

CIVIL WAR WEAPONS AND TACTICS AND OUR JUDGMENT OF GENERALS

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American Civil War battles resulted in horrendous casualties unimagined by the populace both North and South in when fighting began in April 1861. Although casualty numbers were consistent with contemporary European battles, they were far different from those in the American Revolutionary War and the War of 1812. As a consequence, their commanders are often portrayed in "generic weapons-tactics statements" as Luddites, Neanderthals, or worse, mindless butchers, who purportedly continued to employ "*tactics*" "*outmoded*" by "*advances*" in weaponry." Depictions like these are often accompanied by seemingly rhetorical questions such as, "How could those generals have sent those men across those fields?" Similar accusations get levied equally against generals North and South, competent or inept: for Ulysses Grant at Cold Harbor, one finds Robert E. Lee at Malvern Hill; for Ambrose Burnside at Fredericksburg, one finds John Bell Hood at Franklin.

This paper examines generic weapons-tactics statements and the contention that Civil War generals allowed their men to be unconscionably slaughtered. It attempts to show that the statements and their contentions are based on a series of misunderstandings that start with the terminology and continue through other concomitant misunderstandings. These misunderstandings are cultural, historical, and subtle.

However, some disclaimers are warranted. First, this paper covers aspects of the weapons and tactics used in the Civil War. Few, if any, judgments are offered on the

generals who employed them in battle. In addition, none of the points presented suggests that any side in that conflict was superior to the other: both North and South were part of the American culture. Finally, the paper never questions the incredible and inexhaustible courage and fortitude of the common soldier who suffered, regardless of how their generals chose to fight battles: whether victors or losers, men died. In summary, decisions are analyzed, not persons.

For comparison, this paper correlates actions and persons to those in other conflicts, a technique uncommon in Civil War historiography with the notable exceptions of the works of Fletcher Pratt and John Keegan. However, using such an approach can often help cast new light on relevant topics and serve to explain them better than in isolation. Although many students think that our civil war was fought in a historical vacuum and is unique among world conflicts with *absolutely* no comparison to others, the similarities are there if one is willing to both look for them and accept what they reveal.

BACKGROUND ON TACTICS

The first misunderstanding inherent in generic weapons-tactics statements involves the word "tactics," its usage, and its definitions. This misconception is compounded by a lack of specificity as to the exact tactics affected by certain weapons.

Often in print and broadcast media about the Civil War are comments such as "the weapons outpaced the tactics," "the weapons made the tactics obsolete," or "the generals continued to use tactics that were outmoded." Such statements are unintentionally ill-conceived for several reasons, the first of which is the use of the word *tactics*. One meaning is generic (the science and art of disposing military forces in

combat) whereas the other is plural (methods of employing military forces in combat). Thus, the science of *tactics* (singular) studies the use of many military *tactics* (plural). To avoid such confusion in terminology, this paper uses the proper noun *Tactics* for the science and *tactics* for the plural. Also, this paper concentrates on the effects of particular weapons on specific *tactics*.

Another reason weapons-tactics statements are imprecise is that they almost always arise while discussing the effect of advances in firepower versus a specific type of attack—the close-order frontal assault—often the only tactic meant by these assertions. For instance, one never hears that the rifled musket should have affected any of the tactics of motion such as turning movements or envelopments. Thus a broad statement such as "the weapons outpaced the tactics" might be better stated as "advances in firepower affected certain types of attacks, notably the frontal assault."

The final reason for the non-specificity of weapons-tactics statements is that rarely are alternatives offered. Although historians do not purposefully avoid justifying their contentions, such statements have an air of intrinsic authority and perspicacity that appears to require no explanation. Often the residual impression is that Civil War generals were somehow deficient because of the prevalence of frontal attacks. The weapons-tactics statements tacitly imply that the tactics used were wrong and something else should have been used instead. About this, historian and Gettysburg licensed park guide Garry Adelman states that whenever someone says Civil War soldiers had a death wish or were not intelligent, he simply inquires what they would have done in their place.

(1)

Parts of this paper discuss the experimentation done with weapons and tactics on both sides of the Atlantic prior to the Civil War. A major assumption of this paper is that *tactics are not obvious*, except of course to experts in hindsight. New tactics do not just appear. Experimentation must determine whether they work or require new equipment. Then the army must be extensively trained, after which combat inevitably teaches many lessons that maneuvers cannot. World War II naval warfare in the Pacific Ocean provides an excellent case study here.

The fleets of both the United States and Japan trained extensively in carrier operations prior to their entry into war. The Japanese Navy had significant experience before its assault on Pearl Harbor and indeed executed a successful surprise attack, albeit on a fixed target still at peace. Consequently, despite training and practical skills, in the first two battles between carrier fleets at Coral Sea and Midway, both sides had difficulty finding the other. All types of mishaps occurred—launch timetables were hard to keep, search patterns were inconsistent, and equipment malfunctioned—making the two sides seem like amateurs compared to similar operations later in the war.

For clarity, the weapons most commonly referred to in weapons-tactics statements about the Civil War are typically the rifled musket with the Minié bullet and improved artillery, all of which increased the potential range and efficacy of firepower on both sides. These greater distances and capabilities for killing were responsible for the large casualties in combat. However, although some battles are noted for the effect of artillery fire, notably those with favorable terrain such as Malvern Hill, Antietam, and Gettysburg, cannons accounted for a small percentage of total battle casualties; therefore, this paper concentrates on the rifled musket.

Infantry weapons were still overwhelmingly muzzle-loaders that limited severely the ability of the individual soldier to fire while under cover or maneuvering. Black powder was smoky for both rifle and cannon, which added to the soldier's woes by revealing concealed positions, and conversely, by concealing open locations after a few shots. Field artillery, again mostly muzzle-loaders, was still limited to direct fire, i.e., what the battery could see. Indirect artillery fire, such as over a hill, was not generally feasible until the 20th century, when better communications could direct shots efficiently and accurately. Civil War armies did have mortars and sometimes howitzers for indirect targeting, but these were limited to sieges because their weight did not lend them to mobile combat use.

Regardless of one's preferred theory of war—Frederick the Great, Napoleon, Jomini, or von Clausewitz—it all depended on battle. And that involved attack. Generals and armies could maneuver profusely, but sooner or later, combat was joined and one side had to advance. It was almost the only way to win the Civil War or any other conflict for that matter. According to von Clausewitz:

"A battle belongs also to a greater whole of which it is only a part, but because the essence of War is conflict, and the battle is the conflict of the main Armies, it is always to be regarded as the real centre of gravity of the War, and therefore its distinguishing character is, that unlike all other encounters, it is arranged for, and undertaken with the sole purpose of obtaining a decisive victory." (2)

Therefore, imprecision in generic weapons-tactics statements results in confusion between their actual and intended meaning. Implications, mostly negative, about Civil War leadership result from this unintended ambiguity.

HOW NOT TO JUDGE TACTICAL USE

The second misunderstanding in generic weapons-tactics statements involves how Civil War leadership is judged. Before covering the tactics themselves, the next step is to determine the basis by which they might be studied and evaluated. In this area it is not a question of ambiguity but exclusion, wherein judgments are made with no mention of criteria.

Critique of historical events should indicate the criteria against which they are compared. Hindsight, so common in Civil War discussions, can often sound authoritative enough to be perceived as truth rather than opinion. It also has the unfair benefit of current knowledge or awareness of the outcome, a luxury not afforded the participants.

For instance, no one can state objectively what would have happened had the Japanese destroyed the oil supplies at Pearl Harbor on December 7, 1941. Nor can anyone truly determine whether General Thomas "Stonewall" Jackson could have taken Cemetery Hill on July 1, 1863. Since he had been dead since May 10, any statement about what he *would* do at Gettysburg or anywhere else is pure conjecture. Unfortunately, the failure of General Richard Ewell to attack Cemetery Hill is judged against a fanciful, idealized version of Jackson's activity, an easy but ultimately empty supposition requiring no proof. Therefore, the criterion must be unsoiled by hindsight.

The basis must also avoid cultural and temporal elitism, the idea that anything modern is better than anything from the past—or put simply, that we know better. Historical figures were parts and products of their environment and managed well in them: they did not know or think that they were "backward." It is helpful here to look at

another discipline, such as science, for examples that show subtle ways of displaying such a bias.

Physics is divided into "modern" physics and "classical," i.e., *not* modern physics, indicating the dividing line between Newtonian mechanics and quantum mechanics as proposed by Max Planck in 1900. Biology refers to "degenerative" evolution, where an organism simplifies itself because of environmental pressures. Examples include cave-dwelling fish that lose the ability to see or reptiles that evolve into snakes. Ignored are the facts that their speciation involved simplifications rather than increased complexity and that these adaptations allowed them to thrive for hundreds of millions of years. Such terminology implies a prejudice imposed by the complexity of humans.

Mankind, however, has lost many natural abilities despite our complexity: manufacturing certain vitamins, the ability to re-grow severed limbs, and the capacity to swing in trees. These changes are never referred to as "degenerative" but in fact they are. (3) Similarly, it is important to discard thoughts of superiority over past decisions and methods simply because we live in a later time and supposedly "know better."

