CHAPTER TWO
DEVELOPMENT OF MODERN TACTICS

I. Introduction

For armies languishing in the somnolence of peace, the critical reading of the lessons of past wars is one of the most fruitful means of seriously preparing for future conflict. While no one war has ever exactly resembled another, the illumination of historical study has often provided some useful light with which to probe the fog of distant battle.[1]

This chapter is a historical study of tactics. Historical study provides you with insight on how soldiers of earlier times solved the tactical problems facing them. It identifies trends and lessons that may be applied to future combat. For Marines, this is the main purpose of studying history: to glean lessons from the past that apply to combat in the future.

Studying the history of tactics is a process of **analysis** and **application**. There are, essentially, four steps to this process:

First, you try to figure out **what happened**. This is seldom easy. Think about the chaos and confusion of war (chapter one), and you can understand why different accounts of the same battle are sometimes contradictory. Through study, you can determine which accounts are most accurate. Usually, you can determine what happened in a battle to a reasonable and useful degree, although you will seldom achieve complete certainty.

The second step is figuring out **why things happened as they did**. Again, this is not easy. Battles and wars are so complex that it becomes extremely difficult later to look back and weigh the significance of each factor. The Vietnam War is one example. There are many competing theories as to why we lost that war. As a student of war, you must keep an open mind, always questioning both facts and theories and always asking yourself not only **what** happened, but **why**.

The third step is to **perceive tactical trends**. This is the task of theorists: to draw lessons from the past. Here, you must be careful. The wrong lessons are often drawn from historical analysis. For example, in the Spanish Civil War in 1938, the Italians used tanks in battle--the first time since World War I they were used in combat on a large scale. When they failed dismally, many French and British observers concluded the tank was not the decisive arm of future warfare, as armor enthusiasts claimed it would be. The Germans reached a different conclusion. They decided that the tank's failure was not due to the nature of the weapon, but to the incompetence of those handling it. As a result, the Germans used the tank properly in the Battle of France in 1940 and won; the French and British did not and lost.

Fourth, and finally, you **apply theories and lessons from the past** to prepare for future combat. This is the principal task of Marines, and why they must always be students of war. Marines must constantly revise tactics, procedures, and techniques so they accord with modern technology and the modern battlefield. As a junior officer or NCO, you may yourself take the lead in revising techniques within your unit. You will need to be able to think through how to defeat the enemy on future battlefields. Historical study gives you a place to start. Historians and theorists do not fight wars; they only observe and draw conclusions. Marines must make use of their work by

translating it into battlefield practice. For example, Colonel John Boyd's theory that warfare is essentially time-competitive is the basis of the Marine Corps' maneuver warfare doctrine. It remains the challenge of the Marine Corps to take this theory and turn it into victories on actual battlefields (Boyd's theory is based on the Observation-Orientation-Decision-Action (OODA) cycle which is discussed in detail in chapter three).

This chapter discusses the development of tactics in modern warfare. You will see that tactics and technology bear a close relationship, one that continues today. As weapons improved in accuracy, range, mobility, and effect, no man's land--"the zone between the forward edges of two armies which are locked in combat against each other"--became an increasingly dangerous place to be. As a result, men tended to spread out, and control was decentralized. This is evident in the fact that the smallest unit capable of independent maneuver in Napoleonic times was the battalion, while today it is the squad, and, according to some, the individual.

You might ask, what lessons does history hold for today's infantryman? To answer that, it would be useful to reflect on John English's concluding statement in his book, *On Infantry*:

> *From all indications, past and present, there will*
> *be a place for the foot soldier and his traditional*
> *skills on the battlefield of tomorrow. To prevail over*
> *more numerous enemies in conjunction with other arms,*
> *however, the Western infantryman will doubtless have to*
> *rely as much on his brain power as on his weapon power.*
> *...he will have to ...embrace...the belief that*
> *superior training, endurance, and tactical skill can*
> *compensate for quantity. The cynical view that anyone*
> *can be made into an infantryman because he can stop a*
> *bullet as well as the next will likewise have to be*
> *scorned. The modern infantryman will have to be taught*
> *to live, not die.*[2]

II. First Generation: Smooth Bore Era Tactics

The first generation of modern warfare[3] began about 1650 when the musket replaced the pike as the primary infantry weapon and continued until the breech-loading rifle became dominant on the battlefield, around 1867. First generation tactics are often called Napoleonic tactics or the tactics of the line and column. Infantrymen moved about the battlefield in dense line and column formations (shoulder to shoulder), engaging the enemy in a tight series of ranks and files. Modern close order drill is based on infantry tactics of the Napoleonic era.

