

2

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE 5/5/97		3. REPORT TYPE AND DATES COVERED MONOGRAPH
4. TITLE AND SUBTITLE Operational Art in Classical Warfare: The Campaigns of Alexander the Great (U)			5. FUNDING NUMBERS	
6. AUTHOR(S) MAJ MARK G. CAREY, USA				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) School of Advanced Military Studies Command and General Staff College Fort Leavenworth, Kansas 66027			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Command and General Staff College Fort Leavenworth, Kansas 66027			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; Distribution Unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) See Attached				
14. SUBJECT TERMS Operational Art Alexander the Great Classical Warfare Conquest of Persia			15. NUMBER OF PAGES 56	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UNLIMITED	

19971106 154

OPERATIONAL ART IN CLASSICAL WARFARE: THE CAMPAIGNS OF ALEXANDER THE GREAT

**A MONOGRAPH
BY
Major Mark G. Carey
Armor**



**School of Advanced Military Studies
United States Army Command and General Staff
College
Fort Leavenworth, Kansas**

SECOND TERM AY 96-97

Approved for Public Release Distribution is Unlimited

DTIC QUALITY INSPECTED 6


SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

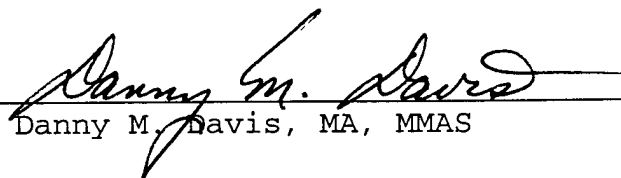
Major Mark G. Carey

Title of Monograph: *Operational Art in Classical Warfare:
The Campaigns of Alexander the Great*

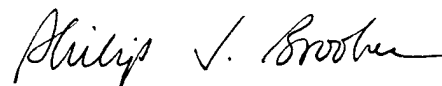
Approved by:



LTC Clarence E. Taylor, MMAS Monograph Director



COL Danny M. Davis, MA, MMAS Director, School of
Advanced Military
Studies



Philip J. Brookes, Ph.D. Director, Graduate
Degree Program

Accepted this 22d Day of May 1997

Operational Art in Classical Warfare: The Campaigns of Alexander the Great

A Monograph
by
Major Mark G. Carey
Armor

School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas
Second Term AY 96-97

Approved for Public Release; Distribution is Unlimited

ABSTRACT

Operational Art in Classical Warfare:

The Campaigns of Alexander the Great

by MAJ Mark G. Carey, USA, 42 pages

One of the greatest generals and practitioners of military craft fought successfully over two thousand years ago. Between 335 and 325 B.C., Alexander the Great campaigned into Persia and India with the aim of conquering the known world. His distinguished military victories are a clear testament to his tactical brilliance; however, his genius extended beyond the bounds of tactics alone. He linked the tactical and strategic levels of war.

This monograph examines these campaigns, using the definitions and criteria for operational art found within the current U.S. Army *FM 100-5 Operations*, to determine if Alexander the Great used operational art during this period of classical warfare. Along with this doctrinal view, two theories that assert that operational art began in the nineteenth century are considered. Theories provide students with useful tools for historical analysis; yet, they are not the final determining factor and must be tempered with an understanding that the criteria could skew the conclusions. Furthermore, focusing merely on modern campaigns limits the scope of study and excludes potentially valuable bodies of knowledge from the student of military history.

A review of history reveals that Alexander the Great used operational art during his campaigns into Persia and India. He met the modern Army doctrinal criteria of applying a broad vision to guide all decisions, determining clear strategic military goals, establishing military conditions, conducting simultaneous and sequential operations, and efficiently allocating his resources. Technological innovation has dramatically changed the science of war since ancient times; however, the art of war has slowly evolved to take advantage of this change. Despite the changes in the ways and means of warfare, the requirement to logically connect tactical victories to achieve strategic aims has endured. Furthermore, if operational art has existed since the time of Alexander the Great, one may conclude that some form of operational art will continue to evolve and withstand the changing conditions of future warfare.

Table of Contents

I. Introduction	1
II. Operational Art.....	4
Theoretical Views	4
Doctrinal View	10
III. Alexander the Great's Campaigns	13
IV. Analysis.....	34
V. Conclusions	39
VI. Endnotes	43
VII. Maps:	
1. Alexander's Campaigns (336-323 B.C)	48
2. Battle of Guagamela (331 B.C.)	49
3. Battle of Hydaspes (326 B.C)	50
VII. Bibliography.....	51

I. Introduction

Students of military history seeking to master their profession tend to focus on modern warfare. Yet, one of the greatest generals and practitioners of military craft fought successfully over two thousand years ago. When he died in 323 B.C., Alexander the Great had “subdued the largest tract of the earth’s surface ever to be conquered by a single individual ... and ruled as overlord, emperor or king from Mount Olympus to the Himalayas.”¹ His distinguished military victories are a clear testament to his tactical brilliance. However, his genius extended beyond the bounds of tactics alone. Between 335 and 325 B.C., Alexander the Great practiced operational art as he achieved his goals during his extended campaigns into Egypt, Persia and, ultimately, India with the aim of conquering the known world.

The current U.S. Army *FM 100-5 Operations* defines operational art as “the skillful employment of military forces to attain strategic and/or operational objectives within a theater through the design, organization, integration, and conduct of theater strategies, campaigns, major operations and battles.”² Furthermore, it states that “operational art translates theater strategy and design into operational design which links and integrates the tactical battles and engagements that, when fought and won, achieve the strategic aim.”³ Relying solely on the definition within *FM 100-5*, it is possible that operational art existed during the classical warfare period over two thousand years ago.

Carl von Clausewitz noted that theory should be used “to illuminate all phases of warfare in a thorough critical inquiry ... [it] then becomes a guide to anyone who wants to learn about war from books; it will light his way...”⁴ Thus, in addition to a doctrinal view, theories on the definition and origins of operational art must also be considered. Two of these theories, developed by current professors at the U.S. Army’s School of Advanced Military Studies, assert that operational art began in the nineteenth century. One, offered by Dr. James Schneider, argues that operational art began during the American Civil War. Another, by Dr. Robert Epstein, states that operational art began with the campaigns of Napoleon. A comparison of the definitions provided by Dr. Schneider, Dr. Epstein, and *FM 100-5* will help to show how theory and doctrine, while both useful tools, can offer different insights when studying military history.

If an examination of theory and doctrine reveals that Alexander the Great practiced operational art during his campaigns, then it could illustrate the timeless relevance of the operational level of warfare. The science of war has clearly changed dramatically over time with advances in technology, techniques and tactics of warfare. However, Alexander’s use of operational art in classical warfare shows that the art of war endures and evolves more gradually. While the actual execution of this operational art may continue to evolve, it will remain as a bridge between the tactical and strategic levels of war.

II. Operational Art

Theoretical Views

In 1989, Dr. Schneider published his thoughts on the evolution of operational art in the U.S. Army War College periodical *Parameters*. In an article entitled "The Loose Marble -- and the Origins of Operational Art," he argues that, until the American Civil War, armies sought a decisive battle of annihilation as the culmination of a campaign. Schneider echoes the views of other military theorists by labeling this the "strategy of a single point." He explains that this phrase was coined because the size of the battlefield in relationship to the entire theater of operations seemed to resemble a point on the ground.⁵

Schneider states that "before the evolution of operational art, movement of field forces in single dense masses obviated coordinating the operations of other forces."⁶ Since all military activities tended to cease following the decisive battle, military leaders did not need to focus on simultaneous or successive operations. Yet, Schneider emphasizes that these two characteristics "are in fact the heart of operational art."⁷ He concludes that, as operations began to expand across the breadth and depth of a theater, commanders started to "integrate these operations, separated in space and time, into one coherent whole. Thus, operational art and the operational campaign were born."⁸

In the *Parameters* article, Schneider offered twelve overall criteria to ascertain the existence of operational art. However, three years later, in a subsequent theoretical paper, he reduced that number to eight in a section addressing the structure of operational art.

In this more recent work, entitled “Vulcan’s Anvil: The American Civil War and the Emergence of Operational Art,” Schneider wrote that “in order for operational art to flourish and sustain itself creatively ... necessary and sufficient contextual conditions must first exist.”⁹ He goes on to acknowledge; however, that these conditions cannot exist before the American Civil War since they are a result of a series of technological innovations, such as railroads and the telegraph.¹⁰ Thus, by their very nature, these criteria automatically exclude all military campaigns prior to the American Civil War. An examination of these criteria will reveal that they are much more specific and restrictive than the criteria found in current U.S. Army doctrine. Despite the restrictive nature of Schneider’s criteria, a review of Alexander the Great’s campaigns will reveal that some, if not all, of them were met.

Schneider begins by stating that “operational art is characterized first by the distributed operation: an ensemble of deep maneuvers and distributed battles extended in space and time but unified by a common aim ... the retention or denial of freedom of action.”¹¹ Unlike previous classical “single point” warfare, he argues that operations that are extended

throughout a theater discourage commanders from concentrating their forces. He explains this by noting that distributed operations force military commanders to realize that "premature concentration meant envelopment and annihilation."¹² As a result, Schneider theorizes that the distributed operation must be the basic building block of operational planning and execution.

