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Acknowledgments

I wish to thank Wayne Wei-Siang Hsieh for contacting me in the spring of 2004, encouraged by his dissertation adviser, Gary W. Gallagher at the University of Virginia. Gary had told Wayne of my work on Civil War fortifications, which seemed relevant to the issues Wayne was exploring in his dissertation. An e-mail correspondence with Wayne inspired me to undertake this study after eighteen years of waiting for someone to respond to Paddy Griffith’s call for a reevaluation of the standard interpretation of the rifle musket’s impact on Civil War combat. David Perry also forwarded information about this issue to me from a Web site.

Most important, my gratitude to my loving wife, Pratibha, for everything.
Introduction

This book is about the rifle musket and its use in the Civil War. Ever since the end of the conflict, the prevailing view of this weapon has been that it revolutionized warfare because of its increased range. Participants and latter-day historians alike have assumed that because the rifle deepened the killing zone so much—from roughly 100 yards to about 500 yards—it produced significant results. The rifle musket has been blamed not only for the unusually heavy casualties of the war, but for prolonging the conflict by rendering engagements indecisive. Four years of increasingly brutal fighting, with battles that resulted in no clear-cut victory for either army, created a national tragedy. Those historians who accept the prevailing interpretation highlight the increased firepower of soldiers who defended a position with rifles, arguing that defensive measures ruled Civil War tactics. The widespread use of the rifle led to a dramatic increase in the employment of sophisticated field fortifications, so the traditional interpretation goes, further strengthening the use of defensive over offensive action. The rifle also reduced the ability of field artillery to support infantry attacks because the cannon could not advance close to the enemy without losing too many gunners, and it negated the ability of cavalry to attack and break up infantry formations. In short, those who believe that the rifle had a revolutionary impact on combat strive to account for every characteristic they see in Civil War battles by reference to the use of the new weapon.

The Standard Interpretation

Even before the firing on Fort Sumter, observers in Europe and the United States assumed that the rifle musket would revolutionize warfare. They wrote books and articles expressing their wonder at the possibilities inherent in the new technology. One can hardly blame them. Still largely untested in the hands of ordinary soldiers on a real battlefield, the new weapon drew speculation that was as yet unburdened by the realities of actual use in war.
But these writers issued an important caveat. They recognized that the new rifle’s trajectory traced an arc—the bullet curved dramatically upward before descending to the ground, rather than sailing on a relatively flat line toward its intended victim. That meant that a wide space of the “killing zone” was safe passage for soldiers on the opposing side. The parabolic trajectory was so high that bullets would fly over the heads of many opponents, creating two killing zones. If a man adjusted the sights of his rifle musket for a range of 300 yards, the bullet ascended so that the first killing zone was about 100 yards long (almost exactly the same distance as the effective range of a smoothbore musket). The second killing zone lay at the far end of the bullet’s trajectory and was only about 75 yards long, because it descended at a sharper angle than it had ascended. For nearly half the 300-yard range, enemy troops would be untouched by the balls. Pre–Civil War rifle enthusiasts tried to point out that it was absolutely necessary to train recruits how to use the weapon to compensate for this unique phenomenon. Soldiers had to be taught how to estimate distances and then to adjust the sights of their rifles to account for the complex problem of hitting a human target at a range greater than that of the smoothbore musket. In contrast, the old smoothbore had a much flatter trajectory and was easy to aim at the comparatively short distance that marked its range. It demanded little in the way of specialized skills. Without proper training, however, a soldier would be unlikely to maximize the full capabilities of the new rifle musket.¹

The prewar rifle enthusiasts, including Lt. Cadmus M. Wilcox of the Seventh U.S. Infantry, noted that sophisticated musketry schools began to operate in Europe by the late 1850s to teach soldiers the needed rifle skills. They assumed it would happen in the United States as well, but that did not come to pass until years after the Civil War ended. Nevertheless, nearly all Americans who wrote about the subject continued to assume the rifle was the wave of the military future and was already in the process of revolutionizing warfare. A reviewer of William H. Morris’s Field Tactics for Infantry proclaimed the old smoothbore musket obsolete in 1864. The new rifle reigned supreme on the battlefields of that year, making massed frontal attacks prohibitively costly, or so most observers believed.²

