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Does the U.S. Army Really Understand Operational War?  
A Logistics Perspective

by

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Fort Leavenworth, Kansas

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ABSTRACT

DOES THE UNITED STATES ARMY REALLY UNDERSTAND OPERATIONAL WAR? A LOGISTICS PERSPECTIVE. by Major Robert T. Dail, USA, 42 pages.

This monograph explores the extent to which logistics influences operational war. It focuses on the inelastic relationship between logistics and operations at levels beyond tactics, the role of logistics in determining operational courses of action, and upon the doctrinal implications which are generated by logistics' rediscovered importance.

A theoretical model of operational war, together with historical examples from the Twentieth Century are used to demonstrate the dominant role logistics plays in the planning and execution of operational campaigns. The paper questions whether current United States Army doctrine, which emphasizes the sequencing of engagements, correctly reflects the true nature of operational war. The author argues that the operational level of war is, in fact, the logistics level of war. As such, logistics cannot be subordinated to operations as is the case so frequently at the tactical level. Highlighted in this study is the significant impact which both friendly and enemy logistics considerations exert upon operational decisionmaking.

The author concludes that there exists a very inelastic relationship between operations and logistics beyond the tactical level, and that successful operational commanders of the Twentieth Century understood this relationship. He proposes a greater integration of logistics into the heart of the U.S. Army's operational war fighting doctrine as we increase efforts to train future operational commanders and staff officers.

Keywords: military economics; mobility; Korea; North Africa, World War 2; Central Europe (KF).

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## INTRODUCTION

Sustainment is equally vital to success at both operational and tactical levels of war.

FM 100-5(1)

The division commander stood before his subordinate commanders and staff in the division command post. He had just completed briefing his concept of operations, focusing on the mission and tactics of the operation. After several questions had been asked regarding the scheme of fire and maneuver a subordinate commander stood up and asked the general, "Sir, is this plan logistically supportable?"

"Well, yes!" the general replied, "logistics is very critical to the success of this operation. We gotta have 'em. I told the G4 guys that we just got to do it."

Does this parable sound familiar? In a humorous way it suggests that logistics is important — but not that important. It does not receive the same consideration and attention by the commander which operations do during the planning and conduct of battles. The parable highlights the relationship which exists between logistics and operations at the tactical level of war. The relationship is, of course, that logistics is subordinate. Its whole function is to support the combat plan and subsequent operations. Professional army officers know this. So do determined commanders, as they drive on to take objectives even when their logisticians tell them they will not be able to make it. We are reminded of men who personified this attitude when we read about the exploits of Field Marshal Erwin Rommel and General George Patton.

In the opening scene of this monograph, the division logistics officer probably understands that the means exist for his corps, the next higher headquarters, to push supplies down to the division if the general's plan does not quite work out as anticipated. At the tactical level, whenever problems arise which cannot be resolved by local prioritization or policy, the next higher commander normally can reshuffle the supply, transport, and maintenance efforts to resolve them.(2) Perhaps captured enemy stocks can alleviate certain logistical shortcomings. Salvation by captured enemy stocks is usually a good argumentative point for a plan's supportability, especially when the risk factor is growing too large for an otherwise rational discussion. We may wonder why we plan this way. Sometimes the pressure for a logistics staff officer to state that a plan is supportable is just too great. You see, even these "G4 guys" know that operations drive the train -- that it dominates logistics. This is a fact of life for soldiering at the tactical level.

The notional general at the beginning of this paper who subordinated logistics to operations serves as an example of the tactical thinking which places operations as the sine qua non of warfighting. While this may be all well and good at the tactical level, it does not follow that it is equally appropriate at the operational level. Our army rediscovered the operational level of war and incorporated it into doctrine so quickly that a thorough examination of logistics to determine its role was not performed. What resulted was a tactical focus for logistics at both levels of war. The popular use during the 1980's of such literary analogies as "tooth to tail", and "tail wagging the dog" underscores the United

States Army's tactical focus regarding logistics and its misunderstanding of operational war.

Another indicator of this focus is an operational warfighting paradigm currently offered as "food for thought" at U.S. Army educational institutions.(3) It emphasizes those things which are critical for the operational commander to consider when campaigning. The paradigm includes three primary military considerations: forces, space, and time. These are certainly important. However, no mention is made of resources, logistics, or economics as critical considerations of operational warfighting. Neither are culminating points, friendly and enemy. This paradigm only serves to reinforce the attitude that logistics is applied tactically even at the operational level of war, and therefore is subordinate to operations.

FM 100-5, although worded in operational terms, also reinforces this tactical focus on logistics. It demands the execution of agility, initiative, depth and synchronization (the tenets of AirLand Operations) in its prescription for future success on the battlefield. Flexibility, consistently mentioned as a precondition for the execution of these tenets, is never related to its primary determinant -- resources and logistics. These issues are treated in a separate chapter of FM 100-5 and are never fully integrated into the discussion of flexibility. The opening quotation of this monograph advances the view which equates the importance of logistics at the tactical and operational levels. It is though the tenets and ingredients for AirLand success are the same at both levels.

This is hardly the case. With the growing emphasis on operational war in the United States Army over the past few years it

is important to understand the different relationship which exists between operations and logistics at different levels of war. Specifically, now that the United States Army has rediscovered operational warfare it must also rediscover why logistics is not equally vital at the tactical and operational levels. Admiral Henry Eccles, a noted operational logistician in World War II, stated that logistics is military economics.(4) Just as with demand curves in business economics, logistics exhibits a certain elasticity. As one moves from the tactical to the operational level of war, logistics becomes more inelastic. Because of this inelastic characteristic logistics becomes a more dominant factor in determining tempo and the nature of operations, in limiting the options for maneuver, and in forming the basis for sequential operations. If operational level commanders do not realize that logistics and resource considerations should dominate their attention, tactical victories may only result in operational defeat because campaigns culminate at inopportune times.

The question at hand today is whether present military professionals realize the dominant nature of logistics during certain phases of operational campaigning? This paper will explore the seriousness of logistics at the operational level of war, the consequences of not understanding when logistics requires the commander's priority, and the relationship between operations and logistics at the operational level of war. In this manner we should be able to determine if campaigning is mostly logistics. Furthermore, we should be able to tell if the operational commander better spends his time focusing on logistics or operations. Finally, we should be able to tell if FM 100-5 could prescribe a better relationship

between operations and logistics at the operational level of war.

#### THEORETICAL PERSPECTIVE

The answer to this question begins with a theoretical perspective of operational war and logistics. I will develop a theoretical model which provides the framework to answer the following questions: What is operational war, who is the operational artist, what does he do and how does logistics influence his actions? The theoretical model starts with FM 100-5's definition of the structure of war.

