

DESERT STORM: ATTRITION OR MANEUVER?

A Monograph
by
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ABSTRACT

DESERT STORM: ATTRITION OR MANEUVER? by MAJ Stephen E. Hughes, USA, 51 pages.

In February 1991, the Allied Coalition forces led by the U.S. achieved a stunning victory over the Iraqi forces in the Persian Gulf War. Did the U.S. Military validate the Army's new Airland Battle doctrine with its emphasis on maneuver warfare precepts or did it win the campaign in its traditional way using firepower-attrition warfare?

The study examines theories of attrition warfare and maneuver warfare. Next, it explores the evolution of maneuver warfare from its roots in the ancient writings of Sun Tzu to the modern expression of maneuver warfare principles embodied in the German military in WWII. The study then traces the evolution of the U.S. Army's fighting doctrine from WWII to the time of the Persian Gulf War to highlight its emphasis on attrition warfare and examine its attempt to become more maneuver oriented.

Finally, the study analyzes the planning and execution of Operation Desert Storm to see if the U.S. military used the maneuver warfare precepts espoused in the Army's Airland Battle doctrine. The study concludes that the U.S. military did use the precepts of maneuver warfare to defeat the Iraqi forces and discusses the implications for future conflict.

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I. Introduction

In February 1991, the Allied Coalition forces led by the U.S. achieved a stunning victory over the Iraqi forces in the Persian Gulf War. The Coalition decisively defeated the fourth largest army in the world while sustaining the lowest casualty rate ever recorded for a large scale conflict.¹ There are many reasons why the American forces performed so superbly in this brief war. Among them was the doctrinal reform that took place after the Vietnam War that eventually led to the development of a new doctrine called Airland Battle. An important aspect of Airland Battle was the emphasis placed on the tenets of maneuver warfare as a replacement to the traditional reliance on firepower and attrition. Dating back to the Civil War, the U.S. consistently favored attrition warfare as a form of operational art.² Often, the U.S. would use its enormous industrial and material capacity to fashion a blunt instrument of force to overwhelm its opponent. This proved to be an effective strategy but not always an efficient one.

The U.S. Army began its doctrinal revolution in the early 1970s when it faced the daunting task of rebuilding a demoralized army after the Vietnam War. The Army also had to switch its focus from a counterinsurgency war to a possible conventional war in western Europe. The 1973 Yom Kipper War awakened the senior Army leadership to the high lethality and tempo of modern mechanized warfare. Army leaders were also concerned with the rapidly growing strength of the Warsaw Pact forces arrayed against NATO. They recognized that the Army needed a doctrine that would enable them to fight outnumbered and win without any clear advantages in material or technology. The old method of incorporating overwhelming force in

attrition style operations was no longer workable. In developing its new doctrine, the Army explored the ideas of noted maneuver theory advocates like J.F.C. Fuller, B.H. Liddell Hart, and some of the German commanders from WWII as well as others. The doctrine that emerged in the 1980s represented a paradigm shift from attrition warfare to maneuver warfare.³ If Operation Desert Storm was a validation of Airland Battle doctrine as some have claimed, then one must logically conclude that it was a vindication of maneuver theory over attrition theory.⁴ However, others would argue that America's traditional way of overwhelming firepower won the war.⁵ Where does the truth lie?

This study briefly reviews the theory of attrition and maneuver warfare to highlight their distinctions. It then explores the evolution of maneuver warfare and examines the two models of maneuver theory, one known as Vernichtungsgedanke and the other called the indirect approach. The Germans developed Vernichtungsgedanke as a doctrine in the nineteenth century that emphasized fast decisive maneuver aimed at encirclement and destruction of the mass of the enemy. The years of stalemate and carnage on the Western Front in World War I led to the development of a new type of warfare known as the armored idea or the indirect approach. Early advocates of this idea were J.F.C. Fuller and Sir Basil Liddell Hart. Heinz Guderian later championed a form of this idea in the German Army. The indirect approach had much in common with Vernichtungsgedanke, but it also had some significant differences that this study will examine. Leaders of the German military in World War II were divided as to which strategy was better, and as a result, they used elements of both in their campaigns.

This study also explores the evolution of the U.S. Military's fighting doctrine from WWII to the time of the Persian Gulf War to highlight its emphasis on attrition warfare and examine its attempts to become more maneuver warfare oriented. It then analyzes the planning and execution of Operation Desert Storm to see whether it reflected the precepts of the Vernichtungsgedanke model of maneuver warfare, the indirect approach model, or perhaps a high technology version of attrition warfare. This study concludes by examining the implications of this issue for future warfare.

II. Theory

Attrition warfare and maneuver warfare differ in emphasis and orientation rather than absolutes. Both incorporate elements of maneuver and attrition. Definitions will clarify the point. Maneuver is the movement of a force in relation to an opposing force.⁶ Attrition is the reduction of a force caused by loss of personnel and equipment.⁷ It is usually accomplished by some type of fire delivered from the air, ground, or sea. Another word for attrition is destruction. Maneuver and destruction are the two basic forms of action between opposing forces in a conflict.⁸

Attrition warfare aims to defeat the enemy by orienting directly on the mass of his forces. It relies more on superior firepower delivered by air, ground, and sea rather than maneuver to prevail. The attacks are made on a broad front and synchronized so that no flanks are exposed for the enemy to exploit. Attrition warfare can also be called the direct approach because maneuver is generally confined to the most direct route to the enemy's mass or strength.

Maneuver warfare aims to defeat the enemy by an indirect orientation on the mass of his forces. It can achieve this aim in one of two ways. One way is to bypass the enemy's strength and attack him from a direction that he is not prepared for. This form of maneuver is called an envelopment and seeks to disrupt the enemy.

Disruption is the art of throwing the enemy into confusion by attacking his mass or battle command structure obliquely.⁹ The other way is to bypass the enemy's strength and maneuver in depth to cut the enemy's lines of communication and retreat. This form of maneuver is called a turning movement and seeks to dislocate the opponent. Dislocation is the art of nullifying or weakening the enemy's strength by gaining a position of advantage.¹⁰

If the enemy does not present an open flank or exploitable gap, then a third form of maneuver, the penetration, can be employed to create a gap. The idea is to concentrate combat power on a narrow front to attack and break through the enemy's defense. Once he has done that, the attacker can proceed in one of the two ways previously mentioned.

Maneuver warfare requires a force dichotomy to succeed. A supporting force pins or distracts the enemy to prevent him from effectively countering the main force's oblique attack to strike his rear. The supporting force accomplishes that by demonstration, feint, or some other form of deception.

Attrition and maneuver warfare, even in their purist forms contain both elements of attrition and maneuver. Attrition warfare emphasizes firepower and physical destruction of the enemy's mass to achieve victory. Maneuver warfare favors

maneuver to achieve disruption or dislocation of the enemy as the primary means to defeat him.

III. The Evolution of Maneuver Warfare

For to win one hundred victories in one hundred battles is not the acme of skill. To subdue the enemy without fighting is the acme of skill.¹¹

Sun Tzu

The fundamental ideas of maneuver warfare can be traced all the way back to the writings of Sun Tzu recorded in the fourth century BC. Much of his teaching centers on doing the unexpected and pursuing the indirect approach to gain a decisive advantage over the enemy. Essential to Sun Tzu's notion of maneuver is fixing the opposing force with one element to enable another element to maneuver unhindered to the rear or flank of the opposing force. Sun Tzu described the fixing element as the cheng or normal force and the other element as the ch'i or extraordinary force.¹² The extraordinary force should seek the most decisive objective at the least cost; where the enemy is weak.¹³ Sun Tzu stressed the importance of selecting the indirect approach to avoid the enemy and to attack weakness rather than strength. He emphasized that the test of true skill in warfare is to defeat the enemy with as little fighting as possible. Sun Tzu's view contrasts sharply with the approach of attrition warfare which seeks to bring the enemy to battle to defeat him. Sun Tzu relates his brand of warfare to the flow of water:

The nature of water is that it avoids heights and hastens to the lowlands. When a dam is broken, the water cascades with irresistible force. Now the shape of an army resembles the water. Take advantage of the enemy's unpreparedness;

attack him when he does not expect it; avoid his strength and strike his emptiness, and like water, none can oppose you.¹⁴

Sun Tzu understood the importance of the human dimension of warfare. He stated that all warfare is based on deception. He considered the primary target to be the mind of the enemy commander. No plan was complete without a scheme to mislead the enemy and conceal the commander's ultimate intent.¹⁵ Sun Tzu looked beyond numerical force ratios to find where the enemy was vulnerable. He explored less tangible areas that might reveal weaknesses such as the commander's will and experience, the competency of the leadership, the state of the soldiers' training, and the level of their morale.¹⁶

Sun Tzu also stressed the importance of speed and flexibility to take advantage of unexpected opportunities. The attack should occur where the enemy is unprepared and when he least expects it. To do this the commander needed to know as much about the situation as possible. Sun Tzu advocated an estimate process much like the one used today to study the enemy and the terrain. Although he emphasized thorough planning and preparation, Sun Tzu did not advocate methodical battle or rigid paradigms. Every operation had to be worked out according to the unique circumstances surrounding it. Success rested on opportunity and expediency.¹⁷ The most important idea was to exhaust all means to find and attack the enemy's weakness to gain decisive results.