Weapons

The basic infantry weapon of this period was the muzzle-loaded, smooth bore musket (see figure 2-1). It was a single shot weapon whose maximum effective range was about 100 meters. Well-trained infantryman could fire and reload the musket about 5 times per minute. The musket's reliability and rate of fire increased greatly between 1650 and 1750, but then changed very little during the rest of its battlefield life. It was a crude, inaccurate weapon whose barrel was prone to frequent fouling. It was most
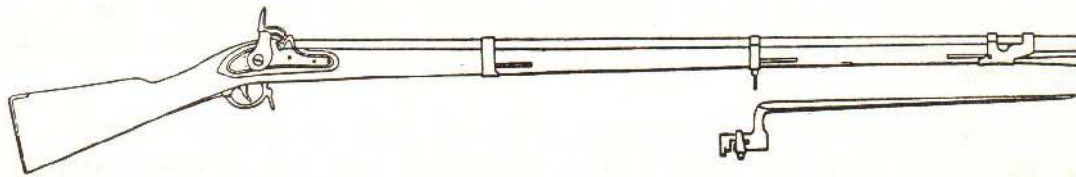
Fig 2-1.   Smooth bore musket. U.S. Model 1842.

effective when fired by volley at ranges of less than 100 meters. Beyond that, its effectiveness dropped sharply, and beyond 200 meters, it had only a psychological effect.[4]

The rifled musket was invented about 1650 but, while more accurate than the smooth bore musket, was not used in battle until about 1750. Because its bullets had to be loaded at the muzzle and forced into the grooves of the rifling, it had an extremely slow rate of fire. It was also more prone to fouling since its bullet had a tighter fit. Consequently, only specialized infantry, such as skirmishers and snipers, used the rifle.[5]

The primary artillery piece of this period was the muzzle-loaded, smooth bore gun (see figure 2-2). It was a single shot, direct fire weapon, firing three types of ammunition: round shot, shrapnel, or case shot. Round shot was the gun's primary long range ammunition. Each round was a spherical, solid-iron projectile that was effective out to about 750 meters. Round shot was classified according to its weight. During Napoleonic times, the most common round shot guns were either the 6, 9, or 12 pounder varieties.

Shrapnel shell was invented about 1790 and used by the British during the Napoleonic wars. It consisted of a hollow iron sphere filled with bullets and a bursting charge of gunpowder. The charge blew open the shell at a predetermined point on the trajectory, ejecting bullets along the shell's path toward the target. Shrapnel shell was most effective at long range and typically consisted only of about 15 percent of a field gun's ammunition.

Case or canister shot was the artillery's short range ammunition. It consisted of a tin case containing a number of loose bullets which spread out rapidly when ejected at the muzzle. It was quite effective when used against assaulting infantry and cavalry at ranges up to 350 meters.

