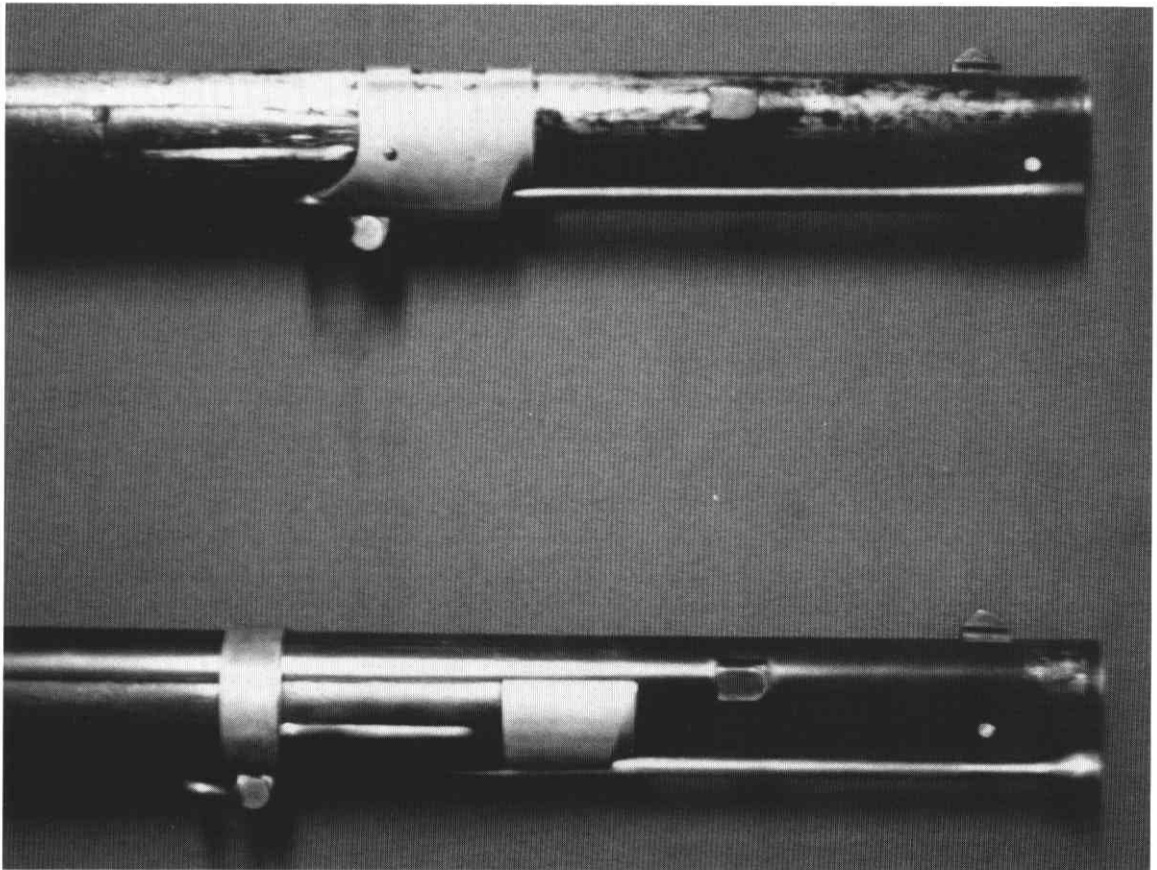


**An 1841 Type III alteration (top) with an 1855 rifle, showing their rear sights, which are the same!**



**Front sights and bayonet lugs of the 1841 Type III alteration (top), which are the same as on the Model 1855.**

# Harpers Ferry Alteration of the Model 1841 Rifle

M.D. Beckford

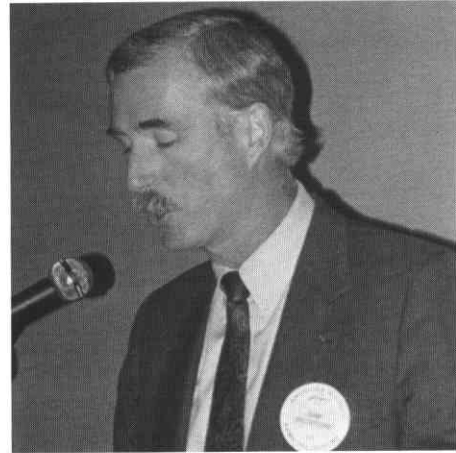
On May 13, 1846, President James Polk signed the declaration of war with Mexico. Eighteen days earlier a skirmish on the Rio Grande had taken place and "American Blood" had been spilled. The relationship with Mexico had been worsening since the annexation of Texas in 1845. Now there was no turning back: the United States was at war with a foreign country for the first time since the War of 1812.