In western military thought, the roots of modern maneuver warfare began with the German military in the nineteenth century. Several factors influenced the German approach to warfare. Germany's central location among the European powers made it

vulnerable to a two front war. Its limited manpower and resources meant that it could not afford to engage in a lengthy and costly war of attrition. Germany's leaders recognized that the increased lethality of the new armaments made the battlefield more deadly, and defensive-firepower the dominating characteristic.¹⁸ Helmuth von Moltke, Chief of the Prussian General Staff from 1857 to 1871, recognized that frontal attacks would result in high losses and indecisive results, two things Germany could not tolerate. Instead, Moltke developed principles that emphasized fast, decisive maneuver at the strategic level that aimed to encircle and destroy the mass of the enemy. Rapid maneuver enabled the German forces to retain the initiative and concentrate numerically superior strength to overwhelm the enemy before he could respond effectively. It was during this time that the appearance of the railway, the telegraph, and the methods of mass production made it possible to mobilize, equip, and move large armies over long distances in a short time. Germany now had the means to deploy the bulk of its army on one front, achieve a quick victory based on the principles of rapid and decisive maneuver and then quickly deploy to another front to replicate the same results.¹⁹

Moltke's form of warfare demonstrated its swiftness and effectiveness in its 1866 war against the Austro-Hungarian Empire which lasted only seven weeks, and the campaign against France in 1870-71 that was just over six weeks long. In the battle of Sedan, the Germans captured a French army that numbered 104,000 men, the largest force ever captured up to that time. The Germans were successful because the carefully worked out plans of their efficient general staff enabled them to mobilize and concentrate their forces faster than their adversaries. This essentially enabled

them to preempt their enemy. The Germans combined their numerical superiority with aggressive operational leadership to crush the opposition.²⁰

Another influential figure in the formulation of the German way of war was Alfred von Schlieffen, chief of the German General Staff from 1891 to 1905. Like von Moltke he understood that the essential element in strategy was to bring superior forces into action at the decisive point. Von Schlieffen also rejected the idea of frontal battles of attrition in favor of annihilating the enemy with rapid blows on his flanks and rear. He coined the expression, Vernichtungsgedanke, (the idea of annihilation), as part of his effort to transform von Moltke's principles into an established doctrine. Von Schlieffen's doctrine of decisive maneuver incorporated the idea of disruption, the disorder and confusion caused by rapid maneuver into the enemy's rear. This would lead to the breakdown of the enemy's cohesion and hasten his destruction.²¹

In 1905, von Schlieffen masterminded a plan that integrated a wide maneuver designed to envelop the French rear. It was the basis of Germany's strategy at the beginning of WWI. The Germans came close to achieving their aim when they advanced to within 30 miles of Paris in less than six weeks. However, their offensive bogged down and was stopped by the Allies at the Marne River. The war degenerated into a stalemate as the opposing forces occupied lines that stretched from the Swiss Alps to the English Channel. Germany was caught in a war of attrition that forced it to abandon its doctrine of Vernichtungsgedanke. However, in the east the Germans continued to apply the doctrine of strategic envelopment to destroy the Serbian and Romanian armies and later defeat the Russian forces.²²

Since there were no longer any flanks to turn in the west, the Germans sought a way to penetrate the Allied defenses to bring mobility back to the battlefield. With the approach of 1918, Germany had the prospect of facing an Allied force that was superior in manpower and resources now that the U.S. had entered the war. The Germans were suffering from the effects of over three and a half years of hard fighting and an economic blockade. The army would have to find a way to achieve a quick victory before attrition overtook them. They did not have the resources to open gaps in the enemy's defenses with long and heavy artillery bombardments like the Allies used. The German offensive in 1918 incorporated a new doctrine known as infiltration tactics. It started with a short and intense artillery preparation that was designed to neutralize rather than destroy the enemy. That was immediately followed by a ground assault that was to advance quickly while the defenders were still dazed from the shelling to achieve a deep penetration. The infantry conducting the assault was organized into small units who worked in close coordination with the artillery. The lead units bypassed enemy strongpoints to maintain the momentum of the attack. The Germans relied on small unit initiative to locate the weaknesses in the Allied lines and aggressively advance before the Allies had time to respond with local counterattacks. Follow on forces had the mission to protect the flanks of the penetration and reduce the bypassed pockets of resistance.²³

The new German attack doctrine worked very effectively in the initial stages of their offensives in 1918. On the first day of their attack against the British, the Germans secured about 140 square miles at a cost of just over 39,000 casualties. In comparison, the Somme offensive in 1916 took the British and the French 140 days to

secure 98 square miles at a cost of over one-half million casualties. Of the 38,000 British casualties on the first day, 21,000 were prisoners as compared to only 300 German prisoners.²⁴ That statistic revealed how extensively the Germans disrupted the British forces and that destruction was not always necessary. Despite tactical success, the Germans were not able to achieve a strategic breakthrough. Transport difficulties prevented them from moving the supporting units and the reserves fast enough to exploit the penetrations.²⁵

The German infiltration tactics brought military strategy a step in the right direction towards restoring mobility to the battlefield. Instead of attempting to destroy the enemy's front line forces, the Germans used firepower and maneuver in a complementary manner to penetrate rapidly and deeply to disrupt his command and control. This created confusion, disorder, and paralysis that sped the collapse of the enemy's defenses. Instead of methodically seizing or holding terrain, the Germans focused on the enemy force as the fundamental objective. The infiltration tactics enabled the Germans to advance faster and with fewer casualties than the offensives of either side since the beginning of the stalemate in 1914.²⁶

In contrast to the German methods, the Allies attempted to overcome the stalemate on the western front with greater amounts of artillery to destroy the enemy's dug-in positions. The French Army's dominating precept became "l'artillerie conquiert, l'infanterie occupe (the artillery conquers and the infantry occupies)."²⁷ Artillery became the dominant factor in the Allied offensives. In the Somme offensive in 1917, the artillery preparation and the assault barrage lasted six days and fired over 1.6 million shells in the British sector alone. The British expected to obliterate the

German defenses that were within the range of their guns. The British infantry advanced in linear fashion behind the rolling artillery barrage and suffered heavy casualties while making only marginal progress.²⁸

The Allies overreliance on the firepower of artillery in the attack caused them to relegate maneuver to a secondary role. The artillery bombardment dictated the direction and pace of the attack. To produce the necessary destructive force, the Allies concentrated their artillery units and adhered to a rigid schedule of bombardment. The huge barrages churned the ground so badly that it made it difficult for the assault units as well as the support elements to advance. The methodical nature of the attack enabled the opposing side to determine the attacker's intent with plenty of time to shift the reserves into position to foil his efforts. The Allies used these methods to achieve limited gains at the cost of high casualties and never achieved a strategic penetration.²⁹

The Allied artillery was taking a deadly toll on the Germans who responded by developing the elastic defense in depth. They designed it to offset the Allies' heavy bombardment by manning the forward defensive line with relatively few soldiers in widely scattered outposts. German strength no longer directly confronted Allied strength. The main line of resistance was behind the outpost zone. As the Allied attack advanced farther from its artillery, it weakened as it confronted the German main line of resistance. As the attacks petered out, the Germans then launched counterattacks to smash the enemy forces and regain the lost ground.³⁰ The Germans had learned that the window of time to launch successful counterattacks was small and fleeting. They emphasized immediate counterattacks that were not held up while

waiting for permission from higher headquarters. This required high standards of leadership down to the smallest units and a doctrine that encouraged subordinate initiative.³¹

In contrast, the Allies relied on the inflexible use of their tremendous firepower which tended to stifle subordinate initiative. After the war, French Lt. Col. Pascal Lucas commented about the lack of initiative in Allied operations:

...The command, which could quickly get information on everything which was going on, tended toward excessive centralization; nothing could be done except upon its orders; it took over all initiative and responsibility...Our corps of officers lost in that school the taste for initiative and responsibility, a grave disadvantage, the results of which were to make themselves cruelly felt late³²

The German doctrinal methods in WWI proved their ability to balance the demands of precision for unity of effort and the demands of flexibility to adjust to the changing conditions of the battlefield. This reflected the teaching of Clausewitz on the imponderables in war caused by the unpredictability of human behavior. The Germans accepted the idea that fog and friction would be inherent in battle. They understood the need for flexibility to adjust to unforeseen circumstances. The Germans responded by developing the doctrine of Auftragstaktik, a policy of issuing mission type orders that stated overall intent. Subordinate leaders were told what to do and given a substantial amount of latitude in how they accomplished it.³³ In response to the circumstances of WWI, the Germans pursued this doctrine to a new level that reached down to the smallest tactical units.

