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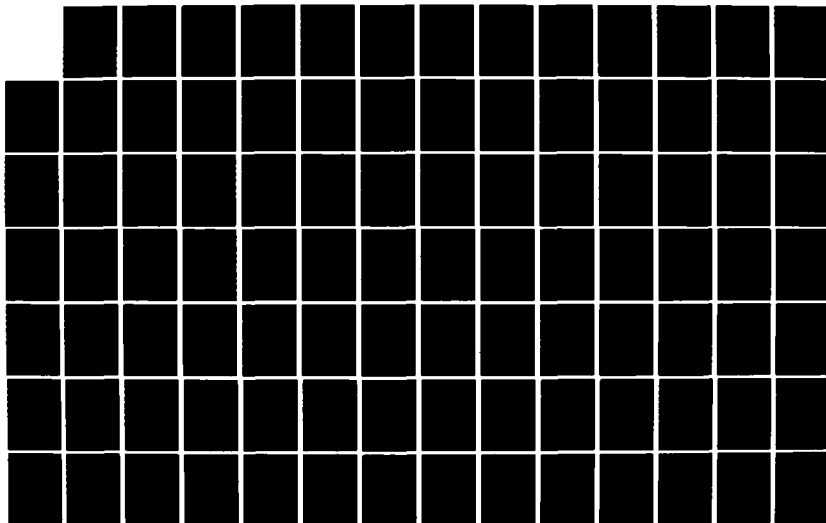
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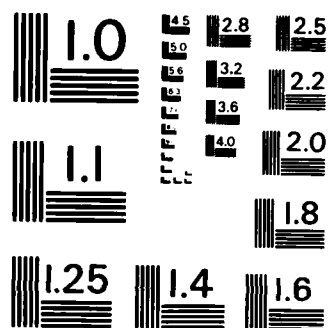
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CONSIDERATIONS FOR DEEP MANEUVER:
LESSONS FROM NORTH AFRICA, 1941-1942

A Thesis presented to the Faculty of the U.S. Army
Command and General Staff College, in partial
fulfilment of the requirements for the
degree

MASTER OF MILITARY ART AND SCIENCE

by

Glen L. Scott, MAJ, USA
B.A., University of California, Santa Barbara, 1972
M.A., Pepperdine University, 1978
M.P.A., Golden Gate University, 1980

Fort Leavenworth, Kansas

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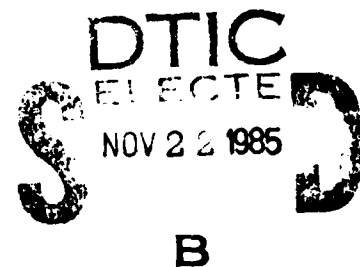
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MASTER OF MILITARY ART AND SCIENCE

THESIS APPROVAL PAGE

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

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ABSTRACT

CONSIDERATIONS FOR DEEP MANEUVER: LESSONS FROM NORTH AFRICA, 1941-42,
by Major Glen L. Scott, USA, 206 pages.

This study uses historical analysis to derive factors which merit consideration by the commander or staff officer contemplating the employment of large ground maneuver forces in deep maneuver. The study focuses on whether there are conditions or factors which, if present, tend to favor success in deep maneuver.

Following a general review of the development of maneuver warfare from the time of Frederick the Great to the outbreak of World War II, the study analyzes four battles from the North African campaign of 1941-42 in which deep maneuver played a significant role. The battles studied are Operation "Battleaxe" (June 1941), Operation "Crusader" (November 1941), the Battle of Gazala (May-June 1942) and the Battle of Alam el Halfa (August-September 1942).

The study concludes that deep maneuver by ground forces is a viable means of seizing and retaining the initiative during offensive operations. It can yield results out of proportion to the size of the force involved. Correctly used, deep maneuver can enable the commander to defeat an enemy superior in strength and defending the ground of his choice. The study identified certain conditions which were characteristically present when deep maneuver was successful. Successful deep maneuver forces in North Africa possessed, or achieved, a clear operational concept; accurate and timely intelligence; surprise; superior relative speed of operations; freedom, or flexibility, of maneuver; adequate logistical sustainment; the ability to concentrate and synchronize the effects of all available sources of combat power; and an internalized doctrinal approach to war which emphasized the importance of all the preceding.

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CHAPTER 1: Introduction

Purpose

This study focuses upon considerations for the employment of ground forces in deep maneuver. Specifically, it strives to draw, from historical examples in one theater of World War Two, lessons and insights useful to commanders and their staffs attempting to transform the doctrinal prescription for deep attack into the battlefield reality of employing ground forces deep. The emphasis is upon the operational level of war, as distinguished from the strategic and tactical levels. Thus, although relatively small forces have the potential to yield operationally decisive results (an example would be the Israeli seizure of the Mitla Pass in 1956), the emphasis is upon the employment of corps and divisions in deep maneuver.¹

There are more issues and questions concerning the operational employment of ground forces in deep maneuver than can be adequately addressed in a study of this length. Accordingly, attention focuses upon investigating one major question; are there principles or conditions that must be met if the deep maneuver of ground forces at the operational level is to be successful?

The employment of ground maneuver units in deep maneuver is fraught with risk, yet success can be potentially far out of proportion to the effort spent.² This study is intended to aid the commander and his staff in determining whether the risk is worth taking and provide suggestions on how to increase the probability of success.

Background²

In 1978 the U.S. Army began writing and talking about the concepts that became formalized as the doctrine of AirLand Battle in August 1982. Adoption of new doctrine has traditionally posed significant challenges to a military establishment. Efforts by the United States Army to assimilate AirLand Battle doctrine are no exception. AirLand Battle doctrine necessitates a significant reexamination of how the United States Army prepares for, and fights wars. The need arises from the evolutionary changes inherent in the concepts of AirLand Battle doctrine. Among these changes are the reintroduction of the operational level of war, the spatial and temporal expansion of the battlefield, and a renewed appreciation for maneuver and mobility versus attrition and position. AirLand Battle doctrine thus requires the commander to conceive the employment of large forces over an extended, very fluid battlefield.

Success on the extended battlefield requires hitting the enemy throughout the depth of his formations. While the modern commander has many assets to use in striking deep, including indirect conventional fires, special weapons, unconventional forces, and aviation, the maneuver of conventional ground forces deep in the enemy's rear has historically yielded decisive results. However, moving from this simple prescription to the actual employment of large forces in deep maneuver is not easy. Success requires more than simply launching an army into a campaign of maneuver against the enemy's rear. The commander must determine what action will yield decisive results, that

is, he must know his enemy. He must know the strengths and weaknesses of his own forces. In many cases his subordinate formations will differ widely in their capabilities with respect to mobility, firepower, leadership and logistical sustainment. He must integrate offensive and defensive operations while employing tactical means to achieve strategic and operational goals. Thus, the commander considering the deep maneuver of large ground formations faces a complex task fraught with risk and uncertainty.

Methodology

The battlefield provides the ultimate test of the efficacy of military doctrine. In the absence of major war, the means available to develop and test doctrine are limited. There are essentially four alternatives: Theoretical conceptualization; laboratory simulation (including war gaming); field exercises; and historical analysis. The alternatives need not be mutually exclusive. For example, a period of theoretical conceptualization is a necessary precursor to the other alternatives being employed. As research designs all these alternatives have shortcomings.

Laboratory simulations, to include computer simulations and manual war gaming, provide valuable training and information yet are suspect due to the difficulties of using a mathematical model to portray an inherently illogical activity. Lieutenant General John H. Cushman warned of this when he wrote, "...Battle leaders whose thoughts are formed by mathematical models which fall short of battle's reality will forfeit battle mastery to enemies with greater insight."⁴

The use of field exercises is useful but limited due to the question of scale involved. Aside from the difficulty of accurately replicating battlefield conditions, the question of cost and feasibility must be solved. To portray accurately the forces and territorial expanse needed to adequately test deep maneuver at the operational level would require multiple divisions freely maneuvering over tremendous areas. The US Army has not exercised on this scale for decades.⁵

The principal difficulties in the use of historical analysis are whether a suitable historical period and location can be identified, whether sufficient documentation about it exists, and the degree to which any results are applicable to the present or future.

North Africa during the period 1941 and 1942 was selected with these difficulties in mind. It offers many opportunities for studying the operational art in general, and deep maneuver in particular. From the arrival of German forces in early 1941, until their eventual defeat in 1943, the war in North Africa was characterized by almost continuous combat between two sophisticated, mechanized armies. Both sides used mobility and maneuver to gain battlefield advantages. There are numerous instances of commanders attempting to employ ground forces in deep maneuver against the enemy's rear. Both opponents employed significant mobile forces consisting of all the traditional ground combat arms. Both opponents used aviation assets for reconnaissance, interdiction, and close air support. Logistics played a key role in all operations. Intelligence assets, both within the theater and external to it, were a critical element. The area of operations was geographically isolated from other ongoing land campaigns, resulting in

a relatively "pure" battlefield. There are striking similarities with the terrain and environmental conditions which United States forces may face in some non-NATO contingency operations. Finally, there exists sufficient documentation to support a meaningful research effort.

Selected battles in North Africa form the historical case studies. Early 1941 was selected as a starting point because prior to the Germans actively entering the area the use of maneuver warfare was effectively limited to the British forces; the Italians, aside from doctrinal and command limitations, were insufficiently mechanized. Early 1943 is a logical end point since following it the Germans were largely incapable of conducting mobile warfare. Thus the time frame is one in which both opponents had the potential to conduct mobile warfare at the operational level.

Having established the time period, geographical region and opposing sides to be studied, it remained to select the specific battles to form the case studies. To accomplish this two questions were asked; how many battles were needed to form the case studies, and by what criteria would they be selected?

Four battles were chosen to constitute the case studies. This represents a compromise between the competing demands of research validity and thesis length constraints. Four case studies provide a sufficiently broad data base to be meaningful. Attempting to examine more than four would have entailed expanding the research effort beyond reasonable length.

The criteria for selection of the four battles to form the case studies derived from the focus of the study, that is, the deep maneuver

of ground forces at the operational level of war. To be selected a battle must have satisfied all the following requirements:

1. Occur in North Africa during the period 1941 to early 1943.
2. Involve the planned employment of ground maneuver forces of at least division-equivalent size in deep maneuver.
3. Execution of the planned deep maneuver must have been attempted.

Based upon the selection criteria, the following operations were selected for study:

1. "Battleaxe": The British offensive of June 1941 and the German response.
2. "Crusader": The British offensive in November 1941.
3. The Battle of Gazala: The German attack in May and June 1942.
4. The Battle of Alam el Halfa: The German attack in August 1942.

Analysis of each selected operation concentrates upon the deep maneuver aspects of the battle. The cognitive framework employed for the analysis of the case studies was based upon an expanded version of the classic principles of war. To the traditional principles of war were added the factors of sustainment, leadership, moral factors, equipment, training and doctrine.⁶

Organization

To minimize confusion, a few words on organization and terminology are appropriate. First, the organization of the study. There are seven chapters. Chapter 1, introduces and defines the problem. Chapter 2 provides the background for discussing deep maneuver by introducing

various maneuver warfare concepts. This is done by means of a brief historical overview of European and American warfare in general, and deep maneuver in particular. Familiarity with the ideas of men such as Frederick, Napoleon, Jomini, Clausewitz, Fuller, Liddell-Hart, and Tukhachevsky is essential to any meaningful analysis and discussion of the case studies. Chapters 3 through 6 are the case studies. Chapter 7 is the conclusion and findings.

The case studies are presented in chronological sequence and are best read in that order. The earlier chapters in particular contain aspects of terrain, force organization, equipment, training, logistics and strategic background which is not repeated in later chapters. Each chapter focuses upon the maneuver aspects of a particular battle. Each battle is examined with respect to the operational setting or background, what the plan was and how it was executed. Each chapter concludes with a brief analysis of the salient lessons and insights. Accompanying each chapter are maps (Maps are enumerated alphabetically by chapter, thus the first map of Chapter 3 is Map 3a) and an appendix. The appendices contain more detailed force-listings than are found in the text. At the conclusion of each chapter are endnotes and map credits.

Terminology

An essential first step in analyzing a problem is agreeing on terminology. While Chapter 2 serves to introduce many of the concepts to be discussed, some deserve early clarification. Specifically, what is

meant by deep maneuver and what constitutes the operational level of war? Finally, a few words on placenames and force designations.

Inasmuch as this study focuses on deep maneuver, it is useful to clarify just what that means. For the purposes of this study, deep maneuver is defined as referring to maneuver by ground forces into the rear of the enemy forward forces to such a depth that the maneuver force is beyond the mutual support of other friendly forces facing the enemy forward forces. Mutual support is taken to refer to support by either fires or maneuver. By this definition there is no definitive distance which delineates when a maneuver becomes "deep," rather it is relative to the size of the forces involved. The implication of this is that technology plays a key role in determining what constitutes "deep." As the range of support weapons and the mobility of ground maneuver forces increases the distance to which forces can be considered in mutual support increases.

Definitions of the operational level of war are many and diverse. For this study, a definition offered by the School of Advanced Military Studies, Command and General Staff College, is used. According to this definition the operational level of war "...comprises the maneuver, support, and sequential employment of large forces in the conduct of military campaigns in order to implement strategic goals and give strategic effect to tactical actions."

In discussing maneuver at the operational and tactical levels it is important to remember that no clear boundary separates the two. Corps and divisions can be employed in either a tactical or operational sense, and often aspects of both will be found during a single operation. It

is therefore useful to think of the levels of war as existing along a continuum, with minor tactics at the lower extreme and grand strategy at the higher. It is the area of the middle of the continuum which modern doctrine refers to as the operational level. The 18th century French term for the operational level of war was "grand tactics."⁸

Lastly, a few words on naming places and forces. To avoid confusion, the spelling of North African placenames has been standardized to agree with the maps accompanying each chapter. The opposing forces in the case studies frequently represent a bewildering array of nationalities. The term "Axis" forces refers to Italian and German forces working in conjunction. In many cases a force or headquarters is referred to as German although it may contain some non-German elements; in such cases the relative importance of the German element was deemed so predominate that labeling it as a combined effort would be deceptive. Likewise, on the "Allied" side the 8th Army contained forces from many nations, including some outside the British Commonwealth (such as Polish and Free French units). Where appropriate the term "Allied" is employed. However, just as in the case of the Germans, in many instances a force or headquarters will be referred as British to imply the predominate influence of British doctrine and force composition. This is particularly true when referring to headquarters above the division level.

Scope and Limitations

The study focuses on lessons for the operational employment of ground maneuver forces in the deep attack. Attempting to generalize the

results to either the strategic or tactical levels of war would be of questionable reliability. The scope is also limited in that the use of deep maneuver during the exploitation or pursuit is not addressed. Indeed, the type of deep maneuver studied is that which is intended, if successful, to result in the ability to begin exploitation or pursuit operations.

This study uses historical analysis of selected battles occurring in North Africa during the period 1941 and 1942. As such the results are necessarily limited by differences in time, space, and technology. Chemical and nuclear destruction were not concerns of the Axis and Allied commanders. Rotary wing aircraft, with the attendant possibilities for command and control, fire support, battlefield mobility, and vertical envelopment were not yet developed. The technology of armored forces, weapons, and communications were not as advanced. Finally, caution must be exercised in transferring lessons learned on the terrain of North Africa, in combat between two western European armies, to warfare in geographic areas characterized by predominately closed or restricted terrain, and fought by non-European forces.

Conclusion

To successfully translate the precepts of AirLand Battle into practical reality the U.S. Army must improve its ability to maneuver large forces over an extended, very fluid battlefield. This study focuses upon one aspect of that challenge, the employment of large forces in deep maneuver. More specifically, it seeks to answer the

question of whether or not there are certain principles or conditions that must be met if the deep maneuver of ground forces at the operational level is to be successful. It does so through examination of past examples of deep maneuver at the operational level in North Africa during the Second World War.

The results of this study are intended to provide insights to the commander and staff officer; to give them the opportunity to learn from the actions of others. While it is intended to provide an addition to their foundation of experience and knowledge, by no means will it yield an infallible recipe for success. In this way it is intended to perform a role similar to that which Carl von Clausewitz saw military theory filling.

It is meant to educate the mind of the future commander, or, more accurately, to guide him in his self-education, not to accompany him to the battlefield; just as a wise teacher guides and stimulates a young man's intellectual development, but is careful not to lead him by the hand for the rest of his life.³

Endnotes

1. For discussions of the operational level of war see Colonel Wallace P. Franz, "Maneuver: The Dynamic Element of Combat," Military Review, May 1983, p. 6; US Department of the Army, FM 100-5, Operations (Washington, DC: US Government Printing Office, 1982), p. 2-3; and Lieutenant Colonel Paul T. De Vries, "Maneuver and the Operational Level of War," Military Review, February 1983, p. 30.

2. Lieutenant Colonel L.D. Holder, "Maneuver in the Deep Battle," Military Review, May 1982, p. 60.

3. For a brief discussion of the origins of AirLand Battle see Lieutenant General John H. Cushman, Organization and Operational Employment of Air/Land Forces, reference text for the U.S. Army War College (Carlisle Barracks, PA: US Government Printing Office, 1984),

p. vii; the keystone manual for AirLand Battle is FM 100-5, see p. 1-1. See also General Donn A. Starry, "To Change An Army," Military Review, March 1982, p. 21; Franz, "Maneuver: The Dynamic Element of Combat," p. 3; General Donn A. Starry, "Extending the Battlefield," Military Review, March 1981, p. 49; Lieutenant Colonel (P) Huba Wass de Czege and Lieutenant Colonel L.D. Holder, "The New FM 100-5," Military Review, July 1982, pp. 55; and De Vries, "Maneuver and the Operational Level of War," p. 27.

4. Cushman, p. 10-5.

5. Major General John W. Woodmansee, "Blitzkrieg and the AirLand Battle," Military Review, August 1984, p. 38.

6. The principles of war adopted by the US Army consist of objective, offensive, mass, economy of force, maneuver, unity of command, security, surprise and simplicity. For discussion of these principles refer to FM 100-5, pp. B-1 to B-5.

7. Definition offered by Lieutenant Colonel Harold R. Winton and Lieutenant Colonel L.D. Holder in an unpublished memorandum, Subject: Scratch Definition of the Operational Level of War, dated 8 February 1985, at the School of Advanced Military Studies, Command and General Staff College, Fort Leavenworth, Kansas.

8. Franz, p. 4.

9. Carl von Clausewitz, On War, (Princeton: Princeton University Press, 1976), p. 141.

CHAPTER 2: THE EVOLUTION OF DEEP MANEUVER TO WW II

Introduction

Understanding how the theory of deep maneuver developed and its major concepts is a necessary precursor to analyzing the North African campaign. This chapter reviews the historical development of deep maneuver from the pre-Napoleonic period in Europe to the beginning of WW II. The review concentrates upon those influences, both events and individuals, which led to the doctrine employed by the British and Germans in North Africa. It also briefly touches upon the development of the principles of war which form the basis for analyzing the case studies from North Africa.

Europe Prior to Napoleon

European warfare prior to the age of Napoleon was essentially a limited, formalized endeavor conducted with restricted resources to accomplish a finite objective.¹ Armies tended to be small, professional and expensive. Commanders preferred to avoid battle except under the most favorable of conditions. Battles were often terminated prior to a real decision being reached and pursuit was rarely employed. Siege warfare became an art in itself and the bloodless campaign was regarded as the epitome of the art of war.

Against this general context of limited warfare however there were individuals whose achievements and writings foreshadowed the future. Field commanders such as Gustavus, Marlborough, and Frederick and

writers such as Bourcet and Guibert provided the foundation for Napoleon's style of maneuver warfare.

Frederick the Great of Prussia (1712-1786) both succeeded on the battlefield and left his thoughts on paper. He advocated a quick, violent and cunning approach to war coupled with the realization that hitting weakness with strength yields the greatest benefits.² Despite this offensive orientation his army remained one that maneuvered by regiments and was tied to a cumbersome logistics system. He lacked a sufficiently large and mobile force capable of fully executing his ideas. French military theoreticians of the latter half of the 18th century would provide part of the solution.

During the decades immediately preceding the French Revolution a number of French military writers addressed the issue of reforming the organization, doctrine, and equipment of the French Army to expand its combat capabilities. The influence of such men as Guibert, Bourcet, and Du Teil were of particular importance. Count Jacques Guibert, in his work Essai General de Tactique, published in 1772, advocated achieving greater mobility by streamlining the supply system and an emphasis upon simplicity and flexibility.³ Pierre de Bourcet, favored creating division-size units capable of independent action. His divisions would march separately but fight together; thus one division could be used to fix or pin an enemy force while another attacked his rear. Finally, the Chevalier Du Teil proposed that artillery assume a greater role in the battle. He asserted that mobile artillery could be moved about the battlefield and massed to concentrate fires at the decisive point or reinforce points in danger.⁴

By the time of the French Revolution the theoretical foundations for the maneuvering of large force in campaigns and on battlefields were firmly established.

The Influence of Napoleon

Napoleon

There are in Europe many good generals, but they see too many things at once. I see only one thing, namely the enemy's main body. I try to crush it, confident that secondary matters will then settle themselves.

Napoleon, 1797⁵

The influence of the Napoleonic wars upon military thought lasted well into the 20th century. To understand this influence requires not only studying Napoleon but also his chief interpreters, Clausewitz and Jomini, and the major conflicts of the period.

