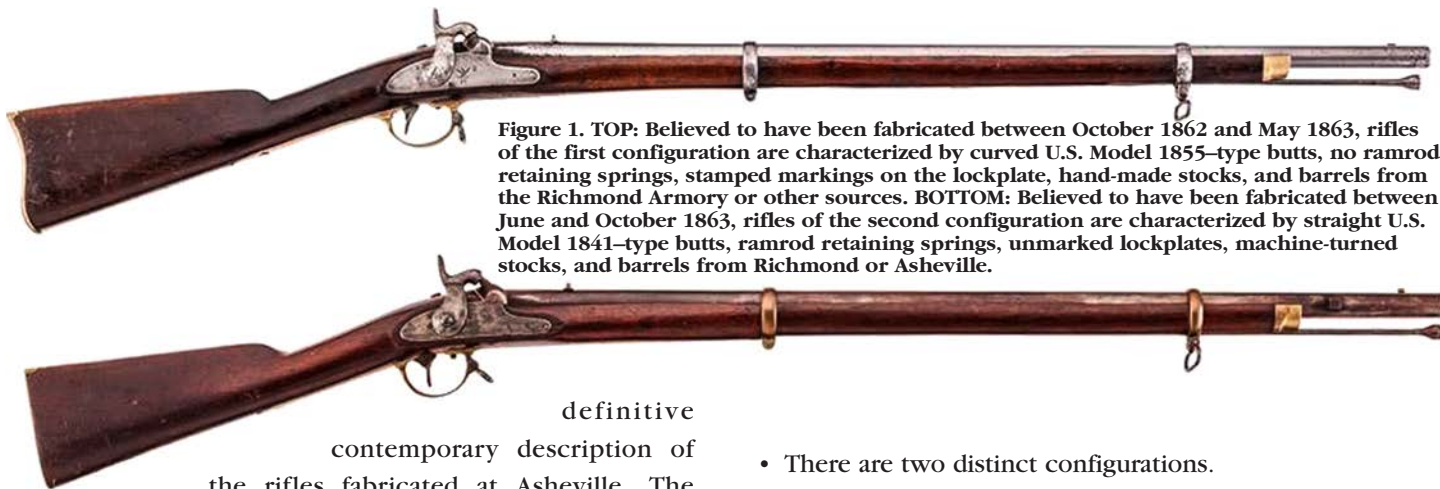


Figure 1. TOP: Believed to have been fabricated between October 1862 and May 1863, rifles of the first configuration are characterized by curved U.S. Model 1855-type butts, no ramrod retaining springs, stamped markings on the lockplate, hand-made stocks, and barrels from the Richmond Armory or other sources. BOTTOM: Believed to have been fabricated between June and October 1863, rifles of the second configuration are characterized by straight U.S. Model 1841-type butts, ramrod retaining springs, unmarked lockplates, machine-turned stocks, and barrels from Richmond or Asheville.

definitive contemporary description of the rifles fabricated at Asheville. The December 1862 report by Richmond Armory commander William S. Downer suggesting changes in the rifle has not been located and is presumed lost, as is an April 1863 report by Master Armorer Amasa W. King outlining the costs, materials, dimensions, and weight of the rifles.<sup>5</sup> Hence, any attempt at classifying a mere 14 rifles by comparing their physical characteristics with surviving written evidence can only be tentative. Nevertheless, there are some physical characteristics common to all 14 examples of Asheville Armory rifles identified to date:

- Barrels are (or were) .577 caliber and 33 inches in length.
- Saber bayonet studs are attached 3.5 inches behind the muzzle.
- Rear sights are comprised of a simple iron block cut with a “v” notch.
- Cone seats are of the U.S. Model 1841 configuration.
- Hammers taken from U.S. Model 1841 rifles appear sporadically throughout production.
- Barrel bands (brass or iron) are of the screw or clamping type; there are no band springs.
- Stocks have brass stock tips, not U.S. Model 1841-type double-strapped nose caps.
- Buttplates and triggerguard plates are made of brass.
- No implement compartment (“patchbox”).
- The italicized stamps “A.W.K.” and “ASHEVILLE N.C.” appear sporadically in rectangular cartouches on the flat opposite the lock and on the left side of the butt, respectively, throughout production.
- A single “S,” usually between a “V” (“viewed”) and “P” (“proved”), appears sporadically on the left side of the breech throughout production, but especially early production.
- Internal markings on barrels, locks, and other parts consist of slash marks, letters, Roman numerals, and Arabic numerals. These appear to be assembly marks and barrel inventory numbers, respectively; no discernible pattern of serial numbers has been observed.

- There are two distinct configurations.
- Characteristics of the first configuration are:
  - Curved U.S. Model 1855-type butt;
  - No ramrod retaining spring (or “spoon”) in the stock;
  - Stamped markings (“CS” and/or “ASHEVILLE. N.C.”) on the lockplate;
  - Hand-made and hand-bedded stocks; and,
  - Three of the five extant examples have iron bands instead of brass.
- Characteristics of the second configuration are:
  - Flat (with slight curve at the toe) U.S. Model 1841-type butt;
  - Ramrod retaining spring in the stock;
  - No markings on the lockplate;
  - Machine-turned stocks, usually with hand-bedded furniture;
  - All extant examples have brass bands; and,
  - Model 1841-type sideplates appear on two examples.

Not surprisingly, for many years prior to the digital age, historians and collectors knew little about the Asheville Armory. Although Claud E. Fuller and Richard D. Stuart, William A. Albaugh III and Edward N. Simmons, and Richard T. Hill and William E. Anthony all mentioned the Asheville Armory in their classic works, the first to attempt an in-depth study was William B. Floyd in his 1981 article in the *American Society of Arms Collectors Bulletin*. Floyd was the first to make use of the Asheville Armory letter book, the first to note the two configurations of rifles produced at the armory and the first to estimate production numbers (“less than 900”) based on solid documentary evidence.<sup>6</sup> The most significant step toward detailing of the activities of the armory and identifying its products came in 1996, with the publication of John M. Murphy and Howard M. Madaus’s groundbreaking work *Confederate Rifles and Muskets: Infantry Small Arms Manufactured in the Southern Confederacy, 1861–1865*. Based on physical characteristics, internal numbers, and primary source documents (including the armory letter book), the authors were the first to



Figure 2. The rectangular inspection stamps “ASHEVILLE N.C.” and “A.W.K.” (for Master Armorer Amasa W. King) appear on stocks of both first and second configuration rifles. The “S” inspection stamp (believed to be for E.W. Stubbs, foreman of the barrel shop) appears most often on barrels of first configuration rifles. The “S” at lower right marks a socket bayonet made by the Union Manufacturing Company of Richmond. Could there be a connection between this “S” mark and the “S” on the barrels of Asheville Armory rifles?

attempt a chronological classification of extant Asheville rifles. They estimated total production at 875.<sup>7</sup>

Murphy and Madaus tentatively classified Asheville Armory rifles into three types. Type I, comprising the first shipment of 200 arms to Richmond, was characterized by a straight U.S. Model 1841-style buttplate and was serial numbered internally 1 to 200 (I to CC) in Roman numerals. The rifle cited as a Type I in the book is in the Milwaukee Public Museum collection and bears the slash marks “VII” in nine places, including under the barrel, on the breechplug, inside the stock, lock, and under the buttplate. Type II was characterized by a curved U.S. Model 1855-style buttplate. Examples cited here are two rifles in the John Murphy Collection (now in the Greensboro History Museum collection), with Arabic numerals “55” and “160” under the barrel, and one cut-down rifle in the North Carolina Museum of History which could not be disassembled to examine internal numbering. Type III reverted to the straight U.S. Model 1841-style buttplate and was serial numbered from approximately 400 to the end of production. The example cited here is a rifle in the Beverly DuBose collection (now in the Atlanta History Center collection) which is numbered in Arabic numerals “423” under the barrel.

Assuming these internal marks represent serial numbers and assuming the Asheville Armory consistently applied

them throughout production, Murphy and Madaus’s classification system is entirely logical. However, the author now believes neither assumption is correct. Although the numeral “VII” is applied in nine places on the rifle cited as a Type I, there are no other arms known to have been so extensively marked and no others marked exclusively with Roman numerals, making it unlikely that “VII” was anything but an assembly code. It is also uncommon to find Roman numerals above 100 in any arms of the period, especially when such numbers require a “C” as opposed to the usual (and more easily applied with a chisel) “I,” “V,” or “X.” Furthermore, if these internal markings indeed represent consecutive serial numbers, and even assuming a production figure around 875 (which is low), there would probably be at least one extant rifle with an internal number above “437,” which is the highest known. Given the fact

that the Asheville Armory consistently shipped rifles in separate lots of 200, it is more likely that if numbers were consecutively applied at all, they would have been applied only within each lot. As this study will demonstrate, the Arabic numerals are probably inventory numbers applied to commonly sourced barrels, while Roman numeral slash marks, which often appear in addition to these Arabic numerals, were probably assembly codes. Although the Arabic numerals may reflect a chronological sequence in finishing a certain number of barrels from a common source, they were probably never meant to function as sequential serial numbers for the guns themselves. Finally, it is difficult to imagine why the configuration of the stock (especially the inclusion of a ramrod retaining spring) would change at one point in production only to be changed back again later — although, of course, given the normal inconsistencies in Confederate manufacturing, almost anything is possible.

The key to unraveling the story of the Asheville Armory and its products is a close examination of the quality of workmanship on extant rifles. This statement is based on the assumption that quality generally improved over time as inexperienced workers gained experience and experienced workers improvised or improved methods, tools, and machinery. There are many exceptions, of course, mainly related to the erratic supply of raw materials (for example,

the substitution of iron furniture for brass and vice versa) and the periodic availability of parts (for example, the use of Model 1841-type hammers on an otherwise newly-made lock). Yet contrary to traditional “Lost Cause” narratives of a century ago, which emphasized the declining quality of Confederate production as the war dragged on, increasing quality is evident throughout central government, state, and private arms production in the Confederacy at least through 1863 and mid-1864.

In 1996, Murphy and Madaus were only able to examine five Asheville Armory rifles for their study. Since then, nine others have come to light from private collections, including two from the George W. Wray, Jr. collection, which were featured in the Atlanta History Center’s 2014 catalogue of the Wray Collection, entitled *Confederate Odyssey*.<sup>8</sup> These additional examples, as well as the discovery of new evidence and a closer examination of the armory letter book, have thrown previous conclusions into doubt and raised new questions about the Asheville Armory and its place in American firearms history. The present study attempts to answer these questions by:

- discussing the relevant details of the armory’s production history;
- updating and extending the research of Floyd, Murphy, and Madaus;
- establishing a definitive production number;
- identifying all extant examples of Asheville Armory rifles and listing their characteristics and markings;
- determining which configuration of rifle was produced first and why; and,
- understanding the Asheville Armory in the context of Confederate arms production, industrialization, and defeat.

### INVENTING A NATIONAL ARMY

Nestled deep in the Blue Ridge Mountains of western North Carolina, the tiny hamlet of Asheville was known mainly as a stopover for cattle and hog drovers along the main road connecting Asheville to the closest railheads, Greeneville, Tennessee, and Greenville, South Carolina, each about 60 miles away. Although far from potential Union incursions and close to a dozen or more iron furnaces, Asheville had virtually no industrial infrastructure or specialized mechanics among its 1,100 inhabitants.<sup>9</sup> As one early chronicler wrote, “The town had no water supply, no sewer system, no public lights anywhere, no railroad, no telegraphic communication with any part of the outside world, no market, no municipal building, no public laundry.”<sup>10</sup> It was hardly a location that Confederate Chief of Ordnance

Josiah Gorgas would have willingly chosen for a national armory.

As it turned out, that decision was made for him. In the summer of 1861, 52-year-old Robert W. Pulliam, a former New York City dry goods merchant and now a supplier for Asheville-area volunteer companies, managed to have himself designated an official agent of the C.S. Ordnance Bureau. On August 5, 1861, an enthusiastic Pulliam went well beyond his original charge — collecting and repairing old arms — and entered the Confederate States government into a contract with master carpenter Ephraim Clayton and dentist George W. Whitson, the owners of a steam-powered wood-planing and lumber mill, for fabricating new firearms. All production expenses — including wages, use of the mill building and its machinery, the purchase of additional machinery, and, above all, the cost of transporting raw materials in and completed guns out — were to be borne by the Confederacy. Gorgas was vaguely aware of this embryonic enterprise as early as September 1861, but it was not until March 31, 1862, when Clayton, Whitson, and Company submitted a bill for \$7,359.71 worth of expenses already incurred (and pre-approved by Pulliam), that Gorgas first saw a copy of the contract.<sup>11</sup> Skeptical of the venture but keenly aware of his country’s desperate need for arms, Gorgas decided to make a go of it.<sup>12</sup>

Although the contract did not state the type of arm to be produced, it is clear that Pulliam, now managing agent of the fledgling Asheville Armory, intended to make copies of the U.S. Model 1841 “Mississippi” rifle. With Gorgas’s blessing, in June 1862, he dispatched his unofficial master armorer William D. Copeland to the Fayetteville Armory to

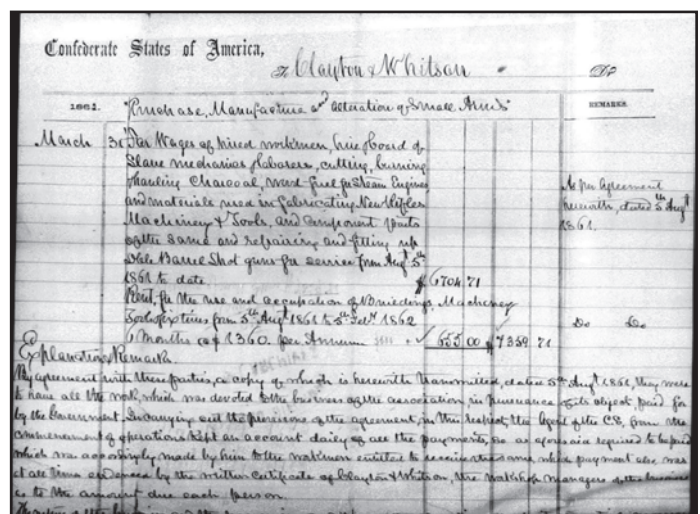


Figure 3. C.S. Chief of Ordnance Josiah Gorgas was taken by surprise when he received this March 31, 1862, invoice for \$7,359.71 from Clayton, Whitson & Company, reflecting start-up costs for a new government armory in Asheville. The invoice was accompanied by two pages of “Explanatory Remarks” as well as a copy of the August 5, 1861, C.S. government contract that Gorgas had neither seen nor approved.

“select the Tools, Dies, and Machinery and whatever else he may as the Supt. of that Armory spare for the manufacture of the Mississippi rifle at this Armory, whether it be tools or materials.”<sup>13</sup> In a property account for the year 1862, the Asheville Armory had on hand “1 Mississippi Rifle, with Lock, Complete,” presumably to be used as a model arm.<sup>14</sup> From the nature of Copeland’s mission — essentially begging for help — it is also clear that Pulliam had thus far failed to construct or purchase enough machinery to begin production, despite the passage of 10 months since the initiation of the enterprise.

Copeland was one of at least three experienced former Harpers Ferry workers that Pulliam had lured to the Asheville Armory with the promise of substantial wages. Along with machinist William D. Riley, Copeland had worked at the Fayetteville Armory through the spring of 1862 and was evidently on friendly enough terms with Josiah Gorgas to report to him on the partial success of his trip there in June.<sup>15</sup> “I succeeded in getting most of the things that took me to Fayetteville,” he wrote on June 26, “with the exception of the forging tools which they Flatly refused to let us have.” But the real point of Copeland’s letter to the Confederate ordnance chief was to complain about being passed over for promotion. During Copeland’s absence, Gorgas had appointed Amasa W. King, a brash 29-year-old mechanic from the Richmond Armory, to act as Acting Master Armorer at Asheville. “I came to this place at the insistence of Mr. Pulliam,” Copeland protested, “and was busily engaged in fixing up his establishment. . . . My long experience and knowledge in the manufacture of fire arms surely entitle my claims to consideration.”<sup>16</sup>

Meanwhile, King was not at all pleased with Copeland, Pulliam, or what he found at the Asheville Armory. On July 7, 1862, he penned this report to Superintendent of Armories James H. Burton:

I found a very small place indeed with about 90 hands, all told, 2 milling machines complete one nearly finished and two more in progress, one Rifling machine, 3 very ordinary Barrel Boring machines, 2 Lathes, one planer 3 Drill presses and several other very ordinary Machines. My first business after looking at the establishment was to examine the components of the Gun. I condemned all the Locks and had them put in as good order as possible. I examined the barrels and found them very bad indeed, having to condemn a large majority of them. Last week a contractor brought 300 barrels here from Tenn., out of the number I found only 85 that I could possibly receive [King’s emphasis]. I have changed the patterns for mountings and changed some tools, making them work to a better advantage. There is a sort of tilt hammer here that I propose to remedy if I can, there is also a cam shaft pul-

ley and boxes for which I have made a drawing intending to weld barrels with this. I am having some gauges, calibre plugs and other tools made.<sup>17</sup>

Over the next 5 months, King insisted on appointing his own foremen on the basis of merit and on organizing the workforce by specialty areas, a move that quickly angered everyone in the armory. Like most businessmen in a pre-industrial economy, Pulliam, Clayton, and Whitson maintained an informal management structure. Pulliam ran the armory out of his dry goods store and often paid his 100 or so white workers in store scrip instead of Confederate currency. Most of the men operating the machinery were jacks-of-all-trades, used to setting their own hours and doing piecework.<sup>18</sup> Despite his good intentions, Pulliam had little idea of the massive scale and industrial-style discipline necessary to make the armory a viable operation. Thus, what seemed like common sense changes to the young acting master armorer seemed like abusive treatment to the armory’s workers and thus made them all the more determined to resist his efforts.