At the close of WWI, all sides generally recognized that change was necessary to find the strategic solution to the position warfare that prevailed on the western

front. However, there were some factors that worked against military innovation during the period between WWI and WWII. The first factor was the general revulsion toward warfare and anything related to the military. The tremendous carnage in the war had such a profound impact that fifteen nations signed the Kellogg-Briand Pact in 1928 that renounced the use of war except in national self-defense. The anti-military sentiment resulted in very tight defense budgets that left little room for developing new methods and equipment for war. The onset of the Great Depression made this situation even worse. Another factor, not unique to that particular period, was the opposition of the more traditional combat arms to developments that might threaten their dominance.³⁴ As a result, the Allied nations were inclined to stay with their doctrine of firepower-attrition.

At the end of the war, the British were the leaders in the world in both armored equipment and armored doctrine. While most of the military leaders saw the tank as an infantry support weapon, there were some who advocated a different role. Among the visionaries was Col. J.F.C. Fuller who had produced "Plan 1919," a concept for a large scale armor offensive if the war had continued. Instead of dispersing the tanks to support the infantry, Fuller advocated massing them in separate organizations. His plan, modeled on German infiltration tactics, called for the use of the armor formations to produce multiple penetrations of the German defenses to disrupt their command structure and rear organization. Fuller described his aim as a "pistol shot to the brain" of enemy command and communications rather than destroying combat forces through systematic attrition.³⁵

Fuller later refined his ideas into a new type of warfare coined as the doctrine of Strategic Paralysis. He believed that mechanization would revolutionize warfare by dramatically increasing the tempo at which campaigns were conducted. Fuller concluded that it was pursuit and not the attack that would produce the disruption necessary for decisive victory. The tool that now made the pursuit possible was the tank which was much faster than the infantry and more powerful and survivable than horse cavalry.³⁶

Fuller advocated that the decisive point was the enemy's rear. To get at the rear required an element to pin the enemy's forces in position. Once this was accomplished, a mobile force could maneuver swiftly around to attack his rear. The speed and violence of this attack would demoralize the enemy and cause his resistance to crumble.³⁷ Fuller's idea was remarkably similar to Sun Tzu's expression of the cheng and ch'i forces and the German doctrine of Vernichtungsgedanke. The speed and shock of massed armor brought a new dimension to these methods. According to Fuller, the new aim in warfare would be to destroy the enemy through disruption and demoralization rather than attrition.

B.H. Liddell Hart was another advocate of maneuver warfare who came to prominence during the interwar years. Liddell Hart agreed with much of Fuller's thinking but felt that his ideas did not go far enough to achieve a strategic effect. While Fuller believed that armored forces would make battle decisive again, Liddell Hart thought that maneuver on a strategic scale could render the battle, if it had to be fought at all, as a foregone conclusion.³⁸ He asserted that the deeper the armored forces advanced, the greater the disruption of the enemy's command. This in turn

would lessen the need to engage the enemy in a decisive battle. Liddell Hart adhered to Sun Tzu's philosophy that the true skill in war was to defeat the enemy with as little fighting as possible. In other words, win without attrition. The strategist's true aim should not be battle, but a strategic position "so advantageous that if it does not of itself produce a decision, its continuation by battle is guaranteed to do so."³⁹

Liddell Hart believed that dislocation, a superior strategic position obtained through movement, had a physical and a psychological aspect. Physical disruption was the result of a maneuver that forced the enemy to reorient in a new direction, separated his forces, or endangered his line of communication. Psychological disruption was the impression created in the mind of the enemy as a result of the physical dislocation. Liddell Hart saw the latter as the most important of the two.⁴⁰ Like Fuller, he believed that demoralization rather than destruction ought to be the key to victory.

Liddell Hart called his method the strategy of the indirect approach and he equated it to a wrestling match. It was better to throw an opponent when he was off balance as a result of coming at him from an unexpected direction than to tackle him head on while he remained in a balanced stance. The latter equated to attrition, required a much greater margin of strength, and tended to be more exhausting than the former. The indirect approach needed deception, surprise, and speed to make it work. The opponent needed to be distracted to prevent him from effectively responding to an attack from an unexpected direction. The distraction could be a feint, demonstration, or some other form of deception to produce the psychological

effect that deprived the opponent of his freedom of action. The surprise and speed of the attack helped to keep the enemy off balance until he was defeated.⁴¹

The ideas of Fuller and Liddell Hart came to represent two different patterns of maneuver warfare. Fuller's idea was a variation of the Jominian tradition of victory by successively destroying fractions of the enemy's forces by masses of one's own. The rapid concentration of mechanized forces in the immediate rear of the enemy army would produce decisive results by disrupting his command and control. While Fuller's approach sought out the enemy's tactical rear, Liddell Hart felt that the maneuver element should seek a depth that produced a strategic collapse of the enemy.⁴² Liddell Hart's strategy of the indirect approach was the more radical of the two because it depended more on achieving a psychological effect that is difficult to predict.

In the years preceding WWII, a small group of German officers wedded the ideas of Fuller and Liddell Hart to their doctrine of infiltration tactics to produce a new concept of war that became known as the armored idea or the indirect approach. The leader of the group was Heinz Guderian, a maverick who had only limited success selling the idea to the German high command.⁴³ The Germans based their version of the indirect approach on three basic concepts--breakthrough, penetration, and aim.

In the first concept, breakthrough, the armored force attacked by concentrating its combat power on a narrow front. The Germans described this as the *schwerpunkt*--the focus of effort. The first requirement was to determine the enemy's weak point and then strike it with overwhelming force to break through his defenses.⁴⁴

In the second concept, penetration, the armored forces continued the advance after the breakthrough to drive deep into the enemy's rear. As in the infiltration tactics of WWI, the armored force bypassed enemy strongpoints to maintain momentum. The main thrust was obscured by feints and demonstrations. Follow on forces consolidated the gains by reducing bypassed pockets of resistance. Priority was given to the speed and depth of the advance to prevent the enemy from reforming a coherent defense. Risk was accepted in leaving flanks exposed.⁴⁵

In the third concept, the aim of the attack force was to turn a tactical advantage into a strategic one. In line with Liddell Hart's idea of dislocation, a penetration in depth destroyed the enemy indirectly by paralyzing his command and control. The key to success was to advance the armored force with enough speed and depth to prevent the enemy from effectively reestablishing a coherent defense.⁴⁶

The basic organization for this new form of warfare was the armored division. It incorporated a balanced team of all arms--tank, anti-tank, infantry, artillery, and engineer--to produce a combination of maximum firepower, mobility, and flexibility. Another important component was the Luftwaffe, the German air force, which devoted the greater part of its resources to support the army. The Germans considered command of the air essential and would concentrate their air sorties to achieve air superiority in the vicinity of the *schwerpunkt*. Close air support protected the exposed flanks of armor spearheads and supplemented the artillery which was hard pressed to keep pace with the advance.⁴⁷

Although the indirect approach and *Vernichtungsgedanke* both emphasized the importance of decisive maneuver, there were several key differences. The primary

aim of Vernichtungsgedanke was the physical destruction of the enemy while the indirect approach sought paralysis and demoralization to achieve the same goal. The method of Vernichtungsgedanke was well coordinated flanking and encircling movements as compared to the unsupported thrusts of the indirect approach deep into the enemy's rear areas. The former operated within the parameters of guarded flanks and unbroken supply lines in contrast to the velocity and unpredictability that characterized the latter. Vernichtungsgedanke was more centralized in control while the indirect approach favored independence of action. The primary instrument of the former was the mass infantry army while the latter depended on the smaller, mobile armored division to achieve its aims.⁴⁸