Artillery's greatest limitation was its mobility and rate of fire. Significant progress was made in both respects after 1750, with the development of both a light weight carriage and elevating screw.[6] By 1800, field guns had a rate of fire in battle of 2-3 rounds per minute.[7]
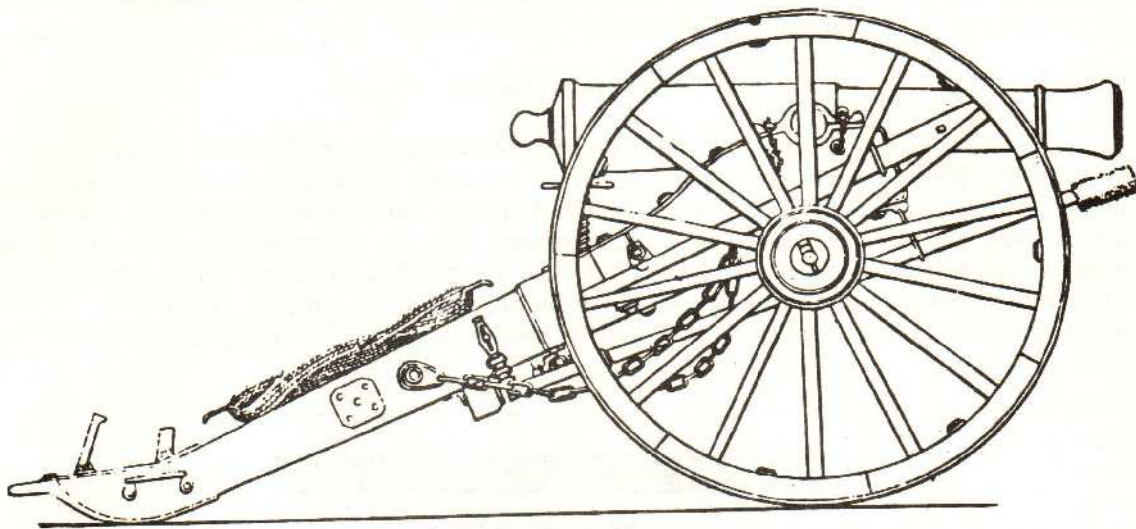
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Fig 2-2.   Muzzle-loaded smooth bore gun.   U.S. Napoleon
Twelve-Pounder, circa 1842.

The bayonet replaced the pike as an infantry weapon during the late 17th century. In many engagements, the bayonet charge of an infantry force was the final action. Bayonet charges seldom occurred without preliminary musket or artillery fire, and it was usually the threat which the bayonet posed rather than its actual use that determined the outcome.   Close combat with the bayonet occurred rarely, since one side usually took flight before the two forces came together.   Thus, bayonet charges usually confirmed results that were largely produced by firepower or maneuver.[8]

Organization

Armies during this period had essentially three combat arms: infantry, artillery, and cavalry. **Infantry** was the largest combat arm of the army. In a major battle or engagement, it was usually the decisive element in combat. The smallest line infantry unit capable of independent maneuver was the battalion. Subdivided into 6 or 8 companies, the battalion moved about the battlefield in various close order line and column formations, and, when engaged, fired (at least initially) by volley.

Battlefield **artillery** was typically organized into two groups: battalion and park artillery. Battalion artillery accompanied the infantry and cavalry units, providing direct support to those arms in the attack or defense. The lighter, more mobile guns-- 6 and 9 pounders--normally assumed this role. Artillery kept at higher levels in general support was called artillery of the park. Park artillery was primarily used to mass fire at the point where the army or corps commander judged to be decisive.[9]

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After dominating the battlefield in the middle ages, **cavalry** declined during this period. During Napoleonic times, cavalry forces, organized in anywhere from squadron to corps-size units, served two functions: as highly-mobile reconnaissance and scouting troops, and as shock troops in massed attacks. As weapons continued to improve in the 19th Century, massed cavalry attacks became rare.

First Generation Tactics

The line infantry tactics of the era were epitomized by the Prussian linear tactics of Frederick the Great. Frederick drilled his army incessantly, enabling large masses of men to move through various line and column formations in a smooth, orderly fashion (see figure 2-3). The *line infantryman* was an automaton.[10] He moved and deployed on the battlefield under strict control of his NCO or officer. Theoretically, a drill movement covered every action which he performed in combat. His unit's performance depended greatly on how well its soldiers remained a tightly-controlled unit.

