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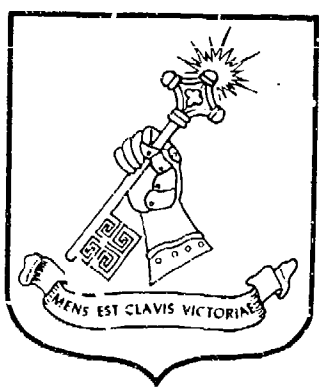
The Evolution of Operational Art: A Neverending Story

A Monograph
by

Major William J. A. Miller
Armor



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ABSTRACT

THE EVOLUTION OF OPERATIONAL ART: A NEVERENDING STORY.
by MAJ William J.A. Miller, USA, 57 pages.

The operational level of war lies at the heart of the United States Army's warfighting doctrine and the focus of this level of war is the operational art. In order to successfully prosecute war at the operational level, American military commanders must understand how and why operational art developed.

For as long as mankind has organized to make war it has operated at the strategic and tactical levels of war. At the strategic level of war, nations and states practice the art and science of employing armed forces and other elements of national power to attain their objectives. At the tactical level of war military commanders practice the art and science of employing military forces and supporting means to win battles and engagements. At some point in time a linking level of war evolved in response to the increasing complexity of society and the corresponding difficulty of prosecuting wars. This level of war is the operational level of war and is nearly as old as recorded history. The operational level of war has always been the "vital link between strategic aims and the employment of forces on the battlefield."

This monograph examines the evolution of operational art by defining the major contributions offered by Alexander the Great, Napoleon, U.S. Grant and the Russians Soviets of the early twentieth century to demonstrate how each of these contributions was linked to some fundamental change in the nature of their societies.

This monograph concludes that it was not the lightning advance of technology nor the advent of mass armies within the last two hundred years that defined operational art. These phenomena were the result of societal evolutions that allowed men of great genius to advance the practice of war to its fullest potential within their times. While these astounding technological and organizational changes have repeatedly expanded the scope and compressed the time within which we must practice operational art, they have not changed its nature. Operational art is still the process by which strategic aims are translated into tactical missions. Further it concludes that operational art is a product of the evolution of war and the societies that wage it. From Alexander until the present day, operational art has been evolving to meet the needs of the warrior and the dictates of the societies it serves. The genesis of operational art is not linked to any single facet of society, be it technology, politics or ideology. Operational art is a logical evolution of the practice of war. Its evolution proceeds from the fact that as society evolves so will the practice of war.

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It is from the operational perspective of war that senior, experienced military commanders must balance the demands of strategy with the capabilities of tactics. ... Indeed, no matter how they define it, the great captains of history have had their greatest successes when they viewed the conduct of war from the operational perspective.[1]

I. INTRODUCTION

The operational level of war lies at the heart of the United States Army's warfighting doctrine and the focus of this level of war is the operational art.[2] In order to successfully prosecute war at the operational level, American military commanders must understand how and why operational art developed.

For as long as mankind has organized to make war it has operated at the strategic and tactical levels of war. At the strategic level of war, nations and states practice the art and science of employing armed forces and other elements of national power to attain their objectives. At the tactical level of war military commanders practice the art and science of employing military forces and supporting means to win battles and engagements. At some point in time a linking level of war evolved in response to the increasing complexity of society and the corresponding difficulty of prosecuting wars. This level of war is the operational level of war and is nearly as old as recorded history. The operational level of war has always been the "vital link between strategic aims and the employment of forces on the battlefield."[3]

Operational art is a product of the evolution of warfare. Throughout history each incremental change in the nature of society, whether it was political, ideological, technological or structural, has produced a corresponding change in

the nature and conduct of war. Within any number of historical epoches, a change in society produced a change in the practice of war, which in turn synthesized the nature of war into new and different forms. Operational art is a product of this dialectical process -- it evolved to meet the particular circumstances of the time in which it was practiced.

Admittedly, some of these changes have been more dramatic than others, but it is the effect of these changes taken in the aggregate, rather than the impact of any single event, that has shaped how the United States Army understands operational art. There is no single evident period in time where operational art began. Operational art is the product of a series of sequential changes in the practice of warfare which were engende ed by evolutionary, and in some cases revolutionary, changes in the nature of society.

The context and circumstances of the practice of warfare throughout history are relevant and necessary to understanding how and why successful military commanders and political leaders function at the operational level of war. The key to understanding this transitional level of war between strategy and tactics lies in the examination of the changes in the nature of society over time and how those changes have altered the tools of the operational artist -- his ways and means.

The purpose of this monograph is to examine the evolution of operational art by defining the major contributions offered by Alexander the Great, Napoleon, U.S. Grant and the Russians/Soviets of the early twentieth century to demonstrate how each of these contributions was linked to some fundamental change in the nature of their societies.

Each of these groups or individuals brought something to the practice of operational art that was previously missing. Their contributions represent watersheds in the evolution of operational art. They define steps upon the evolutionary ladder of operational art that each man designed and carved based

on the nature of change in his society. Rather than individually defining the genesis of operational art, each man's contribution builds on those that came before him until, taken in the aggregate, they define how we have come to understand the practice of operational art.

This monograph contains four sections. After this brief ***Introduction***, Section II, ***The Operational Level of War***, discusses the operational level of war and operational art. It further examines what aspects of war operational art governs and three critical questions practitioners of operational art must address if they are to successfully link their nation's strategic aims to achievable tactical missions. Section III, ***The Evolution of Operational Art***, examines the operations of Alexander, Napoleon, Grant as well as the experiences and theoretical work of the Russians/Soviets in the early twentieth century and analyzes them within the framework of the United States Army's view of operational art. The final section, ***Conclusions*** analyzes the contributions of each of the great captains and the Soviets presented in Section III and presents the conclusions of this research.

II. THE OPERATIONAL LEVEL OF WAR

The practice of operational art constitutes the ways and means by which senior military commanders translate their nation's strategic aims into achievable tactical missions. The United States Army's Field Manual (FM) 100-5, Operations, defines operational art as:

> the employment of military forces to attain strategic goals in a theater of war or theater of operations through the design, organization and execution of campaigns and major operations.[4]

The purpose of operational art is to ensure that commanders use their resources, troops, material and time, effectively in pursuit of the strategic aims

assigned them. The practice of operational art allows commanders to determine when, where and for what purposes his forces will fight. It regulates the deployment of forces, their commitment to or withdrawal from battle and the sequencing of successive, battles, engagements and major operations.[5]

In order to successfully prosecute war at the operational level, a commander must address the following questions:

1. What military conditions will achieve the strategic objectives in the theater of war or theater of operations?
2. What sequence of actions is most likely to produce these conditions?
3. How should the commander apply military resources within established limitations to accomplish that sequence of actions?[6]

These questions require a commander to consider the ways and means available to attain the ends he desires. The campaign is the physical manifestation of the answers to these questions -- it is the commander's expression of the operational art.

A campaign is a series of related operations designed to achieve strategic aims within a specific geographic area. It describes how each individual operation is linked in time and space to the creation of the endstate. It is the real and tangible result of combining the ways and means available to a commander in order to attain specific end.[7] The art of the operational level of war is the translation of strategic objectives into a campaign with tactical objectives that are specific, tangible and achievable.

According to FM 100-5, Operations, when answering the above questions and designing a campaign, the commander must consider, as a minimum, four key concepts of campaign design: centers of gravity, lines of operation, decisive points and culminating points.

When planning and executing a campaign the concept of a center of gravity is used to focus all efforts. "The center of gravity is the hub of all power and movement upon which everything depends."[8] This characteristic or capability is that from which each of the opposing forces draws its freedom of action, physical strength and will to fight. In order for any campaign to be successful, a commander must correctly identify and destroy or neutralize his opponent's center of gravity while at the same time ensuring the protection and integrity of his own. This is the essence of operational art.[9]

Decisive points are physical objectives for which a commander is willing to expend combat power.[10] The possession or control of these points provides a commander a significant advantage over his opponent. These points do not represent an enemy's center of gravity. Rather, they are ways or avenues for getting at the center of gravity. Within any theater decisive point are numerous and varied in nature, centers of communications, hills, towns, etc. Commanders must carefully analyze the theater of operations in conjunction with the enemy to determine which decisive points are most important to his operations and allocate his resources accordingly. By selecting the most important decisive points within a theater of operations, a commander will retain his own freedom of action and protect his center of gravity while gaining access to his opponent's center of gravity.[11]

Lines of operation link forces in the field with their objectives and their bases of operation. They define the force's relation to the enemy in terms of time and space. Lines of operation must be carefully crafted to allow a commander to focus the effects of his combat power toward the desired end. These lines channel combat power through decisive points over time and allow the effects of firepower, psychological operations, deception and maneuver to converge upon and defeat, by destruction or neutralization, the enemy's center of gravity.[12]

Culminating points are those locations in time and space where an attacker's combat power no longer exceeds that of his opponent or vice versa. Whether on the defensive or the offensive, part of the art of crafting a victory is to make one's opponent culminate before one's own force does. Culmination can occur because of combat losses, insufficient resources, improper tempo and a host of other reasons. Commanders must understand the effects on men and materiel caused by the conduct of operations over extended periods of time and great distances. The operational artist must plan carefully in order to ensure that he can focus the effects of his combat power to achieve his strategic objective before his force culminates.[13]

Taken in the ensemble, these concepts represent the "how" of operational art. If properly addressed, they provide the answers to the critical questions posed earlier. These concepts are inextricably linked to one another. Consideration of one in the absence of the others will prevent a commander from attaining the full measure of operational success -- satisfaction of the strategic aims. The identification of centers of gravity, both enemy and friendly, and their linkage to strategic objectives will tell a commander what enemy source of power should be attacked to produce the strategic objective while at the same time protecting his own hub of power and movement. A commander's consideration of the decisive points in a theater in relation to both the enemy and friendly centers of gravity will determine where and when a commander chooses to fight. The design of lines of operation are predicated not only upon the destruction of the enemy's center of gravity but also upon the consideration of when and where both the enemy and friendly forces might be forced to culminate. Lines of operations must also be designed to allow a commander to concentrate the effects of his combat power more rapidly than his opponent, while not endangering the sources of these effects, his center of gravity. The rapid concentration of the effects of combat power along

carefully designed lines of operation at the decisive points on the battlefield should force one's opponent to culminate more rapidly than expected and yield any claim to initiative.