At the beginning of WWII, most of the German General Staff and officer corps still favored Vernichtungsgedanke over the unproven strategy of the indirect approach. Like other armies, they were shackled to tradition and did not fully comprehend the possibilities of the new technology and methods. The old doctrine had been the basis for the initial campaign in WWI that came close to defeating France in only a few weeks. The Germans used the strategy of Vernichtungsgedanke to win their first campaign in WWII, in Poland. The Polish campaign was won by encirclement with mobile forces, but there were no great tank battles or sizable tank concentrations.⁴⁹

Germany's amazing campaign in France, Belgium, and Holland in 1940 is one that maneuver warfare enthusiasts most frequently refer to support their claim that maneuver warfare is superior to attrition warfare. The German's original plan for Operation Yellow, their campaign in the west, aimed at the encirclement of the Allied

northern flank much like their plan in 1914.⁵⁰ Since the Allies had already mobilized and positioned their forces, the Germans could not count on the strategic surprise that was vital to their offensive strategy. However, they found a different way to preempt the Allies by coming up with another plan that had the main attack pushing through the Ardennes Forest. The *schwerpunkt* was positioned to strike the French defenses between the Maginot Line and the Allied left wing. The Allies did not expect the German main attack to come through the Ardennes, and consequently placed their weakest forces there. The Germans planned to penetrate the forward defenses to enable them to encircle the reinforced Allied wing that was poised to engage what the Allies thought would be the German main attack in the north. Germany's Army Group B in the north would be the *cheng* or distracting force. In Army Group A, the *schwerpunkt* was a panzer army commanded by Ewald von Kleist that contained three panzer corps--the bulk of the German panzer forces. It was aimed at Sedan, the location where German intelligence confirmed was the weak link between two second-class French divisions.⁵¹

The German plan for Operation Yellow was maneuver oriented, but it was based on *Vernichtungsgedanke*. Instead of deep thrusts, the panzer units were expected to support the encirclements executed by the infantry armies.⁵² However, the advocates of the indirect approach, led by Guderian, a corps commander in Kleist's panzer army, wanted to push towards the coast immediately after the breakthrough without waiting on the foot mobile infantry. Key members of the German command staunchly opposed this idea.⁵³ Clearly the Germans were divided over the feasibility and prudence of the strategy of the indirect approach.

German ambivalence toward the indirect approach continued during the actual conduct of the campaign. The conflict over proper strategy came to a head during the crossing of the Meuse River by Kleist's forces. The lead armored formations arrived at the river on May 12. The French command, already surprised by the German advance through the Ardennes, calculated that the Germans would consolidate and bring up their artillery before attempting to cross the river.⁵⁴ Consequently, they ordered eleven divisions into the area to arrive from 14 to 21 May. Considering previous experience, the French response should have been timely and adequate. However, the Germans aggressively crossed the Meuse on the 13th, concentrating their air force to provide the necessary support in place of the artillery. The *schwerpunkt* fell on the seam between two French Armies. The concentrated ground and air forces tore a gap in the French defenses.⁵⁵

When his corps consolidated its position on the west bank of the Meuse, Guderian chose to push west instead of waiting for the infantry units to catch up. In the coming days, the progress of the panzer spearheads was influenced as much by the caution and hesitation of the traditionalists as the audacity and dash of the proponents of the indirect approach. The panzer forces were given numerous orders to stop out of fear of being cut off by Allied counterattacks. That set off intense arguments among the commanders all the way up the chain of command. Hitler himself was apprehensive about the exposed flanks of the panzer forces.⁵⁶

Despite all the debate, Guderian's corps reached the coast on May 20. That astonished the Allies who were paralyzed by the rapid tempo of the German panzer units. They deployed their forces slowly and were not able to mount an effective

counterattack.⁵⁷ Early on, the Luftwaffe contributed significantly to the momentum of the breakthrough by establishing air superiority in the vicinity of the main attack and providing effective interdiction and close air support.⁵⁸ The German command was elated but confused about what to do next after they had cut the Allied forces in two. They could have turned Southwest and began a large encirclement up against the rear of the Maginot Line or turned north up the coast to complete a battle of annihilation of the trapped Allied forces.⁵⁹

On May 21, the British mounted a counterattack at Arras that was defeated but had a psychological impact on the German command. They became more cautious and halted to allow their infantry to catch up. Guderian did not renew the attack until the 22nd and then with a reduced corps. He was ordered to give up a panzer division to be placed in reserve to counter any further Allied attacks. He was also instructed to leave elements of his two other panzer divisions back to secure the Somme River bridgehead until they were relieved. Guderian believed that he could have cut off the Allies' escape across the channel if he had been released earlier and not had his corps depleted by his cautious superiors. The time gained by the Allies enabled them to organize their defenses to slow the German attack once it was renewed.⁶⁰

The German command ordered the panzer forces to stop again from 24 to 27 May. It then gave the Luftwaffe the mission to complete the destruction of the Allied forces in the pocket around Dunkirk. Hampered by the Royal Air Force and bad weather, the Luftwaffe failed to destroy the Allied forces or prevent their evacuation. When the ground attack resumed on the 27th, the Allies used the respite to solidify their defenses. The fighting was difficult and caused heavy casualties on both sides.

Guderian later reported, "By then it was too late to achieve a great victory."⁶¹ The Allies managed to evacuate around 336,000 men across the channel before the Germans finally closed in. This would provide them the nucleus of an army to build on and continue the war. Before the Germans halted their panzer units on the 24th, the Allies did not expect more than 45,000 soldiers to escape. The German's failure to close the pocket quicker demonstrated their lack of confidence and understanding in the strategy of the indirect approach.⁶²

The Germans had won a tremendous victory but it was not completely successful since they failed to close the pocket at Dunkirk. The numerous halts of the panzer forces violated the precepts of the strategy of the indirect approach that advocated rapid, continuous movement to keep the enemy off balance and prevent him from reestablishing a coherent defense. The success that was gained provided a glimpse of the potential of this new form of warfare. The campaign lasted only forty-six days and was all but decided after the first ten. The Allies lost over sixty-one divisions, half their battle order, and three-fourths of their equipment. 1.2 million soldiers were taken prisoner. In comparison the Germans had about 61,000 casualties.⁶³

The 1940 German campaign brought to fruition ideas that trace all the way back to Sun Tzu and found their modern expression in the German military. The German's swift victory in the west appeared to answer the problem of offensive strategy that bedeviled the militaries caught in the stalemate in WWI. Their doctrine, a curious mixture of Vernichtungsgedanke and the indirect approach embraced the precepts of maneuver theory. Modern maneuver warfare advocates have integrated

the ideas of Sun Tzu, Fuller, Liddell Hart, and the Germans as well as others to synthesize a doctrine to achieve decisive victory at the least cost in human life. The means to achieve this end are tempo, focus of effort, and surfaces and gaps. The ways are preemption, deception, dislocation, and disruption.

IV. The Evolution of American Military Doctrine

The Army's attrition warfare mentality was rooted in the American society's view of the military. Americans have traditionally been suspicious of the military profession. The U.S. was founded with the idea that the Army remains small and checked by civilian control. Early on, the nation chose an army that combined the elements of a small standing force and citizen-soldiers called into service in times of emergency.⁶⁴ America's anti-military inclination kept it from adopting the elite and powerful general staff created by the Germans to advance the science of war and copied by other western societies in the Nineteenth Century. America also resisted the trend practiced by the European powers of recruiting and training a large conscript army in peace time. The American way of war was to mobilize and expand the small, professional force with citizen-soldiers and then demobilize quickly after the war. America had been successful at combining the minutemen model with its vast material wealth and industrial capacity to subdue its enemies. What the expanded wartime force lacked in the way of professionalism and refinement, it compensated with sheer strength. America's "brute force strategy" was effective from the Civil War through the Korean War. The Vietnam War and its aftermath, however, provided compelling reason to change.