The second criterion offered for operational art is the distributed campaign. Schneider notes that in classical warfare a campaign was ultimately built upon seeking a decisive battle with the enemy. Conversely, he argues that "although a distributed campaign may consist of a single operation, in its fullest expression operational art, however, is characterized by the integration of several simultaneous and successive distributed operations in a campaign."¹³ Under these conditions, he posits that battles are now fought to "achieve or deny freedom of action rather than to attain total destruction of the enemy."¹⁴ As a result, distributed campaigns would, by necessity, begin to orient more on terrain than on the enemy's forces to sustain deep operational maneuver.¹⁵

Continuous logistics are Schneider's third requisite condition for operational art. In order to execute distributed campaigns, he argues that the flow of logistics must be continuous. A commander cannot sustain simultaneous and sequential operations without an efficient and effective

flow of supplies and materiel. Moreover, he contends that this was not possible before the advent of the railroad as a major transportation asset.

The fourth criterion, instantaneous command and control, focuses on the emergence of the telegraph as a method of rapid communication.

Schneider explains this by noting that:

Unlike classical conditions, the distributed deployment of forces creates a greater variety of unexpected or unanticipated tactical and operational possibilities. As a result this variety generates greater information. Since information is the basis of decision, the operational commander is confronted with many more decisions than his classical predecessor. The operational commander thus requires an instantaneous means of communication in order to adjust his distributed forces in rapid counteraction to the unexpected actions of the enemy.¹⁶

The operationally durable formation, the fifth criterion, refers to formations that are capable of indefinitely conducting successive distributed operations.¹⁷ Schneider asserts that, before the advent of the railroad and telegraph, units were only tactically durable. That is, they were only capable of fighting battles independently for about one day. Thus, the ability for large, army sized units, to operate continuously is critical to conducting sequential and successive operations. For this reason, Schneider strongly believes that "the operationally durable formation is the primary engine of operational design: it is the hammer that drives the operational chisel."¹⁸

The sixth criterion, operational vision, interjects the human factor of leadership into operational art. Schneider alludes to an idea that the gift of operational vision can be associated with mental agility or, "the ability to

react to incoming information faster than it arrives.”¹⁹ He reasons that the increased distances and size of the theater of operations require commanders to process information much more rapidly so that decisions can be promptly disseminated to subordinates.

The idea of a distributed enemy is the seventh criterion. Here Schneider states that “an operational system evolve[s] most effectively against a similarly designed opponent, an opponent that constitutes the stone upon which the operational artist performs his creative work.”²⁰ Essentially he believes that operational art cannot be practiced in its truest form unless the enemy is attempting to use it as well.

Schneider’s final criterion discusses distributed deployment. This idea focuses on the growing importance of a nation’s wartime production base. He points out that “deployment patterns and force posture [have] to take into consideration the defense of key resource and industrial areas.”²¹ Overall, distributed deployment emphasizes sustaining a protracted war with national assets.

In his conclusion, Schneider summarizes his theory by offering that “operational art is the creative use of distributed operations for the purposes of strategy.”²² He reemphasizes his belief that a distributed operation is “a coherent system of spatially [sic] and temporally extended relational movements and distributed battles, whether actual or threatened, that seek to seize, retain or deny freedom of action.”²³ The destruction of the enemy

force in a climactic battle is no longer the focus. Instead, distributed operations strive to influence the enemy's capability to wage war.

Dr. Robert Epstein offers similar criteria to those of Dr. Schneider. He ultimately concludes, however, that operational art began before the American Civil War. The cornerstone of Epstein's theory is that the "creation of divisions and more specifically corps altered the intellectual approach to the conduct of war ... [since] armies organized into divisions and corps could be dispersed across broad fronts and maneuvered according to a preconceived plan."²⁴ Epstein contends that, since Napoleon was the first to institutionalize army corps into warfare, operational art began with the campaigns of Napoleon. Furthermore, he argues that this development altered the intellectual approach for conducting military campaigns.²⁵

In this key aspect, Epstein and Schneider agree. That is, both believe that distributed maneuver, whereby armies conduct maneuvers throughout a theater of operations, is a fundamental requirement for the existence of operational art. Here, Epstein concludes that the "deployment and use of different units in a theater of operations meant that there would be not one battle but a series of battles tied to a larger plan of operations or plan of campaign."²⁶ As a result, a level of war emerged that linked individual battles with theater-wide maneuvers. This he calls the operational level of war. Moreover, he concludes that the process of thought and its associated actions at this new level of war is called operational art.²⁷

From this conclusion, Epstein develops some conditions that must exist to enable the practice of operational art. First, he contends that operational campaigns require a new method of command. Since army commanders could no longer directly control corps practicing distributed maneuver, "broad mission orders would have to be issued to subordinated commanders, and so the nature of command would have to be decentralized."²⁸ Furthermore, if this form of command is to succeed, commanders at all levels must have common doctrinal understanding of tactical and operational techniques.

If the corps is to be the cornerstone of operational maneuver, Epstein reasons that conscription of forces is essential. He states that "with conscription, armies grew in size which in turn led [sic] to the creation of larger formations such as army corps to more easily command and control them."²⁹ Once the corps are formed, a continuous draw from a nation's manpower is necessary to sustain this force structure.

Epstein further argues that "armies organized into corps often could not be destroyed in one battle but in a series of battles."³⁰ In the early campaigns of Napoleon, decisive battles were still possible since enemy forces were not similarly formed. Yet, when rival armies that were organized into corps fought each other, symmetry was achieved. Epstein concludes that, "when symmetrical armies fight, they are rarely overthrown in a single big

battle; instead, victory in a campaign is a product of a series of related engagements.”³¹

Overall, Epstein theorizes that operational art was not possible before the development of division and corps size organizations. This development allowed armies to conduct distributed maneuver across a theater of operations. As other belligerents developed these capabilities, victory in war was no longer possible by winning a single decisive battle. Instead, success could only be achieved by conducting campaigns that linked tactical battles logically to achieve strategic aims. Epstein views this linkage as the operational level of war and states that the actions and thoughts within this level of war constitute operational art.

Doctrinal View

While theory provides a framework for students to organize knowledge, doctrine can be described as the best available military thought that can be defended by reason. The U.S. Army’s keystone manual for warfighting doctrine is FM 100-5 *Operations* (1993). The introduction to this manual emphasizes that the “Army’s doctrine lies at the heart of its professional competence ... [and] is the authoritative guide to how Army forces fight wars ...”³² It acknowledges, however, that military history and theory are critical sources that impact on the development of doctrine. A review of current doctrine will reveal how military leaders, mindful of theory

and history, articulate the accepted requirements for operational art. This Army operations manual pronounces that

tactical battles and engagements are fought and won to achieve operational results. No specific level of command is solely concerned with operational art ... the intended purpose, not the level of command, determines whether an Army unit functions at the operational level ... In its simplest expression, operational art determines when, where and for what purpose major forces will fight. It governs the deployment of those forces, their commitments to or withdrawal from battle, and the sequencing of successive battles and major operations to attain major objectives ... without operational art, war would be a set of disconnected engagements, with relative attrition the only measure of success or failure.³³

All of this is not possible without a commander who possesses broad vision. Furthermore, this manual declares that in order to practice operational art, a commander must answer three questions. Within these questions lie the Army's doctrinal criteria for operational art. A commander who addresses each of these questions and focuses a campaign accordingly is practicing operational art.

The first question is: "What military conditions will achieve the strategic objectives in the theater of war or theater of operations?"³⁴ To answer this question, a commander must identify the military strategic goals that will achieve the nation's strategic objectives for the conflict. The commander must then use available forces to establish the military conditions that will achieve those military goals.

The second question a commander must answer is: "What sequence of actions is most likely to produce these conditions?"³⁵ Inherent in this question is the requirement for sequential and/or simultaneous operations to establish the previously identified military conditions necessary to accomplish the military goals.

The final question asks: "How should the commander apply military resources within established limitations to accomplish that sequence of actions?"³⁶ The commander must effectively allocate all potential resources to achieve operational goals.

Thus, current doctrine maintains that operational art facilitates the linkage of tactical battles and strategic aims. It then articulates three questions that the operational commander must answer to achieve those aims. An examination of these questions reveals five criteria for the existence of operational art: identification of military strategic goals, establishing military conditions, sequential and simultaneous operations, resource allocation, and commanders that display a broad operational vision.

Looking back at the campaigns of Alexander the Great, through the lenses of theory and current army doctrine, will reveal that this legendary Macedonian warrior practiced operational art. While victory in classical warfare was indeed decided many times by a single decisive battle, Alexander's campaigns to conquer the entire known world of his era contain the seeds of modern operational art.

III. Alexander the Great's Campaigns

The Bow is Drawn

In 336 B.C., the twenty year old Alexander rose to power following the assassination of his father, Philip II of Macedon. Before his death, Philip was planning a crusade against the Persian Empire. However, the sudden absence of the strong rule of Philip II briefly threatened the unity of a loose confederation of Greek states called the League of Corinth.³⁷ Since Philip had not yet firmly consolidated this League, "the Greeks regarded their treaties with him as terminated by his death."³⁸ However, Alexander quickly demonstrated his military genius as he "swept like a whirlwind"³⁹ through the states to reaffirm the control established by his late father.

The army that Alexander led had been originally formed and organized by his father, Philip. This was a combined arms force that included "heavy cavalry and heavy infantry for close-order field battles; light cavalry and light infantry for protective and loose-order operations, and artillery and engineers for sieges."⁴⁰ Indeed, the Macedonian army reflected the far-sighted planning of its King in that

Philip decided to make his cavalry his decisive arm; that is, it would replace the phalanx as the instrument of shock, while the phalanx he intended to form would constitute the base of cavalry action. Instead of assaulting, normally the phalanx would threaten to do so, and through the terror its advance always instilled it would immobilize the enemy and morally prepare the way for the decisive charge.⁴¹

Since the cavalry traditionally came from aristocracy and fought under the King's personal leadership, they came to be called the Companions. Of the 5,000 cavalry that crossed into Asia with Alexander, approximately 1,800 were Companions. These were organized into *ile* (squadrons) with a strength of between 200 and 300 horsemen. These *ilai* were further divided into two *lochoi* (companies).⁴² When the Companions fought, they formed each squadron into a delta-shaped wedge formation that "permitted rapid wheeling and withdrawal and was ideal for penetrating other cavalry formations."⁴³ Additionally, since Companions were armed with a sarissa, a 4.5 meter long spear, they were able to use this weapon to penetrate infantry formations that were typically armed with the shorter 2.5 meter hoplite spear.⁴⁴ In battle, Alexander traditionally rode and fought at the head of this Companion cavalry.