What then might be an ideal method for evaluating the intent or actions of historical figures?

The only legitimate means for judging Civil War actions is in the context of that war: the intelligence and training of the generals, their choice of tactics throughout campaigns, and any special circumstances that caused them to engage in what are considered today "pointless" attacks. Especially pertinent to evaluating the latter are mid-

19th century medicine, statistics of Civil War fatalities, and the concept of death during that period.

Disease and death in the mid-19th century were commonplace. Hospitals and funeral parlors did not exist as we know them today. Infant and child mortality rates were also much higher than compared to those of the modern First World. Contracting an illness such as scarlet fever, cholera, or diphtheria—there were many others—involved lengthy home stays among family, with mostly women providing nursing care around the clock. The course of illness was often predictable and all knew when death was imminent: Doctor Hunter McGuire had the faculty to tell General Jackson's wife in the morning that he would die *that day* from pneumonia. And unlike the 21st century, imprecise medical knowledge of hidden ailments such as genetic heart conditions caused many overtly healthy people to die suddenly.

Because of this ubiquity, disease and death were also major components of cultural pursuits such as art and literature. For example, plague and leprosy appear as major themes in paintings from the Middle Ages until the 1800s. Many artists, writers, and poets were themselves afflicted with diseases, whose effects influenced their work. Artists painted what they saw, from a face with an enlarged adenoid, to facial paralysis, to varicose veins. (4)

Much literature of the period included characters inflicted with the ailment common at the time. For example, in the Middle Ages and Renaissance, leprosy was popular; in the 17th century, gout was favored; and by the 18th century, tuberculosis and fever diseases made the most frequent appearances in novels. (5) One can extend this to film in the mid-twentieth century, where cancer became preferred.

The dead were prepared for internment at home where services were held before being taken directly to the burial site—either a public or church cemetery, or a private plot on the property. (6) If the latter, the gravestones reminded everyone constantly of the dead. This was not a culture centered on death, as the Mayan and Aztec were with human sacrifice, but one that went to great lengths for coping with loss and its aftermath. This does not mean that people thought life was cheap or that they did not mourn; although they valued living, death was all too common.

As a result, cultural norms for grieving were much more stringent and codified than today. England's Queen Victoria set the standard with her perpetual vigil for her husband, Prince Albert, who died in 1861. Proper mourning became ritualistic and fashionable, and articles even appeared in magazines. Everything was specified from its duration (three months for men and up to three years for women), clothing materials worn, headwear (bonnets and veils), when to wear jewelry and what type. Mourning practices even extended to children, societal engagements, and stationery. (7) The expression of grief was meant to be personal, tasteful and public.

Prior to the Civil War, art and photography allowed the completion of mourning with post-mortem paintings and photographs. Photos were expensive, and the average family could not normally afford them. Despite the expense, they allowed one final, lasting image of the deceased before burial. (8) These too were ritualistic, with defined genres and poses of the deceased dressed in their best clothes sitting on furniture or, if a child, in the arms of a family member. In fact, by the latter part of the 19th century, post-mortem photographs were a large part of the business of professional photographers. (9)

In summary, death was thus common, personal, ritualistic, and public with a memorial duration lasting years: civilians, privates, and generals were thus immersed in a culture that subsumed mortality as a part of daily life. Therefore, the probability and ubiquity of death, especially among the young, would have inured soldiers and generals to its inevitability. This is not an overlooked bias of the weapons-tactics statements, but a hidden prerequisite for the ability of commanders and their men to function despite moral attitudes evaluated from a modern perspective.

If death was much more personal than today, then 19th century medicine was equally far less developed. As the germ theory had not yet appeared, there was knowledge neither of how disease moved through the populace nor how to fight it effectively. Internal imaging was non-existent, as was laboratory testing. (10) Invasive surgery was rare, as evidenced by high death rates of soldiers who were "gut shot." Although amputation surgery was effective, it carried the risk of death from infection.

Anesthesia was a recent development and did much to ease the pain of the wounded, but because the science around it was unknown, its application was often inconsistent. Medical specialties were almost unheard of. Therefore, because of scientific limits, Civil War doctors had constraints beyond their knowledge or ability to overcome. Whatever actions they took, regardless of how primitive or repulsive they appear to the modern eye, were in the best interests of their patients *within the spirit of their medical ethics*. Their charges could ask for no more, and neither should modern historians.

By the early 1900s, death had become so associated with the parlor of a house that when mortuary establishments appeared they were called funeral "parlors." Around

that same time, the magazine *Ladies' Home Journal* suggested renaming it the "living room." (11) Shortly thereafter, medicine started to advance to the point where it acquired therapeutic validity. The result was that hospital stays were no longer interludes between life and death, and since the 1920s, the combination of increasingly modern medical care and funeral homes had largely removed death from the common man.

By the early 21st century, the combination of coherent medical knowledge and instruction, pharmaceuticals, imaging, surgical techniques, and genetics has offered an improved quality of life within a considerably extended span. (12) Serious accidents and illnesses are treated in hospitals and the elderly and long-term care patients live out their lives in nursing homes. When death occurs, morticians prepare the body for burial. The direct exposure of the modern non-medical person to disease and death is therefore minimal to non-existent.

In summary, just as the capabilities of modern medicine should not be the basis by which historians judge the techniques of Civil War doctors, modern experience with disease and death is equally unsuited for judging the actions of persons in that era. This presents a new way to look at army deaths in the Civil War. The following figures are computed and rounded from the National Park Service Civil War Facts web site.

The total number of soldiers on both sides for the four years of the war was about 3.5 million. The total number of deaths in both armies was approximately 590,000, of which 204,000, or around 35 percent of deaths, were combat deaths (killed in action and mortally wounded). However, about 386,000, or 65 percent of deaths, were from non-combat deaths such as disease and injury. (13) To be fair, for this era the annual death rate among males in the 1850s was about 22 per 1,000, or 0.022. (14) This means that if

there were no Civil War, about 77,000 (2.2%) of those 3.5 million soldiers would have died of other causes anyway over those four years. This number is much less than the total number of non-combat deaths, and the public expected this as a normal part of life. The difference of 309,000 non-combat deaths indicates how more lethal army life was.

Assuming that a minimum of 3.5 million soldiers fought on both sides, this means that roughly one in six died overall, one in twenty died in combat, and *one in ten died just from being in the army*. However, if one considers all casualties—battle deaths, diseases, wounded in action, and dead prisoners of war—one arrives at 642,000 for the Union and 483,000 for the Confederacy for a total of 1,125,000. (15) Again, based on a minimum of 3.5 million soldiers on both sides, this means that about 32 percent of all soldiers were casualties, or *one of three*.

Numbers such as these are out of the realm of experience for modern soldiers and historians, but were apparently all too common then. This is important to remember. For instance, for World War II (WWII), the corresponding rounded numbers are 407,000 killed and 671,000 wounded out of 16,354,000 who served in all branches of the military (including the Coast Guard). This means that 2.5 percent were killed and 4.1 percent were wounded for a total 6.6 percent casualty rate. Therefore, judging Civil War performance through the WWII filter might produce somewhat high expectations of the former.

Do these relatively low percentages mean that no difficult tactical situations appeared in WWII comparable to the frontal assault? No. That war had them aplenty. At the Battle of Midway in June 1942 U. S. Pacific Fleet Commander Admiral Chester

Nimitz was forced to attack the Japanese fleet with large numbers of outmoded planes to—they were all he had—and many were shot down and their crews killed.

For the first years of the war the United States 8th Air Force made a tactically difficult decision to send unescorted bombers in daylight raids over Germany. Of approximately 370 bombers on the Schweinfurt-Regensburg raid in August 1943, 60 were shot down and upwards of 90 were damaged seriously. This total loss rate of 40 percent led eventually to a cessation of offensive bombing operations for a few months. Yet, the Allies later continued these missions unescorted because it was important to keep hitting German industry. Because fighters did not have to range to escort bombers for entire missions before needing to turn back, the problem persisted until the appearance of the longer-ranged American P-51 Mustang fighter early 1944.

Finally, U. S. forces staged over 70 amphibious landings throughout the war in all theaters, but mostly in the Pacific. Against a fortified beach such as at Tarawa or Normandy, these were little different from a Civil War frontal assault, but it remained the only way to gain a foothold and prosecute the war. One might be tempted to criticize the commanders of these invasions for using tactics that in some cases ensured high casualties among the first assault waves, but such criticism would be unwarranted for a number of reasons.

Amphibious assaults, or bridging the transition between water and land under fire, have been (and still are) recognized as high-risk. The first such large-scale modern operation was executed by forces of the British Empire and France at Gallipoli, Turkey in April 1915. It lasted eight months, cost over 200,000 casualties, and was a colossal failure. The specter of Gallipoli loomed large over subsequent thinking of amphibious

operations as doctrine, tactics, and equipment were developed through the 1920s and 1930s.

The commanders at Tarawa and Normandy, in particular, knew that such operations were risky, and did everything in their power to minimize casualties. Special landing equipment was designed, assaulting soldiers trained extensively for the landings as did their seaborne counterparts, and heavy pre-invasion bombardments from sea and air were planned and practiced (although they were not as effective as had been hoped).