The American military's preference for firepower dates back to WWII. In Europe and the Pacific, the U.S. used its overwhelming advantage in firepower to hammer its enemies into submission. In Europe, the Army relied heavily on artillery bombardment and air interdiction to overcome the Germans. Air operations crippled the German's battle command structure, paralyzed their movement, and severely attrited their combat power. Allied air dominance effectively prevented the Germans from massing their forces to conduct large scale mobile operations. They were forced to attack piecemeal. However, German commanders interrogated after the war felt that the Americans did not make the most of their opportunities for maneuver, surprise, and improvisation.⁶⁵ One German general noted:

In contrast to the Eastern theater of operations, in the West it was possible to still straighten out seemingly impossible situations because the opposing Armies there...despite their enormous material superiority, were limited by slow and methodical modes of combat.⁶⁶

American operations in general tended to be cautious and systematic and lacked the precepts of maneuver warfare. Their methodical approach continually allowed the Germans to escape pockets, withdraw in orderly fashion, and reestablish a coherent defense. General Max Simon, the commander of the German XIII SS Infantry Corps stated, "...The tactics of the Americans were based on the idea of breaking down a wall by taking out one brick at a time..."⁶⁷

The Pacific theater was no different. American forces relied more heavily on their preponderance in firepower to vanquish the enemy than on the precepts of maneuver warfare. A U.S. Army division historian described the American style of fighting as a prescription of waiting for the artillery to move up and lay down a heavy

bombardment on the enemy positions until they were obliterated. It took longer, but it saved soldier's lives.⁶⁸ The American commanders as well as their allies in all theaters tended to rely more on firepower and attrition than unbalancing the enemy's defense or forcing him to give ground by attacking his flanks and rear.⁶⁹

The end of the war did not bring any major change to the military's fighting doctrine. It continued to emphasize firepower and attrition in Korea, particularly during the static phase of the war. One major exception was the Inchon landing in 1950 which was a brilliant application of a turning movement. The Army turned again to air operations and artillery support to beat off the waves of Chinese infantry. Political policy in the latter stages of the war forced the military to fight a strategy of attrition at the expense of maneuver and its offensive spirit.⁷⁰

After the Korean War, the U.S. Army focused on preparing to fight on a nuclear battlefield in Europe against the Soviet Union. It developed tactical nuclear weapons as a way to offset the Soviet's overwhelming superiority in conventional forces arrayed against NATO. The Army changed its organizations, doctrine and training to reflect the emphasis on tactical nuclear war. The experience of the Korean War and the focus on forward defense in Europe kept the Army tied to a strategy of firepower-attrition.⁷¹

In the early 60s, the military turned to counterinsurgency to combat the Communist threat in third world nations. In Vietnam, operational constraints imposed by policy and misunderstanding of the social dynamics in that country forced the military to pursue a strategy of pure firepower-attrition. The Army was focused on fighting the North Vietnamese but confined to operations in South Vietnam while the

Air Force conducted a limited bombing campaign in North Vietnam.⁷² Reduced to using body counts as the measure of success, U.S. forces used massive amounts of firepower to destroy the enemy wherever they could find them. The Army's search and destroy operations killed many guerrillas but they also victimized many non-combatants and tended to alienate the civilian population.⁷³ The strategy of attrition was devoid of a reasonable goal and ultimately failed.

The U.S. military emerged from the Vietnam War as an institution in transition. Defense policy shifted in the early 70s which drastically scaled back the military's activities against Communist aggression and sharply curtailed military spending. The military tuned its attention back to Europe where NATO faced considerably stronger Soviet and Warsaw Pact forces. The Soviet and Warsaw Pact units had gradually redeployed closer to the inter-German border implying a shift in strategy toward preemptive, non-nuclear operations. The Army recognized the need for a new strategy to fight outnumbered and win.⁷⁴

Under the dynamic leadership of General William Depuy, the Army produced a new doctrine in 1976 that began to move away from the old doctrine of attrition warfare. The 1973 Yom Kipper War was a strong catalyst in the process. Military leaders observed weapons of increased lethality that made conventional war more destructive than ever. The Middle East War destroyed more equipment than was in the entire U.S. inventory. They noticed that the Soviets had forged a lead in combat vehicle technology while the U.S. had been tied up in a guerrilla war for a decade. The Army saw its desperate need to modernize its forces for mid to high intensity conflict. It also saw the need to reemphasize combined arms warfare. The Israelis had

underestimated the Egyptian's integrated air defense as well as their man-packed anti-armor missiles. It almost cost them the war.

The analysis of the Yom Kipper War and the growing Soviet-Warsaw Pact threat in Europe influenced the Army to create a doctrine that still favored attrition, but there were signs of change. It emphasized the importance of employing fires and maneuver to complement one another. It discussed force dichotomy; one element suppressed the enemy while another element maneuvered to his flanks and rear. It stressed the need to maneuver to concentrate superior force at the decisive point while accepting risk in other areas. It also emphasized the importance of air and ground operations working in close concert.

The new doctrine, known as active defense, focused almost exclusively on NATO defense in Europe. It was heavily influenced by the Germans who insisted on forward defense that did not provide adequate depth for operational maneuver.⁷⁵ NATO was organized into separate national corps arranged in sectors like pancake layers, each supported by their own autonomous logistical network. That arrangement hindered the maneuver of units outside their national boundaries.⁷⁶ Faced with those constraints, Active Defense doctrine called for extensive analysis and reconnaissance to locate the Soviet's main effort and then a delaying action in the covering force area to slow his advance. That action was supposed to buy enough time for the commanders to maneuver forces laterally to concentrate the necessary combat power to destroy the enemy's massed armor formations.⁷⁷

The Active Defense doctrine had many critics inside and outside the military, but it served a great purpose because it caused the Army leadership to think. Many of

them felt that the doctrine focused too narrowly on a NATO scenario because the Army was more likely to fight elsewhere. Another criticism was that the doctrine depended too heavily on a systems analysis approach that oversimplified the nature of war and neglected its human dimension. The doctrine focused too narrowly on winning the first battle and did not address the enemy's follow-on echelons. Finally, critics claimed that the doctrine downplayed the decisiveness of the offensive form of war.⁷⁸

From the late 70s to the early 80s the Army continued to mold and refine its doctrine into a form much like the Germans practiced in France in 1940. As a result, it published new doctrine in 1982 known as Airland Battle and later updated it in 1986. The new doctrine placed greater emphasis on offensive warfare and the importance of seizing and retaining the initiative. It drew on the ideas of Sun Tzu, Fuller, Liddell Hart, and others to stress the ideas of the indirect approach. These ideas included the attempt to avoid the enemy's strength, surprise and audacity to seize the initiative from the enemy, concentrating combat power against critical units or areas to disrupt or dislocate the enemy, deception to mislead the enemy to conceal friendly intent, and sustaining a high tempo to deny the enemy the opportunity to recover.⁷⁹

To address the concern that Active Defense did not adequately deal with the enemy's follow-on echelons, the Army developed the concept of deep battle. The idea was to locate and monitor the enemy's dispositions in depth and disrupt the forces in depth with air interdiction and long range fires. The aim was to cause the enemy to commit his forces piecemeal and attrited that left him open to defeat in detail. Instead of narrowly focusing on the first battle, the Army now took a broader view that

integrated the deep battle with the fight in the main battle area. This required the Army and the Air Force to coordinate more closely so that their actions complemented one another to achieve a single aim.⁸⁰

The new doctrine added two maneuver warfare precepts taken from the Germans. It adopted the concept of mission orders, *Auftragstaktik*, which required leaders at all levels to take initiative in the absence of orders to respond to unforeseen events⁸¹. Airland Battle also incorporated the German concept of *Schwerpunkt*--designating and sustaining the main effort to accomplish the most important task.⁸²

The introduction of Airland Battle marked the Army's departure from attrition warfare. In stressing the indirect approach, the Army recognized that maneuver was the key dynamic in achieving decisive victory at the lowest cost. However, it acknowledged that maneuver and firepower are inseparable and complementary elements of combat power. The Airland Battle doctrine also raised the Army's awareness of the operational level of war. The Army now viewed the close, rear, and deep battles as integrated into a single operation that required inter-service cooperation to achieve unity of effort.

V. Operation Desert Storm: Attrition and Maneuver

When U.S. forces deployed to the Persian Gulf region in 1990, Airland Battle doctrine had been in place for eight years. Did Operation Desert Storm (ODS) demonstrate that the U.S. military had transitioned from firepower-attrition warfare to a strategy of maneuver? Chapter Two of the study traced the evolution of maneuver

warfare and established certain ways and means associated with it. This chapter examines the war in view of those criteria to determine if it properly fits the model of maneuver warfare.

