

# **BATTLEFIELD TACTICS**

By: Leslie J. Rodman

To at least one historian, the death of the Confederacy began in Mexico. Confusing? Not really, according to Bernard DeVoto who made that argument in 1923, based primarily on the fact that Jefferson Davis learned just enough during the war with Mexico in exactly five days of combat to virtually guarantee the South's defeat 15 years later. This argument was later supported by Hamilton J. Eckenrode, another prominent military historian who carried the point even further, identifying the exact moment of the Mexican War which spelled doom for the Confederacy as being in 1847 when Jefferson Davis formed his regiment of Mississippians into an obtuse angle and halted the Mexican attack at Buena Vista. Lost in the accolades of the moment for executing this brilliant movement, Davis duped himself into believing himself a master in the art of military tactics and strategy. In more modern phraseology, Jefferson Davis had enough success and learned enough to be dangerous 15 years later.

During his 5 days of glory on the battlefield Davis was made a military hero, as well as expert in military strategy, all of which elevated him in the short-term to the United States Senate, and in the long-term made him the man of choice to the southern aristocracy to lead the South in its war for independence. In the final days of the war these sordid realities were reflected in the editorial words of the Richmond Examiner "*if we are to perish, the verdict of posterity will be, Died of V*" referring to Davis' moment of fame at Buena Vista.

What it all comes down to is that the battlefield tactics used during the Mexican War had been rendered outdated by the new technologies of the rifled bullet which was in wide circulation by the beginning of the Civil War, and it took at least two years and countless deaths before anyone paid any attention. Infantry marched in close-order columns and deployed into lines as it prepared for battle making it easy targets for riflemen often so far away their victims could not even see who was killing them. Once an infantry column had been deployed, each regiment would send out a company or two as skirmishers holding the remainder of the regiment in close-order formation. As it volleyed with the enemy, the infantry regiment still in formation would advance in close formation lines hoping to get near enough to the defenders to break their lines with concentrated musket fire, then near the end of the advance break into an open charge with fixed bayonets.

Within this mindset, artillery was an important defensive arm, being mobile enough to shift from one point on the threatened line to another. Occasionally, it was used in conjunction with infantry to support an offensive thrust which would turn into an infantry charge. During all of this cavalry was used to patrol the infantry's flanks and rear, always prepared to make a saber charge against enemy infantry once it was out of formation and in retreat.

Battlefield tactics are usually determined by weaponry, and the primary weapon of the Mexican War was the smoothbore musket possessing either a flintlock or percussion firing system. In 1861, there were at least nine different models of flintlock muskets in use made at government armories, and most made

after 1800 found their way into usage during the Mexican War. Of these, the Model 1822 was clearly the most popular and the most available.

The musket used during the Mexican War was clumsy, heavy, and hard to handle, not to mention load and fire. It was unreliable in wet weather, and had no uniform firing mechanism. That being said, its greatest liability was that it was horribly inaccurate and had a limited range. The bores of the smoothbores contained no riflings, and even in the hands of an expert marksman they were only marginally accurate. From a range and effectiveness perspective, the smoothbore was limited to 200 to 300 yards, and was basically useless at a range beyond 400 yards.

#### **SMALL ARMS PROCUREMENT**

	<b>Held Pre-war</b>	<b>Imported during the war</b>	<b>Produced Domestically During the War</b>	<b>Total</b>
<b>CONFEDERATE</b>				
<b>Smoothbore</b>	140,000	40,000	3,000	183,000
<b>Rifled Muzzle-loading</b>	35,000	300,000	100,000	435,000
<b>Breechloading single-shot</b>	0	0	4,000	4,000
<b>Repeaters</b>	0	0	0	0
<b>Total Shoulder Arms</b>	175,000	340,000	107,000	622,000
<b>Revolvers</b>	0	3,500	13,500	17,000

<b>UNION</b>				
<b>Smoothbore</b>	400,000	100,000	10,000	510,000
<b>Rifled Muzzle-loading</b>	100,000	1,000,000	1,750,000	2,850,000
<b>Breechloading single-shot</b>	3,000	0	300,000	303,000
<b>Repeaters</b>	0	0	100,000	100,000
<b>Total Shoulder Arms</b>	503,000	1,100,000	2,160,000	3,763,000
<b>Revolvers</b>	6,000	14,000	400,000	420,000

Griffith, Paddy, Battle Tactics of the Civil War, Yale University Press, 1987, pg. 80.