The Army's basic fighting doctrine is known as "AirLand Battle." First documented in the 1982 version of FM 100-5, this doctrine is an integration of classic principles of war with current views on the nature of contemporary battle.(5) Fundamental to the doctrine is the recognition that the structure of modern warfare is defined by three levels: strategic, operational, and tactical. Military strategy is the employment of military force to achieve national policy objectives. Tactics is the art by which smaller unit commanders employ weapons systems to achieve victorious engagements and battles. The sequencing of battles and major operations into campaigns defines the operational level of war; a victorious campaign leads directly to the achievement of strategic military objectives.(6)

The military leader responsible for translating strategic military objectives into finite, operational goals is the operational commander.(7) Consequently, the operational level of command is a specific level with responsibility for the direction of combat operations beyond the immediate tactical battle. Exactly who the operational commander (or artist) is has been the subject of much

debate. FM 100-5 states:

No particular echelon of command is solely or uniquely concerned with operational art, but theater commanders and their chief subordinates usually plan and direct campaigns. Army groups and armies normally design the major operations of a campaign. And corps and divisions normally execute those major ground operations.(8)

FM 100-5 seems not to want to exclude anyone from this rediscovered level of war. The subliminal message appears to be — "you too can play this new game". This is not to say that any of the commanders listed above might not find themselves fighting at the operational level of war. Even the commander of a small special operations force (SOF) unit may find himself commanding at the operational level because some of his specific missions may have significant operational impact. However, because commanders at various echelons of command are "concerned" with or "operate at" the operational level, that fact alone does not make them the operational commander — or artist. For lack of a more specific doctrinal one, I will present a definition of the operational commander for use in our model.

For the purposes of this paradigm, the commander of all joint forces within a theater of operations will be considered the sole operational commander/artist. He is the one man with both the authority and the responsibility for artistically synchronizing the various elements which make up combat power into a coherent harmony to achieve strategic goals. He has command over all military resources within his geographic theater of operations. Obviously his operations are of a joint, and possibly combined, nature. The "artist" is responsible for establishing operational aims and then resourcing

subordinate commanders to attain those aims. The size of the joint and combined force which the operational artist commands can vary. Operational commands can be very large, consisting of army groups and corps', as in Western Europe or they can be small, consisting of brigade and battalion sized task forces operating in secondary theaters, as in Southwest Asia and Central America.

Where is the operational commander's area of responsibility? It is defined first within a larger strategic theater of war, a geographic area (to include land, sea and air) where nations ". . . assail each other".(9) The theater of war commander articulates how this is done in a war plan which provides general guidance to the operational commander on the employment of his military forces. Theaters of operations exist within the overall theater of war; again, it defines a geographic area (it also includes land/sea and air) assigned to the operational commander to conduct his campaign. A theater of war may contain several theaters of operations or only one. Regardless, the theater of operations outlines a defined area of the world within which the commander synchronizes the efforts of his military resources to achieve operational aims.(10)

Having established who commands at the operational level and where he commands, we need to next determine what it is that he is supposed to do? FM 100-5 provides the starting point for our discussion. It states that the operational commander practices operational art through the design, organization, and conduct of campaigns.(11) This simplistic answer does not really define what this operational "art" is. The key to its definition is the manner in which it is practiced.

FM 100-5 states that an operational commander is required to answer three questions:

- (1) What military condition must be produced in the theater of war or operations to achieve the strategic goal?
- (2) What sequence of actions is most likely to produce that condition?
- (3) How should the resources of the force be applied to accomplish that sequence of actions?(12)

The first question which FM 100-5 poses is indeed a good one. The operational commander must have a clear vision of the desired "end state" of his campaign. However, I contend that questions two and three are not separate and distinct actions, but rather reflect a dynamic process which dominates the operational commander's time and which serves as the key to understanding what operational art is all about. When commanders think of sequencing operations they must think resourcing and logistics at the same time. Commanders who do not consider logistics as the driver of sequential operations may find their subordinate units stranded without the means for continued fighting or unable to concentrate combat power at a decisive place.

FM 100-5 drives us away from integrating resources which result in sequential operations. It implies that resources should be applied toward the end of operational planning. An example of the danger which accompanies the checklist methodology in FM 100-5 (checklists themselves connote a tactical approach), is found in the following quote from a monograph by a student of the School of Advanced Military Studies:

Once the operational commander has defined the desired outcomes of his campaign and the sequence of combat operations necessary to produce that outcome, he then decides how to resource the plan.(13)

The author implies that resourcing is accomplished in a vacuum, after the plan is made. This thinking demonstrates a tactical orientation of decision-making which will not produce campaigns which are resourced to achieve the desired end state. Moreover, the placing of resources and logistics at the tail end of the operational thought process is not supported in the writings of the great theorists. Logistics played an integral part, not an afterthought, in their discussion of warfare. A review of their comments regarding logistics will reveal that it had profound impact upon the sequencing of operations.

Clausewitz referred to the central relationship between operations and logistics in On War. The following quotes are taken from his lengthy discussion of logistics matters:

. . . .the problem of supply has assumed much greater importance in modern warfare.(14)

All this will indicate the general influence that questions of supply can exert on the form and direction of operations, as well as the choice of a theater of war and the lines of communications.(15)

The two excerpts from On War underline Clausewitz' understanding of the importance of logistics in modern war. In his writings Clausewitz relates objectives, the disposition of units, the form of war (offense vs defense), and the theater of war to logistics considerations. Since his day armies have grown even more dependent upon logistical bases to support intricate and lethal weapons systems

and tactical and operational mobility. The influence exerted upon operations by logistics is greater today than ever before and is most prominent at the higher levels of war (operational and strategic). It is at these levels that decisions are made regarding direction of operations, objectives, theater boundaries, basing and the establishment of lines of communications.

Clausewitz also said, "Victory results from the superiority of one side -- from greater physical and psychological strength." He goes on to list seven causes of superior strength: personnel loss rate; asset loss rate; fixed and natural resource loss; use of enemy resources; enemy loss of allied resources; enemy loss of cohesion; and enemy discouragement.(16) It is interesting to note that of the seven, he lists five which are logistics oriented. If victory is attained by the army with superior assets, manpower, and resources then it seems that the great theorist argues for commanders of armies to concern themselves with them. Clausewitz goes on to say that the attacker will continue toward his objective until his superiority is exhausted. This brings us to the concept of "Culminating Point".

Clausewitz first introduced this concept in On War one hundred and fifty years ago. FM 100-5 provides the current definition:

. . . the point where the strength of the attacker no longer significantly exceeds that of the defender, and beyond which continued offensive operations therefore risk overextension, counterattack, and defeat. In operational theory, this point is called the culminating point.(17)

Modern day operational artists should be concerned with this concept of culmination. The ability to prevent one's own culmination while causing the enemy to reach his is one of the keys to operational

success. The maintenance of combat power is what keeps a campaign going. Of the reasons which are listed in FM 100-5 as causing offensives to reach their culminating points, only one is non-logistics related -- determination of the defender. FM 100-5 argues that as defenders lose more of their homeland they will become more determined in their fighting and thus accelerate the culminating point of the attacker.(18) The important point in reviewing this concept is that operational commanders should devote considerable time to it. As Clausewitz stated ". . . what matters therefore is to detect the culminating point with discriminative judgment."(19)

Jomini introduced concepts heavily flavored in logistics into his theory of war. We will discuss three of them in this theoretical review: basing, establishment of lines, and decisive point. The three terms are closely related.