The operational artist must seek to concentrate his center of gravity more rapidly than his opponent and throw the effects of this concentration upon the most lucrative decisive points in the theater. All operations must be designed to negate, directly or indirectly, the enemy's ability to concentrate and focus the effects of his combat power. At the operational level of war, a commander seeks to rack-up a score of cumulative victories brought about by the sequential and parallel execution of combat operations oriented on neutralizing or destroying the enemy's center of gravity. Within a specific framework, which is dictated by the strategic objectives assigned the commander, each operation within the campaign sets the conditions for following operations and thereby maintains the initiative.[14] The ultimate goal of the operational artist is to destroy the enemy's capacity to wage war, both in terms of his will and means to do so.[15]

III. THE EVOLUTION OF OPERATIONAL ART

Alexander the Great.

> Whatever else he was, he was one of the supreme fertilizing forces in history. He lifted the civilized world out of one groove and set it in another; he started a new epoch: nothing could be as it had been.
>
> Tarn[16]

Alexander the Great occupied a position of power that afforded him the opportunity to be the Macedonian empire's chief strategist, operational artist and tactician. As Hegemon and Captain-General of the Hellenic League[17] his strategic mandate was "to avenge the wrongs done to Hellas by Xerxes."[18] In Alexander's eyes, the war was to be ideological in nature -- a conflict between right

and wrong. It was a war that had to be pursued and won regardless of the cost. At the operational level of war, Alexander was charged with translating the strategic aims of the League into achievable tactical missions. In order to accomplish this task the circumstances of the time dictated that Alexander had to do two things: retain his political and military freedom of action and destroy his enemy's capacity to wage war. As chief tactician, Alexander was expected not only to employ his forces on the field of battle, but also to provide inspired, visible leadership.

Alexander ascended to the Macedonian throne at the age of twenty as a result of his father's assassination. The assassination rocked the Hellenic world and fomented revolt among the dissatisfied states that had been conquered or neutralized by Alexander's father, Philip. Alexander quickly recognized two facts: first, that he was, by right of birth, the Hegemon of the Hellenic league, and second, that if the League were to survive and he was to carry out his mandate to punish the Persians, he would have to ensure the survival of the League and the security of his home base before he could execute his commission against Persia.[19] Alexander's first campaign was to secure his base of power within Hellas.

Disregarding the advice of his more faint-of-heart counsels, Alexander struck out rapidly southward to secure and pacify the rebellious peoples of Thessaly, Thermopylae, Boetia and Thebes. Within a matter of weeks he was encamped before the gates of Thebes and all resistance crumbled quickly. The Hellenic League formally declared his Hegemon for life and bestowed upon him his father's title as Captain-General in the war of punishment against Persia.[20]

Alexander quickly consolidated his gains and made plans to ensure the security of his home base before he departed for Asia. Within Greece itself, Alexander still had to worry about non-League member Sparta and the recalcitrant Athens. Both had shown a willingness to test his authority and power and in his absence could be expected to intrigue against him. In order to contain the

influence of these states and prevent their operating in coalition against him, Alexander designated a trusted general, Antipater, to command a force which would remain in Greece specifically for that end. Alexander had in effect created a subordinate theater of operation to ensure he retained his political freedom of action and maintained a secure base of operations.

To further ensure the security of Greece proper and to relieve Antipater of the necessity to heavily garrison the northern frontier, Alexander undertook a series of major operations designed to destroy or neutralize any military threat external to his northern border and south of the Danube river.[21] From the spring until the fall of 335 B.C., Alexander travelled from the Adriatic coast to the Danube and back again, defeating or subjugating every major power between his northern border and the Danube river -- suppressing a final attempt at insurrection and challenge to his power.[22] By the first of 334 B.C., Alexander had achieved the objectives of his first campaign. He had secured his place as Hegemon of the Hellenic League and thereby ensured his political freedom of action and secured his base of operations, both externally and internally, from which he could launch operations against the Persians.

Having secured his home base both politically and militarily, Alexander now set about the business of defeating the Persians. Alexander recognized that he would have to destroy his enemy's capacity to wage war and to do so he would have to attack it in stages. The campaign to destroy the Persians was divided into three distinct stages: securing of an overseas base or lodgment in Asia, destruction or neutralization of the Persian naval superiority, and finally, destruction of the Persian army and seizure of the Persian empire.[23]

The first major operation of the campaign was to seize an overseas base. In the spring of 334 B.C. Alexander embarked on an operation to cross the Dardanelles and establish a lodgement in present day Turkey.[24] Soon after

crossing, Alexander defeated a large Persian army at Granicus and rapidly moved south along the coast taking great care to secure not only his foothold in Asia but also the key islands along the coast, thereby securing his lines of communication with Greece.

During these operations Alexander took great care to "attack Persia internally by winning the Persians to him by considerate treatment."[25] Alexander spent a great deal of his resources and time securing the areas he conquered while at the same time taking great pains not to alienate the people now under his dominion. He did this in two ways. First, he adopted the Persian Satrapal system of government for his occupation. This system of government consolidated nearly all power, civil, military and financial, in the hands of one man. It was a system he could entrust to those loyal to him without fear of their authority being diluted in some power sharing relationship. By adopting a system the people were used to and moderating the power of the Satrap, Alexander was able to win the acquiescence of the population with little resistance. The second method of attacking the Persians internally was to make alliances with any power or faction that opposed the Persians. As a consequence of these actions, Alexander's army destroyed the Persian infrastructure as it advanced. This included popular support, the tax base and naval bases along the eastern Mediterranean coast. It also deprived the Persians of any allied support, consolidated a large overseas base area and provided a greater measure of security to his sea lines of communication.[26]

With his overseas base secure, Alexander embarked on the second phase of his campaign -- the destruction or neutralization of Persian naval power. During this operation Alexander's sole concern was "to win command of the sea -- which could only be achieved finally by the occupation of the Phoenician coastal cities."[27] It was the first step in destroying the Persian's capacity to wage war. As a result, he

spent the majority of two years "building the foundation for future [operations] in Persia by moving through Phoenicia and Egypt to secure the entire coast."[28]

Alexander's efforts to secure the ports and coastline had as their main effort operations on land, with his navy providing only logistical and transportation support. He was very careful not to match his weakness at sea against the Persian strength. At the same time he sought to match his strength on land against the decisive points along the coast from which the Persian navy operated, but could not defend.

From the winter of 333 B.C. until the spring of 331 B.C., Alexander methodically worked his way around the Adriatic and Mediterranean coasts fighting a major battle at Issus, where the Persian army was soundly defeated but not destroyed, and investing and reducing the fortress cities of Halicarnuss, Tyre and Gaza.[29] By the time he reached Egypt, Alexander had significantly expanded the size of his overseas base, removed the Persian naval threat, and effectively secured his lines of communication both internal and external to his theater of operations. Alexander was now prepared to execute the final phase of his campaign against the Persians -- the pursuit and destruction of the Persian army.

In the fall of 331 B.C., Alexander set out to trap and destroy the main Persian army commanded by King Darius. On the first of October, 331 B.C. "the greatest battle in the history of the ancient world [was] fought"[30] at Arabela (also known as Guagamela). Alexander's army soundly defeated the Persians and forced Darius to flee the battlefield. Alexander rapidly marched on the cities of Babylon, Susa and Persepolis to establish his control over these politically important points and installed himself as the de facto king of Persia.[31] It was the Battle of Arabela and Alexander's immediate occupation of the Persian empire's strategic center of gravity, the capital of Babylon, that effectively destroyed the Persian monarchy's ability to resist.

Alexander continued to pursue Darius during the next year and finally caught up to his old nemesis only to discover that he had been assassinated by his own generals lest he surrender any portion of Persia to Alexander.[32] With the death of Darius, the Hellenic League's war of retribution against the Persians was concluded.

Alexander had fulfilled the strategic mandate assigned him by the League. He designed and executed two separate campaigns to achieve the strategic aims of the League. The first campaign secured Alexander's political freedom and secured his home base of operations. The second completed the destruction of the Persian empire. Each campaign was designed to produce a sequence of related tactical successes that would allow Alexander to focus the sum total of his efforts on achieving the strategic endstate. Alexander successfully linked his strategic aims to tactical successes "in a theater of war or theater of operations through the design, organization and execution of campaigns and major operations."[33]

Alexander's Legacy.

Because Alexander has not been generally recognized as a practitioner of operational art, the preceding review of Alexander's operations prior to and during his invasion of Persia was presented to demonstrate his use of the campaign and his practice of operational art. Alexander took the concept of the campaign to a higher level than that of his predecessors and his contemporaries. The following discussion identifies the conditions within the Hellan and Macedonian societies that allowed him to so artfully elevate the concept of the campaign and the practice of operational art.

The first major reason Alexander was able to execute so many sequential and related operations was the nature of his army. In contrast to the citizen armies that dominated the military structures of most of the Greek city-states, Alexander's army was a professional one.[34] This fact allowed Alexander to conduct continuous

operations and campaign year-round without having to worry about releasing his soldiers for plantings, harvests and the like.

Alexander's army was also the first true combined arms force. The key was "the organizational blending of all branches of the arms in a unified cooperation."[35] Alexander's army, while small and unitary by today's standard, was extraordinarily flexible and mobile by the standards of his day. The combination of the first true cavalry force, vice mounted men,[36] superb infantry, both heavy and light, and supporting forces such as slingers allowed Alexander to mix and match his forces depending on the composition and disposition of his opponent. The numerous capabilities inherent in this combined arms force allowed Alexander to move and mass upon the battlefield far more rapidly than his enemies.

Alexander's armies were the product of a "royal system" based on a structured and authoritarian chain of command. The bottom line is that there was absolute unity of command. Unlike many of the city-states of the time which elected their leaders prior to each combat, in Alexander's army there were no questions or arguments about strategy, operational design or tactics. It was the "unified concept of the army commander, who is at the same time creator of the army and leader, [that] govern[ed] the whole"[37] With the rise of Alexander:

> the command of an army developed into an organic function of such magnitude and complexity that it became separated from personal participation in combat.[38]

This separation required a clearly delineated chain of command populated by loyal, capable subordinates, which was precisely what the Macedonian nobility provided.

Alexander's position as the unquestioned leader of a coalition of individually weak but collectively strong city-states allowed the strategic and operational flexibility to structure operations as he saw fit. The coalition structure of the time,

while not perfectly stable as evidenced by Alexander's apportionment of troops to maintain its integrity, was a new and powerful tool that provided Alexander what no leader before him had experienced -- a virtually unconstrained strategic mandate. Alexander had to meet only one objective: he had to right the wrong done Hellas by the Persians. How he did it was his affair.