The introduction of the rifle, along with the railroad and telegraph were the technological breakthroughs of the era. The rifle increased the range and accuracy of the shoulder weapon as well as the artillery piece, and the ability to kill increased exponentially over any other period in the history of warfare. There was a common phrase that a man with a musket had a range of a few hundred yards, while a man with a rifle might fire at you all day without finding out.

But even in the face of these technological breakthroughs vastly limiting the value of the smoothbore musket, still it was common for many commanders to attempt the use of musketry at exaggerated ranges. While the smoothbores were the most common weapon used during the Mexican War, the breech-loading Mississippi Rifle Model 1841 was in existence and in fact, was the first general issue rifle. In fact, this rifle was used by Jefferson Davis's First Mississippian Rifles at Monterey and Buena Vista. Although there were rifles in use during the Mexican War they were not widely available, and saved primarily for special uses. In terms of the average soldier, the smoothbore musket was

the much more commonly available, and the rifle was viewed mostly as support for the musket. Within this context, rifles were expected to draw enemy fire while muskets and bayonets were the weapons that were used to settle the issue.

Without question, the American Army in Mexico relied upon the smoothbore musket and the bayonet. While the musket was effective as a tool of mass firepower, the effectiveness of the bayonet was limited to that time during the battle when the musket fire of the defenders had become so weak, the attackers were able to get close enough so as to engage in hand to hand combat. As a result of the commonality of their usage, the smoothbore musket and the bayonet became the basis for tactical theory. As a result, these two weapons which had been dated by the technological innovation of the rifle had become the foundation of the authorized tactical manual of the American Army at the outbreak of the Mexican War.

Tactical theory recognized that individual musket fire was inaccurate and sought to compensate by keeping infantrymen in close order lines so they could concentrate their fire power. As a result, attack tactics of the infantry manuals were designed to keep men close together and well ordered in their advance, so they could strike the enemy line capable of delivering a concentrated volley of fire, capped off by a bayonet charge.

In their advance the men were expected to align themselves with elbow to elbow contact maintaining their shoulders square to the enemy line toward which they were advancing. In his three-volume treatise *Infantry Tactics* Winfield Scott openly stated his first concern was that a steady advance be made by soldiers in

close proximity while remaining orderly in their department. He cautioned against making a rapid advance when defensive musket fire was weak until the attackers were in short range of the defensive positions, and was in position to make a final charge against the enemy line.

In quantified terms, an advancing army would advance at a “direct step” of about twenty-eight inches, and at a “common time” of about 90 steps per minute. Scott’s tactical manual also allowed a “direct step” to be used at the “quick time” of about 110 steps per minute. Any advance faster than “quick time” was discouraged due to difficulty keeping the men in such a level of physical condition so as the men to keep up such a pace. Thus, the practice of advancing at a speed greater than quick time was discouraged due to the difficulty in keeping the men adequately conditioned.

Scott’s manual allowed for loose order in an advance only for “skirmisher tactics” which were common on the periphery of the battle line. This included a section for “*skirmisher tactics*” which assumed that each regiment would send out one company of rifles or light infantry to do the skirmishing for the rest of the regiment. Scott tended to equate skirmishing with rifle tactics and did not expect the deployment of more than two companies per regiment in this manner.

During the Mexican War commanders did not like using skirmishers because in order to be most effective, musket fire had to be concentrated, and the close order formation was the best means of accomplishing this goal. Thus, to dedicate riflemen to skirmishing duty only lessened the firepower of the regiment. Close order formations had long been proven to be the best means of

delivering concentrated fire power, and most field commanders were simply unwilling to change.

The alternative to the line formation for an advancing army was the column which was designed to deliver a hammering blow with decisive power at a predetermined point along the enemy battle line. While line attacks relied on concentration of fire power, column attacks relied upon shock tactics. While line attacks were more common, column attacks were occasionally employed in certain circumstances. Possibly the best example of this was the use of a column formation when storming fixed defensive positions. Good examples of this during the Mexican War were at both Molino del Rye and Chapultepec. At Molino del Rey the center of the American attack was spearheaded by a force of 500 men, and at Chapultepec, two storming parties of 250 men each were used.