War fever abounded, and so great was the enthusiasm for volunteering in some states that it was hard to find a spot to serve. President Polk had called for only 50,000 volunteers: therefore some states were limited to only one regiment. This created great outrage from some states and indignation from Southern states in particular, as they felt that Northerners were not as well suited for combat in Mexico as the Southerners were.<sup>1</sup>

In Mississippi, one volunteer, a graduate of West Point in 1828 named Jefferson Davis, now a young congressman, expressed a desire to lead a regiment of volunteers. Jefferson Davis was elected Colonel of the First Mississippi Regiment at Camp Independence, near Vicksburg, Tennessee, on June 18, 1846.<sup>2</sup> Davis's men for the most part were reputedly superb marksmen and only the best equipment would do. Dressed in red shirts, white duck pants, and black slouch hats (conspicuous for warfare), they were armed with the most modern rifles available. Davis had insisted on being armed with the new Model 1841 rifle, manufactured in New Haven, Connecticut, by Whitney. Davis eventually received 1,000 of these rifles, enough to outfit four companies.<sup>3</sup>

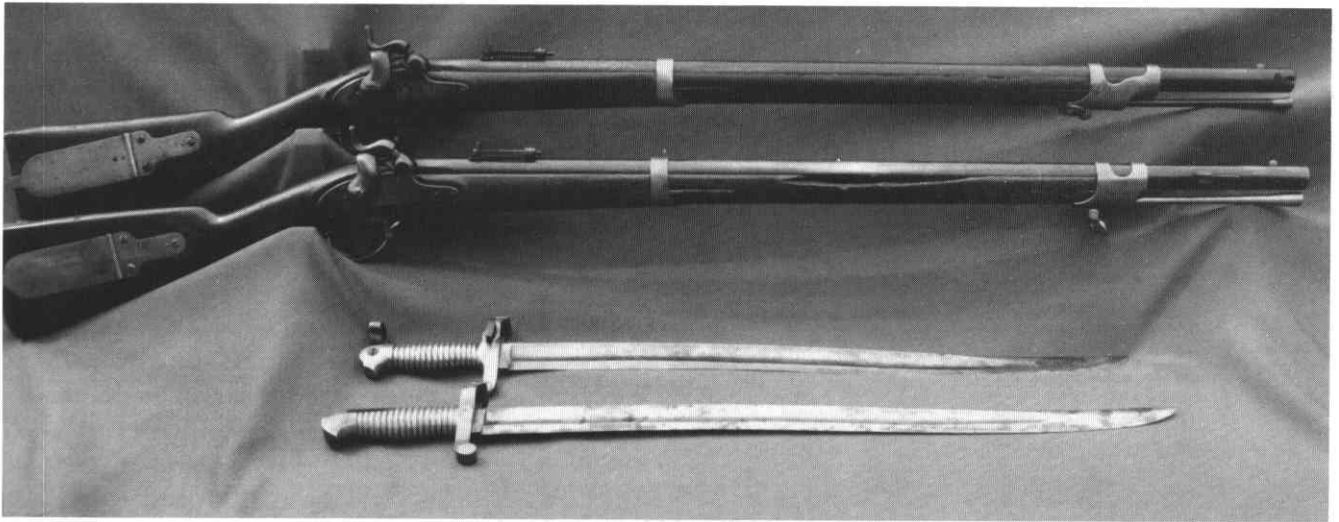
He had to fight for these new rifles over the advice of General Winfield Scott, who said they had not been sufficiently tested. It was the intervention of President Polk, in exchange for Davis's vote on a "Tariff Bill", that Davis was able to secure the new rifles. The Whitney rifles were delivered by ship to the regiment in New Orleans, where Davis joined his command on July 21, 1846.<sup>4</sup>

This new rifle, the Model 1841, was of .54 caliber, with seven lands and grooves with one turn in 48, the same rifling twist as the Hall pattern rifle also manufactured at Harpers Ferry. The Model 1841 percussion rifle fired a patched .54 cal ball with a 75 grain powder charge. The overall length was 48 inches, with a 33 inch browned barrel. The bands, trigger guard, buttplate, and patch box were made of brass, as was the tip of the iron ramrod. The sight consisted of a brass front blade sight with a fixed block shallow V rear sight dovetailed into the barrel, 2

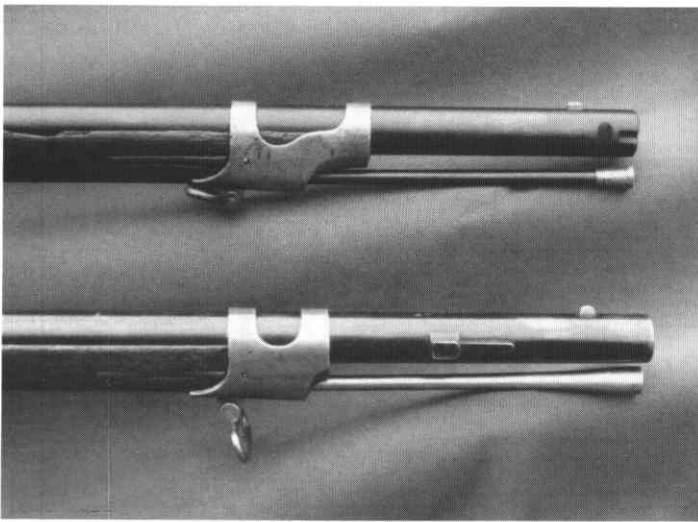


7/8 inches from the breech. The rifle had no provision for a bayonet and was supplied with a rifleman's pouch and flask. These pouch and flask sets were used from 1830 with the Hall rifle into the 1850s with the Model 1841 percussion rifle (until replaced by a cartridge box). The pouch was of black leather, 7 inches wide, 5 1/2 inches deep with gussets for expansion. The pouch was worn suspended from a buff sling which slipped through two Japanned rings at the back of the pouch near the top. A flask was also suspended from the buff strap and these were made by Ames or Batty. These were known as Peace Flasks, because of the clasped hands that were incorporated into the design.