Copeland, now foreman of the barrel shop, began actively lobbying for a new position. Fortunately for historians, he was also actively reminding his various superiors what he had accomplished (or claimed to have accomplished) for the Asheville Armory. On July 6, 1862, he wrote to James H. Burton, “I have learned two of their men to Bore and straighten Gun Barrels, they can execute their work equal to any one, but not quite so fast and am now busily arainging [arranging] & getting their Tools in working condition.”<sup>19</sup> On October 7, 1862, Copeland wrote in the same vein to William S. Downer, commanding officer of the Richmond Armory, mentioning components received from Fayetteville:

I am very desirous of sending some of my work for you and Col Gorgas to inspect[.]I wish to be weighed by my peers and not by inferiors interested in enemies. I should like much to pay Richmond a visit this winter, then I could show you my capacity as A Mechanick and the work that I have done since I have been here. I am now busily engaged prepairing the components that came from Fayetteville to this place on last saturday to put the men to work on them[.] I wish to have 1 or 2 hundred of them [guns] put up in a short time.<sup>20</sup>

Unfortunately, there is no known list of these components, but subsequent correspondence regarding failure to properly account for them mentions “you account for 489 proved barrels — there should be 558,” as well as “22 Rod Springs to be acct. for,” and four “stocks or holders for cutting machines” all of which were “rec’d from Fayetteville, Sept. ‘62.”<sup>21</sup> Given that the Fayetteville Armory was by this

time concentrating its efforts on the fabrication of new arms rather than the alteration of old ones, these were probably surplus musket or sporting rifle barrels, or perhaps .54 caliber U.S. Model 1841 barrels. The Asheville Armory now had more than enough barrels, although some were evidently of questionable quality. Five months later, an unspecified quantity of “condemned musket barrels, and rammers, in store” was ordered to be issued to the workshops as scrap iron.<sup>22</sup> Meanwhile, the disgruntled William D. Copeland remained at the Asheville Armory through November 1862 before Gorgas transferred him to the Macon Armory where he worked as foreman of the machine shop. In his place as foreman of the barrel shop at Asheville, Copeland left E.W. Stubbs, who had previously worked as a filer and machinist and, presumably, was one of the two men Copeland had “learned” to “Bore and straighten Gun Barrels.”<sup>23</sup>

It appears that at least some of the Fayetteville barrels and other components were used in assembling the Asheville Armory’s first shipment of rifles. On October 13, 1862, King reported to Downer that he expected to have 240 rifles completed around the first of November for which he needed “some stamps (letters).” “Please let me have them as soon as possible, I want them badly” he continued, “as the Regulations require the inspector to mark his arms, it will be necessary for me to do so, before delivering them to the M.S.K. [Military Store Keeper].”<sup>24</sup> King is here referring to the U.S. Army’s ordnance manual (copied verbatim by the C.S. Army) which specified that the initials of the master armorer “be stamped on the rear end of the face of the stock, opposite the lock in *italic* letters.”<sup>25</sup> But amid his determined efforts to build a smith shop, secure 14 new forges, and purchase additional overhead shafting for his machinery, King’s report proved overly optimistic.<sup>26</sup> The first 200 rifles were not ready until five weeks later, when King personally escorted them to the Richmond Armory between December 11 and 25, 1862.<sup>27</sup>

Unlike those that would follow, the rifles of this first shipment were fabricated without bayonet studs. In response to Gorgas’s request on November 16 that studs be attached to each barrel, Pulliam asked Gorgas for a sample bayonet “to guide in its correct adjustment,” but “in the mean time at the request of Mr. King the privilege is asked for turning this first lot of 200 over to you in Richmond without the ‘stud’ after which the attachment can be applied at the proper time.”<sup>28</sup> This request was evidently granted, but it may have been part of the reason these rifles received a lukewarm reception from Josiah Gorgas and William Downer. Almost immediately upon receiving the guns at the Richmond Armory, Downer penned a report to Pulliam suggesting alterations, especially “in reference to the reduction of the rifle barrels.”<sup>29</sup> Unfortunately, Downer’s report does

not survive and the precise meaning of this phrase is unclear. Perhaps he considered the barrels too light (if boring and rifling had excessively reduced the barrel wall) or too heavy (not sufficiently reduced from sporting rifle barrels), but in any case, Downer took issue with their quality. He also took issue with the locks, recalling later that “lock work is all much too low, both in materials and workmanship.”<sup>30</sup>

Additionally, the configuration and placement of bayonet studs — and probably other iron components as well — was still an issue a month after these first rifles were delivered. During his December trip, King “had boxed up and left at the Richmond Armory a model rifle” intending it to be shipped to the Asheville Armory. As of January 29, 1863, the model arm had still not been received in Asheville and “the shops are seriously incommoded from it. The forging of certain parts of the rifle are suspended on account of it.”<sup>31</sup> It is unclear from the correspondence whether this model rifle was fabricated at Richmond or was one of the rifles brought from Asheville and modified at Richmond to reflect the official wishes of the C.S. Ordnance Bureau. Either way, it seems that the Bureau was not satisfied with the rifles it had just received.

Of the 14 Asheville Armory rifles examined for this study, one stands out for its exceptionally poor quality. This rifle, originally in the George W. Wray collection (now in the Atlanta History Center collection), is made with a curved Model 1855-type butt and no ramrod retaining spring. The left face of the stock opposite the lock bears the remains of Master Armorer Amasa W. King’s “A.W.K.” inspection stamp, made using the “letters” he had requested in October 1862. The stock is entirely handmade: slight undulations are visible in the otherwise smoothly-sanded barrel channel, the wrist is slightly narrower than subsequent examples, and, as evidenced by the jagged and slightly uneven lockplate, trigger-guard, and ramrod cavities, the furniture was bedded by hand. Clearly, these stocks were not furnished by the Macon Armory, which was then turning and finishing stocks on machinery seized at Harpers Ferry; furthermore, the butts of Asheville stocks have a slightly fuller curve at the toe of the butt than those of the Harpers Ferry/Macon stocks.

The six-land-and-groove barrel is unusually lightweight, with a wall of only .09 inch, giving a distinctly flimsy feeling to the rifle. Although originally specified as .577 caliber, the barrel has been worn down by heavy use and/or was bored out to about .615 caliber (20-gauge), though the rifling is still plainly visible and was once deeply grooved. As with all Asheville Armory rifles, the cone seat (“bolster”) is of the U.S. Model 1841 configuration, and indeed, this barrel may have begun life as a “Mississippi.” It is marked on its underside with a slash mark “X” and stamped with the Arabic number “116;” the left side of the breech bears an “S” stamp, though unaccompanied by the “V” and “P.”



Figure 4. Numbered “116” under the barrel, this rifle from the Wray collection is believed to be one of the earliest ones fabricated at the Asheville Armory. Note the unusually thin barrel, a bayonet stud slot that may have been marked but never milled, and the obviously hand-bedded lock and trigger-guard cavities (with ramrod protruding into the lock cavity). Both bands are made of iron instead of brass and the forward one appears to have been taken from a British Pattern 1853 rifle-musket.

The most distinctive feature of this rifle is a lockplate taken from a Harpers Ferry-made Model 1841 rifle, the tail section of which has been ground down (obliterating the original maker and date marks) while the “US” under the American eagle stamp forward of the hammer has been struck over to form a crude “CS.” One of the Asheville rifles exhibited in the Murphy collection (numbered “55” on the underside of the barrel) as well as three of the four Model 1841 locks which survive without a parent arm, exhibit the same ground-down tail section and are additionally marked in block letters forward of the hammer “ASHEVILLE” or in two lines, “ASHEVILLE. N.C.” These letters are of the same font and size as those used to mark Fayetteville Armory rifles. The



Figure 5. The first Asheville Armory rifles were assembled with re-used Harpers Ferry-made U.S. Model 1841 lockplates, the tails of which were ground off to obscure the markings. The original eagle stamp remains untouched but the “US” has been struck over to form “CS.”

hammer and internal mechanisms of the lock itself were evidently fabricated in Asheville, as evidenced by the large casting flaw on the inner surface of the hammer, the lack of a mainspring swivel (“stirrup”) between the tumbler and mainspring, and the ersatz attachment of the mainspring with its upper branch resting on a flattened screw head.

In the author’s opinion, this rifle and the one in the Murphy Collection (“55”) are the earliest among the 14 extant, thus included in the first shipment in December 1862, and representing the first configuration of Asheville Armory rifles. When read in this context, King’s July 1862 report to James Burton makes sense: if he had “condemned all the Locks,” found the barrels “very bad indeed,” and “changed the patterns for mountings” that would explain his need for components from

Fayetteville two months later. The thin-walled barrel may also explain Downer’s suggested change “in reference to the reduction of the rifle barrels.” It is likely that this barrel was among the 558 “proved barrels” received from Fayetteville but re-bored, rifled, and otherwise finished (improperly) in the Asheville Armory barrel shop. The numbers “55” and “116” are probably part of a numbering sequence specifically for the barrels, but in this case, may also refer to the sequence in which the guns of this shipment were finished (since neither number is above 200). It is likely that Fayetteville was also the source of the Model 1841 lockplates. Exactly why the tails were ground down remains unknown, except, perhaps, to obscure their origins or make them better fit the contour of the lock cavity and stock. And perhaps it was King who actually re-configured the rifle, making it look less like the Model 1841 rifles Pulliam had originally intended, and more like the rifles being fabricated at Fayetteville with curved butts, no implement compartments, and stock tips rather than double-strap nose caps. Notable too is King’s apparent decision to use rounded British-style clamping bands rather than U.S.-style flat bands held in place by band springs.

Significantly, there is no saber bayonet stud on this Wray collection rifle, though there is a rectangular outline in the right side of the barrel 3.5 inches from the muzzle where the milled stud slot should be. The slot either has been carefully filled in with iron closely matching the rest of the barrel or, more likely, it

was marked but never actually milled out. If so, this is further evidence that the rifle was part of the first shipment, but in this case, the stud was never actually added in Richmond because milling a stud slot into the thin-walled barrel may have been deemed dangerous or even impossible. The similar rifle in the Murphy Collection is fitted with a U.S. Model 1841/1855-type saber bayonet stud. It has a slightly thicker-walled barrel which bears a faint vertical mark forward of the stud, suggesting more than one attempt to place the stud correctly.<sup>32</sup>

Madaus and Murphy speculate that the “S” mark at the breech, which is unique to Asheville Armory rifles, may have stood for “Sloan.” If so, this rifle could not have been inspected and shipped to Richmond prior to Sloan’s arrival at the armory on December 24, 1862. However, according to traditional ordnance department practice in the United (and Confederate) States, barrels, like stocks and other parts of the arm, were to be stamped by designated inspectors, sub-inspectors, and/ or the master armorer. Sloan, King, and the others who had worked at Harpers Ferry would have been well aware that an armory’s commanding officer did not usually perform those duties, especially given that King evidently paid such close attention to regulations. It is more likely that the “S” was the inspection mark of E.W. Stubbs, foreman of the barrel shop after Copeland’s departure in mid-November 1862 through the armory’s closure in October 1863. A very similar “S” (identical in size but not in font) has been noted as an inspection mark on a U.S. Model 1816-type replacement bayonet made by the Union Manufacturing Company of Richmond. If so, this enigmatic “S” mark may point to Richmond and/or the Richmond Armory as the ultimate origin of this and other barrels so marked.<sup>33</sup>

#### SLOAN TAKES COMMAND

Aware of the growing internal tensions at the Asheville Armory, Josiah Gorgas had ordered William S. Downer to visit the armory and report on conditions there in mid-November 1862.<sup>34</sup> Well before the first rifles were shipped or even completed, Downer was already critical of the armory’s operations, claiming that before King arrived, work was “carried on almost at the discretion of the men,” and “the guns were made worthless and the labor performed (at the expense of the Department) worse than thrown away.” As for management frictions between King, Pulliam, and nearly everyone else at the armory,

I believe that Mr. Pulliam has been in the habit of exercising too little authority and Mr. King too much. No official discipline has been enforced. This state of things led to fault-finding and jealousy between Mr. King and Pulliam which caused the present unpleasant state of feelings. During Mr.

Pulliam’s absence at Charleston two weeks ago, a gentleman told Mr. King that Mr. Pulliam had said he was going to Richmond to make an effort for his removal.<sup>35</sup>

Instead, it was Pulliam who got the boot. In his place, the Chief of Ordnance dispatched 26-year-old ordnance captain Benjamin Franklin Sloan, a South Carolina native and 1860 graduate of the U.S. Military Academy who had previously served (briefly) at the Richmond Armory.<sup>36</sup>

Sloan arrived at the Asheville Armory on Christmas Eve 1862 and immediately began putting his new house in order. Although it is unclear precisely when (or if) during the previous year the Asheville Armory ceased being a business venture of Clayton, Whitson, and Company and became an official C.S. Ordnance Bureau establishment, it certainly became one when Sloan assumed the duties of commanding officer. His first act was requesting the formal appointment of Amasa W. King as Master Armorer, with authority over all of the armory’s 123 workers.<sup>37</sup> Over the next three months, the young captain fired 26 of these workers and appointed new foremen in two departments. Those dismissed faced immediate referral to Confederate conscription officers, who were given the man’s name and home town in case he failed to report for duty (which most did).<sup>38</sup> In order to maintain the loyalty of the rest, Sloan retained 58-year-old Ephraim Clayton (appointed head of the newly created Master Builder’s Department), his 27-year-old son Thomas L. Clayton (appointed Acting Military Store Keeper), and 36-year-old George W. Whitson (appointed assistant foreman, Lock and Mounting Department).<sup>39</sup>

Among other measures designed to enforce military discipline, Sloan ordered that the remaining employees were to be paid their wages at the armory instead of at Pulliam’s store, especially as “time cannot be spared for them to visit the Town to receive their money.” Furthermore, if any worker left the armory without permission during working hours, “he shall have deducted from his monthly pay a sum equal to his wages for twice the time he shall be so absent.”<sup>40</sup> At the same time, Sloan did his best to provide his workmen with the basics, including food (“Sir, you will go into the neighborhood counties and purchase all the corn you can, and as low a price as possible”), shoes (“Many workmen at this armory are almost barefooted and it is impossible to get shoes.”), and pay raises to stay ahead of inflation (“The wages of the men have been raised in order that they might purchase the provisions that have been provided for them at the armory”).<sup>41</sup> Given the routine distrust of Confederate paper currency, Sloan asked the Richmond Armory for bags of shot, as “the people in this country will give anything they have in exchange for No. 3, No. 5 & No.7.”<sup>42</sup>

Sloan was also made keenly aware that he was operating in a virtual war zone. In early January 1863, a band of 50



unionists raided the town of Marshall, a little more than 20 miles from Asheville, and the resulting retributions — including the execution-style murders of 13 men and boys — came to typify the bloody internecine war fought in Appalachia.<sup>43</sup> Immediately thereafter, Sloan organized his workforce into a military company, for which he requisitioned 200 percussion muskets as well as accoutrements and ammunition from the Knoxville Arsenal.<sup>44</sup> In June, the armory commander sought to beef up his military deterrent: “A few pieces of Artillery would give confidence to the people, intimidate the disloyal, and do much to prevent an attempt to destroy the Armory buildings, besides its efficiency in case of an attack.” He requested a four-gun battery of 12 pounder howitzers and “Napoleon” field guns; it is believed that at least two were delivered.<sup>45</sup>

Sloan also had good reason to suspect that some of his own men were less than sympathetic to the Confederate cause or even outright unionists. Wesley M. Justus, a former silversmith and now foreman of the lock and mounting department, admitted in an 1872 claim before the Southern Claims Commission, that he worked in the armory “in order to avoid conscription in to the rebel service” and because it was close to his home and family in Hendersonville. “There were several Union Men in the Armory,” he continued, “and threats were often made that they would take us out and send us to the ‘front.’” One of four witnesses to Justus’s claim was B.F. Staggs, a lock filer, who wrote, “there were a great many union men in the armory at Asheville, NC, & we worked there only to keep out of the rebel army. . . . I think he never voluntarily did anything to help the Confederate States.”<sup>46</sup> That the armory served as a haven for draft-dodgers (even loyal Confederates) was an open secret: “Now, we have an armory at Asheville,” wrote “Plain Dealer” in the Raleigh *Semi-Weekly Standard*, “and a few who consider the precious stuff too important to part with put there [their] sons there; and what their labor fails or lacks in quitting expenses, they foot up, rather than they will send their sons to the army.”<sup>47</sup>

Obtaining skilled workers of any loyalty was a chronic problem. Throughout the spring and summer of 1862, Robert Pulliam had placed ads in various North Carolina newspapers hoping to attract “Machinists, Gun-Smiths, Filers and good Black Smiths” of “steady, industrious habits, capacity and genius” to the Asheville Armory. “This is a fine healthy region,” noted an ad in Raleigh’s *Weekly State Journal*. “The climate is unsurpassed for salubrity. The water is pure, cool and invigorating. Whilst the locality will, in all probability, remain undisturbed by Yankee invasion.”<sup>48</sup> By 1863, nearly all the qualified mechanics in the South were either already working in Confederate government facilities, thus exempting them from the draft, or had already been

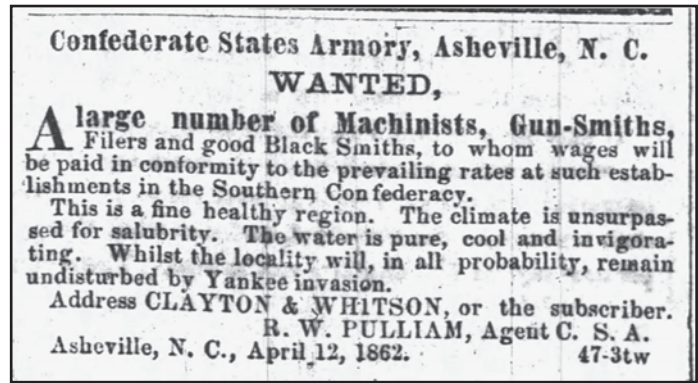


Figure 6. Local businessman-turned-armory-superintendent Robert W. Pulliam did his best to attract skilled workers to Asheville through newspaper ads such as this one from April 1862. Like any good civic booster, he emphasized his hometown’s healthy climate and safe (from “Yankees”) environment.

conscripted into the C.S. Army, from which it often proved impossible to be detailed for work in a government armory. Pulliam himself had reportedly abused the system in 1862 when he applied for a conscript for “Govt business,” but instead “made him overseer on his place and put a negro slave in his place at the work for which he was detailed.”<sup>49</sup> Yet Pulliam’s actions may have been more pragmatic than dishonest. Faced with a serious labor shortage, Benjamin Sloan, like many others in the Ordnance Bureau, turned to slave labor, which was both more abundant, and, theoretically at least, more compliant.