Jomini was careful to underscore the importance of bases. Several other of his theoretical points are linked with them. The most prominent link is made between bases and objectives. As Jomini states

The great art then, of properly directing lines of operations, is to establish them in reference to the bases and to the marches of the enemy as to seize the communications of the enemy without imperiling one's own. . .(20)

Jomini implies that the source of all combat power and the capability of sustainment comes from the base and the lines which carry replenishment. The idea is to protect one's own lines and bases while cutting the enemy's lines and destroying his bases. According to the theorist, bases should be established in the theater so that advantageous lines can be established relative to objectives. Bases,

following Jomini's logic, will exert great influence over the lines and location of objectives. In fact, bases and lines could well become key objectives in theater military operations. Jomini calls this linkage (between bases and objectives) the "most difficult problem in operational art".(21)

Jomini also introduced the term "Decisive Point". The term refers to a physical point on the ground which, if occupied by friendly forces, would help to secure victory. It could be a flank or a position where the enemy supply lines could be cut or a location that forces the enemy to fight at a disadvantage.(22) We have earlier discussed the importance for the operational commander to identify the enemy center of gravity. How he chooses to defeat it is one of the real challenges of operational art. Many times the decisive point will be the key to success at the operational level. Earlier we saw where Jomini emphasized that friendly lines should be established so that they are protected while offering the ability to strike at the opponent's. The occupation of the enemy's rear or the destruction of his bases by ground forces would certainly threaten the enemy center of gravity -- his hub of all power.(23)

Twentieth Century war has produced few logistical theorists. One prominent figure, Rear Admiral Henry E. Eccles, emerged from World War II. In his book, Logistics in the National Defense, he advanced several key points regarding Twentieth Century logistics and operational war. He proposed that logistics' only purpose was to create and maintain combat forces which were responsible to the commander. In defining this function he used the term earlier introduced in this paper -- "military economics".(24) As such,

logistics serves as the great provider and mover of forces. Eccles proposed that flexibility was a key ingredient to future victory. To achieve this flexibility he argued that the military commander must control all available resources. He viewed these resources as the "means of war".

RADM Eccles emphasized that logistics was the bridge between the nation's strategy and the tactical action on the battlefields around the world.

The process of fully integrated strategic-logistics planning relates means to specific strategic objectives. When this is followed by sound logistics procedures and processes the timely logistic support of tactical forces is assured. (25)

The most significant point which RADM Eccles makes is related to this idea of logistics being the bridge between the strategic and the tactical levels of war. He writes in 1959 that logistics is operational planning.

The organization of specific combat units for the accomplishment of specific tasks or missions together with the provision of logistic resources—and units — for their sustained support can be generally classed as operational planning. It may be also called the operational level. Furthermore, there is a general tendency to use the term "operational" to apply exclusively to the strategical and tactical aspects of military operations in contra-distinction to the logistic arrangements and movements which are the foundation of all military operations. This not only leads to semantic confusion but in the past it has contributed to the neglect of the logistic provisions which make the strategic dispositions and tactical movements possible. (26)

With the introduction of the theorists' views of logistics and war our paradigm is now complete. The key theoretical framework has

been established for a study of logistics and modern war. I have focused on the operational "artist" and the theater in which he operates. I have defined what it is he is supposed to do. He is charged with identifying and destroying the enemy's center of gravity while protecting his own. In doing so, he must make creative decisions concerning the desired end state of a campaign and the sequencing of military actions to achieve the operational objectives given available resources (occupying the decisive point or cutting enemy lines). In making these decisions he must concern himself with basing, establishment of lines of operations, the prevention of friendly culmination, and with vulnerabilities in the enemy logistics structure. Finally, he must be aware of the importance of logistics without letting them snowball out of proportion.

One further comment is required regarding the relationship between the size of the operational force and the impact of logistics considerations upon its employment. Logistics will normally become less of a dominating concern for smaller sized operational forces because nations tend to be capable of massing small force packages on short notice. This is not to say that logistics will never drive operations involving small numbers of forces. In underdeveloped theaters logistics may still drive operations. The Iranian hostage rescue operation conducted by the United States in 1980 is an example of how infrastructure, equipment, and tactical mobility considerations significantly impacted upon small unit operational planning.

#### HISTORICAL PERSPECTIVE

It is appropriate to continue this examination of logistics at

the operational level of war with an historical perspective. This monograph will examine three historical campaigns which underscore the dominant nature of logistics in operational war and which reveal the operational commander's focus and attention during the planning and operational phases of the campaign. The three campaigns examined are: the North African Campaign, 1941-42; the Allied invasion of Central Europe in June, 1944; and two U.S. campaigns in the Korean War (CHROMITE and the Chinese Counteroffensive) July-October 1950. During this examination I will focus specifically on the respective operational commanders -- Rommel, Montgomery, Eisenhower, and MacArthur.

#### THE NORTH AFRICAN CAMPAIGN, 1941-42

Much has been written of the "Desert Fox", Erwin Rommel. He is a hero to many in uniformed services today, respected for his tenacity and tactical genius. When we think of Rommel, we think of "Attack"! Much has also been written of Field Marshal Bernard Montgomery. It is understandable why he does not receive the same praise in the American Army that Rommel receives. He is portrayed as slow and methodical, unwilling to take bold action or accept great risk. The debate over their individual tactical abilities, begun even before World War II was over, continues today. However, the campaigns of Rommel and Montgomery in North Africa provide the modern day military professional with a new debate question: who was the better operational commander and campaign planner? The North African campaign demonstrates that being an outstanding tactical leader is not always the prerequisite for greatness and victory at the operational

level of war, and that operational success is directly related to the commander's focus on logistics. Base building, establishment of lines of communications and operations, and identification of enemy culminating points were all important considerations which the operational commanders faced during the planning and operational phases of the campaign.

The Germans originally looked at North Africa as a place where they would fight an operational defensive campaign while the major effort of the Third Reich was poured into BARBAROSSA (the invasion of the Soviet Union). This was a clear matching of ends to means. When Rommel arrived in Tunisia in February 1941 there were not enough resources to conduct a sustained operational offensive and there had not been any detailed planning with logistics considerations in mind. Regardless, Rommel decided almost immediately upon his arrival to change the operational nature of the war. He decided to go on the operational offensive; he attacked after just two weeks in command.(27) Over the course of the campaign Rommel never demonstrated that he understood the importance of logistics at the operational level of war. Rommel had no concept of synchronization and the sequencing of actions with the establishment of logistics bases and lines of operations -- no concept of the importance of avoiding culmination and planning for operational pauses. Indicative of this reckless and tireless style is his outlook in June 1942, just prior to launching an attack east from Tobruk:

We are moving on again and won't give the Tommies any peace. They believe we are going to need four or six weeks first, but our big attack begins -- tomorrow! Let's hope they don't duck out . . . We may even make it to Cairo . . . (the British) Have huge supply dump at Capuzzo.(28)

Such commentary reflects Rommel's misunderstanding of the role logistics plays at the operational level of war. Instead of consolidating his gains and developing the base at Tobruk, establishing new lines of communications, and taking measures to protect his logistics structure, he immediately went on the attack again. Rommel did not understand that the sequencing of engagements is tied directly to the sequencing (moving up or shifting) of bases and the ensuring of short lines of operations thereby preventing armies from culminating. Used to fighting "by the seat of his pants", he failed to see the serious consequences of not letting logistics dominate theater-level campaign planning. His statement, "Let's hope they don't duck out . . . we may even make it to Cairo. . . ." reveals the lack of detailed logistics planning at Afrika Korps. Operational warfare, with its unforgiving outcome, cannot be waged on words like "hope" and "maybe". It must be based upon feasible plans that offer a reasonable chance of success. It must be waged reflecting the realistic assessment of the generation and maintenance of combat power.