In fact, the entire Island Hopping campaign in the Pacific constituted the capture of important islands, each involving an amphibious assault, and bypassing (maneuvering around) more strongly held Japanese bases where possible. Large, heavily-defended bases such as Rabaul in the Solomon Islands and Truk Atoll in the Caroline Islands were attacked by air until they were rendered inert to the Japanese war effort and the garrison was left to starve and wither: neutralization without a landing.

Despite this, although almost all amphibious landings in the war were successful, many involved unforeseen problem or heavy casualties. In short, things went wrong, which is common in battle. Tarawa is a case in point. Among the problems: the blanket naval bombardment did little damage to the Japanese bunkers; flat-bottomed landing craft got stuck on a reef in low tide hundreds of yards from the beach; the Marines were not trained in overcoming the pier on one side of the island; and radios did not work in the salty environment preventing coordination from shore to ship. Thus, on an island less than half the size of New York's Central Park, the Marines suffered over 3,000 casualties over the four-day battle, about eight percent of the landing force.

These problems and losses caused the Navy and Marines to examine every aspect of the landing and make required corrections. They did not, however, cause anyone to abandon amphibious assaults as a tactic to be used for the rest of the war. Although many choices existed in techniques, equipment, and overall strategy, *there was no choice* on the basic tactic required to win back the Pacific. World War II commanders somehow receive no criticism for this, whereas Civil War generals are consistently criticized for sticking to a tactic that, as will be shown below, worked well enough for them.

A milder, less morbid illustration of using different sensibilities can be made with boot camp drill instructors (DIs). Compared to the abusive demeanor of DIs as late as the Vietnam War, their situation today is much transformed. Training remains tough, especially in the combat arms, but the treatment of recruits is much less sadistic. In addition, DIs receive much more command supervision than their predecessors and now receive mandatory periodic psychological examinations.

The cause of this transformation were training incidents where recruits were injured or killed because DIs went too far, situations that might not have been reported in WW2 but which made headlines afterward. To the modern viewer, some WW2 or WW1 training methods might seem too harsh or extreme, but they did not appear so at the time. Experience and sensibilities change, and with them, the view of the past.

Thus modern experience is unsuitable to judge the past because it can set standards and expectations that historical figures and technologies cannot meet. Civil war generals lived in an era long before modern medicine, one that experienced much more death than today and endured it more personally and publicly. Their decisions and personal acceptance of those decisions were based partly on contemporary values.

Because these values were cultural, generals would not have realized that they were part of their decision-making. Their predispositions would have been subconscious.

This means that any decisions made by Civil War generals must be judged *not* against modern standards of medicine, death, or warfare, but against criteria that governed their concept of reality. Any conclusions, therefore, from weapons-tactics statements, i.e., that the generals were so inept as to be unaware of the impact of the statement, are flawed. As for the intellectual part of their decision-making, i.e., what they could have known, one must look at their tactical concepts, as is done in the next two sections.

WEAPONS AND TACTICS IN EUROPE, 1830-1860

It is important to understand that weapons and tactics exist in a delicate balance, each side pushing for advantage. Sometimes a weapon wins, as with the chariot or the machine gun or the atomic bomb. Other times, the tactic wins, as with crossing the T or the two-plane formation of pilot and wingman or *blitzkrieg*. In all cases, the efficacy of a weapon or tactic lasts only until a counter weapon or tactic meets or bests it. Therefore neither stupidity nor incompetence cause imbalance: imbalance permeates the history of warfare.

In particular, the histories of Civil War weapons and tactics are intertwined and should be discussed together. The performance of Colonial units with rifled muskets during the American Revolutionary War (ARW) might lead one to think that those actions led directly to the use of rifled muskets during the Civil War. This is not totally true, because the British were the only ones impacted by them. Although the British

army experimented with rifled muskets, one need remember that in the War of 1812 and the Napoleonic Wars in Europe (1803-1815), the armies of the United States and Britain were still armed largely with smoothbore muskets, as were the French. (16)

The use of rifled muskets and modified tactics traces to the 1830s and 1840s when France was involved in colonial wars in northern Africa. Native troops fighting French forces did not fight according to European "rules." Instead they fought in irregular lines and hid behind any cover they could find. Their main weapons were long-barreled matchlock muskets that they elevated for greater range and accuracy.

French soldiers were not trained in marksmanship, fought in close-order lines, and carried heavier equipment; therefore, they offered good targets for the Algerians and suffered heavy losses against them. (17) A French army captain, Gustave Henri Delvigne, offered a solution in the form of a rifled musket that when tested in 1834 produced an effective range of 400 yards. However, its unsuitability for the Algerian climate, however, and other problems—loading a round ball and increased maintenance owing to powder buildup—caused it to be ineffective. (18)

Despite the failure of this initial attempt, the French army did not abandon the rifled musket. It started to experiment with cylindrical-conical bullets in the 1830s. After a number of promising attempts failed, owing again to the problems of increased maintenance, a captain named Claude Étienne Minié modified the cylindrical-conical bullet with a hollow bottom that expanded into the grooves of the rifling, making it more accurate than previous versions. Other changes to the rifles made them easier to load and maintain. By 1846 all French chasseur and Zouave regiments in Algeria had the new weapon with the new ammunition as it proved superior to all predecessors. (19)

As early as 1841 the British Royal Engineers had also tested rifled muskets and found them to be as accurate as 1000 meters as the smoothbores were at 600 meters. (20) The British issued its infantry a version of the French weapon and by the 1850s had developed and started to deploy the Enfield rifle. By the Crimean War (1853 to 1856) most combatants had units fitted with rifled muskets. Even with technical problems, the armies were sanguine about future success. An observer in that war from the United States Army, Captain George McClellan, would have been aware of this. The American Springfield rifle, also produced in the 1850s under Secretary of War Jefferson Davis, was an unauthorized copy of the Enfield. (21)

At this point, it is prudent to discuss Tactics in relation to this particular weapon. Its formal study known developed independently from weapons, although the two eventually walk hand-in-hand. The origin of Tactics reaches back over two thousand years. The Chinese work *The Art of War*, credited to Sun Tsu, is an early example. Although popular in the Orient, it did not receive much notice in the West until Western powers started to become involved in conflicts in the East. In Europe, however, formal study of war waited until much later. First attempts were the Marquis de Savorgano in the 16th century, and Montecucculi and Colonel Nochern von Schorn of the Netherlands in the 17th, but these never achieved popularity.

In 1766 Henry Lloyd published *History of the Late War in Germany*, which began the systematic study of war unfettered by traditional prejudices and based on principles similar to those established by recent scientific discoveries. He followed this in 1781 with *Military Memoirs* wherein he wrote that the art of war had two parts: mechanics and application. The former could be learned, but the latter could not, i.e., as

with art or writing, knowing the rules was not enough without the talent to apply them. Maneuver and victory, he said, depended on mathematics and topography. He coined the phrase "line of operations" (the path from starting point to destination taken by an army) and he outlined strategic principles to govern it. Although he emphasized measurable qualities, he discussed also moral and political aspects of war. (22)

After Lloyd two schools of thought on Tactics developed in the 17th century: those who believed that war depended on precise operational analysis based on logistics and topography and those who emphasized will, personality, and moral fiber. By the 19th Century each of these two schools of thought found its own influential spokesman: General Antoine Henri Jomini wrote on the precise, mathematical aspects of war and Carl Maris von Clausewitz wrote on war from the other viewpoint, that of the force of will.

Clauswitz served in the Revolutionary Wars in Germany and at Waterloo; Jomini, who was Swiss, rose in Napoleon's armies and eventually served as his chief of staff. The two were contemporaries and rivals. Although Clauswitz's reputation eventually overshadowed Jomini's in the 20th century, it was the latter who affected military minds in the 19th. It was Jomini that was translated (as needed) and taught in the military academies of Europe and North America. (23)

In his *Summary on the Art of War*, published in 1837, Jomini laid out the principles for which he is famous: directing the mass of force to the decisive point, maneuvering to engage a part of the enemy's force, and achieving concentration of effort to overwhelm the enemy. Using examples from the campaigns of Frederick the Great and Napoleon, he taught the basic mechanics: Strategy is the art of directing the army to the battle and tactics is the art of applying them on the battlefield to the decisive point.

Lines of operation and formations were geometric: concentric, eccentric, interior, exterior. Battle was a complex, but precise, pattern of lines, points, fronts, pivots, and zones. It is this intellectual and mathematical form of war that was the basis of Lieutenant Henry Halleck's *Elements of Military Art and Science*, published in 1847, which became a favored text among officers who would eventually fight against each other from 1861 to 1865. (24)

Returning to weapons, it is important to note that all of the above works on Tactics were based on smoothbore muskets. In the 1840s, armies began to study scientifically the characteristics and performance of rifled muskets versus smoothbores with both round and cylindrical bullets. Specifically, they studied muzzle velocity and trajectory. The important find was that round bullets fired from smoothbores had higher muzzle velocities than conical balls fired from rifled muskets, on average 1400 feet/second versus 1000 feet/second. (U.S. Army Major A. Mordecai confirmed this in independent tests.) This affected the bullet's trajectory. (25)

A bullet fired from a barrel is acted on by two forces (ignoring air resistance): the force of the propellant in the direction of motion and gravity which is toward the ground. From the moment it exits the barrel, gravity pulls the bullet earthward in its trajectory until it hits the ground. A higher muzzle velocity gives a bullet a straighter (or flatter) trajectory. This is what makes smoothbore muskets accurate for a short distance. A slower muzzle velocity requires a more curved upward trajectory to counteract gravity, or a rainbow trajectory, to hit a target. (26)

The British determined that for a rifled musket (with its slower muzzle velocity) to be accurate at it longer range, it had to be elevated so that the bullet exited upward

from the muzzle, traveled to the peak of an arc, and then downward to hit its target. This was of course known to hunters long before these studies and the Civil War. Thus, to hit a target at 300 yards, a shooter was required to aim the musket upward so that the bullet would travel 42 inches over a target 150 yards away. The angle needed to raise the weapon is dependent on the distance of the target; therefore, rifled muskets required range estimates of far more accurate than those for smoothbores.

