

USAWC STRATEGY RESEARCH PROJECT

**THE RAPIER OR THE CLUB:
THE RELATIONSHIP BETWEEN ATTRITION AND MANEUVER WARFARE**

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ABSTRACT

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If wars of attrition are generally more costly than wars of maneuver, why do modern wars so often become wars of attrition? This project compares the relationship between attrition and maneuver warfare. The study considers whether there are times wars of attrition should be fought and whether there are conditions that force wars of attrition. The project employs two case studies to better understand the relationship and the risks of attempting to impose maneuver warfare when the conditions that favor attrition exist. The results of the study indicate four major reasons exist to explain why wars of attrition are common and are sometimes the preferred form of war despite the costs involved. A better understanding of the relationship between wars of attrition and maneuver provides the professional officer with a wider range of options while developing and executing operations. Additionally, leaders must realize that the cost of returning to maneuver may be greater than continuing to fight with an attrition based strategy.

THE RAPIER OR THE CLUB: THE RELATIONSHIP BETWEEN ATTRITION AND MANEUVER WARFARE

The concepts of wars of maneuver and wars of attrition are basic to the study of war.¹ Sometimes these two broad categories of war are given different names such as wars of destruction or wars of exhaustion. Wars of maneuver are also described with reference to “decisive battles”, as the decisive battle often concludes wars of maneuver. Both concepts focus on compelling the enemy to do our will or reducing his ability to resist us until he finally accedes to our will.² A major assumption is that a war of maneuver is of a higher order than a war of attrition and that the general who defeats his enemy in a war of maneuver is superior to one who defeats his enemy in a war of attrition. Many professional officers and historians still think of General U. S. Grant as a “butcher” because of the methods he used to defeat the Confederate armies, or believe all World War I generals lacked inspiration because they seemed incapable of breaking the stalemate at the front. Since the American public expects us to win wars quickly and almost bloodlessly, professional officers should consider whether there are times wars of attrition should be fought and whether there are conditions that force wars of attrition despite the desires of the commanding generals. Strategic leaders, civilian and military, must also understand the risks and potential drawbacks of attempting to impose maneuver warfare when the conditions that favor attrition exist. Leaders must realize that the cost of returning to maneuver may be greater than continuing to fight with an attrition based strategy. An understanding of the relationship between wars of attrition and wars of maneuver provides the professional officer with a wider range of options.

Attrition and maneuver occur at all levels of war (tactical, operational, and strategic) and are not mutually exclusive. This study will characterize a war as either a war of maneuver or of attrition based upon the predominant concept employed.³ It will focus at the operational and strategic levels. How can the difference between wars of maneuver and wars of attrition be described and defined? Wars of maneuver are characterized by the search for decisive battle. The antagonists, or at least one antagonist, maneuver against each other to gain a position of advantage.⁴ They meet after one side has gained its desired position or when one decides the time is right to fight. While relatively minor engagements may occur during the maneuver phase, it is the decisive battle that determines the war’s outcome and consumes the majority of resources, especially personnel. After the decisive battle the war’s outcome is decided because one antagonist is willing to accept the results of the battle. They accede to the demands of the other either because their national power has been reduced below an acceptable level or the cost of continuing is considered too high. Wars of maneuver are sometimes referred to as wars

of annihilation or wars of destruction, because the enemy's ability or will to fight is annihilated after a decisive battle or a series of decisive battles in different theaters.⁵ Wars of attrition focus on the sapping of the enemy's strength through the loss of personnel and materiel throughout an operation, not just during a decisive battle. The two sides are in almost constant combat and do not break contact. In a war of attrition, movement, position, and actual battle matter less than forcing the enemy to consume his resources or will at an unsustainable rate. His resources can be consumed through destruction, loss of sources, through use, or the combination of all three. Attrition does not necessarily mean trading casualties with the enemy. One side could completely dominate a war of attrition. Wars of attrition are sometimes referred to as wars of exhaustion. In wars of exhaustion, one antagonist's ability or will to resist is exhausted and he finally submits to the other's will. Wars of attrition can be presumed to be more costly to both antagonists in terms of loss of personnel, materiel, treasure, and time unless one side completely dominates the other.⁶

Why Attrition Warfare?

If wars of attrition are generally more costly than wars of maneuver, and practitioners of attrition are perceived as less enlightened than those who succeed through maneuver and a decisive battle, why do modern wars so often become wars of attrition? Four major reasons may be cited to explain why wars of attrition are common despite the costs involved. The first reason is that often the combat power the antagonists can generate at the "front" is almost equal. Temporary stalemate and attrition follow until one side achieves a decided advantage in the elements of combat power (leadership, fire power, maneuver, protection, information).⁷ The second reason is that one of the antagonists perceives that its best chance of success is through a strategy of attrition. The third reason is that nations which produce their own major armaments, not just small arms or the modification of weapons systems produced elsewhere, possess a large population, and an adequate transportation system can replace losses in personnel and equipment at the front quickly. The fourth reason is simply a matter of choice. In all cases, the enemy may refuse to accept the decision of a seemingly decisive battle and fight on.