Central Command's (CENTCOM) campaign plan for Operation Desert Storm was both attrition and maneuver oriented. It had four phases: (1) strategic air campaign, (2) establish air superiority over the Kuwait Theater of Operations (KTO), (3) air operations to reduce Iraqi ground force's capability before the ground attack, and (4) ground offensive into Kuwait.⁸³ The first three phases were conducted simultaneously with the goal of significantly reducing the Iraqi armored forces before launching the fourth phase.⁸⁴ CENTCOM designed the strategic air campaign to incapacitate Iraqi leadership and destroy its key military capabilities. Liddell Hart considered strategic bombing the ultimate indirect approach since it bypassed armies completely. In the 1920s, Douhet had advocated that air forces could play a decisive role in war by bombing cities to terrorize and demoralize the enemy's population. He justified attacking noncombatants by claiming such attacks would lead to a quick decision and ultimately fewer casualties. Strategic bombing has never lived up to Douhet's vision, but some in the U.S. Air Force persist in the idea of deciding a conflict with air operations alone. The most well known member of that group, Col. John Warden, has refined Douhet's ideas into a theory calling for precision strikes against critical vulnerabilities to paralyze a nation's ability to carry on a war.⁸⁵ CENTCOM put Warden's theory into action but did not predicate the success of the campaign on it alone. Specific target groups included command and control nodes, NBC facilities, air defense systems, air fields, electric power, oil production, railroads,

and military production.⁸⁶ Phase II, Air Superiority, was considered the first step for all air operations and was only made a separate phase at Gen. Schwarzkopf's suggestion. Phase III, Battlefield Preparation, called for heavy attrition of Iraqi ground forces in the KTO. CENTCOM decided that they needed to reduce Iraqi's numerical superiority in ground combat power by fifty percent before launching an offensive.⁸⁷

The fourth phase of the campaign, the ground offensive was unambiguously maneuver oriented. The planners made a conscious decision to avoid a frontal attack and came up with the idea of the "left hook" envelopment. The CENTCOM CINC, Gen. Schwarzkopf, determined that he needed to destroy the Republican Guard, Iraq's elite armor, mechanized infantry, and special forces units that served as the operational reserve.⁸⁸ That conformed to CENTCOM's implied objectives of destroying Iraqi offensive capability and a consequent restoration of a regional balance of military power.⁸⁹ The plan was an application of Sun Tzu's cheng and ch'i forces. The Marine and Arab-Islamic forces as the cheng element would attack to pin the Iraqi forces to their front. Third Army with two corps would be the ch'i element. XVIII Abn Corps had the mission to trap the Republican Guard by cutting Highway 8 south of the Euphrates River. CENTCOM designated VII Corps with four heavy divisions as the main effort with the mission to destroy the Republican Guard.⁹⁰

The plan for the ground offensive called for a tightly coordinated encircling movement. It emphasized synchronization to ensure that the left hook struck the enemy's "jaw" with full force rather than a piecemeal effort.⁹¹ Third Army essentially attacked in a coordinated manner on a broad front to avoid gaps that could be

exploited by the enemy. It based its conservative approach on the assumption of friendly control of air and space to blind the enemy and severely limit the control of his ground forces. Third Army also took into consideration the uncertainty of where the Republican Guard would be during the operation.⁹²

In keeping with the indirect approach, the campaign incorporated a deception plan to hide its true intent from the enemy. The aim was to portray a frontal attack along Kuwait's southern border with no intent to envelop from the west. To keep Iraq's attention away from the west, a Marine expeditionary brigade was to fake an amphibious landing off the Kuwaiti coast and Third Army was to delay moving to its attack positions in the west until after air operations had sufficiently blinded the enemy.⁹³

In the early stages of the ground offensive, the Iraqi forward defenses began to collapse much faster than anyone anticipated. Their disintegration was more the result of attrition than maneuver. Interrogations of prisoners indicated that weeks of extensive bombing left them with a sense of futility that sapped their will to fight.⁹⁴ As a result CENTCOM launched Third Army's attack a day earlier.⁹⁵

Third Army carefully synchronized its attack according to plan. During Third Army's attack, CENTCOM slowed the progress of 24th Infantry Division to prevent a gap from forming between XVIII and VII Corps. The VII Corps commander, Gen. Franks, also slowed the progress of his lead elements to ensure his corps was massed against the Republican Guard. Since Franks determined that he needed three divisions for that effort, he waited for 1st Infantry Division to complete its penetration of Iraqi forward defenses and passage of the 1st U. K. Armored Division.⁹⁶ The imperative for

a three division "fist" left Franks with no units to serve in a follow and support role. Perhaps that is why VII Corps did not bypass pockets of resistance which only slowed their advance further.⁹⁷ Franks had a justifiable concern of keeping his corps massed and his supply routes free of enemy, but his slowed pace incurred the wrath of the CENTCOM CINC. Gen. Schwarzkopf was afraid that collapsing Iraqi resistance could result in a cease-fire before VII Corps could close and destroy the Republican Guard.⁹⁸

Maneuver theory purists such as William Lind and John Schmidt insist that synchronization is anathema to maneuver warfare because it slows the ability to respond to unforeseen events. That opens the way for the enemy to seize the initiative and gain the upper hand. Their idea rests on the assumption that war is too chaotic and unpredictable to allow for a deterministic and methodical approach.⁹⁹ However, Gen. Franks stuck to his plan and vindicated himself by VII Corps' overwhelming success against the Republican Guard.¹⁰⁰

The air campaign did not attrite and demoralize the Republican Guard units as effectively as it did the Iraqi units in the forward areas. That was due to the fact that the Republican Guard units were the most difficult to observe and attack due to their position deep in the rear of the theater. Also, precision guided munitions (PGM) were limited and aircraft not firing PGMs were less effective because they bombed at high altitudes to avoid intense air defense artillery and infrared SAMs.¹⁰¹ As a result, the Republican Guard remained at about seventy-five percent in composite strength rather than the objective of fifty percent.¹⁰² The air campaign also failed to paralyze the Iraqi

command or cut off their communications completely. They were able to move into prepared defensive positions oriented against VII Corps enveloping from the west.¹⁰³

VII Corps essentially conducted a frontal attack against the Republican Guard with three divisions shoulder to shoulder. They chose the direct approach for three reasons. First, the Corps had to close and destroy the Republican Guard quickly since a cease-fire might come at any time. Second, since the enemy could not detect VII Corp's approach, the frontal advance at high speed enabled VII Corps to strike the enemy before he could fully prepare. Finally, U.S. forces had superior weapons range and thermal capability that gave them a decisive advantage over the Iraqi units. As a result, VII Corps, assisted by XVIII Corps and the Air Force, devastated several Republican Guard units in a route that was only stopped by CENTCOM's orders due to strategic considerations.¹⁰⁴ By that time, VII Corps had shattered five Iraqi heavy divisions.¹⁰⁵ 1st Armored Division alone overran elements of ten Iraqi divisions, destroyed 418 tanks, 447 APCs, 116 artillery pieces, 1211 trucks, and 110 air defense systems in four days of combat. In addition, it captured 2234 prisoners while losing only four men killed.¹⁰⁶

Schwarzkopf stopped the destruction of the Republican Guard and other Iraqi units attempting to escape after consulting with the National Command Authority. At the end of hostilities, the Republican Guard was severely disrupted but not completely destroyed. One third of their armored force escaped across the Euphrates River.¹⁰⁷

The fact that CENTCOM did not close the pocket on the Iraqi forces has been a matter of close study and speculation. James Burton wrote a scathing article accusing the U.S. forces of pushing the Iraqi forces out of the theater in attrition style warfare

instead of trapping them.¹⁰⁸ His criticism that VII Corps moved too slowly and methodically is flawed for the reasons already addressed. However, his argument has some merit from the theater perspective. The plan required XVIII Corps to cut the western route (highway 8) out of the theater while the Air Force was left with the task of cutting the escape to the north. The Air Force was not completely successful in keeping the bridges across the Euphrates down.¹⁰⁹ Aircraft sorties were hampered by the low visibility due to the poor weather and the thick smoke from the oil fires.¹¹⁰ Perhaps if XVIII Corps had been given the mission from the start to completely trap the Iraqi forces, they may have pulled it off. CENTCOM could have helped if it had released 1st Cavalry Division, the theater reserve, sooner than the third day of the ground offensive. As it was, 1st Cavalry Division did not get into the fight at all.¹¹¹

Problems with air to ground coordination contributed to the difficulty of closing the pocket. The speed of the ground advance kept the senior ground commanders from being able to report an accurate front line trace of friendly forces to the Air Force in a timely fashion. To prevent possible fratricide, CENTCOM took control of the fire support coordination line (FSCL), normally a permissive fire measure, and made it a boundary. The terrain on one side belong to the ground commanders while the other side belonged to the air component commander.¹¹² On the third day of the ground operation, CENTCOM established the boundary on the 20 north-south grid line. The bulk of the Iraqi forces withdrawing north were to the east of the boundary. The Air Force attacked the area with a series of single FB-111 strikes based on an air tasking order (ATO) prepared more than twenty-four hours earlier. Their bombing mission was far too inadequate to blunt the withdrawal. Franks

tried to get permission to attack the Iraqi formations with the 11th Aviation Brigade but was denied because the ATO was inflexible once in the execution phase. A golden opportunity was missed to bring enormous combat power to bear on the bulk of the Iraqi units.¹¹³ CENTCOM's decision to leave everything east of the 20 N-S grid line to the Air Force was similar to the German decision in 1940 to halt their armored forces and allow the Luftwaffe to complete destruction of the Allied forces. In both cases, the air forces were not up to the task.