The traditionally non-slaveholding region around Asheville had become home to an increasing number of enslaved people sent by nervous owners from threatened coastal areas to the relative safety of the mountains. Some enslaved men were hired out to the armory for hauling wood or making charcoal; others, including several men belonging to Ephraim Clayton (who were probably already working at the planing mill), performed skilled jobs traditionally reserved for whites. Twelve enslaved workers are mentioned by name in the Asheville Armory Letter Book or the Confederate Citizens’ files, but evidently there were many others.<sup>50</sup> “John” worked as a master carpenter, “Ned” and “Monroe” as carpenters, “Lam” as a blacksmith, and “Jim” tended the steam engine that powered the armory’s machinery.<sup>51</sup> However loyal Sloan considered these enslaved men to be, he was also running the risk of angering his white workers. At a time when unskilled white laborers were earning as little as one dollar a day, these skilled black workers were collecting \$2.25 per day, paid to their owners. In the forging department, the only department in which pay rates for “Negro slaves” are specified, an enslaved man could make up to \$3.00 per day for his owner.<sup>52</sup> Resentment among local whites boiled over in January 1863 when an enslaved “boy” named Allen, from York, South Carolina, was “flogged unnecessarily severe” after he was discovered in town with-

23  
C. S. Sloan  
Asheville, N.C. Jan'y 15<sup>th</sup> 1863

Order  
To the Major  
Jim - slave of Mr. E. Clayton head fire  
Engineer at the A.S. Armory is displaced on  
account of neglected and dangerous neglect  
of his duty as Engineer, and his services are  
no longer needed at the Armory.  
G. L. Cochran is assigned to the duty  
of running the Engine. H. N. Reid will  
instruct him unless he is competent to take  
charge of it himself.

B. Sloan, Capt  
Asheville Armory

Figure 7. The Asheville Armory Letter Book records Benjamin Sloan's January 15, 1863, order to "displace" Jim, the "slave of Mr. E. Clayton" as an engineer. Jim tended the steam engine that had powered master carpenter Ephraim Clayton's wood planing mill, now transformed into the Asheville Armory. In place of Jim, machinist H.N. Reid was to train barrel filer G.L. Cochran how to operate the engine. Both men were white. (Courtesy Library of Virginia.)

out a pass from the armory. When Allen returned to the armory five days later, Sloan wrote to his owner, "I do not think he will again be found in the village without a 'pass.'"<sup>53</sup> At about the same time, Captain Sloan summarily dismissed "Jim" "on account of repeated and dangerous neglect of his duty as Engineer," replacing him thereafter with a white worker.<sup>54</sup> Whether this action was part of Sloan's reform of the workforce or based on other reasons is unknown.

### THE QUEST FOR BARRELS

Through the early spring of 1863, the problems facing the Asheville Armory were mainly related to a disgruntled workforce and the need for additional tools and machinery. But just as the armory was beginning to actually produce rifles, shortages of black walnut for stocks and iron for barrels began to pinch. Benjamin Sloan's ongoing quest for gun barrels (or at least the iron to make them) would define the remaining months of the Asheville Armory's existence. Sloan tried to go through official channels to obtain raw materials, but his requisitions to the Ordnance Bureau were often either delayed or entirely unfilled. On February 2, Sloan reported that he would have had 200 rifles ready for shipment were the stocks finished: "A requisition for walnut lumber, made by the Master Armorer, during the latter part of last year, was not filled, hence the delay." On February 16, a frustrated Sloan reported yet more delay, this time because his stockers had been ill, but nevertheless would have 100 rifles ready by the end of the week. Even when he could obtain black walnut which, he reported, "in this section of the country is very fine and very abundant," the fact that all his stocking was done by hand was creating a bottleneck in production.<sup>55</sup>

Immediately after taking command of the armory, Sloan had addressed Downer's objections to the quality of the barrels in the first shipment by requisitioning "a number of short barrels in the Richmond Armory which may be used in the manufacture of rifles at this Armory."<sup>56</sup> On December 29, 1862, Sloan dispatched agent P.D. Gates to obtain them, along with forges, shafting, and drill presses. Although Gates did not return to Asheville from Richmond with these stores until February 11, 1863, Sloan asked Downer on January 29, "Are the barrels you sent annealed?" implying that the barrels had arrived in advance of Gates's return or at least that they were in the process of being shipped.<sup>57</sup> On February 25, Sloan reminded Gorgas that there were in store at the Richmond Armory "a number of short, rough musket barrels" and that "200 of these barrels have been received from Major Downer and they are found to be suitable for the manufacture of rifles made here." Sloan then asked for "all that can be spared." Downer responded that "The difficulties of transportation are so great that we cannot send your goods through. It would be best for us to roll b'bles especially for you, as well as to give you our short ones," and then asked Sloan to make a regular requisition for barrels.<sup>58</sup>

But Sloan's requisition went unfilled, even after he had sent agent George Spears to obtain "all short rifle musket barrels at the Richmond Armory."<sup>59</sup> On March 28, Sloan complained first to Downer at the Richmond Armory, and then went over Downer's head and complained directly to the Chief of Ordnance:

I have to inform you that my Requis'n on Major Downer for Gun barrels cannot be filled by him. There are on hand at this Armory 195 Rough barrels — these will be worked up by the 1st of May and unless another supply can be obtained before that time I will be out of materials, for no preparations have been made here to make the barrels.

M. Armorer King states he acted on Maj. Downer's suggestion, given last Fall in not making these preparations, Major Downer having told him that barrels could be better supplied from Richmond.

I might be able in time to get skelps [strips of iron ready for forming into barrels] from the Cranberry [Iron] Works and work them up, but it could not be done until some time after the barrels already on hand have been consumed.

I beg some arrangement may be made, which will continue operations at this Armory.<sup>60</sup>

Downer, evidently irritated, nevertheless sent an apologetic reply, saying that he did not refuse to roll rifle barrels, but that there were simply none on hand when Spears arrived in late March. Downer pledged to have 300 rifle bar-

C.S. Sloan  
Asheville N.C. March 10<sup>th</sup> 1863

Mr. George Spears  
Lieut.

You will proceed to Richmond  
and, after having obtained the following  
Ordinance stores, return with them  
to Asheville N.C. viz:

10 Cast-iron Forges }  
1 Extra Smelter Pipe } Samton & Pae  
50 feet Black Pipe }  
2 800 lbs nails }  
All short Rifle barrels at Rich<sup>d</sup> Armory  
300 lbs Cast Steel - 1.25" x 1.25"  
1000 lbs " " 9/8" x 9/8"  
250 lbs " " 3" x 3"  
50 Concillin No 10. Maybe had at C.W. & R. Kapruder  
1 Tim Book for machine shop, edited by W. King when in  
4 " " similar to book used in Rich<sup>d</sup> Armory  
Requisition for Stationary [redacted]  
Prussiate of Potassa [redacted]  
1 Box Soap  
10 to 15 Gals Alcohol  
10 " 15 lbs Gum Shellac

Figure 8. On March 10, 1863, Sloan dispatched agent George Spears to the Richmond Armory on an urgent mission to obtain much-needed supplies. In addition to gun barrels, Spears's shopping list included cast steel, "Prussiate of Potassa" (used in case-hardening), stationery, gum shellac, and "1 Box Soap."

rels rolled "as soon as possible" but then reminded Sloan that the Richmond Armory was turning out some 1,500 rifle-musket barrels per month, in addition to carbine barrels, thus making it "impossible for us to get ahead of our own work in B'bles. I hope to get a double set of hands and will then be able to supply demands."<sup>61</sup>

The barrels Downer initially suggested be rolled "especially for you" were to be fabricated at 33 inches (rifle length) by the enormous barrel rolling machine which had been hauled at great time, expense, and danger from Harpers Ferry to Richmond in February 1862. This state-of-the-art machine, the only one in the Confederacy, eliminated the need to weld barrel seams, making stronger "rolled steel" (actually iron) barrels at half the time and cost. The "short, rough musket barrels" Sloan so desperately sought were probably rolled on this machine at 40 inches (rifle-musket length), but due to flaws in forging or finishing were rejected. Richmond Armory workers, always averse to

wasting parts or materials, simply cut off the affected area whenever possible, thus creating 33-inch barrels suitable for rifles ("our short ones"). Unlike the 558 "proved" barrels the Asheville Armory received from Fayetteville the previous September, the "rough" barrels received from Richmond were probably many steps away from completion: not yet fully bored, rifled, straightened, ground and polished, and certainly without breech plugs, cone seats, and front and rear sights.<sup>62</sup> Thus, it would have been some weeks before E.W. Stubbs's barrel shop could finish the 200 "rough" barrels; it is therefore uncertain if any were used in assembling the 200 rifles of the second shipment in mid-March 1863. Upon the urgent request of Josiah Gorgas on behalf of the hard-pressed Army of Tennessee, Asheville Armory agent G.H.A. Adams accompanied these rifles to Chattanooga between March 12 and 23, 1863.<sup>63</sup> From there, presumably, the guns were sent directly to the army then encamped in Tullahoma, Tennessee.

Despite all of his efforts as well as the barrel-rolling machine, Downer never really "got ahead" of his work in barrels for he, too, was scrambling to obtain iron and his first priority had to be supplying his own Richmond Armory. Nevertheless, there is evidence that Downer actually made good on his pledge and had 459 rifle barrels rolled for the Asheville Armory in May 1863. At the same time, there is no written evidence that these rolled barrels ever reached Asheville, and, indeed, at least a portion of them were probably diverted to the Fayetteville Armory, which was also making rifles and was also experiencing the same crisis at the same moment.<sup>64</sup> Phillip Burkhardt, the master armorer at Fayetteville, explained that "a regular uninterrupted Manufacture of arms cannot possibly be carried on, without having at least treble the Number of Barrels on hand in the different States of Operation (of which there are no less than forty) over and above the Number required for Monthly issue. The limited Number of certain Kinds of Machines on hand, renders this Policy absolutely necessary."<sup>65</sup>

King was of the same mind when he later complained, "All the component parts of the arm are pretty well advanced, but of what use are they without barrels, and unless something is done it will be impossible for me to 'keep each particular branch of manufacture in an equal state of advancement' (Quotation from Ord. Regulations)."<sup>66</sup>

Benjamin Sloan sized up the situation. With little prospect of additional help from Richmond (or anywhere else), he was on his own: the Asheville Armory would have to become as self-sufficient as possible in barrels, stocks, and all other components. On April 8, 1863, he dispatched Amasa King to the Macon Armory where James H. Burton had set up the stocking machinery captured at Harper's Ferry. "This will be handed you by Master Armorer King,"

read Sloan's letter of introduction. "He visits Macon for the purpose of examining the Stocking Machines there in the C.S. Armory, with a view of building similar ones here."<sup>67</sup> On April 18, Sloan sent Ephraim Clayton about 75 miles north-east of Asheville to the massive Cranberry Iron Works to contract for a regular supply of iron for barrels. "The iron must be had," Sloan admonished. "Never mind the price, unless it be fabulous."<sup>68</sup> Sloan was already contracting with the Hurricane Rolling Mill near Spartanburg, S.C., the Davidson River Iron Works in Henderson County, N.C., and the Toe River Iron Works in Mitchell County, N.C.<sup>69</sup> Sloan also sent an agent to surrounding towns and farms to scrounge for old cast iron: "Sir, will you buy for the Asheville Armory all the old Cast iron that you can? Don't get large castings: I can't break them up. Old pots, ovens, stoves &c and the smaller castings used in mills will be accepted."<sup>70</sup>

Sloan was able to report optimistically to Gorgas on April 15, 1863:

Sufficient Machinery and tools have been collected here for the manufacture of 200 Rifles a month. The greater part of this Machinery and all the tools have been manufactured at this Armory since the 28th of June, 1862. By reference to the Pay Rolls you will see that 151 men are now employed. The use of Steam and Charcoal require the services of 20 of these men as woodchoppers, colliers, and teamsters. Where slave labor can be obtained and it is profitable, slaves are employed. The stock of materials on hand is at present good, with the following exceptions - viz: The general assortment of files is not a good one - the quantity of steel is not sufficient, and in Iron there is also a deficiency. Steel for Ramrods can be made here from Blister Steel if I can obtain it, and if 3,000 lbs. a month, of the Cranberry iron could be obtained from the government, the barrels now obtained elsewhere could be manufactured here, and the surplus, together with what is obtained from other sources would be sufficient for other purposes.

Additional machinery is now being constructed. The completion of the Stocking machinery (stocking is now done entirely by hand) will increase the production of arms and lessen somewhat their cost. Within a few months I anticipate, with the same number of operatives at present[,] putting into service near 300 Rifles a month, provided it can be with a sufficient number of barrels, or suitable material for making them. . . . The arm, I think, will compare favorably with any in service as regards finish, accuracy, and safety.<sup>71</sup>

In follow-up correspondence with Gorgas on May 20, Sloan commented that, "We are now preparing to make our own barrels entirely. An order from the Nitre [and Mining] Bureau for 3,000 lbs. Cranberry Iron per month for six

months has been received by me which will enable us to manufacture the barrels."<sup>72</sup>

On June 2, 1863, Sloan again reported on progress at his armory. He reminded Gorgas that the reason production was still delayed was the earlier snafu in requisitioning barrels from Richmond. However, with his monthly supply of iron now received, "we are making our own barrels" and "as soon as the Barrel department gets under headway again, there will be nothing to prevent the production of from 150 to 200 rifles monthly." As for the rest of his machinery, "but a few pieces are yet to be added. Some of these are in process of construction. The stocking machinery entire, will be completed before long. The turning machine for the 1<sup>st</sup> and 2<sup>nd</sup> turning is now completed."<sup>73</sup> Unfortunately, no list or description of the machinery built at the Asheville Armory in 1863 has yet been located. However, James Burton's inventory of the armory's machinery on April 5, 1864, three months after it had been moved to Columbia, S.C., includes 15 forges and two "Trip Hammers for welding Barrels," as well as boring and rifling machines, milling machines for slitting screws, making lock screws, tumblers, sears, and cones. In addition to the turning machine, stocking machinery included milling machines for "Barrel letting in," "Stock facing," "Cutting & curving butt," plus "Hand Lathes for Wood." Yet to be completed were the "Lock letting in" machine, a profiling machine (type unspecified), as well as a nut-boring machine (for barrels), a draw polishing machine, and a mainspring swivel milling machine. "The machinery is generally of a serviceable character although not of the most approved construction and finish," Burton commented, "Several of the stock making machines have wooden frames, but nevertheless, are said to work very well." Burton noted that the machinery at that time was still being set up and much of it needed repair.<sup>74</sup> Otherwise, there is no evidence indicating precisely when these machines were originally constructed, but it is probably safe to assume that most of them were built in Asheville rather than Columbia.<sup>75</sup>

Given the efforts already expended in building a stock-turning machine, Sloan vigorously dismissed an Ordnance Bureau inquiry dated May 22, 1863, regarding desperately needed carbines: "the barrel cannot be conveniently shortened from 33 to 28 inches or 30 inches," because the newly completed machinery "will have to be changed, as will all the tools, bands, &c. This change in the length of the Arm would cause a great delay in the manufacture of the rifle."<sup>76</sup> Delay was the last thing that Benjamin Sloan and Amasa King wanted, for at last they seemed to have achieved their goal: the forges and trip-hammers for welding barrels and the machinery for turning stocks were complete; virtually all major parts of the rifle could be fabricated in Asheville, at the rate of nearly 200 a month. Against all odds, the C.S. Armory at Asheville was teetering on the brink of success.



Carolina Museum of History (internal markings unknown), the second of the Asheville rifles in the Murphy collection at the Greensboro Museum of History (stamped "160" under the barrel), a rifle privately owned by Rick Abel in Pennsylvania (stamped "196" under the barrel), and another cut-down rifle privately owned by Michael D. Kramer (stamped "258" under the barrel).<sup>85</sup> All four are made with curved Model 1855-type buttplates and no ramrod retaining springs, the stocks appear to be hand-made, and the lockplates are stamped "CS" and/or "ASHEVILLE. N.C.," the barrels have "S" inspection stamps at the breech (with and without "V" and "P"), and the two arms that are still in rifle configuration have Model 1841/1855-type saber bayonet studs attached 3.5 inches from the muzzle.