In a war of attrition, the war may culminate in what appears to be a decisive battle but would actually be decided through attrition. Recognizing the advantages of attrition and the reasons attrition may be forced on a commander will allow the participants to determine if they want to fight a war of attrition, or use a phase of attrition to return maneuver to its "proper place" and force a decisive battle upon the enemy. Recognizing that you must fight a war of attrition

may also offset some of the moral degradation caused by an extended period of conflict and mounting casualties.⁸

Attrition warfare will be forced upon opponents when the combat power that each adversary can generate at the front is equal or roughly equal to that of the adversary. The U. S. Army recognizes leadership, fire power, maneuver, protection, and information as the elements of combat power. FM-3.0 states “[combat power] is the total means of destructive or disruptive force, or both, that a military unit or formation can apply against the adversary at a given time.” It also states “[d]efeating an enemy requires increasing the disparity between friendly and enemy forces by reducing enemy combat power.”⁹

The Army is correct to use the word “total” in the definition of combat power. The combat power elements of the adversaries must be looked at in totality. The comparison is subjective as not all elements of combat power can be measured and their true effects may not be known until afterwards. One side may possess greater fire power, but its advantage can be offset by the protection and leadership of the other. History offers many examples where good leadership has enabled a weaker force to triumph over its physically stronger opponent in a decisive battle, such as Alexander over the Persians or the Germans over the French in 1940.¹⁰ In both cases, the intangibles of leadership, training, morale, doctrine, etc. overcame numerical shortcomings. However, good leaders have also used their physical strengths to negate the combat power generated by their opponent’s intangible advantages and have won through attrition; a good example is the American Civil War. Defeating an opponent in a decisive battle may not guarantee strategic victory. For example, Napoleon was able to defeat individual members of coalitions but seemed to always face a new coalition and was ultimately defeated. Once the combat power scales begin to move in one direction, attrition of the weaker should begin to intensify, or maneuver should become a major factor again.

A nation’s industrial power, population base, transportation system, and area or terrain can combine to force attrition warfare on its adversaries. In cases where a nation possesses large physical assets, the effects of a seemingly decisive battle can be made good quickly. A disastrous outcome in a major battle may remain non-decisive. The battle would be just one of multiple phases in a war of attrition which will continue until one side achieves a decided advantage in moral or combat strength and the other accedes to its will.

With a strong industrial base and willing population, the nation’s forces become very durable.¹¹ The country can provide a steady stream of replacements that may not only make good battle losses but, also, tip the combat power scales in its favor. Today a soldier requires about sixteen weeks of initial training prior to combat and equipment can be produced very

quickly when required. If the nation also possesses the transportation system to get the replacements to the front, its forces are durable. Currently, only the United States possesses major forces that are globally durable.

During World War II, Japan produced thirteen aircraft carriers and Germany produced over 63,000 tanks of all types.¹² Much of this production was used as replacements for destroyed systems and allowed both Germany and Japan to maintain viable forces despite major losses in several battles. Germany and Japan, relatively large, populous, and modern nations lost the *Materialschlacht* of World War II to even larger modern nations.¹³ Belligerents that do not possess a modern industrial base can not sustain forces during a war of attrition unless they can be guaranteed a steady stream of replacement equipment. Their best opportunities will be to win a decisive battle or revert to attrition through irregular warfare.

Nations that possess large areas, such as the Soviet Union, the Confederacy, and even Germany in World War II, can absorb tremendous losses of military resources and continue the fight as long as they can move back into the protective space the area affords before their adversaries can continue the attack. While space can be a relative term, a “large area” allows the “defeated” forces to reconstitute in an area safe from major attack. The “large area” prevents the “victorious” force from immediately driving to the enemy’s strategic depth due to his own need to reconstitute and resupply.¹⁴ It would place its own forces at great risk if it pushed ahead too quickly. The pause allows the defeated force time to reconstitute because the logistical and time requirements for reconstitution are less as the force falls back on its resource centers. Harsh terrain, mountains, jungles, and large urban areas, offer many of the same opportunities as large areas. Non-state actors that have access to large areas or harsh terrain also possess the ability to reconstitute with some impunity.

Nations that have created durable forces also require good leadership after battlefield defeats to extract or safeguard the remaining forces. Leadership is also required to ensure that the opponent can not force a decisive battle until the combat power ratio disadvantage is considerably less than immediately following the defeat. Through continuing to fight a war of attrition, the defeated side which has lost a battle may gain a more favorable peace or reconstitute enough strength to fight on and eventually prevail. There are many examples demonstrating that industrial nations with large populations can replace their losses and continue to fight, especially if they possess competent leaders who can execute plans required to maintain and rebuild their force. Both the American Civil War and World War I provide good examples of the ability of durable armies to sustain losses until national resources are completely exhausted.

Why would anyone choose a war of attrition? The belligerent who perceives he can not win a decisive battle, or whose only hope is to defeat the enemy's will, should choose a war of attrition unless the sacrifice of his force might produce some perceived moral gain.¹⁵ By refusing to fight a decisive battle and causing casualties through attrition, an antagonist can slowly wear at its opponent until it either gains the upper hand in corresponding combat powers, or the enemy loses the will to continue to fight a seemingly endless war. The most obvious example is when a relatively weak power is involved in a war with a dominant power. A willing population and large area or restricted terrain that provide safe havens to reconstitute are crucial assets that increase the possibility of success through attrition. For example, Washington pursued a war of attrition strategy against the British in the American Revolution. While he maintained sizeable American armies and fought occasional large engagements, he and the other American commanding generals refused to allow their armies to be decisively engaged and focused their efforts on defeating detached elements of the British force. The British forces and national will were slowly reduced until Washington saw an opportunity to defeat a sizeable contingent and convince the British of the hopelessness of their aims. In following his strategy, Washington helped create and provided a great example of compound warfare.

In compound warfare, one of the antagonists maintains both a conventional force and an irregular force.¹⁶ The conventional force usually gives the antagonist more legitimacy; it represents a government in being. The conventional force ensures that the opponent must maintain a force that attempts to bring the conventional force to battle or defends against it. This allows the irregular force to concentrate efforts on detached or weak elements of its opponent's overall force. A regular army is a crucial component of state sovereignty and legitimate authority.¹⁷ A country is perceived as less legitimate with only irregular forces since its potential power is less. It might even be considered a terrorist organization based on how it employed its forces. Washington would give battle occasionally with his conventional force to keep the British focused on it and to assert the legitimacy of America as a nation that was willing to fight for its sovereignty, but he continued to sap British forces and will through attrition of their detachments with his irregular forces. All the while, America continued to build conventional power. After defeat at Yorktown, the British lost what was left of their will and entered serious negotiations, resulting in a peace that recognized American independence two years later.