The Napoleonic wars which flared intermittently for over a generation brought a break with the previous age of limited warfare in Europe. According to J.F.C. Fuller, "The wars Napoleon waged were wars of conquest on the grand scale, and they had no precedent since the days of Charlemagne..."⁶ After studying Napoleon's campaigns, J.F.C. Fuller deduced the following as characterizing his art of warfare:

(1) His invariable reliance on the offensive; (2) his trust in speed to economize time, and (3) to effect strategic surprisals; (4) his insistence on concentrating superiority of force on the battlefield, particularly at the decisive point of attack; and (5) his carefully thought out protective system.⁷

The protective system Fuller attributed to Napoleon does not refer to passive defensive measures; rather, as Fuller quotes Napoleon, "The

whole art of war consists in a well reasoned and circumspect defensive, followed by rapid and audacious attack.⁸

In The Campaigns of Napoleon, Chandler attributes to Napoleon an excellent grasp of the uses of security, intelligence, and deception. Napoleon's employment of security measures, ranging from press censorship at the strategic level to cavalry screens at the tactical level, when combined with the speed and mobility that characterized his operations frequently resulted in his enemy being off balance and confused before the battle began.⁹

What made it possible for Napoleon's forces to achieve such rapidity of movement were the development of the corps concept, lightening of the the logistical "tail" and Napoleon's iron insistence upon the need for rapidity.¹⁰ Napoleon expanded the divisional concept into the corp d'armee. A Napoleonic corps was a combined arms organization of two or more divisions capable of conducting independent operations for several days. It was designed to be able to hold its own against superior forces for some time. Napoleon was able to decrease the logistical drag upon his Army due to several factors, among them being the radically different makeup of his soldiers, the corp d'armee system, decreased baggage, and careful logistical planning and organization.¹¹

Napoleon employed three types of operational maneuver to achieve his aim of creating a favorable battle situation capable of producing decisive results. These maneuvers were the penetration, the maneuver of central position and maneuver upon the rear (la manœuvre sur les derrieres).¹²

Napoleon used maneuver upon the rear when facing a numerically equal or inferior foe. While part of his army, normally one or more corps, "pinned" the enemy's front, he maneuvered the rest around the enemy toward his rear and lines of communication. Upon reaching the enemy rear, or his lines of communication (the two were normally but not always the same), he would advance toward the enemy. The enemy was faced with forces to his front, toward his rear, and his chosen lines of retreat and communications were already severed. His alternatives were to surrender, accept battle under unfavorable conditions, or attempt to conduct an awkward withdrawal.

If outnumbered, Napoleon employed the concept of central position. Under this idea Napoleon would advance to seize a position dividing the enemy forces. Then, using part of his forces to "pin" or fix one part of the divided enemy, he would rapidly move to concentrate against the other part, thus gaining numerical superiority against one part of the enemy force. The operational concept depended on using interior lines to defeat the enemy forces in detail.

The third type of maneuver was the penetration. The operational penetration was designed to lead to a situation in which the maneuver of central position or maneuver upon the rear could be employed. The penetration was employed when the enemy used an extended linear type of defense. Napoleon would concentrate sufficient forces to break through the enemy line, then march rapidly into the enemy's rear to seize some key objective from which subsequent operations would be conducted.

None of these maneuvers were mutually exclusive. Napoleon demonstrated particular brilliance in integrating all three concepts into a campaign plan.

These Napoleonic maneuvers depended for success upon several factors, the lack of any of which could result in failure. These factors included delicate timing, tight security, good intelligence, excellent planning, and soldiers of great stamina, capable of conducting strong holding actions and long, hard marches. In turn, the ability to conduct marches at great speed depended not only upon good commanders and troops but also upon an adequate network of roads.

Finally, Colonel Wallace P. Franz evaluated Napoleon's contribution to the art of war as follows:

...The operational level of war had its most significant development during the Napoleonic wars. Napoleon's greatest contribution to the art of war was at this level. He fused marching, maneuvering, fighting and pursuing into one continuous process--that is, the transition from strategy to tactics.¹³

Napoleon's Interpreters: Clausewitz and Jomini

The writings of Antoine Henri Jomini (1779-1869) and Carl von Clausewitz (1780-1831) exerted tremendous influence upon the development of European and American military doctrine. Both men based much of their work upon their participation in, and study of, Napoleon's campaigns.

Jomini defined the basic concepts which provided a common language for discussing military theory. His delineation of the differences

between strategy, grand tactics and minor tactics provided the basis for discussing the levels of war.

Jomini viewed war as a rational, logical undertaking; governed by certain rules which could only be violated at great risk. He summarized these rules by stating:

It is proposed to show that there is one great principle underlying all the operations of war, a principle which must be followed in all good combinations. It is embraced in the following maxims:

1. To throw by strategic movements the mass of an army, successively, upon the decisive points of a theater of war, and also upon the communications of the enemy as much as possible without compromising one's own.
2. To maneuver to engage fractions of the hostile army with the bulk of one's forces.
3. On the battlefield, to throw the mass of the forces upon the decisive point, or upon that portion of the hostile line which it is of the first importance to overthrow.
4. To so arrange that these masses shall not only be thrown upon the decisive point, but that they shall engage at the proper times and with energy.¹⁴

Jomini recognized the weakness inherent in his maxims; the idea of throwing one's concentrated forces against the decisive point seems obvious, the problem is how to identify the decisive point.

Clausewitz rejected the idea of war as an essentially rational enterprise. He viewed war as the ultimate expression of violence; an endeavor fraught with uncertainty and chance, where the impact of moral factors was supreme. Clausewitz emphasized the linkage between politics and war, identifying the need to relate military objectives to political goals.

Clausewitz greatly influenced the 19th century Prussian Army and the later German Army. Michael Howard identified the following aspects of Clausewitz's work which the Prussians and Germans seized upon; first, the recognition of the living, dynamic nature of war, filled with reciprocal actions, chance and friction; second, his emphasis on the preeminence of moral forces in war; and third, the idea that the objective of war is the destruction of the enemy armed forces in battle.¹⁵

While all of Clausewitz merits study, certain of his concepts are particularly noteworthy because of their relevance to deep maneuver. These key concepts are chance, friction, the decision point, the culminating point, the center of gravity, boldness and surprise. Each of these concepts will be addressed.

Clausewitz wrote that four elements make up the climate of war; danger, exertion, uncertainty, and chance. Acceptance of the element of chance as being integral to the art of war results in the realization that no plan is likely to be executed exactly as intended and the unexpected must be anticipated.¹⁶

The concept of friction, like the element of chance, explains why things do not go as planned. The following excerpts from On War describe friction:

Everything in war is very simple, but the simplest of things is difficult. The difficulties accumulate and end by producing a kind of friction that is inconceivable unless one has experienced war...Countless minor accidents--the kind you can never really foresee--combine to lower the general level of performance, so that one always falls far short of the intended goal. Iron will-power can overcome this friction; it pulverizes every obstacle, but of course it wears down the machine as well.¹⁷

Action in war is like movement in a resistant element...in war it is difficult for normal efforts to achieve even moderate success.¹⁸

Clausewitz felt boldness in war "...must be granted a certain power over and above successful calculations involving space, time, and magnitude of forces, for wherever it is superior, it will take advantage of its opponent's weakness."¹⁹ He did not, however, carry the concept of boldness to the extreme of recklessness, stating:

...Boldness governed by superior intellect is the mark of a hero. This kind of boldness does not consist in defying the natural order of things and in crudely offending the laws of probability; it is rather a matter of energetically supporting that higher form of analysis by which genius arrives at a decision; rapid, only partly conscious of the possibilities.²⁰

Closely related to the concept of boldness is that of surprise. Clausewitz identified the two factors that produce surprise as secrecy and speed. While either alone will yield an advantage, both in conjunction can produce a decisive outcome.²¹

The culminating point, the decision point and the center of gravity are key concepts that Clausewitz employed in describing the conduct of campaigns and battles. The culminating point refers to that point, in space or time, beyond which the relative balance of strength between the attacker and the defender begins to change in favor of the defender. The culminating point normally occurs because of the inevitable tendency for an attacking force to become weaker as the attack proceeds; the process is speeded if the defender actually gains in strength or, alternatively, if he loses strength at a slower rate than the attacker as the operation progresses. It is just prior to the culminating point being reached that an attacker would be well advised to go on the defense, otherwise

he may face a counteroffensive from an opponent he no longer dominates.²²

The decision point refers to the stage of the battle or campaign at which the course or outcome has become, for all practical purposes, decided. It is the point at which it is readily apparent which side will be victorious.²³

Combining the concepts of the decision point and the culminating point, success for the attacker occurs when he achieves a favorable decision point prior to reaching his culminating point. Contrarily, in a defensive battle or campaign the defender strives to postpone the decision point in hope that the defender will reach his culminating point.

Clausewitz used the term "center of gravity" to refer to an opponent's "...hub of all power and movement, on which everything depends. The point against which all our energies should be directed."²⁴ Clausewitz realized the importance of correctly identifying what Jomini termed the "decisive point."

From Waterloo to World War I²⁵

Technology and the Defense²⁶

The wars of the mid-19th century foreshadowed the increasing strength of the defense versus the offense which arose with the industrial revolution. The Crimean War degenerated into positional warfare based on fortresses, especially Sebastopol, and trenches soon after the amphibious landings. The War of Italian Unification (1859)

was the first in which all the infantry of both sides were armed with rifles. The American Civil War featured such technological products of the industrial revolution as railroads, telegraph communications, steamships, balloons, armor plate, rifled weapons, and wire entanglements.

J.F.C. Fuller summarized the effects of these technological changes in his conclusions regarding the US Civil War. He concluded that frontal assaults by massed infantry were suicidal, that field entrenchments were an inevitable consequence of the rifle bullet and that both the cavalry charge and the bayonet were anachronistic.

However, despite the growing strength of the defense, there were some indications that battlefield mobility could restore the decisiveness of offensive maneuver. Civil War commanders such as Grant (particularly during the Vicksburg campaign), Sherman, Lee and Jackson employed maneuver with great skill at the operational and tactical levels of war. Additionally, the potential of cavalry (exemplified by commanders such as Grierson, Stoneman, Forrest and Stuart) to employ its speed and mobility to conduct deep maneuver, as opposed to being employed as a shock formation, was demonstrated on several occasions.

The Prussian Tradition²⁷

The wars Prussia fought against Austria (1866) and France (1870-71) led to the unification of Germany and the ascendancy of the Prussian Army in Europe. Credit for Prussia's military successes must go to Field Marshall von Moltke. Building upon the heritage of men such as Frederick, Scharnhorst and Clausewitz he produced an army oriented to

employ offensive maneuver to gain decisive victory. Realizing that the destructive power of modern weapons made the frontal assault infeasible except for holding actions, he concluded that the envelopment was the decisive form of maneuver on the battlefield.

Moltke also realized that the increasing size of modern armies, and the necessity for speed to achieve large scale envelopments, required subordinates capable of employing initiative. Thus, once battle was joined general directives rather than detailed orders would be the norm. In these concepts are the basis of Auftragstaktik and the Kesselschlacht. This doctrinal orientation, when combined with an effective General Staff (particularly during the mobilization period), skillful use of technological advances (such as the superior Prussian breech-loading needle gun against the Austrians, the superior Prussian artillery against the French and the use of railways during mobilization in both wars) resulted in quick victories by the Prussians.

Turn of the Century War

Around the turn of the century two small wars and one large one were fought. The Spanish-American War of 1898 was a relatively unimportant affair of small forces with few lessons for maneuver.²⁰ The central lesson of the Boer War of 1899-1902 was summarized as being that "...the smokeless, long-range, high-velocity, small-bore magazine bullet from rifle or machine-gun, plus the trench, had decisively tilted the balance against the attack and in favor of the defense."²¹

No startling lessons emerged from the Russo-Japanese War. Operations at Port Arthur resembled those of Sebastopol during the

Crimean War, the difference being the increased lethality of weapons. Operations around the Yalo River were similar to those of the Franco-Prussian War, reinforcing the superiority of the envelopment when executed with initiative and resoluteness.³⁰

1914-1939: Search for Mobility

World War I

Operations in World War I, particularly on the Western Front following the opening maneuver phase, quickly degenerated into trench warfare (there were notable exceptions to this on the Eastern front; for example, at Tannenberg, and the Brusilov offensive in Galicia³¹). The advancing technology of defense (the machine gun, barbed wire, improved artillery and rapid firing rifles) outpaced the technology of offense, particularly the ability to advance under heavy fire and exercise command and control over dispersed formations. In contrast to this general trend however, the Germans demonstrated an ability, even on the Western Front, to achieve penetrations using innovative infiltration techniques.³² The difficulty which remained though was the inability to move following forces forward quickly enough to exploit tactical successes. Towards the end of the war the introduction of new offensive technology, particularly mechanized vehicles, airplanes, and wireless communications promised to restore operational mobility to the battlefield.

Following World War I, military theoreticians and writers in many countries saw the possibilities inherent in the new tools of war. Among

the most influential and outspoken of the pioneers were J.F.C. Fuller and B.H. Liddell Hart of Great Britain. Others, such as Guderian of Germany and Tukhachevski of Russia were of great influence within their own nations if less so outside them. Still others, DeGaulle among them, were virtually ignored even within their own nations. The thoughts and writings of these men constituted the foundation for much of the military doctrine of maneuver during World War II.

Liddell Hart (1895-1970)

Liddell Hart (1895-1970) was an early advocate of the use of mechanized forces to regain the tactical and operational mobility which had been lost during the trench warfare of World War I. He argued that mechanized forces composed of tanks, armored infantry, and tracked artillery, supported by tactical air power, would achieve decisive battlefield results by combining speed and firepower to create deep penetrations. During the 1920's and 1930's his writings were widely read by the young officers of all the European armies. In Germany his writings during this period were a key factor in the development of panzer forces and the Blitzkrieg. F.W. von Mellenthin, who served as Rommel's chief of staff remarked, "...we mostly studied the books of English tank experts like Captain Liddell Hart, while the enemy, in their thought, were still in the First World War."²²

At the core of Liddell Hart's military thought was his theory known as the strategy of the indirect approach. This theory grew out of his studies of past military campaigns, especially those of the 13th century

Mongols and of Sherman in the American civil war. From his studies of 280 campaigns he derived two simple rules:

...In the face of the overwhelming evidence of history, no general is justified in launching his troops to a direct attack upon an enemy firmly in position.

...Instead of seeking to upset the enemy's equilibrium by one's attack, it must be upset before a real attack is, or can be, successfully launched.³⁴

His solution to the challenge posed by the above rules are summarized in the following:³⁵

1. Dispersal and mobility: Keep your forces dispersed as long as possible, then concentrate rapidly to achieve superiority at the decisive point.
2. Alternative objectives and flexibility: Attack so as to threaten multiple objectives and remain flexible as long as possible.
3. Dislocation of equilibrium: Strive to throw the enemy off-balance, either mentally or physically. Use the concept of the "baited gambit," that is, draw the enemy into attacking a proffered target, then counterattack when he is extended and off-balance.
4. Strategic penetration: Strike deep to destroy and disrupt the enemy's command, control, and logistics. Use the "expanding torrent" technique, that is, attack along the line of least resistance and continuously reinforce success rather than failure. Accept the idea that the nearer the front lines an envelopment is made the more immediate the effect, but the deeper the operation the greater the final impact.
5. Air power: Use tactical air power for physical and psychological strikes; consider it flying artillery, able to keep up with rapidly moving mechanized forces.
6. Surprise: Employ deception, concealment, and the unexpected to achieve surprise.

Liddell Hart advocated using mechanized forces to achieve deep operational dislocation rather than mere tactical destruction. To defend against these techniques he offered the concept of an elastic

defense. The elastic defense would allow the enemy to penetrate to some depth before blocking his movement and destroying his forces with flanking attacks.

J.F.C. Fuller (1878-1966)

J.F.C. Fuller deserves at least equal recognition for influencing the concepts of mechanized warfare in the 1920s and 30s. The two aspects of his work which are of particular relevance to this study are his principles of war and theories of mechanized warfare.

Fuller studied war as a science. Based upon his historical studies, particularly of Napoleon's correspondence, Fuller derived a set of principles for the conduct of war. His 1925 list of principles included:³⁶

1. Direction
2. Offensive
3. Surprise
4. Concentration
5. Distribution
6. Security
7. Mobility
8. Endurance
9. Determination

Due to Fuller's success in advocating the logic and utility of his principles they, or closely related ones, were adopted by many of the military powers during the years preceding World War II, including Great Britain and the United States.³⁷ Fuller considered the principles of war to be universal, varying only in degree of application. The following excerpts are particularly relevant considering the forces that would fight in North Africa:

When both sides are partially mechanized, the governing principle is economy of force; consequently application depends upon a correct distribution of troops to the ground, the non-mechanized arms seeking security from mechanized attack by operating over broken and enclosed areas, whereas the mechanized one develop their mobility over the less difficult spaces, working at a distance but still in cooperation with the former, which should be looked upon as the tactical base of their movement. The mechanized arms should attempt to surprise the enemy by concentrating offensive power against his flanks or rear.

When both sides are fully mechanized, surprise, mobility and concentration against the objective are the governing principles, from which should be developed security and offensive power in cooperation, so that economy of force may result. As mobility will probably be the same for both sides, surprise becomes all important, therefore, command of the air is an essential factor.³⁸

Fuller and Liddell Hart agreed on many aspects of how they envisioned mechanized forces fighting.³⁹ Both advocated deep penetration by mechanized forces to disrupt enemy command, control, and logistics; both realized the psychological impact of deep maneuver upon the moral and physical cohesiveness of the enemy. Where Fuller diverged from Liddell Hart was in his belief that tank forces would virtually replace infantry and cavalry. Fuller proposed the future mechanized battlefield would be dominated by pure tank units that would use tactics very similar to those used in naval warfare between warships. Liddell Hart believed the need for infantry on the "machine" battlefield remained, but they must be mechanized and specially trained; he insisted on the continuing need for combined arms. Both men foresaw the need for air power to work in close harmony with the mechanized land forces. Fuller viewed the tank and the airplane as complementary systems and believed each would need the other in order to survive.

Guderian (1888-1954) and Blitzkrieg

Heinz Guderian was the foremost exponent of tank warfare in Germany in the years leading up to World War II. He is noted less for the originality of his thought than for his ability to transform the ideas of others into practical reality. Guderian's efforts were aided by the German tradition of offensive warfare, the support of men such as General Hans von Seeckt⁴⁰ and the patronage of Adolf Hitler.

Irrespective of the origin of Guderian's concepts, his development of them into doctrine for the German Army was decisive. While accepting the ideas of Liddell Hart and Fuller on the use of mechanized forces to create deep penetrations and the devastating impact of such penetrations upon the coherence of an enemy defense, Guderian foresaw with exceptional clarity the importance of the combined arms concept and the need for effective command and control. While other men saw similar needs, Guderian was able to actually implement his ideas.

Guderian became convinced during the late 1920s that the ideal mobile formation was a combined arms force.⁴¹ He reaffirmed this conviction in an article published in the United States shortly before WW II:

The tank attack must be carried out with the upmost speed in order to take advantage of the surprise effect...speed is the main requirement of armored forces...The swift execution of the tank attack being of decisive importance, the auxiliary weapons of the tank units must be as fast as the tanks themselves. Auxiliary weapons designed for cooperation with tanks should be combined with them into permanent units comprising all modern arms.⁴²

Guderian also recognized that air power must be an integral part of the combined arms team. As a result of the acceptance of the this

doctrinal premise, the German Stuka dive bomber was developed as a means of providing close fire support for rapidly moving mechanized forces. Curiously, despite his recognition of the need for close air support, Guderian did not extend this to imply the need for tactical air superiority.⁴³

Guderian realized that operations based on high mobility and deep penetration would be impossible without adequate means of command and control. He saw the answer to the problem as lying in two complementary areas, leadership and technology. In a time when the conventional view was that Generals commanded from the rear, relying upon maps and telephones, Guderian emphasized the importance of leading from the front. To make this concept of forward leadership a practical reality he supported the widespread use of radios in armored vehicles.⁴⁴

Perhaps Guderian's greatest talent was his ability to visualize the scale of future mobile warfare; indicative of this are the thoughts he had in 1931:

"We were quite convinced that the future development of our armoured troops must be directed at making them into an operationally decisive weapon. They must, therefore, be organized in the form of Panzer Divisions and later Panzer Corps."⁴⁵

The result of Guderian's efforts was to meld the potential of post-World War I technology to the German maneuver warfare tradition to produce what came to be called Blitzkrieg. Integral to Blitzkrieg were the concepts of Auftragstaktik, Schwerpunkt, Aufrollen, and Kesselschlacht. In grossly simple terms, conditions for the decisive battle (Kesselschlacht) would be created by a combination of surprise, speed and concentration. Subordinates would use aggressive initiative

(Auftragstaktik) to focus superior combat power at the point of principle effort, the thrust point or Schwerpunkt. Initial success would be exploited by an "irruption" into the enemy rear; this Aufrollen would be similar to Liddell Hart's idea of the expanding torrent. Fundamental to Blitzkrieg is the principle of maintaining the momentum by shifting the Schwerpunkt as circumstances change; continual pressure to find and exploit weakness by concentrating locally superior forces. The means of accomplishing Blitzkrieg would be combined arms formations, built around the panzer divisions and corps.⁴⁶

Tukhachevski (1883-1937)

Soviet Army doctrine during the 1920's and 1930's was principally determined by Marshall Mikhail Tukhachevski. Tukhachevski believed victory only came about by the defeat of the enemy's forces in a series of offensive actions. In pursuit of creating an army capable of waging offensive maneuver warfare the Russians borrowed heavily from both the Germans and the British. In the late 1920s a joint German-Russian tank training center was established near Kazan on the River Kama and a number of leading military writers, including Liddell Hart were approached to enlist their services.⁴⁷

In his unpublished work of 1931, New Problems in Warfare, Tukachevski advocated offensive maneuver to envelop, encircle, and destroy enemy forces. One of his statements is particularly worth noting in view of the geography of the North African case studies:

Destruction of the enemy force appears more simple if it can be attacked and by-passed on one flank and pressed against some impassible barrier, such as the sea...The principle of developing such an operation is approximately the same as in enveloping both flanks: strict secrecy in preparation, sudden breakthrough, and the commencement of the turning movement in combination with persistent frontal attack. If the opposition is approximately equal in strength such a method of operation is usually most convenient and is frequently applied. Taking proper advantage of the terrain, it is possible to inflict heavy losses upon the enemy.⁴⁸

During the period 1930-35, Tukhachevski conducted extensive experiments involving mechanized tactics, organization, and movement. On the basis of these experiments a new set of Soviet Army Field Regulations were published in 1936. The regulations reflect Tukhachevski's offensive maneuver orientation. A premium is placed upon relentless pursuit; concentration, cooperation and speed; use of combined arms formations in deep penetrations; depth; initiative; and surprise.⁴⁹

The 1936 Field Service Regulations portray a sophisticated doctrine for offensive maneuver warfare. Offsetting this doctrinal strength however was the reality of actual Soviet military practice. Western military observers at the 1936 Soviet maneuvers reported seeing little adherence to the regulations; units regularly carried out dogmatic frontal attacks and there was little apparent cooperation between the various arms.⁵⁰

Rehearsals in Spain and Manchuria

Just prior to the outbreak of WW II there were several opportunities to test the doctrinal theories of the European powers.