Twentieth-century historians have accepted the assumptions of the pre–Civil War rifle enthusiasts with little alteration or questioning, except to ignore their plea for rigorous training of all soldiers to use the rifle. They share the earlier generation’s fascination with the increased range of the rifle, which
they place at anywhere from 250 to 1,000 yards, and tend to assume that all their conclusions about the nature of Civil War combat stem from that increased range of fire. Historians readily take at face value comments by contemporaries that denigrated the effectiveness of the smoothbore musket, such as the observation of Brig. Gen. Stephen Vincent Benet, post–Civil War chief of ordnance, that it “was not much more efficient as a weapon of accuracy and range than a piece of gas-pipe closed at one end.” Modern historians have readily employed phrases such as “the devastating impact of rifled musket fire” in characterizing the nature of Civil War combat. They stress the newness of the weapon against the old technology of the smoothbore, arguing without evidence that it “could be more reliably and accurately aimed.” There is also no evidence that the new weapon could be fired faster than a smoothbore, yet many historians have assumed that it had a faster rate of fire.3

The tragedy of the war, in the view of traditionalist historians, lies in the fact that the Civil War generation continued to fight with old-fashioned tactics against devastating new weapons. “The tactical predominance of the defense helps explain why the Civil War was so long and bloody,” writes James M. McPherson. “The rifle and trench ruled Civil War battlefields as thoroughly as the machine-gun and trench ruled those of World War I.” Russell Weigley has written that the Civil War battlefield was “a killing ground par excellence,” illustrative of “the devastating effect of the rifled musket in the hands of steady and well-positioned defenders against a frontal attack.” In another study, Weigley argued that “Civil War battles soon demonstrated that rifles tended to tear any frontal attack to shreds before it could close.” Many historians believe that “the advantage had swung sharply to the tactical defensive during the Civil War” because of the new weapon, especially when coupled with the digging of field fortifications. In fact, most historians accept the idea that fieldworks were a natural outcome of the use of rifles. “Because of the destructive power of the rifle,” Weigley has written, “soldiers increasingly looked for the shelter of stone walls or dug rifle pits or trenches as soon as they halted anywhere.”4

Believers in the standard interpretation are certain that both field artillery and cavalry had significant offensive capabilities in the era of the smoothbore. By moving forward with attacking infantry and firing at ranges in which the smoothbore could not reach them, artillerists helped to break up defending infantry formations; and the cavalry did the same by conducting mounted charges against enemy foot soldiers. Neither arm could do so anymore, their offensive capabilities neutralized by the long range of the rifle musket.5
Alternatives to the Standard Interpretation

It is time to reevaluate the standard interpretation of the rifle musket’s impact on the Civil War. This book proposes an alternate view of the rifle as having only an incremental, limited effect on Civil War combat, mostly in the area of skirmishing and sniping. The operations of the battle line, the main body of Civil War infantry, were affected comparatively little by the use of the rifle, mostly because Civil War soldiers never utilized the long-range capabilities of their new weapon, for several reasons that will be discussed. Moreover, it becomes apparent that the average soldier was incapable for many reasons of realizing those long-range firing capabilities, and therefore the rifle could not revolutionize the operations of the main battle formations of Civil War armies. Sometimes on the skirmish line, and mostly in the highly specialized craft of sniping, some soldiers realized the long-range capabilities of the rifle musket in impressive ways. They tended to be men who had either a natural aptitude for firearms or had received some type of specialized training in gauging distances. Because the Civil War rifle was still a musket—a single-shot weapon loaded from the muzzle—its rate of fire remained the same as that of pre–Civil War smoothbores. Other than the possibility that it was a bit more accurate, a claim that has never been proven, the only advantage offered by the rifle musket was increased range. Given the difficulties of seeing man-sized targets 200 to 500 yards away, especially in wooded or hilly terrain, there were many obstacles to the soldier’s ability to effectively use his weapon at that range. The most important difficulty, even on a level, open field of 500 yards, was that of accounting for the parabolic arc of the bullet and the consequently short killing zone afforded by the ball’s trajectory. The vast majority of soldiers in the Union and Confederate armies received no training in estimating distances and therefore were not prepared to effectively fire their muskets at long-range targets.

Civil War commanders and soldiers alike preferred to wait until the enemy came quite close before opening fire. Several studies have indicated that most Civil War fire was delivered at distances well below the effective range of the rifle musket. In fact, most Union and Confederate soldiers opened fire at ranges quite consistent with, or a bit longer than, the range of the smoothbore musket.