A nation that does not possess a large population or industrial base will not, as a rule, possess durable forces even if it is a modern nation. It will be forced to rely either on the industrial capacity of other nations or will not have the manpower required to maintain durable

forces competitive with the major powers. Such a nation would probably lose a conventional war of attrition against a major power because of a lack of depth.¹⁸

Such a nation or force would also be hard pressed to win a decisive battle against a modern force unless led by a true genius. Modern industrial nations possess military education and training systems that are usually superior to those possessed by smaller or less modern states. Pitted against them, only a true genius could hope for victory in a decisive battle or through conventional attrition.¹⁹ Under these circumstances, most nations would be foolish to go to war with a modern large industrial nation unless it perceived the larger nation to be lacking in will, or hoped to gain a moral victory in a valiant but doomed defensive fight.

It would seem that attrition favors large nations with major population, production, and materiel assets; only the strong survive. However, strength has a moral sense as well as a physical sense. Immeasurable moral strength can outweigh measurable physical strength. A nation governed with the consent of the people could fight an irregular war of attrition with a possibility of success. It would in all likelihood be occupied. If it refuses to fight conventionally, it would probably lose its ability to sustain modern forces above the "guerrilla" level. Compound warfare would be beyond its capability. Its people would suffer but could maintain their identity and continue the fight until more favorable circumstances developed. If, however, the nation was ruled without popular consent, the government could probably not fight an irregular war as it would lose its ability to govern and could not lead a popular fight. A government such as that of Iraq under Saddam Hussein would lose control of the areas where it was not considered legitimate when its capacity to govern and intimidate was reduced. Another leader or leaders, perceived as more legitimate, would have to lead the people in a guerrilla fight. The attacker may not be able to defeat the people but the government would in any case have been replaced.

A large industrial nation with a professional military would probably not have to fight a war of attrition with a nation that lacks an industrial base or large population. However, if the larger nation could not force decision in a war of maneuver and was forced into a war of attrition, the larger nation should prevail. The more industrial a nation the more it should try to force a decisive battle; if it can not force or win a decisive battle, it can continue to employ attrition warfare, weakening its opponent continuously. The attempt at decisive battle could accelerate the attrition process. When an antagonist lacks either the industrial base or the population to replace its losses quickly and battle can be forced on it, the battle could be decisive. The two most recent examples of decisive battles between a modern industrial nation with a large population and a nation with modern equipment but not the industrial base to replace losses are

Operation Desert Storm in 1991 and the initial phase of Operation Iraqi Freedom in 2002. In Desert Storm, Saddam Hussein was forced to accept the battlefield decision and agree to coalition demands, at least initially, to preserve his power base, the army that he could not replace quickly.²⁰ In the initial phase of Operation Iraqi Freedom, Hussein's army was destroyed by decisive battle and the government ceased to exist. Conceivably, the Iraqis could have forced a war of attrition if they possessed a more capable military. It is, however, unlikely that a non-industrial nation will be in position to force attrition warfare, except with guerrilla type forces, in the near future, as industrial nations tend to possess the more competent conventional militaries.

American Civil War Case Study

In the spring of 1864, the Confederacy seemed to be in a fairly good position but in reality it was a shell. It benefited from the operational techniques employed by the North, the durability of its forces, its large size, and its ability to hold territory. Although the South had lost the Mississippi Valley in 1863, and been split in two as a result, as well as losing control of Tennessee, and various other locations in northern Virginia and along its coasts, it could boast that after three years of fighting it was still a viable nation. The northern blockade was not yet fully effective and the South had not felt the full effects of being split asunder. The South was able to make good its losses due to its industrial capacity, imports which by-passed the blockade, its population and size, and the North's operational techniques which provided "pauses" that allowed the South to reconstitute its forces.

The South could boast that it had made good most of its personnel losses from 1863. The South had approximately 446,000 troops in January 1863 and 481,000 in January 1864 despite the losses at Vicksburg, Gettysburg, Chickamauga, and Chattanooga.²¹ While not concentrated prior to active campaigning, General R. E. Lee had over 80,000 soldiers in the Army of Northern Virginia and General Joe Johnston had over 70,000 in the Army of Tennessee.²² However, the Confederacy was a shell that would eventually crack under determined pressure.

The South had two hopes: to win a war of maneuver in which the army managed to prevail in a decisive battle; or win due to loss of northern will as a result of a war of attrition. Its manpower base was shrinking and its infrastructure, especially railroads, was beginning to show the effects of overuse and inadequate maintenance.²³ Jefferson Davis, the president of the Confederacy, favored a defensive strategy which he believed would give the South the moral high ground of being invaded and would eventually erode Northern will.²⁴ Davis, though, was not willing to cede any territory to Northern forces without attempting some form of defense

which made the pursuit of a war of attrition much more difficult. Lee seems to have preferred a war of maneuver strategy culminating in a victory on Northern territory.²⁵ He invaded the North twice, with Davis' permission. Neither invasion resulted in a decisive victory. Both men probably realized the disadvantages of the South, but disagreed on the most appropriate strategy. Davis did not realize President Lincoln's determination to preserve the Union nor, for valid political and moral reasons, did he permit his subordinates to give up territory without resistance. Lee did not realize he could not win a decisive battle due to the durability of northern armies and the abilities of their field commanders.

The manner in which the North initially prosecuted the war allowed the South to recover from major fights through 1863. In the East, the armies fought two or three campaigns per year seeking a decisive battle. After a major fight and typically a Northern tactical setback, the armies would withdraw and pause to reconstitute. The North, also, allowed the South operational pauses in the West. After Shiloh, Grant had wanted to move immediately on the Confederate forces at Corinth, Mississippi but was overruled.²⁶ General Halleck assumed personal command of the army and used a very methodical approach, allowing southern forces to rebuild and escape. It took Halleck a month to move the 20 miles to Corinth and Confederate forces increased from the roughly 30,000 after Shiloh to over 65,000 in the same period.²⁷ After Vicksburg, Grant's forces were dispersed as opposed to moving on Mobile as he desired.²⁸ In both cases, operational advantages were not immediately acted on and pauses followed, allowing the Confederates time to reconstitute. The pauses in the two major theaters allowed the Confederates to focus on one theater at a time and parcel out their relatively meager resources and replace their losses. This brought the two forces back to rough parity in combat power which continued to provide the South opportunity for success in a war of maneuver.