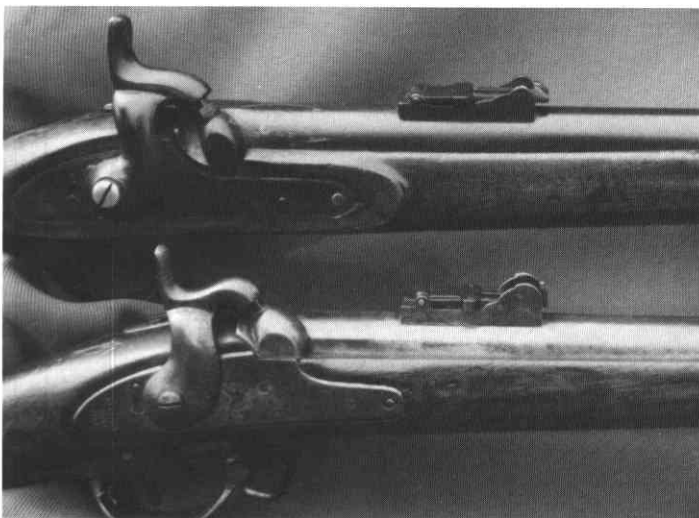
Thus armed, Col. Davis's First Mississippi Riflemen were to make good account of themselves and their new rifles at the Battle of Buena Vista, in February of 1847. Prior to this battle, General Zachary Taylor's army had been reduced by General Winfield Scott, pulling out most of his experienced troops. Among the troops Taylor had left were Davis's Mississippi Riflemen and the battery of Major Braxton Bragg (later of Confederate fame). Just before the battle Santa Anna called upon Taylor to surrender and after being told to "go to hell,"<sup>5</sup> the Mexican army advanced. Taylor withdrew to a more strategic position better suited for his smaller force to fight Santa Anna's larger army. The First Mississippi Regiment, now down to 358 men, were to play a vital role in this decisive battle. As the American left flank collapsed and retreated in panic, Davis's regiment was ordered forward. After waiting for the retreating Indiana troops to fall behind his position, Davis's troops opened fire with their rifles at very close range, displaying deadly marksmanship and stopping the enemy. Davis then arranged his regiment and the remains of the Indiana



The 1841 Benton/Snell sighted alteration (top) and Benton sighted, new short nose cap and bayonet lug for sword bayonet.



The Benton/Snell alteration (top) showing two cuts in barrel for Snell bayonet, with original nose cap and ramrod. At bottom is Benton-sighted alteration with new front band and ramrod, and bayonet lug with guide.



Pattern 1853 Enfield rear sight (top) and an 1841 rifle altered to Enfield slide pattern rear sight.

regiment into an inverted V with the open end facing the enemy. The Mexican Lancers galloped forward in massed order until they were just into the V formation and unaccountably slowed down and halted instead of charging. Davis's men opened fire at 80 yards, devastating the lancers, who turned and fled! Col. Davis was wounded and the First Mississippi regiment suffered 30 killed and 40 wounded, but had stopped the Mexican advance and turned the tide of battle!<sup>6</sup> When the battle was finally over, General Taylor had suffered 665 casualties to Santa Anna's 3533 killed, wounded and missing. Not only had the Mexican War tested many individuals who would rise to fame in another war fourteen years later, it had proven with devastating effect the accuracy and stopping power of the new US Model 1841 percussion rifle.

When the government adopted the new Model 1841 rifle, it adopted a firearm that was almost completely different from its predecessors, the 1803 and the 1817 common rifle: only the caliber was the same. As the popularity of this new rifle, now known as the Mississippi Rifle due to its Mexican War fame grew, contracts to supplement the production at Harpers Ferry were given to other contractors. Tryon of Philadelphia, Pennsylvania, Whitney of New Haven, Connecticut, Remington of Herkimer, New York, Robbins, Kendall and Lawrence (later Robbins & Lawrence) of Windsor, Vermont, and William Glaze of South Carolina all manufactured Model 1841 rifles under government contracts. Total production was 98,796. In the years to follow, the 1841 rifle was altered by Harpers Ferry and individual states and copied by private firms in the south and used as a pattern for their rifles. The 1841 rifle was also altered in an attempt to modernize the rifle into a breechloader: the Linder, Merrill, and Montstrom conversions were made, which I will discuss later on.