In addition, the slower the muzzle velocity, the higher the angle required to fight the pull of gravity. This meant that the bullet would hit the target at a steeper angle and this decreased the "dangerous space" of the shot. Although offering much greater range, the rifled musket required more work for the shooter to hit his target. Backsights were added to the rifled muskets allowing the shooter to unconsciously raise the musket to the correct angle, but he still had to estimate the range. These new skills required more training. (27)

Experiments in the 1840s and 1850s with infantry showed that the ability to fire accurately at longer ranges meant that long columns facing the enemy were susceptible to plunging fire from aimed rifled muskets. This increased the importance of skirmish lines ahead of the main lines of infantry. More testing was conducted with rifled muskets and their effect on artillery and cavalry. The concern was that an enemy armed with rifled muskets could fire at units of these two branches deployed at formerly safe distances. This led to modified tactics for these two branches, including reducing direct cavalry charges and pulling artillery back from the enemy's line, which in turn led to cannon of increased range.

(Although not a topic of this paper, there were also debates about breech-loading rifles that foreshadowed choices made in America early in the Civil War. These concentrated on their increased rate of fire and how quickly ammunition would be expended. It was thought that contemporary logistical capability could not maintain a supply of ammunition if an entire army was fitted with breech-loaders. The recommendation was that only skirmishers should have breechloaders with the rest of the army using muzzle loaders.) (28)

The Great Indian Mutiny of 1857 allowed theory to be put into practice. In this war, British regular army regiments armed with the new Enfield rifles learned that expert marksmen could hit targets up to 800 yards. Also, regiments armed with Enfields could repel enemy attacks at far greater distances and more quickly than previously, especially when the enemy had only smoothbores. In April 1859, a Captain Tyler reported on this to British military leaders in a speech entitled "The Rifle and the Spade, or the Future of Field Operations." He stated that because of rifled muskets, entrenchments and obstacles would become more important to both protect defenders and to strike an attacking enemy at a longer distance.

Field artillery of short range would be less important because crews could not last under long-range musket fire. Although acknowledging the problem of large clouds of smoke from rifle and cannon obscuring targets up to 1,000 yards, Tyler insisted that infantry fighting would still occur at such distances. He predicted that battles would be shorter because casualties would increase and that they would be more decisive. There was still concern, however, as to whether the common soldier would be able or willing to endure the increase in casualties. (29)

The contentions that rifled muskets somehow outpaced certain tactics (or anything for that matter) and military minds had somehow missed their impact on the battlefield prior to the Civil War are misconceptions. They had been discussed and experimented on in European military circles for almost two decades prior. As shall be seen, these developments were not confined to Europe.

(Before ending the discussion of weapons and tactics in Europe, it is important to clarify the use of the term "Napoleonic." It can refer to two major periods of French history. The first is the reign of Napoleon I (Bonaparte) which occurs in two parts, from 1804 to 1814 and again in 1815. The second period is that of Napoleon III (Louis), Bonaparte's nephew and heir, from 1852 to 1870. Jomini's works are based on Bonaparte's campaigns, but Napoleon III had a say in tactics too: the work done in France in the 1850s on rifled muskets and changes in tactics was done under his direction. (30)

In the same vein, the Napoleon cannon, the basic piece on both North and South during the war, was developed in 1856 and named after Louis and not Bonaparte. (31) Often in Civil War historiography the term "Napoleonic tactics" appears, but often it is unclear which tactics refer to which Napoleon. The basic geometric formations are from Bonaparte, but later modifications based on rifled muskets are from Louis. This is an important distinction that is often overlooked.)

WEAPONS AND TACTICS IN AMERICA, 1850s

It should be clear that by 1861, much was already understood about rifled muskets and their effects from the work done in Europe. These advances in weaponry were not lost on the American military. In 1853, Secretary of War Jefferson Davis under

President Franklin Pierce authorized the purchase of Springfield rifled muskets to prevent the United States from falling behind Europe. Colonel Benjamin Huger conducted tests of the Springfield, Enfield, and Swiss rifled muskets 1854 and 1855. (32)

The United States Army in the late 1850s followed a system of maneuvers based on General Winfield Scott's *Infantry Tactics* which was based on post-Napoleonic (Bonaparte) French writings. It is no coincidence that from its inception to this time, French was required during the first two years at the United States Military Academy at West Point. Many technical and military texts used there were written in French. (33) In the 1850s, Davis still considered French ideas on tactics superior to the British.

Given their experience in North Africa, the French Chasseurs and Zouaves utilized a less rigid, looser line of battle over the older, Napoleonic (Bonaparte) close-order lines. Based on this and the army studies, Davis reported to Congress in 1854 that adoption of the new weapons would necessitate a change in infantry tactics, notably an increase in skirmishers and he predicted that almost the entire army would be deployed as "light infantry." (34)

It is around this time that Davis ordered Major William Hardee to evaluate the French tactics and write a new infantry manual for the army. Fluent in French, Hardee translated their manual for light troops and wrote *Rifle and Light Infantry Tactics* in 1854. It was officially adopted the following year and subsequent editions were named simply *Tactics*. In 1854 the War Department sent a commission of three officers as observers to the Crimean War: Majors R. Delafield and A. Mordecai and Captain George McClellan. They were to concentrate on the new (rifled) small arms and French artillery, but they were to also look at all aspects of the military arts.

Each filed a separate report. Mordecai included a copy of Captain J. Schön's Modern System of Small Arms which explained in detail the technology of expanding bullets and rifled muskets as used in Europe. McClellan and Mordecai discussed the Minié bullet and rifled muskets in particular and proposed their widespread adoption. The commission also brought back about 300 scientific works on military subjects in Europe some of which were authored by Napoleon III (Louis), emperor of France. It is unclear to what extent these documents were read among officers in the army. However, based on later works, it is clear that the technology of rifled muskets and cylindrical bullets was well understood in the U.S. Army as were their potential effects on tactics.

(35)

Henry Heth published *A System of Target Practice* in 1858, which was a scientific manual on the rifled musket, another translation of a French manual. (36) In 1860 Cadmus Wilcox published *Rifles and Rifle Practice as an Elementary Treatise upon the Theory of Rifle Firing*. This was a thorough treatment of ballistics, maintenance, and current European advances in rifled muskets. Also in 1860, John Gibbon published *The Artillerist's Manual* which included discussions of small arms. In particular, Wilcox, in his discussion of infantry tactics, did not believe that rifled weapons spelled the end of close-order tactics but that lines would have to be more open.

Wilcox believed instead that officers would have a tougher time preventing soldiers from firing too early and wasting ammunition. As an attacking line approached the enemy and the volume of fire increased, protecting the soldiers in the line was of increased importance: smaller units and maximum use of terrain would afford better protection. He also predicted that artillery would become more important in future

battles because artillerists could see their shot and correct their fire accordingly, which is more difficult for infantry. (37)

In summary, by the start of the Civil War, the U.S. Army was well versed in the technologies of rifled muskets and Minié bullets from both theoretical and practical standpoints. Army observers witnessed operations during the Crimean War and wrote detailed reports. Many European works were translated by knowledgeable army officers into modern manuals giving the army a theoretical basis for the use of these tactics. Alternative tactics were proposed but as of 1861 the army had little real operational experience in these new technologies and tactics. The company and field grade officers of 1861, who became generals quickly, would unfortunately have ample opportunity to test them in the upcoming four years.

TACTICS AND THEIR USE, 1861-1865

For this section, one assumption is required: Civil War generals as a whole were fairly intelligent. West Point in the antebellum years was primarily a college of engineering. The core of both armies, the West Point graduates, possessed a four-year engineering education which included French, calculus, chemistry, geology, physics, and engineering. They did this in an era when one could finish medical school in three years (with no pre-medical college training) and law school was not necessary to practice. Whereas it is true that the performance of the entire set of generals followed a statistical distribution of quality similar to that of grades in a college class (the "curve"), the last cadet by rank in any West Point class was still more educated than most persons in his society.