Both the Germans and the Russians sought to test doctrine and equipment on the battlefield during the Spanish Civil War. The results were inconclusive. Armored formations demonstrated the ability to achieve penetrations but, due to lack of fuel and supporting combined arms, were generally unable to exploit their initial successes. Some mistakenly concluded that the lethality of the anti-tank gun had progressed beyond the ability of the tank to survive and that the tank should therefore be relegated to the role of an infantry support weapon.⁵¹

In Manchuria the Russians had greater success. Following unimpressive frontal clashes with Japanese forces in August 1938, the Russians tested the utility of independent tank forces in renewed fighting in August 1939. In conjunction with frontal attacks, Zhukov successfully executed an envelopment with tanks into the Japanese rear to gain decisive victory.⁵²

Conclusion

In surveying European military thought and action from Frederick to the outbreak of WW II a pattern of struggle between the offense and the defense has emerged. Napoleonic warfare was offensively oriented. The object of operational maneuver was to create a favorable situation in which the enemy army could be decisively defeated. The tool to be used for striking the enemy was massed infantry. Decisive victory could be achieved by throwing massed infantry upon the decisive point or center of gravity. With increases in weapon lethality the massed infantry assault became increasingly costly and more difficult to successfully execute. The ascendancy of the defense reached a peak between the

mid-19th and the early 20th centuries. The solution to the problem, mobility and maneuver, was readily apparent; what was lacking was the means, that is, the means of rapidly moving large forces through fire and controlling them. The advent of armored vehicles provided an answer.

The period between the World Wars saw dramatic technological advances in mechanized vehicles, communications, and aircraft. Military theory also evolved to take advantage of the capabilities represented by the new tools of war. British, German and Russian concepts of offensive maneuver based on mechanized forces were well developed. What varied widely was the degree of acceptance that these concepts received. In Germany the concept of mechanized penetration grew into Blitzkrieg, supported by complementary military equipment, organization and training. In Britain, the intellectual birthplace of mechanized warfare, there was resistance; while the concepts were acknowledged, there was little else done. In Russia the concepts were accepted and expanded, but practical assimilation was still incomplete when the Germans attacked in 1941.

With the advent of World War II it appeared that technology had provided military commanders with the means to return to the days of Napoleonic operational maneuver. Operations in WW II provide many examples of the possibilities inherent in the deep maneuver of large forces. This study focuses upon the use of deep maneuver in a single theater, North Africa, but the techniques employed and the lessons which can be drawn from these operations are applicable elsewhere.

Endnotes

1. The battle of Valmy on 20 September 1792 is a convenient demarcation point for the beginning of the age of Napoleonic warfare; for a brief discussion of the battle and its significance see Gunther E. Rothenberg, The Art of Warfare in the Age of Napoleon, pp. 11-16.¹²
2. Frederick the Great, Frederick the Great on the Art of War, edited and translated by Jay Luvaas (New York: The Free Press, 1966); particularly apt passages related to maneuver warfare can be found on pages 122, 140, 141, 154, 192, 269, 310, 324 and 325.
3. Robert S. Quimby, The Background of Napoleonic Warfare (New York: AMS Free Press, Inc., 1968; reprint ed., 1979), pp. 155-156.
4. Rothenberg, pp. 22-23; for detailed discussions on the French military theoreticians of the 18th century, particularly Guibert and Bourcet, refer to Quimby.
5. David G. Chandler, The Campaigns of Napoleon (New York: MacMillan Publishing Co., Inc., 1966), p.141.
6. Major General J.F.C. Fuller, The Conduct of War, 1789-1961 (London: Eyre and Spottiswoode, Ltd., 1961; reprint ed., New Brunswick: Rutgers University Press, 1962), p.44.
7. Ibid., p. 49.
8. Ibid., p. 51.
9. Ibid., p. 146.
10. Ibid., p. 149.
11. The soldiers of the French Revolutionary Armies, at least during the early years, fought in part from a sense of patriotism and revolutionary fervor. Such soldiers were less susceptible to deserting than the soldiers of the old regimes. As a consequence, soldiers could be used for foraging to a much greater extent than previously. Thus an army, at least while moving through fairly rich territory, could sustain itself to a greater degree. However, just as important was the idea of detailed planning, specifically the avoidance of sieges, the use of civil-military organizations tasked to requisition and provide supplies in areas through which the army was moving, and the prepositioning of supply magazines along the routes of advance. For an excellent discussion of logistics during the Napoleonic period see Martin van Creveld, Supplying War: Logistics from Wallenstein to Patton (New York: Cambridge University Press, 1977; reprint ed., 1982), pp. 40-74.
12. Chandler, pp. 162-175; Rothenberg, pp. 148-149.

13. Colonel Wallace P. Franz, "Maneuver: The Dynamic Element of Combat," Military Review, May 1983, p. 3.
14. Antoine Henri Jomini, The Art of War (Philadelphia: J.B. Lippincott & Co., 1862; reprint ed, Westport: Greenwood Press), translated by Mendell and Craighill, p. 63.
15. Michael Howard, "The Influence of Clausewitz", pp. 33-35; introductory essay to Carl von Clausewitz, On War, edited and translated by Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976.)
16. Clausewitz, p. 106.
17. Ibid., p. 119.
18. Ibid., p. 120.
19. Ibid., p. 190.
20. Ibid., p. 192.
21. Ibid., p. 198.
22. Ibid., p. 566.
23. Ibid., pp. 248-252.
24. Ibid., pp. 595-596.
25. For an overview of European military activity during this period see William McElwee, The Art of War: Waterloo to Mons (Bloomington/London: Indiana University Press, 1974), pp. 1-33.
26. Theodore Ropp, War in the Modern World (New York: Collier Books, 1962), pp. 164-168; Maurice Matloff, gen. ed., American Military History, Army Historical Series (Washington, D.C.: US Government Printing Office, 1969), p. 280; Fuller, pp. 104-105.
27. Prussia defeated Austria in seven weeks; while the war with France lasted five months, the outcome was virtually settled after the battle of Sedan, which occurred within seven weeks of the war opening. Fuller, pp. 114-116.
28. Both sides were characterized by the employment of small, unprepared, ill-equipped and ill-trained units and staffs. McElwee, pp. 207-212.
29. Thomas Pakenham, The Boer War (New York: Random House, 1979), p. 610; just as in the American Civil War the employment of cavalry as a deep maneuver force was also demonstrated, as by General French's relief

of Kimberley in February 1900, see McElwee, p. 213 and Pakenham, p. 328-345.

30. Given that the Japanese Army was trained by the French prior to 1870 and the Germans after 1870 this should not be surprising. McElwee, p.248; for an excellent analysis of the Russo-Japanese War see Brevet-Major W.D. Bird, Lectures on the Strategy of the Russo-Japanese War (London: Hugh Rees, Ltd, 1909), pp. 64-69.

31. S.L.A Marshall, World War I (New York: American Heritage Press, 1971), pp. 94-107 and 110-113.

32. John A. English, A Perspective on Infantry (New York: Praeger Publishers, 1982), pp. 25-26; for an excellent account of German doctrinal advances during World War I see Timothy T. Lupfer, The Dynamics of Doctrine: The Changes in German Tactical Doctrine During the First World War, Leavenworth Paper No. 4 (Fort Leavenworth: US Army Command and General Staff College, 1981).

33. Brian Bond, Liddell Hart: A Study of his Military Thought (New Brunswick: Rutgers University Press, 1977), p. 234.

34. Sir Basil H. Liddell Hart, Strategy (London: Faber and Faber, Ltd., 1954; reprint ed. New York: Frederick A. Praeger, Inc., 1967), p.164.

35. Squadron Leader R.A. Mason, "Sir Basil Liddell Hart and Strategy of the Indirect Approach," The Journal of the Royal United Service Institute, June 1970, p. 39.

36. J.F.C. Fuller, The Foundations of the Science of War (London: Hutchinson & Co., Ltd., 1925), pp. 13-16.

37. Lieutenant Colonel Charles A. Willoughby, Maneuver in War (Harrisburg, PA: The Military Service Publishing Company, 1939; reprinted by the US Army War College, Carlisle Barracks, PA, 1983), p. 28.

38. J.F.C. Fuller, Armored Warfare: An Annotated Edition of Lectures on F.S.R. III (Harrisburg, PA: The Military Service Publishing Company, 1943; reprint ed., 1951), p.11.

39. Anthony J. Trythall, 'Boney' Fuller: Soldier, Strategist, and Writer, 1878-1966 (New Brunswick: Rutgers University Press, 1977), p. 268.

40. General Hans von Seeckt was "Chief of the Army Leadership" from 1920 to 1926. He revitalized the German Army following WW I and, while not a pioneer of mechanized warfare, insured its continued belief in rapid, decisive maneuver. Mathew Cooper, The German Army 1933-1945: Its

Political and Military Failure (New York: Bonanza Books, 1984), pp. 118-119; English, p. 61.

41. General Heinz Guderian, Panzer Leader (New York: E.P. Dutton, 1952; reprint ed., Washington: Zenger Publishing Co., Inc., 1979), p.24.

42. Major General Heinz Guderian, "Armored Forces: Cooperation between Armored Forces and Other Arms," Infantry Journal, November-December 1937; reprinted in RB 20-18, Selected Readings in Military History (Fort Leavenworth: US Army Command and General Staff College, September 1983), p. 281.

43. Richard DiNardo, "The Armored Fist: Development of the Armored Division in World War II," Strategy & Tactics, September/October 1984), p. 16; also, John Strawson, "General Heinz Guderian," in The War Lords, pp. 298-315, edited by Field Marshall Sir Michael Carver (London: Weidenfeld and Nicholson, 1976), p. 301.

44. Kenneth J. Macksey, Guderian: Creator of the Blitzkrieg (New York: Stein and Day, 1976), pp. 51-52.

45. Ibid., p. 25.

46. For a detailed examination of German Blitzkrieg theory and practice see Major Ferdinando O. Miksche, Attack: A Study of Blitzkrieg Tactics (New York: Random House, Inc., 1942), reprinted by the US Army War College, Carlisle Barracks, PA., December, 1983.

47. J.M. MacKintosh, "The Development of Soviet Military Doctrine since 1918," in The Theory and Practice of War, pp. 247-269, edited by Michael Howard (Bloomington: Indiana University Press, 1966; reprint ed., 1975), pp. 252-253; Robert J. O'Neill, "Doctrine and Training in the German Army, 1919-1939," in The Theory and Practice of War, pp. 143-165.

48. Mikhail Tukhachevski, New Problems in Warfare, translation of 1931 Russian edition (Carlisle Barracks, PA: US Army War College, November 1983), p. 14-15.

49. Soviet Army Field Service Regulations of 1936, translation of 1937 Russian edition (Carlisle Barracks, PA: US Army War College, June 1983), pp. 1-8 and 52.

50. MacKintosh, p. 255.

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52. Macksey, p. 99.

Chapter 3: Operation "Battleaxe"

Introduction

Operation "Battleaxe" occurred 15 to 17 June 1941. It was the first British offensive against German forces in North Africa involving significant armored forces in maneuver designed to achieve decisive results. "Battleaxe" set the background for the maneuver warfare which would continue between German and British forces in North Africa for almost two years. Two maps, one of northern Libya and Egypt (Map 3a) and one of the battlefield (Map 3b), serve to amplify the text. Additionally, a detailed force listing to supplement the text is included in Appendix A.

Setting

Background

The introduction of German forces into North Africa in February 1941 changed the operational picture in North Africa drastically. By May 1941 the British Middle East command was in an unenviable situation; Greece and Crete had fallen, Syria and Lebanon were threatened, and Rommel had driven the Western Desert force back to the Egyptian border except for British forces left to be invested around the port of Tobruk.

On 28 May 1941 the British commander for the Middle East, Wavell, received instructions from London stating that the airfields in eastern Libya, especially those between Sollum and Derna, must be recaptured (see Map 3a).¹ Churchill sent the following signal to Wavell on 28 May to underscore the importance of the upcoming operation:

...Everything must now be centered upon destroying the German forces in the Western Desert, only by this deed will you gain the security on your western flank which will enable you to keep the Germans out of Syria and yourself gain contact with Turkey...Now... is the time to fight a decisive battle in Libya and go on day after day facing all necessary losses until you have beaten the life out of General Rommel's Army.²

British Situation

The British forces in North Africa required rebuilding following their retreat to the Egyptian frontier. Compounding the problem was the fact that North Africa was but one area of the British Middle East command. Many of the experienced troops and leaders who had performed so well against the Italians in North Africa had been sent to Greece and either were lost there, with their equipment, or subsequently at Crete. Wavell was also committed to a joint British-Free French campaign in Syria and Lebanon which would last from 8 June to 11 July and which would divert forces from North Africa, particularly air support. Additionally, he had just finished an active campaign against Italian forces in eastern Africa.³

Churchill reacted to Wavell's needs by dispatching a fast convoy of ships through the Mediterranean which reached Egypt on the 12th of May. The 238 tanks which arrived effectively quadrupled Wavell's tank strength in North Africa, allowing him to rebuild two armored brigades of two regiments each.⁴ However, the arrival of new tanks and equipment could not magically produce effective combat units, time was the missing element needed to train troops and staffs.

After the arrival of new equipment Wavell had two divisions, under the command of Lieutenant General Beresford-Peirse of XIII Corps,

available for "Battleaxe." The 4th Indian Division, commanded by Major General Messervy, was composed of the 11th Indian Brigade and the 22d Guards Brigade. The 7th Armored Division, commanded by Major General Creagh, included the 7th Armored Brigade, 4th Armored Brigade and Support Group. The two regiments of the 7th Armored Brigade had relatively quick moving cruiser tanks whereas the 4th Armored Brigade had two regiments of "I" tanks. The "I" tanks were heavily armored in front but weakly gunned and very slow, having been designed to provide direct support to infantry units.⁵

A weakness of the British armor was the lack of a high explosive shell. British tanks during "Battleaxe" only fired high-velocity solid shot rounds, a munition designed to defeat tanks but virtually worthless for suppressing anti-tank guns or dug-in infantry.⁶

Any British offensive plan would have to take into account the perceived vulnerability of their infantry to German tanks and the logistical requirements of mechanized formations in the desert. The British infantry lacked an adequate anti-tank gun. As a result they demanded that field artillery guns and tanks provide anti-armor protection for them.⁷ Armored forces in the desert required frequent replenishment of ammunition, water and fuel. Accordingly, the ability to move and protect supply columns was an important consideration.⁸

German Situation

Rommel's forces in North Africa also needed to rebuild their strength after pursuing the British for 400 miles to the Egyptian border. Replenishment of units and equipment was a slow process for

several reasons, among them being the long supply lines,⁹ the low priority accorded the German effort in North Africa¹⁰ and the British retention of Tobruk.¹¹

Tobruk presented a difficult operational complication for Rommel. Axis efforts to prevent Tobruk receiving supplies and reinforcements by sea were unsuccessful. Consequently, a strong Tobruk garrison, built around the 9th Australian Division and including some 50 odd tanks, was a constant threat. Rommel thus had to invest Tobruk while simultaneously guarding against any British offensive out of Egypt.¹²

Rommel adopted a defensive posture combining static and maneuver forces based on his available forces and the terrain.¹³ Rommel considered the Halfaya and Sollum passes as critical, they were the only places for 50 miles where it was possible to cross the escarpment which ran southeast from Sollum toward Egypt. In particular, whoever held the Halfaya Pass would control the communications of any forces attacking out of Egypt.¹⁴ Rommel's based his defense on his two German divisions. The non-armored units of the 15th Panzer Division, reinforced with Italian forces, established strongpoints to absorb the first blows of any British offensive. Italian forces defended in depth while the Germans defended forward with strongpoints at Halfaya Pass, Qalala, Point 206 and Point 208 on Hafid Ridge.¹⁵ The German positions, particularly at Halfaya Pass and Hafid Ridge were organized for all around defense and based on well-sighted and camouflaged anti-tank guns supported by mines and infantry. The 15th Panzer Division's tank regiment, consisting of about 100 tanks, was retained as a mobile reserve behind the static positions. The 5th Light Division, Rommel's

other German armored force, with about 96 tanks, was well back, in the vicinity of El Adem and Acroma, so as to also support the largely Italian forces left to invest Tobruk.¹⁶

The Plan

The British intent was to destroy Rommel's forces and reoccupy the airfields of eastern Libya. An ancillary objective was the relief of Tobruk. Enemy dispositions and British logistics were the two factors which governed the British plan. While there was some uncertainty, the British estimated they faced approximately 100 tanks and the equivalent of seven German and nine Italian battalions in the forward frontier area. The bulk of Axis strength was believed to be seventy miles further back in the vicinity of Tobruk. Accordingly, British forces should enjoy numerical superiority at the frontier for the time it would take the Germans to move forces forward from Tobruk. The British also believed it was essential to seize the Halfaya Pass in order to provide a secure logistical support route. Combining these two considerations the British adopted a three phase plan for "Battleaxe."¹⁷

The first phase involved an assault to seize the German positions in the Sollum-Cappuzzo-Halfaya Pass area by the 4th Indian Division, reinforced by the "I" tanks of the 4th Armored Brigade, while the 7th Armored Division (-) covered the desert flank on the left to prevent German armored reserves from interfering. If the 7th Armored Division became involved in a major tank battle during this phase then the 4th Armored Regiment would return to its control. The Tobruk garrison was not to attempt any serious sortie unless the XIII Corps forces advanced

to within supporting distance. For the second phase the 7th Armored Division, with both armored brigades, would attack to relieve Tobruk. The final phase would be an exploitation to the west. The air plan for "Battleaxe" called for a concerted campaign against Axis lines of communications and air fields prior to the offensive beginning with the priority of effort during the actual attack shifting to protection of the advancing British forces. Medium bombers were to be on call for attacking targets in the battle area.¹⁸

The Corps commander, Beresford-Peirse, elected to set up his headquarters at Sidi Barrani, approximately 60 miles (5 hours by road) behind the battle area. Sidi Barrani was the most advanced position which had reliable communications with the RAF headquarters at Maaten Baggush, some 100 miles back.¹⁹

The Battle

Events of 15 June 1941

The British attack began at 0400 on the 15th following a 30-mile approach march which had started during the afternoon of the 14th.²⁰ As planned, the 4th Indian Division attacked on the left while the 7th Armored Division moved through the desert on its right. Control of the two advancing divisions was effected by coordination between the respective commanders, the corps commander remained at Sidi Barrani.

The 4th Indian Division attacked on two axis. The 11th Indian Brigade (reinforced with 1 and 1/2 squadrons of "I" tanks from the 4th Armored Brigade) assaulted both ends of Halfaya Pass.²¹ The remainder

of the 4th Indian Division, the attached 4th Armored Brigade (minus the tanks supporting the attack on Halfaya Pass) leading the 22d Guards Brigade, attacked toward Point 206 and Fort Capuzzo.

The 7th Armored Division (minus the 4th Armored Brigade) advanced through the desert in two columns. The 7th Armored Brigade, supported by a small force of infantry and artillery, oriented on Hafid Ridge. The Support Group, a tactical formation containing artillery and infantry, advanced toward Sidi Omar while screening the division left flank.

The attack was not a surprise. Rommel had concluded by early June that the British were preparing to attack during the middle of the month. The two British divisions were known to have concentrated and their approach march was observed. Rommel alerted the frontier forces at about 2100 hours on 14 June. Reserve units were repositioned and warned to prepare for commitment on short notice. Rommel counted on his excellent signals intercept unit to provide him current intelligence once the British offense began.²²

The attacks on the 15th yielded inconclusive results. The attacks on the Halfaya Pass failed with heavy losses, particularly of "I" tanks to anti-tank guns and mines. The attacks on Point 206 and Fort Capuzzo succeeded after hard fighting, including action by the "I" tanks of the 4th Armored Brigade against counterattacks by the 15th Panzer Division. By evening the 4th Armored Brigade had 40 operational "I" tanks remaining. On the left the 7th Armored Division had sustained heavy losses for little result. The 7th Armored Brigade had assaulted Hafid Ridge (Point 208) three times with tanks lightly supported by artillery.

The outcome was that by the end of the day the brigade had 48 operational tanks left. Operations in the air had gone satisfactorily, only six Axis air attacks making it through the protective fighter cover.²³

The British plan for the following day was for the 4th Indian Division to renew its attack on Halfaya Pass, continue to consolidate in the Cappuzzo area and attempt to exploit toward Bardia. The 4th Armored Brigade was to rejoin the 7th Armored Division which would seek to destroy the German armor in the vicinity of Hafid ridge while also protecting the left flank.²⁴

The Germans suffered losses during the fighting on the 15th, but most of their tank strength was unimpaired. Rommel had the advantage of excellent intelligence from intercepted British radio signals and thus had a good idea of British intentions for the 16th. Additionally, he now had the full armored forces of the 5th Light and 15th Panzer in position for commitment. He decided to hold the British center, the 4th Indian Division, while attempting to turn the British left and cut into the enemy rear and link up with his forces at Halfaya Pass. If he succeeded there was a good chance the British forces could be encircled and destroyed. Accordingly, he instructed the 15th Panzer to attack Capuzzo at first light and the 5th Light to attack from a point west of Sidi Aziez toward Sidi Suleiman and onward to Halfaya Pass.²⁵

Events of 16 June 1941

The attack of the 15th Panzer on Capuzzo at 0500 suffered high tank losses but succeeded in pinning the 4th Armored Brigade, the 4th Indian

Division commander deciding he would retain it.²⁶ By evening the 4th Indian Division had successfully held onto Capuzzo and had taken Musaid and Sollum barracks. The attacks on the Halfaya Pass again failed. The 7th Armored Division (the 7th Armored Brigade and two columns of Support Group) engaged the 5th Light all day in a running battle that steadily moved towards Sidi Omar.