Alexander was a true operational artist. He skillfully used the geography of the theater to mass the effects of his forces at decisive points and continually threatened his opponent's center of gravity.[39] At the same time he went to great lengths to secure his decisive points and deny the enemy access to his center of gravity as evidenced in his careful preparation of the theater by securing both his home and overseas bases of operation. He mastered the art of forming the right combinations, both in terms of branches of the army and use of his naval assets, to present the most effective force at the critical time and place on the battlefield. While Alexander could not be strong everywhere, he was always strongest at the point that mattered.

Alexander's operational vision was unmatched in his time. Every move he made was executed with an eye to how it affected his subsequent moves and how the sum of his moves contributed to the attainment of the strategic end.

Alexander's strength lay not so much in his tactical acumen but in his ability to consolidate the gains proffered by his tactical actions and link them in a coherent "strategic-political combination [that] brought the countries [he conquered] under his power ... [which] then served as a base for new campaigns."[40] Alexander was always able to link the strategic objective to his tactical successes.

Alexander's success would not have "become possible until the means for achieving them had been prepared."[41] Alexander's way was prepared by his father Philip and occurred at the confluence of several societal, social, political and military changes. According to the eminent professor of history Dr. Hans Delbruck:

> In the uninterrupted work of one generation, pushing forward step by step, King Philip had won and bequeathed to his son a dominion that justified his contemplating to the greatest possible accomplishment, and with the growth of the means, of the extensive as well as intensive increase in the use of military power, **the conduct of war itself had changed its countenance and taken on other forms.**[42] (Emphasis added)

Napoleon.

> Napoleon's life was an immense turmoil, not for himself, not for France, but for the Future.
>
> Spengler[43]

Dr. Robert Epstein, professor of military history at the United States Army's School of Advanced Military Studies, asserts that "the period 1763-1807 marks a significant transformation in the conduct of war"[44] culminating with the "dazzling conquests ... of the Napoleonic blitzkrieg[s]"[45] of 1805-1807.

A fundamental evolution in the practice of operational art lies in the change that the organization of armies underwent during this period. The root of the organizational changes were in the social, political and intellectual evolutions that occurred in French society during this period. According to Epstein:

> The critical change that occurred in warfare at the end of the eighteenth century was social, political, organizational, and intellectual ... [46]

The French revolution was the defining social change that allowed the conduct of operational art to evolve. The revolution produced three major phenomena which allowed the French army to evolve its organization. These phenomena were the *levee en masse*, the social equalization of the soldiers and leaders, the emergence of a merit-based promotion system and the encouragement of innovation and leadership at the small unit level.

The *levee en masse* provided the manpower to raise and maintain the huge

French armies which "checked invasion, repressed insurrection and carried the revolution across the frontiers."[47] It provided not only military manpower, but the economic wherewithal to mobilize the French nation's workers and natural resources. The *levee* was the focal point through which the sum of the nation's efforts could be mustered toward the accomplishment of its strategic aims. It was the heart of the nation in arms.

With the rise of the revolution came the social restructuring of the army. The French Assembly decreed that "all citizens may be admitted, without distinction of birth, to all ecclesiastical, civil and military employments."[48] With this act officers and soldiers were no longer separated by class distinctions -- the army of a nation was born

The opening of the officer corps to all led to the creation of a merit-based promotion system which relied on demonstrated competence rather than political connections or accidents of birth to identify the best leaders to lead the army. Indeed, it was this system that allowed Napoleon and many of his Marshals to rise to the top.[49] This merit-based system also reinforced the development of initiative, heretofore virtually unknown within the army, and led to "a passion for bravery and leadership [that] percolated throughout the entire officer corps and down to the lowest levels."[50] It was this merit-based system that unshackled the genius of the French nation.

Politically, it was the revolution in the French body politic which allowed the Directory to be overthrown by coup d' etat in November of 1799 and marked Napoleon's arrival. Napoleon soon displaced his rivals and rose to power as First Consul, where "for fifteen years he was both head of state and supreme commander, with few if any restrictions placed on his freedom of action."[51] Napoleon's rapid and secure rise ensured " the closest integration of policy and war"[52] ever seen in France. His ascendancy to power also marked "a unity of

political and military authority [that] eliminated the friction at the top that was otherwise inevitable."[53] In short, the political situation that evolved in France in the late 18th century ensured that Napoleon would have necessary control to focus all the elements of French national power on the goals of his choosing.

The intellectual seeds of the French Army's organizational change during this period were sown by Marshal Broglie, Pierre Bourcet and the Comte de Guibert in the 1770s and 1780's.[54] The cumulative effects of the works of these men was to modify the organizational instrument of war -- the French Army. Between them, these three men espoused three major ideas: the breakup of unitary armies, the creation of a favorable strategic situation through the use of the campaign, and the linkage of the campaign to political objectives.

The creation of independent divisions and corps allowed the French to break up their previously unitary combat formations. These smaller, more mobile formations could operate on a dispersed front, subsist off the countryside, move along multiple axes, threaten any number of enemy objectives, operate close enough to support one another during an operation, and significantly multiply the commander's options.[55] This corps organization became the heart of the Napoleonic system.

Concurrent with the breakup of the unitary army was the rise of the concept of the campaign where maneuver and battle became fused and every move, battle or maneuver, was designed to create a specific end.[56] The French Army under the leadership of Napoleon was always employed in concert with a "master plan" or campaign.[57] These plans were neither fixed nor sluggish; rather they were a standard against which the conduct of the operation could be measured. The campaign plans were created by the Emperor and reflected his vision of how he wanted the battle to unfold. The plan considered all the possible branches and sequels to the action which might occur during the operation and accommodated

for them. The intent of the campaign was to "produce the greatest number of men on the battlefield" and "the procurement of a favorable battle situation at the earliest possible moment."[58] The concept of the campaign and the detailed planning associated with it were central to the Emperor's vision of success for the French Army. Napoleon fervently believed that, "[d]uring a campaign whatever is not profoundly considered in all its details is without result. Every enterprise should be conducted according to a system; chance alone can never bring success."[59]

The final intellectual concept that guided the French Army was the necessity of linking the execution of the campaign to political objectives[60]. Bourcet had written that the campaign should be based on clearly identifiable political objectives, and Napoleon took Bourcet's admonition to heart. For Napoleon, once war was initiated all political objectives could be attained by the destruction of the enemy's main army. From Napoleon's perspective, "the best method of reaching whatever political goal he sought was to reduce his opponent's power of resistance to the greatest extent possible. That meant above all to defeat the major enemy armies."[61] Hence, the destruction of the enemy's army was of central importance because that army represented the opponent's capacity to wage war. Once their armies were destroyed, the nations of the day had little or no ability to reconstitute them nor did they have any other element of national power that was sufficiently developed enough to deter or check Napoleon.

The campaign was Napoleon's means of ensuring that the enemy army was brought to battle. The design of Napoleon's campaigns removed the choice of when and where to fight from the hands of his opponent's and placed it firmly in the hands of the Emperor. Every effort within the campaign was designed to ensure that the enemy army was found, trapped and destroyed. The campaign allowed him to fuse the political aim, removal of his opponent's capacity to resist, i.e., wage war, with a recognizable military endstate, the destruction of the opposing army.

Napoleon's Zenith.

Of all the campaigns of Napoleon, perhaps none better demonstrates the change in the nature of warfare and more specifically operational art, than that of his campaign to defeat the Third Coalition in 1805: the Ulm-Austerlitz campaign. The Ulm-Austerlitz campaign was possible because of the cumulative effects of forty years of social, political, organizational and intellectual change that were now manifest in the first "truly nineteenth century army,"[62] *Le Grande Armee* (the Grand Army).

Organized in the summer of 1804, the Grand Army consisted of 219,000 soldiers and 396 guns[63] which the Emperor organized into seven corps, a cavalry corps and a Guard corps. Each corps was a self-contained, combined arms formation capable of fighting on its own. The army had been raised mostly by the conscription of the citizen soldier, but had a great many veterans of France's earlier wars among its ranks. As a result, the army had just the right combination of innocent enthusiasm and battle-hardened realism to produce a highly motivated and effective fighting formation.

Napoleon's army had professional staffs at the corps and division level. They were specifically designed to ensure the efficient and rapid movement of combat power in accordance with the Emperor's grand design. Each staff was manned by highly experienced, competent officers dedicated to serving Napoleon. As a result, Napoleon's staffs represented the finest, most competent staff system of the day.[64]

The combined effect of the corps system, highly motivated, experienced soldiers, and a truly professional staff produced an army and system of war that was qualitatively superior to that of its opponents.[65]

Napoleon's plan for the defeat of the Third Coalition was simple and elegant. He would divide the theater of war into two theaters of operations. The

first was a supporting theater of operations in northern Italy where General Massena would block the powerful force under Archduke Charles from interfering with the main effort north of the Alps. The second and main theater of operations would be north of the Alps centered around the Danube river in what is today southeastern Germany, western Slovakia and northern Austria. Operations within this theater would be directed by Napoleon and all efforts would focus on the destruction of the Austrians and then the Russians, ensuring they were unable to unite their forces.[66]

In the main theater of operations, the Grand Army would depart from its positions overlooking the English Channel where it had been threatening the invasion of England and be "launched along the roads to the Danube by the fastest and most direct route."[67] The army would then wheel south from the Rhine to destroy the exposed flanks and rear of the Austrians, a condition created by Napoleon's use of a grand deception which indicated his route of approach would be from the west debouching the Black Forest in the vicinity of Ulm. Finally, upon the destruction of the Austrians, Napoleon would swing back to the east and attack the oncoming Russians and any remaining Austrians before they could unite.[68]

On 26 August 1805 orders were issued to begin the movement of the Grand Army towards the definitive battle of the day. By the end of September the army had provisioned, prepared and moved to face the Austrians. Napoleon's deception in the Black Forest had drawn the undivided attention of General Mack, commander of the Austrian Army, who rushed his forces westward to seize crossing sites on the Danube in the vicinity of Ulm, which he thought to be Napoleon's objective. The time had come for Napoleon to spring his trap.