Of all 1200 or so generals in the war, approximately 32 percent were from the army and another 32 percent were from the military (including all West Point graduates and all services). About 25 percent were attorneys, by far the largest percentage of all non-military generals. Together officers and lawyers constituted over 80 percent of all generals. The rest were from business, engineering, education, students, clergy, and other occupations. (38) In addition, many were educated at other military schools in the country such as the Virginia Military Institute (VMI) and the Military College of South Carolina, known also as The Citadel. It is important to remember also that the war produced several outstanding civilian generals, the most notable of whom was Nathan Bedford Forrest.

The task of finding competent commanders had to fight the unfortunate numbers that were understandably hidden at the start of the war. Regardless of the intelligence of the average Civil War general, overall the U.S. Army officer corps had little experience commanding large units. In 1861, the number of officers in the U.S. Army was 1,080: both North and South would raise eventually over 3,000 regiments. (39) So from the start, the number of experienced officers available was less than the eventual demand, meaning that in 1861 most regiments would be led by men who had no military experience.

Starting with this intelligent core, West Point taught its cadets the Principles of War that are the basis for strategy and tactics. Nine were taught by the U.S. military (at the date of the source in 1959): Objective, Simplicity, Unity of Command, Offensive, Maneuver, Mass, Economy of Force, Surprise, and Security. Using modern instructional

language at West Point (from the date of the source in 1959), the principles germane to the current discussion are defined here:

1. Objective: "Direct all efforts toward a decisive, obtainable goal." The proper goal of a battle is to destroy the enemy.

2. Offensive: "Seize, retain, and exploit the initiative."

3. Maneuver: "Position your military resources to favor the accomplishment of your mission. Maneuver itself can produce no decisive results, but if properly employed it makes decisive results possible." Maneuver makes possible envelopments and turning movements. (40)

The Offensive is where armies receive objectives that result in attack, one of three basic types:

a. Frontal: Strictly this means an attack with equal weight along the entire front, but normally means merely an attack against the enemy's front. Such attacks are generally costly. (41)

b. Envelopment: An attack directed against an enemy's flank(s) or rear. (42)

c. Turning Movement: A wide strategic envelopment that avoids an enemy's main position and threatens his rear. It forces him to leave and fight elsewhere. (43)

The close-order frontal attack with concentrated, short-range fire from long lines of infantry was the most common, but not all regiments stuck to that method. Lt. Col. Thomas Kane developed a dispersed formation for his 42nd Pennsylvania—the first "Bucktail Regiment"—as did Colonel Hiram Berdan for his 1st and 2nd U.S. Sharpshooter regiments (along with green uniforms to blend into the brush). These

tactics proved particularly helpful when these regiments were deployed as skirmishers.
(44)

Indeed, the Confederates also organized twenty-three independent sharpshooter units, but these were all formed at the state level and most were no larger than a battalion. They were good, but none reached the level of training or marksmanship found in Berdan's two regiments. (45) Longstreet at Chickamauga and Emory Upton at Spotsylvania attacked in column formation rather than line. However, these examples are notable exceptions to a rather large norm: unlike French soldiers in North Africa who were long-term professional soldiers trained in marksmanship, most Federal and Confederate infantry were volunteers not similarly trained.

Training for the average infantryman concentrated mostly on drill (maneuver) and speed of firing and less on accuracy. A subtle reason that close-order infantry firepower was preferred is that the rifled musket did little to simplify the number of drill movements required to load and fire one round. Loading and firing was therefore better controlled under command of officers and sergeants. The 1836 smoothbore musket (with powder in the barrel and the lock) required eighteen steps, but the later percussion rifled muskets (with percussion caps in the lock) still required seventeen. It was still difficult for poorly trained infantryman to reload in the heat of combat. Early breech load weapons reduced this to six steps, which seems a significant improvement. Although these weapons offered the possibility of less constrained battlefield maneuver, they were not standard issue throughout most of the war. (46)

In addition, one must realize that frontal attacks changed as the war progressed, and that variations on the standard Jominian line formation occurred in different battles

throughout the war. Based on terrain and the opponent's position, these changes indicated that generals were indeed trying to compute the best approach to attacking positions. Johnston at Shiloh used a classic grand tactic linear formation and this became the most common tactic. Variations came in the form of column formations (also called "deep formations" or "dense columns)," which stacked regiments behind each other rather left to right in a long line.

References of varying degrees of reliability to such formations appear in accounts and reports on both sides for such actions as Gaines Mills, Corinth, Chickamauga, Franklin, and the Atlanta and Knoxville campaigns. Perhaps the largest column of attack was Hancock's attack against the tip of the Mule Shoe at Spotsylvania, which involved 20,000 men in a column two brigades wide. Attempts to modify the frontal attack indicate that generals on both sides were thinking of the problem and not simply ordering men into battle blindly. (47)

To judge fairly the performance or integrity of Civil War generals relative to frontal assaults, one must look deeper than victories or casualties (although these provide a first level of approximation). This is true especially for frontal assaults. Instead, one should examine the totality of their campaigns and battles to determine how they tried to avoid such attacks by using other available tactics. In doing so, one must remember that their objective was to destroy the opposing army and that eventually meant battle, meaning that at least one side would attack.

This approach is not an attempt to acquit generals for bad battle plans or undue caution or other command faults; rather, it tries to put the frontal assault in the context of the entire battle or campaign. This is not often done in discussing generals' performance.

It is important to consider that these generals, no less than their successors in later wars, were serving their country as best they could. They did not awaken on the day of their defeat and say, "Today I will be stupid for the benefit of historians," although this is how historians sometimes portray them.

For such an audit, one must choose a sample of campaigns and battles both with a range of casualties, from few to many. These descriptions should be from a relatively neutral source with balanced, nonpartisan coverage. Such a list appears in Paddy Griffith's *Battle Tactics of the Civil War*. (48) In addition, movement of armies should be labeled by the proper maneuver. Lieutenant Colonel Mark Boatner's *The Civil War Dictionary* serves this well.

These campaigns are discussed below in chronological order such that the development of tactics can be observed. Five modifications to Griffith's list are battles grouped by campaign where apt and these additions: the Tullahoma and Vicksburg campaigns, and the Shenandoah Valley campaigns of 1862 and 1864. Those added for this paper are indicated with an asterisk (*).

1861

1. First Manassas, July. Federal General Irwin McDowell's plan called for an *envelopment* around the Confederate left, but his green troops could not execute it properly. The *frontal attack* was initially successful, but stopped at the second Confederate defensive line near the Henry House; reinforcements allowed the Confederates to push back the Federal attackers. The Confederates were also green but were initially defending and not expected to execute complicated maneuvers as were the Federals. (49)

1862

2. Fort Donelson, February. After taking Fort Henry on the Tennessee River, General Ulysses Grant decided to strike overland quickly to Fort Donelson on the Cumberland River. In doing so, he surprised the Confederates. With the help of Commodore Andrew Foote's gunboats, the Federals quickly surrounded the fort. When the Confederates tried to escape, Grant ordered a *frontal attack* that forced them back into the fort. They surrendered the next day. The occupation of these two forts was in effect a *turning movement* on the Confederates in Kentucky and made their position there untenable. (50) Grant demonstrated at this place his willingness to take the offensive when the opportunity presented itself.

3. Shiloh, April. The Confederate strategic plan was to attack the Federal Army of the Mississippi under Grant before the Army of the Ohio under General Don Carlos Buell could meet with it. The inexperienced Confederates took a day longer to arrive at the field. Their tactical plan was for the main *frontal attack* to occur from its eastern flank along the Tennessee River to force its way past the gunboats and into the Federal rear. This fell apart upon meeting unexpected resistance. Buell's reinforcements arrived overnight and the Federals attacked the next morning. (51) Both parts of the Confederate plan were sound: taking the offensive and the *envelopment* along the river.

4. Shenandoah Valley Campaign of Jackson, May-June.* Although Jackson lost the Battle of Kernstown in March, it led to Federal mistakes making it worth more than a victory. Washington authorities decided to send three independent armies into the valley with no central command. Taking the offensive and using deception, rapid *maneuver* through the mountains, and carefully chosen *frontal attacks*, Jackson was able to occupy

the these armies enough to prevent them from supporting General George McClellan's Peninsular campaign. Ineffective Federal counters contributed to his success. (52)

5. Fair Oaks and Seven Pines, June. This was the final act of McClellan's Peninsular campaign, planned as a *turning movement* by water on Richmond. After much delay and hesitation by McClellan, the Federals advanced to within eight miles of Richmond. With most of the Federal Army of the Potomac north of the Chickahominy River, General Joseph Johnston's plan was to *attack* the isolated Federal IV Corps south of the river and destroy it. Confederate errors in staff work and execution resulted in a late attack with fewer divisions than planned, nullifying Johnston's sound plan. Johnston was wounded in this battle. (53)

6. Seven Days, June-July. With the Federals eight miles from Richmond and outnumbered two-to-one, new commander General Robert E. Lee was forced to choose between losing Richmond or acting boldly, i.e., attacking, to repel the invader. He chose the latter, taking the offensive and never releasing it. Recalling Jackson from the Valley, he attacked first at Mechanicsville. One week and four battles later, he had pushed the Federals almost back to Harrison's Landing on the James River. Realizing that McClellan would continue to retreat, he faced the Federals at Malvern Hill, where his infantry executed *frontal attacks* against scores of Federal cannon lined up on a dominating position.