Beginning in May 1864, Grant began to synchronize the operations of the northern armies. His objectives were the southern armies and their resource centers.²⁹ Operations did not culminate after a major engagement. They were continuous and nationwide. Grant would have accepted southern defeat in a decisive battle but refused to be deterred by a tactical setback and refused to allow the Confederates time to reconstitute. Grant fought the type of war that was forced on him; a war of attrition.

In the east, the North tried to gain positions of advantage and performed some fine maneuvering such as avoiding Confederate defenses at the North Anna and crossing the James River unopposed. The South's defensive stance and command competence denied the North their decisive battle. Grant continued his relentless drive to fix the southern forces and

sap their resources. By the 18th of June, the main armies in the East were facing each other outside Petersburg and those in the West were at Kennesaw Mountain, northwest of Atlanta.³⁰

With all armies short of resources, the South had to prioritize. The priority went to Lee's Army of Northern Virginia, leaving the army in the west with much less than would be required.³¹ Lee was forced onto the defensive and, often, was not even in a position to counterpunch, as was his style. Three factors eased the South's predicament. First, it was on the defensive and made extensive use of entrenchments for protection, thereby reducing the potential number of casualties. Second, it was falling back on its resource centers. Third, Johnston, although forced back almost to Atlanta, had suffered fewer casualties as he had denied battle to General Sherman. Johnston would have preferred continuing to avoid battle and maintaining the army in being but Davis could not permit the fall of Atlanta without a fight. The South had run out of protective space and had to stand and fight. At this point, the war truly became a war of attrition.

In the East, Lee became fixed behind his entrenchments outside Petersburg and Richmond. The attacks his army had absorbed in roughly 40 days of continuous fighting prior to Petersburg had sapped his strength to attack. The trenches and the South's ability to replace his losses ensured that he was not quickly defeated although he continued to suffer losses due to daily contact. Lee realized he could not win the war of resources if the North had the will to continue the fight and refused to launch foolhardy attacks on his position. His major attempt to break the North's hold failed when General Early was soundly defeated by General Sheridan in the Shenandoah Valley.³²

In the West, the South replaced Johnston with General John Bell Hood. Hood was placed in a poor situation. Johnston had been maneuvered out of strong positions and forced back on Atlanta. While Johnston had maintained his army, he had given up too much territory without enough fighting in Davis' mind. Now the armies were just outside Atlanta, a major rail hub and resource center for the South. Instead of defending Atlanta from entrenchments and becoming fixed or withdrawing, Hood decided to attack Sherman's army and defeat it. Although initially surprised, Sherman's forces absorbed all of Hood's attacks and inflicted a large number of casualties. After his attacks had culminated, Hood was forced to abandon Atlanta to avoid being fixed and destroyed. Despite being on the strategic defensive, the South actually lost more forces from the start of the campaign to the fall of Atlanta, and with the capture of that city it lost Atlanta's resources as well.³³

Through its skills, defensive posture, and ability to replace some losses, the South had avoided a disastrous decisive battle, but also failed to win one. Throughout the campaign, the

North had been unable to defeat the South in a war of maneuver but refused to accept tactical setbacks as defeat, adjusted its methods, and accepted the war of attrition required to gain larger strategic goals. Both sides had become decisively engaged in a war of attrition. The South's only hope became loss of northern will. Abraham Lincoln ensured that the North never lost the will to succeed and the war was decided by southern resource exhaustion; attrition.

World War I Case Study

In 1914, both the Central Powers and members of the Entente believed the war would be short, decided by a decisive battle. In the West the Germans relied upon the Schlieffen Plan while the French relied upon Plan 17; both called for offensive maneuver warfare.³⁴ This belief was based in part on European history. Napoleon had achieved greatness by his ability to force and win decisive battles. Additionally, the Prussians had defeated the Danes, Austro-Hungarians, and French quickly with decisive battles during the Wars of German Unification. The First World War proved to follow the pattern of the American Civil War more than the wars of Napoleon or German Unification. Both belligerents sought victory through a decisive battle, but they were eventually forced to either fight a war of attrition or negotiate a peace. Neither proved ready to negotiate and neither was ready to accept their initial setbacks as decisive. A great war of attrition followed during which both sides sought solutions to the stalemate. That is, to revive maneuver.

Two major factors caused the deadlock at the front. First, both belligerents possessed durable forces and could replace losses in armaments and personnel over a considerable period. They could inflict and absorb much punishment. Second, the combat power that both sides could generate at the front was roughly equal. Since neither had a positional advantage, this parity ensured both sides would continue to exchange casualties. Stalemate would continue until one belligerent could gain a decided advantage in position or combat power. On the Western Front with a continuous line from the Channel to Switzerland, operational positions of advantage could only be gained on the periphery or through technology. Some of the attempts to gain advantage in combat power included turning movements such as Gallipoli, unrestricted submarine warfare, introduction of air power, tanks, gas warfare, and evolving doctrine. None of the attempts were completely successful and two, Gallipoli and unrestricted submarine warfare, did more harm than good to the side initiating the action. Leaders must realize their attempts to win decisive battles may have affects worse than continuing a strategy of attrition. Ultimately, the war was decided by the exhaustion of German resources. Like the Confederacy, Germany appeared to be doing well until the shell cracked.