In addition to the Companions, Alexander's army contained 1,800 Thessalian cavalry. These cavalry men were possibly the finest cavalrymen in the army. Although they were organized into squadrons like the Companions, they fought in a diamond-shaped formation during battle.⁴⁵

The core of the Macedonian army was the phalanx infantry. These Foot Companions were organized into *taxis* (brigades) of about 1,500 soldiers. Additionally, there was an elite Guard known as the Hypaspists or Shield Bearers. Like the Companion Cavalry, the phalanx infantry's standard weapon was the sarissa.⁴⁶

The phalangite wielded his sarissa with both hands, keeping it carefully aligned with the weapons of his comrades. Phalanx drill called for the sarissas of the first five ranks to project beyond the front rank men in the compact formation used for attack ... The result was a towering hedge of sarissas, impenetrable to enemy infantry, cavalry, and even ... elephants.⁴⁷

Alexander firmly believed in the principle of “march divided, fight united ... he marched usually in two divisions, one conducting the impedimenta (logistics) and his own traveling light; his speed of movement was extraordinary.”⁴⁸ Indeed, this ability to move faster than his adversaries was a key to his success. Once in contact, the phalanx was typically in the center of a battle formation with the Companion cavalry on the right flank and the Thessalian cavalry on the left. However, Alexander did alter his tactics and formations when conditions required him to do so.

By 335 B.C., he had solidified the League except for the city of Thebes. Upon reaching that city, he initially called upon them to honor their allegiance to the League. However, the Thebans sent an insulting reply and attacked Alexander’s advance guard. So, Alexander “brought forward the phalanx, drove the Theban forces which were outside the walls back ... and entered Thebes on the heels of the rout before the gate could be closed ... A massacre followed in which 6,000 Thebans are said to have perished.”⁴⁹ Ultimately, the city was razed to the ground and the survivors were sold into slavery.

While historians view this as one of Alexander's major military crimes, J.F.C. Fuller notes that "at the time, if he was to be assured of a stable home base from which to operate once he crossed into Asia, it was strategically imperative for him to teach the Greeks a lesson they would not readily forget."⁵⁰ By 334 B.C., Alexander had reestablished the Macedonian hegemony of the League of Corinth and was ready to plan his invasion of Persia.

Historians vary in their opinions as to why Alexander invaded Persia. W.W. Tarn, regarded as one of the greatest modern scholars on Alexander, believes that, "the primary reason why Alexander invaded Persia was, no doubt, that he never thought of not doing it; it was his inheritance."⁵¹ Fuller appears to echo this idea in his articulation of the aim for this war. He argues that it was to avenge an earlier invasion by the Persians in 490 B.C., led by King Xerxes. Furthermore, Fuller contends that it is unlikely that Alexander's initial aim was to conquer the entire Persian Empire.⁵² However, historian Arther Ferrill notes that when Alexander first arrived in Asia, he planted his spear into the ground and claimed "from the gods I accept Asia, won by the spear."⁵³ From this, one may infer that Alexander intended from the beginning of this campaign to become ruler of all Asia, not just Persia.

Alexander's strategic plan was to "meet and defeat the Persian army of Asia Minor in the field and then ... to march through central Asia Minor to

gain military control of the entire area.”⁵⁴ However, the Persian naval superiority affected Alexander’s campaign plan. Because the Persian fleet was much stronger than the League of Corinth’s fleet, Alexander knew he could not defeat the Persians in direct naval battle. Instead, “Alexander formed the clever scheme of paralyzing the maritime superiority of his opponent by first conquering with his land army the Mediterranean coast regions of the Persian empire.”⁵⁵ Moreover, Fuller concludes that the aim of this strategy was “not only to deprive his enemy of his sea power, but simultaneously to acquire it and thereby win the command of the eastern Mediterranean, and secure his home base and his conquests in Asia Minor for good and all.”⁵⁶ By neutralizing Persian naval power, his lines of operation would be secure and would enable him to use the sea to supply his forces in the field. With this plan in mind, Alexander was ready to begin his campaign into Persia (map 1).

The Arrow Flies

In the spring of 334 B.C., the twenty-two year old Alexander led the Macedonian army, composed of approximately 30,000 infantry, including light troops and archers, and over 5,000 cavalry, across the Hellespont into the continent of Asia.⁵⁷ To control Macedonia and the League of Corinth in his absence, he named Antipater as deputy hegemon and provided him with about 12,000 phalanx infantry for security.⁵⁸ Once Alexander’s army was across the Hellespont, it linked up with a force of 8,000 infantry, sent two

years earlier by Philip to establish a bridgehead on the continent. This would give Alexander's combined field army a strength of about 45,000.⁵⁹

When the Persians received news of Alexander's crossing into Asia, they sent regional forces to halt the advance of the Macedonian king. Three days after his army completed crossing the Hellespont, Alexander encountered the Persian forces along the Granicus River and engaged in the first battle of this campaign. Facing Alexander were 20,000 cavalry along the river bank and 20,000 Greek mercenary hoplites in phalanx formation on the high ground to the rear.⁶⁰ Parmenio, Alexander's second-in-command, recommended waiting until morning in order to catch the Persians in a surprise attack. However, Alexander decided to attack at once.

The ancient historian Arrian spoke of "a profound hush as both armies stood for a while motionless on the brink of the river, as if in awe of what was to come."⁶¹ Upon command from Alexander, a cavalry squadron led by Socrates moved towards the center of the line and charged into the middle of the Persian cavalry on the far bank. Arrian vividly describes this initial contact.

The leading files under Socrates were met as they gained the river bank by volleys of missiles from the Persians, who kept up a continuous fire into the river ... a hand-to-hand struggle developed, the Macedonian mounted troops trying to force their way out of the water, the Persians doing their utmost to prevent them ... the first to engage the Persians were cut down and died a soldier's death, though some of the leading troops fell back upon Alexander, who was now on his way across: indeed, he was almost over, at the head of the army's right wing ... a moment later he was in the thick of it ... round him a violent

struggle developed, while all the time, company by company, the Macedonians were making their way over the river ...⁶²

The Macedonians eventually broke the center of the Persian cavalry line as more of Alexander's forces made it across the river. When the center broke, the wings of the formation gave ground as well. Alexander wisely did not pursue these retreating cavalry forces. Instead, he led his cavalry against the flank and rear of the Greek hoplite infantry as his Foot Companions attacked their center. The Greek mercenaries were trapped "in a pocket with nowhere to run ... the carnage was great ... only 2,000 were taken alive."⁶³ Alexander had gained his first victory in Asia Minor.

Following this victory, Alexander's actions "heralded his policy to win the war through conciliation."⁶⁴ He selected a Macedonian general to govern that region of Asia Minor. However, he did not give him a traditional Macedonian title. Instead, he gave him the old Persian title of satrap, or governor, and instructed him to collect the same tribute from the inhabitants as they had previously paid to Darius, the King of Persia.⁶⁵ Alexander understood that his long lines of operation would be less threatened if the local populace did not see themselves as conquered peoples. This would allow him to reduce the required garrison forces and enable him to use the maximum combat force against the enemy army.

As word of his victory at the Granicus spread, the neighboring regions of Asia Minor fell to Alexander's army without fighting. As he moved

through these satrapies, he continued to show that “he came not to enslave but to liberate, and was minded to pay respect to national characteristics.”⁶⁶ As he marched through Asia Minor, he restored democracies and abolished the payment of tribute to Persia. As a result of these policies, “everywhere the liberation from Persian rule was greeted with enthusiasm and Alexander celebrated as the liberator.”⁶⁷ Alexander had achieved his first strategic objective by liberating the Ionian Greek states during his first campaign season.

As planned, he next moved into central Asia Minor to secure control over these newly liberated states. In April of 333 B.C., he took the city of Gordium. Here Alexander added to his rapidly spreading fame by solving the riddle of the gordian knot, a knot on the yoke of an ancient wagon in the temple of Zeus at Gordium.⁶⁸ The legend in the ancient world said that the person who untied the knot would become the King of Asia. Alexander cut the knot with his sword.

In the fall of that year, Alexander discovered that Darius had mobilized a large army at Babylon. Alexander understood that he must move quickly to seize the Mediterranean coast before Darius could combine his naval power and land army to trap him in Asia Minor.⁶⁹ In late October of 333 B.C., while Alexander moved along the coast towards Syria, Darius maneuvered his army through some mountain passes and placed himself at the rear of Alexander’s forces. Realizing that his lines were cut, Alexander

turned his army and finally gained the battle he sought against Darius' main army. The Battle of Issus was a disastrous defeat for the Persian army. Moreover, once the Persian army was shattered, Darius fled from the field and the Macedonians captured his mother, wife, and children. Following the battle, Alexander did not attempt to tactically exploit the victory. Instead, he stayed focused on his strategic aim of gaining command of the sea by occupying the Phoenician coastal cities.⁷⁰ The victory at Issus was "strategically decisive because it gave Alexander more than a year to complete the conquest of the Mediterranean coast before facing Darius in the field again ..."⁷¹

As Alexander continued his march down the coast, the Persian seaports readily capitulated to him until his army reached the city of Tyre. This was a "highly fortified island city with a circumference of nearly three miles and walls up to 150 feet high ... situated about half a mile off the coast, Tyre was also protected by water twenty feet deep around its edges."⁷² Thus, the people of Tyre believed that their island fortress could hold and did not allow Alexander to occupy it without a fight. Alexander, realizing that the fall of Tyre would mark the end of Persian sea power, besieged the city. A speech by Alexander to his army before the siege reveals his strategic outlook at that point in his campaign.