Battalion in line

Battalion in column of companies

Battalion in column of double companies

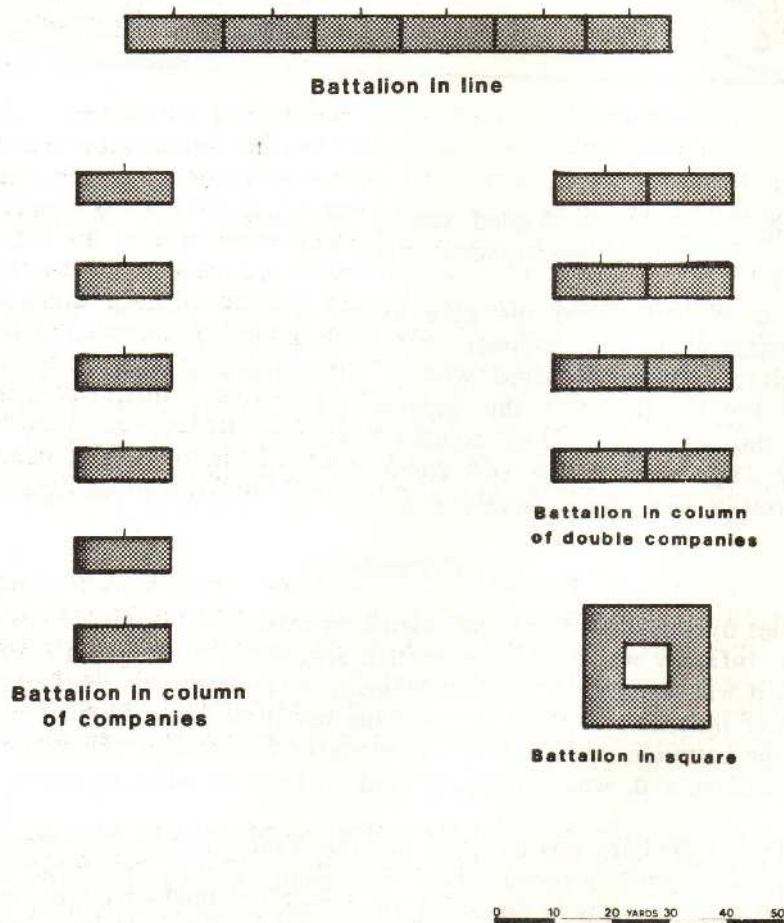**Battalion in square**

0   10   20 YARDS 30   40   50

Fig 2-3. First generation line infantry formations.

In the attack, a typical battalion of a Napoleonic era army advanced as close as possible to the enemy before firing a volley. Depending upon the terrain, it might advance in column and deploy on line for the final assault. Choosing the right point to deploy was critical to the attack's success. If the battalion deployed too early, the commander could lose control; his formation might break up or converge, and its firepower became weak and ineffective. If the battalion waited too long to deploy, it might face overwhelming fire from the enemy battle line before it could maximize its own firepower. In that case, the attackers would be driven off before completing their deployment.[11] In some situations, units attacked in column. The column gave considerable momentum to the attack, especially if the attacking force surprised the defenders and closed with them before they were fully deployed. Against poor infantry, the French, under Napoleon, often assaulted in column successfully.[12]

Once the battalion closed to within effective musket range of the enemy, about 100 meters, several things might happen. If the battalion had not yet opened fire and the enemy line appeared to be wavering, it might stop, fire a volley, and charge the enemy with fixed bayonets. If, instead, the attacking battalion closed with the enemy before being discovered, it might charge without firing a volley. However, in an engagement between two competent infantries, the most likely result was a prolonged fire fight between the two forces at short range, lasting anywhere from 20 minutes to an hour or more.[13]

The key to the attack's success lay in maintaining **momentum**. This hinged on a combination of factors, most of which can be classified under good leadership. When skillfully maneuvered, the battalion often surprised the enemy and closed with him before he could respond. If so, momentum was maintained, and the enemy driven off in disorder. Good leadership also inspired the troops to advance in the face of fire, when men were falling all around them. If the troops lacked confidence in their unit or the abilities of their officers and NCOs, they also lacked the courage and will to close with the enemy. Also critical to maintaining momentum was the skillful use of weapons. A well-timed volley or skillful use of artillery often gave the attackers the upper hand. Sometimes, good fire discipline regained the impetus of a stalled attack. However, in many cases, mere good fortune made the difference. With two forces locked in a fire fight at close range, and success or failure hanging in the balance, the timely arrival of reinforcements might turn the tide in favor of one side or the other.[14]