If that is true, and there is ample evidence to support the argument that Civil War soldiers tended to fire at short range, that fact alone justifies a reevaluation of the rifle musket’s impact on Civil War military operations. One problem with the standard interpretation has always been that it is too myopically focused on
the theoretical range of the new weapon, without an attempt to verify that soldiers actually fired the gun at the new range. Those who have accepted the standard interpretation of the rifle musket’s role in the Civil War also tend to ignore important characteristics of combat in wars that occurred before 1861 and after 1865. Heavy losses were not unique to the Civil War, and field artillery and cavalry never were as effective against infantry in eighteenth-century warfare or in the Napoleonic era as historians have assumed. Looking at other battles in other wars, one gets the impression that the Civil War was but one episode in the grand sweep of Western military history. It shared more characteristics with previous conflicts than the holders of the standard interpretation assume. At best, the rifle musket had an incremental effect on changing the nature of combat for a few selected functions on the battlefield, such as skirmishing and sniping. It did not revolutionize warfare.

The rifle musket had only a brief showing in world history. Within five years of Appomattox, opponents in the Franco-Prussian War fought with breech-loading rifles far superior to the rifle musket of the Civil War. Twenty years after that, most modern armies adopted bolt-action rifles that were superior to the breechloader. Increasing the rate of fire with magazine-fed weapons that had improved reloading capabilities represented the truly revolutionary aspect of small-arms development in the nineteenth century, not the mere rifling of a single-shot, muzzle-loading weapon whose reloading and firing mechanism was unchanged from that of a smoothbore. Ironically, despite the introduction of powerful small arms in the twentieth century, the evidence indicates that infantry fire continued to take place at ranges of roughly 100 yards in the major wars of that century. In short, the sophistication and power of long-range small arms had little effect on the range at which most infantry combat took place. Soldiers in World War II, Korea, and Vietnam continued to fire at ranges consistent with that of men in the War of the Spanish Succession and the American Civil War.

Ironically, historians have consistently denigrated the use of linear tactics as an outdated tactical formation, given the longer range of the rifle musket. If firing took place at ranges consistent with the smoothbore musket, then linear tactics, which were developed over centuries of European experience to conform to the smoothbore, were the proper tactics to use in the Civil War as well. Moreover, a careful study of battle reports supports the argument that unit commanders and soldiers alike learned those tactics well and executed them effectively to take their regiments forward into battle or extricate them from dan-
gerous situations. Far from obsolete, linear tactics were highly successful in the Civil War. Gory and failed assaults like that which the Federals conducted against the Stone Wall at Fredericksburg, or like Lee’s men conducted against Cemetery Ridge at Gettysburg, were not the fault of the tactical formations employed. Those are case studies of failures in command decisions—the question is whether those attacks should have been made at all, regardless of the tactical formations used. Judging tactics by the results of a handful of bad decisions on the grand tactical level is unfair. Linear tactics should rightly be judged by the hundreds of individual case studies on the regimental level in a variety of engagements. The irony is that Civil War soldiers learned linear tactics well and effectively used them on the battlefield, even though they failed to make the most of the long-range firing capability of their rifle muskets.

A handful of historians have suggested that the standard interpretation is in need of revision, and they have contributed significant ideas to that effort. The English historian Paddy Griffith, who has written on the art of war in several eras, became the first historian to question the validity of the standard interpretation when he published *Battle Tactics of the Civil War* in 1986. Griffith based his points, among other things, on a survey of the primary literature, which revealed that typical ranges at which Civil War soldiers delivered fire were much shorter than the effective range of the rifle musket. He concluded that the average range in battles fought in 1863 amounted to only 127 yards, while those of the following year averaged 141 yards. Griffith also found evidence in the primary literature that the range at which fire was most decisive in stopping attacks was much shorter than that, only about 33 yards in many cases. He rightly concluded that “the existence of a wide field of fire may be regarded as irrelevant to the effect of musketry in the Civil War.” The rifle musket failed to bring down large numbers of opposing troops at long distance and therefore its arrival “actually made very little practical difference.” At most, Griffith allowed that “minor improvements” in warfare followed the introduction of the rifle, while the truly important break with the past occurred only with the post–Civil War introduction of the breechloader.6