Friends and fellow soldiers, I do not see how we can safely advance upon Egypt, so long as Persia controls the sea; and to pursue Darius with the neutral city of Tyre in our rear and Egypt and Cyprus in enemy hands would be a serious risk ...

With our army on the track of Darius, far inland in the direction of Babylon, the Persians might well regain control of the coast, and thus be enabled with more power behind them to transfer the war to Greece ... but with Tyre destroyed, all Phoenicia would be ours, and the Phoenician fleet, which both in numbers and quality is the predominant element in the sea-power of Persia, would very likely come over to us ... our supremacy at sea would be guaranteed and the expedition to Egypt would thus be a simple matter, and finally, with Egypt in our hands ... we shall be able to march on Babylon with security at home, with enhanced prestige, and with Persia excluded not only from the sea, but from the whole continent up to the Euphrates.⁷³

As Alexander's army began the siege in January 332 B.C., the news of his victory at Issus had spread along the coast. As a result, all of the Phoenician squadrons of the Persian fleet, except those from Tyre, agreed to serve under Alexander. He quickly used this new fleet of 220 warships to assist in his siege operations of the island city, ending any hopes of relief within.⁷⁴ However, the city was able to hold out for seven months until the Macedonians successfully stormed the walls in August. Occupation of this city completed Alexander's goal of control of the eastern Mediterranean. His campaign along the coast gave him control over all former Persian naval bases and naval supremacy over the eastern Mediterranean. With his sea lines of operations now secure, he was able to focus exclusively on land operations.⁷⁵

Before the siege operation ended, envoys from Darius arrived to negotiate the return of the King's family. Darius' offer included a large sum of money, all territory west of the Euphrates to the Aegean Sea, and

marriage to his daughter to seal the new alliance with Persia.⁷⁶ Alexander's reply reveals his ultimate strategic objective. He wrote that "he had no need of Darius' money, nor was there any call upon him to accept a part of the continent in place of the whole. All Asia, including its treasure, was already his property, and if he wished to marry Darius' daughter, he would do so, whether Darius liked it or not."⁷⁷ This made it clear that war would continue until Alexander had achieved hegemony over all of Asia.

As Alexander clearly expressed in his oration at Tyre -- Egypt must be his army's next objective. He understood that securing Egypt would complete his hold on the eastern Mediterranean and enable him to campaign inland towards Babylon.⁷⁸ The only resistance met, as his army marched south to Egypt, was at the fortress city of Gaza. However, after a two month siege, the last impediment to Egypt fell. Alexander marched into Egypt without further fighting and the Egyptian people welcomed him as "their deliverer from the Persian yoke."⁷⁹

In the city of Memphis, Alexander wisely gave sacrifice to Egyptian gods. This was "a political act of high importance that made a profound impression on the Egyptians, for nothing had outraged them more than the [Persian] desecration of their temples..."⁸⁰ Again Alexander understood the importance of not being viewed as an oppressor. He realized that the main threat to his security in Egypt was from internal insurgencies, not external attack. Once he renewed his campaign into Persia and eventually India, he

could not afford to send forces to restore control in his rear.⁸¹ Alexander stayed in Egypt through the winter of 332-331 B.C. to reinforce his army and prepare for the next phase of his campaign.

In the spring of 331 B.C., Alexander marched north out of Egypt to renew his fight against Darius.⁸² Initially, he marched along the coast so that he could readily supply his 47,000 man army by sea. He then turned east towards the Euphrates, reaching the river by August.⁸³ Here he learned that Darius' large army was near Babylon to the south. However, Alexander understood that a direct move to Babylon would be difficult to support logistically. Instead, he bridged and crossed the Euphrates and moved east along the foothills of the Armenian mountains through countryside rich in supplies and forage for his army.⁸⁴ Alexander's move away from Babylon forced Darius to leave his position and move north across the Tigris River to seek battle with Alexander.

By late September 331 B.C., the armies were within striking distance from each other. On October 1, after conducting a thorough reconnaissance of the area, Alexander attacked Darius on the plains near the village of Guagamela (map 2). While Arrian writes that Darius' army was 1,000,000 strong, modern historians estimate his strength between 100,000 and 250,000 men.⁸⁵ Nevertheless, by all accounts the Persian army was enormous and dramatically outnumbered Alexander's force.

Darius planned to execute a double envelopment by conducting massive cavalry attacks against both of Alexander's wings in conjunction with a chariot attack against his center. Alexander intended to fight a battle similar to his victory at Issus. He wanted his left wing under Parmenio to fight a defensive battle while he waited for an opportunity to attack the Persians with the Companion cavalry on the right. The result would be "to catch Darius again between the hammer of the Macedonian cavalry and the anvil of the Phalanx."⁸⁶

Darius attacked first with his chariots. However, Alexander's skirmishers, armed with javelins, moved aside and killed most of the drivers or horses as they passed through the formation. The Macedonian phalanx opened ranks and allowed the remaining chariots to ride through until the cavalry rode them down. Darius' first assault had failed. The Persians then executed a heavy attack against Alexander's left wing. As Parmenio was quickly flanked, other Persian troops had success against the Macedonian left center. However, when Darius pressed the attack by moving against Alexander's right, the Persian cavalry opened a gap between the Persian left infantry and the cavalry. Alexander immediately formed the Companion cavalry into a wedge formation and charged. This attack broke the center of the Persian line as the Macedonian infantry also closed and rushed through the gap. Again, Alexander defeated the Persians and Darius was forced to

flee. The rout of the Persian army at Guagamela destroyed Darius and allowed Alexander to march on to Babylon without further battle.⁸⁷

As in his previous victories, Alexander set out to consolidate his power. Yet, "his problem was not only how to reorganize his conquests, but how, with Macedonia and Greece, to weld them into one world power. This his genius told him he could never do by force alone; but only through the willing cooperation of the conquered peoples."⁸⁸ To gain that cooperation, he appointed a Persian as satrap. To balance that political appointment, he assigned a Macedonian general to command the troops remaining in Babylon.

After Babylon, Alexander's army marched to Susa and took the city without any resistance. After reinforcing his army and reorganizing them to make them more mobile, he set out for the Persian capital city of Persepolis. For this operation, he divided his army, sending Parmenio with the baggage train, Thessalian cavalry, and the more heavily armed soldiers ahead along the road. Alexander led the Companion cavalry and the lighter armed infantry on a forced march through the mountains to seize a key defile called the Persian Gates.⁸⁹ He quickly overwhelmed the force holding that ground and rapidly advanced into the capital. In January 330 B.C., the palace in Persepolis was set ablaze and Alexander declared the crusade against Persia complete.⁹⁰ In June of that year, Alexander learned that Darius was dead. He was the undisputed King of Persia.

Alexander's next objective was the conquest of India. However, before he could begin that campaign, he first fought the northeastern satrapies of the Persian empire to secure his strategic flank.⁹¹ Two years later, in the spring of 327 B.C., Alexander's army began this aggressive new campaign.

The army that Alexander led into India was smaller than the one he had crossed the Dardanelles with six years earlier. His Companion cavalry was 5,000 strong and he had between 27,000 and 30,000 infantry.⁹² As Alexander set out to conquer India, his vision of that area was much different from the way it is depicted on modern maps. Alexander perceived India as a "peninsula of no great depth, which jutted eastward to the sea, and that on its northern flank it was bordered by the chain of the Paropamisus mountains, north of which, at no great distance ... flowed the ocean, which washed their foothills and swept round the eastern end of the peninsula."⁹³ Alexander saw India as an extension of the old empire of Darius and saw his invasion as the "necessary and inevitable completion of his conquest of that empire."⁹⁴ He was simply continuing his conquest of Asia.

In the summer of 327 B.C., Alexander divided his invasion force into two columns and set out for India. He placed the mercenaries and about half of the Macedonian troops under Hephaestion with the mission of securing the main road into India, destroying any centers of resistance they may have encountered, bridging the Indus River and then waiting for Alexander's forces to arrive. Alexander took the elite troops with him and, to protect

their left flank and line of communications, moved against the peoples north of the river in the mountain countries of Bajaur and Swat.⁹⁵ As Alexander's forces advanced, they considered all inhabitants new subjects. Indeed, while moving through India, they punished any who resisted with enslavement or massacre. As a result, most cities surrendered to his army without a fight.

By the spring of 326 B.C., Alexander linked up with Hephaestion at the bridge site on the Indus River. After crossing the Indus, Alexander marched his army to Taxila, which was the largest city between the Indus and Hydaspes Rivers.⁹⁶ Taxila fell without a fight, so Alexander quickly made preparation for continuing his move. However, he received word that an army led by Porus was gathering on the east bank of the Hydaspes to block his advance. Porus planned to use the river to anchor his main line of defense and to prevent Alexander's army from crossing.