In the defense, the battalion formed companies in line, each company deploying in two or three ranks, so that all of the battalion's muskets were brought to bear on the enemy (see figure 2-4). If cavalry attacked, the battalion would **form square** with each side of the square three or four ranks deep (see figure 2-5). If the battalion was taking effective fire from the enemy's artillery, the battalion commander might order his unit to lie down in position, or he might order it over the crest and onto the reverse slope of the hill.[15]

As attacking infantry closed, the defenders had several options. The battalion commander normally held his fire until the enemy closed to within effective range-- usually 100 meters or less. At that point, the defender might let loose with a volley followed by a bayonet charge, if the attack appeared to be faltering. Otherwise, the two forces might engage in a protracted fire fight, as described earlier. Each side tried to gain psychological advantage, and if the engagement was decisive, one side eventually quit the battlefield in herd-like disorder.[16]
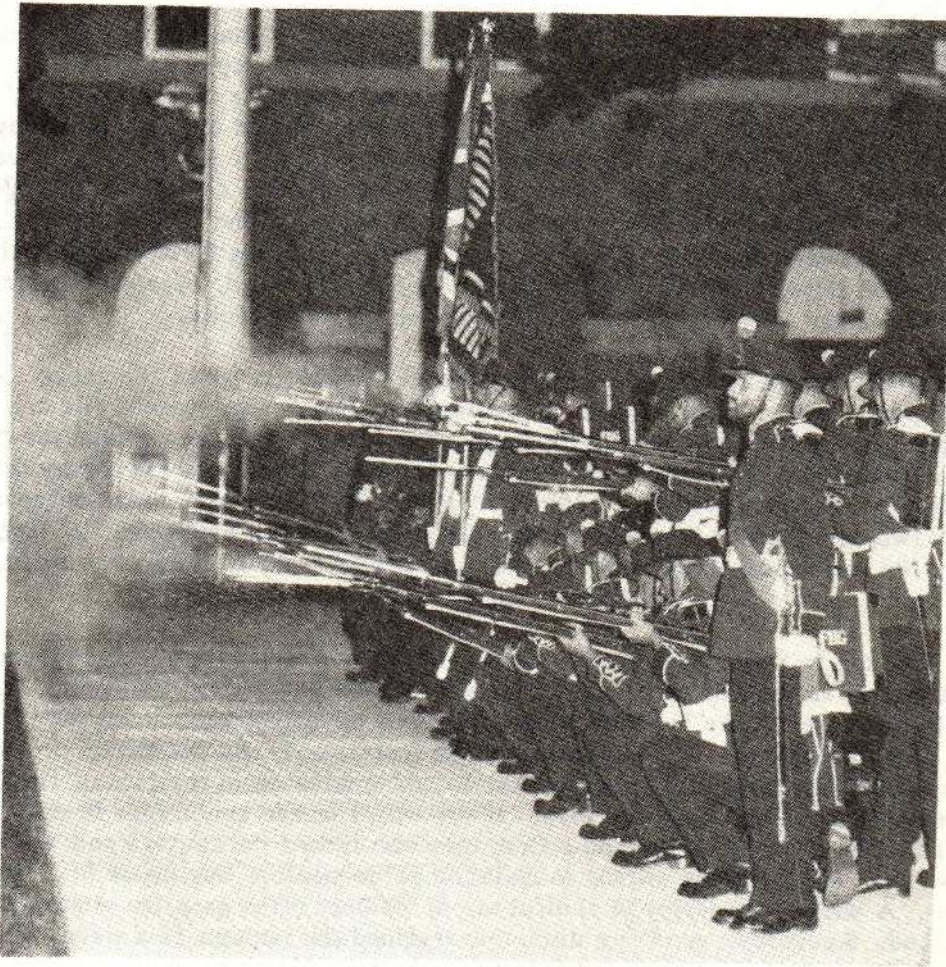
Fig 2-4.   Infantry on line.