How was the British method different from the German techniques in North Africa? Only after ninety days in command was Field Marshal Montgomery satisfied with the buildup which had been going on since the summer of 1942. The Allied arsenal, meticulously assembled in North Africa, provided a satisfactory correlation of forces. Tanks, artillery pieces, and support vehicles were staged in superior numbers in depots and supply dumps waiting to be moved forward. The logistics infrastructure was improved through the construction of new roads and rail systems. Intensive training was conducted to allow soldiers to

work the ports as soon as each future supply base was captured.(29) Montgomery's actions during his initial period of command indicate that he was attuned to the different nature of warfare at the theater level where the maneuvering of large forces was directly related to the sequencing of bases and the maintenance of short lines of operations and communications. He understood the need to avoid operational exhaustion, or culmination. As Lieutenant Colonel Douglas W. Craft writes:

. . .it is important for the operational commander to understand the significance of the concept of culmination. The nature of modern warfare will likely dictate an operational pause sometime during a campaign. The operational planner must recognize that culmination will occur if adequate resources are not programmed to sustain the campaign and the means provided to ensure that the operation does not culminate before the operational objective is achieved. . .there is a requirement to synchronize operational maneuver with supporting operations that enhance one's own sustainment of combat power and attack one's opponent's capability. Such action prevents culmination of one's own force while it contributes to the culmination of the enemy force.(30)

The British actions at El Agheila in 1942 further reinforce this point. Montgomery paused at El Agheila to open the port of Benghazi, bring forward fresh divisions, and shift objectives of the pursuit. Montgomery decided where, when and for how long the operational pause would occur. He was involved in bolstering replacements (both personnel and weapons systems), shortening the lines of communications, and advantageously positioning his lines of operations.(31) Clearly, he was demonstrating that he was in the business of matching means to ends.

North Africa also demonstrates that being preoccupied with one's own culmination is only half the operational battle. Montgomery, and the British commanders before him, realized the benefits of interdiction of enemy lines of communications and operations in hastening the opponent's culmination. The defense of Tobruk is an example of this appreciation of interdiction. Tobruk had been a thorn in Rommel's side since the campaign began. The British decision to hold this base and resupply it had exerted a significant operational impact. Rommel's recognition of this is reflected in Major Myron Griswold's work, "Considerations in Identifying and Attacking the Enemy's Center of Gravity".

Rommel's selection of Tobruk as the enemy center of gravity is understandable, considering its effect on his operational flexibility. If Rommel did not invest Tobruk with sufficient numbers of forces, he could expect the very formidable British garrison to launch an attack along his already long LOC. . . As a result, Rommel could not concentrate his Panzergruppe at the frontier -- a necessary precondition for launching an offensive in Egypt. Additionally, if Rommel could take Tobruk he would improve the Axis supply situation.(32)

The British saw Tobruk as a vital base from which to launch strikes against the supply lines of the enemy. As long as it was held the British knew that the enemy could not reach Cairo and the Suez Canal. Rommel saw Tobruk only as a threat to his already weak logistics system. He did not see the significant role Tobruk could have in sequencing his future operations. After capturing it, he could have paused to build it up for use as a major logistics base during a subsequent attack east to Cairo. But to do this, there were other critical tasks to be considered. Emphasis on cross-

Mediterranean shipping and the reduction of Malta would have supported Rommel's operational campaign better. This would have allowed him to control the lines of communications in the Mediterranean and to build up a sizeable logistics base in Tobruk.(33)

However, as Rommel attacked east from Tobruk immediately after having seized it in June, 1942 he passed his culminating point. Montgomery understood this when he took command of the British Eighth Army several weeks later. He did not think that Rommel had the resources to achieve the German operational objectives. He was attuned to the essence of operational warfare. Subsequently, he and his staff focused on sequencing bases, maintaining short lines of communications and operations, preventing friendly culmination by planning for operational pauses, and destroying Rommel with superior force.

#### ALLIED INVASION OF CENTRAL EUROPE

Like the North African campaign, the Allied invasion of Central Europe in June of 1944 underscores the dominant nature of logistics in operational warfare. General Dwight D. Eisenhower, a military leader not known for his tactical style and exploits, ended up commanding the greatest assemblage of naval, air, and army forces ever to conduct an amphibious operation. OVERLORD, as it was codenamed, offers many lessons regarding the relationship between basing and the sequencing of operations, the importance of establishing clean, uncongested and advantageous lines of operations, and the impact of logistics upon troop dispositions and missions to subordinate units. Let us assess the influence which logistics exerted upon Allied efforts to generate

mass, execute deception and flexibility, and upon the decision to go to Normandy.

Our review of OVERLORD begins with the directive which Eisenhower received from the Combined Chiefs of Staff in the Spring of 1944.

You will enter the continent of Europe, and, in conjunction with the other United Nations, undertake operations aimed at the heart of Germany and the destruction of her armed forces. The date for entering the continent is the month of May 1944. After adequate channel ports have been secured, exploitation will be directed to securing an area that will facilitate both ground and air operations against the enemy.(34)

It is interesting to note the strong emphasis on basing and logistics buildup which had to occur before ground and air operations could be launched into the heart of Europe. In his memoirs Eisenhower outlined his concept for accomplishing Germany's defeat in four phases: land on the Norman coast; accumulate sufficient resources and break out; pursue to the borders of Germany; and, after operational pause, envelop the Ruhr valley.(35) General Eisenhower's phasing indicates that the sequencing of his campaign was tied to the concept of basing. Prior to the campaign, England had served as the Allies' base. Subsequently, an area would be secured in Normandy (a base) from which to launch a pursuit of the enemy. Finally, after this pursuit had reached the German borders, the Allies would pause to consolidate resources for a final thrust into Germany's industrial pocket. Two of these phases are predominantly logistics operations -- the landing and the establishment of a theater logistics base. A third phase, the operational pause and envelopment of the Ruhr is at least 50% logistics.

Specifically, the impact of logistics was manifested in the following considerations: (1) Watercraft availability; (2) Beach sustainability; (3) Port(s) availability; (4) Turnaround time for the watercraft and shipping.(36) The issue of watercraft availability would have impact not just on the supportability of OVERLORD, but on its schedule and the scheduling of other planned operations in the theater of war (ANVIL most prominently). As the number of required watercraft for the invasion and subsequent sustainment operations continued to grow, British Prime Minister Winston Churchill declared, "The destinies of two great empires seem to be tied up in some god-damned things called LST's."(37) However great the frustrations, Churchill had no alternative but to live with the time consuming buildup of watercraft and other materiel and equipment in England. Sealift would deliver the margin of strength which would overpower the Germans.

OVERLORD planners were faced with the task of moving as much materiel and men across and off the beach as rapidly as possible. As Van Creveld stated in Supplying War, "the men who planned OVERLORD were well aware that the success of an eventual Allied invasion of Europe would depend above all on their ability to feed-in troops and equipment at a higher rate than their enemy."(38) To do this, a location would have to be selected which provided adequate port and discharge capacity, access to an existing logistics infrastructure, and rapid delivery and clearance of all types of equipment. Planners were concerned with keeping lines of operations as short as possible to facilitate quick turnaround times for watercraft. The beaches and ports would need access to roads and rails (although the rail system

in Northern France had been demolished by Allied bombing prior to the invasion which impacted adversely on the subsequent pursuit), and the landing area would have to include enough space to marshal the buildup and enough consistency to support the invasion traffic.(39) These were the factors which together comprised the first series of operational decisions for General Eisenhower, and they were all rooted in logistics.