Alexander set out with his forces and reached the Hydaspes by early June. Here Alexander began to plan exhaustively for the next phase of his campaign. The ships that his forces had used to cross the Indus were dismantled and transported overland to the Hydaspes -- a distance of approximately 300 kilometers.⁹⁷ Arrian describes Alexander's early weeks at the Hydaspes:

From the position he took up on the bank of this river he was able to see Porus, with all his forces, including his squadron of elephants, on the further side. At the point immediately opposite Alexander, Porus remained on guard in person, and sent pickets, each under command of an officer, to the various other points along the river where a crossing was practicable;

for he was determined to stop the Macedonians from getting over. Alexander's answer was by continual movement of his own troops to keep Porus guessing: he split his force into a number of detachments, moving some of them under his own command hither and thither all over the place ... Moreover, the continual movement of Alexander's boats up or down stream, the manufacture of skin floats filled with hay, and the sight of troops, cavalry and infantry, constantly massed on the river-bank, gave Porus no chance to relax his vigilance or to concentrate his defensive preparations upon any one point rather than another.⁹⁸

Initially, Porus had forces mirror Alexander's nightly moves to block any attempts to cross the Hydaspes River. However, after some time Porus stopped following the enemy forces, kept his army in its original position and posted only look-outs at key places along the river. Thus, "Porus, no longer expecting a sudden attempt under cover of darkness, was lulled into a sense of security - and this was Alexander's opportunity."⁹⁹

The size of the army opposing Alexander is a matter of dispute. However, noted historian Hans Delbrueck estimates the entire strength of that army at 20,000 to 30,000 men, including 2,000-3,000 cavalry. He emphasizes that the strength of the Indian army was in the squadron of 85 elephants.¹⁰⁰ The decisive battle would finally occur after Alexander unexpectedly crossed his army eighteen miles upstream from Porus' camp. Upon learning of the crossing, Porus moved his forces to meet Alexander in the Battle of the Hydaspes (map 3).¹⁰¹

Porus' plan centered around frightening off the Macedonian cavalry with his elephants. He deployed his 85 elephants in front of his infantry in

fifteen meter intervals. Beyond the elephants was his infantry which had cavalry protecting their flanks. In front of the cavalry were Porus' chariots.¹⁰² To oppose this force, Alexander deployed his force in its traditional formation, with the infantry phalanx in the center and the cavalry on the flanks. However, Alexander placed himself on the left wing for this battle, as that terrain was more acceptable for a flanking movement.¹⁰³

Alexander's plan called for the phalanx to remain back while he attempted to use his cavalry to attack the enemy in the front and then move quickly against their flank. Soon after the battle was joined, the flank attacks succeeded and the Indian chariots and cavalry, pursued by Alexander's forces, fell back behind the protection of the elephants.¹⁰⁴

The elephant-drivers forced their beasts to meet the opposing cavalry, while the Macedonian infantry, in its turn, advanced against them, shooting down the drivers, and pouring in a hail of missiles from every side upon the elephants themselves ... the monster elephants plunged this way and that among the lines of infantry, dealing destruction in the solid mass of the Macedonian phalanx ...¹⁰⁵

During this infantry clash, Alexander led his cavalry to exploit openings in the Indian flanks and rear. Eventually, the driverless elephants began to crush friend and foe alike. As the Macedonian phalanx pressed its hedge of sarissas forward into the melee, the cavalry continued its envelopment.¹⁰⁶ Finally, "attacked from all sides and crowded under the feet of their elephants, the Indians were slaughtered ruthlessly until pressure of

numbers opened a gap in the Macedonian cavalry cordon and allowed some of the infantry to escape.”¹⁰⁷ Porus’ army was shattered.

The wounded Porus was captured and brought before Alexander. When asked how he wished to be treated, Porus replied, “As a King.” Alexander, impressed by this reply, restored the Indian to his kingdom.¹⁰⁸ Fuller notes that this gesture was also driven by Alexander’s desire to establish a balance of power in India that would maintain control without requiring garrison forces. By restoring defeated kings to power, Alexander hoped that the local kingdom’s “mutual rivalries and antagonisms would enable him to play off one against the other and remain master of both.”¹⁰⁹ After this victory in the western Punjab, Alexander prepared to continue east to reach the ocean and thereby secure his eastern frontier.

The Arrow Falls

His army set out in the summer during the peak of the monsoon season, meeting only minor opposition until they reached the city of Sangala. There Alexander’s force met heavy resistance and suffered severe losses in a victorious assault. Indeed, his losses were so serious that he had to allow Porus to garrison these newly conquered territories. He then resumed the campaign and set out for the Hyphasis River. However, his army mutinied when it reached that river. After eight years of conflict and having marched nearly 17,000 miles, his army had tired of campaigning and wished to return home.¹¹⁰ After thinking in his tent for several days, Alexander agreed to

march back. Before leading them back to the Hydaspes River, he ordered his army to build twelve towering altars on the western bank of the Hyphasis River to mark the limit of his empire.¹¹¹

Upon returning to the Hydaspes, Alexander resolved to use the sea as much as possible for the return west. Fuller explains that Alexander was determined to reach the ocean, regardless of cost, and also desired to establish a sea route between the mouths of the Indus and Euphrates that would allow him to avoid returning over the long land invasion route he had taken.¹¹² Despite all that he had achieved, this may have been his grandest undertaking.

After building a fleet of about 1,000 vessels, Alexander's army prepared to move down the river in search of the ocean. Alexander planned to maneuver his forces along the banks in conjunction with the forces embarked upon the ships. In November 326 B.C., his force began the long journey home. Alexander and the Companions boarded the vessels and sailed down river while the rest of the army marched in three columns.

Craterus, with part of the cavalry and infantry marched along the right bank of the river; and along the left Hephaestion led the better part, including two hundred elephants. Each of these bodies was in light marching order, and, like, the modern army corps, some forty to fifty thousand strong; while Alexander's force in the river was so placed as readily to sustain either one at need, or to enable a crossing to be made.¹¹³

In July 325 B.C., Alexander's army arrived at the apex of the Indus River's delta, in the city of Patala, after some minor actions en route. Here

he placed his close friend Nearchus in command of a coastal expedition whose mission was to explore the coast in search of harbors or towns and ascertain the fertility of the region.¹¹⁴ Alexander then set out through Gedrosia with the remainder of the army. Eighty days later, Nearchus' expedition passed through the Strait of Ormuz. After a brief link up with Alexander, Nearchus led his small fleet through the Persian Gulf to the city of Susa on the Euphrates River. In 323 B.C., Alexander arrived in Susa and began planning to restore control and order throughout his vast empire.¹¹⁵

However, on June 2, Alexander became sick with a fever, possibly from malaria. Eight days later, as rumors of his imminent death began to spread, his soldiers gathered and began filing past his bed. Alexander died on June 13, before reaching the age of thirty-three.¹¹⁶ His empire did not survive without him. With no clear successor, civil war between his generals tore it apart.

Alexander's successful campaigns to conquer Persia dramatically altered warfare. His combined arms army crushed all opponents as it moved menacingly across the continent of Asia to accomplish his strategic goals -- he was never defeated in battle. Indeed, an analysis of these campaigns using doctrinal criteria will demonstrate that Alexander the Great used operational art to achieve these dramatic victories.

IV. Analysis

In conquering the world, Alexander proved that he was a brilliant field commander. Hans Delbrueck succinctly summarizes Alexander the Great as a military leader:

Skillfully he led his army toward the enemy, overcame terrain obstacles, had it deploy out of narrow passes, combined the various arms in a different way each time, according to the differing circumstances, for the strongest possible total effect, strategically secured his base and his communications, gave due consideration to his supplies, waited until the preparations and equipping were completed, stormed forward, [and] pursued the victory up to the point of the most extreme exhaustion of his forces ...¹¹⁷

Delbrueck's account of Alexander's performance during the campaigns into Persia and India is a synopsis of the current doctrinal requirements for operational art. Alexander met all the requirements of *FM 100-5 Operations*: broad vision, identification of military strategic goals, establishment of military conditions, simultaneous and sequential operations, and allocation of resources. A review of history will substantiate this assertion.

Broad Vision

Alexander understood the significance of the relationship between the political and military aspects of a campaign. Throughout these campaigns, he maintained his vision of appearing as a liberator instead of as a conqueror. After conquering a new city or region, he placed a new, loyal governor in charge, with the traditional Persian title of satrap. Furthermore, Alexander displayed a broad appreciation of local customs and beliefs as his

campaigns took him to Egypt. There Alexander enhanced his image as a liberator when he accepted the Egyptian gods and did not desecrate their temples as the Persians had done. Because he understood the linkage between political realities and military requirements, Alexander was consistently able to consolidate his policy of winning through conciliation.

Additionally, as his campaign progressed into India, he understood the changing requirements of this linkage. During this stage of his campaigns, Alexander realized that it was no longer a question of maintaining control over individual Persian satrapies. Instead, as India was composed of competing local kingdoms, Alexander chose a policy that "closely resembled that of the British in India in the eighteenth century -- to divide and rule."¹¹⁸ Restoring defeated kings to power allowed Alexander to maintain a balance of power in the region without leaving a large garrison of Macedonian soldiers behind. He was able to achieve regional stability because he was able to account for regional differences as he balanced political requirements and military objectives. Only a commander with broad operational vision could do that.

Identification of Military Strategic Goals

From the outset of his campaigns, Alexander's strategic aim was to conquer Persia by defeating Darius' army. While it is not clear when Alexander decided to continue his operations into India, it is clear that total conquest was the strategic goal when he did ultimately attack. This strategic

focus provided the foundation for everything that he did to expand his empire. J.F.C. Fuller highlights this by stating that, “in all his campaigns it was the same; his strategical aim was subordinated to his political aim, and his tactical aim to his strategical aim, and the result was a systematic and methodical conquest.”¹¹⁹

Establishing Military Conditions

Once Alexander identified his strategic goals, he organized his campaign to achieve those goals with military force. His rapid suppression of uprisings in Macedonia following Philip’s death enabled him to secure his home base before setting out on his ambitious conquests. Once the campaigns were underway, Alexander continued to link tactical engagements logically to establish the requisite military conditions to achieve strategic success.