Screened by a large force of cavalry, Napoleon set in motion the remaining corps of his army. These corps crossed the Rhine, rapidly moved east, and by 2 October began their wheel to the south, moving at an average pace of thirty

kilometers a day. Initially each corps had been allocated a separate route upon which to move separated by no more than a forty-eight hour march from at least one of its sister units. As the turn south continued, the frontage of the army gradually narrowed from one-hundred and twenty to approximately sixty kilometers as Napoleon prepared to concentrate and strike at Mack from north to south, upon his flanks and rear, while Mack cautiously awaited Napoleon's arrival from the west.[69] By the 6th and 7th of October, Napoleon's forces seized the crossing sites on the Danube to the east and rear of Mack's army. Napoleon acted rapidly to remove as many options from the Austrian's commander's hand as possible and consolidate his positions across Mack's lines of communication by disposing his corps about Augsburg. He arranged them in a web with Augsburg at the center and each of his fighting corps positioned so that it was within forty-eight hours march time of at least two other corps.[70] Mack tried to move back along his lines of communication by crossing the river and proceeding east and would have succeeded if not for Napoleon's ability to move his corps more quickly than he could move his army. By 20 October Napoleon had trapped Mack and destroyed his army. Napoleon now began the second phase of his campaign and moved to isolate and destroy the Russians approaching from the east.

As the French headed east and a joint Russian-Austrian force under Kutusov retreated before it toward Vienna, the Grand Army began to feel the effects of overextension. Kutusov was able to escape north across the river, place the Danube between himself and Napoleon and eventually effect a link-up with another Russian army under Buxhowden and Tsar Alexander. By 23 November the French were forced to halt to consolidate their gains, rest their troops and evaluate the situation.

The Russians and Austrians had gathered a force of some 90,000 men in the vicinity of Olmutz. Marshal Massena was hard-pressed to contain the Archduke

Charles in Italy as he attempted to move north to help the Allied formations in Austria. Napoleon knew he had to destroy Kutusov, for he could no longer afford to pursue him. Again he chose to set a trap for his opponent. He contrived to convince his opponents that he was on the defensive and vulnerable in the vicinity of Austerlitz. Should they accept the bait and attack, the Emperor would fall upon them with his uncommitted corps and destroy them. That is precisely what happened; at the Battle of Austerlitz on 2 December 1805 the armies of Kutusov and Buxhowden were smashed and the forces of the Third Coalition were defeated.

Napoleon's Legacy.

Napoleon's genius lay not only in the fact that he was a uniquely gifted tactical commander and a strategic genius with rare vision and prescience but even more importantly that he alone realized that the structure of the modern army had to change if it were to be wielded with decisive results.

The creation of the corps system allowed Napoleon to control forces larger than any previously fielded. As he proved at both Ulm and Austerlitz, it provided him the capability to divide his forces for the march while retaining the capability to rapidly mass and fight.

The corps system allowed Napoleon to pioneer the use of distributed maneuver where multiple independent, operationally durable formations maneuvered in concert to create a decisive tactical condition where the effects of Napoleon's combat power could be concentrated to overwhelm his opponents at the time and place of his choosing. Napoleon's ability to orchestrate the execution of distributed maneuver within the context of a campaign plan allowed him to create decisive points, at Ulm and again at Austerlitz. This also allowed him to gain access to the enemy's center of gravity -- the armies of Mack, Kutusov and Buxhowden.

Distributed maneuver also allowed the Emperor to deceive the Austrians as to his true location and lines of operation as evidenced by Mack's concentration at Ulm and Kutusov's acceptance of battle at Austerlitz. Further, distributed maneuver allowed Napoleon to deny his enemy a center upon which to concentrate unless the Emperor chose to do so. His ability to assemble, move units into supporting positions without having them in contact, and to concentrate, massing the effects of his combat power at the time and place of his choosing, allowed him to coalesce or distribute his center of gravity at will. Distributed maneuver provided Napoleon with the freedom of action, at both the strategic and operational levels, necessary to create the conditions for tactical success.

Napoleon created an army that was no longer a unitary mass lumbering about the battlefield searching for a decisive battle. Instead, his was an army of self sustaining combat formations that moved independently of one another in concert with a greater plan -- the campaign. The purpose of the campaign was to destroy the enemy's capacity to wage war -- his army.

The Emperor Napoleon provided the operational artist a new tool with which to practice of war -- distributed maneuver. He set the stage for the creation, deployment, employment and sustainment of the massive field armies which were to emerge with the advent of the Industrial Revolution.

U.S. Grant

> Somewhere after the industrial revolution and by the time General Grant's campaign [1864-65] occurred, the decisive effect of a single battle had dissipated. ... to impose one's will as a 'conqueror on the conquered,' a commander now had to destroy his enemy's war making capabilities which included both armed forces and resources.[71]

The Impact of the Industrial Revolution.

By the early 1800's the impact of the industrial revolution was beginning to be felt by the great societies of Europe and America. The very nature of society itself began to change. According to J.F.C. Fuller, the industrial revolution "led to the rise ... of great industrial towns, which steadily replaced agricultural civilization by urban ... and cities became the centres of business."[72] The power of industry replaced the power of the land and a new measure of national power was born -- industrial capacity.

With this societal evolution the machine had changed how man would wield the sword in war. The effect of the industrial revolution was to change the environment of war by introducing three major changes in its conduct: the emptying of the battlefield, the creation of a coherent system of distributed communications and the requirement to attack and destroy not only the armies of one's enemies, but also an enemy's capability to produce new armies -- his total capacity to wage war.

The emptying of the battlefield was a direct result of the increased lethality of the weapons produced during the industrial revolution.[73] While the rifled gun had existed since 1500,[74] the advent of the percussion cap and the cylindro-conoidal bullet dramatically increased its efficiency and range.[75] This increase in range and efficiency allowed the rifled musket to make "its full impact felt for the first time."[76] The increased effectiveness of the rifle when combined with improvements in artillery combined to drive the closely deployed infantry, artillery and cavalry formations from the field.

The net effect of this increased lethality was twofold. First, it emptied the battlefield by forcing formations to disperse and seek cover in order to avoid the devastating effects of the new weaponry. In order to survive, tactical formations began to open their ranks and move toward the use of skirmishers. The second

effect was the rise in the use of the tactical defensive and extensive entrenchment, both on the part of the offensive and defensive forces, whenever possible. Taken together, dispersion and the increased reliance on the defense created a decrease in the casualty rates, even though the lethality of the weapons of war had increased significantly. The emptying of the battlefield and the rise of the effectiveness of the defense now forced "the attacker to confront the increasing strength of the defense in a new dimension."[77] The new dimension was maneuver off the battlefield. In order to maneuver off or between battlefields, armies needed redundant and reliable systems of communications.

The next major contribution of the industrial revolution was the combination of the railroads and telegraph, which together produced the first truly integrated, distributed system of communications. This system provided for the first time in the history of warfare a continuous link from the industrial rear to the military front.[78] It provided nations the capability to continuously mobilize their men and materiel in support of their war efforts. Furthermore, it provided nations the ability to rapidly shift the focus of their combat effort between separate battles and even theaters.

The continued evolution of the distributed system of communications led to the development of transportation and supply systems specifically designed to cope with the geographic demands of the theaters of war. Systems were designed, mostly through trial and error, to be flexible and redundant by maximizing the use of not only the mechanized advances of the day, but also the careful integration of animal drawn conveyances where appropriate.[79] These systems were successful enough, particularly in the American Civil War, to extend the range and durability of the largest formations ever fielded in combat, the field army.

The combination of an emptying battlefield, a distributed system of communications, and a maturing system of supply and transport produced a dynamic where, given access to sufficient resources, a nation could now produce

and move armies faster than an opponent could destroy them. This dynamic had redefined a nation's capacity to wage war. Previously, a nation's capacity to wage war was primarily measured by the armies it could field. Nations could generally only field one effective army during a war. They simply did not have the industrial, economic, and infrastructural wherewithal to produce more than one army during a conflict. With the advent of the industrial revolution, the capacity to wage war was modified to include not only the existing armies, but the capacity to mobilize and move new armies. Commanders now had to conduct operations against their opponent's total capacity to wage war. Commanders fighting within the shadow of the industrial revolution had to destroy their opponent's existing armies, the potential to generate new armies (industry, infrastructure and external commerce) and finally, their opponent's will to fight.

The Industrial Revolution and the American Civil War.

The industrial revolution provided the protagonists of the American Civil War with a new set of problems to address in the conduct of war. The lethality of the weapons, the ability to have near real-time communications between commanders, and the capability to move thousands of troops and tons of cargo over rail networks all contributed to the aforementioned "emptying of the battlefield" and the expansion of battle space for both sides. Operations would have to be conducted in much greater depth and over longer periods of time because the dispersion of forces would no longer allow one force to focus a decisive blow against his opponent's fighting forces or his capabilities to produce those forces. War in this time, under these conditions, would have to focus not only on the destruction of an opponent's armies, but also on his capacity to replace those armies over time. To be decisive, operations would have to focus on the destruction of the opponent's total capacity to wage war. Enter U.S. Grant.

Ulysses S. Grant was a visionary leader that realized war in his time had to

change and evolve with the technological and social conditions of the age. Grant understood that the war against the Confederacy would only be won if the South's capacity to wage war was removed. It was a war against the will, the army, the economy and the very fabric of southern culture that was needed. Fortunately for the Union, he was also in a position to make such a war a reality.

The Confederacy had banked on a short, sharp war to separate themselves from the Union. Failing that, it hoped to exhaust the Union's will to fight. Neither worked and the South found itself gripped by a war of exhaustion that slowly sapped the life from the Confederate cause. The South simply did not have the wherewithal to fight a war over a period of years. Unfortunately for the Confederacy, the Union did.

The industrialized Union's capacity for waging war was infinitely greater than that of the agrarian Confederacy. In virtually every measurable category from miles of railroad, to fighting-aged men, to factory capacity, the Union was clearly superior. While the Union's will to fight was sometimes questionable, there is no doubt that it had the industrial and human capital to fight any type of war the South might pursue.[80]

Grant's strategy of all-round pressure was a strategy he knew he could afford. It was based on his capability to attack the Confederacy's total capacity to wage war. He had the wherewithal to attack not only the South's armies, but its infrastructure as well. U.S. Grant was able to achieve strategic success because of his operational design. While not always successful in every tactical engagement, he was successful enough in the aggregate to destroy the South's capacity to resist.

The 1864-65 Campaign.

Grant's maturation as an operational artist is best demonstrated in his planning and execution of the final major campaign of the war which took place

from the spring of 1864 until the summer of 1865.