Given the evident improvement in the quality of barrels and locks, the author believes these four rifles were part of the second shipment in March 1863 and the third in June. Rick Abel's rifle stands out in this group as especially well-marked and well-made. The six-land-and-groove barrel is much sturdier with thicker walls (.13 inches) than the Wray collection rifle ("116"). The number "196" on the underside of the breech and on the breech plug is stamped with the same dies as the "116" and the external diameter of the barrel at the muzzle is .81 inches, only slightly larger than the Wray collection rifle (all other barrels of extant Asheville Armory rifles, including those thought to have been rolled in Richmond, measure between .885 and .895 at the muzzle). Thus, it appears that the two barrels originated from the same source, suggesting that the armory was still using some

of the barrels sent from Fayetteville until better ones could be obtained from Richmond. Therefore, the author believes there is a higher probability that the Abel rifle was part of the second shipment rather than the third. Most importantly, the barrel is stamped "1863" on the tang, which not only makes it the only surviving Asheville Armory rifle marked with a date, but also confirms that it could not have been part of the first shipment in December 1862.

The locks of Rick Abel's rifle and a nearly identical one on Michael Kramer's cut-down rifle ("258"), also show considerable improvement over the locks made with re-used U.S. Model 1841 plates. The parts are crisp, move smoothly, and the tips of the mainsprings at the upper branch are milled flat so they can be securely screwed into the lockplates under the bolster. Furthermore, both lock mechanisms are fitted with mainspring swivels, making these the only two Asheville Armory rifles yet observed with this feature. The presence of these swivels suggest that the locks were probably made at approximately the same time by the same maker, though it is yet to be determined if they were made in Asheville or came from another source. The lock cavity of the Kramer collection rifle is much more crudely cut than that of the Abel rifle, and, like most Richmond Armory guns (also made with mainspring swivels), is deeply worn at the bottom edge of the cavity where the base of the mainspring has pressed into the wood.

Rick Abel's rifle also has a family story linking it to the Western Theater, hence to the second shipment to the Army of Tennessee. Eighteen-year-old George Neely, who had earlier

been incapacitated by an accidental gunshot wound, was at his home just south of Franklin, Tennessee, when the horrific battle erupted there in the late afternoon of November 30, 1864. The next day, Neely "picked up 6-8 broken muskets on the family farm and this was the best."<sup>86</sup> By "broken" the story may have been referring to the bent trigger guard and chipped wood opposite the lock (since restored), but otherwise this rifle is in unusually good condition. There are also two references to "Asheville Rifles" in the ordinance records of Chalmer's Division of Nathan Bedford



Figure 10. Believed to have been part of the second shipment, this Asheville Armory rifle from the Rick Abel collection ("196") is the only one known to bear a date stamp. The barrel has the proper sword bayonet stud, the lockplate is stamped with lettering very similar to that of Richmond and Fayetteville rifles, but the stock is still hand-made and hand-bedded (see the poorly-cut ramrod channel).



Figure 11. A comparison of the workmanship on rifles “116” (TOP) and “196” (BOTTOM) shows the considerably improved lock mechanism of the latter, including a mainspring swivel, a screw securing the upper mainspring branch, and a re-used Model 1841 hammer. Both locks were made under the supervision of Wesley Justus, who later claimed Union loyalties. The barrels of the two rifles are probably from the same source, though “196” is thicker-walled and better-finished. Both barrels are marked with the same set of dies.

Forrest’s Corps in Alabama in June 1864. In order for them to have been so identified, the rifles were almost certainly part of the first (curved buttplate) configuration with the Asheville name stamped on the lockplate. Murphy and Madaus note that the rifles used by Forrest’s corps seem to have originated at the Selma Arsenal; hence the author believes they were part of the third shipment.<sup>87</sup>

Assuming these four rifles formed part of the second and/or third shipments, the changes incorporated into the “model rifle” from Richmond involved improving the quality of the locks and barrels and placing the bayonet stud correctly, but not changing the configuration of the stock. Instead, the change from the curved Model 1855-type buttplates without ramrod retaining springs to the flat (with a slight curve at the toe) Model 1841-type buttplates with ramrod retaining springs almost certainly occurred as the armory shifted from hand stocking to machine stocking in late May or early June 1863. This change seems to fly in the face of modern-day collective wisdom about firearms production. Why would one government armory suddenly switch from the (modified) U.S. Model 1855 configuration already in production at the two other government armories in favor of the older U.S. Model 1841- and British Pattern 1853-type rifles favored by private manufacturers?

It may have been a straightforward matter of simplifying the curvature of the butt in order to speed up production.

However, this simplification would have also entailed changing the molds for the brass buttplates. Given the scattering of surplus Model 1841 hammers throughout production as well as the use of Model 1841 lockplates on rifles of the first shipment, it is entirely possible that the armory had also procured a supply of Model 1841 (or Model 1841-type) buttplates. On September 30, 1863, the armory still had in store 316 condemned brass buttplates.<sup>88</sup> Were these the older curved buttplates no longer needed for the second configuration?

It is also possible that the change in the stock configuration and the addition of the ramrod retaining spring originated with James Burton, whom Amasa

King had visited at the Macon Armory for advice on building stocking machines in April 1863. The former Chief Engineer of the Royal Small Arms Factory at Enfield Lock preferred many features of the British Pattern 1853 series to those of the U.S. Model 1855 arms, especially screw-clamping barrel bands and brass buttplates, trigger-guards, and stock tips (which would not rust in close contact with wood), all of which were standard on Asheville Armory rifles. At the time of King’s visit, Burton had not only chosen the Pattern 1853 as the standard long arm for the Confederacy, but was also making arrangements to purchase machinery in England for mass-producing them at the Macon Armory. If these Confederate “Enfield” copies had ever been made, it is likely that they would not have followed the British pattern in every detail. In 1860, Burton’s design for a new model rifle-musket for the state of Virginia was based on the Pattern 1853 stock (including ramrod spring), except that he recommended flattening the butt and buttplate in order to prevent the common problem of wood at the toe splitting off the stock along the lower buttplate screw. The proposed specifications for the Virginia arm included a brass buttplate and a butt configuration for which “Lateral and longitudinal curvatures will vary slightly from Enfield. One curve from heel to toe will be observed in order to facilitate the manufacture.”<sup>89</sup> In

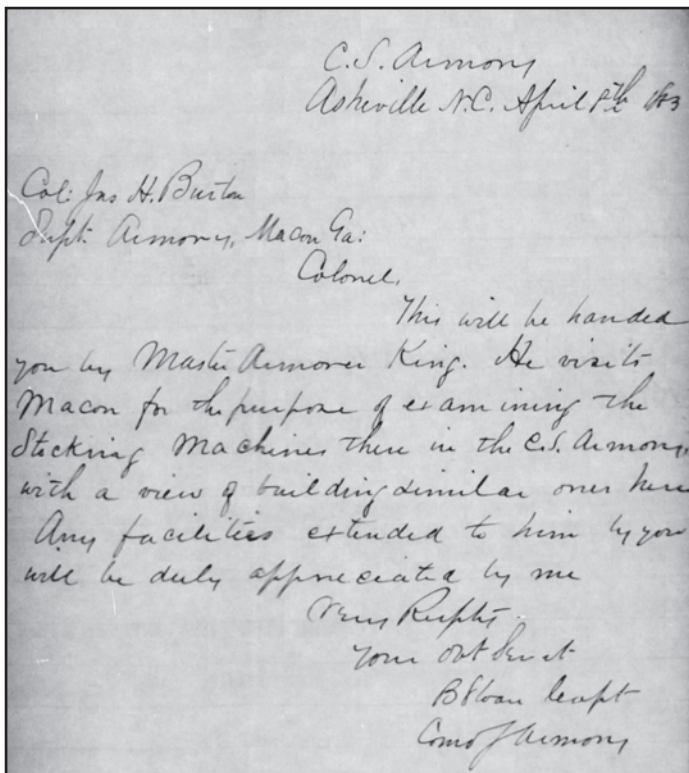


Figure 12. With this letter of introduction, Master Armorer Amasa King traveled to the Macon Armory in April 1863, to examine the Harpers Ferry stocking machines and confer with James Burton, the South's foremost expert in arms production. Based on Burton's advice, King would oversee the construction of another full set of stocking machinery for the Confederacy.

essence, Burton envisioned a butt configuration much closer to the U.S. Model 1841. Furthermore, he had also already recommended that the Richmond Armory eliminate the swell near the tip of the ramrod, thus making ramrod production easier. That swell had been introduced for U.S. Model 1855 arms as more efficient way to retain the ramrod in the channel, but Burton may have felt that the older method of using a ramrod retaining spring was the better solution. Thus, it may have been the thoroughly experi-

enced and highly respected Superintendent of Armories who advised young Master Armorer King to reconfigure the Asheville stocks as a means of both improving the durability of the rifle and making its manufacture simpler.

There are two rifles among the 14 studied that combine features of the first and second configurations and thus may represent the transition between the two types: a rifle in the Milwaukee Public Museum collection (with internal slash marks "VII" in nine places) and a rifle privately owned by Michael Kramer of New Jersey (a single punch mark under the barrel). The butts of both stocks are of the flat Model 1841-type, but, unlike all other known second-configuration rifles, neither have ramrod retaining springs. A quantity of these springs (probably from Model 1841 rifles) were received from Fayetteville in September 1862, but apparently had never been used. Given that the slots for retaining springs in the stock channel were inletted by hand, the armory may simply have omitted the springs in its rush to complete a shipment. Both rifles were fabricated with newly made lockplates, but only the Milwaukee Public Museum example bears the "ASHEVILLE. N.C." stamping, making it the sole surviving second configuration rifle so marked. Murphy and Madaus speculate (probably correctly) that the "C.S." and "ASHEVILLE. N.C." dies used during initial production simply wore out after repeatedly striking case-hardened Model 1841 lockplates.<sup>90</sup> Otherwise, there is no evidence suggesting why Asheville Armory lockplates fabricated after this time went unmarked.

The barrels of these two rifles may be among the first welded at the Asheville Armory. Neither is numbered and neither bears inspection stamps at the breech. There is no documented reason for this departure from standard armory practice, and no discernible pattern to the application of these stamps between barrels rolled in Richmond versus those welded in Asheville (unless the "S" is somehow related

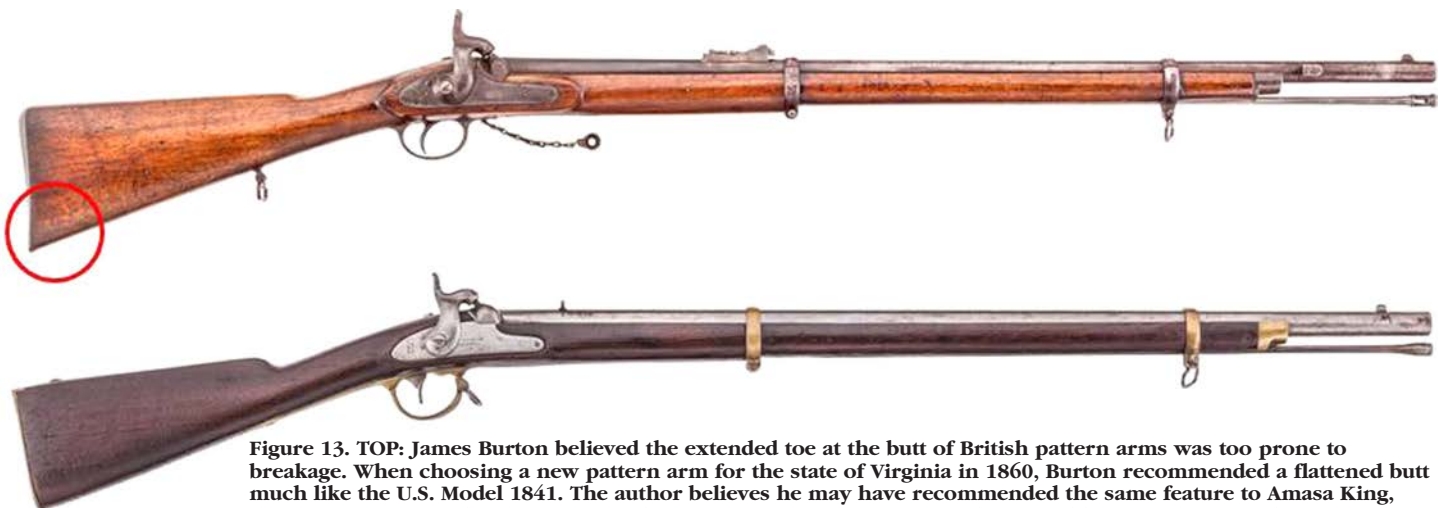


Figure 13. TOP: James Burton believed the extended toe at the butt of British pattern arms was too prone to breakage. When choosing a new pattern arm for the state of Virginia in 1860, Burton recommended a flattened butt much like the U.S. Model 1841. The author believes he may have recommended the same feature to Amasa King, thus accounting for the change in stock configuration. BOTTOM: Note the resemblance of the second-configuration Asheville Army rifles to privately made arms such as this 1865-dated Dickson, Nelson, and Company rifle.



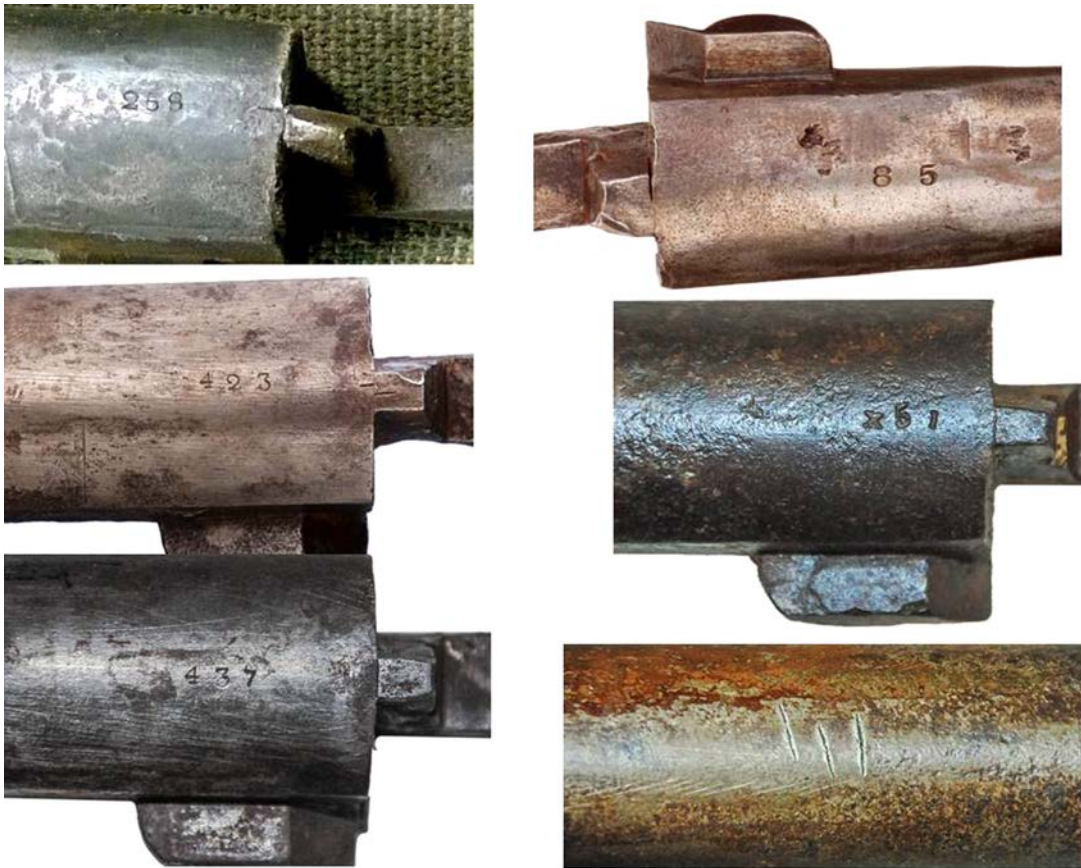


Figure 14. LEFT: Stamped with the same set of dies, numbers “258,” “423,” and “437” are believed to designate barrels received from the Richmond Armory, including some of the 459 barrels rolled in May 1863. RIGHT: Stamped with a different set of dies, numbers “85” and “x51” are believed to mark Asheville-made barrels, probably forged in September or October 1863. Note the slash assembly marks, which often appear in addition to the inventory numbers on the barrels.

to inspection by the Union Manufacturing Company in Richmond). If foreman E.W. Stubbs was indeed responsible for the “S” stamps, he may not have applied them to every barrel or other workers may have finished the barrels without stamping them. The author feels that both of these rifles were part of the third (June) or fourth (August) shipments.

Two other Asheville Armory rifles appear to have been fabricated in the summer of 1863 but have features more consistent with the other rifles of the second configuration: a rifle from the DuBose collection at the Atlanta History Center (stamped “423” under the barrel) and a rifle privately owned by Steve Ransbotham of Atlanta (stamped “437” under the barrel), which has had its barrel and stock shortened. Both arms have the flat Model 1841-type butts, ramrod retaining springs, unmarked lockplates, and unmarked breeches. Both arms are marked with the “ASHEVILLE N.C.” cartouche on the left side of the butt and the DuBose example also has the “A.W.K.” inspection stamp on the stock opposite the lock. The six land-and-groove barrels were probably rolled in Richmond but undoubtedly finished and breeched in Asheville. They are numbered under the breeches and on the breech plugs with same set of dies as the Michael Kramer rifle stamped “258.” Hence,

“423” and “437” may be inventory numbers applied to the last of the 459 barrels rolled in May 1863, proving that at least some of this second batch of rolled Richmond barrels did, in fact, reach the Asheville Armory.