Beresford-Peirse visited both Divisional commanders during the afternoon and made no changes in their missions for the following day. That evening the two division commanders decided jointly that since the 4th Indian's anti-armor defenses were now well established in the Cappuzzo area, the 4th Armored Brigade would return to the 7th Armored Division early on the 17th for a concerted effort against the German armor which was threatening the left flank. Efforts by the 4th Indian Division against Halfaya Pass and north toward Bardia would continue.²⁷

Despite his losses Rommel was convinced he still had a great opportunity. He ordered the 5th Light to resume its attack toward Sidi Suleiman the next day; the 15th Panzer was ordered to leave light forces containing the British at Capuzzo and attack around the left flank of the 4th Indian Division toward Sidi Suleiman. The intent was still to cut the British lines of communications and retreat. Both attacks were ordered to commence at 0430 hours for the express purpose of beating the probable start time of any British attack.²⁸

Events of 17 June 1941

The 5th Light and 15th Panzer struck the British divisions before they were able to move early on the 17th. The 4th Armored Brigade was

hit by the 15th Panzer before it could rejoin the 7th Armored Division. The 5th Light pushed the 7th Armored Brigade before it and by 0800 hours had reached the vicinity of Sidi Suleiman. German armored forces were now in the rear of the 4th Indian Division, a fact brought home to the Division commander as his command post was almost overrun.²⁹

Rommel intercepted radio signals from the 7th Armored Division which described their situation as very serious and requesting that Beresford-Peirse come forward. Rommel interpreted this as indicating the British were close to collapse and, at 0900 hours, ordered the 15th Panzer and 5th Light to converge on Halfaya Pass and block the escape of British units to the south.³⁰

The commander of the 4th Indian Division did not wait for Beresford-Peirse to arrive at the front. Major General Messervy informed Creagh of the 7th Armored Division of his intentions and then ordered the 4th Indian to begin withdrawing at 1100 hours. When Beresford-Peirse arrived at 1145 he had Wavell with him. Wavell soon recognized it was too late to salvage the operation and, cancelling an order he had given the 7th Armored Division to counterattack at Sidi Suleiman, directed that all forces withdraw.³¹ That the bulk of the British forces were able to withdraw successfully can be attributed to three things: The British air effort; the delaying action fought by the remnants of the British armored forces; and the slowness of the German forces to close the pocket.³²

Results of "Battleaxe"

By evening on the 17th the British and Axis forces were back in the same general positions as prior to the 15th. The British lost just under a thousand men killed, wounded and missing. Only four artillery guns were lost but of the approximately 190 tanks employed, 91 were lost. The RAF lost 33 fighters and 3 bombers. The Axis personnel losses were equivalent, but only 12 tanks were destroyed; the remaining estimated 50 damaged tanks being repaired. The German air force lost 10 aircraft.³³

Reflections on "Battleaxe"

After reflecting upon the failure of "Battleaxe," Wavell sent the following message to the Chief of the Imperial General Staff in London on 19 June 1941:

Very sorry about "Battleaxe." Main trouble was the 7th Armored Division hastily re-equipped was not fit for battle tactically or technically. Infantry tank without transporter is definitely not weapon for desert warfare. Tank crews were not sufficiently trained, hence shot not good and too many mechanical breakdowns. Think troops fought all right but enemy was waiting for us with carefully prepared counter-attack and was too strong.³³

Wavell's message told only part of the story. Deficiencies of equipment and training were a contributing factor to the British defeat, however the problem was much greater. There were fundamental operational weaknesses in the British planning and execution for "Battleaxe." Among these weaknesses were an appalling inability to control and synchronize the actions of large forces, a lack of

operational objective or focus, and an almost complete disregard for the principles of concentration and maneuver. Contrarily, the Germans demonstrated a mastery of agility and purpose in outmaneuvering and defeating the British with mobile forces will yet conducting a stubborn defense with static forces.

To understand the British failure requires reexamining their mission. The mission given Wavell was to regain the airfields in eastern Libya, particularly those between Sollum and Derna. To accomplish this required defeating the Axis forces in the Western Desert. However, it was not necessary to destroy the entire Axis force; in Clausewitzian terminology the center of gravity of the Axis forces was the two German armored divisions in Libya, the 15th Panzer and the 5th Light. The Italian forces in North Africa had already demonstrated their inability to resist the British and the non-armored German forces lacked the mobility and combat power to survive except in defensive positions. Therefore, the key to regaining the airfields was the destruction of the 200-odd tanks available to Rommel in the 15th Panzer and 5th Light. All British efforts in planning and executing "Battleaxe" should be viewed in this light, that is, how they contributed toward destroying these two German divisions.

The British determined that a necessary preliminary to executing a deep movement toward Tobruk was the securing of a logistical route. This resulted in the decision to seize the Sollum-Capuzzo-Halfaya Pass area. This meant that a force orientation, destruction of the German armored divisions, had now become a terrain orientation, the securing of a land line of communication. The German armored divisions thus were

not the focus of the initial phase of "Battleaxe" for the British, rather the fixed defensive positions of the Germans at Halfaya Pass, Cappuzzo, and Sollum became the focus. The British armored force, the 7th Armored Division, thus became a supporting force for the primarily infantry-type assault of the Axis frontier positions. The orientation during the first phase of "Battleaxe" was not to destroy the German armor but rather to prevent it interfering with the work of the 4th Indian Division. This connotes a defensive rather than an offensive mission for the British armored division.

For the Germans the decisive point or focus of the battle remained destruction of the British forces, not retention of the terrain. The static defensive positions were simply a means of softening the British attack, canalizing and weakening his forces while gaining time to position armored forces for the counterattack. There was thus a strange dichotomy in which the attacking British were terrain oriented and tied to the progress of the infantry, while the Germans were force oriented and their maneuver forces were free to capitalize on their mobility.

While the British began the offensive they did not retain the initiative. It was the Germans who late on the 15th began dictating the course of the battle. Beginning on the 16th the British were constantly reacting to German offensive initiatives. After the 15th, the 4th Indian Division commander was the only British leader to demonstrate any initiative. He recognized the decision point had been passed and ordered his units to begin withdrawing before they were surrounded. The Germans demonstrated their grasp of the offense and initiative by such simple techniques as timing their attacks on the 16th and 17th to begin

in the morning prior to the time the British had planned to execute their own movements.

The British failed to mass units and fires. Mass and economy of force are interrelated concepts; to achieve mass at one point there must be economy of force somewhere else. To accomplish this however requires a clear operational focus or main effort. The Germans recognized this, their defensive strongpoints were economy of force operations; so was the action of the 15th Panzer in leaving light forces to contain the British north of Capuzzo while the rest of the division concentrated to envelop the British left. The British tried to be strong everywhere. By splitting up their two available divisions into at least five separate elements, none of which were mutually supporting and most of which were unbalanced from a combined arms perspective, they were unable to concentrate combat power when needed. Even the British air effort suffered similarly. The air umbrella provided by the RAF precluded their massing fighters for offensive action.

A weakness of the British throughout the battle was their inability to mass supporting fires. Despite the orientation of the initial phase of the battle on known terrain objectives, such as Halfaya Pass, there was almost no effort to mass artillery and aerial fires to suppress the German defenses. As another example, the bulk of the 7th Armored Division Artillery remained with Support Group throughout the 15th, while the 7th Armored Brigade made repeated assaults, with little artillery or air support, on Hafid Ridge. The Germans however demonstrated an appreciation for massing units and fires in the

commitment of armored forces and the combined arms integration of various weapon systems in both the offense and the defense.

The Germans employed maneuver as a means of bringing strength against weakness, the idea of maneuver being relational to the enemy rather than simply movement. Rommel's employment of the 5th Light and 15th Panzer resembled the Napoleonic concept of manoeuvre sur les derrieres (see Chapter 2 for a discussion of Napoleonic maneuver). However they also suffered lapses, the attack by the 15th Panzer on Capuzzo succeeded in pinning the British 4th Armored Brigade but was very costly.

Once the attack started on the 15th there was little maneuver by the British, although there was movement in accordance with their established plan. The one maneuver which might have proven decisive, the massing of the 7th Armored Division, never occurred. The British concept of maneuver seemed limited to finding the enemy and then assaulting him with whatever forces were immediately available. The British failure to incorporate the Tobruk garrison into a maneuver plan early in the operation again demonstrates this lack of relational thinking. Finally, the British penchant for not bypassing German strongpoints revealed a basic doctrinal weakness; a fixation on secure flanks and seizing ground rather than gaining advantage relative to the enemy. There appears to have been nothing to preclude the British from bypassing the German defenses on Hafid Ridge. Had the 7th Armored Division bypassed the position, not losing half its tanks in futile attacks on it, and met the 5th Light moving south from Tobruk or taken

the 15th Panzer in the flank the battle might have had a different outcome.

Unity of command was a strength for the Germans and a weakness for the British. Rommel maintained contact with his division commanders. He was frequently found at the critical point of an action.³⁴ He issued clear directive to synchronize the actions of his forces. The British command and control system essentially devolved upon the ability of the two British division commanders to reach consensus. The failure of the 4th Armored Brigade to rejoin the 7th Armored Division was one result of this inadequate command structure.

British security for "Battleaxe" was atrocious. Rommel enjoyed such detailed intelligence that he was able to alert his troops and reposition reserves prior to the attack. During the attack Rommel apparently had a better grasp of the British situation than the British did themselves. There was no evident attempt by the British at deception, whereas the the excellent camouflage and positioning of German defenses and the use of night movements frequently deceived the British.

The British did not achieve surprise. Clausewitz identified the essential components of surprise as speed and secrecy. The lack of security by the British forfeited the factor of secrecy. The slowness and deliberateness of the British operations did the same for speed. Rommel was able to achieve surprise by speed of movement and secrecy by movement at night.

Sustainment was a critical factor during "Battleaxe." The justification for attacking the Sollum-Capuzzo-Halfaya Pass area was the

need to secure a line of communication to sustain further operations. Thus the question of logistical sustainment became a primary consideration in planning the initial phase of "Battleaxe." In an operation in which ultimate victory is dependent upon the ability to destroy armored forces this dependence upon sustainment can be a crippling factor. Despite the growing German threat to their left the British continued to devote half their armor and the bulk of their infantry toward efforts to secure a road.

In considering the British defeat such contributing factors as leadership, the moral element, equipment, training, and doctrine deserve mention.

The evidence supports the idea that Rommel's generalship was superior to that of his adversaries. Aside from his tactical astuteness and personal presence, his boldness and grasp of the moral element were key to his victory. Rommel's action in shifting his weight to the British left, despite his own losses and the threat of a breakthrough in the center, illustrates Clausewitz's concept of boldness, particularly in taking "...advantage of the opponent's weakness."³⁶ What made Rommel's boldness work was his correct appreciation of the probable British reaction to a thrust into their flank. His decision to concentrate against the British left was due as much to his understanding of the psychological impact of such a stroke as to its tactical potential.

Differences in the leadership exercised by the German and British commanders have already surfaced, a closer look shows a key difference in approach. The ostensible British commander, Beresford-Peirse, relied

upon the initial plan and the common sense of his subordinates to achieve the desired results. Unfortunately for the British this resulted in such slowness of movement and reaction to change that the Germans were able to seize and retain the initiative. The unanswered question is whether this leadership approach would have been more effective if the leaders and staffs of the divisions had been more experienced or better trained.

In his explanation to the Chief of the Imperial General Staff, Wavell identified deficiencies in equipment and training as the primary causes of the British defeat. While these factors clearly had an impact upon the battle, it is not clear that the British would have succeeded even with adequate equipment and training. An inadequate operational orientation, to include lack of maneuver and mass, would still have remained a fundamental weakness. British tactics bore a similarity to the early phases of WW I, substituting tanks for infantry and anti-tank guns for machine guns.

Conclusion: Lessons for Deep Maneuver

Operation "Battleaxe" failed. The British force intended to conduct the deep ground maneuver toward Tobruk never did so. It was virtually destroyed by a German force of roughly equivalent size which decisively outmaneuvered and outfought it. In the British defeat are to be found a number of lessons for the commander and his staff considering or planning the employment of ground maneuver forces deep.

The effort of a deep maneuver force must be focused by a clear operational concept which attacks or threatens a critical enemy center

of gravity. Deep maneuver forces are limited with respect to disposable combat power and logistical resilience. This is the price for their operating beyond the support of other major friendly ground forces. Accordingly, to achieve decisive results the force must concentrate its limited available combat power against a critical point where success will result in furthering the overall commander's concept. Thus, the force must both be accurately targeted and able to mass sufficient combat power, through use of combined arms, to force a favorable decision at the critical point. Any distractions (such as protecting slow infantry formations or assaulting fortified enemy strongpoints) which detract from this must be minimized.

The deep maneuver force must offset inherent weaknesses in strength and staying power by tempo of operations. An enemy able to act faster than the deep maneuver force will achieve local numerical and moral superiority. To retain an advantage in tempo of operations requires denying the enemy the ability to concentrate in advance (security) and being able to sustain a faster pace of operations once the maneuver has begun. Fundamental aspects of achieving this rapid tempo are adequate intelligence, quick decision-making by the maneuver commander and subordinate formations capable of reacting to changes quickly and in a coordinated fashion.

Related to the issue of operational tempo is the necessity of the deep maneuver force to retain as much freedom to maneuver as possible. Tying the deep maneuver force down by the need to protect a logistical tail reduces this freedom of maneuver as well as creating a vulnerability which the enemy can exploit. By the nature of its

operations, a deep maneuver force is subject to having a vulnerable line of communications. Efforts to reduce this vulnerability, without degrading the combat power or mobility of the deep maneuver force is a fundamental issue that must be addressed.

Lastly, the need for well coordinated air operations to support the deep maneuver force became increasingly more apparent during the course of "Battleaxe." The potential of aerial forces to enhance and complement the deep maneuver force in the areas of security, protection, interdiction and reconnaissance was clearly demonstrated.

Endnotes and Map Credits

1. With Greece and Crete under German control the Axis had access to open sea communications with Rommel in Libya. To interfere with this route, to help Malta convoys and to continue attacking the Italian sea routes to Tripoli the Libyan airfields between Sollum and Derna were vital. Thus, the axis forces in the Western Desert must be destroyed. Major General Ian S.O. Playfair, The Mediterranean and Middle East, vol. II, History of the Second World War, United Kingdom Military Series (London: Her Majesty's Stationary Office, 1956), p. 163.
2. John Connell, Wavell: Scholar and Soldier (New York: Harcourt, Brace, and World, Inc., 1965), p.481.
3. Ibid., pp. 491-493.
4. Basil H. Liddell Hart, History of the Second World War (New York: G.P. Putnam's Sons, 1970), pp. 175-178.
5. Ibid., pp. 176-178.
6. Barrie Pitt, The Crucible of War: Western Desert 1941 (London: Jonathon Cape, 1980), p. 299.
7. The inadequate 2-pounder anti-tank gun would not be replaced until April 1942 when the 6-pounder arrived in North Africa. This weakness aggravated the already questionable tendency of the British to disperse scarce artillery and armor assets. Shelford Bidwell and Dominick Graham, Firepower: British Army Weapons and Theories of War 1904-1945 (London: George Allen and Unwin, 1982), p. 230.

8. Major General G.L. Verney, in commenting on tank warfare in the desert, likened it to naval warfare, but with a key difference, that being that tanks were not capable of carrying more than a few hours supply of ammunition, water, fuel and food. Thus there was great dependence upon resupply, to include diversion of armored vehicles and guns to escort supply columns. Major General Gerald L. Verney, The Desert Rats: The History of the 7th Armored Division 1938 to 1945 (London: Hutchinson and Son, Ltd., 1954), p. 56.
9. The main Axis port of Tripoli was over 900 miles from the front while the secondary port of Benghazi was almost 300 miles away; see Martin van Crevald, Supplying War: Logistics from Wallenstein to Patton (New York: Cambridge University Press, 1982), pp. 184-190.
10. The German High Command considered North Africa a secondary theater, their priority was upon preparations for the upcoming invasion of Russia on 22 June 1941. The Halder Diaries provide a good insight into the thinking of the German OKW during this period; for a specific instance see Colonel General Franz Halder, The Halder Diaries: The Private War Journals of Colonel General Franz Halder, 2 vols. (Colorado: T.N Dupuy and Westview Press, Inc., 1976), p. 868.
11. British forces besieged in Tobruk interdicted the Via Balbia roadway. As the only hard surfaced roadway from the Axis ports toward Egypt the Via Balbia was the main logistical land route for forces operating in North Africa. Thus, as long as the British occupied Tobruk it forced Axis supply columns to detour through the desert south of the fortress. Erwin Rommel, The Rommel Papers (New York: Da Capo Press, 1983), p. 138.
12. Ibid., p. 139; Liddell Hart, p. 173.
13. Due to a chronic lack of wheeled transport much of his Italian forces and part of his German forces were not motorized and thus were of limited utility for conducting mobile operations.
14. Rommel, p. 136.
15. In the areas of Sollum, Musaid and Capuzzo there were three Italian battalions and an artillery regiment from the understrength Trento Division. The remainder of the Division occupied Bardia. Playfair, p. 164.
- 16 Playfair, p. 164; Colonel E.G. Keogh, Middle East 1939-43 (Melbourne: Wilke and Company, Ltd., 1959), p. 217; Connell, p. 495; Ronald Lewin, The Life and Death of the Africa Korps (New York: Quadrangle/New York Times Book Co., 1977), p. 63.
17. Although information from Enigma provided fairly complete information the German order of battle, field intelligence concerning the actual dispositions of Rommel's armor and the strength of the

frontier positions was incomplete. F.W. Hinsley, British Intelligence in the Second World War: Its Influence on Strategy and Operations, vol 1 (London: Her Majesty's Stationary Office, 1979), p. 399; Also Winston S. Churchill, The Grand Alliance (Boston: Houghton Mifflin Company, 1950), p. 340.

18. Liddell Hart, p. 178; D.W. Braddock, The Campaigns in Egypt and Libya (Aldershot: Gale and Polden Ltd., 1964), p. 39; Air Ministry, Air Support: The Second War 1939-1945, Royal Air Force, Air Publication 3255 (British Air Ministry, Air Historical Branch, 1955), pp. 51-53; Lord Arthur W. Tedder, With Prejudice: The War Memoirs of Marshall of the Royal Air Force Lord Tedder, G.C.B (Boston: Little, Brown and Company, 1966), pp. 121-128.

19. Braddock, pp. 39-40.

20. For detailed movement of forces on 15 June see Liddell Hart, p. 178-179; Verney, p. 56; Playfair, p. 165]

21. This required half the attacking force to move on top of the escarpment while the other half moved along the coastal plain, generally along the Via Balbia.

22. Rommel, p. 141-142; Hinsley, p. 399.

23. Playfair, pp. 167-168; Verney, p. 57; Lewin, p. 65.

24. Playfair, p. 168.

25. Rommel, pp. 142-144; David Irving, The Trail of the Fox (New York: Avon Books, 1978), p. 127.

26. Rommel reported the Division had but 30 operational tanks by 1030 hours out of the 80 it attacked with, however many of the losses would return after recovery and repair. Rommel, p. 144.

27. The balance of evidence is that it was a joint decision of the two division commanders rather than an order by Beresford-Peirse, see Playfair, p. 169; Connell, p. 499.

28. Rommel, pp. 144-145.

29. Playfair, p. 170; Henry Maule, Spearhead General: The Epic Story of General Sir Frank Messervy and his Men in Eritrea, North Africa and Burma (London: Odhams Press, Ltd., 1961), pp. 121-124.

30. Rommel, p. 145.

31. Playfair, p. 170; Maule, p. 123.

32. Since 1000 hours on the 17th the RAF had concentrated on bombing enemy vehicles and columns while still managing to largely cover the withdrawing British. The 5th Light and 15th Panzer did not reach the Halfaya Pass until shortly after 1600 hours. Rommel, p. 145; Maule, pp. 123-124.

33. The fact that the Germans retained the battlefield not only allowed them to recover and repair their own damaged equipment but also that which the British had abandoned. Liddell Hart, p. 180; Playfair, p. 171.

34. Connell, pp. 501-502.

35. Heinz W. Schmidt, With Rommel in the Desert (London: George G. Harrap and Co., Ltd., 1953), p. 64.

36. Carl von Clausewitz, On War (Princeton: Princeton University Press, 1976), p. 190.

Map 3a: From Braddock, facing p. 7.

Map 3b: From Keogh, p. 219.

Chapter 4: Operation "Crusader"

Introduction

The British offensive termed Operation "Crusader" began on 18 November 1941 in the vicinity of the Egyptian-Libyan frontier and lasted until the middle of January, 1942, by which time the Axis forces had withdrawn to El Agheila. Whereas in "Battleaxe" the maneuver forces were divisions, in "Crusader" corps formed the maneuver base. "Crusader" thus provides an excellent opportunity to observe the maneuver of large units by both the Allied and Axis forces.

This chapter focuses upon the period of greatest relevance for the study of maneuver warfare, 18-23 November and 24-27 November 1941. Beginning 18 November the British XXX Corps moved deep into Axis territory and fought the German Afrika Korps in a series of battles and maneuvers that culminated at Sidi Rezegh on 23 November with a tactical victory for the Axis. From 24 to 27 November Rommel led the Axis mobile forces on a bold, but futile, maneuver designed to encircle the British 8th Army and break their will to continue the offensive. The emphasis during discussion and analysis will thus be upon the actions of the British XXX Corps, the German Afrika Korps and the respective army commanders. Actions of other major units, the British XIII Corps and German and Italian supporting forces, will be limited to that necessary to maintain continuity. Lessons which already came to light during the discussion of "Battleaxe" will not be treated in detail.

Much of the discussion of terrain and equipment detailed during the previous analysis of "Battleaxe" remains accurate for "Crusader." Therefore, the reader may wish to review the "setting" section of

Chapter 3. Maps of the battle and an appendix (Appendix B) containing the force composition of each side are included to supplement the text.

Setting

Background

After "Battleaxe" in June 1941 both sides were exhausted. Rommel was unable to exploit his success. Instead he began to assemble forces to assault Tobruk and remove it as a threat to his rear prior to invading Egypt. On the British side, Churchill relieved Wavell and the British forces in North Africa underwent extensive reorganization. As the time for "Crusader" approached the British were increasingly able to devote more resources toward North Africa, particularly as the Russians successfully slowed the German advance to the Caucasuses. The German war effort, on the other hand, was concentrated upon their Russian campaign. The British realized that they must strike during the period of German preoccupation with Russia and before Rommel could overpower Tobruk.