Prior to his appointment as a lieutenant general in March of 1864, General Grant began to work on his plan of campaign to defeat the South. General Grant had a single strategic aim -- to bring about the defeat of the Confederacy before President Lincoln's term of office expired.[81] His planning was constrained in four ways. First, Grant had to ensure that President Lincoln remained in the White House. Second, the General's plan had to maintain popular support for the war in the north. Third, the plan had to demonstrate to the international community that the Union would prevail. Finally, the President required immediate action to end the war and silence the anti-war critics nipping at his political heels. It was according to his strategic guidance and within these political constraints that Grant set about formulating his campaign plan.[82]

The unifying concept for General Grant's campaign was to "have all parts of the Army, or rather Armies, act as much in concert as possible."[83] Grant's concept was to create a situation that removed from the hands of the Confederate commanders any options other than to stand and fight. He sought to bring the entire Confederacy, military and non-military alike, under a continuous pressure designed to ultimately destroy its capability to resist. According to LTC James M. Dubik, in his work, Grant's Final Campaign: A Study of Operational Art:

> [Grant's] vision was clear: he sought to break the military power of the rebellion by a well coordinated series of maneuvers and battles throughout the depth and breadth of the theater of war, 'co-operative action of all the Armies in the field' to 'hammer continuously against the armed forces of the enemy and his resources.'[84]

Grant had two primary campaign objectives. First, it was imperative that the Union destroy the armies of Lee in Northern Virginia and Johnston in Georgia because they were sources of military power and symbols of hope to the

Confederate cause; they were the centers of gravity. Second, in order to ensure the war could no longer be protracted, Grant had to deny the South the capability to produce new or supply old armies by attacking its sources of commerce (the Gulf and Atlantic ports), sources of food (the Shenandoah Valley and the farming regions of Georgia, Alabama and the Carolinas), and its industrial infrastructure (concentrated around Atlanta, Richmond and the rail network). Taken together, these points constituted the set of decisive points within the theater of war. They were points or localities for which the Confederacy would expend combat power and eventually draw the centers of gravity, the armies of Lee and Johnston, to their defense.[85]

Grant chose an operational design that would distribute his combat power across the theater of war not uniformly but rather oriented on the decisive points he had previously identified. By dispersing his force around the perimeter of the Confederacy,[86] Grant sought not to concentrate his armies at one point; rather he intended to effect "concentration ... practically ... by Armies moving to the interior of the enemy's country."[87] This distribution was designed to bring on a series of sequential and simultaneous battles that were not decisive individually but in the aggregate produced a decisive effect on the Confederacy's capacity to wage war.

The execution of Grant's plan of campaign was probably not as successful as he would have liked in terms of each operation, particularly those of Butler, Banks and Sigel. But in the end the campaign was successful because Grant's efforts "had a cumulative effect, and the weight of them was ... irresistible..."[88]

By the spring of 1865 the South had been torn asunder by the combined efforts of Meade, doggedly pursuing Lee in Virginia; Sheridan, who had isolated the Confederacy from its breadbasket, the Shenandoah Valley; and Sherman who had soured the southern taste for war on his rampage through Georgia. General Grant met his strategic guidance by designing and executing a campaign that

broke the Confederacy's standing military power, destroyed its capacity to generate or supply new armies and shattered the South's will to resist.

Grant's Legacy.

> As the new technology of modern warfare brought tactical stalemate ... Grant ... gave the most spectacular display of the growing search for an alternative through strategic maneuver. In a spirit that revived the ghost of the French Revolutionary reformer Bourcet, ... Grant exploited diversion, dispersion, and surprise to pursue successfully a modern total war strategy of exhaustion against the enemy's resources, communications and will.[89]

Grant understood the context of war in his time, in terms of its technological capabilities as well as its social imperatives. Grant realized that war had changed and that to defeat the South he had to fight a "total war against the will of the enemy's population, and against the territory, resources and communications needed to support the enemy's armies."[90]

Like Alexander and Napoleon before him, Grant focused his efforts on the destruction of the enemy's war making capacity within a greater strategic context. The difference between Grant and his predecessors was in the definition of the war making capacity of a nation after the maturation of the industrial revolution. Grant recognized that a nation's capacity to resist was no longer measured solely by the armies it had in being or could quickly mobilize. A nation's total capacity to wage war was now defined as the armies in being, the capability to supply and move those armies, and the potential to produce and move new armies into combat. "Every action the general took and every decision he made aimed at this end -- destruction of the enemy's armed forces and resources."[91]

Grant was the first to perfect the use of distributed maneuver which Napoleon had pioneered some sixty years before him. Distributed maneuver became practical for four reasons: new technology, Grant's understanding of the

enemy's capacity to wage war, increased lethality on the battlefield, and the need to maintain operational freedom of action.

Distributed maneuver was possible because of the complex and redundant system of communications made possible by the technological advances of the railroads and the telegraph. This system allowed the Union, and the South for a period of time, to maintain continuous links from front to rear. This created the continuous movement of men and materiel towards the zones of combat. It also allowed the Union, by way of its superior rail and telegraph system, to focus the effects of its forces at decisive points across the theater of war faster than the Confederacy could mass forces to counter them.

General Grant understood that the measure of a nation's capacity to resist went beyond the armies it fielded. Therefore, he sought not to bring about the physical junction of all his armies in a climactic battle with the armies of his opponent, but to mass the effects of their independent yet coordinated operations toward a common end. The vehicle for massing the effects of his operations was the plan of campaign. It is with U. S. Grant that the effects of the campaign rather than the battle became decisive.[92]

Distributed maneuver, particularly maneuver between battlefields, became necessary to combat the rising lethality of weapons and the increased use of the defensive. Distributed maneuver gave Grant the capability to threaten an engaged enemy force both directly and indirectly. It allowed him to physically assault and fix a force, while at the same time threaten its base of operations from another direction, e.g. Meade's battles with Lee and Sherman's supporting rampage in Georgia.

The final reason for Grant's perfection of distributed maneuver is that he had no other choices if he was to meet his strategic guidance and operate within the constraints imposed upon him. The only way he could meet his political goals was

to retain his operational freedom of action. The key to ensuring that the Confederacy did not continue to draw the war out was to gain and maintain the initiative -- to force them to react to the Union plan of action.

Distributed maneuver provided General Grant with the means to maintain his freedom of action within the theater of war. Battles were orchestrated across the theater to prevent the Confederacy from reinforcing or focusing its efforts on any one operation.[93] It provided the Confederacy with no other option than to fight everywhere, all the time. Furthermore, distributed maneuver provided the only way to meet the strategic aim of defeating the South during Lincoln's term of office. It provided the only method to attack both the Confederacy's armies and sources of production simultaneously and in depth.

It was U.S. Grant who took the concept of the campaign and expanded it to include war against the total war making capacity of a nation. His vehicle was distributed maneuver. It was the industrial revolution that provided Grant not only with the tools to execute distributed maneuver, but the reasons -- increased lethality and the emptying of the battlefield -- to do so as well.

Somewhere between the American Civil War and World War I, discounting the Prussian successes of 1860's and 1870's, the lessons that Grant learned the hard way were forgotten. The power of the defense seemed to reach its zenith in World war I. Stalemate existed from the strategic to the tactical levels on the western front. But in the East the Russians experienced a new view of war which was was further amplified by their experiences in both their Civil War and the Russo-Polish war. It was from their experience in war and the concurrent ideological revolution that the Russians would promulgate the next major evolutionary step in operational art -- the recognition of the operation.

The Russians and the Soviets.

> ... objective reality advanced the requirement for the creation of a new branch of military art which would encompass questions of the theory and practice of operations, i.e. operational art. Thus operational art was a logical consequence of the change in the character of armed struggle[94]

The Russian/Soviet Experience in War: 1904-1920.

By the end of the nineteenth century and the beginning of the twentieth century, the Russians realized that the nature of warfare had shifted dramatically. Like Grant before them, the Russians were coming to grips with the real impact of modern society on war.

Armies had grown rapidly both in size and effective combat power. Universal conscription and extensive reserve mobilization systems meant modern countries could transform themselves into nations at arms on a moment's notice. The increased lethality of the weapons then fielded, including the rifle, automatic weapons and exploding artillery projectiles, dramatically increased the killing power of the armies of the day. Finally, the completion of modern systems of communications, composed of the railroads and telegraph systems, made it possible not only to mobilize, but move mass armies. These systems also provided the European powers the ability to shift and focus their military assets and industrial support towards any threat almost overnight.[95] These new conditions of war required a new way of waging war.

The Russians observed that the dispersion of troops on the battlefield, both in depth and breadth, eliminated any one "center of battle." Instead, there were "a number of smaller battles scattered in space and time, not linked tactically but requiring unification and leadership in aim, space and time."[96] Each of these

centers would have to be addressed in a coordinated sequence in order to attain victory. The Russians first termed such actions as *armeskiy boy* or "battle in large masses" and then finally began to use the term "operation."[97]

During World War I the experiences of the Russians on the Eastern Front differed from those of the Allies in the west. The conflict in the east "never degenerated into the absolute linearity of positional trench warfare"[98] seen in the west. There were two reasons why the war in the east did not stagnate in a manner similar to the western front. The first reason was the sheer length of the front and the attendant reduction in the density of combat formations. There simply were not enough soldiers to entrench from the Arctic Ocean to the Black Sea. The second reason was the economic backwardness of Eastern Europe. It did not have the extensive integrated systems of communications available to the defenders and attackers in the west. These conditions combined to make it possible for commanders on both sides to conduct large scale maneuver. While large shifts in the front were common during the war, neither side could attain a strategic advantage because the very same conditions that allowed maneuver on a large scale prevented it from being decisive. Frontages and troop densities provided the opportunities for maneuver but the primitive infrastructure constrained their decisiveness. Because of the elasticity of the front and the inability of both sides to breakthrough decisively, one Austrian officer characterized the war as a "gummikrieg", or rubber war.[99]

As a result of his observations of the stagnated trench lines on the western front and the indecisiveness of operations on the eastern front, GEN M. N. Tukhachevskii was moved to comment :

> The initial period of the imperialist war [WW I] was characterized by a situation in which a general conflict was converted to its antithesis. From being a means of destroying enemy armies it became a means of

> postponing decision ... it was impossible to bring a destructive operation to a conclusion and inversely an operation could not create a situation leading to a general annihilating battle.[100]

The Soviet experience in the Russian Civil War and the ensuing Russo-Polish War of 1920 confirmed much of what they had learned during the Great War. However, two major observations were brought out primarily as a result of GEN Tukhachevskii's abortive operation against the Poles in Warsaw in the summer of 1920. The first observation was the need to integrate breakthrough operations with deep pursuit to destroy the enemy throughout the depth of their defenses. The second observation was that success in the operation was dependent on "the successful struggle against the attendant operational exhaustion" that accompanied the conduct of operations in modern war. Both of these observations solidified the Soviet belief that in modern warfare the destruction of the enemy in depth and across large frontages could not be accomplished in a single operation.[101]

Soviet Theorists and Operational Art.