It is also possible that these numbers refer to the total number of Richmond barrels received, including the 200 sent in January or February 1863. If that were the case, and assuming that all 459 barrels were delivered to Asheville, these numbers should reach 659. As mentioned previously, however, “437” is the highest number yet observed, suggesting that the total number of Richmond barrels received or used was considerably lower. Significantly, the armory’s September 30, 1863, inventory includes 76 condemned “steel rifle barrels.”<sup>91</sup> Were these some of the sub-

standard ones to which Downer had objected in December 1862, or some of the rolled barrels from Richmond that had been ruined during finishing (or proving) at Asheville? In any case, the author believes these numbers are associated with the barrels and should not be confused as serial numbers for the rifles *per se* even though they probably indicate an approximate order of production for the barrels. Assuming barrels “423” and “437” were rolled in May 1863, it is unlikely they were finished in time to be used in assembling rifles until June or July, thus tentatively placing these two rifles in the fourth shipment of August 1864, to the Atlanta Arsenal.

The stock of a rifle privately owned by Gary Albert of North Carolina bears a strong resemblance to the stock of the Dubose collection rifle (“423”) described above. The lower edges of both stocks are sharply tapered upward from the forward band to the brass stock tips, which have been milled down to approximately half of their normal thickness in order to fit the abnormal shape. This flaw is indicative of a profiling error in the new stock turning machine. The stocks, probably among the first fabricated on the new



Figure 15. Evidence of machine-made stocks on second-configuration Asheville Armory rifles is clearly visible in the improperly-milled tip of the Albert collection rifle as well as the striations across the stock channel of the Wray collection rifle ("85") indicating use of a barrel-bedding machine. Note the stamped "H" assembly code on the butt of the DuBose collection rifle ("423").

machinery, were evidently too valuable to be discarded and so workers simply made the stock tips fit however they could. Otherwise, the Albert rifle is completely unmarked, externally and internally, except for what appears to be remains of an "A.W.K." inspection stamp on the left face opposite the lock. The barrel is of indeterminate origin, though absent any numbers stamped below the breech, it may have been fabricated in Asheville. It seems likely that during the summer of 1863 the Asheville Armory was simultaneously assembling rifles using barrels rolled in Richmond as well as barrels welded in its own forging shop.

As previously noted, some of the arms of the fourth shipment were issued to two companies of the "Atlanta Fire Battalion," one of which, known locally as the "Lula Videttes," was supposed to be outfitted as cavalry. It is interesting to note in this context the possible history of Steve Ransbotham's rifle ("437") which has a barrel shortened to 26 inches, or approximately carbine length, a small brass bead sight attached just behind the muzzle, and a brass heart affixed to the upper surface of the wrist. Whether this modification was accomplished during the war or after is unknown, but given the proximity of the Atlanta Arsenal and the unexplained "P2" ("second proof"?) stamped on the right side of the barrel just behind the rear sight, it is conceivable that this rifle was indeed cut down for the Lula Videttes.

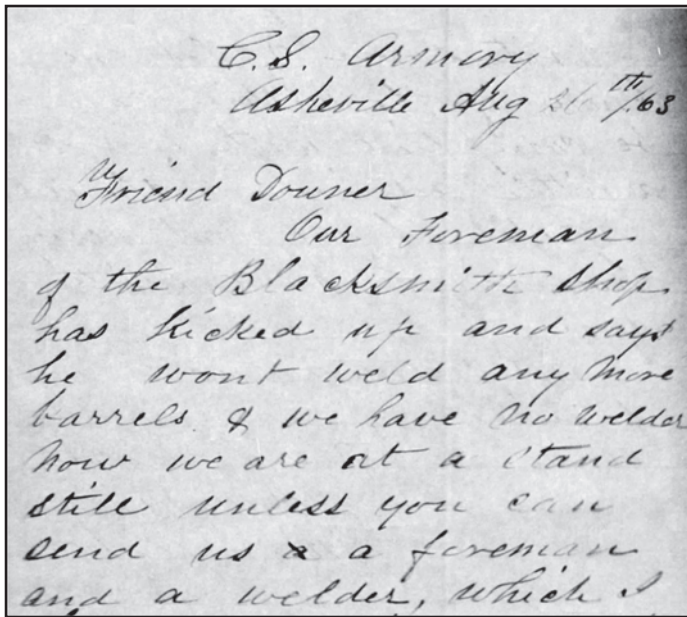
#### AN UNTIMELY END

The Asheville Armory's nominal self-sufficiency in production was only as good as its monthly supply of raw materials. From June through August 1863, the Cranberry Iron Works delivered some 10,613 pounds of iron, exceeding the 3,000 pound-per-month minimum Sloan had calculated.<sup>92</sup>

Sloan had also sent G.H.A. Adams to Charleston to procure through the blockade "15,000 pounds of steel and 50,000 pounds of English Marshall Iron or Superior Norway Barrel iron." Adams returned with nowhere near that quantity, but did manage 2,611 pounds of steel and 3,319 pounds of iron (plus a new flag for the armory grounds).<sup>93</sup> But Sloan's relations with Thomas Carter and Jordan Hardin, owners of the Cranberry works, soon began to sour. "In future you will confine yourself in your communications to me to purely business matters," Sloan chided. "Any speculations of you as to my personal qualifications are entirely idle." Furthermore, Cranberry's bar iron was not properly trimmed and the quality of the skelps left something to be desired: "I return you a skelp which does not speak very highly for the

quality of the iron furnished. A decided improvement is needed in it."<sup>94</sup> After the Cranberry and the Toe River iron works changed ownership (evidently without his knowledge), Sloan was left wondering if he would continue to get his supply.<sup>95</sup> Meanwhile, Sloan's requisition for 4,000 pounds of copper from the Department of East Tennessee had been rejected because "the copper should be obtained in this neighborhood [western North Carolina] on account of the expense of transportation." On the contrary, Sloan responded, although the Ducktown mines in East Tennessee were only 80 miles distant, "to collect the quantity required I am sure my wagons would have to travel a vastly greater distance in this country if they could procure so great a quantity. Money is no inducement to these people to deliver anything."<sup>96</sup>

For the time being at least, Sloan had his iron, but now he needed more skilled workmen to forge it into barrels. On June 30, 1863, he wrote to Major Downer at the Richmond Armory to ask for a barrel welder and barrel borer, adding that the Cranberry iron "makes a fine barrel."<sup>97</sup> Although Sloan apparently did find a barrel borer, the forging shop was still unable to make barrels during the month of August. "Our Foreman of the Blacksmith Shop has kicked up and says he won't weld any more barrels & we have no welder now," Amasa King reported in a confidential letter to William Downer on August 26. "We are at a standstill unless you can send us a foreman and a welder . . . this fellow (the foreman) has raised a mutiny in the shop & none will work only as they please there being no Provost Marshall here we are completely powerless."<sup>98</sup> The only thing that seemed to satisfy Mathew Woods, the disgruntled foreman of the forging department, was a pay increase from \$5.15 per day (the standard rate for foremen) to \$6.50, which made him the high-



C.S. Amory  
Asheville Aug 26<sup>th</sup> 1863

Friend Downer  
Our Foreman  
of the Blacksmith Shop  
has kicked up and says  
he wont weld any more  
barrels & we have no welder  
now we are at a stand  
still unless you can  
send us a foreman  
and a welder, which I

Figure 16. On August 26, 1863, Amasa King reported the latest dysfunction at the armory: Mathew Woods, foreman of the forging shop, was refusing to make any more barrels. A few days later, Sloan raised his wages, apparently quelling what King called “a mutiny.”

est-paid foreman at the armory.<sup>99</sup> As if that frustration were not enough, one of the two trip hammers used in making barrels was unworkable due to a missing iron swedge and line shafting pulley, both of which had been ordered four months earlier but never delivered.<sup>100</sup>

Sloan was rapidly becoming disenchanted with the whole operation. King later confided to a friend (probably Downer) that

“Capt. Sloan is not like the same man at all, he has become so favorably impressed with old Kitz [Archibald M. Kitzmiller] that any advice that old K gives, he acts upon it immediately . . . The Capt. has assumed the position of Master Armorer as well as Comdg. Officer (this is Kitz’s work, as Kitz and I don’t speak) and got very angry because I went to Greenville to see you, when I came home he had furloughed some and had others at work on private work such as making sugar mills and repairing old arms, none of this work was ever ordered through my office.”<sup>101</sup>

According to King, Sloan was to be pitied “for allowing such a man as old Kitz” to “wrap him around his finger.”<sup>101</sup> Kitzmiller, for his part, was also writing to William Downer, asking for a new job in Virginia while complaining of “the drudgery of subordination” and that there were “no accommodations for refugee families or outside barbarians of any class in this village.”<sup>102</sup> Sloan had had enough. On August 25, 1863, he asked Gorgas to be assigned to other duties and recommended (perhaps in disgust) that King be appointed as the new commanding officer.<sup>103</sup>

Over the next month, as the Chief of Ordnance considered anyone but King for Sloan’s replacement, the military situation in East Tennessee rapidly deteriorated. Federal troops under General Ambrose Burnside occupied Knoxville on September 3, severing the East Tennessee and Georgia Railroad, much to the delight and relief of local unionists. “There are no Confederates here or between this place and Green[e]ville,” Sloan warned Gorgas on September 14. “It is needless to expect any assistance from the people in this necessity: no organizations can be expected from among the men left at home - many of these men indeed will embrace the first opportunity of joining the enemy.”<sup>104</sup> Sloan prepared for the worst, ordering that “three discharges of the Armory Artillery” would be used to summon workers back to the armory in an emergency, requisitioning 5,000 more percussion caps for the armory guard, and suggesting the removal of the “Government Machinery” to “some safer place.”<sup>105</sup> A week later, Sloan reported rumors of a “large body of Tories” threatening to sack the armory. Because “numerous bands of armed men, deserters, &c. have been seen in this neighborhood in the last month . . . I am compelled to guard the armory night and day — the operatives being used for this purpose.” King complained that, “The men in the armory are very much demoralized from having to do so much guard duty that it is almost impossible to get anything out of them.”<sup>106</sup> Worst of all, on October 7, the armory’s wagons returned empty from the Cranberry Iron Works, the teamsters bearing the news that unionist guerillas had forced iron smelting there to a halt.<sup>107</sup>

On October 15, 1863, Gorgas’s replacement for Sloan finally arrived at the Asheville Armory.<sup>108</sup> Captain of Ordnance Clement Clemington McPhail, a 32-year-old Virginian, sent Gorgas a bleak report:

The operations of this armory are much impeded for want of sufficient supplies of iron for gun barrels and copper for mountings. I believe that Major Sloan has made every effort to procure the material needed: but up to this time without avail. The working of the Cranberry Furnace has been interfered with by the disloyal persons of that region & I find that the quantity of iron to be delivered from that source monthly — 1 1/2 tons is entirely insufficient — even if it was promptly furnished.<sup>109</sup>

The new commander tried to make the best of a bad situation, beginning by addressing the armory’s recalcitrant contractors. To the furnisher of black walnut plank for gun stocks: “If you do not take immediate steps to furnish the quantity agreed upon & deliver it each week, I shall feel it to be my duty to relieve you from detail & report you to the enrolling officer.” To the Davidson River Iron Works: “The quality of your iron is, I must say miserable, arising from pal-

pable neglect & want of the exercise of proper attention & skill in forging it. The quantity also falls below what may reasonably be expected." Unless there is "immediate and manifest improvement, I shall be forced to relieve all your operatives."<sup>110</sup> McPhail was determined to impress scrap iron from any locals who refused to sell it. He also inquired of the Macon Armory, but there was no iron to be had there either: the other Confederate armories were experiencing the same shortages; production at Fayetteville had already shut down.<sup>111</sup> On October 2, King had already concluded, "I think that the Govt. had better close up here, for this simple reason, that we will be unable to make any Rifles this winter for want of barrel material. . . . I have not a pound of iron to make a barrel with."<sup>112</sup>

On October 24, 1863, in one final attempt to keep his armory going, McPhail ordered King to Lincoln County to locate possible sources of iron. The order was cancelled almost as soon as it was written.<sup>113</sup> Later that day, McPhail decided (without official permission) to pull the plug on the Asheville Armory:

The Commanding Officer of the Armory considers that the interest of the Public Service makes it expedient for him to suspend work for the present & to prepare the Machinery, Tools, and Materials for transportation to some other point in the event of the possible approach of the enemy to this place. He expects every man to remain at his post, doing his duty with zeal and rendering implicit obedience to orders.

In case it becomes necessary to remove the Public Property, all the employees of the Armory will consider themselves under orders to move with it. Any man absenting himself without leave of the Commanding Officer will be considered & treated as a Deserter.

The employees may rest assured that in any event, the best exertions will be used to secure and provide for the interest of themselves and their families.<sup>114</sup>

McPhail immediately ordered the "most valuable" machinery disassembled, boxed up, and made ready to transport. Over the next four days he ordered Ephraim Clayton and Wesley M. Justus (the secret Union sympathizer) to take charge of two wagon trains moving the machinery to Greenville, S.C., where it would be stored temporarily until a new home for the armory could be found.<sup>115</sup> Two days later, McPhail informed Gorgas of his unilateral decision, explaining that with a force of "Tories and yankees" gathering strength "not more than 30 or 35 miles from this place," and with only "four hundred of raw and undisciplined Militia" to oppose an advance on the armory, "it would be criminal neglect of duty not to act promptly and put the public property out of danger as speedily as possible." His boss

agreed, and ordered the Asheville Armory dismantled and moved to the safer environs of Columbia, S.C.<sup>116</sup>

On October 19, 1863, McPhail had ordered King to inspect all finished arms on hand and turn them over to the Military Store Keeper.<sup>117</sup> No records have yet been located enumerating these arms. But in his letter of October 2, King commented that "In the month of August we did not make a gun, and this month (Sept.) we have only assembled 132[,] in Oct. we will only make about 75."<sup>118</sup> It is also clear that there were arms on hand at Asheville after the fourth shipment of 200 arms had been sent to the Atlanta Arsenal in mid-August, for in early September Gorgas directed an officer in Lincolnton, N.C., to requisition the 12 rifles he needed from the Asheville Armory. Sloan responded that he could not supply them, for "I have no Rifles of Calibre .54 - all of Caliber .57."<sup>119</sup> On September 23, Gorgas also mentioned to North Carolina Governor Zebulon Vance, then urgently requesting help defending the western part of his state, that "200 or more rifles may be obtained at Asheville Armory, N.C."<sup>120</sup> Assuming Master Armorer King was correct about the 132 rifles assembled in September (and he would know), the total production of the Asheville Armory from its inception through the end of that month was 932 rifles.

Even with the unsettled conditions at the armory during the first three weeks of October, it is still possible that an additional 75 guns were assembled just as King had anticipated. The third quarter inventory of ordnance stores indicates that as of September 30, 1863, there were on hand 937 cones, 382 assembled locks, 150 barrel skelps, 12,248 pounds of bar (wrought) iron, 9,385 pounds of scrap iron, 2,836 pounds of "round" iron, plus 195 pounds of scrap brass and 100 pounds of copper ingot. Clearly there was material on hand for fabricating rifles at least for a little while longer (assuming there were men available to do the work) despite King's claim that he "had not a pound of iron."<sup>121</sup> If indeed an additional 75 arms were assembled, the total production of the Asheville Armory would stand at 1,007.<sup>122</sup> The author feels that total production was probably somewhere between the two figures, perhaps 950 or 975, but could have approached 1,000. In any event, the fate of these last rifles is unknown, but in all probability they were withheld for North Carolina troops and local defense in accordance with Governor Vance's pleas.

There are two rifles among the 14 extant that were probably among the last fabricated at the Asheville Armory in September or October 1863: a rifle in the Wray collection of the Atlanta History Center (with interior assembly number "85") and a rifle privately owned by David Winfield of South Carolina (assembly number "20"). Both have the flat Model 1841-type butts, ramrod retaining springs, unmarked lockplates, unmarked stocks, and newly made lockplates and



Figure 17. The features of second-configuration rifles are remarkably uniform, including (with a single exception) unmarked lockplates. Nevertheless, there are many small variations, such the addition of a re-used Model 1841 hammer (LEFT) on the DuBose collection rifle (“423”), and an unusually thick shield behind the cone seat (RIGHT) on the Winfield collection rifle (“x51”). Note also the lack of a rear sling swivel.

hammers. The assembly numbers are stamped with what appear to be the same set of dies on the interior faces of the hammers and inside both lockplates on or just below the bolsters, indicating that the locks, at least, were fabricated at nearly the same time. The Atlanta History Center rifle bears the same “85” under the barrel as well as in the stock channel. David Winfield’s rifle has “20” only inside the lock, with

“x51” and three matching slash marks under the barrel and inside the trigger guard plate.

As demonstrated by slag stringers (pitted streaks running lengthwise along the barrel), and other visible flaws, the wrought iron barrels of both rifles were almost certainly forged and finished in Asheville using the Cranberry or other locally sourced iron. The stocks of both rifles show evidence of machining in the stock channel. Regularly spaced undulations running across (or perpendicular to) the channel, each about three or four millimeters apart, strongly suggest that the “Barrel letting in” machine mentioned in the April 1864, inventory was in use in when these two stocks were made. Assuming the



Figure 18. The locks of the late-production Wray collection rifle (LEFT) and the Winfield collection rifle (RIGHT) are marked on the inside of the hammers and on the inside faces of the lockplates with numbers “85” and “20,” respectively. The lock mechanisms are of generally good quality, albeit without mainspring swivels. Note the flaws on the surface of the wrought iron barrels, which were almost certainly made in Asheville.

stocking machinery was built in order of priority, a barrel bedding machine would have logically followed the stock-turning machine that began operation in late May or early June. Given that no other extant second-configuration rifles show similar signs of machining, it seems likely that the barrel-bedding machine did not come into use until very late in production, suggesting a September or October date for these rifles. At the same time, the lock cavities, ramrod channels, and trigger-guard beds, though far more precisely cut than the stocks of the first shipment, still seem to have been rendered by hand, indicating that the rest of the bedding machines had yet to be completed.