After his victory at the Granicus established a bridgehead in Asia Minor, Alexander understood that he must defeat the Persian navy to secure his lines of communication back to his home base in Macedonia. However, he knew that he did not have the naval power to directly attack the powerful Persian fleet at sea. Instead, he chose to deny the Persian fleet access to ports by seizing its naval bases along the Mediterranean coast. Thus, his successful land campaigns established the necessary military conditions to achieve regional naval superiority.

Later, after defeating Darius' army at Issus, Alexander wisely chose not to pursue Darius into the heart of the Persian Empire. He realized that he must first secure his rear area of operations. This decision caused him to march into Egypt and deny the Persians the opportunity to rally forces against his base of operations. Additionally, securing Egypt allowed him to maintain a smaller garrison force in his rear area and take a larger army into the campaign east into Persia. Once again, he established the necessary military conditions for future operations.

After conquering Persia, Alexander wanted to continue east into India to complete his conquest of Asia. However, he understood the necessity of protecting his forward base of operations before continuing his campaign. He secured his strategic flank by suppressing organized guerrilla warfare in the northern Persian satrapies. This operation set the conditions for the conquest of India.

Alexander did not move directly at opposing armies in a rush to win a decisive battle. He consistently and logically established military conditions that would enable him to achieve his ultimate strategic aims. This recognition of the relationship between military conditions and strategic aims contributed significantly to his success on the tactical battlefield.

Simultaneous and Sequential Operations

Alexander displayed a keen grasp of the requirement for sequential operations to establish desired military conditions throughout the Persian

campaign. By the time he mounted his campaign into India, he had also begun to use simultaneous operations.

Alexander divided his force into two columns as he began his march into India. While both supported a common objective, each column had a distinct mission. One column, under Hephaestion, moved by direct route along the road to defeat enemy forces en route to the Indus River. Once there, that force's mission was to conduct bridging operations and wait for Alexander's column. Concurrent with this movement, Alexander's forces moved along a parallel axis to the north. These two columns worked independently for nearly a year before they linked up at the Indus River. Alexander had divided his army into two self-sustaining columns and conducted separate tactical engagements that focused on a common operational goal. This was distributed maneuver in its elementary form.

After the battle of the Hydaspes led to the ultimate conquest of India, Alexander once again employed simultaneous operations during his return march. In fact, he maneuvered his army in three columns over land while a part of his force embarked on ships. Later, Alexander reorganized his army into two separate forces. One force, under Nearchus, moved by sea along the coast ultimately arriving in Susa. At the same time, Alexander led the ground forces overland to the same objective. Alexander the Great had sewn the seeds of distributed joint operations.

Resource Allocation

Alexander would not have been able to conduct these massive campaigns had he not effectively orchestrated his logistics. Indeed, thorough planning was necessary for his army to continue through the deserts and barren regions of Persia and India. To accomplish this feat, Alexander implemented a variety of solutions to sustain his large army. These included:

the forming of alliances, ... establishment of magazines of provisions in desolate regions, the provisioning of the army by the fleet which sailed beside it in barren terrain, the division of the army into several units when supplies would be difficult to obtain, force-marching to conserve supplies, and the synchronizing of the march with the harvest dates throughout the conquered regions.¹²⁰

Alexander's meticulous planning for the logistical support of his army substantially contributed to the success of his extended campaigns. Interestingly, other armies that later followed the same routes lost significant portions of their men from starvation and dehydration.¹²¹ Clearly, his ability to overcome the constraints of that period, including barren terrain, limited overland transport and agricultural production levels, illustrates his remarkable skill at ensuring continuous logistical support for his army.

V. Conclusions

Using current U.S. Army doctrine as a guide, Alexander the Great used operational art during his campaigns into Persia and India. He applied

a broad vision that guided all political and military decisions. Furthermore, he continuously established clear strategic military goals and then used simultaneous and sequential operations to establish the necessary military conditions to achieve his strategic endstate. Finally, he efficiently allocated all of the resources required to ensure success. While this operational art during the classical warfare period was perhaps less sophisticated than that found in modern warfare, it was operational art nonetheless.

It is clear that all of the criteria identified in Dr. Schneider's and Dr. Epstein's treatises cannot be found within Alexander's campaigns. Moreover, as these two theorists both believe that operational art began in the nineteenth century, neither would conclude that Alexander used operational art. However, some elements of their theories are present in Alexander's ancient campaigns.

The case study shows that Alexander's campaigns demonstrated four key aspects of Schneider's criteria. They are: distributed operations, distributed maneuver, continuous logistics, and operational vision. Since Schneider himself admitted that his criteria are dependent upon technology that arrived during the industrial revolution, it is indeed impossible for any classical campaign to meet all eight conditions. Yet, Alexander came remarkably close.

While Epstein's criteria are broader than Schneider's, they are still more specific than those offered by current army doctrine. The centerpiece of

Epstein's theory on operational art, the Corps, did not exist in that exact form in classical warfare. However, Alexander did divide his forces into independent columns and did use a form of distributed maneuver during his campaign into India. While not on the Napoleonic scale, these formations were nevertheless "dispersed across broad fronts and maneuvered according to a preconceived plan."¹²² Thus, Alexander's division of forces during his campaigns illustrates basic distributed maneuver -- an important element of Dr. Epstein's theory.

Determining the existence of operational art is highly dependent upon the chosen criteria. While theories provide students with useful tools for historical analysis, they are not the final determining factor and must be tempered with an understanding that narrow criteria can skew the conclusions. The broader framework found within modern Army doctrine allows the student to examine historical campaigns to glean insights on early uses of operational art. Yet, when used together, both theory and doctrine can provide valuable points of reference for applying lessons of military history to modern warfare.

The key to practicing operational art is the manner in which a commander ties tactical engagements to strategic goals. Focusing merely on modern campaigns limits the scope of study and excludes potentially valuable bodies of knowledge from the student of military history. Moreover, criteria that solely focus study on modern warfare assume that operational

art is unique to the modern battlefield. If it is true that operational art can only exist under specific conditions, then it is possible that changing battlefield conditions could ultimately make operational art obsolete. Yet, if operational art existed during the dramatically different conditions of classical warfare, it becomes apparent that the linkage between the tactical and strategic levels of war will continue to exist into the future.

Technological innovation has dramatically changed the science of war since ancient times; however, the art of war has slowly evolved to take advantage of this change. Despite the changes in the ways and means of warfare, the requirement to logically connect tactical victories to achieve strategic aims has endured. Thus, some form of operational art will continue to evolve and endure through the changing conditions of future warfare.

Endnotes

- ¹ John Keegan, *The Mask of Command*, (New York: Penguin Books, 1987), p. 14.
- ² U.S. Department of the Army, *Operations*, Field Manual 100-5, (Washington, D.C.: U.S. Government Printing Office, 1993), p.6-2.
- ³ Ibid.
- ⁴ Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1989), p. 141.
- ⁵ James J. Schneider, "The Loose Marble -- and the Origins of Operational Art," *Parameters* (March 1989): p. 86.
- ⁶ Ibid., p. 87.
- ⁷ Ibid.
- ⁸ Ibid., p. 88.
- ⁹ James J. Schneider, "Vulcan's Anvil: The American Civil War and the Emergence of Operational Art," (Theoretical Paper No. 4, School of Advanced Military Studies, Ft. Leavenworth, 1991), p. 65.
- ¹⁰ Ibid.
- ¹¹ Ibid., p. 39.
- ¹² Schneider, "The Loose Marble," p. 93.
- ¹³ Schneider, "Vulcan's Anvil," p. 40.
- ¹⁴ Ibid., p. 41.
- ¹⁵ Ibid., p. 42.
- ¹⁶ Ibid., p. 54.
- ¹⁷ Ibid., p. 55.
- ¹⁸ Ibid., p. 58.
- ¹⁹ Ibid.
- ²⁰ Ibid., p. 62.
- ²¹ Ibid., p. 63.
- ²² Ibid., p. 64.
- ²³ Ibid.

- ²⁴ Robert M. Epstein. *Napoleon's Last Victory and the Emergence of Modern War* (Lawrence, Kansas: University Press of Kansas, 1994). p. 4.
- ²⁵ Ibid.
- ²⁶ Ibid., p. 5.
- ²⁷ Ibid.
- ²⁸ Ibid.
- ²⁹ Ibid.
- ³⁰ Ibid., p. 6.
- ³¹ Ibid.
- ³² *Operations*. Field Manual 100-5, p. v.
- ³³ Ibid., p. 6-2.
- ³⁴ Ibid.
- ³⁵ Ibid.
- ³⁶ Ibid.
- ³⁷ John Hackett, ed., *Warfare in the Ancient World* (New York: Facts on File, Inc., 1989). p. 104.
- ³⁸ W.W. Tarn. *Alexander the Great* (Chicago: Ares Publisher, Inc., 1948), p. 4.
- ³⁹ J.F.C. Fuller. *The Generalship of Alexander the Great* (New Brunswick, N.J.: Rutgers University Press, 1960; reprint, New York: Da Capo Press, Inc., 1989), p. 82.
- ⁴⁰ Ibid., p. 48.
- ⁴¹ Ibid.
- ⁴² Hackett, p. 104.
- ⁴³ Ibid.
- ⁴⁴ Ibid.
- ⁴⁵ Ibid., p. 107.
- ⁴⁶ Ibid., p. 106.
- ⁴⁷ Ibid.
- ⁴⁸ Tarn, p. 125.

⁴⁹ Fuller, p. 87.

⁵⁰ Ibid.

⁵¹ Tarn, p. 8.