By the early and mid 1920's there existed an "atmosphere conducive to the development of operational art."[102] Soviet military intellectuals had the freedom to review and study the experiences of the past forty years of conflict and came to the general conclusion that :

> In the warfare of modern armies, defeat of the enemy results from the sum of continuous and planned victories on all fronts, successfully completed one after another and interconnected in time ... The uninterrupted conduct of operations is the main condition for victory.[103]

The seminal effort in Soviet recognition of operational art was provided by A.A. Svechin, a former Russian General Staff officer and a member of the faculty at the Frunze Academy and General Staff Academy, when he published his book Strategy in 1927. In this work, Svechin defined, for the first time, operational art

and "placed operations in a strategic context."[104]

Operational art, according to Svechin, was "the totality of maneuvers and battles in a given part of a theater of military action directed toward the achievement of the common goal, set as the final in the given period of the campaign."[105] He also took great care to clearly define the relationship between tactics, operations and strategy. Svechin stated:

> The battle is the means of the operation. Tactics are the material of the operational art. The operation is the means of strategy and operational art is the material of strategy.[106]

It was Svechin and the other theorists of the 1920's that were able to coalesce the concept of the operation and operational art into a new category of military theory and practice.

By the late 1920's and early 1930's, the Soviets began to experiment with how they could apply their theories of operational art to the battlefield. They concluded that the only way to accomplish their aim was through deep battle. Deep battle sought "to secure successes in the tactical depth of enemy defenses by the simultaneous use of infantry supported by tanks and long-range-action tanks with infantry, artillery and aviation support."[107] Deep battle was to be the key to executing operations simultaneously and in depth.

As the Soviet theorists and planners pursued the concept of deep battle they were again confronted by the problems of the geography and population of their anticipated area of operations. It was a problem they characterized as the "peasant rear." The Soviet west and eastern Europe were dominated by an agrarian, non-industrial economy based on peasant labor. This put the Soviets at a significant disadvantage when compared to the more industrialized portions of western Europe. If it came to waging a modern war by conducting operations in great depth at a high tempo, the Soviets would be unable to do so because they did not have

the infrastructure.

V.K. Triandafillov, a former brigade commander in the Red Army and later theoretician, recognized the problem in his work the Nature of the Operations of Modern Armies. In this work Triandafillov laid out the problem of a peasant economy lacking in technology and infrastructure to support the modern army in conducting operations. Triandafillov addressed not only how the Soviets could conduct deep operations via the use of shock armies[108] to breakthrough and pursue enemy armies until they were destroyed but also how the nation could attain the means to do so. From the mobilization of conscript soldiers, to the creation of a supporting industrial infrastructure, to the command and control of the armies in battle, Triandafillov examined not only the ways, but the means of preparing for and practicing operational art. Triandafillov deduced that the success of the operation, within the Soviet strategic context, hinged on two problems: "the organization of an effective command and control system to coordinate operations on several fronts, and the establishment of realistic logistical norms in keeping with the geographic-economic realities of the theater of military actions."[109]

By the 1930's, based on Triandafillov's work, there was a great demand for the complete mechanization of the Red Army. GEN Tukhachevskii took up the cause and argued powerfully and persuasively that a totally mechanized army would provide the means to execute the operation as theoretically envisioned.[110] The call for industrialization was eventually heeded by Stalin and the seeds of the modern Soviet army had been sown.

By 1936 the concept of deep operations had matured and were incorporated into Soviet military doctrine.[111] The marriage of the ways, successive operations, postulated in the early 1920's, and the means, the emergence of a modern mechanized Red Army, demanded in the early 1930's, meant that the capability to execute deep operations might soon be a reality for the Soviets.[112] Deep

operations were now defined as:

> Simultaneous assault on enemy defenses by aviation and artillery to the depths of the defense, penetration of the tactical zone of the defense by attacking units with the widespread use of tank forces, and the violent development of tactical successes into operational successes ...[113]

Deep operations became the "focal point for the Soviet understanding of the operational level of war." This concept represented a full articulation of their concept of modern war and "marked the pinnacle of Soviet operational art in the interwar period."[114]

The Soviet Legacy.

It is not the Soviet and Russian conduct of campaigns in the early 1900's that marks their contribution to the evolution of operational art. Rather it is their theoretical study, appreciation of the changing nature of war and the act of formally recognizing the operational level of war as the missing link between strategy and tactics in modern war that mark their most major contributions.

Their most significant contribution is simple and straight forward. They were the first to view war as a whole in its relation to society. They realized that as factors in society, social, political, technological and ideological, changed, the nature of war changed. A change in the nature of war required a change in the way war was waged. The Soviets understood that war could no longer be won in any single annihilating battle. War was an undertaking that required not only a new way of waging it, operational art, but also the means to do so. For the Soviets, war was total in nature.[115] It required the full mobilization of a a nation's assets, people, materiel and will, if it was to be prosecuted successfully.

The operation became key in the Soviet view of modern war. It's concept was keyed to continuous operations throughout the depth of the enemy's defenses designed to produce a decisive defeat of his capability to wage war. The operation

was the instrument that would allow the decisive defeat of a modern army over time versus the climactic annihilating battle of previous times.

The Soviets also realized that the conduct of the operation required a well thought out system of support from the tactical to the strategic level. The conduct of operations across broad fronts to fix enemy forces and with deep penetrations to destroy the enemy in depth necessitated the creation of a system of industry and infrastructure to that would allow the theory to become a reality. The concept of the operation and the limited resources available, would drive modern armies and their commanders to carefully plan the sequential and simultaneous introduction of combat forces into a campaign in a coordinated manner with the intent not of winning each and every battle, but of attaining the strategic aim assigned them.

From the Soviet point of view, the conduct of the operation, within the greater context of a national strategy, required that the conduct of war become both and art and a hard science. As an art, the operation represented the creative employment of the ways and means available to a commander for destruction of the enemy's capacity to wage war. As a science, the operation required a nation to carefully produce and manage the means necessary for the operation to be employed. The effects of this philosophy have been felt for the last seventy-odd years and are evidenced in both the Soviet and American preoccupation with their military-industrial complexes.

The Soviet's integrated the conduct of war from the strategic to the tactical levels. They brought to the world a new intellectual paradigm for the conduct of war in modern societies. The Soviet definition of operational art and their theoretical work relating operational art to strategy and tactics changed forever the way modern armies viewed the conduct of war.

IV. CONCLUSION

Operational art is a product of the evolution of war and the societies that wage it. From Alexander until the present day, operational art has been evolving to meet the needs of the warrior and the dictates of the societies it serves. The genesis of operational art is not linked to any single facet of society, be it technology, politics or ideology. Operational art is a logical evolution of the practice of war. Its evolution proceeds from the fact that as society evolved so did the practice of war.

It was not the lightning advance of technology nor the advent of mass armies within the last two hundred years that defined operational art. These phenomena were the result of societal evolutions that allowed men of great genius to advance the practice of war to its fullest potential within their times. While these astounding technological and organizational changes have repeatedly expanded the scope and compressed the time within which we must practice operational art, they have not changed its nature. Operational art is still the process by which strategic aims are translated into tactical missions. Operational commanders must still design campaigns and major operations that ensure this linkage occurs.

It is clear that within each of the periods of history examined, the leaders and the theorists both practiced and comprehended the concepts of operational art as understood by the United States Army today. From Alexander to the Soviets, each group or individual grasped the fact that in order to attain a strategic end, resources would have to be allocated and sequenced in a coordinated manner to produce the conditions for tactical success -- they explicitly or implicitly understood the concept of the campaign. This collective group also understood the basis for campaign design. In particular, each of the great captains was able to, define the military objectives that would attain the desired strategic ends, sequence

operations to attain that endstate, and allocate resources to support the execution of the sequenced actions (see Appendix A for a graphic representation). Furthermore, it is clear they each understood the concepts of campaign design, centers of gravity, decisive points, lines of operation and culminating points (see Appendix B for a graphic representation).

Each of the great captains contributed something unique to the practice of operational art. Alexander was the progenitor of the campaign. His operational vision allowed him to design a series of linked and related operations, executed over time, within a constrained set of resources, to achieve a strategic objective. From Napoleon, operational art received the first modern army capable of distributed maneuver. The corps system of organization, when combined with the professional staffs and the manpower of the *levee en masse,* allowed Napoleon to create a system of war that was unmatched during its zenith. Napoleon's organizational revolution laid the groundwork for the exploitation of the technology of the Industrial Revolution. U.S. Grant successfully integrated the concept of the campaign and distributed maneuver with the emerging technology of the Industrial Revolution to produce a system that could wage war against the total capacity of a nation to resist -- its will, its armies and its infrastructure. It was U.S. Grant that defined modern total war.

The Soviets were the first to see and define the evolving operational level of war. They created an entire field of military study devoted to understanding the operational art. The work of the Soviets acknowledged not only the changing nature of war, but its relation to the evolution of society as a whole. They concluded that war must be approached both as an art and a science. The Soviets understood that science and technology would produce for them the modern tools of the operational artist -- the armored car, the tank and the airplane. Science produced the tools of the artist and the artist demanded tools of science. It was the

Soviets who codified not only the ways of operational art, but also the study of the production of the means of the operational art.

Each of these groups or individuals built upon the knowledge and experiences of those before them (see Appendix C) but there was a common theme, besides the concept of campaign, that ran between their operations -- the need to destroy the enemy's capacity to wage war. Over time that capacity has been redefined as societies have evolved.

From Alexander until Napoleon, the capacity to wage war was largely defined as a the strength of a nation's existing armed forces. The industrial and economic powers of the nation's of the world had not matured enough to make them decisive in their application. Additionally, nations, in general, could not produce more than one competent army during the period of war. As a result, if a nation's armies in the field could be destroyed, victory could be declared. That was precisely what commander's from Alexander to Napoleon strove to do, destroy the military forces in the field -- that was their ultimate goal. By the time of Grant's operations in 1864-65, a nation's capacity to wage war had evolved. It now included not only the military forces of a nation but the resources and infrastructure that allowed it to produce new armies. The Industrial Revolution combined with rising populations to create a condition where nations could produce armies as fast or faster than they could be destroyed. It was Grant who realized that he would have to destroy not only the fielded armies but the armies in production and the infrastructure that produced them.