In 1915, the Allies used their naval superiority to attempt to force passage of the Dardanelles and Bosphorus Straits. The operation was a turning movement attempting: to open a way to Russia, end Turkish pressure in the Caucasus, Egypt, and Mesopotamia, reinforce Serbia, influence then neutral Bulgaria, Rumania, and Greece, and possibly precipitate an Austro-Hungarian collapse.³⁵

If successful the operation could have forced the Central Powers to shift combat power from other areas and, potentially, could have forced two of the Central Powers, Austria-Hungary and the Ottoman Empire, from the war. The shift in forces alone could have had a decisive effect on the Central Powers' ability to fight on other fronts.

The attempt failed for several reasons. First, the operation was conducted, initially, as a single service, naval, operation. The Allied land forces were to garrison the forts along the straits after the Navy drove the defenders out. Second, surprise was lost because the British Navy shelled some of the forts in an unrelated operation and the Turks took measures to strengthen their defenses on land and sea. Third, the initial landings occurred at the wrong beach increasing the distance and time the force was required to travel prior to exiting the beach. Fourth, the Allies lacked strong leadership and moved slowly while the Turks reacted resolutely. The Allied commanders did not fully understand the operation's relationship with other operations or believe in the task they were given. The Central Powers were not driven from the war and neither Germany nor Austria-Hungary had to make a major shift of forces to meet the threat. The stalemate continued.³⁶

In 1915, Germany ended its unrestricted submarine attacks on Allied shipping due to American pressure and German belief that they did not possess the required number of submarines to sink sufficient shipping to force Britain from the war. With continued stalemate and the Germans feeling the slow effects of the Allied blockade, the Germans decided to resort to unrestricted submarine warfare once again in February 1917. The Germans reasoned that they now possessed the submarines to sink enough Allied tonnage to starve and economically ruin Britain. The attempt, essentially a search for a decisive battle, not only failed but also brought the United States into the war on the Allied side less than two months after renewal of unrestricted submarine warfare.³⁷

The German attempt failed for several reasons. First, adoption of the convoy system provided greater protection for shipping and increased submarine sinking. Second, the Allies were able to sufficiently replace losses.³⁸ Third, the Germans had miscalculated British dependence on shipping.

The attempts to use technology such as the airplane and tank to break the stalemate and allow greater maneuver failed mainly because the technologies were not sufficiently developed at the time and the equipment was not fielded in sufficient quantities.³⁹ While some advantages were gained with the technologies and doctrinal improvements on their employment, the advantages did not break the stalemate and were not decisive; attrition (German national exhaustion) was decisive.

The Germans evolved their attack doctrine in an attempt to break the trench warfare stalemate. The main changes evolved around the use of specially trained storm troops, better artillery preparations, and poison gas. The changes were put into effect with the 1918 Ludendorf Offensive. While successful tactically, the Germans lacked the mobility, personnel, and leadership to carry the advantage to strategic depth. Although the Germans broke through the British 5th Army lines and forced a realignment throughout the British and part of the French sectors, they lacked the cavalry or tanks (mobile forces) to drive to strategic depth.⁴⁰ Secondly, the artillery required to assist the attacks was not very mobile and was not completely in place to assist attacks after the initial attacks. Thirdly, only a limited number of units had been trained as storm troopers, these assisted the initial successes but attacks in other areas failed partially due to the poorer quality of the German forces. Additionally, after the initial breakthrough, Ludendorf decided to change the objectives. Instead of continuing to attack north to drive the British into the sea, the Germans moved north, west, and south dissipating their strength and ability to continue. The attacks continued past the culmination point; the final attacks were almost immediate failures and left the Germans in poorer position to defend.⁴¹ The German losses, especially in storm troops, were greater than they could afford and they lacked the required mobility to sustain their local advantages; the offensive faltered and ceased.⁴²

Of course, the Allies also made changes that assisted in halting the Germans. First, at the time of the attacks, the Allies were changing their defensive tactics. The tactics took longer to implement in the British sector as they had not been on the operational defensive since 1914. The sector initially attacked was using the older tactics (defending with more forces forward), was more thinly held as it was an economy of force sector (more forces were kept near the channel ports in the north), and the soldiers were not familiar with the sector as it had just been taken over from the French. During the German offensive, German attacks against positions using the new tactics that relied more on forces in depth were stopped while those on positions using the older tactics were more successful. Second, the Allies changed their command structure and named Ferdinand Foch, a Frenchman, supreme commander. This produced much better coordination between the Allied forces. Third, the Allies possessed greater mobility

than the Germans. At the tactical level, the Allies possessed greater quantities of tanks and cavalry. At the operational and strategic levels, the French railroads permitted more rapid repositioning of forces and eased the logistics burden of supplying the forces in the field. Fourth, the United States' forces began to arrive in sufficient numbers to eventually erase the German numerical advantage and strategic initiative.⁴³

The Germans achieved some dazzling successes, especially as compared to the previous three years of war in the West, but durable Allied forces, Allied command competence, and German lack of operational and strategic depth and abilities eventually combined to halt their attacks. The initiative passed to the Allies.

There are three major lessons that can be drawn from the Allied and Central Powers attempts to end attrition in World War I. First, failing to recognize that you have culminated wastes resources that should have been husbanded. If you can take advantage of the enemy's culmination, you will gain strategic and operational advantages that can be translated into victory or greater success during peace talks. Second, the attempt to end attrition may be more costly than recognizing that attrition warfare must be waged and taking steps to ensure you consume less in waging it than the enemy. Third, the political costs of operating on the periphery may outweigh any potential gains. New enemies may be created or friends may lose confidence. The entry of the United States due to unrestricted submarine warfare provided the Allies with the materiel required to gain enough of an advantage over the Central Powers to finally win the war of attrition. The Allies suffered more than 300,000 casualties at Gallipoli for no real gain.⁴⁴ The Allies were able to recover from Gallipoli but were not able to supply Serbia and Russia with required resources and Bulgaria entered the war on the Central Powers side due, at least in part, to the failure.⁴⁵

Both sides attempted several initiatives to break the stalemate but World War I was decided through attrition. If either side had been able to force part of the enemy alliance from the field, it would have reduced the enemy's available resources and forces. Additionally it would have forced the enemy to spread its fewer forces over a larger area, potentially allowing greater room for maneuver. However attrition was forced on the belligerents until the combat power ratios were changed and the Allies gained a clear advantage.