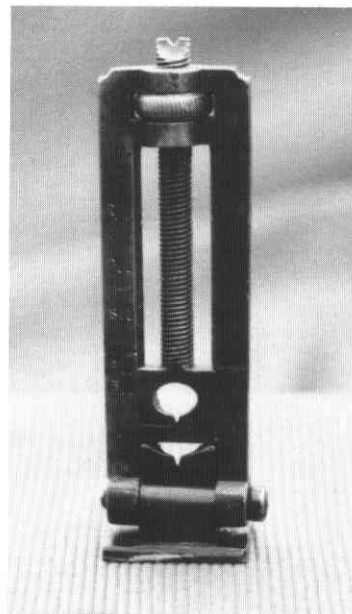
But it is early 1850 that saw the first of many changes at the government arsenal, in an attempt to keep up with

the advances that were being made in Europe, largely due to the development and accuracy of the elongated bullets of the Minie type. It is these alterations to the 1841 rifle that I will now discuss.

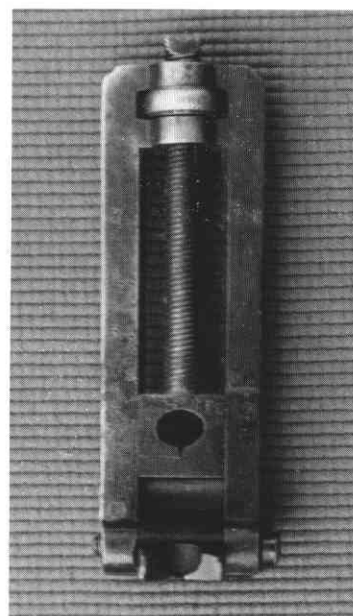
The National Armory at Harpers Ferry started making 1841 rifles in 1845-46, producing 700 that year, and 25,296 over the next ten years, until 1855.<sup>7</sup> Model rifles had been produced since 1841 and distributed to contractors along with components and gauge sets for the verification of parts.<sup>8</sup>

In 1853 and 1854 Col. Huger of the Ordnance Department experimented at Harpers Ferry with the rifle "a Tige," and regulation rifles and muskets. His experiments included rifling of different styles and depth, and many different projectiles. During these trials it had been found that by modifying the Minie bullet and not using the metal plug of the original Minie, greater accuracy could be achieved. Rifles had been fired at ranges of up to 450 yards and were found to equal the Tige rifle in accuracy. Col. Huger noted that all that was necessary was to "make new ramrods and breech sights which can be made at the armory and applied to whatever arms they desired so that the range and efficiency could be doubled at a trifling expense."<sup>9</sup> In a summary of his report, Col. Huger states that by direction of the Colonel of Ordnance, a rifle is also submitted with a sword bayonet attached. The sword is to be worn habitually as a side arm and "in case of need can be promptly and firmly attached by a very simple lock to the muzzle of the rifle and used as a bayonet."<sup>10</sup>

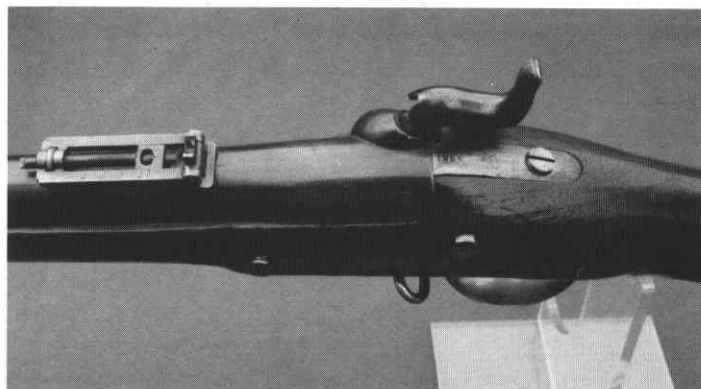
This led to the further experimentation with the regulation Model 1841 rifle at Harpers Ferry in 1854. In the course of these experiments, Lt. J.G. Benton of the Ordnance Department realized he would have to make a new rear sight, one capable of being adjusted for elevation. As a result of having to fabricate a sight that could be used with a variety of guns, he developed the screw sight now called the Benton sight. This sight is basically a block sight with a 1/2 inch base that fits into a dovetail in the barrel. The sight has a ladder that pivots on the block sight and contains a screw mechanism for adjusting an aperture sight that slides in the side rails as the screw is turned. During 1854 and 1855, 590 Model 1841 rifles were altered to take this screw sight developed by Lt. Benton. These rifles were also altered to take a sword bayonet with a unique method of attachment, generally credited to Mr. Chancey Snell of Auburn, New York.<sup>11</sup> To attach this bayonet two elliptical cuts were made to the barrel. The bayonet had a ring attached at the hilt that slipped over the muzzle and front sight and a transverse spring-loaded thumb screw that, when depressed and turned, rotates a half round pin that locks into the elliptical cut in the barrel, locking the bayonet



The Benton screw pattern rear sight, leaf up.