The British Situation

General Sir Claude Auchinleck replaced Wavell as commander of the Middle East in July 1941. He immediately came under pressure from London to resume the offense in North Africa. His reaction was to insist on receiving sufficient resources to conduct a major operation. The remnants to the British Western Desert Force were redesignated as the 8th Army, under the command of Lieutenant General Sir Alan

Cunningham. With reinforcements and new equipment the 8th Army grew to two corps, the XIIIth, commanded by Lieutenant General A.R. Godwin-Austin, and the XXXth, commanded by Lieutenant General Sir W. Norrie. The XIII consisted of two infantry divisions (4th Indian and New Zealand) and a tank brigade. The XXXth contained an armored division (the 7th), an armored brigade group, an infantry division and a motorized infantry brigade. Within Tobruk, commanded by Lieutenant General Sir R. Scobie, was an infantry division (the 70th), an armored brigade, and a Polish infantry brigade. An infantry division (2d South African) and infantry brigade group formed the Army reserve. Enroute to North Africa were elements of a second armored division.¹ For a detailed force listing refer to Appendix B.

The British estimated the Axis forces could field seven armor battalions with about 390 tanks, including light German tanks but excluding light Italian tanks. According to official records the British 8th Army fielded 12 armor battalions (including 3 battalions of "I" tanks, but excluding the mixed tank brigade in Tobruk) with 477 tanks in XXX Corps and 135 tanks in XIII Corps. Additionally, the British maintained over 250 tanks in reserve, to serve as replacements for battle losses, with another 236 tanks enroute by sea.²

The British reorganization and refitting effort neared completion by the end of October 1941. However, as in the case for "Battleaxe," many units were not fully trained.³ Recognition of this was a major factor in delaying the offensive to last half of November. Another concern was the relative quality of equipment. Although the British expected to outnumber the Axis at least 3 to 2 in armor strength, the

German tanks, if not the Italians, were more heavily gunned. The British had greater numbers of anti-tank guns than previously but they were still primarily the weak 2-pounder, except for some 18-pounders in the 1st South African Division.⁴

The British expected to gain air superiority.⁵ After "Battleaxe" the Desert Air Force sought to improve army/air cooperation and revised many of its procedures for providing close support and conducting the tactical air campaign. One significant change was the recognition that the air commander must locate control elements forward with the ground forces.⁶

The German Situation

Rommel believed the British would attack sometime around November. British strength had grown sufficiently and, more importantly, the German advance toward the Caucasuses was slowing.⁷ Thus the British could concentrate upon attacking without worrying about a German attack through the Caucasuses.⁸

Rommel faced much the same situation as he had prior to "Battleaxe." By the beginning of September the Italian and German High Commands had concluded that until the port of Tobruk was captured any advance into Egypt was pointless.⁹ While Tobruk remained under British control the Axis had no supply port close to the front near Sollum. Benghazi was 300 miles away and Tripoli almost 1,000. Accordingly, it became a question of who could build up enough strength to attack first, Rommel against Tobruk or the British against Rommel.

Rommel's forces consisted of one German and two Italian corps. The heart of the Axis forces was the German Afrika Korps. Commanded by Generalleutnant Ludwig Cruewell, the Afrika Korps consisted of the veteran 15th and 21st Panzer Divisions and a newly formed provisional infantry division (the Afrika Division, later to be renamed the 90th Light). The Italian XXI Corps under Generale di Corpo Navarrini consisted of five infantry divisions. The Italian Armored Corps, under Generale di Corpo Gambara, consisted of the Ariete Armored Division and the Trieste Motorized Division. The Italian Armored Corps was nominally under Italian national control and not subject to Rommel's orders; however, General Gambara agreed to position his forces to support Rommel's desires.¹⁰

The Axis forces were far from uniform in equipment or quality. The German forces were generally mobile, well armed (particularly with anti-tank guns when compared to the British), and well lead. The Italian forces suffered from poor equipment and leadership.¹¹ The Italian infantry was generally without transport and weak in anti-armor weapons while the Italian armor was obsolete and inferior to the British. The Axis tank strength comprised 260 German and 154 Italian tanks.¹² Unlike the British, the Germans did not seek to build a reserve of tanks, at least in part because they simply did not have any to spare.

Rommel intended to attack Tobruk 23 November 1941.¹³ By 16 November the Axis forces had been repositioned to attack Tobruk while also guarding against an attack out of Egypt.¹⁴ Four divisions of the Italian XXI Corps, strengthened with some German units, invested Tobruk.

The German Panzer divisions were centrally located between Tobruk and the frontier, relatively close to the Mediterranean Coast. The Italian Armored Corps was located south of Tobruk (the Ariete Armored Division at Bir el Gobi and the Trieste Motorized at Bir Hacheim). The Axis frontier defenses were mostly manned by Italians with some German elements. In the months since "Battleaxe" continued improvements had been made in the frontier defenses, including the use of extensive mine fields.¹⁵

If the British launched a major attack out of Egypt, Rommel depended on their mobile forces making a wide movement to bypass the static Axis frontier defenses. Rommel would then have the option of either attacking the British armor or its vulnerable line of communications.

The Plan and Preparations

The British mission was to destroy Rommel's Army, relieving Tobruk in the process. Exploitation toward and beyond Tripoli was thought possible. With the defeat of the Axis forces in Libya and subsequent occupation of airfields by the Royal Air Force, decisive British air and naval influence would expand well into the central Mediterranean; pressure on Malta would be eased and Italy itself threatened with invasion. The key to accomplishing this had not changed since "Battleaxe." Rommel's armor, particularly his two German panzer divisions, had to be destroyed.

Two courses of action were considered for "Crusader." The bolder alternative involved a deep thrust from the Libyan-Egyptian frontier

across the bulge of Cyrenaica to seize the key Axis port of Benghazi, severing Rommel's line of communication. A supporting attack would be made against the Axis forces around and to the east of Tobruk. The second course of action considered was a much shorter hook from the frontier, around the Axis frontier defenses, toward Tobruk. This attack would directly threaten the Axis forces around Tobruk and also the Axis line of communications with their frontier defenses. A supporting attack would serve to mask the frontier defenses. The idea of the second alternative was to force Rommel into a decisive tank battle short of Tobruk.¹⁶

The first course of action, the deep thrust to Benghazi, was rejected as too risky. It required the movement of large forces over 400 miles of questionable terrain. There were doubts such a force could be supplied and provided effective air support. Perhaps the most disturbing aspect was the uncertainty as to Rommel's reaction to such a movement. It might be the British rather than the Axis supply line that was cut or, worse still, Rommel might ignore the British advance and attack a weakly defended Egypt where he could live off the British stores in the Delta.¹⁷

The alternative selected bore a resemblance to "Battleaxe," substituting corps for divisions. XIII Corps would fix the Axis frontier defenses while XXX Corps thrust around the defenses to the south, then turned northwest to engage the Axis armor near Tobruk. After the Axis armor was defeated the siege of Tobruk would be raised in conjunction with a sortie by the garrison. An armored brigade group, nominally under command of XXX Corps, would operate between the two

corps to guard the left flank and rear of XIII Corps from any German armor attack. As a deception measure a small force, brigade-sized, would thrust along the route originally envisioned in the alternative plan for a deep thrust on Benghazi.

The critical assumption of the plan was that Rommel would react strongly to the penetration by XXX Corps. On the first day the British armor would advance about 30 miles into the Axis rear, near the vicinity of Gabr Saleh. General Cunningham, 8th Army commander, left his options open for subsequent movements, depending on how Rommel reacted. The commander of XXX Corps, General Norrie, favored advancing on the second day to the area El Adem-Sidi Rezegh. The Sidi Rezegh area both contained an excellent airfield and was dominating terrain. If the British held the airfield, and the ridge to its north, they would effectively interdict Rommel's line of communications west of Tobruk as well as overlooking the Axis forces investing Tobruk.¹⁸

The British were determined not to repeat the mistakes of "Battleaxe." The Army Commander intended to be positioned well forward.¹⁹ The British knew they could not deceive Rommel that there would be an attack. However they intended to deceive him as to the time and place of the attack.²⁰ A significant effort was made to achieve surprise and prevent German observation of preparations for the offensive.²¹ An example of the British deception measures were the elaborate camouflage efforts, including the use of canvas "sunshades" to disguise hundreds of tanks as trucks when seen from the air.²²

Unlike "Battleaxe," British preparations for "Crusader" were methodical and complete. The railway line was extended over 50 miles

west of Mersa Matruh, water was piped from Alexandria almost as far as the railhead, and over 25,000 tons of supplies were stockpiled in forward areas.²³

The Battle

Opening Phases: 18-23 November

Preparations for "Crusader" were not limited to the Army. In the days preceding 18 November the Desert Air Force conducted an extensive air campaign against Axis air, ground and sea logistics.²⁴ The British navy conducted aggressive patrolling to further disrupt the Axis supply effort. Deep operations by parachutists and commandos were staged against supply centers, airfields and critical command centers.²⁵ As expected the Desert Air Force achieved air superiority from the start of the operation and maintained it, with rare exceptions, throughout the campaign in North Africa.²⁶

By midnight on 17 November the 8th Army and the Desert Air Force was concentrated along the frontier. At dawn XXX Corps crossed the frontier and by evening had generally completed its planned advance for the first day, encountering only light resistance from reconnaissance elements. XIII Corps by evening had closed on the Axis frontier defenses. The British now waited for Rommel to react.

While the Germans expected a British attack, they did not know when or where it would occur. British security and deception measures during the preparations for "Crusader" had succeeded to such an extent that the attack was a tactical surprise. British success in thwarting German

reconnaissance and signals intelligence was reinforced by other factors, among them the German concentration upon their own planned assault on Tobruk, heavy rains on the Axis airfields, and the fact that Rommel himself was out of North Africa for several days preceding the 18th.²⁷

Rommel was initially skeptical of the significance of the British attack, believing it might simply be a reconnaissance in force to distract him from his attack on Tobruk. Not until the 19th did Rommel give General Cruewell of the Afrika Korps permission to attack, with one panzer division only, in the direction of the British armor.²⁸

For the British things had not worked as planned. The British armor had penetrated deep into Axis territory, but Rommel had not reacted. Early on the 19th the 7th Armored Division commander gave orders which, rather than concentrating his division, dispersed the three armored brigades of XXX Corps. The 4th Armored Brigade was ordered to continue protecting the flank of XIII Corps. The 7th Armored Brigade was ordered to reconnoitre toward Sidi Rezegh. The 22d Armored Brigade was to reconnoitre toward Bir el Gobi. The Support Group was to be prepared to support either the 7th or 22d Armored Brigades.²⁹

As a result of British impatience and Axis sluggishness a series of separated and indecisive engagements were fought on the 19th. The 22d Armored Brigade fruitlessly assaulted the Italian Ariete Armored Division at Bir el Gobi. The 7th Armored Brigade overran the airfield at Sidi Rezegh against light resistance, barely 10 miles from Tobruk. The 4th Armored Brigade dueled elements of the German 21st Panzer Division probing down from the north toward Gabr Saleh. Meanwhile XIII

Corps continued to develop a shallow envelopment around the Axis frontier defenses.

On the 20th the British were faced with a dilemma. They had reached the airfield at Sidi Rezegh, only 10 miles from Tobruk, but had not yet engaged the bulk of the German armor. Indications were that the Germans were concentrating their armor and would be moving south toward Gabr Saleh. The British decided to modify their offensive plan and relieve Tobruk while simultaneously fighting Rommel's armor. The position at Sidi Rezegh would be strengthened (7th Armored Division's Support Group would join the 7th Armored Brigade there), and the Tobruk garrison (70th Division) was ordered to sortie on the 21st toward Sidi Rezegh. At the same time the 22d Armored Brigade would move to join the 4th Armored Brigade at Gabr Saleh to face the Afrika Korps. XXX Corp's infantry division was split, one brigade assuming the mission of "masking" the Italian armor at Bir el Gobi while the other moved to Sidi Rezegh.³⁰

While the 4th Armored Brigade was fighting at Gabr Saleh on the 19th and 20th, the XIII Corp's New Zealand Division and "I" tank brigade were only seven miles away at Bir Gibni. Offers by these units to assist XXX Corps at Gabr Saleh were declined.³¹

By the 20th Rommel had finally concluded the British were mounting a major offensive. Unwilling to abandon the investment of Tobruk, or his frontier defenses, he instructed General Cruewell to destroy the British mobile forces. Believing the British 4th Armored Brigade near Gabr Saleh had been largely destroyed in combat with elements of the Afrika Korps since the 19th, he ordered Cruewell to attack the British

forces at Sidi Rezegh on the 21st. As the 20th progressed the Afrika Korps broke contact with the 4th Armored Brigade (and the arriving 22d) and began to move toward Sidi Rezegh, leaving anti-tank screens to protect its rear.

During the period 21-23 November a confusing series of engagements were fought on and around the airfield and ridges of Sidi Rezegh. The British Official History captures the complex nature of the battlefield as it stood on the 21st:

Over the twenty or so miles of country from the front of the Tobruk sortie to the open desert south-east of Sidi Rezegh airfield the forces of both sides were sandwiched like the layers of a Neapolitan ice. In turn, starting from the north, there were (a) the troops of the 70th Division who had broken out, opposed by (b) German and Italian troops facing north and west; (c) a layer of Axis troops facing south, opposing (d) part of the 7th Support Group north of Sidi Rezegh airfield; the rest of the 7th Support Group and the 7th Armored Brigade facing south to oppose (e) the bulk of the Deutsches Afrika Korps heading north, pursued by (f) the 4th and 22d Armored Brigades. To complete the picture there were the troops of the 361st Afrika Regiment on Pt 175 to the east of Sidi Rezegh airfield, and the whole of the 155th Regiment to the west. A complicated situation indeed, which if suggested as the setting of a training exercise, must have been rejected for the reason that in real life these things simply could not happen.³²

Each side had a different interpretation of what was happening. The Germans were attacking to destroy the British around Sidi Rezegh, believing they had already badly hurt the British armor around Gabr Saleh. In contrast, the mood at XXX Corps and 8th Army Headquarters on the 21st was optimistic. The British believed the Germans were retreating from Gabr Saleh and hoped to trap the Afrika Korps between their pursuing brigades (the 4th and 22d) and their forces at Sidi Rezegh. They estimated 170 German tanks had been damaged while 209

British tanks were still operational. Elements of the British XIII Corps were also making good progress.³³

Throughout the 21st and 22d both the British and Germans alternately attacked and retreated. Without clear information on losses or exact locations of units both sides maneuvered and fought almost continuously. There were differences in the way in which they fought however. Invariably it seemed that a British or South African Brigade, often without supporting arms, would battle a German panzer division organized for and practicing combined arms tactics.

By the 22d the British armored forces were in serious trouble. Tanks losses on both sides were mounting with the British having actually lost almost 200 tanks on the 21st alone. Late on the 22d an example of Clausewitzian chance occurred. The 15th Panzer Division, responding to a call for support from the 21st Panzer Division, made a night movement and literally stumbled into the night leaguer of the British 4th Armored Brigade with devastating results. The 4th Armored Brigade was overrun and scattered with a loss of several hundred prisoners and about 50 tanks. The brigade was effectively out of the battle until reorganized on the 24th. In a period of five days, the 450 tanks of XXX Corps had been reduced to about 50. By contrast, the Germans still had 173 operational tanks out of a starting strength of 250.³⁴

By morning on the 23d the extent of British tank losses was being realized at British headquarters. Still, it was thought the Germans had also suffered heavy losses. In fact the German losses had not been as

severe, in part due to their superior tactics and in part to their superior battlefield vehicle recovery and repair capability.

Early on the 23d, Rommel ordered Afrika Korps to "encircle the enemy and destroy them." To accomplish this the Italian Ariete Armored Division would advance northeast from Bir el Gobi while the 15th and 21st Panzer Divisions drove down from the north and east. When the armored forces met the British would be driven against the German infantry and guns holding the ridge at Sidi Rezegh.³⁵

General Cruewell's attack on 23 November ("Totensonntag" or Sunday of the Dead in German) was costly (see Map 4b). While the attack did not develop exactly as planned the Germans succeeded during the day in attacking and overrunning the separated British brigades in the Sidi Rezegh area (primarily the 5th South African Brigade and the 7th Armored Division's armored brigade and Support Group), the while preventing the remnants of the British 4th and 22d Armored Brigades from interfering. Cruewell's killed or captured 3,000 men but lost over 70 of its remaining tanks. This was the highest daily loss of German tanks during "Crusader." Nevertheless most of the 7th Armored Division and part of the 1st South African Division were destroyed and XXX Corps was shattered. The remnants of XXX Corps withdrew southward to reorganize. The immediate danger to the investment of Tobruk had passed and the British armored forces were greatly weakened and disorganized.³⁶

The British came close to admitting defeat on the 23d. Citing his tank losses, General Cunningham prepared to abandon the offensive, but General Auchinleck realized that Rommel had no reserves left and intervened,³⁷ stating:

...continue to attack the enemy relentlessly using all your resources even to the last tank. Your main object as always to destroy the enemy tank forces. Your ultimate object remains the conquest of Cyrenaica and then advance to Tripoli...³⁸

When General Cruewell reported his victory to Rommel early on the 24th he recommended that he be allowed to complete the destruction of the British armor which had escaped from Sidi Rezegh to the south. Rommel however had other ideas.³⁹

Raid and Retreat: 24 November to 7 December

Rommel decided the time had come for a bold move. Generalleutnant Fritz Bayerlein, chief of staff of the Afrika Corps, stated:

Rommel's intention was to exploit the disorganization and confusion which he knew must exist in the enemy's camp, by making an unexpected and audacious raid into the area south of the Sollum front. He hoped to complete the enemy's confusion and perhaps even induce him to pull back into Egypt again. Our entire mobile force was to take part in the operation.⁴⁰

At midmorning on 24 November Rommel left his headquarters and personally lead the Afrika Korps toward the Egyptian border. From the 24th to the 26th the Afrika Korps spread chaos and panic through the British rear areas.⁴¹ Unfortunately for the Germans, the British infantry units of XIII Corps did not panic and fought stubbornly. Not only did the British not withdraw but Rommel was unable to relieve the pressure upon his frontier garrisons and elements of XIII Corps (the New Zealand Division) continued a dogged advance toward Tobruk.⁴²

An essential factor in the British resolve to continue the offense was the attitude of the British Commander for the Middle East, General Auchinleck. On the evening of the 25th he decided to relieve the 8th

Army commander, no longer having confidence in his ability to continue an aggressive offensive. On 26 November Auchinleck appointed his own Deputy Chief of Staff, Major General N.M. Ritchie to replace Cunningham and continue the offensive.⁴³

While Rommel was raiding toward Egypt with the Axis armored forces the British were busy. XXX Corps was engaged in reconstituting an armored force. The 7th Armored Brigade was sent back to the Delta to be reequiped. Remnants of the 7th were consolidated and attached to the 4th and 22d Armored Brigades. The tank reserves which Auchinleck had insisted upon and recovery efforts began to have an effect; 37 Cruisers joined XXX Corps on the 27th, 44 arrived on the 28th, and another 31 arrived on the 29th. While XXX Corps was reconstituting, XIII Corps had assumed the mission of relieving Tobruk.⁴⁴

The situation for the Axis forces in the Tobruk-Sidi Rezegh area became critical by the 25th. Urgent signals were sent to Rommel explaining the need for the Axis armor to return, but Rommel had been out of radio contact for most of the time he had been leading the raid toward Egypt. Growing desperate on the 26th, Rommel's operations officer, Westphal, contacted the 21st Panzer Division directly and ordered it to return to the Tobruk area.⁴⁵ That same day elements of XIII Corps effected linkup with elements of the 70th Division from Tobruk.⁴⁶

By evening on the 26th it was clear to Rommel that his raid was not having the desired results. Rather than collapsing, the British were continuing offensive operations around Tobruk. Throughout the raid, and particularly on the 26th, the German columns had sustained losses from

heavy British air attacks. On the 27th the Afrika Korps turned back toward Tobruk.

From 27 November to 1 December a series of engagements were fought around Tobruk. The German and Italians fought to sever the corridor linking Tobruk's garrison with the XIII Corps while the British sought to maintain the corridor while continuing to bring up reserves.⁴⁷ On 1 December the Germans succeeded in isolating Tobruk again, but it was becoming clear that whereas the British were able to bring fresh forces forward (particularly the 2d South African Division and elements of the arriving 1st Armored Division), the Axis had no reserves left to commit. Furthermore, because of the British naval and air superiority Rommel could not expect any reinforcements before the beginning of January.⁴⁸

Reluctant to admit that time was now favoring the British, Rommel attempted to relieve his frontier garrisons by ordering armored battle groups to break through to them on the 3 and 4 December while continuing to attack in the vicinity of Tobruk. However the British were also attacking and the Axis assaults were generally unsuccessful. XXX Corps had reconstituted to the point it was again engaging in offensive operations and XIII Corps (in conjunction with the Tobruk garrison) continued to stubbornly fight both to reestablish the corridor to Tobruk and reduce the frontier defenses.