In addition to air to ground coordination problems, concern over fratricide also dampened the aggressiveness of the advance. The flat and open terrain of the theater made for a lethal environment for long range anti-armor weapon systems. The range at which the systems could engage was three times farther than their ability to distinguish between friend and foe. As incidents of fratricide began to occur, the ground commanders became more cautious. VII and XVIII Corps established a five kilometer no fire zone between themselves. Attacks halted more frequently to allow units to sort themselves out. The safety precautions saved lives but allowed some Iraqi forces to escape.¹¹⁴

Despite the problems mentioned, evidence indicates that if the coalition had not ceased operations, it could have destroyed the remaining Iraqi forces stacked up in the Basra area. However, Washington came under increasing pressure to stop the hostilities as vivid images of the "highway of death" raised concern of needless killing among coalition members. Fighting in the more populated and congested area around Basra also risked high friendly casualties. In the final analysis, the military is a servant

of policy, and the political leaders ended the war when they determined that their strategic objectives had been met.¹¹⁵

The U.S. in conjunction with its coalition allies defeated the Iraqi forces with maneuver warfare precepts. CENTCOM delineated and resourced VII Corps as the focus of effort with the decisive task of destroying the Republican Guard. CENTCOM employed the precept of surfaces and gaps by enveloping the Iraqi Army from the west rather than attacking them frontally. The Coalition preempted the Iraqi forces by blinding their ability to monitor Coalition movements and executing a deception plan that drew their attention away from the main effort. The ground forces operated at a tempo that took the Iraqi forces by surprise and never allowed them to recover. The disruption of the Iraqi Army was the result of the relentless attrition operations by the Air Force as well as the actions of the ground forces.

CENTCOM fashioned a victory more in the style of Vernichtungsgedanke but also had elements of the indirect approach espoused by Liddell Hart and Guderian. The aim called for the paralysis and physical destruction of the Republican Guard. The operation was a well coordinated flanking movement but also had the unsupported thrusts of the 101st Infantry Division and the attack helicopter units deep into the enemy's rear area. Guarded flanks and unbroken supply lines were preferred but not exclusive of velocity and unpredictability. Independence of action took a back seat to centralized control but was not absent completely. As an example, Franks was given the freedom by his chain of command to execute his intent. Operation Desert Storm was a strategic envelopment in the tradition of Moltke and Schlieffen because it suited the circumstances unique to that situation. The planners studied those factors

and produced a plan that conformed to the nature of the war rather than attempt to conform the war to a specific model or style of warfare.

VI. Conclusion

In the art of war there are no fixed rules. These can only be worked out according to circumstances.¹¹⁶

Sun Tzu

The U.S. Army applied the maneuver warfare precepts in an integrated campaign with the other services and other nations and came up a big winner. Still, the failure to annihilate the Republican Guard completely left some people less than satisfied. In some ways, it paralleled the Germans' experience of allowing the British Expeditionary Force to escape at Dunkirk in 1940. If the American forces had continued the offensive, they may well have brought down Saddam Hussein's regime. The circumstances and the wisdom of the decision to end hostilities are beyond the scope of this study.

An issue more germane to the study is the debate over the compatibility of maneuver warfare and synchronization. Some maneuver warfare advocates believe that maneuver warfare and synchronization do not mix. FM 100-5 defines synchronization as arranging activities in time and space at the decisive point.¹¹⁷ The maneuver purists claim that synchronization causes a rigid approach to operations that cannot adequately respond to the rapid changes that occur on the battlefield. They point out that the Army's concern for synchronization demonstrates that it never divorced itself from its old tradition of firepower-attrition warfare.¹¹⁸ Army doctrine endorses directive control and specifies that orders should be mission oriented,

allowing the greatest possible freedom for subordinate leaders.¹¹⁹ Synchronization and directive control are both important and exist in tension with one another. The key is to find the correct balance between the two within the context of the conflict.

Even the Germans understood the need for both synchronization and mission orders. Guderian's attack at Sedan in 1940 illustrates the point. Guderian's plan for his corps' attack across the Meuse River was based on mass and combined arms to break through the French defenses. Two months before the operation, Guderian's corps conducted detailed wargames and rehearsals of the crossings. The careful planning and coordination enabled Guderian's chief of staff to issue a very brief order the day before the operation. The Germans effectively synchronized air strikes, artillery, and maneuver to force the Meuse. Guderian then shifted from detailed control to directive control to exploit the breakthrough.¹²⁰

CENTCOM planned a tightly synchronized campaign because it was appropriate to the situation it faced. CENTCOM identified the need to destroy the Republican Guard to achieve the strategic aim of establishing a regional balance of power. CENTCOM chose to accomplish its objective with a plan that incorporated the precepts of maneuver warfare. Synchronization was emphasized to mass the combat power needed to shatter the Republican Guard, a formidable armored force. VII Corps clobbered the elite Iraqi forces by applying Guderian's principle of *klotzen, nicht klechern*--"don't feel around with your fingers at several places, but hit hard with a determined fist."¹²¹ Synchronization enabled CENTCOM to achieve unity of effort and mitigate against fratricide. Fratricide was a problem in the war, but it would have been a worse problem if CENTCOM units had operated more independently.¹²²

The precepts of maneuver have remained intact in the latest edition of Army doctrine published in 1993. The doctrine is broad and flexible enough to allow the Army to operate in a manner appropriate to the nature of the conflict. The next war might require a more decentralized approach to control or present an opportunity to dislocate the enemy with maneuver in the fashion of a Sedan in 1940 or Inchon in 1950. The key is to apply the tools of campaign design to formulate a plan that best suits the needs of that theater. Then one can have the right mix of maneuver and attrition to achieve decisive victory at the least cost in blood and treasure.

¹ Robert H. Scales, Certain Victory: United States Army in the Gulf War, (Washington: Office of the Chief of Staff, U.S. Army, 1993), p. 5.

² Russell L. Weigley, Eisenhower's Lieutenants: The Campaign of France and Germany 1944-45, (Bloomington, IN: Indiana University Press, 1981), p. 5.

³ Richard E. Simpkin, Race to the Swift: Thoughts on Twenty-First Century Warfare, (London: Brassey's Defense Publishers, 1985), p. 18.

⁴ Rick Atkinson, Crusade, (Boston: Houghton Mifflin Company, 1993), p. 448. See also James Blackwell, Thunder in the Desert, (New York: Bantom Books, 1990), pp. 221-222.

⁵ James G. Burton, "Pushing Them Out the Back Door," Proceedings, (June 1993), pp. 37-42.

⁶ James J. Schneider, Theoretical Paper No. 3: The Theory of Operational Art, (Ft. Leavenworth, KS: School of Advanced Military Studies, 1988), p. 40.

⁷ Department of the Army, FM 101-5-1 Operational Terms and Graphics, (Washington D.C.: U.S. Government Printing Office, 1994), p. 1-25.

⁸ Schneider, p. 36.

⁹ Robert R. Leonard, The Art of Maneuver, (Novato, CA: Presidio Press, 1991), p. 66.

¹⁰ *Ibid.*, p. 73.

¹¹ Sun Tzu, The Art of War, Translated by Samuel B. Griffith, (Oxford: Oxford University Press, 1963), p. 77.

¹² *Ibid.*, p. 91.

¹³ *Ibid.*, p. 42.

¹⁴ *Ibid.*, p. 89.

¹⁵ *Ibid.*, p. 41.

¹⁶ *Ibid.*, p. 42.

¹⁷ *Ibid.*, pp. 69, 93-95, 124-140.

¹⁸ Mathew Cooper, The German Army, 1933-1945: Its Political and Military Failure, (Chelsia, MI: Scarborough House, 1990), p. 133.

¹⁹ Gunther E. Rothenberg, "Moltke, Schlieffen, and the Doctrine of Strategic Envelopment." in Makers of Modern Strategy, Edited by Peter Paret. (Princeton, NJ: Princeton University Press, 1986), pp. 296-300.