In Griffith’s view, the length of the conflict was, in part, due to the lack of skill among higher-level commanders in handling their units. Griffith does not believe that the advantages shifted to the defense in the Civil War. All armies acting on the defensive usually had some advantages over the attacker; if those advantages seemed emphasized in the American conflict, it was due to other factors. Griffith asserts that linear tactical formations were not outdated by the weapon
but were as relevant to the single-shot rifle as to the single-shot smoothbore. As in the days of Napoleon, linear tactics effectively brought infantry forces within short range of the enemy, where a heavy firefight decided the victor.7

Griffith chided Civil War historians for viewing their subject within a modernist framework, focusing on the introduction of new military technology to define the character of Civil War combat. Because those historians overlooked the fact that the long-distance killing potential of the new weapon was not realized, the result was a standard interpretation that was “anachronistic and exaggerated.” It had “rather more to do with late twentieth-century habits of thought than with the military realities of the 1860s.” Griffith convincingly portrays the Civil War as the last Napoleonic conflict, while the true shift toward modern war took place in the Franco-Prussian conflict of 1870–1871.8

Griffith issued a clarion call for revision of the standard interpretation that was ignored by most Civil War historians and vehemently rejected by the main exponents of the standard interpretation. I was struck by his evidence regarding the short range of most Civil War firing and believed it justified revision of the standard interpretation. Most of his other conclusions also are convincing, except Griffith’s odd attack on the importance of field fortifications, a topic I have covered in previous work. It took time for me to give further thought to these issues. Indeed, I retained a knee-jerk adherence to the standard interpretation for some years until an opportunity to support Griffith’s conclusion in print occurred with the publication of The Union Soldier in Battle in 1997. In that study, while attempting to delineate the experience of combat in the Civil War, I briefly dealt with the typically short range of firing and suggested further work was needed along the lines that Griffith had established.9

Mark Grimsley was influenced by Griffith’s work and conducted his own brief exploration of the firing ranges typical of Civil War combat. Published in 2001, Grimsley’s results indicate an average range of 116 yards. He concluded that it was “an improvement over the 80–100 yards characteristic of smoothbore warfare, but at best an incremental improvement.”10

Brent Nosworthy, author of an important book on the development of linear tactics in Europe, published a study of Civil War battle tactics in 2003. He agreed with Griffith’s findings regarding the short range of firing and conducted his own survey of Civil War battles to support them. Although Nosworthy believes the average range of firing during the Civil War was “more than a 50% improvement” over that of the Napoleonic era, he nevertheless concludes that the rifle enthusiasts who had predicted a revolutionary effect on warfare
were proven wrong. Civil War soldiers would have had to fire at much longer ranges than they did, reaching out accurately 300 or more yards, to have fulfilled the promise of the rifle musket, and they clearly did not do so.11

In 2005 and 2007, I had an opportunity to approach the question of whether the rifle musket fostered the increased use of fieldworks in the 1864–1865 campaigns in Virginia. In the first two volumes of a projected series of studies on the use of field fortifications in the Civil War, I argued that continued close contact with the enemy was the most significant factor that led to the rapid development of trench warfare in mobile campaigning in Virginia during the last year of the war.12

The testimonies of Grimsley and Nosworthy are encouraging signs that at least a few Civil War historians are willing to reconsider the standard interpretation, although no one to date has conducted a thorough reevaluation of it. This study is an attempt to look at all aspects of the rifle musket’s role in the Civil War, including fundamental issues such as the typical range of infantry firing, in order to understand the subject from the fresh perspective made possible by Griffith’s seminal ideas. While it is important to understand in detail what happened on the Civil War firing line, it is just as important to understand what happened on the battlefields of other wars as well. When one realizes that casualties in European battles fought with smoothbore muskets tended to be just as high, if not higher, than Civil War losses, and that infantrymen in World War II, Korea, and Vietnam typically fired their small arms at ranges that were very close to those of smoothbore battles, the old idea that the rifle musket fostered revolutionary changes in warfare seems wrong.

Some definitions are in order. The term *rifle musket* (sometimes with a hyphen linking the two words) refers to a weapon that had spiral grooves (the rifling) inserted during initial manufacture. In contrast, a *rifled musket* was a smoothbore weapon with spiral grooves added sometime after its manufacture. I use the former term because the majority of rifles used during the course of the Civil War were originally made as such.13