There is also strong circumstantial evidence that these two rifles were among the last ones fabricated in Asheville and subsequently issued for local defense. The stock of the Wray collection rifle was cut down to sporting length (since restored), while the barrel was bored smooth to about .615 caliber (20-gauge), a strong indication of civilian use as a shotgun after the war. The Winfield collection rifle is especially unusual. Its barrel bears the "V," "P," and "S" stamps at the breech, thus making it the sole second-configuration rifle so marked. Additionally, there is no trace of rifling in the bore, suggesting that it was either bored smooth after the war or was never rifled in the first place. Was this an older barrel that had been improperly bored and rejected? This rifle is also characterized by an unusually shaped shield behind the cone seat, the lack of a rear sling swivel, and shouldered brass barrel bands more closely resembling British Pattern 1853-type bands rather than the entirely rounded bands seen on all other extant Asheville Armory rifles. All these features would seem to suggest assembly from leftover parts.

Most significantly, the Winfield collection rifle was recently discovered hidden in the wall of a house in Sylva, North Carolina, about 50 miles southwest of Asheville, wrapped in grease, burlap, and 1924-dated newspapers. The barrel was still loaded with a buckshot cartridge which was found to have been made using a blank Confederate "Invoice for Ordnance Stores" form as well as pages from *The First Book of the Maccabees* and *The History of the Destruction of Bel and the Dragon*. Both books are included in the King James Bible, but as part of the *Apocrypha*, are not recognized as canonical by most Protestant denominations.<sup>123</sup> Hence, it is interesting to speculate as to whether or not these pages were selected at random. It is also interesting to note that as of September 30, 1863, the Asheville Armory still had in store 25 pounds of shot, 169 pounds of black powder, and three spools of thread but had expended all of its cartridge paper.<sup>124</sup>

The move of the Asheville Armory machinery by wagon to Greenville and later by rail to Columbia ended up taking at least three months to complete. The precious cargo included two steam engines, two trip hammers, 15 cast iron forges, and at least 39 machines, plus tools, supplies, and raw materials.<sup>125</sup> Even then, without the necessary buildings,



Figure 19. UPPER LEFT: David Winfield's rifle as it appeared soon after its discovery in the wall of a house about 50 miles from Asheville in 2015. RIGHT AND BOTTOM: The rifle was still loaded with a buckshot cartridge made from pages from the King James *Apocrypha* and a Confederate Ordnance Bureau invoice.

motive power, shafting, and quarters for the workers, the new C.S. Armory on the flood-prone banks of the Congaree River was nowhere close to resuming rifle production. In the interim, McPhail retained his most skilled and competent workers, lent some to the other Confederate armories, and released at least 47 others for army service (including seven unfortunates at the Davidson River Iron Works whom he had previously threatened). "I find very few first class workmen among the employees here," McPhail noted, "they are mostly novices & learning the various branches of the profession."<sup>126</sup> He pleaded for "a careful & intelligent machinist who thinks fast & can see a dozen things at a glance."<sup>127</sup> In February 1864, McPhail's personal skirmishing with Amasa W. King finally came to a head when he not only had his master armorer relieved of duty, but also arrested on charges of insubordination, selling government property for private profit, and "conduct prejudicial to good order & military discipline."<sup>128</sup> In early April, James Burton inspected the armory premises and found, among other things, that the forges and chimneys in the forging shop were improperly placed and had to be torn down and re-built, "a mistake" for which the former master armorer was held responsible.<sup>129</sup> Then there was also the issue of the large boiler needed for one of the two steam engines at the Columbia Armory but still set up in the former buildings of the Asheville Armory until the matter of its legal ownership was resolved.<sup>130</sup>

Still, McPhail persisted. "I am using every exertion to push forward my works," he wrote on February 2, 1864. "The scarcity of material & exceeding difficulty procuring trans-

portation, throw many obstacles in the path of rapid progress." When asked what machinery would be required to increase production to 800 arms per month, McPhail responded with a list, insisting that all could be built in the machine shop "which will be put into operation in a few days," but that by obtaining "our" machinery from the State Military Works in Greenville, South Carolina (used for fabricating Morse breechloading rifles and claimed by the C.S. Ordnance Bureau), he could reach that number sooner.<sup>131</sup> McPhail eventually got his boiler from Asheville, and by August 18, 1864, he reported that the Columbia Armory was on the verge of resuming production, lacking only a few more milling machines.<sup>132</sup> Furthermore, in September 1864, McPhail believed he had found a supplier in western North Carolina capable of delivering enough black walnut lumber to make 150,000 gun stocks, thus solving the Ordnance Bureau's latest and most critical material shortage.<sup>133</sup>

All of McPhail's efforts went for naught. The machinery from Greenville never came; the supply of black walnut for making stocks never materialized. Of his potential walnut supplier, McPhail admitted, "the Tories have burned him out once & I believe he has been afraid to do anything since."<sup>134</sup> In August 1864, with Union cavalry roaming near Macon and the rest of William T. Sherman's armies besieging Atlanta, Josiah Gorgas ordered the Harpers Ferry stocking machinery moved from the Macon Armory to the Columbia Armory. Now McPhail was faced with the task of setting up even more machinery, for which he had no additional steam engine, no building space, and most critically, only two of the six workmen who had tended the machines in Macon: two had deserted, one had died, and one was unaccounted for.<sup>135</sup> As the rest of the Confederate armories slowly starved for want of gun stocks, the sheer impossibility of resuming production even at a modest 200 rifles per month, let alone the once-projected 800, became obvious. The C.S. Armory at Columbia never fabricated a single new arm.<sup>136</sup>

In mid-February 1865, McPhail could save only the Harpers Ferry stocking machinery (which was still boxed up in a warehouse) as the Columbia Armory was put to the torch by Sherman's avenging army. All of the precious machinery dearly bought and painstakingly constructed in Asheville and Columbia went up in flames. "I am deeply mortified and chagrined to report that my entire establishment was lost," wrote McPhail, "I did not save an article of any kind. . . . I profoundly regret I could do no more."<sup>137</sup> Ironically, but almost certainly due to the removal of the armory machinery to Columbia, the hard hand of war did not actually touch Asheville until April, 6, 1865, when a rag-tag force of Confederate militiamen commanded by George W. Clayton (Ephraim Clayton's son) successfully defended the town from a Union raid.<sup>138</sup> That success was short-lived.



Figure 20. *Harper's Weekly* artist William Waud sketched the scene of devastation as downtown Columbia burned on the night of February 17, 1865. The next day, Union troops completed the destruction of all remaining military resources. On the banks of the Congaree River, all the tools and machinery that the Asheville and Columbia armories had so painstakingly constructed over the past four years went up in flames.

On April 26, another Federal force under General George Stoneman sacked the town and burned the buildings of the former armory, obliterating the last vestiges of the Confederate States Armory in Asheville, North Carolina.

#### THE ASHEVILLE ARMORY AND CONFEDERATE DEFEAT

The story of the Asheville Armory began with a well-intentioned decision by Robert Pulliam, Ephraim Clayton, and George Whitson to found a Confederate States armory in their hometown. Like so many southern entrepreneurs in 1861, Pulliam and his partners expected patriotism and profit to go hand-in-hand for the benefit of themselves and their new country. Their expectations could hardly have been more naive. From the beginning, Confederate Chief of Ordnance Josiah Gorgas had his doubts about locating a national armory in so remote a place, but hoping he could "get some useful results from it," he allowed it to proceed.<sup>139</sup> Nevertheless, it is clear that the Asheville Armory was never a top priority for the Ordnance Bureau, nor could it be. In April 1863, when contemplating how to maximize production (especially barrels) at the Richmond Armory, Gorgas unhesitatingly offered to sacrifice Asheville by transferring 50 of its workers to his most productive facility: "It would be better to stop Asheville altogether or reduce its product to merely nominal results if we could double, or nearly double, the product here."<sup>140</sup> In retrospect, perhaps the Confederacy should have done so.

The litany of woes confronting the Asheville Armory is a familiar one to students of the Confederate war effort. Pulliam and his would-be entrepreneurs lacked managerial proficiency for anything but small local business, and, initially at least, their employees lacked industrial work habits.

The Confederate central government stepped in and took direct control of the armory, trying to impose a modicum of discipline and efficiency, just as it would iron works, copper mines, and other private armories across the South, eventually establishing a virtual monopoly on firearms manufacture. Even so, the South's fragile infrastructure, in many ways still largely untouched by the Industrial Revolution that had transformed the North, simply could not supply copper, iron, steel, or even walnut in quantities sufficient for all who needed it. Meanwhile, what few skilled mechanics the Asheville Armory had managed to gather were not necessarily enthusiastic about their work, sometimes due to political sentiment, but more often due to internal squabbling over pay, prestige, and interpersonal rivalries, many of which involved the highly opinionated Master Armorer, Amasa W. King. Further exacerbating these problems was the incredible logistical nightmare involved in obtaining even the most basic tools and equipment: steam engines, overhead shafting, leather belting, forges, crucibles, stamping dies, files, even drawing paper for making machinery patterns. There was never enough and none of it came easily. Much of the Asheville Armory Letter Book is filled with correspondence regarding recalcitrant contractors who were charging exorbitantly for everything from bacon and flour to scrap iron and copper, the delivery of which depended on whether or not the roads had been washed out and there were wagons and horses available. Meanwhile, as unionists lurked nearby, armory workers were either afraid to go home or only too willing to do so, while their work place had to be guarded by a battery of artillery. At the Asheville Armory, as with the Confederacy as a whole, problems confounded problems to the point of absurdity.

And yet, Pulliam, Sloan, McPhail, and the others involved in running the Asheville Armory had every reason to believe their efforts worthwhile. In the face of near-impossible conditions they built an armory from practically nothing, scrounging up tools, machinery, and raw materials any way they could short of outright thievery, all the while co-opting a workforce using the carrot of higher wages and the stick of the local conscription officer. Like the managers of other Confederate war industries (especially the Tredegar Iron Works in Richmond) Pulliam, Sloan, and McPhail had no qualms about using slave labor in an industrial setting, and instantly recognized it as the only labor source beyond the reach of Confederate conscription laws. "I very decidedly prefer slave labor when it can be used," McPhail commented, "for the reason that it does not take laborers from the Armies."<sup>141</sup> Likewise, neither commander hesitated to improvise whenever necessary. When the supply of rolled barrels was not forthcoming, Sloan had his men revert to the older, time-honored method of forging iron around a mandrel;

when hand-stocking was bottlenecking production, he tasked his men with building stocking machinery. By November 1864, the Confederate Ordnance Bureau had another complete (or nearly complete) set of stocking machines, which, considering all obstacles, may be considered a nearly miraculous achievement, forgotten today only because it was never put to use.

Sloan and McPhail (not Pulliam) also proved to be efficient and obedient ordnance officers. Although they could not afford to be as picky as their northern counterparts when it came to quality control, the commanders of the Asheville Armory carefully monitored the supply of materials and the details of production, saw to it that finished arms were inspected (usually), and generally did their best to follow regulations in the ordnance manual. They consistently sought consent for any actions that affected other armories or the Ordnance Bureau as a whole, had their clerks account for every brick and screw, filled out all returns in triplicate, carefully watched their cash flow, and tried not to exceed their budgets. The result was an odd kind of calm in the midst of a storm. In December 1864, as Sherman marched virtually unopposed to Savannah and then prepared to strike deep into South Carolina, James Burton and Clement McPhail coolly discussed the finer details of constructing new buildings and re-arranging the layout of the Columbia Armory to accommodate the Harpers Ferry stocking machinery.

The hard reality was that the war was now in the Confederacy's back yard and, to an extent scarcely imaginable in 1861, always had been. The experience of the Asheville Armory well illustrates the greatest weakness of the Confederate war effort: there was no safe place in the Confederacy, no safe haven where production could proceed unhindered. In October 1863, even in one of the remotest towns in the South, the armory fell victim to Union (and unionist) military pressure, just at the moment when production was finally making headway. The decision to relocate the armory's machinery to Columbia assumed that the Confederate States still had time to re-establish the armory in a safer place. In 1863, perhaps it did. But by the fall of 1864, the Confederate Ordnance Bureau's efforts to move vital arms-making machinery out of harm's way had degenerated into a giant shell game, shifting men and materiel between Richmond, Columbia, Savannah, Macon, Tallassee, and elsewhere, all the while trying to guess where Union armies would go next. In the end, none of that mattered: the Confederacy's inability to protect what little industrial infrastructure it possessed spelled doom for all its arms factories, whether centralized in one "safe" location or spread out among many. What Sherman called "the hard hand of war" would eventually reach into nearly every cor-



ner of the South, wiping out the Confederacy's massive investments in toil and treasure and rendering useless its otherwise remarkable achievements. The story of the Asheville Armory is the story of Confederate defeat.

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Any errors in fact or judgment are entirely the responsibility of the author, who sincerely hopes that such errors will stimulate further research by members of the American Society of Arms Collectors.

#### NOTES

1. Quoted in William B. Floyd, "The Asheville Armory and Rifle" (*American Society of Arms Collectors Bulletin* 44 [Spring 1981]), 22. The author has a digital copy of the original letter, but has not identified its archival source.

2. Benjamin Sloan to Josiah Gorgas, June 2, 1863, April 15, 1863, in Confederate States of America, Bureau of Ordnance Letter Book, 24 December 1862-31 May 1864, Accession 20091, Archives and Records Division, Library of Virginia, Richmond [hereinafter cited as Asheville Armory Letter Book], 101-102.

3. The best estimates on the number of arms fabricated at the Richmond and Fayetteville Armories are 39,600 and 8,600 to 8,900, respectively. See Paul Davies, *C.S. Armory Richmond: A History of the Confederate States Armory, Richmond, Virginia, and the Stock Shop at the C.S. Armory, Macon, Georgia* (Gettysburg, Pa.: Thomas, 2003), 348-351, and John M. Murphy and Howard M. Madaus, *Confederate Rifles and Muskets: Infantry Small Arms Manufactured in the Southern Confederacy, 1861-1865* (Newport Beach, Calif.: Graphic, 1996), 219.

4. All four of the extant locks are stamped "Asheville" or "Asheville N.C." Two are in the John M. Murphy Collection

at the Greensboro Museum of History; one is at the Milwaukee Public Museum, and the third was auctioned by James D. Julia, Inc., as part of a composite arm. See Murphy and Madaus, *Confederate Rifles and Muskets*, 53; "Composite Asheville NC, Confederate Rifle," James D. Julia, Inc., Fall 2011, lot 2186, accessed April 26, 2016, <http://jamesdjulia.com/item/lot-2186-composite-asheville-nc-confederate-rifle-44276>.

5. Sloan to Gorgas, April 15, 1863, Asheville Armory Letter Book, 82.

6. Claud E. Fuller and Richard D. Steuart, *Firearms of the Confederacy* (Lawrence, Mass.: Quarterman, 1944), 191-193; William A. Albaugh and Edward Simmons, *Confederate Arms* (New York: Stackpole, 1957), 198; Richard T. Hill and William E. Anthony, *Confederate Longarms and Pistols: A Pictorial Study* (Charlotte, N.C.: privately published, 1978), 10-13. The latter was the first to include photographs of an Asheville rifle; it is doubtful that the bayonet pictured here actually goes with this rifle. Floyd, "The Asheville Armory and Rifle," 21-25. Before Floyd, production estimates ranged from 300 to 1,000.

7. Murphy and Madaus, *Confederate Rifles and Muskets*, 45-62.

8. Gordon L. Jones, *Confederate Odyssey: The George W. Wray Jr. Collection at the Atlanta History Center* (Athens: University of Georgia Press, 2014). One of the 14 rifles is known only from photographs in William B. Floyd's article.

9. William R. Trotter, *Bushwhackers! The Civil War in North Carolina, The Mountains* (Winston Salem, N.C.: John F. Blair, 1988), 291; Alex S. Caton, and Rebecca Lamb, "The Buncombe Turnpike," Learn NC, accessed April 24, 2016, <http://www.learnnc.org/lp/editions/nchist-newnation/4304>; Gordon B. McKinney, "Premature Industrialization in Appalachia: The Asheville Armory, 1862-1863," in Kenneth W. Noe and Shannon H. Wilson, eds., *The Civil War in Appalachia: Collected Essays* (Knoxville: University of Tennessee Press, 1997), 228-229, 234. The latter is an excellent though brief study of the armory focusing on its development as an industrial enterprise, especially the labor conditions and material shortages documented in the Asheville Armory Letter Book.

10. F.A. Sondley, *A History of Buncombe County, N.C.* (Asheville: Advocate Printing Company, 1930), 691.

11. "There is also an establishment at Asheville, N.C., for the manufacture, alteration, and repair of small-arms, but no report as to its capacity has been received." Josiah Gorgas to Judah P. Benjamin, "No. 5: List of establishments for the supply of ammunition, small-arms, and artillery under the control of the Government," September 24, 1861, in *The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies*, Series IV, Vol. 1

(Washington: Government Printing Office, 1890) [hereinafter cited as *Official Records*], 622. In addition to purchasing "materials used in fabricating New Rifles Machinery & Tools and component parts," the armory was also "repairing and fitting up Dble Barrel Shot guns for service." Invoice of Clayton, Whitson, and Company, March 31, 1862 in National Archives and Records Administration, "Confederate Papers Relating to Citizens or Business Firms, 1861-1865" [hereinafter cited as Confederate Citizens Files], Clayton, Whitson & Co. file, Fold3.com, 4.