On the 6th and 7th the Afrika Korps launched final attacks against the British in the vicinity of Bir el Gobi. The attacks failed with heavy losses. Rommel was now forced to admit that his forces, both German and Italian, were too exhausted and depleted to continue offensive operations. Local withdrawals had already begun as early as

the 4th, on 7 December the Axis forces began a general withdrawal to the west.⁴⁹

Withdrawal: 7 December to 17 January

From 7 December to the beginning of January 1942 Rommel conducted a skillful withdrawal of almost 500 miles across the breadth of Cyrenaica to strong positions in the vicinity of El Agheila (El Agheila is depicted on the western edge of Map 1). The combination of British logistical difficulties, the steady shortening of his own line of communications, and aggressive delaying tactics by the Afrika Korps allowed Rommel to successfully extract the bulk of his forces. The notable exceptions were his frontier garrisons in the Bardia-Halfaya-Sollum area. The last of the Axis frontier garrisons held out against ground attacks, aerial bombing and naval bombardment until 17 January. The resistance of these cutoff defenses, interdicting as they did the main east-west roadways, were one of the key reasons for British logistical difficulties in pursuing Rommel.⁵⁰

Results of "Crusader"

Although the British lost more tanks in combat, because of the Axis retreat they were able to recover and repair many of them, an opportunity the Germans did not have. Thus the final tank losses were 278 British to about 300 German and Italian. With respect to personnel, during the mobile fighting casualties were roughly equal at around 18,000 each. However, the British ultimately captured 4,000 German and 10,000 Italians who had been cut off in the frontier defenses at Bardia,

Sollum and Halfaya. Approximately 300 British aircraft were lost, while Axis losses were well over 300. Thus, according to the numbers and by ground gained the victory belongs to the British.⁵¹

The difficulty which even the British acknowledged in claiming a major victory was that in one essential aspect the offensive had failed. Tobruk had been relieved and Cyrenaica recaptured, but the Afrika Korps had not been destroyed. Moreover, of the approximate 13,000 German casualties a considerable portion were administrative personnel. The bulk of the British losses were combat soldiers whose experience would be missed.⁵²

Reflections on "Crusader"

"Crusader" was a long, complex and confusing offensive. The Clausewitzian concepts of chance and friction were much in evidence. Nevertheless, "Crusader" is a rich source of insights regarding the maneuver of large forces in mobile warfare. The analysis first addresses the British failure to destroy the Afrika Korps during the period 18-23 November 1941. Last is a discussion focusing on Rommel's thrust to Egypt from 24-26 November.

As in "Battleaxe" the immediate tactical objective of the British was the destruction of the Axis armored forces. From the very beginning the British recognized that all other objectives, including the relief of Tobruk and reduction of the Axis frontier defenses, must be secondary to destroying the estimated seven battalions of armor that Rommel could field. Against this criteria for success the British failed in

"Crusader." The Afrika Korps and the Italian Armored Corps were weakened but not destroyed.

Why the British failed to destroy the Axis armor is fundamental to any examination of "Crusader." To all appearances the British should have succeeded, certainly they were in a much superior position than during "Battleaxe." They achieved tactical surprise. They had accurate intelligence of enemy numbers and dispositions and were familiar with the ground. They were numerically superior both on the ground and in the air. Their logistical preparations were thorough and complete. With the Tobruk garrison they already had a significant force in the enemy rear. Because of the naval and air situation it was unlikely the Axis would receive significant reinforcement. Finally, British morale was excellent.

Part of the reason for the British failure can be attributed to equipment and training. The British armor and anti-armor systems were generally inferior to those of the Germans. Not all units and headquarters were fully trained. However, these reasons are insufficient to explain the problems the British encountered. Italian equipment and training were markedly inferior, yet the Italian mobile forces generally acquitted themselves quit well. The problem was not in the tools but rather in how they were employed.

The concept for "Crusader" was sound. The idea of seizing ground in the Axis rear which Rommel would feel compelled to retake with his armor is not new, Liddell Hart called this the "baited gambit". J.F.C. Fuller referred to it when he wrote:

...Seldom can armoured forces be fixed, because not only does their mobility enable them to refuse battle, but also to disengage after engagement. Therefore, in order to bring the enemy armour to battle, it is necessary to attack an objective which is of such importance that the enemy must protect it.⁵³

The validity of Fuller's thought was amply demonstrated by the repeated attacks that Rommel conducted in the Sidi Rezegh area. Clearly the Axis command considered the area around Sidi Rezegh as critical, dominating as it did both the Axis line of communications to the frontier garrisons and overlooking Tobruk. Auchinleck recognized this and the Sidi Rezegh area acted like a magnet, drawing British and Axis forces to it. Jomini would have recognized Sidi Rezegh as the "decisive point," while Clausewitz would have identified the Afrika Korps as the Axis "center of gravity."

What went wrong was the British failure to balance mass and economy of force to achieve concentration at the decisive point. The decisive point was recognized by both sides as being the Sidi Rezegh area. The difference was that the Axis command was able to concentrate better than the British. The British demonstrated, as they had in "Battleaxe," an inferior ability to handle large mobile forces. This inferiority began with the initial allocation of forces and continued through the offensive.

The British consistently maneuvered their armor brigades in a piecemeal manner. Five total tank brigades were available to the British 8th Army. One was in Tobruk and thus not available for the initial stages of the offensive. A second tank brigade, with over 100 "I" tanks, was assigned to support the fixing attack by XIII Corps. That left three armor brigades, a total of nine tank battalions, to

engage the Axis armor. But examination of the first week of "Crusader" reveals that these three brigades were never effectively concentrated. On the 19th the opportunity was missed to mass all four brigades (the "I" tank brigade of XIII Corps was only seven miles away) near Gabr Saleh and overwhelm the Afrika Korps; instead the brigades were further dispersed.

On the 20th the British made a fundamental mistake. Unable to resist temptation they decided to split their effort and simultaneously relieve Tobruk, fight the Afrika Korps, and continue operations against the frontier defenses. This resulted in a continued dispersion of British armor which, in many cases, reverted to its traditional British role of infantry support and protection. The original intention of first concentrating upon destruction of Rommel's armor was lost. With the destruction of the Axis armor, the relief of Tobruk would have been virtually uncontested. Instead, the British responded to German attacks at different locations by sending tank brigades off, like firetrucks, to put out fires.

In contrast to the British, the Germans consistently sought to mass their armored forces. The result of this difference in orientation was that by the end of 23 November the Axis armor was still an effective fighting unit whereas the British XXX Corps was disorganized and decimated.

The British clearly missed the lesson of "Battleaxe" concerning combined arms operations. They persisted in employing relatively pure formations. Still, even these relatively pure ground formations would have been formidable if effective air-ground interoperation had been

achieved. British tank brigades at Sidi Rezegh, with effective close air support, would have been tough to beat. Unfortunately, while the British succeeded in gaining air superiority, the Desert Air Force still had great difficulty delivering ordinance in support of ground tactical maneuver. There was still not a sense of close coordination of the air and ground efforts. The British showed no better ability to integrate aerial fires with their armored formations than they did artillery and anti-tank fires.

The Germans continued to demonstrate a keen appreciation for the efficacy of combined arms operations. They invariably attacked using combined arms formations. They considered the anti-tank gun to be a primary tank killer and fully integrated them, with artillery and infantry, into offensive maneuver. The British took a far more rigid approach, viewing the anti-tank gun as essentially a defensive weapon for the protection of infantry. The British considered the tank as the primary weapon to kill enemy tanks. Aside from the impact this had on degrading the effectiveness of British armor in the attack, it also encouraged a reflexive response to throw whatever armor was available at Axis armor which attacked British infantry. The result was to dissipate British armor strength and degrade its mobility to that of the "helpless" infantry.

This rigidity of outlook extended to the employment of the "I" tank brigade. Once the decision had been made to allocate this potent asset to XIII Corps there was no consideration given to using it in conjunction with the armor brigades of XXX Corps.

Finally, in looking at the events of 18 to 23 November the impact of personal leadership cannot be overlooked. Two factors surface, the importance of forward command and the impact of moral resoluteness. With respect to leading forward, while the British did better than during "Battleaxe" there were still problems with senior commanders not understanding what was happening at the decisive point. The disaster at Sidi Rezegh did not happen suddenly. It built up over several days. The British commanders simply were not aware of the severe losses which their armor had sustained since the 19th. Contrarily, the Afrika Korps commander invariably was at the critical point. On the cautionary side, Rommel demonstrated the danger in being too far forward. While he led the Afrika Korps into Egypt from 24 to 26 November his headquarters was unable to contact him and was left to fight a desperate battle around Tobruk. The resulting confusion of orders resulted in lost opportunities in both efforts.

The significance of Auchinleck's intervention on the 23d cannot be overstated. General Cunningham had admitted defeat. Only Auchinleck's insistence that the offensive continue prevented "Crusader" from ending in a British withdrawal on the 24th.

Many soldiers and historians have debated the wisdom of Rommel's raid from 24 to 26 November. As many arguments supporting it can be raised as those condemning it as foolhardy. What is certain is that Clausewitz correctly stressed the importance of chance and friction in war. Rommel did not have an accurate picture of the enemy in the frontier region. There were problems of coordination and logistics with the raid itself. The Axis columns suffered from almost continuous air

attacks. Yet the panic and chaos which spread through the British rear areas was phenomenal.

In an earlier chapter (Chapter 2), the issue of how deep an envelopment or penetration should be was raised. Shallow operations tend to yield immediate results, whereas deeper operations are slower but tend to produce more significant results. The problem with the deeper operations is the increased time required for their effects to be felt. The British infantry divisions simply continued to fight and advance despite heavy German armored forces pillaging through their rear. Whether they would have continued to fight after several days of disrupted logistics is unknown. Also clear is that in such a raid the mobile raiding forces can be very successful in overrunning "soft" targets, yet lack the ability to overwhelm resolute resistance from determined combat formations. Again the influence of moral factors is supreme. Cunningham was relieved on the 26th, at the height of the panic in the British rear. His successor was determined to show the same degree of resoluteness as Auchinleck.

The British ability to sustain their offensive logistically was a key factor in Rommel's decision to withdraw. The British tank reserves enabled XXX Corps to be virtually rebuilt and resume offensive action in a matter of days. On the other hand, the German ability to recover and repair armored vehicles on the battlefield was a significant factor in their ability to wage offensive maneuver warfare over a period of weeks of intense combat despite a lack of reserve equipment. The British logistical preparations for "Crusader" freed them from the immediate need to reduce the Axis frontier garrisons. Thus, rather than being

tethered to an infantry attack on the garrisons, as happened during "Battleaxe," the British armorer was, at least in theory, free to maneuver.

British tactical doctrine had not appreciably improved since "Battleaxe." The British soldier fought stubbornly and courageously, but not as smartly as the Germans. Despite enjoying overall numerical superiority, at the actual point of tactical combat the British usually faced a locally superior and more agile enemy who could focus greater combat power. What forced Rommel to withdraw was not British tactics but steady attrition and the recognition that whereas the British could replace losses, the Axis forces could not.

An unresolved issue arising from German operations is what constitutes victory. On several occasions, notably on the 20th at Gabr Saleh and the 24th at Sidi Rezegh, Rommel stopped short of exploiting tactical successes. On the 20th this led to the Afrika Korps turning toward Sidi Rezegh rather than completing the destruction of the 4th Armored Brigade and destroying the approaching 22d Armored Brigade. After General Cruewell's attack at Sidi Rezegh on the 23d, Rommel chose to thrust toward the Egyptian border on the 24th rather than seeking to complete the destruction of XXX Corps. As a result, XXX Corps was reconstituted and reentered the battle. In each of these incidents it appears that faulty intelligence and overoptimistic reports contributed toward a misleading impression of how badly the enemy had been hurt. However, it is also clear that Rommel probably did not properly credit the British with the ability to rapidly recover from a severe tactical setback.

The implication drawn from the rebirth of the British XXX Corps is that decimating the weapon systems of a mobile formation, even a corps, is only a temporary measure so long as the formation retains a functioning command structure and has access to reserve equipment or has a strong recovery and repair capability. Rommel chose to pursue the opportunity to achieve a staggering victory by maneuver at little cost rather than accept the cost in time and resources which destroying XXX Corps in detail would have involved. It worked in "Battleaxe" against Beresford-Peirse and Wavell but failed in "Crusader" against Ritchie and Auchinleck. Perhaps the critical lesson is the overriding importance of the moral factor.

Conclusion: Lessons for Deep Maneuver

The lessons of Operation "Crusader" would have been familiar to Napoleon, Jomini and Clausewitz; throwing the weight of your forces upon the critical point and having the resources, both materially and morally to sustain the fight. For the commander contemplating deep maneuver, "Crusader" expands upon the lessons derived from the earlier Operation "Battleaxe." These lessons fall into two general areas, those of planning and those of execution.

A fundamental requirement for success in deep maneuver is accurate and realistic targeting or selection of the maneuver force objective. The British succeeded in this during the planning for "Crusader." The mission could be accomplished either by destroying the Axis armor or by rendering the Axis defenses untenable (obviously accomplishing the former would result in the latter, the opposite did not necessarily

follow). Both options would be addressed by threatening the dominant terrain of Sidi Rezegh; the Axis command would either have to commit its armor to Sidi Rezegh or retreat.

Essential to accurate "targeting" of the deep maneuver force during the planning phase is adequate intelligence concerning both enemy tactical dispositions and his operational situation, to include intentions. The British command was fortunate in having relatively accurate intelligence ranging from tactical to strategic sources.

Given appropriate "targeting" of the maneuver force, the next planning issue is the adequacy of the maneuver force to accomplish the mission, that is, insuring it will have sufficient combat power to force a favorable decision at the critical point. For the British in planning "Crusader," the critical elements in insuring this combat power were assignment of sufficient combat forces (to include aerial forces) and development of a logistical support operation that would allow the ground maneuver force to engage in sustained combat despite operating in the depth of the enemy defenses.

A final part of the planning process for deep maneuver revolves around the truism that combat power is not absolute. Accordingly, degrading the enemy's combat power is equivalent to enhancing one's own. Overall combat ratios in deep maneuver are less important than the relative combat power of forces at the critical point (Sidi Rezegh during "Crusader"). Surprise, with the attendant techniques of security and deception, constitutes a basic means by which the deep maneuver force can achieve local superiority at the critical point before the defender can react and shift forces. Planning for secrecy before and

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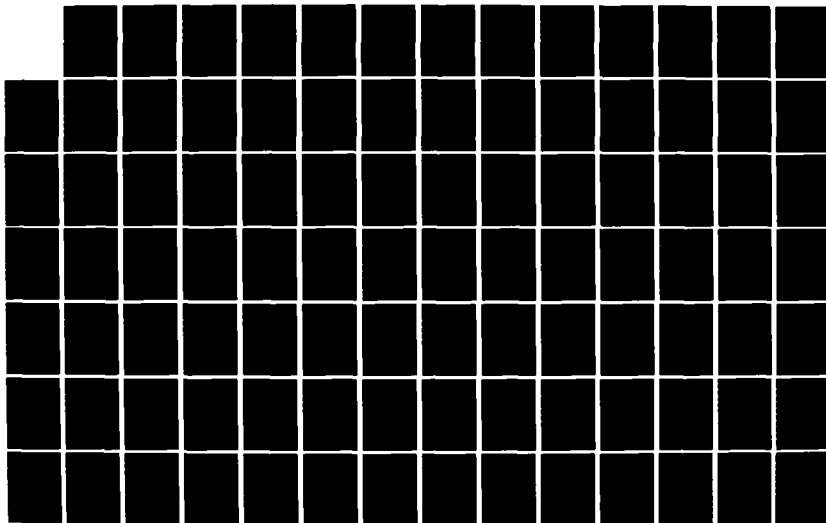
CONSIDERATIONS FOR DEEP MANEUVER: LESSONS FROM NORTH
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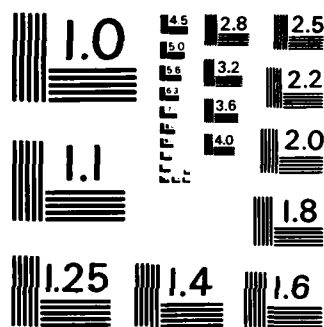
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speed of movement after the operation begins is thus critical in the absence of overwhelming superiority.

Rommel's raid toward Egypt exemplifies what can happen when a maneuver force inadequately plans deep maneuver. Poor intelligence, leading to an inaccurate assessment of British vulnerabilities, coupled with inadequate combat forces and logistical support resulted in an operation which depended for success solely on psychological shock. While moral factors are certainly a fundamental aspect of war, basing operational maneuver upon them is at best a gamble.

The actual execution of Operation "Crusader" illustrates several important considerations for deep maneuver. Among the most important of these considerations are the impact of uncertainty and chance, the importance of combined arms in generating combat power and the impact of leadership.

During "Crusader" neither commander had totally accurate or complete information on either their own forces or the enemy. One implication of this is that the commander must consider the process of maintaining information on the status of his own subordinate units as being just as important as gaining intelligence of the enemy. Despite these efforts however, a great amount of uncertainty is bound to exist, and therein lies a further danger.

In the face of uncertainty there is a temptation to adopt caution, to try and prepare for all eventualities. Trying to cover all possibilities inevitably results in a dispersion of effort. To concentrate at the decisive point one must economize elsewhere. The willingness to accept risk is a necessary element in maneuver warfare.

What is equally clear however is that there are means of reducing that element of risk, foremost among them being accurate intelligence and the ability to quickly use of it. These in turn support the need for a continuous and large-scale reconnaissance effort and leaders being sufficiently forward to reap the benefits.

A conspicuous failing of the British in "Crusader" was their inability to synchronize the various combat arms to maximize combat power. Given the limited assets available to a force operating deep, the ability to integrate the use of infantry, armor, artillery and air is essential. This requires both adequate doctrine, organization and equipment. The German approach of employing combined arms formations at relatively low levels of organization appeared to yield superior results as compared to the British tendency to employ pure formations. Likewise, British weakness in integrating aerial and ground fires resulted in ground formations being unable to achieve sufficient combat power in numerous instances.

Finally, the impact of leadership upon sustaining unity of effort during the execution of deep maneuver cannot be overemphasized. The commander of a deep maneuver force will be faced with many temptations to divert forces and attack targets of opportunity under the rationale of exploiting success. The difficulty with this is that such dispersion of effort may lead to an inability to generate sufficient combat power at the critical point. The maneuver commander must constantly reassess the situation and refrain from weakening his thrust unless and until he becomes convinced that the original objective is no longer appropriate.

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48. Rommel, pp. 167-171; Mellenthin, pp. 94-97.

49. Rommel, pp. 171-172; Mellenthin, pp. 97-98.

50. Playfair, pp. 77-79, pp. 81-92; Rommel, p. 173-179; Schmidt, pp. 118-123; Westphal, pp. 109-110; Mellenthin, pp. 98-99.

51. Rommel, p. 178; Playfair, pp. 97-100.

52. Liddell Hart, p. 198.

53. Fuller, p. 164.

Map 4a: From Rommel, p. 157.

Map 4b: From Mellenthin, p. 84.

Map 4c: From Rommel, p. 165.

Chapter 5: Gazala

Introduction

In late May 1942 Rommel attacked and defeated the numerically superior British 8th Army in the vicinity of Gazala. By the end of the offensive in late June 1942 Rommel's forces had seized Tobruk, driven the British eastward to El Alamein and appeared on the verge of a final assault on Egypt. Gazala exemplified Rommel's ability to employ large mobile forces against a tough foe and gain victory despite failures of planning and intelligence. It demonstrates the difference between a mature operational maneuver force, as exemplified by the Deutsches Afrika Korps, and an immature one, as demonstrated by the 8th Army.

The focus is upon the three periods of the offensive most relevant to studying the maneuver of large forces. These periods are the initial phase of the offensive (Operation "Venezia"), from 26 to 29 May; the British counterattack (Operation "Aberdeen") of 5/6 June and Rommel's response; and the battle around Knightsbridge from 11 to 13 June. Other significant actions, including the air war, action in the "Cauldron" prior to 4 June, the fall of Bir Hacheim, and the exploitation and pursuit ending in the fall of Tobruk will be covered as necessary for continuity.

To amplify the text a detailed force listing is included as Appendix C. Maps on the various phases of the battle are also included. Information on geography, equipment, doctrine, and background previously covered in earlier chapters will not be repeated. To place Gazala into geographic perspective, refer to Map 3a (Chapter 3), which depicts the field of operations in Libya and Egypt.

Setting

Background

The advantage the 8th Army enjoyed as a result of "Crusader" did not last long. After receiving new tanks and equipment following his withdrawal to El Agheila in January 1942, Rommel surprised the British by attacking. By early February Rommel had driven the 8th Army back to a defensive line running from Gazala on the coast to Bir Hachem, forty miles inland to the south.

From February to May 1942 both sides paused while building up the forces and supplies needed to launch a major offensive. The Axis command was anxious to attack and capture Tobruk as a preparatory move to assaulting Malta and then, with their rear secure, invading Egypt. The British wanted to attack in order to destroy Rommel and reoccupy airfields from which they could support Malta.

German Situation

The Germans calculated the 8th Army would be capable of attacking anytime from June 1942 onwards. Rommel had no desire to see his plans being overturned by a British offensive as had occurred during "Crusader;" he intended to attack first.¹ The task appeared formidable. The relative strengths of the two forces did not favor the Axis.

To defeat the British Rommel had a significant force, at least on paper. It included two German and one Italian armored divisions, one German and one Italian motorized division, four non-motorized Italian

infantry divisions, and one non-motorized German rifle brigade. An additional Italian armored division (the Littorio) would join Rommel during the battle.