The leaf of the Benton screw pattern sight.



An 1851 dated M1841 rifle with 1855 dated barrel, Benton screw sight, and (not shown) a short nose cap for sword bayonet.



Top, an original M1841 dated 1846, then Benton/Snell altered 1841 rifle, .54 calibre; Benton/Snell bayonet altered 1841 rifle dated 1851/55, .54 calibre, and an 1854 dated Type II slide sight alteration of 1841 rifle, .54 calibre, with bayonets.

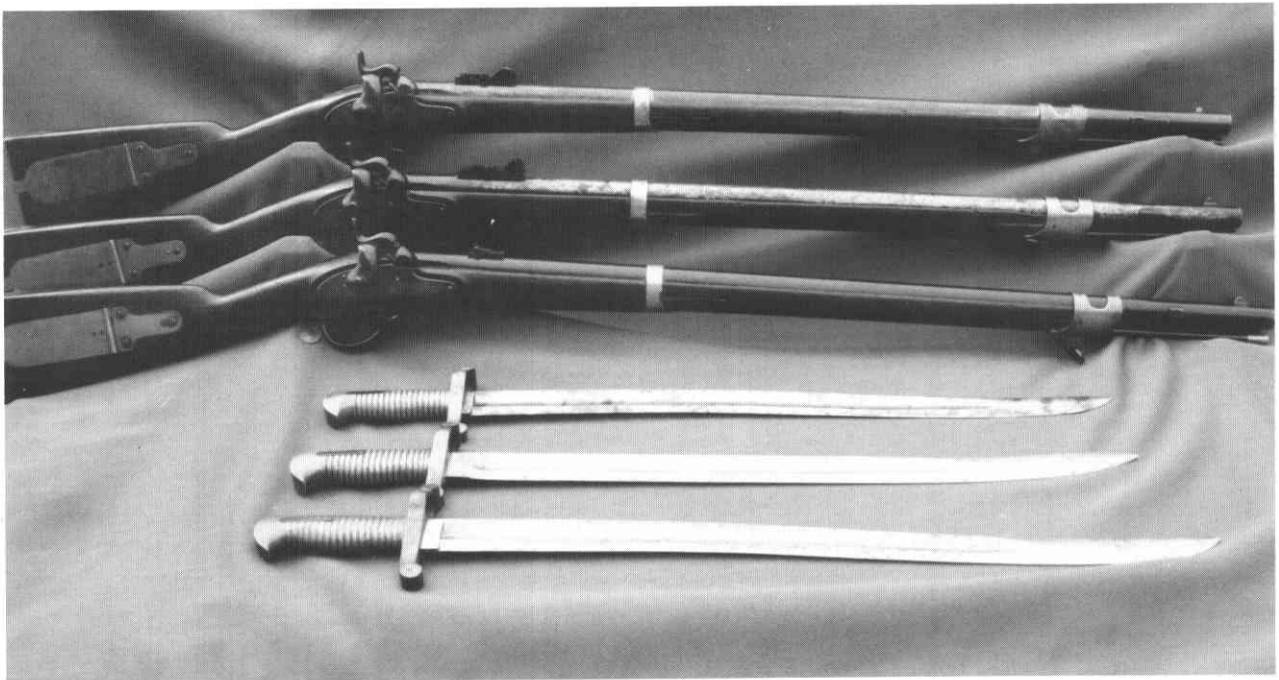
to the barrel. Then the bayonet and muzzle of the rifle were marked with an alpha numeric identification so they could be successfully mated to each other again. The original front band was retained and the rifle remained in .54 caliber. This was the first alteration of the Model 1841 to take a bayonet, and was the first time a bayonet had been fitted to a U.S. military muzzle loading rifle on a production basis to that time (experiences during the Mexican War had convinced the military that a bayonet was desirable on the issued rifle). At the same time, 1,041 rifles, all previous Harpers Ferry production that had been stored in the Washington Arsenal, were also altered to the long tang screw pattern rear sight developed by Lt. Benton. These rifles differed from the Snell/Benton alteration in that they were fitted with a stud attached on the right side of the barrel 2 1/2 inches from the muzzle. The stud was 1/2 inch in length and had a one inch guide. These rifles took a saber pattern sword bayonet with a recess for the stud and stud guide cut into the handle. The original front barrel band had to be replaced by a new, shorter front band to accommodate the hilt of the sword bayonet.

In actual use in the field the "screw sight" proved to be too fragile, broke easily, and had a tendency to move in the mortice. Rifles issued to several companies in the 4th US Infantry in March and May of 1855 failed in the field and in late April of 1855, Lt. Benton, in correspondence to Col. Gray at Springfield Arsenal, expressed his concerns and doubts to this design and directed Misters Buckland and Burton to make up variations of the Enfield slide pattern sight.<sup>13</sup> Failures were also reported by a Lt. G.T. Balch to Col. H.K. Craig on

August 23, 1858, from Ft. Kearney, while he was on the Sioux Expedition, which show that some were in use three years after the alteration was made.<sup>14</sup> As a result of these failures the Ordnance Department retrofitted as many of the Benton sighted arms as could be reached. A simple block rear sight with a 1/2 inch base was substituted and can be easily recognized today. As to the 1,041 rifles with Benton rear sights and stud attachment for the sword bayonet, these rifles subsequently had various high walled slide pattern sights soldered over the 1/2 inch dovetail and are recognized by taking out the spring for the sight and looking for a 1/2 inch dovetail. These rifles generally have an alpha numeric code on the buttplate tang as well.