Upon observing the stalemate and indecision, created by the massive armies and their attendant firepower, of World War I, the Soviets realized that while they must destroy the enemy's capacity to wage war they must also devise a new way to do it. Their answer was the operation. Because of the depth and breadth of the frontages now common in war, destruction of selected elements of the enemy's

fighting formations via the breakthrough and pursuit, was the only way to gain access to the sources of the armies. Success to operational depth would crack the coherence of their opponent's defenses and provide access to the strategic rear and the sources of the armies. The operation and its execution within the deep battle framework would allow the Soviets to destroy a nation's total capacity to wage war.

Regardless of their methods, each of the great captains and theorists realized that the key to linking strategic objectives and tactical actions was planning a campaign focused on the destruction of the enemy's capacity to wage war within the theater.

Alexander, Napoleon, Grant and the Soviets all sought to translate strategic objectives into achievable tactical missions. Each of them realized that war must be understood and fought within the context of its time. These men did not create operational art, they evolved it, studied it and codified it. Their cumulative legacy is what defines how we understand the practice of operational art in our time. The question is no longer who created operational art, but rather what will be our legacy to those who practice operational art in the future. But that's another subject altogether!

APPENDIX A: MATRIX ANALYSIS OF THE ESSENTIAL QUESTIONS OPERATIONAL ART CHALLENGES A COMMANDER TO ANSWER

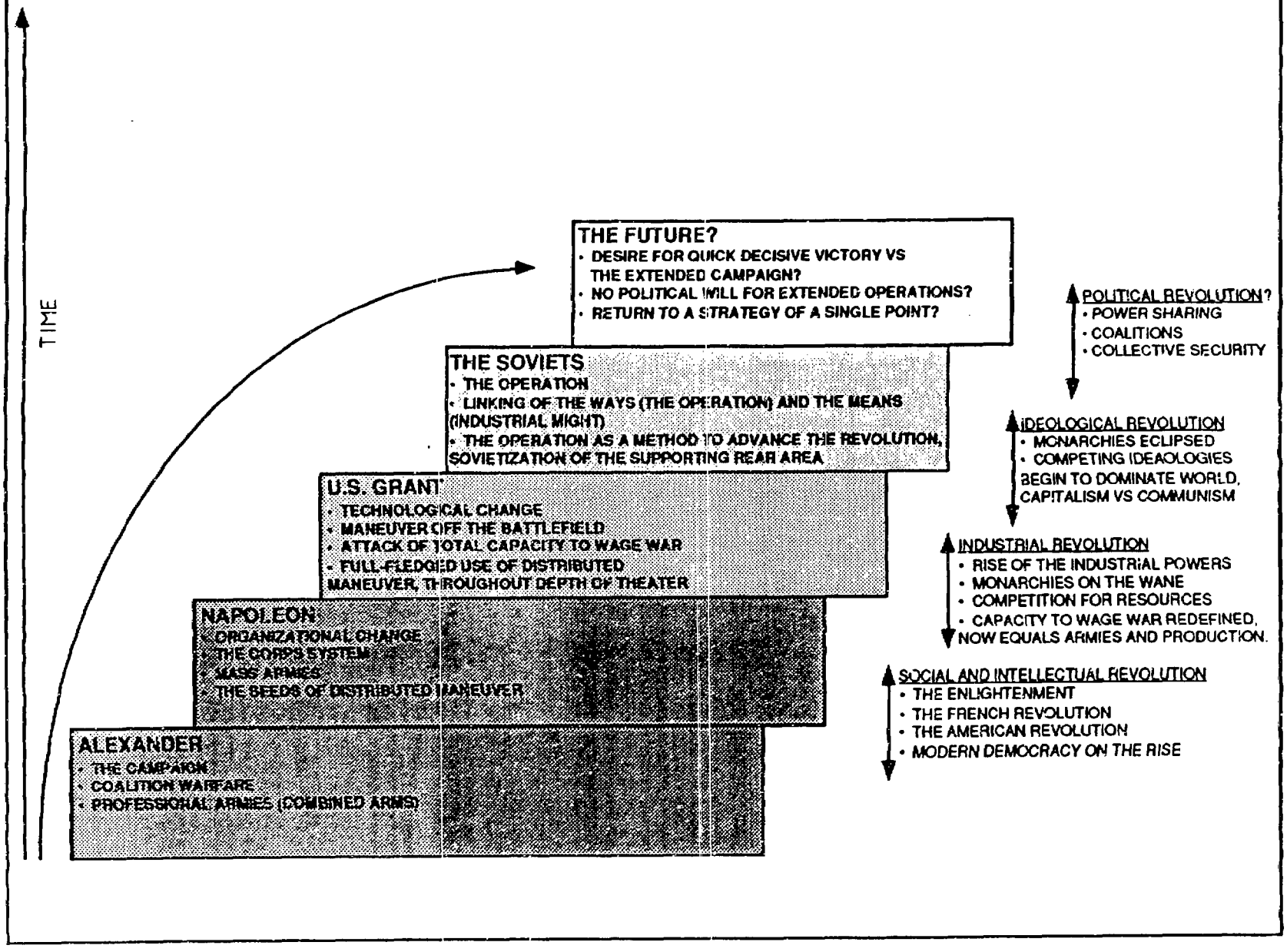
	ALEXANDER The Greek & Persian Campaigns	NAPOLEON The Ulm-Austerlitz Campaign	GRANT The 1864-65 Campaign
1. What military conditions will achieve the strategic objectives in the theater of war or theater of operations?	1. Defeat of the rebellious peoples of Thessaly, Thermopylae, Boetia and Thebes. 2. Defeat of the Balkan Tribes. 3. Prevention of military coalition between Sparta and Athens. 4. Occupation of Adriatic & Mediterranean coasts. 5. Defeat of main Persian army.	1. Defeat of the combined forces of Austria and Russia. 2. Prevention of the union of separate forces under Mack (Austria north of Alps), Archduke Charles (Austria/Italy south of Alps) and the Russians (Kutusov, Buxhowden, etc. enroute from the east) 3. Prevention of Prussia's entry into the war on the side of the Allies.	1. Defeat of the the Army of Northern Virginia (Lee) and the Army of Tennessee (Johnston). 2. Destruction of the South's total capacity to wage war (armies, infrastructure and will).
2. What sequence of actions is most likely to produce these conditions?	1. Secure position as Hegemon of Hellenic League. 2. Secure home base of operations from outside threats. 3. Establish base of operations and lodgement in Asia. 4. Neutralize Persian Naval power. 5. Pursuit and destruction of Persian army.	1. Mobilization and movement of Grand Armee from the English Channel. 2. Fixing of Archduke Charles in southern theater of operations. 3. Execution of deception operation in Black Forest to fix Austrians. 4. Movement of Grand Armee across the Rhine and wheel south across Mack's line of operations. 5. Defeat of Mack. 6. Turn and defeat of Russians advancing from the east.	General Grant envisioned the coordinated and simultaneous use of multiple armies to defeat the South throughout the entire theater of war. This would be accomplished by the combined efforts of the armies of Meade in Virginia, Sherman in Georgia, Sigel in the Shenandoah, Crook in West Virginia, Butler along the James River and Banks from New Orleans to Mobile.
3. How should the commander apply military resources within established limitations to accomplish that sequence of actions?	1. Selected resources devoted to maintenance of base of power in Greece under Antipater. 2. Efforts made to ensure flow of resources by protecting lines of communication between Greece and Asia. 3. Efforts made acquire new sources of supply and men by establishing relations with anti-Persian factions. 4. Main effort, bulk of resources, devoted to pursuit of defeat of Persian army.	1. Corps(-) to deceive Mack. 2. Army of Italy to fix Archduke Charles in southern theater of operations. 3. Grand Armee(-) to move across Mack's line of operations and defeat the main Austrian army. 4. Army moved as separate corps, on separate routes, in order to live off land	1. Main effort was Meade's operations against Lee in Northern Virginia. 2. Sherman was "first among equals" for the supporting efforts. His mission was to defeat Johnston and destroy the infrastructure in Georgia which gave life to the Southern armies. 3. Bulter, Banks, Sigel and Crook were to operate so as to isolate the main armies of Lee and Johnston and to deny the South access to foreign support and markets.

APPENDIX B: MATRIX ANALYSIS OF CONCEPTS OF CAMPAIGN DESIGN

	ALEXANDER The Greek & Persian Campaigns	NAPOLEON The Ulm-Austerlitz Campaign	GRANT The 1864-65 Campaign
1. Centers of Gravity	Alexander's: • His political support as Hegemon of the League • Alexander's lines of communication with Greece • Alexander's army The Greeks & Persians: • The political opposition to Alexander • Spartan/Athenian coalition • The armies	Napoleon's: • His armies (the Grand Armee and the Army of Italy) • Political alliances against him by south German states. The Allies: • Their armies (Mack/Ferdinand, Charles, the Russians).	Grant's: • Political requirements to end war within Lincoln's term of office. • His armies, particularly those of Meade and Sherman
2. Decisive Points	1. Athens 2. The crossing sites on the Dardanelles 3. The Adriatic and Mediterranean ports, from Turkey to Egypt. 4. Babylon, Susa & Persopolis	1. Ulm. 2. Crossing sites on the Rhine. 3. Crossing sites on the Danube, along which Mack must withdraw. 4. Vienna 5. Austerlitz. Note: Napoleon made Ulm and Austerlitz through his use of deception and guile. He made the Austrians and Russians expend combat power for these objectives.	• Rail Centers: Atlanta, Augusta, Charleston, Petersburg, Harpers Ferry, Strasburg, Staunton & Charlottesville. • Ports: Norfolk, Wilmington, Charleston, Savannah, Mobile, New Orleans • Richmond • The Shenandoah Valley • Washington, D.C.[1]
3. Lines of Operation	1. Within Greece: Alexander's lines of operation radiated outward from his native Macedonia 2. External to Greece: Alexander's lines of operation first ran from the Greek states across the Dardanelles and were then extended south along the coast in order to neutralize the Persian Navy. Finally, Alexander worked back along his lines of operation from Egypt to the heart of Persia.	Napoleon was careful to structure his lines of operation to protect them from attack by the Austrians which he lured into the vicinity of Ulm and then the Russians that he pursued east along the Danube. These lines were always protected by some portion of his force. Further, he structured a center of operations first at Augsburg then at Munich[2] from which to control and support his operations.	Grant's line's of operation were varied and allowed him the opportunity to shift resources around the perimeter of the Confederacy with virtual impunity. The Confederacy on the other hand was forced to operated on internal lines with specific hubs that controlled all lines of operation. It was those hubs, i.e. decisive points, that Grant oriented Sherman, Banks and Sigel upon.
4. Culminating Points	Alexander clearly understood the need to maintain his combat power. He continually engineered his campaign to ensure his forces would remain well supplied and manned. Witness his pauses in the winter of of 334 B.C[3]. and 333 B.C.[4]	Napoleon was close to culmination as he pursued the Russian force under Kutusov east along the Danube. It was this realization that made him decide to lure the Russians into battle in the vicinity of Olmutz. He chose to give battle at Austerlitz before the Russians could be joined by the Archduke Charles and the before a possible intervention by the Prussians[5]	Culmination of the Confederate forces is ultimately what Grant was trying to induce. His coordinated attacks upon the Confederacy's systems of supply and communications as well as main forces were designed to ensure the Confederacy remained on the defensive and allow Grant the opportunity to initiate decisive operations. For his own part, Grant knew the Confederate's would be hard pressed to induce his culmination.