The most commonly used formation used to defend a position against mounted cavalry was the square formation. During a battle at Palo Alto during the Mexican War the 5<sup>th</sup> United States Regiment formed a square and virtually stopped an attack by Mexican lancers before they could get closer than 50 yards to the American position. While the square formation was the most common in Mexico, in some instances infantry commanders were successful when they used the line formation against cavalry.

Each of these formations, the line, column, and square were used often and successfully in Mexico, and by the 1860s there remained many commanders in the field thoroughly familiar and comfortable with their usage. Without question, *Scott's tactics* were thoroughly compatible to the musket and bayonet,

but many senior commanders were already beginning to grumble that the tactics Scott advocated contained too much detail which was much too difficult for the average soldier in the field to comprehend, much less employ during the chaos of battle. But much of the detail about which these commanders complained was due to the limitations of the musket, as well as the need to maintain precise, close order drill during battle to ensure a concentration of fire power.

Although complicated, *Scott's Tactics* were successfully used by Zac Taylor and Winfield Scott in Mexico even to the point of having stormed and defeated field entrenchments. Building off these successes, and notwithstanding the erroneous assumptions in which they were grounded, during the years after the Mexican War there had developed a mindset in the American military that the smoothbore musket properly used in conjunction with *Scott's tactics* could overcome field entrenchments.

By the time of the Civil War this attitude had spread from infantry to the artillery commanders, most all of whom were veterans of the Mexican War, and supremely confident in their smoothbore weapons as were the infantrymen. During the Mexican War each of the five American batteries deployed in Mexico consisted of four to six bronze guns, including two or more six-pounders and usually one or two 12 pound howitzers. While the average Mexican infantrymen was armed and equipped much the same as his American counterpart, artillery was entirely a different, as American ordinance enjoyed a considerable advantage over the Mexicans who were limited to firing only solid shot.

In 1839 Captain Robert Anderson, defender of Fort Sumter, published *Instruction for Field Artillery, Horse and Foot* which was essentially an English translation of the French artillery drill manual. In 1843 a board of officers commissioned to prepare an American manual for artillery tactics headed by Brevet Major Samuel Ringgold, developed and published the *Instruction for Field Artillery* in 1845. Throughout the duration of the Mexican War the American artillery showed vast improvement to the Mexicans, the best known artillery battle being at Buena Vista where American field guns played a decisive role in Taylor's successful defense of an important American position. During these engagements batteries commanded by Braxton Bragg, Thomas W. Sherman, and John M. Washington demonstrated the great mobility and power of well organized and led field artillery when used on the tactical defensive. Taylor and his second in command General John E. Wool both praised the American artillerymen for their valor during the battle, stating pointedly that without their heroic efforts the Americans would never have been able to hold their positions.

All of this emphasized mobility as the most obvious strong point in the use of artillery during the Mexican War. On the defensive artillery could be shifted quickly to maintain interior lines to meet the changing threat posed by infantry. In addition, the limited range of the musket and the close-order line formations which were required of opposing infantry to maintain concentrated fire power made it possible to effectively use the artillery on the offensive as well as the defensive. The artillery was mobile and moved rapidly enough that it could even undertake the pursuit of a fleeing enemy. Because of these attributes artillery

could advance close enough to an opposing infantry line to have point blank range before opening fire. Infantry massed in close-order line formations was extremely vulnerable to the fire of field artillery, allowing commanders to advance artillery batteries in advance their regiment's line of infantry.

Expectations related to mobility and effectiveness on the offensive was not limited to the artillery. These were important points of emphasis in use of the cavalry as well. The tactical manual of the cavalry was *Cavalry Tactics* consisting of a three volume set of translated French manuals approved by the War Department in 1841. This manual provided for close-order line tactics within a two-rank formation. In this configuration, a ten-squadron regiment would form into two ranks of five squadrons each, separated only by a twelve-pace interval.