At the same time as the Snell/Benton alterations were being done, 449 rifles from Harpers Ferry and 1200 rifles from the Washington Arsenal were altered for a slide pattern rear sight and stud with a guide for a sword bayonet. The rear sight, copied from the British pattern 1853 rifle musket sight, was 2 1/4 inches long and was soldered to the barrel 2 7/8 inches from the breech. There are several variations of this side-wall sight. The first type used in this alteration were done in 1854 and 1855, were marked 200, 3 and 4 on the right side of the sight for 200, 300, 400 yard graduations. The sight also has 50 yard graduation notches, as well as a sight ladder that is graduated to nine hundred yards. These rifles were also fitted with a bayonet lug 1/2 inch long with a one inch guide and also received a new short front band. These rifles remained in .54 caliber and retained the original style brass-blade front sight.

In 1855 and into 1856, 1050 rifles were altered in the



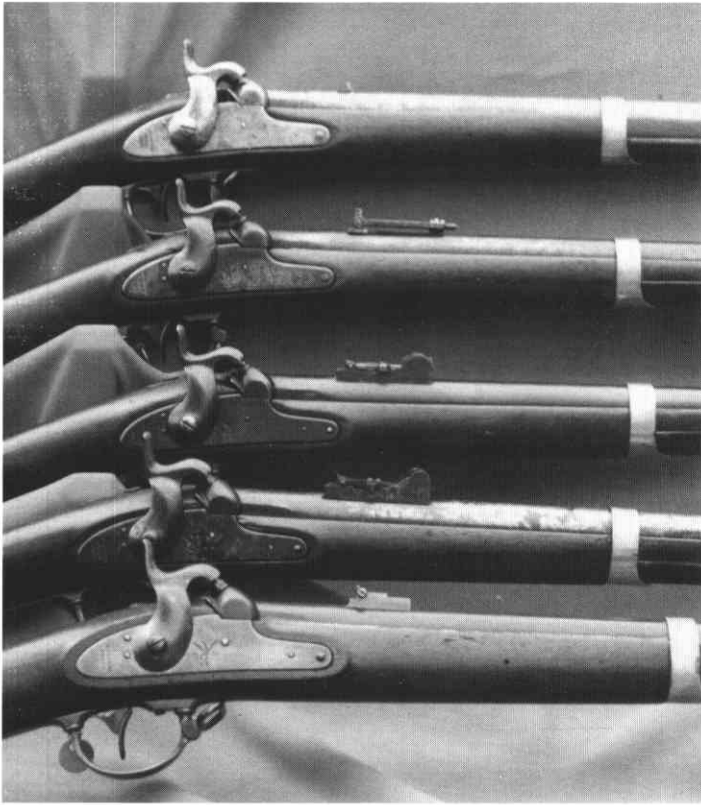
Top, Type II alteration dated 1851, cal. .54; Type III dated 1851, cal. .58, and Type IV dated 1851, cal. .54.

same manner with a high wall sight that was marked 2, 3, and 4 for 200, 300, and 400 yards on the right side of the sight and did not have the 50 yard notches. The sight ladder was graduated from 500 to 1000 yards. These rifles were altered to accept a bayonet and a 1/2 wide lug with a 1 inch guide was attached to the right side of the barrel 2 1/2 inches from the right side of the muzzle; they also had the new short front band. These rifles remained in .54 caliber with seven lands and grooves and retained the original brass front sight and ramrod. During this same period Harpers Ferry also made brass bullet moulds for elongated bullets to be issued to the units of the regular army, and over 10,000 rifle ramrod heads were altered at various arsenals to accommodate the new elongated bullet.<sup>15</sup> It is interesting to note that the 1100 M1841 rifles manufactured by Whitney in 1855 were finished with ramrods altered to accept the elongated Minie bullet. Of these final 1,100 rifles, 600 were altered by Whitney to conform to the Harpers Ferry rifles altered in 1855-56, including a new rear sight, bayonet lug with a guide, and a short front band fitted to them. They also remained in .54 caliber with 7 lands and grooves and retained the original 1841 type brass front sight.<sup>16</sup> The only feature distinguishing them from the Harpers Ferry rifles, other than markings, was a slightly different bayonet lug guide that was squared off, compared to being rounded on the Harpers Ferry altered rifle.