An interesting contemporary example of the combined arms concept occurred when an artillery battery supported a cavalry charge against infantry. To defend most effectively against cavalry, the infantry *formed square*. The square, however, was particularly vulnerable to artillery fire. This presented the infantry with a dilemma: To repel the cavalry charge, the infantry had to form square; however, to reduce the effect of artillery, the infantry had to reform in line, or move in defilade, both of which were vulnerable to the cavalry. This was one of the few situations where a cavalry charge might succeed against competent infantry.[17]

The most significant infantry development of this period was the introduction of light infantry. From the beginning of the modern era until the mid 18th Century, light infantry had a small, limited role on the battlefield. However, beginning with the Battle of the Monongahela River fought on 9 June 1755 during the French and Indian War, light infantry's role began to change. On that date, an English force of 1500 men
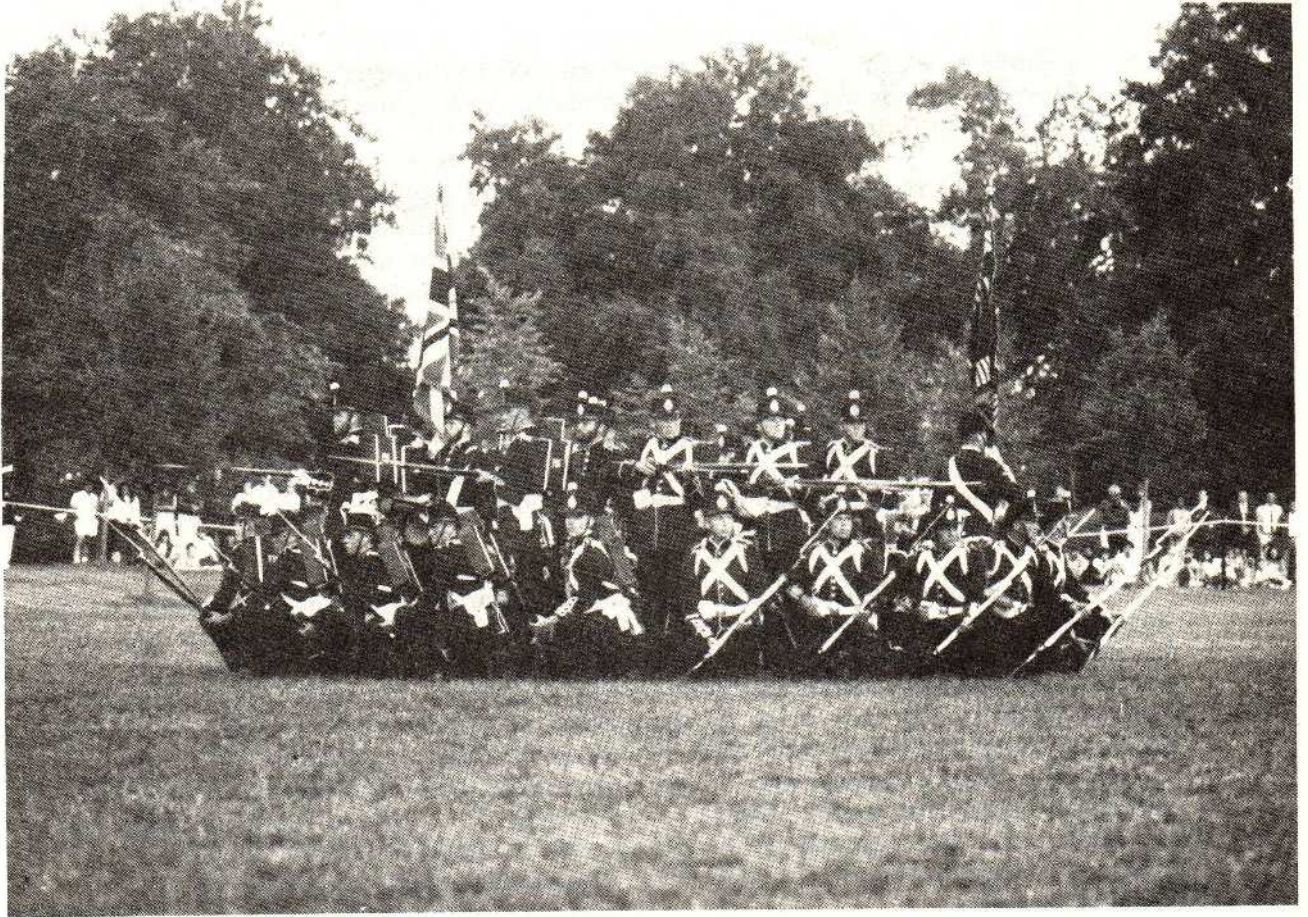
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Fig 2-5.   Infantry in square.