During the Mexican War, American mounted troops were used primarily as skirmishers, cover for the flanks of infantry divisions, couriers, or reservists, ready to pursue the enemy in the even his ranks were broken. In some instances mounted units did reconnaissance work, although the most famous scouting done during the war was done by an engineer. When used in combat during the Mexican War, most mounted units fought dismounted. That is to say they rode to the point of battle, dismounted and fought like infantrymen. The famous and somewhat glamorous "mounted charge" was usually reserved for the pursuit of fleeing, or retreating infantry. Infantry in retreat was particularly vulnerable to mounted saber charges.

Time and again during the Mexican War, the Americans took the tactical offensive but yet suffered only light losses. Close-order musket and bayonet

tactics seemed to work in every major engagement whether the defending Mexicans were behind field works or in the open. It just didn't seem to matter. Over time the ease by which these tactics succeeded fostered an unrealistic expectation of their overall reliability; an over estimation which clearly permeated tactical thinking at the beginning of the Civil War.

In reality, the tactics employed during the Mexican War had progressed little from the tactics utilized during the American Revolution or the War of 1812. Infantry fought in lines and relied upon close-order formations, concentrated musket fire, and the bayonet. Artillery was used on both the offensive and defensive, and cavalry was basically held in reserve awaiting a saber charge when enemy troops began to retreat. Little tactical innovation was attempted since there was little change in the technology of war to drive substantial changes, and because the tactics had worked so well.

But much would change during the decades after the Mexican War. Technology would make an imprint on warfare that would mark the American Civil War as bloodiest war in American History. After Gettysburg it had become painfully evident that tactics that had served the American commands so well in the past were badly out of date and had to change, or vast armies of both the North and South might well face annihilation. Because they had less of almost everything including manpower, this harsh reality was especially true for the Confederacy.

Most of what America's military leaders had learned of tactics during the Mexican War were reinforced by prevailing tactical theory of the day which

emphasized the offensive over the defensive, and preached what proved to be reckless assaults against fixed defensive positions would all be proven fallacious. The arguments for bayonet attacks and close-order formations made popular by the famous French military theorist Antoine Henri Jomini in his 1838 work titled "The Summary of the Art of War" would prove to be suicidal. But these would not be lessons easily learned. They would come at the expense of many a young life.

This mindset coming out of the Mexican War was not confined to Jomini. Current (1850s-60s) West Point professor Dennis Hart Mahan had long been an advocate of the tactical offensive, and had taught most of the men who would become the senior commanders on both sides of the conflict.

In his work titled An Elementary Treatise on Advanced-Guard, Out-Post, and Detachment Service of Troops, and the Manner of Posting and Handling Them in the Presence of an enemy," Mahan offered a general plan for the tactical offensive which divided an attacking force into three groups: an advanced guard, a main body, and a reserve. The advanced guard, or skirmishers would clear the way for the attack for the main body, while the reserve would follow in columns. When the advanced guard was checked by the enemy, it would fall back and integrate into the main body which would then deploy either into a line formation and open fire, or charge the defenders with bayonets. Over the years after the Mexican War Mahan's tactical system had been literally codified into army manuals.

Another important work which had a great amount of influence upon the mindset in the army of the 1850s was written by General Daniel Butterfield and later published in 1862. This work entitled *“Cam and Outpost Duty for Infantry”* Butterfield noted that infantry should always take the offensive against an enemy which had taken a defensive position, arguing that the literal shock of the offensive charge should carry the day for the attackers.

Most anytime a discussion would develop among the top military theorists of the day, the focus would soon be upon the tactical defensive, of which the single most important objective was the absolute necessity of regaining the tactical offensive. In all of his works Jomini insisted that *“the best of all for an army which awaits the enemy defensively, is to know how to retake the initiative when the moment has arrived for doing so with success.”*

According to Mahan the bayonet was the weapon of choice when attempting to regain the initiative from an attacking enemy. Under his system, if the advancing guard came under attack, the main body would come to its support by attacking with the bayonet. On the other hand, if the advancing guard were driven away, the main body would deploy into a line formation and defend itself by concentrating musket fire. If the enemy continued to advance, Mahan argued that the defenders should redeploy into columns and mount a charge, writing *“A charge by a column when the enemy is within 50 paces will prove effective if resolutely made.”*

Many of Mahan’s tactical ideas would later be adopted by one of his students by the name of Henry Halleck who gave great weight to the idea of the

entrenched line with intervals in the works. As so eloquently put by Halleck, *“this allows the assailed to act on the offensive by charging the enemy at the opportune moment.”*