Although the AOP held the field, McClellan retreated to the James, and eventually much of his force was sent to General John Pope's Army of Virginia in Manassas. (54) This is a case where the frontal attacks were necessary to meet the objective of pushing back the AOP. In particular, Lee's frontal attack at Malvern Hill, as

pointless as it seems, was required to maintain his momentum against McClellan who had already showed that he had every intention of returning to his base.

7. Second Manassas, August. With divisions being sent from McClellan to Pope, Lee knew that he must seize the initiative. He did so first at Cedar Mountain, then by taking advantage of Pope's inactivity and sending Jackson on an *envelopment* behind Pope to destroy his supply depot at Manassas after marching over 60 miles in two days. Jackson then executed a series of *maneuvers* that completely baffled Pope.

At the end of this *turning movement*, Jackson was situated along the railroad cut at Groveton awaiting Longstreet's arrival and Pope's attack. Pope *attacked* Jackson's position for two days; Longstreet *attacked* and *enveloped* Pope's left flank near the end of the second day causing him to suffer a tactical defeat. Lee then executed an *envelopment* around the Federal west flank where Jackson attacked at Chantilly after which the Federals withdrew entirely. (55)

8. Antietam, September. Lee decided to retain the initiative after Second Manassas by taking the offensive once again and invading the North. Among his aims was to draw the Federal army from Virginia, which succeeded. To protect his supply route, he took Harper's Ferry and protected mountain gaps in the eastern side of the Blue Ridge. Although McClellan had acquired a copy of Lee's plan indicating that the ANV was split into two wings, he failed to move quickly to take advantage of it.

The ensuing battle along the Antietam Creek involved three separate, unsupported Federal *frontal attacks* which allowed Lee to use his interior lines to reinforce the next phase when the previous one ended. Poor performance by McClellan's subordinates and his own extreme caution—he kept in reserve two-fifths of his army

throughout the entire battle—led to his defeat. (56) Soldiers called this battle "Artillery Hell." The movement of the ANV to draw the AOP out of Virginia can be considered a *turning movement*.

That fall, for the first time in U.S. history, post-battle photographs are exhibited for public viewing in Mathew Brady's New York studio. Images of bloated dead bodies shock the public, who begin to understand its immediate cost, but lead to no general outcry to end the war, certainly not to the level of the draft riots one year later. The frontal assault as a battlefield tactic continues.

9. Perryville, October. During Confederate General Braxton Bragg's invasion of Kentucky, his Army of the Tennessee and Buell's Army of the Ohio *maneuvered* each other to Perryville. The ensuing battle involved *attacks* and *counterattacks* on both sides. Owing to acoustic shadow, Buell was unaware of the intensity of the battle and did not commit most of his army. Bragg retreated from Perryville into east Tennessee. (57)

10. Fredericksburg, December. General Burnside opted to not attack Lee's widely separated corps and decided to shift his attack from the Culpepper, Virginia area to Fredericksburg, in effect a *turning movement*. Although part of his army arrived before the Confederates, he took no advantage of this, and ordered his army to not cross the Rappahannock River before they arrived. A two-week delay in the arrival of his pontoon bridges allowed Lee to collect his two corps outside of Fredericksburg, fortify, and await attack.

This assault occurred on December 13 with a series of *frontal attacks* repulsed with heavy casualties. (58) Burnside followed up with yet another attempt to cross the river in January with an attempted *turning movement* downstream from (north of)

Fredericksburg. This became bogged down in heavy rains, forcing its abandonment, and earning the name "The Mud March." Burnside was removed from command after these two disasters. (59)

11. Murfreesboro (Stone's River), December-January. After his defeat at Perryville, Bragg ordered a concentration near this place. Both commanders, William Rosecrans and Johnston, were newly assigned to their armies. Both armies concentrated along a north-south line and both generals decided to attack on December 31. In fact, each general's plan was to *envelop* the other's right. The Federal right was pushed back but held, and its left held and extended its line to the left (north). Bragg *attacked* the left on January 1, but it held: he started retreating the next day. Rosecrans did not pursue until he started his Tullahoma campaign in June. (60) This battle was a tactical victory for the Confederates, whose *frontal attacks* were along most of the Federal line, but Bragg lacked the strength to destroy the larger Federal army.

1863

Preamble: By this year, most of the generals who would play a part in the final year of the war had experienced battle at some level of command. They and their men were skilled in the intricate maneuvers required to form lines and to maneuver those lines. By then they also knew the effect of rifled muskets on the battlefield. Indeed, it is difficult to imagine any of them *not* understanding their weapons and tactics at this point.

12. Chancellorsville, May. Using a combination *turning movement* with a diversion, General Joseph Hooker conceived and executed an excellent plan to outflank Lee's under-strength army (Longstreet and two divisions were absent). Upon starting the

operation, Lee attacked and Hooker ordered the army to cease the offensive and take up defensive positions. Lee executed a masterful series of *maneuvers*, including splitting his army, which culminated in a large *envelopment* of the Federal right culminating in the *attack* led by Jackson that put part of the army into confusion and flight. Although Federal corps and division commanders performed well and saved the army, the general had not yet been found that could lead the AOP to victory. (61)

13. Vicksburg, October 1862-July 1863.* Until March, Grant made several unsuccessful attempts to take this place by *maneuver* by digging or blasting canals or floating through the bayous. In late March, he started the campaign that worked. Floating his transports and barges south past Vicksburg's guns, he simultaneously marched his much of his army down the west side of the Mississippi. To mask his intention, Sherman and General Benjamin Grierson executed diversions. Crossing the army at Bruinsburg, nearly thirty miles south of Vicksburg, he did not attack the latter directly choosing instead to perform a *turning movement*. He marched east toward Jackson, took this place to block any relief forces, and then marched west.

By the time Grant reached Vicksburg in mid-May, he had marched over 120 miles, fought five battles (in which the Federals *attacked*), minimized the chance of Confederate reinforcements from the East, and forced the Confederates into the town. Federal forces converged on the town. After two unsuccessful *frontal attacks*, he placed the town under siege on May 25 which ended on July 4 with Vicksburg's surrender. With the subsequent capture of Port Hudson, Louisiana, the Mississippi was completely open to Union shipping and the Confederacy was split in half. (62)

14. Gettysburg, June-July. Once again taking the offensive, Lee invaded the North in a large *turning movement* that forced the AOP under Hooker to leave Culpepper and pursue. In late June, General George Meade took command; three days later the battle started as a meeting engagement outside the town. Although the Confederates tried to outflank the AOP numerous times throughout the three-day battle, it nonetheless was a series of numerous *frontal attacks* against all parts of the Federal line, culminating in Pickett's Charge on July 3. (63) Given the static nature of the Federal line on good, high ground and the almost unlimited potential of Union supply (compared to his), Lee could retreat, attempt a turning movement (as Longstreet proposed) around the AOP, or stay and attack. He chose the last, but poor coordination and performance by his three corps commanders undercut any initiative Lee possessed.

15. Tullahoma Campaign, June.* Using a *turning movement* and deception, Rosecrans sent five columns against Bragg to force him out of positions blocking a Federal advance to Chattanooga. Planning to attack, Bragg learned of *attacks* against positions on his west flank, and ordered the army to retreat to Tullahoma and thence across the Tennessee River. This almost bloodless campaign set the stage for the Chickamauga campaign. (64)

16. Chickamauga, September. After Rosecrans occupied Chattanooga in August, Bragg organized his forces around the town. Bragg was reinforced by Buckner's corps, but he later abandoned the Chattanooga area for Lafayette to catch the Federals as they exited the mountain passes. Rosecrans pursued and after a series of *maneuvers*, both sides found themselves astride Chickamauga Creek. After fighting along the creek on the

first day, Bragg was reinforced by two divisions from Longstreet's corps of the Army of Northern Virginia Bragg then *attacked* the Federal *front* on the second day.

A crucial movement order from Rosecrans to General Thomas Wood resulted in an erroneous shift of his division, creating a gap in the Federal line into which Longstreet's two divisions poured. The Federals retreated to Chattanooga, but a stalwart defense by General George Thomas saved the army from ruin. Owing to Bragg's gruff personality and poor coordination among his subordinates, he won a tactical, but Pyrrhic, victory, and the Federals retained possession of Chattanooga. (65) In the end, it boiled down simply to attack after attack, despite the amount of maneuvering on each side.

17. Chattanooga, November. Grant ordered a surprise night operation involving land and water-borne components to open the supply line to that town. He then ordered forces from all over the West to Chattanooga for his attack on Bragg. On three successive days, Grant attacked the Confederate north (right) flank on Orchard Hill, the south (left) flank on Lookout Mountain, then the center on Missionary Ridge. (66) All these *frontal assaults* were uphill and the latter two succeeded beyond expectation.

1864

Preamble: In March, Ulysses Grant was promoted to the rank of lieutenant general and placed in command of all armies of the Union. Prior to his appointment, each Union army operated independently. Grant developed a *national* offensive strategy whereby all armies would attack the Confederacy simultaneously to prevent the shifting of reinforcements from one theater to another and to fight the South to exhaustion, to grind it down. In essence, he expanded Jomini's concentration of force from a spatial concentration only to one of space *and* time.