²⁰ Cooper, p. 134.

²¹ Rothenberg, pp. 312-314.

²² Cooper, pp. 134-135.

²³ Timothy T. Lufper, Leavenworth Papers No. 4 The Dynamics of Doctrine: The Changes in German Tactical Doctrine During the First World War, (Ft. Leavenworth, KS: Combat Studies Institute, 1981), pp. 41-45.

²⁴ Ibid., p. 50.

²⁵ Ibid., p. 53.

²⁶ Ibid., p. 57.

²⁷ Ibid., p. 4.

²⁸ Ibid., pp. 6-7.

²⁹ Ibid., p. 4.

³⁰ Ibid., pp. 11-13.

³¹ Ibid., p. 20.

³² Pascal Lucas, The Evolution of Tactical Ideas in France and Germany during the War of 1914-1918, (Paris, 1923), trans. P.V. Kieffer (Ft. Leavenworth, 1925), p. 68.

³³ Peter Paret, "Clausewitz," in Makers of Modern Strategy, edited by Peter Paret, (Princeton, NJ: Princeton University Press, 1986), p. 212.

³⁴ Jonathan M. House, C.S.I. Research Survey No. 2 Toward Combined Arms Warfare: A Survey of 20th Century Tactics, Doctrine, and Organization, (Ft. Leavenworth, KS: U.S. Army Command and General Staff College, 1984), pp. 43-46.

³⁵ Ibid., p. 46.

³⁶ Brian Holden Reid, "J.F.C. Fuller's Theory of Mechanized Warfare," The Journal of Strategic Studies, (December, 1978), p. 298.

³⁷ Ibid., p. 299.

³⁸ Brian Holden Reid, "J.F.C. Fuller and B.H. Liddell Hart: A Comparison," Military Review, (May, 1990), p. 70.

³⁹ B.H. Liddell Hart, "Strategy," Encyclopedia Britannica, 14th ed., Vol. 21 (1929):452-59. Reprinted by Combat Studies Institute, p.7.

⁴⁰ Ibid., p. 9.

⁴¹ Ibid., pp. 6-9.

⁴² The idea of Fuller and Liddell Hart representing two forms of maneuver warfare was taken from Richard M. Swain, "Lucky War": Third Army in Desert Storm, (Ft. Leavenworth, KS: Army Command and General Staff College Press, 1995), p. 72.

⁴³ Cooper, pp. 142-143.

⁴⁴ Ibid., p. 145.

⁴⁵ Ibid., p. 145-146.

⁴⁶ Ibid., p. 146-147.

⁴⁷ Len Deighton, Blitzkreig, (New York: Ballantine Books, 1990), pp. 139, 157.

⁴⁸ Cooper, p. 148.

⁴⁹ Ibid., pp. 149-152.

⁵⁰ Deighton, p. 198.

⁵¹ Ibid., p. 189.

⁵² Cooper, pp. 202-205.

⁵³ Ibid., pp. 207-208.

⁵⁴ Deighton, p. 207.

⁵⁵ Ibid., pp. 226-228.

⁵⁶ Cooper, pp. 222-225.

⁵⁷ Deighton, pp. 228-236.

⁵⁸ Ibid., pp. 220-221.

⁵⁹ Cooper, p. 226.

⁶⁰ Ibid., p. 228.

⁶¹ Ibid., p. 235.

⁶² Ibid., pp. 230-237.

⁶³ Ibid., p. 236.

⁶⁴ Samuel P. Huntington, The Soldier and the State: The Theory and Politics of Civil-military Relations, (Cambridge, MA: The Belknap Press, 1985), pp. 143-162.

⁶⁵ John Ellis, Brute Force: Allied Strategy and Tactics in the Second World War, (New York: Viking, 1990), p. 385.

⁶⁶ Ibid., pp. 380-381.

⁶⁷ Ibid., p. 387.

⁶⁸ Ibid., p. 496.

⁶⁹ Ibid., p. 535.

⁷⁰ Robert A. Doughty, The Evolution of U.S. Army Tactical Doctrine, 1946-76, (Ft Leavenworth, KS: Combat Studies Institute, U.S. Army Command and General Staff College, 1988), p. 12.

⁷¹ Ibid., p. 25.

⁷² Andrew F. Krepinevich, Jr., The Army and Vietnam, (Baltimore, MD: The John Hopkins University Press, 1986), p. 145.

⁷³ Ibid., pp. 197-199.

⁷⁴ Paul H. Herbert, Deciding What Has to be Done: General William E. Depuy and the 1976 Edition of FM 100-5 Operations, (Ft. Leavenworth, KS: Combat Studies Institute, U.S. Army Command and General Staff College, 1979), pp. 5-7.

⁷⁵ Ibid., pp. 64-65.

⁷⁶ Martin van Creveld, Steven L. Canby, and Kenneth S. Brower, Airpower and Maneuver Warfare, (Maxwell Air Force Base, AL: Air University Press, 1994), pp. 17, 197-198.

⁷⁷ John L. Romjue, From Active Defense to Airland Battle: The Development of Army Doctrine, 1973-1982, (Ft. Monroe, VA: U.S. Army Training and Doctrine Command, 1984), pp. 10-11.

⁷⁸ Herbert, p. 105.

⁷⁹ Romjue, p. 56 and Department of the Army, FM 100-5 Operations, (Washington D.C.: U. S. Government Printing Office, 1986), p.14.

⁸⁰ Ibid., pp. 25-38 and FM 100-5, pp. 33-39.

⁸¹ FM 100-5, p. 21.

⁸² Romjue, p. 59 and FM 100-5, p. 24.

⁸³ Thomas A. Keaney and Eliot A. Cohen, Gulf War Air Power Survey Summary Report (GWAPS), (Washington D.C.: Government Printing Office, 1993), p. 38.

⁸⁴ Ibid., pp. 48-52.

⁸⁵ David MacIsaac, "Voices From the Central Blue," in Peter Paret, Makers of Modern Strategy, p. 634.

⁸⁶ Ibid., p. 36.

⁸⁷ GWAPS, pp. 48-49.

⁸⁸ Scales, pp. 111-112.

⁸⁹ Swain, p. 78.

⁹⁰ Scales, pp.145-146.

⁹¹ Ibid., p. 147.

⁹² Swain, p. 103.

⁹³ Scales, pp. 145-146.

⁹⁴ GWAPS, pp. 107-108.

⁹⁵ Scales, pp. 222-223.

⁹⁶ Swain, pp. 194, 236-240.

⁹⁷ Ibid., p. 245.

⁹⁸ H. Norman Schwarzkopf, It Doesn't Take a Hero, (New York: Linda Grey Bantam Books, 1992), p. 461.

⁹⁹ John F. Schmidt, Major, USMCR, "Out of Synch With Maneuver Warfare," Marine Corps Gazette, (August, 1994), pp. 16-22. See also William S. Lind, Maneuver Warfare Handbook, (Boulder, CO: Westview Press, 1985), pp. 6-8, 13-17.

¹⁰⁰ Scales, p. 305.

¹⁰¹ GWAPS, p. 91.

¹⁰² Scales, p. 209.

¹⁰³ Swain, p. 252.

¹⁰⁴ Ibid., pp. 285, 335.

¹⁰⁵ Scales, p. 301.

¹⁰⁶ Swain, p. 264.

¹⁰⁷ Scales, p. 315.

¹⁰⁸ Burton, pp. 37-42.

¹⁰⁹ GWAPS, pp. 92-95.

¹¹⁰ Ibid., p. 258.

¹¹¹ Swain, p. 265.

¹¹² Ibid., pp. 227-228.

¹¹³ Scales, pp. 287-290.

¹¹⁴ Ibid., pp. 301-303 and Swain, p. 292.

¹¹⁵ Swain, pp. 290-291, 335.

¹¹⁶ Sun Tzu, p. 93.

¹¹⁷ Department of the Army, FM 100-5 Operations, (Washington D.C.: U.S. Government Printing Office, 1993), p. 2-8.

¹¹⁸ Burton, p. 37 and William S. Lind, "What Great Victory? What Revolution?" Net Call, (Association of Advanced Operational Studies, Fall-Winter, 1993), pp. 9-10.

¹¹⁹ FM 100-5, p. 6-5.

¹²⁰ Kenneth F. McKenzie, Jr., "Guderian: The Master Synchronizer," Marine Corps Gazette, (August, 1994), pp. 34-36.

¹²¹ *Ibid.*, p. 34.

¹²² Steve E. Dietrich, "From Valhalla With Pride," Proceedings, (August, 1993), p. 60.

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