One opportunity presented by the suffering and utter destruction of a war of attrition is a better peace which resolves the differences between the nations or, at least, a resolution that both are willing to accept as permanent. The better peace usually requires some magnanimity from the victor and recognition of defeat from the defeated. The relative lack of suffering in a decisive battle or war of maneuver does not present the same opportunity; the defeated may

believe he is not defeated but simply following a new non-military strategy. Examples of the better peace after a bitter war of exhaustion are the American Civil War and World War II; Napoleon's various wars against the changing coalitions and the temporary peace after Operation Desert Storm are examples of the defeated not recognizing defeat after a decisive battle. The opportunity presented by German exhaustion at the end of World War I was wasted. The Peace of Versailles sowed the seeds for an even more tragic Second World War. The peace imposed was so harsh the Allies did not fully implement it and the German military, after the war, convinced itself it had not been defeated.⁴⁶

Conclusion

The effects of decisive battles are obvious quickly, at less overall cost, and the peace can be lasting as long as the defeated recognize they are defeated. However, the effects of attrition can be hidden, especially in large industrial nations, for considerable time.⁴⁷ Then an abrupt collapse will occur. The act of collapse, such as the dropping of the atomic bombs on Japan, is sometimes considered decisive but in reality national exhaustion is the cause.

Attrition warfare presents opportunities, not presented by decisive battle, to permanently resolve conflicts and is not necessarily a sign of poor generalship. Very competent generals may choose or have a war of attrition forced upon them. These generals may continue to maneuver or seek the decisive fight but if the opponent's industrial and population bases, and leadership abilities reach a certain level, attrition warfare may be the best and only means to achieve victory. Attempts to end attrition are worth consideration as they may force decision earlier. However, the potential outcomes must be thoroughly understood or the attempt may cost more than any potential gain. Ultimately, it may be better to fight using attrition while protecting your own resources. Weaker adversaries may see no hope of victory except to defeat the will of their opponent through attrition warfare but they must be willing to accept the costs. As militaries formulate and execute plans, they must realize that attrition warfare is an option and may be the only option. If fighting a war of attrition by design or necessity, we must focus on exhausting our opponent's resources quickly while preserving ours.

End Notes

¹ The relationships and conditions described here apply to conflicts between groups as well as between nations.

² Carl Von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1989) pg 75 states: “[w]ar is thus an act of force to compel our enemy to do our will.”

³ Aleksandr A. Svechin, an early Soviet theorist, believed that wars could not be categorized as Wars of Destruction or Wars of Attrition but “that the evolution [of warfare] has been running from destruction to attrition.” Aleksandr A. Svechin, *Strategy*, edited by Kent D. Lee (Minneapolis, MN, East View Publications, 1992) pg 66. While Svechin’s point is well taken, especially among large industrial nations, it seems wars of destruction are still very possible especially in the post-Cold War world when a large nation confronts a much smaller or less modern nation.

⁴ While not specifically defining position of advantage,

(4-4) Maneuver is the employment of forces, through movement combined with fire or fire potential, to achieve a position of advantage with respect to the enemy to accomplish the mission.

(4-6) To achieve operational results, commanders seek operational advantages of position before combat begins and exploit tactical success afterwards. Ideally, operational maneuver secures positional advantage before an enemy acts and either preempts enemy maneuver or ensures his destruction if he moves.

U. S. Department of the Army, *Operations*, Field Manual 3.0 (FM 3.0) (Washington, DC: U. S. Department of the Army, 14 June 2001) paragraph 4-4 and 4-6.

⁵ The decisive battles in different theaters could be fought against different coalition members to defeat each in sequence and detail or against widespread elements of the same military. A decisive battle in one theater may be operationally decisive for a theater but not strategically decisive. It could end operations in the theater but not in all theaters; hence, a decisive battle may be required in other theaters before the “loser” will agree to the other’s will.

⁶ The presumption is based on the concept of conflict between peer competitors; neither of which has a clear advantage in the field. They must attrit each other with roughly equal capabilities until one is exhausted or gains a dominating advantage over the other.

⁷ U.S. Department of the Army, FM 3.0, para 4-3.

⁸ If a military leader recognizes he must fight a war of attrition, he can better prepare the government and people for a longer war and lower initial expectations of a quick victory. This requires strong leadership but may keep the nation on the path to victory instead of defeat because of an ends and means mismatch.

⁹ U.S. Department of the Army, FM 3.0, para 4-3.

¹⁰ The U. S. Army used to recognize leadership as the most important element of combat power and that strong leadership can overcome enemy strengths to gain victory. However, the current *Operations* manual no longer reflects that position. The 1993 FM 100-5, *Operations*, states that “[t]he most essential dynamic of combat power is ... leadership.” It also states “[s]trong leaders and trained, dedicated soldiers are the greatest combat multipliers. When

opposing forces are nearly equal, the moral qualities of soldiers and leaders – sense of duty, courage, loyalty, and discipline, combined with stamina and skill – provide the decisive edge.” However the current manual states that “...leadership is the most dynamic element of combat power.” The current manual does hint at the importance of leadership by stating “[l]eadership is key, and the actions of leaders often make the difference between success and failure, particularly in small units.” U. S. Department of the Army, *Operations*, Field Manual 100-5 (FM100-5) (Washington, D. C.: Department of the Army, June 1993, pgs 2-11 and 2-12 and U.S. Department of the Army, FM 3.0, para 4-16.