In addition, where possible, Union armies marched through lightly defended southern areas to destroy their ability to make war, a strategy of destroying buildings and not people. This was the first truly national strategy of either side during the war, and it led eventually to victory for the Union.

A result of this strategy is that campaigns would continue with no retreat. Grant would march into Virginia and stay there and Sherman would do the same in Georgia. Although the goal of battle was to destroy the enemy, battles would now become brutal steps in long campaigns and not isolated events in short ones. Because of this, battles for this year are organized by campaign.

A. Overland Campaign

18. Wilderness, May. The AOP crossed the Rappahannock on May 4 and paused to await supply trains. Hitting the Federals in the difficult Wilderness terrain, the ANV (minus Longstreet's corps which arrived the next day) attacked on May 5. The battle raged for two days in the dense growth with each side attacking and counterattacking in both *frontal assaults* and *envelopments*. With no clear decision, Grant broke off the attack and started to move southeast to Spotsylvania Courthouse. (67) The dense growth impeded the standard linear line attack formation, so some attacks occurred in broken line formation. Unlike his predecessors, Grant's decided to not retreat across the river despite the loss of over 17,000 men. His order to move south and continue the attack without pause is one of the most important orders in the war.

19. Spotsylvania, May. After the Wilderness, Grant executed a *turning movement* toward this place, and the two armies converged there on May 7 and remained there until the 19th. The Confederate line ran roughly east-west with a half-mile bulge

northward called the Mule Shoe. On May 10, in an attack by the Federal V and VI Corps, Colonel Emory Upton led a supported brigade attack that penetrated the Confederate line but retreated owing to no support. Grant ordered an *attack* two days later with the entire II Corps with supporting attacks along other parts of the Confederate line.

Before dawn on the foggy morning of May 12, the men hurried to the Mule Shoe silently and with unloaded guns, surprising the Confederates. Capturing 2,000 prisoners and 20 cannon, the advance faltered but the fighting continued as Lee supervised the construction of a second defensive line at the base of the salient. The fighting continued in the trenches for almost 20 hours in some of the most concentrated firepower seen during the war. The rest of the time was spent in skirmishing and *turning* to the east. The AOP was on its way out of the area and again moving south by May 19. (68) Upton's attack was not in line formation but in column by regiment: the attack two days later by II Corps followed this template. This change in attack formation proved successful.

20. Cold Harbor, June. After a stalemate on the North Anna River and skirmishing on Totopotomoy Creek, Grant again moved south to Cold Harbor. By early June, both armies were entrenched along an eight-mile line running northwest to southeast. On June 3, three corps of the AOP executed *frontal assaults* against the highly fortified Confederate line but were repulsed with upwards of 7,000 casualties in less than thirty minutes (compared to about 1,500 Confederates). Grant wrote that he regretted this assault. (69) He has also been criticized for it; however, in the context of

the campaign, it was important to maintain the offensive to try to defeat Lee before he could slip into the Richmond defenses.

However, although Grant possessed a firm sense of purpose, he was hampered by faulty orders, inadequate artillery support, a determined enemy that could entrench quickly and effectively, and an army exhausted by one month of continuous hard fighting. (70) After Cold Harbor, Grant then executed a *turning* movement, crossed the James River, and threatened Petersburg. Lee resisted this assault and then retreated into the defenses of Richmond and Petersburg. Grant then placed them under a siege that continued until the final weeks of the war.

21. Weldon Railroad, June. Union forces attempted to extend their lines (*maneuver*) west around Petersburg to cut off railroads to the south and west. Owing to the terrain, each corps was to protect its own flanks. The Confederates discovered gaps between the corps and *attacked* the exposed flanks to stem the incursion and these attacks succeeded. Although the Federals failed in their primary mission, their final line was farther west than prior to the operation. (71)

22. The Crater, July. A regiment of Pennsylvania coal miners received permission from Burnside to dig a tunnel from its position to under the Confederate position across from it. Although unconventional, this plan was one of *maneuver*: whereas Burnside was enthusiastic about the project, it received almost no support from Grant or Meade. Just prior to the *attack*, Meade and Grant ordered Burnside to not use a black division, his freshest, to lead the offensive. Burnside then chose the replacement division by drawing straws. When the four tons of powder exploded, it created a crater almost two hundred feet long and thirty feet deep. The replacement division, untrained

unlike the black soldiers, ran into the crater rather than around it. Its division commander was in a bunker enjoying spirits. When the black division followed, its division commander joined the first in the bunker. The Confederates reacted quickly, surrounded the crater, poured in mortar fire, and stopped the attack cold. A court of inquiry named five officers derelict in different degrees: Burnside was ordered home and others were removed from command. (72) Although not the only such case, this is an excellent example of a good tactical plan spoiled by indecision, incompetence, and dereliction of duty.

B. Atlanta Campaign

23. Kennesaw Mountain, June. General William Sherman's campaign started three days after the Overland campaign. Sherman's strategy was to *turn* General Joseph Johnston out of positions where possible. He was successful at this at Dalton and Cassville, but engaged in minor battles elsewhere. Skirmishing occurred all throughout the campaign. When Johnston entrenched around Kennesaw Mountain, Sherman thought that the position was weak and decided to attack. (73) After a series of diversions, the *frontal attack* against the main Confederate line was repulsed with heavy loss owing to heat, terrain, strong positions, and determined resistance that made this place impregnable. Sherman returned to his original strategy of *turning* the Confederates out of positions. (74)

24. Peach Tree Creek, July. After Kennesaw Mountain, Johnston retreated until he was near Atlanta. President Davis relived him for ceding so much land to Sherman and replaced him with John Bell Hood, who was known for his aggressiveness. As Sherman's army started to deploy north and east of Atlanta, it *turned* the Confederates

from their defense of the Chattahoochee River. While Thomas's Army of the Cumberland was astride the river, Hood executed a series of *frontal attacks* against the Federal lines, which held. (75) This is the first of many battles where Hood executed frontal attacks with almost no maneuver against seasoned Federal defenders.

C. Shenandoah Valley Campaign

25. Shenandoah Valley Campaign of Sheridan, August 1864 - March 1865.* After Sheridan's force entered the valley, it spent five weeks of *maneuvering* against Confederate forces under General Jubal Early before the first battle at Winchester. Sheridan defeated Early at this place, and Early retreated to Fishers Hill below Strasburg. Sheridan then retired to Winchester to free troops to reinforce Grant. Early *attacked* by surprise at Cedar Creek in October and at the start the Confederates were successful in driving back from successive lines. Sheridan rode from Winchester, rallied his men, and organized a *counterattack* that routed the Confederates, ending organized resistance in the valley. The remainder of the campaign involved Sheridan's destruction of all war provisions and mills for making same, furnaces, tanneries, railroads, and depots. This ended the Shenandoah Valley's use to the Confederacy as a source of provisions for its army. (76)

D. Hood's Invasion of Tennessee

26. Franklin, November. After losing Atlanta, Hood remained near this place until he determined that Sherman was not moving farther south. In October, he devised a plan meant to pull Sherman out of Georgia by threatening Nashville, in effect a *turning movement*. Intent on marching to the ocean, Sherman instead sent Thomas north with orders to check Hood. Waiting for supplies and cavalry delayed Hood which allowed

Thomas time to organize the defense of his department. (77) General John Schofield's Army of the Ohio stopped at Franklin and entrenched south of the Harpeth River to protect its crossing. Hood ordered a series of *frontal attacks* in mid-afternoon and evening that enjoyed early success but which were repulsed with heavy loss. Rather than retreat, Hood ordered his depleted force north. (78)

27. Nashville, December. Schofield's arrival in this place completed the collection of forces under Thomas. Hood's army was too weak for a major battle after Franklin, but he moved to Nashville and fortified south of town. After numerous delays owing to preparation and ice storms, Thomas attacked Hood on the 15th. (79) The Federals first attacked the Confederate right as a diversion with the main *frontal attack* occurring on its left. The latter succeeded and *enveloped* the left causing Hood to withdraw to positions on hills farther south. The next day, a series of *envelopments* with heavy artillery support by the Federal right routed Hood's left and forced the army to retreat. The disparity in numbers (49,700 Federals, 23,200 Confederates) and Thomas's plan accounted for the relatively low casualties. (80)

1865

28. Bentonville, March. During Sherman's march through the Carolina's, Johnston took advantage of Sherman's divided army and *attacked* Slocum's two corps at Bentonville. Slocum massed his forces and repelled several attacks. Two days later, Sherman's army was together and he *attacked frontally*. Johnston held his position, but later withdrew north. (81)

29. Five Forks-Appomattox, April. Sheridan's movement of cavalry and infantry to Dinwiddie Courthouse was meant to *turn* the Confederates from their

Petersburg defenses. Lee anticipated this and sent Pickett's division with cavalry to Five Forks to hold the Southside Railroad out of Petersburg. The Federals *attacked* along the Confederate *front* with dismounted cavalry, and because the Confederate line was shorter than expected, the main infantry attacked open ground to the east of that line. After a quick change of disposition, the Federals attacked the Confederate flank and, after some resistance, started to roll it up. Pickett withdrew north and lost the railroad to Sheridan, forcing Lee to undertake on foot his westward retreat from Richmond and Petersburg. (82) Grant, through Sheridan and Meade, pursued Lee and cornered him less than two weeks later at Appomattox Courthouse. At 5 a.m. on April 14, General John B. Gordon attempted to break through the Federal line at Clover Hill, but was stopped after an hour or so. Subsequent Federal attacks, the weight of Federal numbers, and lack of supplies convinced Lee that surrender was inevitable. (82)

What should be clear from these sketches of campaigns and battles is that in almost all cases, the plan or execution involved some form of tactic *other than* a frontal assault. When two armies have completed their maneuvers and are face-to-face, a general must attack, and ultimately all attacks are frontal. The principle of the offensive was part of their training and that is what their governments expected.