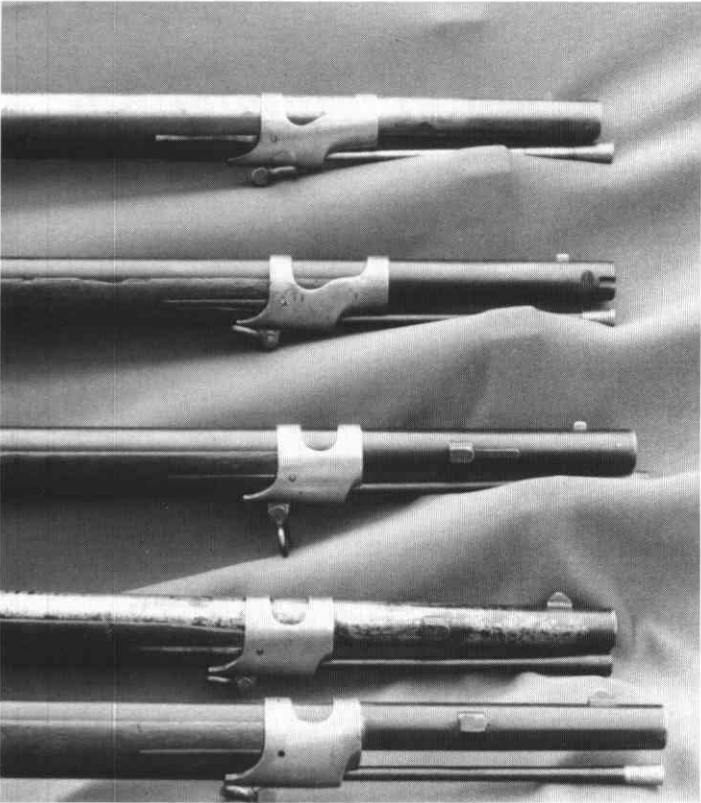
On June 26, 1855, Colonel of Ordnance H.K. Craig submitted a summary statement to the Secretary of War, Jefferson Davis. His recommendations for new models of small arms included a rifled musket with 40 inch barrel,

sapper's musketoon with a sword bayonet, and pistol, all of .58 caliber, as well as enlarging the caliber of the present rifle (the Model 1841) to .58 caliber. The recommendation of the board had not included a new rifle and Col. Craig took exception to this. He did not agree with the idea of not fabricating a new rifle. His recommendations were to produce a rifle of .58 caliber, rifled with three broad lands and grooves with one turn in 6 feet, the same as the rifled musket. He felt it was only necessary to modify the present stock for the Maynard musket lock which had been recommended for the new series of arms and used a paper roll of primers (much like a modern roll of caps for a cap gun), and have the rest of the arm remain as present.<sup>17</sup>

Jefferson Davis concurred on July 5, 1855, approving Craig's recommendation and agreeing to the continuation of the present rifle modified to a new caliber and primer lock. The Model 1855 rifle had arrived, and during 1856-57, 803 Model 1841 rifles were altered to .58 caliber, 3 lands and grooves, and fitted with a sword bayonet. They also received a new rear sight marked 2, 3, 4, 5, for 200, 300, 400, 500 yards on the left side of the sight, and a sight ladder graduated from 600 to 1000 yards similar to the Model 1855 rifle sight. This sight was also soldered to the barrel. The front sight was replaced with a new sight, copied from the new Model 1855. The bayonet lug, added to the right side 3 1/2 inches from the muzzle, did not have a guide for the first time, again copied from the new Model 1855. In addition, 142 Model 1841 rifles were altered in the same manner but remained in .54 caliber. Both alterations received the new short front band. It is



The development of the rear sight, from the top: original 1841 block sight; Benton/Snell alteration; Type II slide sight; Type III slide sight, 1855 rifle sight; Type IV 1858 rear sight.



A comparison of muzzles, showing evolution of bayonet alterations, front sights, and bands: top, original 1841 rifle; Benton/Snell alteration with muzzle cuts and original sight; sword bayonet alteration with 1/2 inch lug and 1 inch guide, original sight, new front band; two M1855 types with half inch bayonet lugs and sight and new front band.

interesting to note that only ten new Model 1855 rifles were completed by November of 1857.<sup>18</sup>

In 1857-58, 1,663 Model 1841 rifles, and in 1858-59, 842 Model 1841 rifles were altered to closely resemble the Model 1855 rifle. They were rebored to .58 caliber with 3 lands and grooves and were fitted with a Model 1855 rear and front sight. They also received a 1855 style bayonet lug without a guide and mounting the Model 1855 brass handled bayonet. This rear sight was also marked 1, 2, 3, 4, 5, in 100 yard increments on the sight wall and 600 to 1000 yards on the sight ladder. This sight was dovetailed and screwed to the barrel 2 7/8 inches from the breech.<sup>19</sup>

In 1858 a new style stepped block type rear sight was adopted for the Model 1855 rifle. This sight was a little over an inch long (1 3/16), and had two sight leaves marked 3 and 5 for 300 and 500 yards. Model 1841 rifles rebored up to .58 caliber with 3 lands and grooves were altered to this new sight, which was dovetailed and held by a screw into the barrel similar to the Model 1855 rifle. These rifles were also altered to the new short front band with the 1/2 inch bayonet lug without a guide. A total of 2975 rifles were altered in this style from 1858 to 1860.