12. "I do not contemplate removing the establishment, but to get some useful results from it." Josiah Gorgas to James H. Burton, June 23, 1862, National Archives and Records Administration, "Compiled Service Records of Confederate General and Staff Officers and Nonregimental Enlisted Men" [herein after cited as Compiled Service Records], James H. Burton file, Fold3.com, 282.

13. "If there is any spare machinery at Fayetteville, it may be placed where it will be useful. I will write to Capt. Booth on the subject." *Ibid*, 282. Robert W. Pulliam to William D. Copeland, June 11, 1862, Confederate Citizens Files, William D. Copeland file, Fold3.com, 72.

14. Benjamin Sloan to Amasa W. King, October 7, 1863, Asheville Armory Letter Book, 158-159. In this letter Sloan asks King to account for articles listed on "the Property accounts of the Commanding Officer of the Armory for 1862 and for which you do not account on your Inventory." It is not known if King ever accounted for the missing rifle.

15. See Confederate Citizens Files, William D. Copeland file, Fold3.com, 73; William D. Riley file, Fold3.com, 4. The third was Archibald M. Kitzmiller, machinist and Chief Clerk of the Harpers Ferry Armory from 1836 to 1861. "List of Clerks in the C.S. Armory Columbia S.C. March 21, 1864, Asheville Armory Letter Book, 106; and National Archives and Records Administration, "Unfiled Papers and Slips Belonging in Confederate Compiled Service Records" [hereinafter cited as Unfiled Papers, Compiled Service Records], Archibald M. Kitzmiller file, Fold3.com, 1-4.

16. Copeland to Gorgas, June 26, 1862, Confederate Citizens Files, Copeland file, Fold3.com, 13.

17. King to Gorgas, Confederate Citizens Files, King file, Fold3.com, 8-9.

18. "Mr. Clayton is a carpenter and owns the property. Dr. Whitson is a gentleman of general genius but no practical knowledge of mechanics. Mr. Pulliam was a member of the firm of Gaines Dever & Co., who are merchants of this place. . . . I find also from Mr. Pulliam's information that he is mixing up public affairs with his own business which will be apt to lead to great confusion in his accounts. For instance, buying meal, flour, etc. to sell to the workmen at a price, as he states, to cover expenses, and accounting for the

funds so expended, as cash on hand. He informs me also that he keeps his cash, etc. at the store and when the men have signed the roll, gives them an order on Gaines Dever & Co. for the money." William S. Downer to Gorgas, November 22, 1862, quoted in Floyd, "The Asheville Armory and Rifle," 22. See also McKinney, "Premature Industrialization," 228-229.

19. Copeland to Burton, July 6, 1862, Confederate Citizens Files, Copeland file, Fold3.com, 20.

20. Copeland to Downer, October 7, 1862, Confederate Citizens Files, Copeland file, Fold3.com, 15.

21. Sloan to King, October 7, 1863, Asheville Armory Letter Book, 158.

22. Sloan to Thomas L. Clayton, February 25, 1863, Asheville Armory Letter Book, 50.

23. The other may have been Jennings Kitzmiller, fifteen-year-old son of Chief Clerk Archibald Kitzmiller. Unfiled Papers, Compiled Service Records, E.W. Stubbs file, 1-3,5,6 and Jennings Kitzmiller file, 1-6.

24. King to Downer, October 13, 1862, Confederate Citizens Files, Amasa W. King file, Fold3.com, 27-28.

25. *The Ordnance Manual for the Use of the Officers of the United States Army, Third Edition* (Philadelphia: J.B. Lippincott & Co., 1862), 187; *The Ordnance Manual for the Use of the Officers of the Confederate States Army, First Edition* (Charleston: Evans & Cogswell, 1863), 178.

26. King to Gorgas, November 11, 1862, Confederate Citizens Files, King file, Fold3.com, 12-13.

27. Invoice of King, December 27, 1862 [covers December 11-25, 1862], and Pulliam to King, December 8 and 10, 1862, Confederate Citizens Files, King file, Fold3.com, 57, 59, 58.

28. Gorgas to Downer, November 16, 1862, Combined Service Records, Downer file, Fold3.com, 521; Pulliam to Gorgas, November 24, 1862, Confederate Citizens Files, Pulliam file, Fold3.com, 10, 11.

29. "A copy of Major Downer's Report of the Rifle, manufactured at this armory, has been received, and the alterations suggested in obedience to yr order shall receive prompt attention." Sloan to Gorgas, December 24, 1862, Asheville Armory Letter Book, 1; "A copy of your report in reference to the reduction of the rifle barrels has been received. Master Armorer King informs me that there are a number of short barrels in the Richmond Armory which may be used in the manufacture of rifles at this Armory." Sloan to Downer, December 26, 1862, Asheville Armory Letter Book, 4.

30. Downer to Gorgas, April 20, 1863, quoted in Murphy and Madaus, *Confederate Rifles and Muskets*, 50. Downer is almost certainly referring to the rifles received at the Richmond Armory in the first shipment; he would not have been able to view personally the rifles of the second

shipment which went through Chattanooga to the Army of Tennessee.

31. "Forged" refers to iron. Sloan to Downer, January 10, and January 29, 1863, Compiled Service Records, Sloan file, Fold3.com, 74-76; see also Asheville Armory Letter Book, 16, 31.

32. For a fuller description of the Murphy collection rifle "55," see Murphy and Madaus, *Confederate Rifles and Muskets*, 50-54.

33. See photos of display by Paul D. Johnson, "Could My Bayonet Be Confederate?" at American Society of Arms Collectors meeting, Chattanooga, Tennessee, June 1, 2016, author's collection.

34. Gorgas to Downer, November 16, 1862, Combined Service Records, Downer file, Fold3.com, 521.

35. Downer to Gorgas, November 22, 1862, quoted in Floyd, "The Asheville Armory and Rifle," 22.

36. Biographical data sheet in author's possession, courtesy of David D. Winfield. See also index card relating Sloan's service in Combined Service Records, Sloan file, Fold3.com, 12.

37. Sloan to Gorgas, December 26, 1862, Asheville Armory Letter Book, 3.

38. For example, see Sloan to Peter Mallet, January 22, 1863, Asheville Armory Letter Book, 11. Colonel Mallet commanded Camp Holmes near Raleigh, North Carolina.

39. Sloan to Gorgas, December 30, 1862, "Orders No.2," and Sloan to Clayton December 31, 1862, Asheville Armory Letter Book, 8,9. For dismissals of workers in January, February, and March, 1863, see pages 10, 13-15, 17, 27, 39, 43, 49, 52, 56, 60, 63, 64, 66, 70.

40. Sloan to Pulliam, December 29, 1862, "Orders No. 15," February 16, 1863, Asheville Armory Letter Book, 7, 46.

41. Sloan to Gorgas, February 7, 1863, to "Mr. Hughes," February 18, 1863, and "Notice1," September 4, 1863, Asheville Armory Letterbook, 38, 48, 141.

42. Sloan to Downer, May 18, 1863, Compiled Service Records, Sloan file, Fold3.com, 132.

43. See the complete story of the Shelton Laurel Massacre and related events in Philip S. Paludan, *Victims: A True Story of the Civil War* (Knoxville: University of Tennessee Press, 1981).

44. Sloan to Gorgas, January 10, 1863, Asheville Armory Letterbook, 17; "Invoice of Ordnance and Ordnance Stores turned over by Capt. S.H. Reynolds to Capt. B. Sloan, Asheville Armory, by Special Messenger," January 16, 1863, Compiled Service Records, S.H. Reynolds file, Fold3.com, 273-274.

45. Sloan to Gorgas, June 24, 1863, Asheville Armory Letterbook, 110.

46. Unfiled Papers, Compiled Service Records, Wesley M. Justus file and B.F. Staggs file, Fold3.com, 1-5 and 1-6;

"Petition of Wesley M. Justus to the Commissioner of Claims," Case 16922, October 12, 1872, National Archives and Records Administration, "Southern Claims - Barred and Disallowed files," Fold3.com, 3-25. The Southern Claims Commission was established in 1871 to allow Union sympathizers in the former Confederacy to apply for reimbursement for property confiscated by U.S. armies during the Civil War. Justus asked for \$75 in compensation for a mule confiscated in 1865, but the examiner concluded that "His excuse that he worked three years making arms for the Confederacy to keep out of the Confederate army is untenable" and rejected the claim.

47. *Semi-Weekly Standard* [Raleigh, N.C.] May 1, 1863, 2.

48. *Weekly State Journal* [Raleigh, N.C.] April 30, 1862, 2; *Asheville News*, June 26, 1862, 3.

49. Confederate conscription laws allowed skilled men needed for work in government facilities and/or private businesses with state or national government contracts to be exempted from military service. Those already in military service could be detailed to work in government armories, but a shortage of manpower meant they often could not be spared from front line duties. Downer to Gorgas, November 22, 1862, quoted in Floyd, "The Asheville Armory and Rifle," 23.

50. Four men (Jim, John, Monroe, and Ned) are mentioned in invoice of Ephraim Clayton, September 30, 1862, Confederate Personnel Files, Ephraim Clayton file, Fold3.com, 9; two (John and Mack) are named in the invoice of Gaines, Deaver, and Company, September 30, 1862, Confederate Citizens Files, Gaines, Deaver, and Company files, Fold3.com, 26-27; one (Zack) is mentioned in the invoice of P.D. Gates, February 11, 1863, Confederate Citizens Files, P.D. Gates file, Fold3.com, 3; and five (Dick, Bill, Bob, Allen, and Lam) are named as Benjamin Sloan orders an increase in wages of \$2.25 per day, "Orders," July 3, 1863, Asheville Armory Letter Book, 111. Examples of additional references to slave labor include Sloan's letter to the local newspaper requesting an ad for hiring "ten Negro men" Sloan to Editor, *Asheville News*, March 20, 1863, Asheville Armory Letterbook, 70. See also the invoice for the labor of eight slaves for 44 days in December, 1863, while transferring the armory machinery to Greenville and Columbia, S.C. Invoice of Edward W. Maxwell, December 31, 1863, Confederate Personnel Files, Edward W. Maxwell file, Fold3.com, 4.

51. See previous note.

52. "Rates of Wages paid Workmen at the Asheville Armory NC, June 1863," Asheville Armory Letterbook, 126. The owners of two other enslaved men, John and Mack, described as "workmen in the armory," were paid \$5.15 for "hours extra time on Sundays and on hours cleaning Steam Engines & Machinery" in addition to an allowance of \$.57

per day for board at the armory. Invoice of Gaines, Deaver, and Company, September 30, 1862, Confederate Citizens Files, Gaines Deaver files, Fold3.com, 26-27. See also McKinney, "Premature Industrialization, 231-232.

53. Sloan to W.E.M. Galbraith, January 14 and 19, 1863, Asheville Armory Letterbook, 19, 25.

54. Benjamin Sloan, "Orders No. 11," January 16, 1863, Asheville Armory Letterbook, 23.

55. Sloan to Gorgas, February 2 and 16, and July 15, 1863, Asheville Armory Letterbook, 33, 47, 113.

56. "Will you turn these barrels over to P.D. Gates and furnish him transportation for the same to this place [?]. A requisition has been made for the barrels." Sloan to Downer, December 26, 1862, Asheville Armory Letter Book, 4. Sloan either knew about these barrels already or King had reported them upon his return to Asheville on December 26, 1862.

57. Annealing is a heat treatment applied by placing the red-hot barrels in a bed of fine charcoal to make them less brittle, hence easier to grind, polish, and finish. Sloan to P.D. Gates, January 15, 1863, Asheville Armory Letterbook, 22; invoice of P.D. Gates, February 11, 1863, Confederate Citizens Files, Gates file, Fold3.com, 3; Sloan to Downer, January 29, 1863, Asheville Armory Letter Book, 4. By February 25, 1863, 100 of the 200 arms had been packed and made ready for shipment. Sloan telegraphed Gorgas on February 27, stating that the remaining 100 would be ready on March 10. Sloan to Gorgas, Asheville Armory Letterbook, 50, 51.

58. Sloan to Gorgas, February 25, 1863, Compiled Service Records, Sloan file, Fold3.com, 84, with Downer's response on the back, 83; see also Asheville Armory Letter Book, 50.

59. Sloan to George Spears, March 10, 1863, Confederate Citizens Files, George Spears file, Fold3.com, 14; see also Asheville Armory Letter Book, 61-63. The letter in Spears's file instructs him to obtain "all short rifle barrels," but the word "musket" has been inserted; the two copies of this letter in the letter book (one of which is struck out) says only "short rifle barrels."

60. Sloan to Gorgas, March 28, 1863, Asheville Armory Letter Book, 74.

61. Sloan to Downer, March 28, 1863, Compiled Service Records, Sloan file, Fold3.com, 80, with Downer's response (quoted) on the back, undated, 79.

62. It is also possible that these were the older welded iron barrels made before the barrel rolling machine was in place, which had been rejected due to cinder holes (tiny cavities in the iron caused by gas bubbles) or some other flaw. For detailed descriptions of barrel and gun-making processes of this era see Jacob Abbott, "The Armory at Springfield," and T. Addison Richards "The Norwich Armories," *Harpers*

*New Monthly Magazine* 5:26 (July 1852), 145-161, and 28:166 (March 1864), 450-465.

63. "Every effort is being made to supply you with arms by the 15th of March." This included 1,000 arms from the Knoxville Arsenal, 200 from the cargo of the blockade runner *Giraffe*, 200 from the Asheville Armory, 300 from the Fayetteville Armory, and 1,400 from the Richmond Armory. Gorgas to Hypolite Oladowski, February 24, 1863, Compiled Service Records, Hypolite Oladowski file, Fold3.com, 678. Invoice of G.H.A. Adams, March 24, 1863, Confederate Citizens Files, G.H.A. Adams file, 42.

64. See correspondence regarding barrel production and iron supplies at the Richmond Armory in Davies, *C.S. Armory Richmond* 133, 138, and on the barrels for the Fayetteville Armory in Murphy and Madaus, *Confederate Rifles and Muskets*, 212-213. On page 124, Davies notes that the 459 rifle barrels must have been intended for the Asheville Armory since another 288 rifle barrels were specifically designated for the Fayetteville Armory. On page 212, Murphy and Madaus note the receipt of 278 barrels at Fayetteville on June 5, 1863.

65. Burkhardt to Frederick L. Childs, enclosed in Childs to Gorgas, July 3, 1863, quoted in Murphy and Madaus, *Confederate Rifles and Muskets*, 212.

66. King to unidentified recipient, October 2, 1863, Compiled Service Records, King file, Fold3.com, 19.

67. Sloan to Burton, April 8, 1863, Compiled Service Records, King file, Fold3.com, 7; Sloan to King, April 8, 1863, Asheville Armory Letter Book, 78.

68. Sloan further specified: "Iron to be clear of sulphur, soft and easy to weld. If made at Cranberry Works the magnetic and clay ore should be used in equal proportion and well roasted. The skelps should be clean upon the surface without tag ends." Sloan to Clayton, April 18, 1863, Asheville Armory Letter Book, 77, 78. Clayton, King, and Downer were already familiar with the Cranberry Iron Works, having visited it together in November, 1862. Invoice of Amasa W. King, November 22, 1863, Confederate Citizens Files, King file, Fold3.com, 54, 55.

69. The Cranberry Iron Works and McKinna and Orr were or soon would be supplying the C.S. Ordnance Bureau as a whole, not just the Asheville Armory, but Sloan hoped to divert some production his way. Sloan to McKenna and Orr December 26, 1862, Sloan to L.J. Johnson, January 29, 1863, Sloan to Simpson Bobo [Hurricane Iron Works], January 14, 1863, copy of order from C.S. Nitre and Mining Bureau, April 23, 1863, Sloan to R.A. Irwin, June 3 and 10, 1863, Asheville Armory Letter Book, 4, 29, 19, 90, 104, 106.

70. Sloan to William Miller, March 18, 1863, Asheville Armory Letter Book, 69.

71. Sloan to Gorgas, April 15, 1863, Asheville Armory Letter Book, 82, 83.

72. Sloan to Gorgas, May 20, 1863, Asheville Armory Letter Book, 94.

73. Sloan to Gorgas, June 2, 1863, Asheville Armory Letter Book, 101-102.

74. "List of Machines & Machinery at the C.S. Armory at Columbia SC 5th April 1864," and Burton to Gorgas, April 8, 1864, Compiled Service Records, Burton file, Fold3.com, 559, 550. An additional list from November, 1864, indicates the armory had yet to complete a banding machine, a breech inletting machine, "grinders for milling main spring swivels," "inletting machine for But plates & ramrods," and "Gauges for Bayonet Sockets." "Summary Statement of Work done at the C.S. Armory Columbia SC in the month of November 1864," Compiled Service Records, McPhail files, Fold3.com, 147-148. See also McPhail to Gorgas, February 2, 1864, with attached list entitled "Additional Machinery required for the Columbia Armory to manufacture 800 arms per month," Asheville Armory Letter Book, 233. Noticeably absent from this list is a barrel bedding machine, probably indicating that it had already been built.

75. The machinery was moved from Asheville to temporary storage in Greenville, South Carolina, in October and November, 1863, then sent to Columbia, where buildings had to be constructed to house them. McPhail did not relocate to Columbia until February 25, 1864. Burton to Gorgas, April 8, 1864, Compiled Service Records, Burton file, Fold3.com, 553. It seems unlikely under these circumstances that there was time or opportunity to construct much if any new machinery until after April, 1864.