Logistics also influenced OVERLORD in other ways. Allied capability to be flexible, to mass, and to deceive the enemy were all rooted in logistics. The Allies were much more flexible than the Germans prior to and after D-Day. The positioning of the objective (Normandy beaches) in relationship to their base (southern England) allowed the selection of a landing point which provided the most desirable correlation of forces. Since the Germans did not possess the force structure to defend the entire coastline of France, the Allies were able to pick and choose from among alternative points on the coast, none of which would have ever taxed Allied lines of communications and operations. Had the Germans decided to concentrate on the coast at a particular point, the Allies, with the close proximity of all of their mass, ships, planes, and supplies would have opted to invade elsewhere. They merely would have drawn the Germans into a deception oriented on a particular location (as in FORTITUDE), which would have caused the Germans to mass elsewhere.(40)

In short, logistics in large measure enabled the Allies to deceive the Germans as to the actual location of the channel invasion. Operation FORTITUDE comprised a massive deception effort to convince the Germans that the Allied landings were going to be

conducted at the Pas de Calais. This operation, which proved to be a magnificent success, came only as a result of committing great amounts of assets, munitions, and resources to a deception plan.(41) Without the systems and resources to conduct it, the deception plan would not have been credible. It might be added that many of these assets, used in feints and demonstrations, did not have to be earmarked for the actual invasion.

More than anything else, however, the Allied focus on logistics during operational planning produced a mass of force (air, naval, and ground) which was never before and may never again be achieved. The results were staggering: A massive superiority in aircraft of nearly 8,000 to 400, and an armada which was the greatest assemblage of military surface shipping in history.(42) This mass provided the flexibility and the capability to strike quickly into the heart of Europe.

OVERLORD also highlights the influence which logistics exerts upon combat operations. Specifically, logistics determined the troop dispositions and missions in France. The decision to place the American troops on the right, in hedgerow country, and the British on the left, near Caen, was based upon the consideration to maintain clean lines of operations from respective bases in England and to ensure that the force which possessed the greatest amount of infantry units and replacements (the Americans) was placed in terrain which allowed for its employment.(43)

Logistics' dominance over actions at the operational level of war is readily apparent from a quick examination of OVERLORD. The disposition of forces in France, the timing of the invasion, the

establishment and sequencing of bases, the generation of combat power and other assets to execute deception, mass and most importantly -- flexibility, are all derived from a focus on logistics. General Eisenhower and his staff had that focus and maintained it until operation COBRA was launched. On the eve of that operation (the breakout at Avranches), there were confined within the space of 1570 square miles a total of 19 American and 17 British divisions containing a million and a half men, with supplies for the Americans alone averaging 22,000 tons a day.(44) After COBRA, the Allies exploited subsequent operational successes all the way to the German border. There, their pursuit ran out of steam. General Eisenhower and his staff, both of whom had focused correctly on logistics considerations prior to, during, and immediately after OVERLORD, had directed their attention away from logistics and toward operations. The result was more than an operational pause. It was a dead stop.

#### KOREA 1950: CHROMITE AND THE CHINESE COUNTEROFFENSIVE

Operation CHROMITE and the subsequent Chinese counteroffensive during the Korean War provide an excellent case study of logistics as part of operational war. On the surface it appears difficult to argue anything but General MacArthur's genius and brilliance as the source of operational victory. It certainly demonstrated that he was a master of amphibious operations. However, a closer look at MacArthur's actions before Inchon will demonstrate his regard for logistics at the operational level and the central role they played in the development of CHROMITE. Moreover, we will see how MacArthur's failure to build up a logistics structure and take an operational

pause after taking Seoul resulted in his crushing defeat by poorly armed and trained Chinese forces in November-December, 1950.

North Korean forces attacked South Korea on 25 June 1950, surprising the South Korean and United States governments.(45) South Korean armed forces were well supplied but poorly led. Consequently, South Korean units broke under fire and fled south toward Pusan. The piecemeal commitment of forces into the Korean peninsula by the United States only delayed the North Korean attack until the now famous Pusan Perimeter was established along the Naktong River in August 1950.(46) During this time period and up until September MacArthur continued to add manpower and supplies to the perimeter to bolster the defenses. Pusan was a busy port and the perimeter served as a lodgement for U.N. forces. Sea lines of communications were left unrestricted between the port of Pusan and the United States massive strategic base -- Japan.(47)

MacArthur, while viewing the massive retreat of the South Korean forces on 2 July 1950, came up with the idea of the Inchon landings as a means of enveloping the enemy forces. This is no doubt one of the great plans in military history. Let's try to get inside his mind and see what considerations drove him to select the invasion at Inchon in 1950. Why was Inchon so important? Why not attack a little to the south of Inchon? What was dominating MacArthur's decision on 2 July? The answer is found in MacArthur's own words.

As to the proposal for a landing at Kunsan, it would indeed eliminate many of the hazards of Inchon, but it would be largely ineffective and indecisive. It would be an attempted envelopment, which would not envelop. It would not sever or destroy the enemy's supply lines or distribution center, and would therefore serve little purpose.

. . . But seizure of Inchon and Seoul will cut the enemy's supply line and seal off the entire southern peninsula. The vulnerability of the enemy is his supply position. . . . The several major lines of enemy supply from the north converge on Seoul. . . . By seizing Seoul I would completely paralyze the enemy's supply system -- coming and going. This in turn will paralyze the fighting power of the troops that now face Walker. . . .(48)

MacArthur demonstrates the dominant role of logistics at the operational level of war by focusing on the enemy's culmination, on the enemy supply system, and on the enemy distribution system. While others were thinking in terms of delay and defense, MacArthur was thinking of accelerating his opponent's culminating point. MacArthur was thinking logistics when, on 2 July, he formulated his idea for CHROMITE.

It boils down to this. MacArthur knew that he did not need logistics to establish operational aims or identify centers of gravity. However, from the point where he began to determine the decisive point to get at the enemy forces facing Walker in the South, his actions were driven mostly by logistics considerations. We have seen proof of this in his own words. But while MacArthur carefully considered enemy logistics imperative to the formulation of operational plans, he was less diligent in considering his own. CHROMITE serves to illustrate how friendly logistics, namely basing and operational mobility, undermined the plan's success and influenced details, even to the point of determining the date of execution. Initially, MacArthur wanted to launch the amphibious assault on 22 July. However, because of the logistics involved in building up bases in both Japan and Pusan, it took nearly two additional months before

the resources and manpower were ready for the operation to commence.(49) MacArthur found that what General Bernard Montgomery had stated about amphibious operations in World War II was true.

It must be remembered that an amphibious landing is fundamentally a supply project rather than a tactical maneuver.(50)

Likewise, operational mobility (naval sealift) was the determining factor in getting superior strength to the decisive point. What was critical was the simultaneous staging and delivery of invasion forces at Inchon and the massing of forces and supplies for the Eighth Army's attack north from Pusan. We can say with certainty, therefore, that logistics was the creative factor which let the idea be executed.

The story of Inchon's success is well documented. It is a great lesson in boldness, in determining the decisive point, and in developing the logistics wherewithal to support a bold idea. We have seen the impact of logistics upon MacArthur's decision to go to Inchon. We will now look at what happened after Inchon and the influence which logistics played in the eventual outcome.