¹¹ Philip Babcock Gove ed in chief, *Webster's Third New International Dictionary of the English Language, Unabridged* (Springfield, MA: G & C Merriam Company, 1964) pg 703 defines durable as “able to exist for a long time with retention of original qualities, abilities, or capabilities.” In military terms durable implies forces that are able to sustain losses but continue active operations. They receive replacements, equipment, etc to build the forces back or keep them at a sufficient strength to continue participation.

¹² I. C. B. Dear ed., *The Oxford Companion to World War II* (New York, NY: Oxford University Press, 1995) pgs 459 and 610.

¹³ The Germans use the term materialschlacht, battle or war of material, as a description of war of attrition. The term appears to have been used during World War I and after the war as Germany realized it could not win a materialschlacht and developed new tactics (Blitzkrieg) to attempt to force a decisive battle. “Feature Articles: Magical Slang: Ritual, Language and Trench Slang of the Western Front”, available from <http://www.firstworldwar.com/features/ang.htm>, Internet; accessed 8 March 2006 and J. B. A. Bailey, “Over By Christmas’: Campaigning, Delusions and Force Requirements”, *The Land Warfare Papers*, No. 51W, September 2005, AUSA, available from http://www.ausa.org/pdfdocs/LWP_51WBailey.pdf. Internet; accessed 8 March 2006.

¹⁴ If the victor had been able to dominate the other, losing far fewer casualties, he could focus on resupply, easing his logistical burden prior to continuing the attack. The fewer resources he consumes, the less his resupply burden. He could maintain his initiative and possibly press the enemy before he has time to recover. If his losses and consumption rate are high, the victor as well as the loser may culminate forcing both to reconstitute and resupply. The initiative may well pass to the “defeated” if he can reconstitute quicker.

¹⁵ The moral gain may be the right to exist as a distinct nationality or to inspire others to fight for the same cause. There is a notion that for a nationality to exist it must be willing to fight for its existence or it will be absorbed into a stronger nationality. The act of fighting, even in defeat, builds a history of distinctness within the nationality. Some famous examples of forces that could be considered to fight hopeless causes for a moral good include the Philippine forces at Bataan; the Greeks at Thermopylae; or, the Serbs under Prince Lazar at Kosovo Polje (The Field of Blackbirds). Information on Kosovo Polje is from Tim Judah, “History, bloody history”, available at http://news.bbc.co.uk/1/hi/special_report/1998/kosovo/110492.stm, Internet; accessed 8 March 2006.

¹⁶ Dr. Thomas Huber, an instructor at the Combat Studies Institute, U. S. Army, Command and General Staff College (CGSC), Fort Leavenworth, raised the idea of compound warfare during the Evolution of Military Thought course during my attendance at CGSC in 1996/1997. The term refers to using both conventional and irregular forces in unison to gain victory.

¹⁷ Military force is recognized as one element of sovereignty and national power. Other elements of sovereignty include the ability to tax, print money, legislate laws, etc; elements of national power include economic, diplomatic, and informational power.

¹⁸ Some European nations, such as Belgium and The Netherlands fall into the category of small modern nations that do not possess durable militaries when compared to large modern nations. A major power should triumph in a war of attrition; it may even force a decisive battle on a small nation. The smaller the nation's area, the greater the opportunity to defeat it in a decisive battle unless the people are willing to resort to urban guerilla warfare. Of course, many small modern powers rely on collective security agreements such as NATO to ensure their security.

¹⁹ To win a decisive battle against a larger modern force or nation, a true genius would, probably, require a great amount of incompetence from an enemy. With modern military educational and training systems, this level of incompetence is less likely to occur than in past times.

²⁰ Saddam may not have believed he was defeated or accepted the outcome any longer than it took to extract his forces but he was forced to leave Kuwait, the objective of the coalition. If he had refused to accept the decision at the time, he would have lost a major portion of his military to include a large number of Republican Guard forces, a resource he required to reconsolidate his control of Iraq.

²¹ Thomas L Livermore, *Numbers and Losses in the Civil War in America 1861 – 65*, (Boston, MA: The Riverside Press, Houghton, Mifflin, and Company, 1901) pgs 45-46. Available online from <http://www.carlisle.army.mil/cgi-in/usamhi/DL/showdoc.pl?docnum=447>. While Livermore and other historians admit that calculating Confederate strengths for later in the war is difficult, the numbers indicate that the South had been able to replace its personnel losses from 1863. Livermore reports a Confederate strength of 446,622 in January 1863; 481,160 in January, 1864, and 445,203 in January 1865. All southern personnel losses between January 1863 and January 1864 seem to have been replaced. It, also, appears the South had lost an aggregate of only about 36,000 in 1864 despite continuous contact in the major theaters; however, their strength reported in the Trans-Mississippi had increased about 25,000 and the Army of Tennessee's strength is from December 10, 1864, prior to about 6,000 losses at Nashville. This would mean that east of the Mississippi the South had not replaced over 65,000 losses during 1864. During this time, the South made a considerable effort to put all eligible men into the force. Attrition was having a major effect on its forces. The estimated Confederate losses for Nashville are (Hood stated "very small") estimated as not more than 6000 from Mark M Boatner III, *The Civil War Dictionary* (New York, NY: David McKay Company, Inc., 1959) pg 582.

²² J. F. C. Fuller, *The Generalship of Ulysses S. Grant* (New York, NY: Da Capo Press, 1991,) pg 214.

²³ Dr. Christopher Gabel asserts that the Confederates not only lacked the ability to maintain railroad infrastructure but also managed the assets poorly. In *Railroad Generalship: Foundations of Civil War Strategy*, he states:

However, the Confederacy began the war with a fragmented and incomplete rail system (9,000 miles, as opposed to 20,000 miles in the north). Unlike the Union,

the Confederacy lacked the manufacturing capacity to expand, or even maintain, its railroad infrastructure once the fighting began.... For most of the war, military traffic moved only at the discretion of civilian railroad managers.... One example serves to illustrate the point: during the winter of 1863-64, when the Union Army of the Potomac subsisted happily on the deliveries of the Aquia Creek line, Lee's Army of Northern Virginia suffered hunger, even though it had a direct, thirty-mile rail link to the national capital. Supplies for the troops were available, but the Confederate authorities could not get them to the front.