This imposing force had problems however. Although the Axis supply situation had improved, many of the units were underequipped and below strength. The Italian units were particularly weak. The Italian motorized division was only at brigade strength while the Italian infantry divisions were only equivalent to regiments. The lack of mobility and firepower in the non-motorized Italian and German units severely limited their use in mobile operations. Additionally, it was known that the British were receiving better tanks and anti-tank guns, thus negating to some degree the qualitative advantage previously held by the German units. The British were receiving the new American-made Grant tank, which was relatively heavily armored and gunned. Also arriving was the six-pounder anti-tank gun to replace the weak two-pounder.²

Numerically there was little cause for Axis optimism. The Axis armored force at the beginning of Gazala consisted of 560 tanks, of which about 240 were obsolete Italian tanks and approximately 50 were German light tanks (the German light tanks were only armed with machine guns and thus were virtually worthless in an anti-armor role). Approximately 70 additional tanks were undergoing maintenance or were en route, thus constituting a small, but not immediately available, reserve. The Germans estimated the British as having at least 700 tanks, with additional tanks in reserve. The British also enjoyed

numerical superiority in personnel, artillery and armored cars. In the air the two forces were roughly equal.³

A further problem for the Axis forces was the lack of precise intelligence concerning order of battle and dispositions of the British forces. The British forward defenses were heavily screened by armored car units which effectively prevented German reconnaissance forces from accurately mapping the British positions and minefields. There was even less confidence concerning the British forces in depth because of British signals security and camouflage efforts. Consequently, the locations of several brigade-sized units were unknown.⁴ Rommel knew the British had emplaced extensive mine fields along their 40-mile forward defense belt, with two divisions (the 50th British and 1st South African) holding the northern end of the line while the 1st Free French Brigade held the southern end of the line from the fortified strongpoint of Bir Hacheim.⁵

British Situation

By early May it was clear to the British that Rommel would attack between the last week in May and the middle of June 1942. Rather than attempt to speed their own offensive preparations, the British decided to await the attack and defeat it in the area Gazala-Tobruk-Bir Hacheim. As the end of May approached intelligence sources increasingly refined their estimates of the German attack. While the timing and objective of the Axis attack were accurately predicted, there was little agreement on exactly how or where Rommel would attack.⁶

The British 8th Army under General Ritchie consisted of two corps (the XIIIth and XXXth) with four infantry divisions, two armored divisions, two separate "Army" tank brigades and two motorized brigade groups. Additional ground forces (an infantry division, infantry brigade and armored brigade) were en route to join 8th Army. The British armored force, including reserves, consisted of approximately 850 tanks. Included in the total were 167 of the new General Grant medium tank, armed with a 75mm gun. An additional 145 tanks (including 75 Grants) were assigned to the en route 1st Armored Brigade. The improvement in weapons quality was not limited to armor alone, British anti-tank units had also begun receiving better weapons in the form of the 6-pounder gun.⁷

British estimates of Axis strength was quite accurate. Between Enigma intercepts and deep reconnaissance by the Long Range Desert Group the Axis tank strength was placed at 325 German and 190 Italian tanks.⁸

In recognition of problems found during earlier fighting, General Auchinleck had directed a reorganization of armored and infantry divisions "to associate the three arms more closely at all times and in all places." Unfortunately this effort was not completed before Rommel attacked.⁹

The British constructed a 40-mile defensive line stretching southward from Gazala. Gazala was far enough to the west of the logistical center at Tobruk to protect the port against anything except air attack or a major offensive. It was thought Rommel would either thrust straight through the center (thus having to make a frontal attack) toward Tobruk, or attempt an envelopment around the southern

defenses (exposing a long and vulnerable line of communications) and then turn northward. With insufficient forces to continuously man such a broad front, the British chose to construct brigade-sized strong points, known as "boxes," along the front and in depth. These "boxes" were organized for all-round defense and occupied by infantry brigades supported with artillery and anti-tank units. Protecting and connecting the forward "boxes" were extensive minefields. The "boxes" were generally not mutually supporting, adjacent "boxes" being from six to thirteen miles apart. Each "box" was considered self-sufficient and expected to defend itself until relieved by other forces, or, if bypassed, to attack and harass following forces or logistical elements.¹⁰

With the infantry and artillery located in the defensive "boxes," the British armored forces were to provide a counterattack and maneuver capability to destroy Axis forces which were bogged down trying to reduce the static positions. In the event the "boxes" were bypassed, such as by a move southward around Bir Hacheim, then the armored forces would be able to attack the Axis lines of communication.

There existed a fundamental difference in how the British commanders thought the armored divisions should be disposed. General Auchinleck, Middle East commander, believed both armored divisions should be kept concentrated and centrally located in the rear. On 20 May he wrote to General Ritchie, 8th Army commander,

I consider it to be of the highest importance that you should not break up the organization of either of armoured divisions. They have been trained to fight as divisions, I hope, and fight as divisions they should. Norrie must handle them as Corps Commander,

and thus be able to take advantage of the flexibility which the fact of having two formations gives him.¹¹

The commanders in the 8th Army favored dispersing the armored units to facilitate quick reaction to frontal attacks against either corps area, an approach around the desert flank, or any combination of these alternatives. This resulted in the two separate tank brigades being placed in close support of the infantry "boxes" of XIII Corps and the armored brigades of the two armored divisions being dispersed. Additionally, the infantry brigades, with associated artillery, which had been allocated to the armored divisions in accordance with General Auchinleck's reorganization efforts were separated from the armored brigades and placed in defensive "boxes".¹²

The Plan

Facing strong forces and unsure of their exact dispositions or defenses, Rommel developed a plan emphasizing surprise, boldness and speed of movement. There were three phases to the plan. The opening phase would be an attempt to convince the 8th Army that the main effort would be a frontal assault against the XIII Corps defenses in the north and center of the Gazala line. The Italian infantry divisions, strengthened with non-motorized German infantry and the bulk of the Axis artillery, would attack during daylight on 26 May to fix the 1st South African and 50th British Divisions and hopefully draw the British armor forward and to the north. Axis armor and motorized forces would also feint toward the area of the Italian attack during daylight.

After darkness on the first day the second phase of the operation would begin with the main attack conducted by the Afrika Korps and Italian Mobile Corps, sweeping to the south around Bir Hacheim. After the Axis mobile forces had reached the enemy rear they would turn north and advance toward the sea, destroying the British armored formations en route and encircling the bulk of the 8th Army. After destruction of the forward divisions an assault would be mounted to seize Tobruk.¹³

The timing of the offensive was ambitious. Rommel intended to complete the encirclement of the forward divisions of the 8th Army on the second day of the attack and seize Tobruk on the third. If the British armor fought well, resupply of the Axis mobile forces would be extremely difficult unless the fortress at Bir Hacheim could be quickly reduced or lanes established through the British minefields. Rommel recognized the risks involved in the undertaking, stating:

That chance has to be taken. And must and will cease to be a gamble by virtue of skilled and determined attack on the lines of the plan formulated. Let it not be forgotten that the British are not without strategical training. They must have considered the possibility of striking up behind the Gazala Line. We are not likely to paralyze them by complete surprise. Therefore we must beat them by carrying out effectively what we perceive to be the essentials for success in employing this particular plan. Our tanks will be behind the enemy's line, and in battle, well, lines of communication must be driven through to serve them.¹⁴

Two actions were taken to further reduce the element of risk. The Trieste Motorized Division was tasked to force a gap through what was thought to be a weak area of the British minefields south of the British 50th Division. Additionally, the Ariete Armored Division was routed so as to overrun the defenses at Bir Hacheim during its advance.¹⁵

The Battle

The Plan Fails: 26-29 May 1941

After an intense artillery preparation the two Italian infantry corps of Gruppe Cruewell began the supporting attack against the British XIII Corps positions at 1400 hours on the 26th. German and Italian armored regiments supported the attack to give the impression of a major attack. Towards evening additional armored units were sent toward the Italian attack; after they had been observed by British aircraft, and as darkness fell, these forces turned back to join the main effort in the south.

At 2030 hours Rommel initiated Operation "Venezia." The Afrika Korps (15th and 21st Panzer and the 90th Light Divisions) and XX Italian Corps (Ariete Armored and Trieste Motorized Divisions) began the envelopment through the desert. By 0700 on the 27th the British command had reports of 300 tanks and 1,200 motor vehicles 10 miles southeast of Bir Hacheim. The scattered brigades of the 7th Armored Division found themselves in the path of the Afrika Korps and Italian XX Corps.

The coherence of the 7th Armored Division was shattered in a few hours. At 0630 the Ariete Armored Division and 21st Panzer Division overran and scattered the 3d Indian Motor Brigade which had gone into position southwest of Bir Hacheim just the day before. About 0830 hours the 90th Light Division attacked the 7th Motorized Brigade near Retma, forcing it to withdraw toward Bir el Gubi. Reacting to preliminary reports, the 7th Armored Division ordered the 4th Brigade to take up a battle position to the southeast of where the 3d Motorized Indian

Brigade was being overrun. While still moving forward it was struck by the 15th Panzer Division and retreated toward El Adem, followed by elements of the 90th Light. Shortly after 1000 hours German armored cars overran the 7th Armored Division's forward headquarters, capturing General Messervey and some of his staff. In the spreading confusion support units were destroyed or scattered.

While the 7th Armored Division was being mauled, General Norrie, commanding XXX Corps, ordered the 1st Armored Division to prepare to move south. The 1st Armored Division in turn instructed 2d and 22d Armored Brigades to move south. The 22d Armored Brigade began to move south but soon was struck by both the 15th and 21st Panzer Divisions and pushed northward, losing 30 tanks in the process. As the afternoon progressed the 2d Armored Brigade and 1st Army Tank Brigade were brought into action and the German advance was finally slowed and halted generally south of the Trigh Capuzzo.

By day's end it was apparent that Rommel's timetable was failing. While one British armored division had been scattered, the British armored brigades were battered but unbroken. The Axis envelopment had stalled short of encircling the forward divisions. Rommel had lost almost third of his tank strength and needed ammunition and fuel, but supplies were not coming forward.

Axis supply columns could not move freely. Bir Hacheim had not fallen to the Ariete Armored Division and the Trieste Motorized Division was bogged down trying to force a gap through the unexpectedly deep minefield belt. The Desert Air Force was attacking wheeled columns everywhere while forces from the garrison of Bir Hacheim and the 7th

Motorized Brigade were attacking supply columns attempting to follow the route of the Axis armor. In addition, the Axis forces had become dispersed during their advance (the 90th Light was out of contact near El Adem) and were susceptible to counterattack. Despite these problems Rommel resolved to continue the attack on the 28th.

The 28th of May was notable only for what did not happen. The British, still enjoying a marked superiority in armor strength, made no effort to concentrate their armor brigades. Instead they engaged in piecemeal skirmishes with German and Italian forces. The Axis forces were limited by supply difficulties. The 15th Panzer was virtually immobile due to lack of fuel. The 21st Panzer fought its way north to a position seven miles west of Acroma. The 90th Light spent the day trying to rejoin the Afrika Korps after withdrawing from positions near El Adem. Perhaps the most significant event of the day was that the Italians had begun to clear lanes through the British minefields. The Trieste Motorized Division was opening a lane along the Trig el Abd while the Pavia Division of the Italian X Corps was clearing a lane along the Trigh Capuzzo. The British had defended neither location, relying on the thickness of the minefields and the limited coverage of artillery from adjacent "boxes," particularly the 150th Infantry Brigade box at Got el Ualeb.

At the end of the 28th the British command was fairly optimistic. The XIII Corps forward defenses were holding while XXX Corps was preventing Rommel's mobile forces from completing their envelopment. The Axis mobile forces were still largely cut off from resupply by the fortress of Bir Hacheim and the minefields. General Ritchie calculated

Rommel had no more than 250 serviceable tanks left and was trapped against the British minefields. He believed he had sufficient strength to destroy the remaining Axis armor.

Rommel was concerned, and with good reason. The British armor was simply too strong for his forces, particularly in their weakened state, to push aside. Early on the morning of the 29th a supply column made it through (Rommel personally led it through a gap in the minefields) but it was clear the offensive was developing into a battle of attrition. Rommel decided to change his focus; rather than continue pushing toward the east and north, the Axis mobile forces would make a limited withdrawal and concentrate with its back to the British minefields. By defending toward the east on a limited front and with its flanks protected by the 8th Army's own minefields, Rommel could concentrate on opening lines of resupply through the minefields to the west along the Trigh el Abd and Trigh Capuzzo. A key part of Rommel's decision was his confidence that the British would respond by continuing to throw their mobile forces against him, thus wasting their strength. Once the British mobile forces had been bled and his own forces resupplied, the offensive would resume. If the British forces remained too strong to attack, then the open lanes would provide a line of retreat. The 29th was therefore a day of fierce counterattacks and local movements as the Afrika Korps and Italian XX Corps concentrated while pressed by the British armored brigades.

The Cauldron: 30 May-4 June¹⁷

On 30 May Rommel completed his concentration and established a defensive screen facing the British mobile forces. This defensive area became known as the "Cauldron." By now Rommel had decided he would clear the southern half of the Gazala line, before refocusing northward again. During the day the 150th Brigade box was surrounded. Rommel determined the box had to be eliminated; the 150th Brigade had been reinforced with the 1st Army Tank Brigade and was capable of interdicting with forces and artillery the supply lanes being cleared through the minefields.

On the 31st strong detachments of the Afrika Korps and the Ariete Armored Division attacked the 150th box. Supported by German Stuka dive bombers the attackers penetrated the position. On 1 June the attacking Axis forces, again with heavy air support, continued their attack and overran the position by early afternoon. The Germans and Italians captured some 3,000 prisoners and destroyed or captured 101 tanks and armored cars as well as 124 guns. Rommel now had secured his rear and reestablished communications with rest of his army to the west of the minefields.

Overwhelming the 150th box had required Rommel to thin his defensive lines to the north and east, relying on anti-tank guns backed by artillery to hold the British armor. The British response was sluggish and consisted of a series of piecemeal, unsupported attacks by armored and motorized brigades of XXX Corps. These attacks broke down

so quickly that Rommel was able to continue economy of force operations on his anti-tank screening line.

Rommel now turned his attention to the Free French at Bir Hacheim. The evening of 1 June the 90 Light and the Trieste Motorized Divisions were sent south to invest Bir Hacheim. On 2 June the attacks, supported by German dive bombers again, against Bir Hacheim began. Meanwhile elements of the Afrika Korps armor made local attacks from the Cauldron, in part to distract the British from Bir Hacheim. The Axis tank strength, now that communications had been restored and maintenance efforts could resume, began to recover. It was clear to Rommel that the British would soon launch a major attack, either against the Cauldron or against his forces investing Bir Hacheim. He counted on the 8th Army being unwilling to risk pulling the 1st South African and 50th Divisions, facing the two Italian infantry corps, out of their defensive boxes to join in the attack. He positioned his forces, the German panzer divisions flanking the Italian Ariete Armored Division and a mobile reserve (Group Wolz), to give himself flexibility to maneuver (see Map 5c).

Operation "Aberdeen": 5-6 June¹⁸

On 5 June the British launched Operation "Aberdeen" to destroy the Axis forces in the Cauldron. The attack had two phases. In the first phase two converging attacks would be made from the north and east. The 32d Tank Brigade of XIII Corps would attack south to "seal" the northern end of the Cauldron. Meanwhile the 10th Indian Brigade, of the 5th Indian Division (originally in Army reserve), would attack westward to

open a hole in the Axis defensive perimeter. The second phase entailed the 7th Armored Division, with two brigades, passing through the 10th Indian Brigade and destroying the Axis forces in the Cauldron. The two brigades constituting the 7th Armored Division were the 9th Indian Brigade, from the 5th Indian Division, and 22d Armored Brigade, which had been reorganized and moved from the 1st Armored Division to replace the battered 4th Armored Brigade. The 1st Armored Division was to be prepared to either exploit success or block any breakout attempt by Rommel. The attacking force thus consisted of four brigades drawn from two different corps and three different divisions.

The command and control system for the British attack was novel. No one below the 8th Army commander coordinated the converging attacks planned during the first phase. For the attack from the east, the 5th Indian Division commander was responsible during the first phase, command would then shift to the 7th Armored Division when the 22d Armored Brigade passed through. The tactical headquarters of the two divisions were co-located well forward near Bir el Harmat.

The attack began early on the 5th following an artillery preparation. The thrust by 32d Armored Brigade, with weak artillery support, was stopped with heavy tank losses. The 10th Indian Brigade attacked, supported by four regiments of artillery, and seized its objectives (primarily because they were actually short of the main defense line) and the 7th Armored Division passed through it and attacked the Italian Ariete Armored Division. After initial local success the attack slowed and by midday had bogged down. The lack of centralized control over the British forces resulted in chaos. Efforts

to bring in additional forces, including the 2d Armored Brigade, broke down in confusion.

Rommel judged the moment was right and counterattacked. As depicted in Map 5b, the German panzer divisions and Group Wolz, supported by German air, enveloped the British attackers, to include overrunning and scattering the 5th and 7th Division headquarters. By evening on the 5th the British armor had withdrawn with heavy losses and the 10th Indian Brigade, with its four regiments of supporting artillery, had been encircled. On the 6th the British unsuccessfully counterattacked to relieve their cutoff forces. By evening on the 6th the encircled forces had been overwhelmed. Rommel captured some 3,100 prisoners, 96 guns and 37 anti-tank guns. The 10th Indian Brigade and four regiments of artillery had disappeared while the 9th Indian Brigade had suffered heavily and over 100 tanks had been lost.

Rommel was now faced with a choice. He could attack out of the Cauldron or continue with his plan to clear the southern half of the Gazala line. The British armor had lost heavily but was still effective. He decided to concentrate on eliminating Bir Hacheim first.

Bir Hacheim became the scwherpunkt of Panzerarmee Afrika and the Luftwaffe. From 2 to 11 June the Luftwaffe flew over 1,300 sorties against Bir Hacheim while the Desert Air Force flew nearly 1,500 in support of it. On 8 June elements of the 15th Panzer Division joined the Axis forces which had been attacking Bir Hacheim for a week. The heavy ground and air attacks gradually broke down the stubborn French resistance. Efforts by the 7th Armored Division to distract the Axis forces investing Bir Hacheim were only partly successful. On the night

of 10/11 June, in response to orders from 8th Army, the French garrison broke out and escaped.

By the end of 11 June Rommel had cleared the southern Gazala line. The schwerpunkt shifted to the British armor.

Knightsbridge: 12-14 June¹⁹

Despite heavy losses, the British believed they could still win the battle. The 8th Army yet retained a numerical advantage.²⁰ While Rommel was reducing Bir Hacheim the 8th Army had strengthened defenses and repositioned units to resist any Axis drive northward or to the east out of the Cauldron. Further, the original defenses of the 1st South African and 50th British Divisions were still holding firmly against the Italian XXI and X Corps. With additional time the British numerical advantage would increase. Rommel had no intention of giving the 8th Army any more time.

As soon as Bir Hacheim fell, Rommel reoriented his forces and attacked on the afternoon of 11 June. The 21st Panzer Division demonstrated to occupy the 8th Army forces north of the Cauldron. The 15th Panzer, Trieste Motorized and 90th Light divisions advanced toward El Adem, threatening the British flank and rear (see Map 5c). Rommel's intent was to force the British armor into a final decision.

The British reacted to Rommel's move. General Norrie, commander of XXX Corps, wanted the 2d and 4th Armored Brigades to move southward on the 12th and attack into the flank of the Axis advance. The units did not move because the commander of the 7th Armored Division objected to the idea and set off to discuss the matter at XXX Corps. Meanwhile, the

German radio intercept service had informed Rommel of the intended move and he seized the opportunity. For 12 June he ordered the 15th Panzer to halt and defend against the anticipated British attack. The 21st Panzer Division would attack southeastward out to the Cauldron into the rear of the British armor.

The battle on the 12th developed slowly. The 7th Armored Division commander was out of contact, still dodging German units and trying to find XXX Corps headquarters, and the British brigades waited for orders. By noon Rommel had ordered both his panzer divisions to attack and the British 2d and 4th Brigades were being pressed from front and rear. General Norrie, unable to contact Messervy of the 7th, transferred control of both brigades to 1st Armored Division. 1st Armored Division reacted by moving the 22d Armored Brigade into the battle and attempted to consolidate a defense around the Knightsbridge box. The 32d Army Tank Brigade was soon committed into the same area. Rommel continued to press the British with converging attacks, bringing the Trieste Motorized and Ariete Armored Divisions in the battle. The German anti-tank guns proved particularly effective in advancing forward, under cover of the haze and dust and supporting fires of artillery and tanks, to kill the British armor caught in the shrinking area between the Axis armored units. While the tank battle raged around Knightsbridge, the German 90th Light had continued to attack El Adem, thus posing a continued threat to the 8th Army rear.

By evening on the 12th the battle of Gazala had virtually been decided. The British had lost 120 tanks and Rommel now had both the initiative and a numerical advantage in armor. The struggle continued

on the 13th with the British attempting to keep their armor concentrated and launch limited counterattacks. Rommel maintained the pressure on the British armor while also attacking British positions in an effort to isolate the Knightsbridge area. By evening on the 13th the 8th Army armor had been reduced to less than 100 tanks and the Knightsbridge box had been evacuated. XXX Corps had virtually ceased to exist. It was increasingly evident that Rommel was on the verge of pushing toward the coast and cutting off the two divisions still holding the Gazala line. On the morning of the 14th the 8th Army began to withdraw to the west. Rommel had won.

Exploitation and Pursuit:²¹

By evening on 16 June the 8th Army had been driven 80 miles east of Gazala. The remaining British armor had been decimated covering the withdrawal and was consolidated into a single brigade, the 4th. Tobruk and positions at El Adem and Belhamed were still held but the British command was in bad shape. Many units were disorganized and there were no fresh reserves remaining. Withdrawing units were directed either into Tobruk or toward the new line which was forming at El Alamein. Rommel's army captured large amounts of supplies. The way to Tobruk was open.

On 18 June Rommel surrounded Tobruk. The Tobruk defenses had not been maintained and many of the forces had just been beaten at Gazala. The Axis forces investing Tobruk found intact many of the artillery stores stockpiled for their assault on Tobruk last November which had been abandoned during the retreat following "Crusader." Beginning on

the 20th the Axis forces, with strong German air support, began the assault. Tobruk collapsed within a day.

Results of Gazala²²

With the fall of Tobruk Rommel could claim to have captured over 45,000 prisoners and destroyed or captured more than 1,000 armored vehicles and almost 400 guns. Roughly 33,000 men had been captured in Tobruk alone. The booty of captured vehicles, fuel, food, weapons and ammunition was immense. The defeat was a major shock to the United Kingdom. South Africa alone had lost almost a third of her total land forces.

Reflections on Gazala

The victory Rommel achieved at Gazala demonstrates the power of combining boldness, speed, concentration and maneuver with a superbly trained and led large maneuver force to defeat decisively a numerically superior foe defending ground of his choice. Just as remarkable as Rommel's successes were the British failures. Both aspects, successes and failures, will be examined for insights into the art of fighting a large, very fluid battle. Much of the discussion concerning Gazala tends to reinforce points already surfaced during analysis of "Battleaxe" and "Crusader," lending further credence to their validity.

A basic principle of war is "objective." Gazala consisted of a diverse series of tactical operations, yet Rommel never lost sight of his operational concept. Rommel began with a major offensive by three Italian and one German corps, transitioned into a defensive operation in

the Cauldron while continuing holding operations in the west and assaulting the 150th Brigade box, conducted a siege and assault of Bir Hacheim, resumed mobile offensive operations at Knightsbridge, and finally exploited his successes to invest and capture Tobruk. Despite the seeming disparity of these tactical endeavors they were all orchestrated to accomplish Rommel's intent of defeating the 8th Army by an envelopment of the Gazala line, to be followed by seizing Tobruk. Rommel's timetable failed but his concept remained clear. That operational concept provided the framework within which all tactical initiatives could be judged and resources allocated.