⁵² Fuller, p. 89.

⁵³ Arther Ferrill, *The Origins of War: From the Stone Age to Alexander the Great* (London: Thames and Hudson Ltd., 1985), p. 189.

⁵⁴ Ibid., p. 190.

⁵⁵ Ulrich Wilcken, *Alexander the Great*, trans. G.C. Richards (New York: W.W. Norton & Company, Inc., 1967), p. 77.

⁵⁶ Fuller, p. 288.

⁵⁷ Arrian, *The Campaigns of Alexander*, trans. Aubrey De Selincourt (New York: Dorset Press, 1986), p. 65.

⁵⁸ A.B. Bosworth, *Conquest and Empire: The Reign of Alexander the Great* (Cambridge: Cambridge University Press, 1993), p. 35.

⁵⁹ Ferrill, p. 194.

⁶⁰ Ibid., p. 195.

⁶¹ Arrian, p. 72.

⁶² Ibid., p. 73.

⁶³ Ferrill, p. 196.

⁶⁴ Fuller, p. 91.

⁶⁵ Ibid.

⁶⁶ Wilcken, p. 90.

⁶⁷ Ibid., p. 91.

⁶⁸ Ferrill, p. 199.

⁶⁹ Ibid., p. 200.

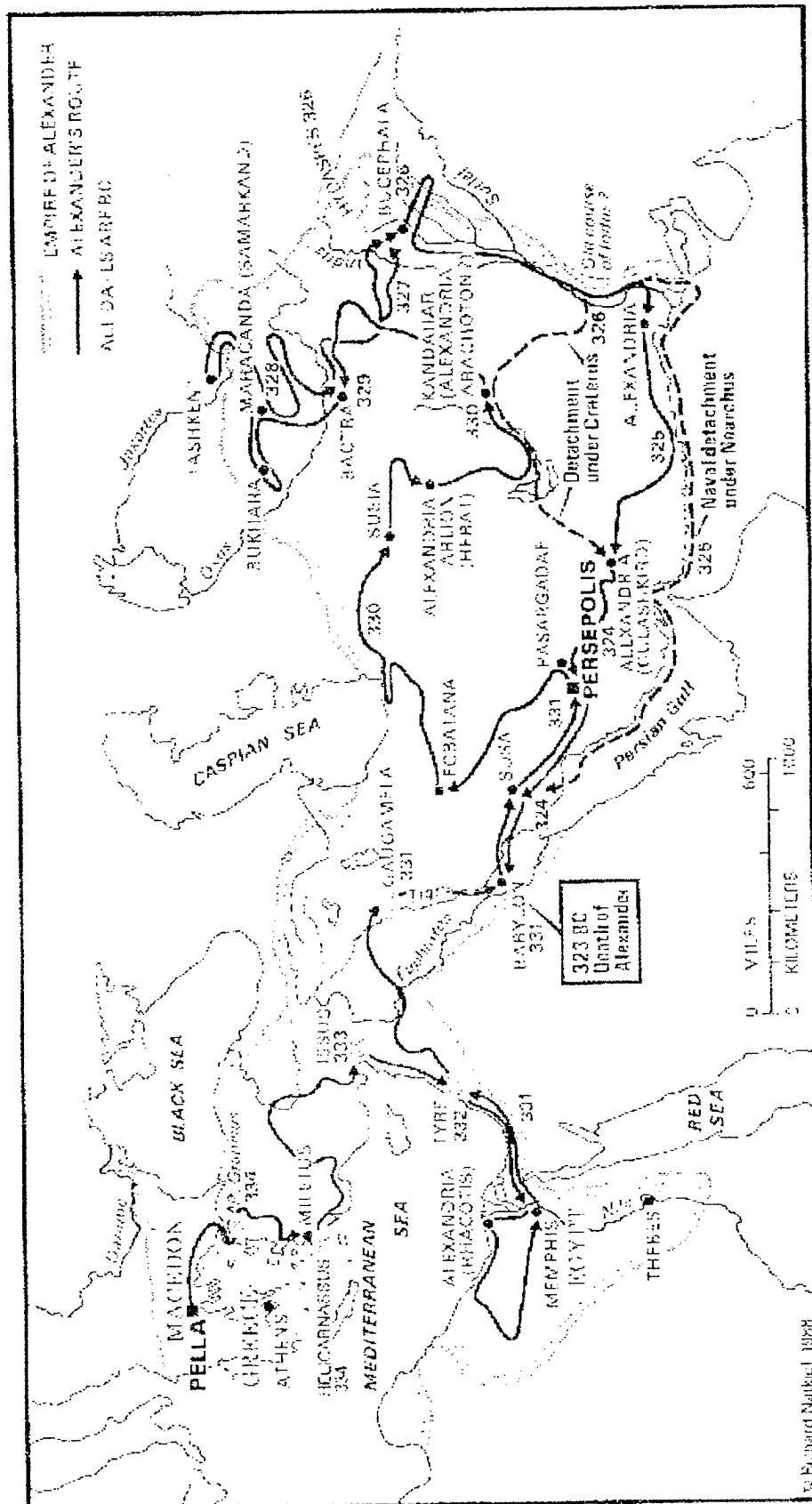
⁷⁰ Fuller, p. 100.

⁷¹ Ferrill, p. 204.

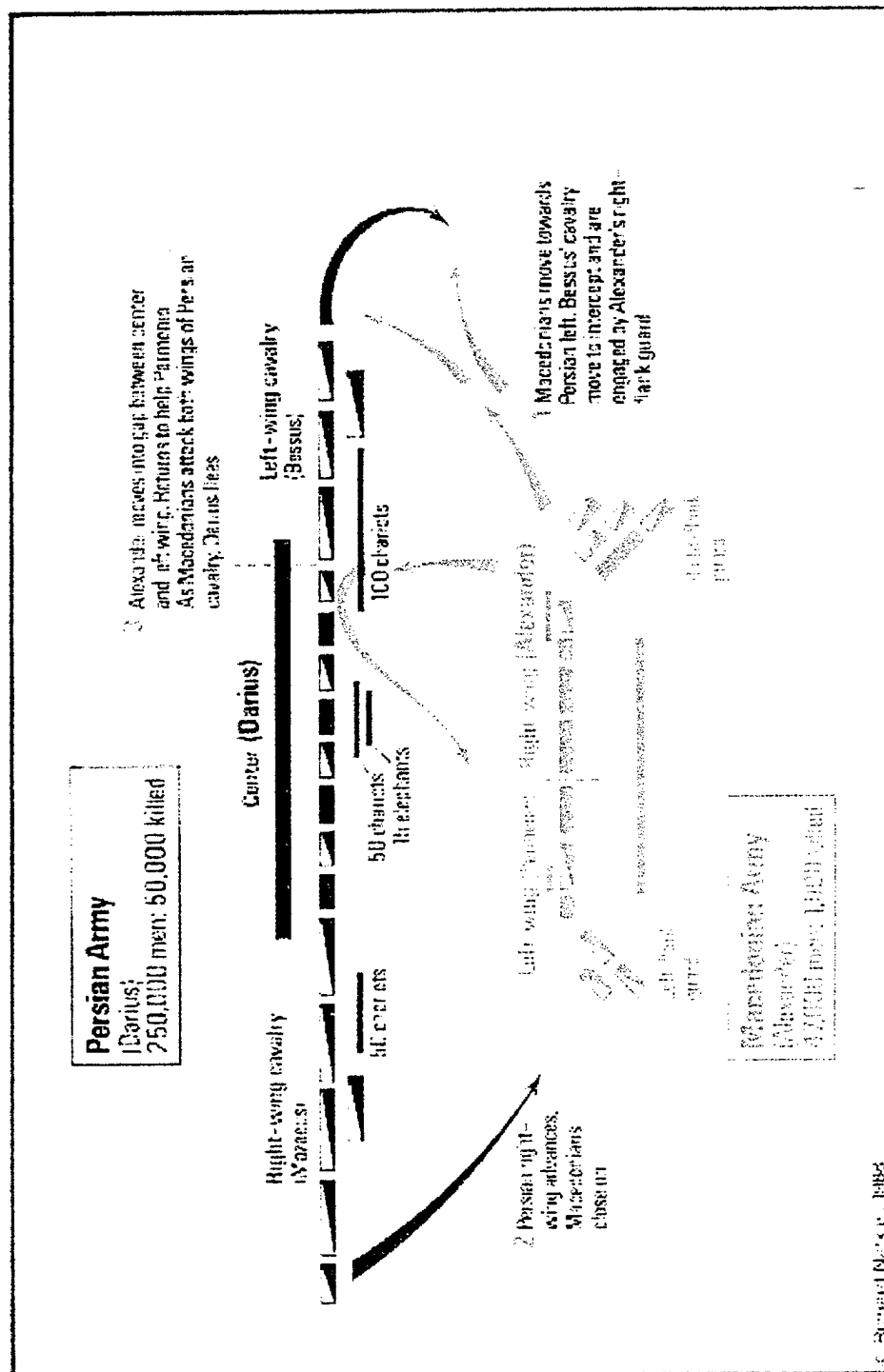
- ⁷² Ibid.
- ⁷³ Arrian, pp. 131-132.
- ⁷⁴ Wilcken, p. 110.
- ⁷⁵ Fuller, p. 103.
- ⁷⁶ Arrian, p. 144.
- ⁷⁷ Ibid.
- ⁷⁸ Fuller, p. 104.
- ⁷⁹ Wilcken, p. 113.
- ⁸⁰ Fuller, p. 105.
- ⁸¹ Lewis V. Cummings, *Alexander the Great* (Boston: The Riverside Press, 1940), p. 205.
- ⁸² Hackett, p. 120.
- ⁸³ Ferrill, p. 207.
- ⁸⁴ Ibid.
- ⁸⁵ Ibid., p. 208.
- ⁸⁶ Ibid.
- ⁸⁷ Ibid., pp. 209-210.
- ⁸⁸ Fuller, p. 109.
- ⁸⁹ Ibid., p. 111.
- ⁹⁰ Ferrill, p. 210.
- ⁹¹ Hackett, p. 124.
- ⁹² Tarn, p. 84.
- ⁹³ Fuller, p. 123.
- ⁹⁴ Tarn, p. 85.
- ⁹⁵ Bosworth, p. 121.
- ⁹⁶ Fuller, p. 127.
- ⁹⁷ Bosworth, p. 127.