At the same time that the tactical offensive was being emphasized, in all of the recognized army tactical manuals, equal emphasis was also being given to the optimum positioning of field entrenchments. Prior to the Civil War, Mahan had become widely recognized as the foremost American expert on use of field works. During this time he wrote that the use of field entrenchments was in the best overall interest of a society which relied on volunteer soldiers since they would minimize casualties as well as assist the growing militias in their struggle to achieve parity with regulars. While most tactical theorists generally respected the value of field entrenchments, they still believed they could be overcome by a vigorous offensive charge.

When faced with strong entrenchments, Jomini seemed to prefer a turning movement over a direct attack, but also seems to not have been afraid to attack an entrenched position on either flank, or even in the center depending upon the specific circumstances. According to Jomini, when a commander was preparing to attack an entrenched line, he should precede the attack of his main body with an artillery barrage. Jomini believed that such an attack had to be pursued vigorously and without hesitation arguing that the *“least hesitation is worse in such a case than the most audacious temerity.”*

Mahan strongly favored the use of the bayonet under the cover of artillery fire when attacking fixed positions, and also recommended the use of the

bayonet in defending a fixed entrenchment. As can be readily be seen, the use of the bayonet was highly regarded at the close of the Mexican War and in the intervening period thereafter, a fact supported by the publication of several bayonet manuals between the 1840s and 1860s. Not the least of these was a manual published by George McClellan in 1852 after observing tactical field operations in the Crimean War which emphasized the use of French bayonet tactics. While McClellan admitted there would not be much bayonet fencing done by infantry on a day to day basis, he also believed learning the skill would be good for morale, making the argument that *“the men will surely be more steady and composed from the consciousness of the fact that they can make good use of their bayonets, and easily project their persons against everything but balls.”*

While the rifle had been considered a special weapon to be used only in special circumstances in Mexico, the musket was the primary mount upon which the bayonet was used after the Mexican War. To Mahan the riflemen were considered sharpshooters with disdain calling them *“lurking and almost invisible foes.”* However, it mattered little whether it was the musket or the rifle that were carried as primary weapons of the infantry, the tactical theory remained the use of the close order formation. Both before and after the Mexican War, tactical theorists objected to the loose order formation and strongly criticized the use of skirmishers in battle. So by the 1860s the basic infantry formation for both offensive as well as defensive operations was the two line formation with a reserve, with no greater distance between lines than the range of small arms fire. (presumably musket )

Within this same mindset small columns were considered acceptable while large or heavy columns were rejected out of hand, mostly because lighter columns were more agile while the heavy columns were slower, less maneuverable and required additional troops to cover their flanks. According to Halleck heavy columns were dangerous because they *“exposed large masses of men to the ravages of artillery, and diminished the mobility and impulsion of the attack without adding greatly to its force.”*

But, all of the relevant tactical theories which had gained popularity during and after the Mexican War were rendered moot with the introduction of the new shoulder rifle. By the mid 1850s the rifle replaced the musket as the principal infantry weapon, and warfare would never again be the same. However no matter how superior the rifle was to the musket in terms of range and accuracy, early on it was an extremely inefficient weapon. At the time it was introduced the projectiles fired were made slightly larger than the rifle bore requiring it to be hammered into position. This tight fit was necessary to provide a means for the projectile to catch the riflings in the barrel as it was fired, causing the projectile to spin thus giving the rifle its accuracy and range. One can easily imagine a rifleman slamming home the projectile down the rifle bore projecting himself an ideal target to opposing riflemen in the process.

Ultimately this ordnance problem was solved by a Frenchman named Claude Etienne Minie of the Chasseurs deOrleans who developed an oblong bullet that was small enough to be easily dropped down the barrel, but with a hollow base that expanded when the weapon was fired to grip the riflings in the

barrel giving the desired spin. While Minie was not the only, or probably not even the first to come up with this idea, his work turned out to be historic in developing the accuracy and efficiency of the rifle and changing the dynamics of warfare.