The final alteration of the 1841 rifle by Harpers Ferry was performed during 1860, noted as percussion rifle Model 1842 (but presumably Model 1841s); 400 rifles were altered to the Mountstorm breechloading system. They were altered in the musket factory and presumably were destroyed when Harpers Ferry was burned in April, 1861. ± ° To date no specimens of this alteration on a 1841 rifle are known and we can only speculate what they looked like. One may still be discovered some day; we can only hope so!1

With the burning of the Harpers Ferry arsenal in April, 1861, all production and alteration of rifles and muskets ceased at the arsenal. The equipment that survived the fire was moved and used by the State of Virginia and later by the Confederate government to produce weapons for the Confederacy. But the Model 1841 rifle story goes on, not at Harpers Ferry, but in factories both North and South where the Model 1841 rifle was altered in many different forms to be used during the War of the Rebellion by soldiers on both sides. Today we are still finding and identifying these other alterations and trying to complete the history that surrounds the Model 1841 rifle, the magnificent Mississippi1.

★★★★★★

I would like to especially thank my photographer, confidant, critic, typist and best friend, my wife, Lynn, for her extensive help and counsel in preparing this paper!



Composite shot of rear sight evolution. top, 1845 dated 1841 Whitney rifle, original sight. 2, 1846 dated Harpers Ferry 1841 rifle, original sight. 3, Benton/Snell screw sight. 4, Benton sighted, sword bayonet altered 1851/1855 dated. 5, Type II rear sight on 1854 dated 1841 altered from Benton sight. 6, Type II 1851 dated 1841, slide rear sight. 7, Type III slide rear sight, 1855 rifle sight. 8, Type IV 1858 rear sight. 9, Type III alteration on 1855 dated Whitney 1841 rifle.

#### NOTES

1. - J.T. McIntosh, *The Papers of Jefferson Davis*, pg. 58
2. - Clement Eaton, Editor, *Jefferson Davis*, 1977, pg. 58
3. - Roland Dunbar, *Military History of Mississippi*, 1907, pg. 407
4. - *Ibid*, pg. 407
5. - Eaton, Editor, *The Papers of Jefferson Davis*, pg. 63
6. - Varina Davis, *Memoirs I*, pg. 328, pg. 354
7. - Reports to Chief of Ordnance, Nov. 10, 1846, pg. 162
8. - Reports to Ordnance Department, Oct. 31, 1845, pg. 419
9. - *Report of Experiments with the Rifle a Tige*, Harpers Ferry, 1853-54, pg. 17
10. - *Ibid* pg. 16
11. - H.L. Peterson, *The American Sword 1775-1945*, pg. 256
12. - *Report of the Colonel of Ordnance*, Oct. 25, 1855, pg. 557
13. - Lt. Benton to Col. Craig, RG #156, Entry 1001, April 21, 1855
14. - Lt. G.T. Balch to Col. Craig, RG. #156, Entry 1000
15. - H.M. Madaus, *Percussion Martial Long Arms of Eli Whitney*, pg. 7
16. - Accounts of Contractors, E152, RG#158, Vol 3, pg. 70
17. - H.K. Craig to Jefferson Davis, *Summary Statement of the Action of the Ordnance Board in Washington to New Models of Small Arms*, June, 26, 1855
18. - Report to the Chief of Ordnance, Washington November 5, 1857, pg. 552
19. - *Ibid*, Washington, November 1, 1858 and October 26, 1859
20. - Report to the Ordnance Office, Washington, October, 1860

#### BIBLIOGRAPHY

- Bauer, K. Jack, *The Mexican War 1846-1848*, Macmillan Publishing Co., Inc. NYC, NY 1974. Davis, Lavina, Edited by Bell I. Wiley, *Jefferson Davis, Ex-President of the Confederate States*, Richmond Mem. Ed. 1958. Eaton, Clement *Jefferson Davis*, The Free Press, a Division of Macmillan Publishing, NYC, NY 1977.
- Hardin, Albert N., *The American Bayonet 1776-1964*, Riling and Lentz, Philadelphia, PA 1914.
- Madaus, H.M., *American Longarms*, The Free Press, NYC, NY 1981.
- Madaus, H.M., "The Percussion Martial Longarms of Eli Whitney," *Armax*, Journal of Winchester Arms Museum, Vol. II, No. 1, 1988.
- Peterson, Harold L., *The American Sword 1775-1945*, Robert Halter, New Hope, PA 1954.
- Reports of Experiments with Small Arms for Military Service*, Secretary of War, A.O.P. Nicholson, Public Printer, 1856.
- Reports from the Ordnance Department, Washington, D.C. 1841-60.
- Rowland, Dr. Dunbar, *Military History of Mississippi*, 1907.
- The Mexican War*, Time Life Books, Alexandria, VA, 1978.



Original 1841 style .54 calibre round ball mould (left) with Harpers Ferry .58 calibre brass mould and .54 and .58 calibre Minies.