THE RESULT

Table 1 below contains a summary of the major tactics used in the campaigns described in the previous section. Except for a small number of non-professional soldiers such as Confederate Generals and John Floyd and Gideon Pillow at Fort Donelson and

Federal Generals Nathaniel Banks and John Fremont in the Shenandoah Valley in 1862, all army commanders of the listed battles are West Point graduates.

TABLE 1. TALLY OF MANEUVERS UTILIZED PER CAMPAIGN

CAMPAIGN OR BATTLE	ATTACK			MANEU- VER
	FRONTAL	ENVELOP- MENT	TURNING MVMT.	
1861				
1. First Manassas	X	X		
1862				
2. Fort Donelson	X		X	
3. Shiloh	X	X		
4. Shenandoah Valley, Jackson	X			X
5. Fair Oaks and Seven Pines,	X		X	
6. Seven Days	X			
7. Second Manassas	X	X	X	X
8. Antietam	X		X	
9. Perryville	X			X
10. Fredericksburg	X		X	
11. Murfreesboro (Stone's River)	X	X		
1863				
12. Chancellorsville	X	X	X	X
13. Vicksburg	X		X	X
14. Gettysburg	X		X	
15. Tullahoma Campaign	X		X	
16. Chickamauga	X			X
17. Chattanooga	X			
1864				
A. Overland Campaign				
18. Wilderness	X	X		
19. Spotsylvania	X		X	
20. Cold Harbor	X		X	
21. Weldon Railroad	X			X

22. The Crater	X			X
B. Atlanta Campaign				
23. Kennesaw Mountain	X		X	
24. Peach Tree Creek	X		X	
C. Shenandoah Valley Campaign				
25. Shenandoah Valley, Sheridan	X			X
D. Hood's Invasion of Tennessee				
26. Franklin	X		X	
27. Nashville	X	X		
1865				
28. Bentonville	X			
29. Five Forks-Appomattox	X		X	

Table 1. Tally of Maneuvers Utilized Per Campaign

The campaign discussions and table indicate the following:

1. All major campaigns involved assault, usually frontal attacks. This indicates that it was a tactic that was accepted and used by generals on both sides. Attack was the unavoidable part of campaigns even after 1863 when the effects of modern firepower were manifest.

2. In addition to frontal attack, maneuver and alternate forms of attack (envelopment and turning movement) were a part of most of these campaigns indicating that generals did considerable planning to outmaneuver their opponents. This is contrary to the myth that generals simply attacked mindlessly. Note that the campaign descriptions and Table 1 cover only three of the nine principles of war as taught at West Point. A more detailed study of these campaigns would show examples of the other six, such as Surprise at Chancellorsville and Vicksburg, which would further deflate weapons-tactics statements.

3. It is unimportant whether such attacks were executed by the victors or losers. The Confederates attacked constantly at Gettysburg, but were defeated, as were the Federals at Kennesaw Mountain. In some cases, both generals attacked such as at Shiloh, Chancellorsville, or Sheridan's Shenandoah Valley campaign of 1864, but only one could emerge the victor. In the Overland campaign, concepts of winning and losing were meaningless because the core of Grant's strategy was to fight constantly to erode Southern strength and refuse Southern respites. Therefore, although the frontal attack did not ensure success—indeed by 1864 it was not even a criterion for success—its use continued.

In summary, weapons-tactics statements perpetuate the myth that Civil War generals were somehow confused and overwhelmed by modern weapons. Their consistent, thoughtful use of the entire array of tactics available to them indicates that this is not true.

SUMMARY AND CONCLUSION

This paper investigated the weapons-tactics statement as it applies to the close-order frontal attack and its derivative conclusions. It discussed its imprecision based on terminology, the basis used to judge the 19th century battlefield, death and medicine in the Victorian era, and the development of weapons and tactics both in Europe and America during the early 19th century. A summary of major campaigns and battles in the war and the major tactics used in each showed that the frontal attack was not the only tactic used by the generals, but that they used it finally regardless of the amount of maneuver preceding it. These discussions suggest a number of conclusions:

1. Because of different meanings of the word *tactics*, weapons-tactics statements are unintentionally vague. This leads to the incorrect conclusion that Civil War generals executed frontal attacks with no regard for campaign planning or for the lives of their men. Precise definitions of *tactic*, *tactics*, and *Tactics* offer a start in correcting any resulting misconstructions.

2. Modern criteria might be inadequate to judge the past because of different cultural norms. One must be aware of Victorian concepts of death and mourning and the limits of 19th century medicine that were part of the culture of soldiers and generals alike. Even with no war, many of those soldiers would die of other causes as civilians. Comparisons of World War II casualties and tactics indicate that judging the Civil War by those criteria might produce incorrect conclusions. In fact, WWII involved a tactic similar to the frontal assault of the Civil War, the amphibious assault against a fortified beach, which produced high casualties; however, as with the frontal assault, no option to such landings could be found.

3. A survey of weapons and tactics in Europe during 1830 to 1860 shows that England and France had long studied the rifled muskets versus smoothbore muskets: their characteristic and tactics. They understood the ballistics of ball and conical projectiles and the importance of training infantry in proper aim. During this time, Tactics as a formal field of study reaches an acme with the works of Clausewitz and Jomini, the latter of which was the source of the U.S. Army manual translated by Halleck. The record shows that by the 1850s, the knowledge of muzzle velocities and trajectories resulted in new rifled weapons issued in Europe that were tested in different conflicts, most notably

the Crimean War. The fact of different tactics resulting from rifled muskets and conical projectiles was well-known in Europe by 1860.

4. America was not far behind in recognizing the benefits of rifled muskets, which were issued to the army as early as 1853. These new weapons came with new tactics, which were treated in no less than three manuals written by young army officers destined to become generals. In addition, a team of three army officers observed the Crimean War and each officer wrote a separate report on his observations with emphasis on rifled weapons and corresponding tactics.

Thus, the premise that Civil War generals entered the war oblivious to rifled muskets, conical projectiles, and their resulting tactics might be incorrect or exaggerated. And given that the French and British were equipping their infantry with the new weapons since the 1840s, American generals were not the only ones using confronting the resulting tactical problems.

5. Although the average general was a man of intelligence and, in most cases, possessed military training or combat experience, the first two years of the war showed that they lacked command experience. Officers, however, were trained to be aggressive and to take the offensive and hold the initiative just as they are today. A close look at infantry training shows that despite the improvements in weaponry, average training was not in marksmanship, but rather in close-order drill and massed musketry. A few units on both sides trained in other open order formations, but these were but a small percentage of both armies. Thus, the bulk of both armies were trained in close-order attack formations forcing generals to fight with what they had.

6. An audit of maneuvers in almost thirty campaigns and battles shows that a considerable amount of maneuver preceded the well-known frontal attacks. In a few cases, campaigns were won largely, but not solely, by maneuver. In others, generals proceeded with frontal attacks despite determined resistance. In almost all cases, it is clear that their plans included attempts to maneuver into preferred positions around their opponents, but this did not always work. In most cases, after all maneuvers were completed and the armies were arrayed, the attack occurred. These attacks were consistent with their training, position, and the abilities of the armies under their command.

In conclusion, the weapons-tactics statements have produced an unfortunate astigmatism about Civil War generals, implying that they were for the most part mindless butchers who repeatedly ordered their men into futile frontal attacks. This is not true; rather, they were dutiful, intelligent, and conscientious officers who tried to use maneuver and deception to gain advantage, but eventually had to attack. Generals were aware of these new weapons and their effects on tactics and infantry. It is important to remember that generals of different (modern) reputations accepted the line formation and used it: Grant, Lee, Longstreet, McClellan, Jackson, Thomas, Sherman, Burnside, Hood, and others. That is what they were taught, it matched the weapons available to them, and the war came upon them with little time to experiment. It is not their fault that the pendulum swung to provide the weapon with a temporary advantage over the tactic: they had a war to fight. If they made bad decisions, men died, but even for good decisions men still died—there was no easy way out. Despite this, those generals had the moral courage to perform their duty as professionally and conscientiously as they could.

If history must dissect or criticize tactics or weapons or generals, perhaps it should be more diligent in ascribing blame or attributes of negligence or stupidity or cruelty. Other than those exhibiting crass dereliction of duty, none of the generals might be a culprit or guilty of anything beyond performing their duty. Perhaps the real offender here is war itself or, more specifically, the magnitude of a war that reached so high on the scale of brutality that it outpaced men of normal stature and required men of comparable proportion to end it.

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