under the command of General Braddock engaged a combined French, Canadian, and Indian force of about 900.   The battle commenced with a meeting engagement between the advance guard of both forces.   The English advance guard, under the command of Lieutenant Colonel Gage, wheeled from column into a close-ordered line and began firing volleys. These volleys were ineffective because the French and Indians, instead of forming a line of their own, used **light infantry tactics**.   Upon contact, the French and Indians swarmed through the forest around both flanks of the English.   Hiding behind trees and bushes or in gullies, they opened a deadly fire on the English deployed in the open. Wasting volley after volley firing on the trees, the English advanced but could see no enemy.   In contrast, the French and Indian fire took a massive toll.   Their spirit broken, the English huddled together in a bewildered mass.   At this point, Braddock arrived with the main body.   Braddock rode furiously up and down the ranks trying to regain order and reform the line.   But panic increased as the French force of irregulars, still using light infantry tactics, cut down English troops in scores. Finally, Braddock ordered a retreat and his force broke and fled in disorder.   Braddock himself was mortally wounded.

The Battle of the Monongahela River was a watershed in tactics. For the first time in modern warfare, a force using light infantry skirmisher tactics defeated a force deployed in massed lines and columns.[18] This battle proved that, in close terrain, light infantry tactics were decisive.

During the remainder of the 18th Century, light infantry's role increased. The American Revolutionary War showed how light infantry skirmishers armed with rifles were effective against troops employed in mass. During the Napoleonic Wars, light infantry became integral to the infantry battalion. Typically, each battalion had a company of light infantry that acted as skirmishers in advance of the battalion.[19] **Skirmishers** provided a security screen for the attacking main body by clearing enemy skirmishers in the path of their advance. They also weakened the resolve of the enemy's main battle line by causing casualties among his line infantry and artillery units.[20] Much of Napoleon's early tactical success was due to his effective use of light infantry skirmishers. Unlike line infantrymen, light infantry soldiers often fought in small, dispersed groups. Light infantry tasks required highly skilled, thinking soldiers with high morale and strong individual initiative.

In summary, you should note the qualities required of the line infantryman during this period. He must be obedient--the success of his unit depended largely on how well its soldiers moved through various formations and the unit remained cohesive. He needed to be brave--it took a brave man to stand fast while the enemy closed and men were dying all around him. Even though weapons of this era were inaccurate in combat-- less than 10% of the rounds from both muskets and artillery found their mark--combat casualty rates were extremely high. Close order tactics were important to keeping the unit steady under fire; it took almost as much bravery for a man to break formation and run rather than fight, especially if he looked over his shoulder and saw his NCO prepared to shoot anyone who broke ranks. **Maintaining order** was the key to the battalion's success.

You should also note the increasing role of light infantry. In close terrain, light infantry tactics were superior to close-order mass tactics. In contrast to the mass tactics of the line infantry, light infantry tactics were **disorderly**. As weapons continued to improve, light infantry tactics replaced close-order tactics. Similarly, the qualities required of infantrymen changed also.

III. Second Generation: Open Order Tactics

By the mid-nineteenth century, technology made Napoleonic close-order tactics obsolete. The first recognized breakdown in close-order tactics occurred during the American Civil War when frontal assaults against defenders armed with rifled muskets proved disastrous to the attacker. In a typical attack, a unit advanced in a series of lines, shoulder to shoulder, to within effective rifled musket range of the enemy, about 300 yards. At that point, the attacking unit broke into a bayonet charge hoping to overrun the enemy and chase him away. The key to success was maintaining the momentum of the attack, but this seldom happened unless the attacker had either overwhelming firepower or numerical superiority. Usually, the attack would **go to ground**, and unless reinforcements got the attack moving again, it usually failed. Casualties during the Civil War were horrendous; at Cold Harbor in 1864, one Union frontal attack suffered 6,000 casualties in an hour.[21] Although the rifled musket gave the defense a new advantage, few armies outside the United States heeded the warning.[22]

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