While the maximum effective range of the musket was only a few hundred yards, the minie ball now increased the effectiveness of the ordinary rifleman to 600 yards, with a destructive capability of 1,000 to 1,200 yards, increasing exponentially the destructive ability of the individual rifleman on the battlefield. At the outbreak of the Civil War, the basic weapon of the Federal infantryman was the Model 1861 Springfield rifle, which sported an effective range of 300 to 400 yards and could kill at a range of 1,000 yards. The Springfields carried by Confederate troops were mostly captured during the successful Confederate campaigns in the Eastern Theater during early years of the war.

The development of this new weapon for the infantry made the publishing of a new tactical manual imperative. *Scott's Infantry Tactics* had been subsequently republished in 1852, 1857, 1860, and 1861, without a word of revision allowing for the introduction of the shoulder rifle. Realizing the potential enormous impact of this new weapon on the battlefield, Jefferson Davis, Secretary of War directed in his annual report for 1854 that a manual of rifle tactics be prepared to replace Scott's musket tactics, and the next year he reported that a new tactical manual was in the process of distribution among the ranks.

The new manual was the two volume work of Major William J. Hardee entitled *Rifle and Light Infantry Tactics*, which was published in 1855, republished

in 1860 and 1861, and reprinted in two Confederate editions, but during all of this only minor revisions were made. In order to compensate for the tremendous improvement in firepower, Hardee's work made significant changes to Scott's tactical system, the greatest of which was the recommended speed of the advance. Incredibly, Hardee's work failed to address the overall wisdom of charging fixed positions, he only advocated charging them faster. Realizing that the new rifle gave the defender more range and accuracy, Hardee sought to compensate for the increased fire power by closing the time when a charging force would begin and end the charge. While Hardee retained Scott's common step of 28 inches, his rate of 90 steps per minute, and the quick time step to 110 steps per minute, Hardee introduced the double quick step and the run into the equation. He increased the length of the step to 33 inches from 28, and executed it as 165 steps per minute. In times of emergency Hardee allowed for an increase to 180 steps per minute. At this rate Hardee calculated that a distance of 4,000 yards could be covered in about twenty-five minutes.

The most striking feature of the tactical manual was the combination of the "double quick-step" and the "double quick-time." The 33 inch stride and the rapid rate were a real challenge for the infantrymen, especially in the summer months wearing heavy wool clothing. Overall, the new tactics introduced by Hardee were dubbed the "Shanghai Drill" by the rank and file infantry soldiers. While almost every change in tactical movement under Scott's system was made from a halt, under Hardee's new method changes could be made while in motion giving more flexibility of movement.

At the time the fighting really began in earnest in 1861, the smoothbore cannon of choice was the 12 pound Napoleon which had first been introduced in 1856. In terms of the big guns, the most common rifled weapons were the ten-pound Parrott and the three-inch ordnance rifle. Like their shoulder fired counterparts, the rifled gun had greater range and accuracy than did their smoothbore counterparts, but most interestingly, the smoothbores were more feared by the infantry than were rifled weapons. The primary reason for this was that the rifles had smaller bores and could not fire the large rounds of canister and grape that had, and would continue to make the smoothbore so lethal to infantry. Because of this the smoothbore continued to be popular after the introduction of the shoulder rifle, and at the end of the Civil War, the total inventory of artillery pieces in the arsenal of the Army of the Potomac was comprised of about one-half smoothbores.

So in most every way, the technological innovation of rifling was much more beneficial to the rifleman than the artilleryman. After the introduction of rifling, the artillery consistently lost ground to the infantry in relative strength, because after the introduction of the rifled shoulder weapon, artillery could simply not remain in front of an infantry regiment armed with rifled shoulder weapons. If artillery expected to operate freely, it had to take up positions well beyond the range of the riflemen. When the infantrymen had been armed with smoothbore muskets artillery could take up positions much closer to the infantrymen just beyond the range of their muskets and be in position to operate very effectively. However, after the adoption of the rifled weaponry, both shoulder and artillery, it

was common for an opposing artilleryman to find himself operating at a greater distance, and under both artillery as well as rifle fire.