76. Sloan to Gorgas, June 2, 1863, Asheville Armory Letter Book, 101-102.

77. Sloan to Gorgas, April 28, 1863, Asheville Armory Letter Book, 84.

78. Sloan to Gorgas, June 23, 1863, Asheville Armory Letter Book, 109.

79. A "Set Saw for Milling bayonet Stud" was among items listed as fabricated in "Summary Statement of Work done at the C.S. Armory Columbia SC in the month of November 1864," Compiled Service Records, McPhail files, Fold3.com, 147. There was one "model bayonet" reported in the inventory of September 30, 1863. "Return of Ordnance & Ordnance Stores received, Issued, and Remaining on hand at the Asheville Armory in charge of Thomas L. Clayton, Acting Military Storekeeper, during the Quarter Ended 30th Sept 1863," Confederate Citizens Files, Clayton file, Fold3.com, 39.

80. Sloan to Gorgas, June 2, 1863, Asheville Armory Letter Book, 102.

81. List of Clerks in the C.S. Armory, Columbia S.C. March 21st 1864," Asheville Armory Letter Book, 306; "Report: The Select Committee of the Senate appointed to

inquire into the late invasion and seizure of the public property at Harper's Ferry," United States Senate, 36th Congress, 1st Session, [published June 15, 1860], 49-51. Joseph Barry, *The Strange Story of Harper's Ferry With Legends of the Surrounding Country* (Martinsburg, West Va.: Thompson Brothers, 1903) 64, 68-69.

82. "The principal delay was caused by the difficulty of again collecting the arms." Sloan to Gorgas, September 9, 1863, Asheville Armory Letter Book, 145; Invoice of Archibald Kitzmiller, September 21, 1863, Confederate Citizens Files, Archibald Kitzmiller file, Fold3.com, 11.

83. Notation by Sloan: "July 22nd - Col Gorgas notified that 200 rifles will be ready by the last of the month," Asheville Armory Letter Book, 117; Sloan to King [who then was at the Richmond Armory], August 6, 1863, Asheville Armory Letter Book, 129. King was probably referring to the period between May and July when he later remarked "I have made my 200 rifles a month." King to Downer, October 2, 1863, Confederate Citizens Files, King file, Fold3.com, 21.

84. Invoice of G.H.A. Adams, September 7, 1863, Confederate Citizens Files, Adams file, 32; 200 arms are shown as issued to Colonel Hypolite Oladwski on August 27, 1863 in "Return of Ordnance & Ordnance Stores received . . . Quarter Ended 30th Sept 1863," Confederate Citizens Files, Clayton file, Fold3.com, 39. For research on the distribution of these 135 arms, see Murphy and Madaus, *Confederate Rifles and Muskets*, 61-62. Company C (infantry) was comprised of men of the Lula Fire Company, Number 3; Company F (cavalry), was comprised of men of the "Lula Videttes."

85. For a full description of the rifles at the North Carolina State Museum and Greensboro Museum of History, see Murphy and Madaus, *Confederate Rifles and Muskets*, 54-57.

86. See photos of display by previous owner Josh Phillips, "The Neely Family Asheville Armory Rifle from the Battle of Franklin," Middle Tennessee Civil War Show, Franklin, Tennessee, December 1, 2012, author's collection.

87. Murphy and Madaus, *Confederate Rifles and Muskets*, 62, note 31. It is far less likely that the rifles were identified by the "Asheville N.C." cartouche on the stock, since not all rifles were so marked and such marks were often obscured by wear.

88. "Return of Ordnance & Ordnance Stores received . . . Quarter Ended 30th Sept 1863," Confederate Citizens Files, Clayton file, Fold3.com, 39-43.

89. Thomas K. Tate, *From under Iron Eyelids: The Biography of James Henry Burton, Armorer to Three Nations* (Bloomington, Ind.: Author House, 2006), 154-158. Tate's quotation and information on the Virginia rifle come from Burton's papers at Yale University.

90. Murphy and Madaus, *Confederate Rifles and Muskets*, 57.

91. "Return of Ordnance & Ordnance Stores received . . . Quarter Ended 30th Sept 1863," Confederate Citizens Files, Clayton file, Fold3.com, 39-43.

92. Notation by Sloan, July 1, 1863, Sloan to Carter & Hardin [Cranberry Iron Works], September 2, 1863, Asheville Armory Letter Book, 110, 138.

93. Sloan to G.H.A. Adams, June 4, 1863, and Sloan to Gorgas October 21, 1863, Asheville Armory Letter Book, 105, 160; invoice of G.H.A. Adams, June 23, 1863, Confederate Citizens Files, Adams file, Fold3.com, 44.

94. Sloan to Carter & Hardin, July 2, 1863 and June 22, 1863, Asheville Armory Letter Book, 110-111, 108.

95. The new owners were Ezekiel P. Jones and Cyrus P. Mendenhall, partners in Mendenhall, Jones, and Gardner, which fabricated rifles for the state of North Carolina. Sloan to Jones and Mendenhall, August 13, 1863, and to "Chief of the Nitre and Mining Bureau," September 21, 1863, Asheville Armory Letter Book, 130, 138.

96. Sloan to Gorgas, June 23, 1863, Asheville Armory Letter Book, 109.

97. Sloan to Downer, June 30, 1863, Compiled Service Records, Sloan file, Fold3.com, 130.

98. King to Downer, August 26, 1863, Confederate Citizens Files, King file, Fold3.com, 23.

99. Unfiled Papers, Compiled Service Records, Mathew Woods file, Fold3.com, 1-5; "Orders," September 30, 1863, Asheville Armory Letter Book, 155-156.

100. Sloan to William Glaze, August 24, 1863, Asheville Armory Letter Book, 133.

101. King to unidentified recipient, October 2, 1863, Compiled Service Records, King file, Fold3.com, 20-22. King addresses the letter "Dear Major." This is almost certainly Major William S. Downer, given that King's previous correspondence with him on August 26 had been similarly confidential in tone.

102. Kitzmiller to Downer, September 2, 1863, Confederate Citizens Files, Kitzmiller file, Fold3.com, 17-18.

103. Sloan to Gorgas, August 25, 1863, Asheville Armory Letter Book, 134.

104. Sloan to Gorgas, September 14, 1863, Asheville Armory Letter Book, 147.

105. "Orders," and Sloan to Gorgas, September 5, 1863, Asheville Armory Letter Book, 141, 143.

106. King to unidentified recipient, October 2, 1863, Compiled Service Records, King file, Fold3.com, 21.

107. Sloan to J.C. McRae [Camp Vance, N.C.], September 22, 1863, and Sloan to Gorgas, October 7, 1863, Asheville Armory Letter Book, 152, 162.

108. See copies of Special Orders 226, September 23, 1863, and 180, October 2, 1863, Asheville Armory Letter Book, 171.

109. McPhail to Gorgas, October 15, 1863, Asheville Armory Letter Book, 172.

110. McPhail to D.B. Brank, October 15, 1863, and to McKenna and Patton, October 17, 1863, Asheville Armory Letter Book, 173, 176.

111. McPhail to Gorgas, October 16, 1863, and to Richard M. Cuyler, October 17, 1863, Asheville Armory Letter Book, 174, 177; Murphy and Madaus, *Confederate Rifles and Muskets*, 213-214.

112. King to unidentified recipient, October 2, 1863, Compiled Service Records, King file, Fold3.com, 21, 22.

113. McPhail to King, October 24, 1863, Asheville Armory Letter Book, 186. The order has been struck through with pencil and written beside it is the word "cancelled."

114. "Special Order No.2," October 24, 1863, Asheville Armory Letter Book, 188.

115. McPhail to King, October 24, 1863, to Clayton, October 28, 1863, and to Justus, October 26, 1863, Asheville Armory Letter Book, 187, 189, 207.

116. McPhail to Gorgas, October 26, 1863, and Gorgas to McPhail, November 4, 1863, Asheville Armory Letter Book, 208, 192.

117. McPhail to King, October 19 and 20, 1863, Asheville Armory Letter Book, 178.

118. King to unidentified recipient, October 2, 1863, Compiled Service Records, King file, Fold3.com, 21, 22.

119. Sloan to A. Snowden Piggott [surgeon and acting commander of the C.S. Medical Laboratory at Lincolnton, N.C.], Sept. 8, 1863, Asheville Armory Letter Book, 144.

120. Endorsement of Josiah Gorgas, September 23, 1863, on letter of Zebulon Vance to James A. Seddon, September 21, 1863, *Official Records*, Series I, Vol. 29, Part 2, 740.

121. Over the previous quarter the armory had expended 11,768 pounds of bar iron, 1,000 pounds of scrap iron, and all of its cast iron and "castings" (type not specified). Hence, the armory was in need of additional materials in order to continue production. Significantly, the return lists 153 barrel skelps on hand at the beginning of the quarter and only three expended, strongly suggesting they were considered to be of insufficient quality. "Return of Ordnance & Ordnance Stores received . . . Quarter Ended 30th Sept 1863," Confederate Citizens Files, Clayton file, Fold3.com, 39-43.

122. According to Fuller and Steuart, Lawrence Pulliam, the son of Robert W. Pulliam, wrote to E. Berkley Bowie in 1931 indicating that total output was no more than 1,000. In 1922, Benjamin Sloan recalled that by the spring of

1863, the armory was turning out 300 “beautiful and efficient muzzle-loading rifles” per month. Fuller and Steuart, *Firearms of the Confederacy*, 192.

123. The first book tells the story of the Jewish revolt against the Greek king Antiochus, who had attempted to restrict Jewish religious customs, and the second is the story of Daniel discrediting idol worship in the court of the Persian king Cyrus.

124. Over the previous quarter the armory had expended 67 pounds of powder, three spools of thread, and 48 gross (6,912) units of cartridge paper. It had also expended 2,700 percussion caps (leaving 5,000 on hand), 110 friction primers (leaving 190 on hand), but none of its shot (listed as 25 pounds). Presumably this reflects drill and practice by the armory guard company and battery. “Return of Ordnance & Ordnance Stores received . . . Quarter Ended 30th Sept 1863,” Confederate Citizens Files, Clayton file, Fold3.com, 39.

125. “List of Machines & Machinery at the C.S. Armory at Columbia SC 5th April 1864,” April 8, 1864, Compiled Service Records, Burton file, Fold3.com, 559. It is believed that that all or most of this machinery was moved from Asheville and not fabricated in Columbia.

126. Untitled orders, December 1, 1863, McPhail to Downer, December 2, 1863, and McPhail to Gorgas, February 3, 1864, Asheville Armory Letter Book, 215, 220, 236.

127. McPhail to Downer, February 8, 1864, Combined Service Records, McPhail file, Fold3.com, 157.

128. McPhail to Gorgas, February 25, 1864, Asheville Armory Letter Book, 278-279. A court-martial was ordered, but King’s declining health and subsequent resignation precluded any further action. Gorgas to J.J. Pringle Smith, March 5, 1864, Asheville Armory Letter Book, 290; King to Gorgas, April 5, 1864, Compiled Service Records, King file, Fold3.com, 34. King died on June 1, 1864 of unspecified causes. His obituary noted that he was a man of “ardent and enthusiastic temperament.” and that “what he thought or felt, he expressed, regardless of the frowns of authority or the threats of power.” *The Daily South Carolinian*, June 10, 1864, 2.

129. Burton to Gorgas, April 8, 1864, Compiled Service Records, Burton file, Fold3.com, 549, 552.

130. McPhail to Gorgas, March 14 and May 3, 1864, Asheville Armory Letter Book, 296, 255.

131. McPhail to Gorgas, February 2, 1864, with list “Additional Machinery . . . to manufacture 800 arms per month,” Asheville Armory Letter Book, 233. McPhail believed the Morse machinery rightfully belonged to the Confederate government, not the state of South Carolina. McPhail to Gorgas, February 2, and April 6, 1864, Asheville Armory Letter Book, 234, 324.

132. On the missing boiler see McPhail to Gorgas, May 23, 1864, with copy of letter from E.W. Stubbs to McPhail, May 6, 1864, Asheville Armory Letter Book, 375. “I am now ready to commence turning out guns but my operations will be impeded for want of sufficient numbers of these [milling] machines.” McPhail to Burton, August 18, 1864, Combined Service Records, McPhail file, Fold3.com, 198.

133. McPhail to Gorgas, September 15, 1864, Combined Service Records, McPhail file, Fold3.com, 196.

134. McPhail to Burton, September 26, 1864, Combined Service Records, McPhail file, Fold3.com, 145.

135. See the discussion of the walnut shortage and moving the Harpers Ferry stocking machinery in Davies, *C.S. Armory Richmond*, 225-275; the missing workmen are addressed on page 259.

136. The Columbia Armory repaired at least 1,180 “old arms” and probably many more. See “Summary Statement . . . November 1864,” Compiled Service Records, McPhail files, Fold3.com, 148.

137. McPhail to Gorgas, February 25, 1865, quoted in Davies, *C.S. Armory Richmond*, 273-274.

138. Trotter, *Bushwhackers!*, 291-294; “Civil War Battle of Asheville,” Asheville and Buncombe County, accessed April 24, 2016, <http://ashevilleandbuncombe-county.blogspot.com/2010/05/civil-war-battle-of-asheville-6-april.html>.

139. Gorgas to Burton, June 23, 1862, Compiled Service Records, Burton file, Fold3.com, 282.

140. Gorgas to Downer, April 11, 1863, Compiled Service Records, Downer file, Fold3.com, 371.

141. McPhail to J.T. Trezevant, December 22, 1863, Asheville Armory Letter Book, 222.

Appendix 1: Extant Asheville Armory Rifles

Components							Markings					Provenance	
Butt	Ramrod Spring	Lock-plate	Hammer	Bands	Lock	Stock	Breech	Interior	Other	Ship-ment	Owner		
curve	no	M1841 (tail ground)	M1841	iron	Eagle/CS Asheville./ N.C.	AWK/ Asheville N.C.	V/P/S	55 (barrel)	none	1	Greensboro Museum of History (Murphy)		
curve	no	M1841 (tail ground)	Asheville	iron	Eagle/CS Asheville./ N.C.	AWK	S	X 116 (barrel)	"B" "x" "gdm" on stock	1	Atlanta History Center (Wray)		
curve	no	Asheville	M1841	brass	CS/ Asheville./ N.C.	unmarked	V/P/S	unknown	stock cut down, barrel original length	2 or 3	North Carolina State Museum		
curve	no	Asheville	M1841	brass	Asheville./ N.C.	unmarked	V/P/S	/// 160 (barrel)	none	2 or 3	Greensboro Museum of History (Floyd, Murphy)		
curve	no	Asheville	M1841	iron	Asheville./ N.C.	AWK	V/P/S 1863	196 (barrel)	none	2 or 3	Rick Abel		
curve	no	Asheville	M1841	iron	CS/ Asheville./ N.C.	unmarked	S	258 (barrel)	stock cut down, 4-digit numbers and small brass plaque on butt	2 or 3	Michael D. Kramer		
flat	no	Asheville	Asheville (cracked)	brass	Asheville./ N.C.	unmarked	unmarked	V/H (lock, stock, barrel)	M1841 sideplate; "CKW" on butt	3 or 4	Milwaukee Public Museum		
flat	no	Asheville	M1841	brass	unmarked	Asheville N.C.	unmarked	Punch mark under barrel	"G" on hammer	3 or 4	Michael D. Kramer		
flat	yes	Asheville	M1841	brass	unmarked	AWK/ Asheville N.C.	unmarked	423	replaced bayonet stud;	4	Atlanta History Center (DuBose)		
flat	yes	Asheville	M1841	brass	unmarked	Asheville N.C.	unmarked	H under buttplate	flaw in stock tip	4	Steve Ransbotham		
flat	yes	Asheville	M1841	brass	unmarked	Asheville N.C.	unmarked	437	cut to carbine length; brass heart on wrist	4	Steve Ransbotham		
flat	yes	Asheville	M1841	brass	unmarked	AWK (?)	unmarked	none	flaw in stock tip	4	Gary D. Albert		
flat	yes	Asheville	Asheville	brass	unmarked	unmarked	V/P/S	/// x51 (barrel) 20 (lock)	had buckshot cartridge	5	David D. Winfield		
flat	yes	Asheville	Asheville	brass	unmarked	unmarked	unmarked	85 (lock, stock, barrel)	M1841 sideplate; stock restored to rifle length	5	Atlanta History Center (Wray)		
flat	no	Asheville	Asheville	brass	unmarked	unknown	unknown	unknown	none	?	Unknown; pictured in Floyd (1982)		



**Appendix 2: Fabrication and Deliveries of Asheville Armory Rifles**

Fabrication		Deliveries			
Date of Fabrication	Number Fabricated	Date of Delivery	Number Delivered	Place of Delivery	Remarks
October to December 1862	200	December 11–25, 1862	200	Richmond Arsenal	Escorted by A.W. King
January to March 1863	200	March 12–23, 1863	200	Chattanooga	Escorted by G.H.A. Adams For Army of Tennessee
March to June 1863	200	June 18–July 31, 1863	200	Selma Arsenal	Escorted by A. Kitzmiller Boxes broken open Knoxville
June to July 1863	200	August 17–27, 1863	200	Atlanta Arsenal	Escorted by G.H.A. Adams Issued Atlanta Fire Btn.
August 1863	0	N/A	0	N/A	Figure from A.W. King letter
September 1863	132	unknown	unknown	unknown	Figure from A.W. King letter
October 1863	75 (est.)	unknown	unknown	unknown	Estimate from A.W. King
<b>TOTAL FABRICATED = 932 (documented) to 1,007 (A.W. King estimate)</b>					