Dr Christopher R. Gabel, *Railroad Generalship: Foundations of Civil War Strategy* (Fort Leavenworth, KS: U. S. Army Command and General Staff College, 1997) pgs 22-23.

²⁴ Russell F. Weigley, *The American Way of War, A History of the United States Military Strategy and Policy* (Bloomington, IN: Indiana University Press, 1977) pgs 96-97. Weigley makes the point that Davis favored a defensive strategy similar to Washington's in the Revolution but realized ceding any territory was politically infeasible.

²⁵ *ibid.*, pgs 108-112.

²⁶ U. S. Grant, *Personal Memoirs of U. S. Grant*, edited by E. B. Long (Cambridge, MA: Da Capo Press, 2001) pg 195.

²⁷ Boatner, pg 176. The southern forces not only received replacements and rest but also escaped without a fight due to Halleck's very methodical approach.

²⁸ Grant, pg 303.

²⁹ *Ibid.*, pgs 365-369.

³⁰ Francis H. Kennedy, ed., *The Civil War Battlefield Guide, Second Edition* (Boston, MA: Houghton Mifflin Company, 1998) pgs 356, 352. Meade's forces were engaged at Petersburg on 15 June, while Sherman's forces arrived at Kennesaw Mountain on 18 June.

³¹ Grant, pgs 225, 330.

³² Early's defeat was disastrous for the South. He not only lost the Valley's resources but about 11,000 casualties not including his losses prior to Sheridan assuming command for the North. Kennedy, pgs 313-324.

³³ Hood suffered about 27,000 casualties to Sherman's 21,000. Archer Jones, *Civil War Command and Strategy, The Process of Victory and Defeat* (New York, NY: The Free Press, 1992) pg 206.

³⁴ Peter Simkins, Geoffrey Jukes, and Michael Hickey, *The First World War, the War to End All Wars* (Oxford, U.K: Osprey Publishing, 2003) pgs 26-30.

³⁵ Theodore Ropp, *War in the Modern World* (Baltimore, MD: The Johns Hopkins University Press, 2000) pg 253.

³⁶ The information on Gallipoli was gathered from past reading including Ropp pgs 252-255; Larry H. Addington, *The Patterns of War Since the Eighteenth Century*, 2nd Edition (Bloomington, IN: Indiana University Press, 1994) pg 146; and, "The Gallipoli Campaign", Internet, available from <http://www.nzhistory.net.nz/war/gallipolicampaign>.

³⁷ The information on unrestricted submarine warfare was from Ropp, pgs 257 – 262; Addington, pgs 148-162; and, Holger Herwig, "Strategic uncertainties of a nation-state: Prussia-Germany 1871-1918" in *The Making of Strategy: Rulers, States, and Wars*, edited by Williamson Murray, MacGregor Knox, and Alvin Bernstein: (Cambridge, UK: Cambridge University Press, 1999).

³⁸ Addington, pg 160. Addington notes that the Germans sank 12 million tons of Allied shipping during the war but the Allies built 13 million tons of shipping.

³⁹ Ibid., pgs 155-158. Of the 371 tanks employed by the British at Cambrai in 1917 very few were mission capable by the end of the first day. The losses were due to the enemy and reliability. Simkins, et al, pgs 135-137 give the tank more credit, claiming 92 were still operational after 2 days but admit the tank was not able to exploit the initial successes.

⁴⁰ Later the Germans would break through the French line but were again unable to drive to strategic depth. Two reasons for the lack of cavalry were the attrition of horses through four years of war and the Allied blockade of Germany which reduced the amount of fodder available.

⁴¹ The U. S. military defines culminating point as "The point at which a force no longer has the capability to continue its form of operations, offense or defense. a. In the offense, the point at which continuing the attack is no longer possible and the force must consider reverting to a defensive posture or attempting an operational pause. b. In the defense, the point at which counteroffensive action is no longer possible." U. S. Department of Defense, *DOD Dictionary of Terms* (Washington, D. C.: Department of Defense, 31 August 2005) Internet, available from <http://www.dtic.mil/doctrine/jel/doddict/data/c/01438.html>.

⁴² Simkins et al, pgs 139-160.

⁴³ Ibid., pgs 139-160.

⁴⁴ Addington, pg 146.

⁴⁵ Ropp, pgs 253-254.

⁴⁶ The German military may have convinced itself it was not defeated during the war, at least partially, due to Ludendorff's own actions. When the Allies were exerting pressure on the German Army, he warned of collapse and wanted armistice but when the pressure sagged, as it did towards the actual armistice date, November 11, 1918, Ludendorff wanted to continue to fight for better terms. Correlli Barnett, *The Swordbearers: Supreme Command in the First World War* (London, UK: Cassell & Co, 1988), 352-361.

⁴⁷ The slow deterioration that turns into abrupt collapse manifests itself in many ways. In the American Civil War, southern infrastructure deteriorated throughout the war due to lack of resources. As territory was occupied and resource centers fell, fewer resources were available for the nation. Stocks were being consumed that could not be replaced. The slow

deterioration was magnified with each loss over a much shorter period of time and the ability to legitimately govern was decreasing accordingly. For example, Livermore lists southern strength on 1 January 1865 as 445,203. However, only 174,223 formally surrendered to northern forces at war's end. That leaves roughly 270,000 unaccounted for. Some of these losses were battle and non battle casualties; some were men who stayed at their posts until the end but did not formally surrender; and, a large number were men who deserted for various reasons. The South had lost the use of about 270,000 men (60% of its force) in about 5 months; sign of an abrupt collapse.