After landing at Inchon, reclaiming Seoul, and linking up with General Walker's forces south of the 38th Parallel, General MacArthur seemingly forgot the centrality of logistics. There was no significant operational pause in order for his forces to refit, reorganize, or to build up supply bases for a possible continued attack north. Plans were not made for the establishment of mutually supportable lines of operations, and for seizing subsequent logistics bases in the North. After rapid advances in the months of October and November, UN forces were stretched to the limit along an extremely

long line of communications. Forces were not mutually supportable due to terrain, limited operational mobility, and the austere logistics infrastructure. There was no pause, no build up, and no series of strong bases which maintained short lines for front units.(51) The result was a weak defense against the overwhelming advance of Communist Chinese Forces in December 1950.

The failure of MacArthur to consider the friendly logistics situation after Inchon is unmistakably a major reason for the shabby condition of the deployed UN forces in November-December 1950. Even after the communist counteroffensive began, MacArthur's continued focus on operational vice logistical matters caused significant problems for the UN forces. As D. Clayton James points out in his book *The Years of MacArthur, Vol III*:

Even while the Eighth Army was being hit by savage Chinese attacks, MacArthur, until better apprised of the situation, was pressing Walker to continue his advance above Pyongyang. As soon as the Chinese broke off contact, MacArthur again began to push his field commanders for a resumption of the drive to the Yalu. Almond's X Corps faced some supply shortages, but Walker's forces were encountering serious logistical difficulties.(52)

MacArthur was so preoccupied with operational matters that he was telling the JCS (Joint Chiefs of Staff) he intended to attack even while his subordinate commanders were trying to overcome severe logistical shortcomings. MacArthur's vision had moved beyond the constraints of his resources.

MacArthur's actions during CHROMITE and the Chinese counteroffensive provide several important lessons regarding logistics at the operational level of war. First, it reinforces the idea that logistics (both friendly and enemy) should dominate the thinking of

operational commanders when they move beyond the determination of aims and the identification of centers of gravity. Once commanders begin to search for the decisive point and determine why it is so important, logistics becomes an even more important factor. MacArthur viewed Seoul/Inchon as important because of its logistical value. It held the key to enemy culmination. Moreover, his actions underscore the relationship between vision and logistics. It is important for our commanders to exercise unconstrained vision. However, as "military economics", logistics is never unconstrained. Significant changes in quantities of theater resources do not occur rapidly at the theater level. As such, logistics can be described as inelastic at the operational level of war. Smart commanders need to understand that vision must be achievable within available or anticipated resources. It took the UN forces almost two and a half months to synchronize and coordinate the logistics to effect CHROMITE. Moreover, we saw the danger of not recognizing logistical constraints when MacArthur ordered his forces to continue the attack in the face of the Chinese counteroffensive.

Another lesson learned from MacArthur's actions in Korea is how operational failure can occur when the commander becomes preoccupied with the maneuver side of operational matters. As with Rommel after Tobruk, and Eisenhower after the lodgement in Normandy, MacArthur took his mind off of logistics considerations (both friendly and enemy) after Inchon and it cost him dearly. His logistics posture demanded a pause to build up supplies and forces for a mutually supportable northern advance. A build up could have ensured short lines of operations. MacArthur, however, failed to recognize that it was time

for an operational pause and thus passed his own culmination point at the 38th parallel.

It could be argued that outstanding commanders "purge the envelope" and seize opportunities which would not otherwise be taken advantage of by commanders too preoccupied with logistics. It is important for commanders to exercise unconstrained thought in considering and deriving possible courses of action. However, the selected course of action must be supportable. At the operational level where the consequences of accepting great risk are more severe, the tactical mentality to charge ahead may result in catastrophic defeat. Maybe it was this "purging of the envelope" that drove MacArthur north to the Yalu without regard for logistics. Subsequently, when the Chinese counteroffensive commenced in November of 1950, MacArthur did not have the wherewithal to put up a good defense. His command was overrun by an inferior force.

Perhaps the greatest lesson does not lie in logistics. The consequences of a commander like MacArthur can be more damaging than beneficial. When the military planning is a one man show everything goes well until the commander focuses on the wrong issues. A staff used to relying on the commander to do all of the planning and generate new thought will not be prepared to identify critical elements of operational planning when the commander begins to falter. If he neglects logistics, or anything else, so too will the staff.

#### CONCLUSIONS

The review of these campaigns and the theoretical role of logistics at the operational level indicates that operational war may

have undergone significant changes in the Twentieth Century. The changes were driven by two factors: the emergence of the massive machines of Twentieth Century war and the ever increasing possibility of nations having to fight at the end of long lines of communications due to global interests and transportation developments. There has been a growing awareness of the role which logistics plays in war. World War II revealed the beginning of logistical dominance at higher levels of warfighting.(53) The advent of the tank and airplane in the late 1930's signaled a new era in destruction and speed. Along with them came a reliance upon the logistics base -- the source of all fuel and ammunition. Ironically, only a few men saw the change. In March of 1937 a paper written by an officer in the Command and General Staff School Quarterly Review of Military Literature predicted the change in modern warfare:

An adequate supply system commensurate with the force to be employed is a prerequisite for success. To be decisive, operations should be oriented against the enemy's source of supply. The importance of mobility in modern warfare, other considerations being equal, the combatant with superior communications should win.(54)

Although the comment appears to be purely Jominian, it relates back to the Clausewitzian point of superiority. It boldly alludes to the emergence of logistics at a level beyond tactics (system against system). Communications, together with its base and supplies, becomes a dominant consideration. The comment above, written in the late 1930's, reflects an attitude which proved correct in World War II, in both the European and Pacific theaters.

If we accept the theorists' emphasis on logistics and on the importance of identifying friendly and enemy culminating points then

we can conclude from our review of historical examples that the generation and application of overwhelming power comes from the establishment, build up and sequencing of bases, from the establishment of efficient lines of operations and communications, and from the ability to identify decisive points on which to focus friendly resources to cause the enemy to culminate first. The "artful" positioning and movement of all of the elements which generate combat power represents the tether on which a theater force can act. They, therefore, define the range of operational possibilities.

Montgomery, Eisenhower, and MacArthur all appreciated the need to build up the strategic base prior to launching an offensive. Each appreciated that subsequent bases had to be established to sequence operations (Montgomery moved his forces west by continually consolidating and building up new bases; Eisenhower had to create a huge base before taking on COBRA). When they failed to sequence operations without consideration for base building and establishment of supporting lines of communications, failure followed (e.g. MacArthur's advance north of the 38th parallel in Korea, and Rommel's entire campaign in North Africa). In fact, because so little planning was done by MacArthur's and Rommel's staffs to regenerate and maintain combat power, their armies were beaten severely.

Finally, since logistics comprises such a large part of modern operational war, the United States Army should develop commanders who understand its role. To this end, the military education system must develop future operational commanders and staff officers who thoroughly understand operational art and the key role which logistics

plays in practicing it. Eisenhower understood it. His problem was that his attention switched to operations after the breakout at Avranches. We saw where that left his armies -- stopped. Had Eisenhower continued his focus on logistics his major commanders might have been able to continue their pursuit without running out of gas. MacArthur understood also, until he focused on operations north of the 38th parallel and forgot the importance of building up bases and mutually supporting lines. We saw where that left his armies -- overrun. Rommel never had it right. And although one could argue that he won tactical battles, he lost operationally in North Africa.