- ⁹⁸ Arrian, pp. 267-268.
- ⁹⁹ Ibid., p. 269.
- ¹⁰⁰ Delbrueck, p. 221.
- ¹⁰¹ Ibid.
- ¹⁰² Hackett, p. 124.
- ¹⁰³ Delbrueck, p. 222.
- ¹⁰⁴ Ibid.
- ¹⁰⁵ Arrian, p. 278.
- ¹⁰⁶ Bosworth, p. 129.
- ¹⁰⁷ Ibid.
- ¹⁰⁸ Ferrill, p. 214.
- ¹⁰⁹ Fuller, p. 128.
- ¹¹⁰ Ibid., p. 130.
- ¹¹¹ Ibid., p. 131.
- ¹¹² Ibid.
- ¹¹³ Theodore Ayrault Dodge, *Great Captains Vol II. Alexander* (New York: Houghton Mifflin Company, 1890), pp. 588-589.
- ¹¹⁴ Fuller, p. 133.
- ¹¹⁵ Ibid., p. 136.
- ¹¹⁶ Ibid.
- ¹¹⁷ Delbrueck, p. 231.
- ¹¹⁸ Fuller, p. 128.
- ¹¹⁹ Ibid., p. 294.
- ¹²⁰ Donald W. Engels, "Alexander the Great and the Logistics of the Macedonian Army" (Ph.D. diss., University of Pennsylvania, 1976), p. 10.
- ¹²¹ Ibid., p. 3.
- ¹²² Epstein, p. 4.

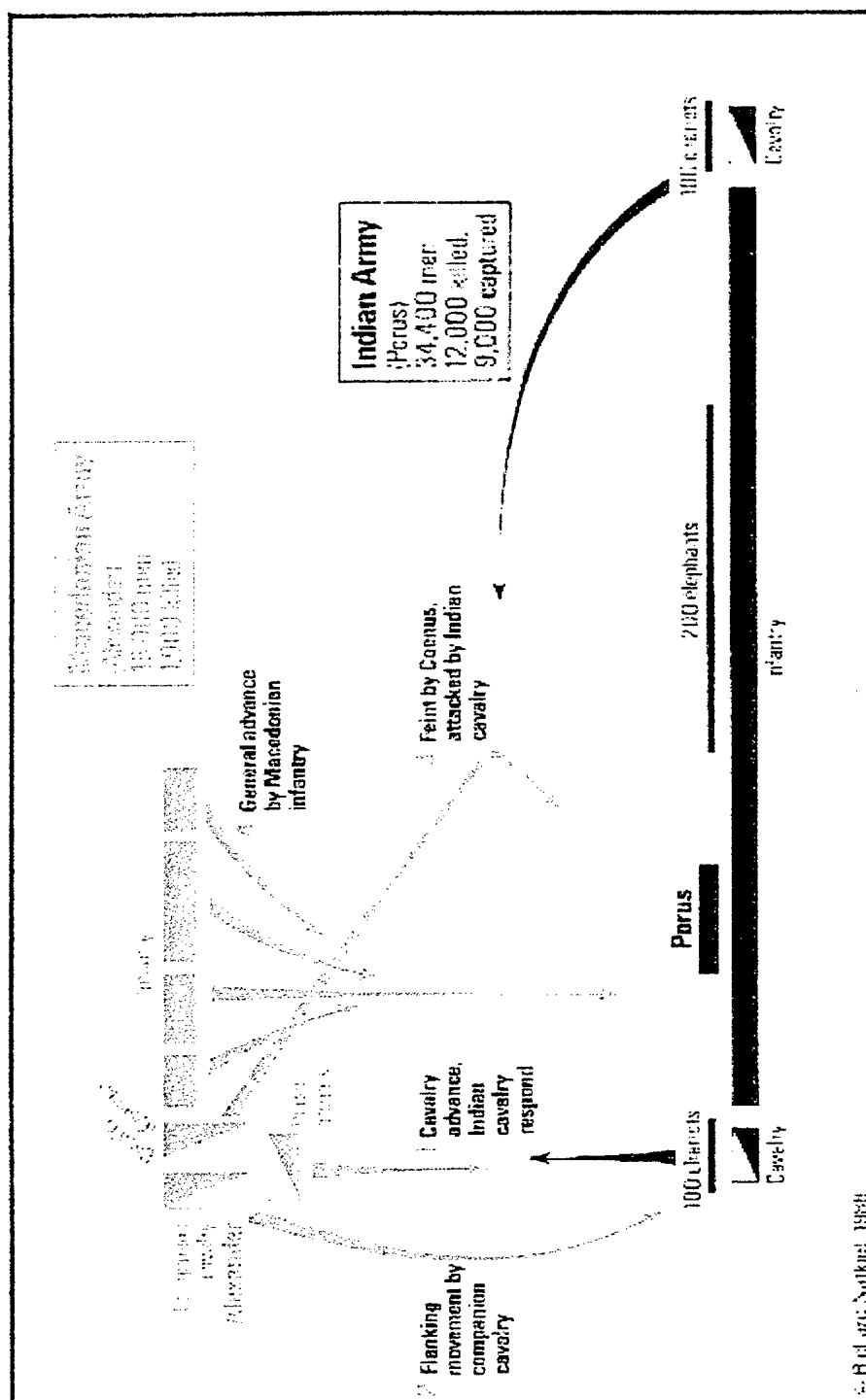
Map 1: Alexander's Campaigns (336 - 323 B.C.)



Map 2: Battle of Guagamela (331 B.C.)



Map 3: Battle of Hydaspes (326 B.C.)



BIBLIOGRAPHY

Books

- Arrian. *The Campaigns of Alexander*. Translated by Aubrey De Selincourt. New York: Dorset Press, 1986.
- Borza, Eugene N. *The Impact of Alexander the Great*. Hinsdale, Illinois: The Dryden Press, 1974.
- Bosworth, A.B. *Conquest and Empire: The Reign of Alexander the Great*. Cambridge: Cambridge University Press, 1993.
- Cummings, Lewis V. *Alexander the Great*. Boston: The Riverside Press, 1940.
- Delbrueck, Hans. *History of the Art of War. Vol. I, Antiquity*. Translated by Walter J. Renfroe, Jr. London: Greenwood Press, 1975.
- Dodge, Theodore Ayrault. *Great Captains. Vol. II. Alexander*. New York: Houghton Mifflin Company, 1890.
- Epstein, Robert M. *Napoleon's Last Victory and the Emergence of Modern War*. Lawrence, Kansas: University Press of Kansas, 1994.
- Ferrill, Arther. *The Origins of War: From the Stone Age to Alexander the Great*. London: Thames and Hudson Ltd., 1985.
- Fuller, J.F.C. *The Generalship of Alexander the Great*. New Brunswick, N.J.: Rutgers University Press, 1960. Reprint, New York: Da Capo Press, Inc., 1989.
- Green, Peter. *Alexander of Macedon*. Los Angeles: University of California Press, 1991.
- Hackett, John, ed. *Warfare in the Ancient World*. New York: Facts on File, Inc., 1989.
- Keegan, John. *The Mask of Command*. New York: Penguin Books, 1987.
- M'Crindle, J.W. *The Invasion of India by Alexander the Great*. Westminster: Archibald Constable and Company, 1896.

Strauss, Barry S. and Josiah Ober. *The Anatomy of Error: Ancient Military Disasters and Their Lessons for Modern Strategists*. New York: St. Martin's Press, 1992.

Sun Tzu, *Art of War*. Translated by Ralph D. Sawyer. Boulder, CO.: Westview Press, Inc., 1994.

Tarn, W. W. *Alexander the Great*. Chicago: Ares Publishers, Inc., 1948.

von Clausewitz, Carl. *On War*. Edited and Translated by Michael Howard and Peter Paret. Princeton: Princeton University Press, 1989.

Warry, John. *Warfare in the Classical World*. New York: Barnes & Noble, Inc., 1993.

Weigall, Arthur. *Alexander the Great*. New York: G.P. Putnam's Sons, 1933.

Wilcken, Ulrich. *Alexander the Great*. Translated by G.C. Richards. New York: W.W. Norton & Company, Inc., 1967.

Articles

Schneider, James J. "The Loose Marble -- and the Origins of Operational Art." *Parameters*. (March 1989): 85-99.

Unpublished Dissertations, Theses and Papers

Engels, Donald W. "Alexander the Great and the Logistics of the Macedonian Army." Ph.D. diss., University of Pennsylvania, 1976.

Schneider, James J. "The Theory of Operational Art", Theoretical Paper No. 3, School of Advanced Military Studies, Fort Leavenworth, 1988.

Schneider, James J. "Vulcan's Anvil: The American Civil War and the Emergence of Operational Art," Theoretical Paper No. 4, School of Advanced Military Studies, Fort Leavenworth, 1991.

U.S. Government Publications

U.S. Army. Field Manual 100-5. *Operations*. Washington, DC: U.S. Government Printing Office, August 1993.