Now field artillery could no longer unlimber within easy canister range, while at the same time remain outside the effective range of opposing muskets. What it all boils down to is that by 1861, the rifled musket had changed the role of artillery from both offensive and defensive to only that of defensive. This greatly changed with Jomini-type thinking. Simply put, Jomini liked the offensive cannon attack. Within his ideas of concentrated *faire* a cannonade fit perfectly. What could be better than concentrated musket fire than concentrated artillery against an enemy position where an attacking commander desired to make a directed effort.?

Within this mindset it had always been relatively safe for artillery to play a significant offensive role against opposing infantry. As practiced in the smoothbore era one or more batteries of artillery would advance on the attack with infantry regiments with the guns on each flank of the infantry if in line formation, or near the heads of its columns if in columns.

When it came to defensive deployment Jomini-type thinking of the day would be reticent to scatter the guns along a defensive line, opting instead for an equal distribution as much as the terrain would allow. Mahan's manual provided that artillery being used on the defensive should be placed about 600 paces apart and in a position so that it would not fire over friendly infantry, or where it would likely attract enemy artillery fire against friendly infantry.

Like infantry theory, cavalry theory emphasized the tactical offensive over the tactical defensive. According to Mahan, a body of cavalry which waits to receive a charge from cavalry, or is exposed to the fire of enemy infantry or artillery must be pulled back to a much safer distance or it would simply be destroyed. Jomini noted that to send cavalry against a well organized infantry line would usually end up with the destruction of the cavalry.

However, there seems to have been little or no reservation about sending a cavalry charge against other cavalry. According to Jomini, when such a match-up occurred, the victor would usually be the commander who had the last squadrons in reserve that he could throw into the conflict at the very end when both forces had been weakened.

The theory of the day as it pertained to cavalry formations was very similar to that of infantry. Most commanders preferred the two-line formation as pretty much standard for cavalry as well as infantry. But formation notwithstanding, the value of the cavalry on the battlefield was still primarily one of shock. As deployment from a two line formation in an offensive attack, the first line was usually the only line to actually come into contact with the enemy, and the second was used primarily to close gaps in the front caused by casualties sustained in the first line during the charge.

According to Jomini, the principles of infantry formations were easily applied to cavalry operations, however, in the case of when in columns, the columns would have to be loose enough to allow for an efficient charge. The column could never be compact like that of an infantry regiment., but instead be

deployed at full or half squadron distance to allow for the movement of the horses during the charge.

While the theory of the cavalry charge was firmly imbedded in the offensive charge, its weapon of preference was the saber. In fact, Mahan believed that if the charge were executed properly, the cavalryman would seldom need his firearm. When one speaks of being executed properly it was meant that the charge was that the speed of the charge be balanced with order. In his book *“Cavalry Tactics”* Phillip St. George Cook wanted the cavalry charge to proceed as rapidly as possible and yet maintain order so as not to wear out their mounts by the time they reached the point of attack.

However, Cook did make one fundamental change in his tactical model and that he adopted the single-rank formation. This conflicted with the manual which had been adopted by the United States War Department which called for the deployment of two ranks of five squadrons each, while Cook called for a single line consisting of ten squadrons.

On the Confederate side, Joseph Wheeler chief cavalry officer of the Army of Tennessee called for a single rank attacking formation. In his manual entitled *“A Revised System of Cavalry Tactics”* Wheeler agreed with Cook that a single line formation would reduce the confusion of the charge that would otherwise be the product of a two line charge, as well provide greater flexibility which would allow a commander to more easily reform his line in the aftermath of a charge. Finally, Wheeler contended that a single line attacking formation would give the

attacking cavalymen a great shock value which was the most valued benefit of the cavalry charge.

It is debatable just how many soldiers of the Civil War era actually read tactical manuals. After all, reading skills were not widespread. But even for those who could read it appears that most manuals were not readily available, and those available for distribution were mostly artillery manuals. But that notwithstanding, in the period between the Mexican War and the Civil War, there were more significant advances in weaponry than there were in tactical theory. The introduction of the rifle, both in musket and gun form made changes in tactical thinking absolutely necessary, and moved the text books covering the subject of the era into obsolescence. Prevailing tactical theory greatly underestimated the impact of the rifle, and when this became obvious new manuals were prepared, but they mostly restated prevailing mindsets and incorporated little new thinking into the process. That is not to say that changes were not made, they most definitely were. The problem here was that change was slow, and what change in thinking did occur proved to be totally inadequate.