The review of both theoretical and historical perspectives may indicate that operational commanders should concern themselves with logistical matters when operations appear to be dominant and vice versa. Perhaps Eisenhower's and MacArthur's forces would have fared better if they had practiced this technique. It certainly would have maintained the operational artist's focus on the decisions which provide for sequential operations; as revealed above, these are largely predicated on logistical matters.

#### DOCTRINAL IMPLICATIONS

In reviewing logistics at the operational level several doctrinal issues surface. The first fundamental problem identified in this paper is how current doctrine fails to distinguish the change in relationship between operations and logistics at the tactical and the operational levels of war. Tactics is usually based upon METT-T (Mission, Enemy, Troops, Terrain -- Time available). Logistics is subsequently built into the force's to be deployed. Today, every

tactical force has its own support structure -- COSCOMS, DISCOMS, and support battalions, companies, and platoons. A tactical commander can overcome and endure logistical shortcomings and faulty estimates through the manipulation of these organizations and the use of several short range fixes: e.g. rationing, slower pacing of the operations, and changes in mission (go on the defensive, withdraw, delay). Usually, the tactical commander will look to the operational commander to provide help quickly. Normally, if the operational commander has formulated sound campaign plans where logistics and resources has dominated the thinking he will be in position to resolve the problems of his tactical subordinates.(54)

In contrast, operational warfare -- the business of employing military forces to attain strategic goals in a theater of war or a theater of operations through the design, organization, and conduct of campaigns and major operations -- is based upon two major factors: politics and logistics. Politics determines the commitment of military force to a theater of war/operations and it mobilizes the will power of nations.(55) Operational objectives are established with these commitments and national will power in mind. Logistics provides the nation's military commitment with the power to win. Logistics at the operational level of war is the generation and maintenance of combat power.

An operational commander, however, cannot proceed toward his objectives if any one of five logistics tasks in Table 1 cannot be achieved.

Table 1  
Operational Logistics Tasks (56)

- (1) Ammunition Distribution

- (2) Petroleum Distribution
- (3) Recovery, Repair, and Replacement of Major Weapons Systems
- (4) Hospitalization and Evacuation of Wounded
- (5) Personnel Replacement

A deficiency in any one of these can hold up an entire campaign and adversely impact upon all or some of the other logistics tasks as well. We see many examples of this in the campaigns examined in this paper -- motor transport to haul fuel and ammunition in North Africa; watercraft availability for the Allied invasion of Europe; personnel replacement shortfalls in the early going in Korea; bombed out rail lines in Northern France. This, of course, says something about the uses of operational fires and the theater air campaign to target enemy theater logistics systems. FM 100-5 and respective logistics field manuals should highlight the more important role which logistics plays at the operational level of war and the serious consequences of subordinating it to operational considerations as at the tactical level. Operational and logistical considerations may, in fact, be one and the same.

A second doctrinal deficiency present in our army today is the failure of FM 100-5 and FM 100-16 (Echelons Above Corps) to reflect and recognize the joint and combined nature of theater logistics. History reminds us of the stovepipe national logistics systems in Central Europe in 1944 (we have those problems today). Not only will logistics dominate the operational commander's time but it will involve service and allied interests and resources as well. Independent operation of national and service logistics systems only inhibit an operational commander's ability to exercise agility, initiative, and synchronization. The reasons are simple. Not all

countries maintain the same level of logistics preparedness. Not all services generate the same demands for supplies and materiel. At the heart of this issue is the unified command authority of the operational military commander to exercise control of all theater logistics; he must make the key logistics decisions involving trade-offs and the allocation of shortages, not just among different countries but different services as well.(57)

Our doctrine must reflect the challenges of interallied and interservice logistics. We must remember that in coalition warfare the weakest link in the chain determines the strength of the whole. The operational artist stands little chance of matching means to ends if he cannot integrate respective national and service logistics systems.

Third, the dominant nature of logistics at the operational level of war is not limited to mid and high intensity military operations where the movement and employment of large forces is involved. A look at the present day low intensity conflict in Central America confirms that the United States Army has been driven by politics and logistics at the operational level of war. The emphasis thus far appears to be on the building of a logistics infrastructure and a capacity for sovereign nations to provide for their own defense. The employment of heavy construction engineer units, medical teams, transportation, ordnance and quartermaster units, contracting teams, and the implementation of foreign military sales and grant programs suggests that the United States will put its logistics effort ahead of any tactical effort. As has been said of Low Intensity Conflict:

Not all LIC operations require the use of force or the introduction of U.S. ground forces. In fact most of the involvement is not characterized by the use of force. (58)

What we see today are officers frustrated because combat forces are not the first consideration in developing a LIC campaign plan. The source of this frustration may well be that a generation of officers were trained to think of operational war in tactical terms (placing operations ahead of logistics). As LIC campaigns were formulated in the early 1980's many officers discovered, to their great dismay, that the central focus had shifted from the employment of combat forces to political and logistical considerations. As has been demonstrated in the insurgencies in Afghanistan and in El Salvador, no insurgency succeeds without good external support. It appears that modern guerrilla campaigns are shaped more and more by logistics considerations than by operational considerations.

Tactics will always occupy the prominent place in the U.S. Army's study of warfare. It is through the study and application of sound tactics that victory in future battle is ensured. However, in our professional quest to be tactically proficient we should stop and remember that modern wars have been, and will continue to be won through joint/combined operations and phased campaigns. These are the characteristics which history has assigned in describing the operational level of war -- and it is mostly logistics oriented. As General Jacob L. Devers, former World War II operational level commander and U.S. Army Ground Forces Commander, said regarding operational level command:

It has been said by many great leaders that they always took at least five looks to their rear for every look to their front. It may well be said that a Combined Theater Commander may well take five looks to the logistics of each of the Armed Services of each of the allied powers under command for each look he takes to the front.(59)

#### ENDNOTES

- 1 FM 100-5, Operations, (Washington, D.C.: May 1986), p. 59.
- 2 Interview, Major General (Ret) David L. Watts, 24 February 1988.
- 3 Presentation to combined seminar by LTC Harold R. Winton, Deputy Director, School of Advanced Military Studies, USACGSC, Ft. Leavenworth, 2 Mar 1988.
- 4 RADM Henry E. Eccles, Logistics in the National Defense, (Harrisburg, PA: The Stackpole Company, 1959), p. 17.
- 5 FM 100-5, Operations, p. i.
- 6 Ibid., p. 10.
- 7 Ibid., p. 28.
- 8 Ibid., p. 10.
- 9 Baron De Jomini, The Art of War, (Philadelphia, PA: J.B. Lippincott and Co., 1862), p. 67.
- 10 FM 100-5, Operations, p. 28.
- 11 Ibid., p. 10.
- 12 Ibid.
- 13 Major Terry Gilbert, "In Search of Jointness: The Air Force Officer as Operational Commander", (Ft. Leavenworth, KS: USACGSC, May 1988), p. 12.
- 14 Carl von Clausewitz, On War, (Princeton, NJ: Princeton University Press, 1976), p. 330.
- 15 Ibid., p. 338.
- 16 Ibid., p. 566.
- 17 FM 100-5, Operations, p. 181.
- 18 Ibid., pp. 181-182.
- 19 Clausewitz, On War, p. 528.
- 20 Jomini, The Art of War, p. 109.