[1] James M. Dubik, LTC, USA. Grant's Final Campaign: A Study of Operational Art. (Ft Leavenworth, KS: United States Army Command and General Staff College, School of Advanced Military Studies, 1992), p. 11.
[2] David G. Chandler, The Campaigns of Napoleon. (New York, NY: Macmillan Publishing Co. Inc., 1966), p. 403.
[3] J.F.C. Fuller, The Generalship of Alexander the Great (Westport: Greenwood Press, 1960), p. 90.
[4] Ibid, p. 96.
[5] Chandler, p. 408-410.

APPENDIX C: THE EVOLUTION OF OPERATIONAL ART



ENDNOTES

1. LTC Clayton R. Newell, "What is Operational Art?", Military Review, p.6.

2. FM 100-5, p. 5-2.

3. Ibid.

4. FM 100-5, p. 5-2.

5. Ibid.

6. Ibid, p. 5-3.

7. Ibid, p. 7-3.

8. FM 100-5. p. 7-9.

9. Ibid.

10. James J. Schneider & Lawrence L. Izzo, "Clausewitz's Elusive Center of Gravity", Parameters, September, 1987, p. 56.

11. FM 100-5, p. 7-10.

12. Ibid. p. 7-10.

13. Ibid, p. 7-11.

14. Schneider & Izzo, p. 57.

15. Ibid p. 57. See also James J. Schneider, Theoretical Paper No 4, "Vulcan's Anvil: The American Civil War and the Emergence of Operational Art", USACGSC, SAMS, 16 June 1991, p. 67.

16. Elmer C. May and Gerald P. Stadler, Ancient and Medieval Warfare, (West Point: United States Military Academy, 1980), p. 33.

17. Alexander was granted these titles as a result of both his birthright and military conquests. These titles effectively granted Alexander the right to make policy and wage war against Persia in the name of the League. The League was composed of most of the major Greek city-states with the exception of Sparta.

18. J.F.C. Fuller, The Generalship of Alexander the Great (Westport: Greenwood Press, 1960), p. 89.

19. Ibid, p. 81.

20. Ibid, p. 82-83.

21. Ibid, p. 83.

22. Ibid, p. 86-87.

23. Elmer C. May and Gerald P. Stadler, p. 36. May and Stadler characterize these phases as strategic in nature. Given our understanding of operational art today, the author has chosen to view these phases as representing two separate yet related campaigns designed to attain a strategic endstate -- the defeat of the Persians.

24. Fuller, p. 88.

25. Ibid, p. 90.

26. Ibid, p. 92.

27. Ibid, p. 100.

28. Elmer C. May and Gerald P. Stadler, p. 47.

29. Hans Delbruck, The History of the Art of War: Within the Framework of Political History, Volume I: Antiquity, (Westport: Greenwood Press, 1975), p. 181.

30. Fuller, p. 108.

31. Elmer C. May and Gerald P. Stadler, p. 45.

32. Ibid.

33. FM 100-5, p. 5-2.

34. Delbruck, p. 230.

35. Ibid, p. 180.

36. Ibid, p. 177.

37. Ibid.

38. Ibid, p. 231.

39. Ibid.

40. Ibid.

41. Ibid, p. 230.

42. Ibid, p. 231.

43. Major General J.F.C. Fuller, The Conduct of War: 1789 -1961, (New York, NY: Da Capo Press, 1961), p. 44.

44. Robert M. Epstein, Eagles Triumphant: 1809 and the Emergence of Nineteenth-Century Warfare, (Unpublished Manuscript that has been accepted for publication by Kansas University Press, 1993), p. 14.

45. Ibid, p. 58.

46. Ibid, p. 14.

47. Gunther E. Rothenberg, The Art of Warfare in the Age of Napoleon, (Bloomington, IN: Indiana University Press, 1980), p 101.

48. Ibid, p. 96.

49. David G. Chandler, The Campaigns of Napoleon, (New York, NY: Macmillan Publishing Co. Inc., 1966), p. 160.

50. Epstein, p. 25.

51. Peter Paret, "Napoleon and the Revolution in War", Makers of Modern Strategy: From Machiavelli to the Nuclear Age, (Princeton: NJ, Princeton University Press, 1986), p. 129.

52. Ibid.

53. Ibid.

54. Epstein, p. 18.

55. Ibid, p. 18-19.

56. Chandler, p. 154.

57. Ibid, p. 145.

58. Ibid, p. 150-151.

59. Ibid, p. 145-146.

60. Epstein, p. 19.

61. Paret, p. 131.

62. Epstein, p. 43.

63. Chandler, p. 1103.

64. Epstein ,p. 43.

65. Ibid, p. 44.

66. Chandler, p. 384-85.

67. Ibid, p. 384.

68. Ibid.

69. Ibid, p. 391.

70. Ibid, p. 396.

71. James M. Dubik, LTC, USA. Grant's Final Campaign: A Study of Operational Art. (Ft Leavenworth, KS: United States Army Command and General Staff College, School of Advanced Military Studies, 1992), p. 36.

72. Fuller, p. 78.

73. James J. Schneider, Vulcan's Anvil: The American Civil War and the Emergence of Operational Art. (Ft Leavenworth, KS: United States Army Command and General Staff College, School of Advanced Military Studies, 1991), p. 6.

74. Ibid, p. 8.

75. Fuller, p. 87

76. Edward Hagerman, The American Civil War and the Origins of Modern Warfare: Ideas, Organization and Field Command. (Bloomington, IN: Indiana University Press, 1988), p. xi.

77. Schneider, p. 18.

78. Ibid, p. 35-6.

79. Hagerman, xiii.

80. Robert M. Epstein, Ph.D. Lecture on the Strategic Background for the American Civil War, (Ft Leavenworth, KS: School of Advanced Military Studies, 19 November 1992)

81. Dubik, p. 7.

82. Ibid, p. 7-8.

83. Ibid.

84. Ibid, p. 14.

85. Ibid, p. 13.

86. Grant spread his armies to attack along multiple axes. Each was oriented a series of decisive points. In total, attack of these decisve points would cripple the Confederacy because it could not protect all of them . Grants plan is summarized in this extract quoted by Dubik on p. 12 of Grant's Final Campaign:

The main blow would be struck by the Army of the Potomac (commanded by General Meade) against the Army of Northern Virginia (commanded by General R.E. Lee), while simultaneous subsidiary objectives would be launched in the other theaters: by Sherman in Georgia; by Sigel in the Shenandoah Valley in combination with Crook in West Virginia; by Butler from the mouth of the James River; and by Banks from New Orleans against Mobile.

87. Dubik, p. 9-10.

88. Ibid, p. 20.

89. Hagerman, p. 293.

90. Ibid, p. xiii.

91. Dubik, p. 35.

92. Ibid, p. 36.

93. Ibid, p. 13.

94. David M. Glantz, COL, USA, "The Nature of Soviet Operational Art", Parameters, (Carlisle Barracks, PA: The United States Army War College, Spring 1985), p. 4.

95. I Mariyevski, "The Formation and Development of the Theory of Operational Art (1918-1938)", Selected Readings in the History of Soviet Operational Art, (FT Leavenworth, KS: Soviet Foreign Military Studies Office, 1990), p. 10-11.

96. Ibid, p. 11.

97. Ibid.

98. Jacob W. Kipp. Soviet Military Doctrine and the Origins of Operational Art, 1917-1936, Unpublished Manuscript, January 1993, p. 22.

99. Ibid, p. 22-23.

100. M. N. Tukhachevskii, New Problems in Warfare, (Carlisle Barracks, PA: United States Army War College (reprint), 1931), p. 3-4.

101. Kipp, p. 48-49.

102. Ibid, p. 22.

103. S.S. Kamenev, Commander of the Red Army, 1919-1924, as quoted in Glantz, p. 4.

104. Glantz, p. 5.

105. Svechin as quoted in Kipp, p. 42.

106. ibid.

107. Glantz, p. 6

108. V. K. Triandafillov, Nature of the Operations of Modern Armies, (Ft Leavenworth, KS: United States Army Command and General Staff College, School of Advanced Military Studies, (Reprint, 1929), p. 109.

109. Kipp, p. 53.

110. Ibid, p.58.

111. Ibid, p. 61. The 1936 Provisional Field Regulation (Vremennyy polevoy ustav RKKA 1936) codified many of the concepts that the Soviets had been debating for years. According to Kipp it placed "emphasis upon the 'decisive offensive on the main axis, completed by relentless pursuit' as the only means to bring about the total destruction of the enemy's men and equipment..."

112. M.V. Sahkharov, "Problems of Strategy and Operational Art in Soviet Military Works (1917-1940)", Selected Readings in the History of Soviet Operational Art, (FT Leavenworth, KS: Soviet Foreign Military Studies Office, 1990), p. 67.

In fact the Soviets were never able to achieve the objective design for their Army before the Second World War. Devisive arguments and internal political problems culminated in the Stalinist purges of the Soviet military elite and the disbanding of most large mechanized formations by 1939. Stalinist rhetoric based on political ideology and a "cult of personality" had replaced a well thought military doctrine derived from an extensive study of the the conduct and theory of war. The Soviets were to pay a steep price for this diversion in upcoming World War.

113. Glantz, p. 6.

114. Ibid.

115. Richard Simpkin, Deep Battle: The Brainchild of Marshal Tukhachevskii, (London: Brassey's Defense Publishers, 1987), p. 22-23

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