- 21 Ibid.
- 22 Ibid., p. 79.
- 23 Clausewitz, On War, p. 595.
- 24 Eccles, Logistics in the National Defense, p. 17.
- 25 Ibid., p. 51.
- 26 Ibid., p. 60.
- 27 David Irving, The Trail of the Fox, (New York, NY: Avon Books, 1977), pp. 81-83.
- 28 Ibid., p. 225.
- 29 Lieutenant Colonel Douglas W. Craft, "Operational Art in the Western Desert", (Ft. Leavenworth, KS: USACGSC, 7 May 1987), pp. 12-13.
- 30 Ibid., p. 32.
- 31 Irving, The Trail of the Fox, pp. 300-305.
- 32 Major Myron J. Griswold, "Considerations in Identifying and Attacking the Enemy's Center of Gravity", (Ft. Leavenworth, KS: USACGSC, 14 May 1986), p. 11.
- 33 Irving, The Trail of the Fox, pp. 220-222.
- 34 Forrest C. Pogue, The Supreme Command, (Washington, D.C.: Department of the Army, Office of the Chief of Military History, 1954), p. 53.
- 35 Major William R. Betson, "Centers of Gravity, Lines of Operations, and the Normandy Campaign", (Ft. Leavenworth, KS: USACGSC, June 1987), p. 5.
- 36 Martin Van Creveld, Supplying War, (London: Cambridge University Press, 1977), pp. 207-208.
- 37 Russell F. Weigley, Eisenhower's Lieutenants: The Campaign of France and Germany 1944-1945, (Bloomington, IN: Indiana University Press, 1981), p. 43.
- 38 Van Creveld, Supplying War, p. 206.
- 39 Ibid., pp. 207-208.
- 40 Betson, "Centers of Gravity, Lines of Operations, and the Normandy Campaign", p. 12.

- 41 Weigley, p. 73, and Betson, pp. 9-12.
- 42 Betson, "Centers of Gravity, Lines of Operations, and the Normandy Campaign", p. 13.
- 43 Ibid., p. 39.
- 44 Van Creveld, Supplying War, p. 212.
- 45 D. Clayton James, The Years of MacArthur, Volume III, 1945-1964, (Boston, MA: Houghton Mifflin Company, 1985), p. 419.
- 46 Roy E. Appleman, South to the Naktong, North to the Yalu (June-November 1950), (Washington, D.C.: Department of the Army, Office of the Chief of Military History, 1961), p. 252.
- 47 Ibid., pp. 116-117.
- 48 James, The Years of MacArthur, Volume III, 1945-1964, p. 470.
- 49 Ibid., p. 472.
- 50 Weigley, Eisenhower's Lieutenants: The Campaign of France and Germany 1944-1945, p. 103.
- 51 James, The Years of MacArthur, Volume III, 1945-1964, pp. 488-493.
- 52 Ibid., p. 526.
- 53 Watts, interview, 24 February 1988.
- 54 Captain William C. Braly, "The Influence of Supply on Strategy", USACGS School Quarterly Review of Military Literature, (Ft. Leavenworth, KS: 1937), p. 5.
- 55 Watts, Interview, 24 February 1988.
- 56 Ibid.
- 57 Ibid.
- 58 Major Jesse M. Perez and Major Jose G. Ventura, "Base Development in a Low Intensity Conflict Environment", (Ft. Leavenworth, KS: USACGSC, undated), p. 1.
- 59 General Jacob L. Devers, "Major Problems Confronting a Theater Commander in Combined Operations", An Address to the Armed Forces Staff College, 8 October 1947.

## BIBLIOGRAPHY

### Books

- Appleman, Roy E., South to the Naktong, North to the Yalu (June-November 1950). Washington, D.C.: Department of the Army, Office of the Chief of Military History. 1961.
- Barnett, Correlli, The Desert Generals. Bloomington, IN: Indiana University Press. 1960.
- Clausewitz, Carl von, edited and translated by Michael Howard and Peter Paret, On War. Princeton, NJ: Princeton University Press. 1976.
- Eccles, RADM Henry E., Logistics in the National Defense. Harrisburg, PA: The Stackpole Company. 1959.
- Irving, David, The Trail of the Fox. New York, NY: Avon Books. 1977.
- James, D. Clayton, The Years of MacArthur, Volume III, 1945-1964. Boston, MA: Houghton Mifflin Company. 1985
- Jomini, Baron De, translated by G.H. Mendel and W.P. Craighill, The Art of War. Philadelphia, PA: J.B. Lippincott and Co. 1862.
- Macksey, K. J., Afrika Korps. New York, NY: Ballantine Books Inc. 1968.
- Pogue, Forrest C., The Supreme Command. Washington, D.C.: Department of the Army, Office of the Chief of Military History. 1954.
- Van Creveld, Martin, Supplying War. London: Cambridge University Press. 1977.
- Weigley, Russell F., Eisenhower's Lieutenants: The Campaign of France and Germany 1944-1945. Bloomington, IN: Indiana University Press. 1981.

### Articles

- Braly, William C., CPT, USA. "The Influence of Supply on Strategy", USACGS School Quarterly Review of Military Literature. March, 1937.

### Theses and Studies

- Betson, William R., MAJ, USA. "Centers of Gravity, Lines of Operations, and the Normandy Campaign". SAMS Monograph, USACGSC. Fort Leavenworth, KS. 3 June 1987.
- Craft, Douglas W., LTC, USA. "Operational Art in the Western Desert, 1940-43". AOSF Monograph, USACGSC. Fort Leavenworth, KS. 7 May 1987.

Gilbert, Terry, MAJ, USA. "In Search of Jointness: The Air Force Officer as Operational Commander". SAMS Monograph, USACGSC. Fort Leavenworth, KS. 2 May 1988.

Griswold, Myron J., MAJ, USA. "Considerations in Identifying and Attacking the Enemy's Center of Gravity". SAMS Monograph, USACGSC. Fort Leavenworth, KS. 14 May 1986.

Mamaux, David H., MAJ, USA. "Operation CHROMITE: Operational Art in a Limited War". SAMS Monograph, USACGSC. Fort Leavenworth, KS. 3 June 1987.

Perez, Jesse M. and Jose G. Ventura, MAJ's, USA. "Base Development in a Low Intensity Conflict Environment". USACGSC. Fort Leavenworth, KS. undated.

Pierce, Kerry K., MAJ, USA. "Kursk: A Study in Operational Art". SAMS Monograph, USACGSC. Fort Leavenworth, KS. 3 June 1987.

#### Government Manuals

Department of the Army Field Manual 100-5, Operations, 5 May 1986.

Department of the Army Field Manual 100-6, Large Unit Operations (Coordinating Draft), 30 September 1987.

#### Other Documents

The Principles of Strategy for an Independent Corps or Army in a Theater of Operations. USACGSC. Fort Leavenworth, KS. 1936.

"Major Problems Confronting a Theater Commander in Combined Operations". An Address by General Jacob L. Devers, Commanding General, Army Ground Forces, to the Armed Forces Staff College. 8 October 1947.

Paradigm presented by LTC Harold R. Winton, Deputy Director, School of Advanced Military Studies, USACGSC, to a combined seminar of the class of 1988. Fort Leavenworth, KS. 2 March 1988.

Swain, Richard M., COL, USA. Glossary of Military Terms. USACGSC. Fort Leavenworth, KS. 1988.

#### Interview

Watts, David L., Major General (Ret), USA. (By Letter), 24 February 1988.

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