One fundamental lesson which can be drawn from the diversity of Rommel's operations is the need for retaining a high degree of flexibility within the parameters of the operational concept. Rommel employed, and undoubtedly considered many more, a wide range of expedients and improvisations in accomplishing his operational goals. He had to in order to take advantage of tactical opportunities as the battle progressed. Given that few things go as planned when dealing with large forces in an environment of friction and chance, this mental agility would appear essential ingredient for success against a competent foe.

In contrast the 8th Army had no real concept or "objective" to focus on. The fuzzy idea of waiting for the enemy to attack and trying to destroy his armor, but also not daring to expose a vulnerable rear in Egypt or risk losing Tobruk is not a concept to clarify decision-making but rather to encourage caution and indecisiveness.

In earlier chapters the interrelationship of mass and economy of force to achieve concentration has been discussed. The critical point is that to concentrate at one point requires weakness at other points, thus invariably entailing a certain degree of risk. Rommel was willing to accept this risk, in large part because of his confidence in the tactical ability of his forces, his belief in the validity of his operational concept and his insight into the enemy. The British were unwilling to take corresponding risks.

Perhaps the ultimate indictment of the British pusillanimity with respect to concentration is that 8th Army was defeated on the Gazala line without XIII Corps ever becoming decisively engaged. When one considers that the XIII Corps units were all motorized, whereas the four weak Italian divisions and one weak German brigade facing them were not, this seems incredible. The impact of these forces could have been decisive during the Cauldron battles. Certainly Rommel would have been prevented from concentrating upon and destroying the 150th Brigade box and thus clearing his rear.

Rommel's willingness to accept risk, combined with the sheer professional competence of his subordinates, resulted in a pattern which has been seen in earlier battles. Invariably the Axis formations achieved numerical superiority at the decisive point, despite being numerically inferior overall. Rommel maneuvered corps and divisions. The British maneuvered brigades. The impact of this is exemplified by what happened to the 7th Armored Division on the first day when isolated brigades were successively hit by overwhelming forces from two attacking corps.

This difference in maneuver echelon orientation negatively influenced the Allied ability to project combat power, forfeiting the potential derived from the integration of the various arms and combat multipliers. Not only were the five armor brigades available (six if the arriving 1st Armored Brigade is included) in 8th Army never massed, but those that were committed were not done so in a coordinated, synchronized fashion with adequate supporting arms.

General Auchinleck's efforts to increase the combined arms integration of the 8th Army were defeated by his subordinates before the battle began. The infantry and artillery allocated to British armored divisions were placed in defensive boxes and largely unavailable to support the armor brigades.

The defensive box concept itself resulted in a dispersion of units without mutual support and invited defeat in detail. The key to making such boxes work is the ability to concentrate mobile forces to defeat the enemy forces reducing them. The British proved unable to do this. Isolated brigades, whether in static defensive positions or as maneuver forces, simply could not achieve sufficient combat power, especially artillery and air, to equal the power that combined arms divisions and corps could generate. What might have overcome this weakness were strong division and corps commands able to closely coordinate and support the efforts of the maneuver brigades. Unfortunately for the British, there was little evidence of this.

The command and control above brigade level was abysmal in the 8th Army. Time and again the division and corps headquarters demonstrated an inability to synchronize and support the efforts of their maneuver

brigades. The impression predominating was of a weak Army, corps, and division command structure that relied upon rule by committee. An example was the fiasco that occurred on 5/6 June. In contrast, there was no doubt who was in command of the Axis mobile forces.

The cohesion and integrity of 8th Army units was constantly violated, with brigades being shifted from division to division. Confusion and an inability to react resulted. On the other hand, Rommel managed to largely maintain the integrity of his divisions and fought them as combined arms teams. Eyewitnesses repeatedly marveled at the close cooperation between tank, anti-tank, artillery and infantry units, particularly in the attack.

Rommel again validated Clausewitz's view that surprise is a product of speed and secrecy. The British knew an attack was coming. They did not know where, in what strength, or how fast it would come. The Axis efforts to portray the main effort as being in the north clearly contributed to the British slowness to react to the attack around Bir Hacheim, but just as clearly the attacking mobile forces gained a significant advantage simply by their ability to move fast and concentrate faster than the 8th Army thought they could.

Rommel consistently proved able to react faster than his opponents and, just as importantly, his subordinates were able to respond quickly to his orders. Several factors contributing to this operational agility can be identified. First, Rommel stayed well forward and thus not only received information faster but also was able to act on it, if necessary assuming personal control of units at critical points. Second, as relatively fixed organizations of combined arms, the German units were

experienced at maintaining a high operational tempo while synchronizing all available combat power. Lastly, they had the benefit of sound tactical doctrine, well suited to the challenges of mobile warfare.

Some specific insights concerning forms of maneuver and the use of air support are worth noting. The Axis mobile forces consistently sought to achieve converging or enveloping attacks whenever possible. Rommel's counterattack on 5 June (Map 5b) was almost a classic double envelopment. The same principle is evident during the battle for Knightsbridge. As for the wide envelopment of a single flank which formed the basis of Rommel's operational concept to defeat the 8th Army, the insight of Tukhachevsky's comments on Napoleon's manoeuvre sur les derrieres (refer to Chapter 2) are striking.

Gazala was unique for the air parity that existed. Both sides extensively employed air support in aid of both offensive and defensive operations. Some patterns began to emerge. German dive bombers were most effective when massed on point targets, such as Bir Hacheim, the 150th Brigade box, or Tobruk. The Desert Air Force had considerable success in disrupting Axis supply columns which were forced to pass through narrow points, such as the minefield lanes. They were generally not capable of destroying columns which could disperse, although the resulting confusion and loss of time was significant. At times the sheer number of targets, literally thousands of supply vehicles in Axis mobile forces alone, was beyond the capability of the available air power to do more than harass.

Both air forces were relatively ineffective in attacking armored formations. In part this was due to difficulties of target

identification in the rapidly changing environment. There was also a lack of ordinance effective at destroying tanks. Thus close air support directed upon armored formations, while some kills were achieved, tended to slow but not stop maneuvering forces.

Although the impact of air power upon sustainment efforts was not decisive, it became clear that the ability of ground maneuver forces to disrupt logistical resupply efforts was potent. Rommel devoted considerable effort to reducing the 8th Army positions, including the 150th Brigade box and Bir Hacheim, from which his supply lines could be interdicted either by fires or maneuver forces. The need to clear a line a communications diverted Rommel from his operational maneuver for significant periods. During these periods the 8th Army missed opportunities to mass and decisively defeat Rommel in the Cauldron.

Conclusion: Lessons for Deep Maneuver

The Axis victory at Gazala reinforces the previous lessons of "Battleaxe" and "Crusader" as well providing further insights concerning the deep maneuver of ground forces. Two comments which Rommel made when reflecting on maneuver warfare in general, and Gazala specifically, summarize the essential lesson of the battle:

What is the use of having overall superiority if one allows one's formations to be smashed piece by piece by an enemy who, in each separate action, is able to concentrate superior strength at the decisive point?²³

The main endeavor should be to concentrate one's own forces in space and time, while at the same time seeking to split the enemy forces spatially and destroy them at different times.²⁴

The probability of successful deep maneuver is enhanced by proper synchronization of the deep maneuver element with efforts by other elements of the overall force to fix enemy forces. Rommel was successful in using relatively immobile infantry forces to fix substantial portions of his enemy's main forces while maneuvering against his rear. With substantial portions of the enemy main force committed against the threat of other attacks, the deep maneuver commander may then employ greater relative speed of decision-making, movement and concentration to gain victory despite facing an experienced, numerically superior and well-equipped foe defending the ground of his choice.

The type of leadership required of deep maneuver commanders was demonstrated by Rommel, including the need for a clear operational concept, a willingness to accept risk and the drive necessary to overcome the inevitable friction of war. He was blessed with having a responsive instrument, Panzerarmee Afrika, trained and experienced in the combined arms mobile warfare so suited to the terrain of North Africa. Finally, he was opposed by an army which was well equipped and willing but crippled by weak vision and leadership at division, corps and army level.

Gazala also reinforces the need for accurate intelligence. The ability of a deep maneuver force to strike its target is contingent upon being able to get into the enemy's rear. If a penetration of enemy lines must be made, as opposed to maneuver around them, then planners must consider the time and resources that will be needed to create the "hole" either for combat or support elements of the deep maneuver force.

Rommel's operational tempo was upset by the unanticipated strength of enemy forward defenses that had to be reduced before the deep maneuver force could attain freedom of maneuver.

Finally, a note of caution. Rommel's own words illustrate the simultaneous danger and opportunity inherent in operating with and against forces so dependent upon an uninterrupted flow of supplies:

Supply lines are particularly sensitive, since all petrol and ammunition must pass along them...everything must be done to protect one's own supply lines and to upset, or better still, cut the enemy's.²⁵

Rommel took a grave risk logistically. One measure of a great general is the ability to judge how much risk is justifiable, and then taking full advantage of that judgement. Rommel's judgement was proven correct during Gazala. A more vigorous foe would not have given him the opportunity to regain his strength between 29 May and 5 June. The actions he took against the 8th Army of mid-1942 were bold; against a better enemy they would have verged on being reckless.

Endnotes and Map Credits

1. Erwin Rommel, The Rommel Papers (New York: Harcourt and Brace, 1953), pp. 193-194; General Siegfried Westphal, The German Army in the West (London: Cassell and Company, Ltd., 1951), p. 113; F.W. von Mellenthin, Panzer Battles (New York: Ballantine Books, 1980), p. 110.
2. Rommel, p. 195-197; Mellenthin, p. 111; Generalfeldmarshall Albert Kesselring, Kesselring: A Soldier's Record (New York: William Morrow and Company, 1954), p. 145.
3. The 8th Army enjoyed a 3 to 2 advantage in artillery, but whereas the British artillery was all allocated to divisions, Rommel retained a mobile reserve of 56 medium guns. Respective troop strengths were 113,370 Axis (48,370 German and 65,000 Italian) versus 125,360 Allied. B.H. Liddell Hart, History of the Second World War (New York: G.P. Putnam's Sons, 1970), p. 270; Rommel, pp. 196-197; Mellenthin, pp.

110-111; U.S. War Department, The Libyan Campaign, May 27 to July 27, 1942, Campaign Study No. 4 (Washington, D.C.: Military Intelligence Service, January 1943), p. 1.

4. Rommel underestimated the 8th Army forces in the forward area by two armored and three infantry brigades. Ian S.O. Playfair, The Mediterranean and Middle East, vol. 3, History of the Second World War, United Kingdom Series (London: Her Majesty's Stationary Office, 1960), p. 219 and Mellenthin, pp. 111-112.

5. Rommel, pp. 194-195.

6. F.H. Hinsley, British Intelligence in the Second World War: It's Influence on Strategy and Operations, vol 2 (New York: Cambridge University Press, 1981), pp. 350-366; Major General Sir Francis de Guingand, Operation Victory (New York: Charles Scribner's Sons, 1947), p. 109; Playfair, p. 216.

7. Playfair, p. 220.

8. Hinsley, vol 2, p. 357.

9. Playfair, pp. 213-215.

10. Playfair, pp. 216-217; Bidwell, p. 222.

11. Playfair, p. 218.

12. For an excellent discussion of the British failure to employ an integrated combined arms approach in warfare, and during this period in North Africa specifically, see the official South African history by J.A.I. Agar-Hamilton and L.C.F. Turner, Crisis in the Desert, May-July 1942 (Cape Town: Oxford University Press, 1952), pp. 11-13. Also see Playfair, p. 218.

13. Rommel, pp. 201-203; Mellenthin, pp. 112-113; The Libyan Campaign, pp. 2-3, 23-29; Heinz W. Schmidt, With Rommel in the Desert (London: George G. Harrap and Company, Ltd., 1953), p. 129; Westphal, p. 114.

14. Schmidt, p. 130.

15. Schmidt, p. 129; The Libyan Campaign, p. 2; Mellenthin, p. 113.

16. Rommel, pp. 206-211; The Libyan Campaign, p. 3; Mellenthin, pp. 116-122; Playfair, pp. 223-225; D.W. Braddock, The Campaigns in Egypt and Libya (Aldershot: Gale and Polden, Ltd., 1964), p. 96; Agar-Hamilton, pp. 23-32.

17. Rommel, pp. 211-216; Mellenthin, pp. 123-125; Playfair, pp. 228-229; Agar-Hamilton, pp. 36-39.

18. Playfair, pp. 231-237; Mellenthin, pp. 132-133; Rommel, 214-217; Agar-Hamilton, pp. 39-49.

19. Rommel, pp. 220-222; Mellenthin, pp. 134-136; Playfair, pp. 238-250; Braddock, pp. 102-105; The Libyan Campaign, pp. 9-11; Agar-Hamilton, pp. 60-67.

20. The 8th Army had worked hard to rebuild their armor strength after the fiasco of 5-6 June. By 10 June they could muster 185 tanks between the 2d, 4th, 22d armor brigades and 63 "I" tanks in the 32d Army Tank Brigade. Achieving this required extensive reorganization of units, including splitting up the arriving 1st Armored Brigade as replacements. Rommel could field 160 tanks in the Afrika Korps and 70 tanks in the Ariete Armored Division. The 8th Army had lost a significant amount of artillery, seven regiments since the offensive began, while Rommel had lost almost a third of his motorized infantry. Playfair, pp. 238-239; Mellenthin, p. 134.

21. For details on the events from 14 June to 21 June see Playfair, pp. 245-274; Rommel, pp. 225-232.

22. Rommel, p. 233; Playfair, pp. 274-275. For a detailed account of the fall of Tobruk refer to Agar-Hamilton, pp. 109-223.

23. Rommel, p. 217.

24. Ibid., p. 199.

25. Ibid., pp. 199-200.

Map 5a: Rommel, p. 205.

Map 5b: Ibid., p. 215.

Map 5c: Ibid., p. 219.

Chapter 6: Alam el Halfa

Introduction

The battle of Alam el Halfa, 31 August to 6 September 1942, was Rommel's last major effort to defeat the 8th Army and seize Egypt. The battle features Rommel attempting the now familiar feint in the north and envelopment through the desert which worked so well at Gazala, but would fail completely at Alam el Halfa. The battle thus provides a balance against which to assess Rommel's earlier successes and the 8th Army's previous failures. The battle raises questions concerning initiative and maneuver, the effects of air attack on ground maneuver, and the importance of intelligence and logistical sustainment.

Setting

Background

After the British defeat at Gazala and the fall of Tobruk an exhausted 8th Army withdrew to a defensive line at El Alamein and held it against an equally exhausted Panzerarmee Afrika. The El Alamein line was but 60 miles from the delta of Egypt. If it failed then the fall of Egypt was virtually assured. From the end of June to the first week in November a series of battles was fought in the vicinity of El Alamein, of which Alam el Halfa, occurring from 31 August to 7 September, represented the last major Axis offensive action in North Africa prior to the appearance of major American formations with Operation Torch.

Axis Situation

Rommel faced an awkward situation at El Alamein. After the Axis failure to breakthrough to the Delta following Gazala the balance of forces began to favor the Allies again. The staff estimates of Panzerarmee Afrika were pessimistic. Time favored the 8th Army. The Axis logistical situation was bad and not getting better, whereas the British forces were receiving increasing amounts of supplies and reinforcements. The logical course of action was to withdraw the non-motorized Axis forces to Libya and fight a delaying action with mobile forces; the kind of fluid warfare in which the Afrika Korps had already demonstrated special competence. However, events outside of North Africa dictated otherwise.¹

The German high command opposed Rommel withdrawing. Hitler felt the forty mile stretch of terrain between the sea and the Qattara Depression to be the best defensive position the Axis forces had in North Africa. Further, Hitler thought the continued presence of the Panzerarmee there would divert Allied attention from the impending German attack through the Caucasus and into Persia. Rommel's options were thus reduced to either defending or attacking.²

The Axis forces facing the El Alamein line in August 1942 were scarcely in an optimal state to launch a major offensive. Equipment losses sustained in earlier fighting had only partially been replaced. Personnel strengths were low in both the Italian and German units. The Afrika Korps in particular had lost many of its veterans to combat

losses, disease and rotations home. Rommel himself was ill and under constant medical supervision.³

Of even greater concern to Rommel than low personnel and equipment strengths were low stocks of fuel and ammunition. Because of shortages of fuel the Axis forces were only capable of a limited offensive.⁴

The Axis estimate of the relative strengths of the two armies placed the Panzerarmee at a disadvantage. The 8th Army was believed to have fielded five infantry and three armored divisions, with some 70 infantry battalions, 900 tanks and armored vehicles, 550 light and heavy guns and 850 anti-tank guns. The Axis air forces expected to be outnumbered by as much as 5 to 1. Panzerarmee Afrika consisted of four German and eight Italian divisions, including two German and two Italian armored divisions. The Axis mobile forces could muster 229 German and 281 Italian tanks. Rommel had gained only three fresh units, a German infantry division (the 164th), a German parachute brigade and an Italian parachute division; none of them motorized. Time would not improve things. German intelligence knew a large convoy containing new equipment and supplies, including tanks, was due to reach Egypt in early September. This new equipment would give the 8th Army an overwhelming numerical advantage.⁵

Rommel thus faced the choice of either waiting for the 8th Army to attack in overwhelming strength sometime after mid-September 1942, or launch an attack of his own before then. Rommel chose to attack.

The 8th Army positions at El Alamein were strong and growing stronger by the day. Unlike Gazala there was no "open" flank. As Rommel described the terrain,

...The Alamein line abutted on the sea in the north and in the south opened out into the Qattara depression, a flat plain of loose sand studded with numerous salt marshes and hence completely impassable for motor vehicles. The line could not be turned...⁶

German reconnaissance reported that while the center and northern portions of the 8th Army line were strongly held, the southern portion consisted only of weakly mined defenses that would be comparatively easy to penetrate. However, intelligence concerning the Allied defenses was incomplete. Strong Allied air and ground patrols denied accurate information to Axis reconnaissance elements. Additionally, the previously efficient German signals intelligence capability had almost disappeared. The German radio intercept company had been overrun and destroyed during fighting in July. The Panzerarmee lost an invaluable asset while the 8th Army had realized, from the captured codes and equipment, how poor their security had been.⁷

Allied Situation⁸

The 8th Army underwent a shakeup following the disasters of Gazala and Tobruk. Every commander above division level had been replaced, along with many of the key staff. Lieutenant-General Sir Bernard Montgomery assumed command of the 8th Army on 13 August and immediately made some fundamental changes. Among the more significant changes were: All contingency plans for the 8th Army to retire, retreat or delay further east were ordered destroyed, the Army might die at Alamein but would not retreat; divisions would henceforth fight as divisions, no longer would brigade groups be broken out; orders were cause for action,

not discussion; and the Air and Ground component headquarters would be co-located.

Montgomery intended to attack Rommel once his Army was properly equipped and trained. He estimated the 8th Army would be ready by October. In the meantime he was determined to conduct defensive operations and avoid the type of fluid battle which Rommel's forces were masters of. This meant fighting a largely static defensive battle should Rommel attack. To conduct this defensive battle Montgomery had good terrain, growing air and ground strength and the benefit of excellent intelligence.

From sources such as Enigma it was clear even before Montgomery took command that if Rommel was to attack it would be around the end of August. When Montgomery assumed command his intelligence staff was able to tell him both the most likely date of the attack, and the "thrust line" or avenue of advance of the Axis armor.⁹

Montgomery's predecessor, Auchinleck, had organized the Alamein defenses to present a static front in the north and center while the southern area would rely on a more fluid defense. Auchinleck's concept had been to fight a mobile battle between the respective tank forces in the southern area, with the option of delaying back toward the Delta. Montgomery retained the general trace of the defenses but altered the concept and placement of forces significantly.

It was clear that the Alam el Halfa ridge, bisecting the British rear, was critical terrain (see Map 6a). Any significant force of British armor placed on the ridge could easily attack the flank, rear, or communications of any Axis force attempting to bypass it. Montgomery

reasoned that any Axis effort to attack in the south and subsequently thrust northward would necessitate early seizure of the ridge. Montgomery therefore based his southern defenses in two echelons. The initial Axis penetration would be met by 7th Armored Division. The 7th's mission was to impose maximum delay and losses without becoming decisively engaged. The core of the defense would be the 10th Armored and 44th Infantry Divisions dug-in on Alam el Halfa ridge. Rather than attempt to outmaneuver Rommel on an open battlefield, Montgomery intended to let the Axis armor enter the corridor between Alam el Halfa ridge and the Qattara Depression. If all went well, Rommel's armor would then waste itself attacking into the concentrated anti-tank, tank and artillery fires of Alam el Halfa ridge, the whole time being subjected to heavy and continuous air attack. Montgomery wanted to defeat Rommel's attack with minimum losses to his own armor. He was already planning his own offensive.

To increase the probability that Rommel would attack as expected, the 8th Army undertook deception measures, including preparing a map with false information on trafficability and defenses in the southern area. The "false going" map was planted so as to be captured by a German patrol. The map portrayed the best avenue of approach supporting Rommel's concept as including Alam el Halfa ridge.¹⁰

To improve control during the battle, the 8th Army instituted a new system for passing battlefield information upward. A network of reporting centers was established, echeloned down as far as forward units, which gathered and relayed information directly to Army headquarters.¹¹

By 25 August the 8th Army was positioned per Montgomery's plan. By the 28th the ground and air plan for the battle had been thoroughly coordinated and mobile units had rehearsed movements for various contingencies. The Alamein line thus presented a strongly held front from the sea southward to the 2d New Zealand Division at Alam Nayil. From there only light defenses extended to the south. The real defensive line continued east from the 2d New Zealand Division to Alam el Halfa ridge. Along the ridge were the 10th Armored and 44th Infantry Divisions while the 7th Armored Division covered the weak southern defensive line.

The Axis Plan¹²

Rommel's plan was simple yet bold. It relied on speed and surprise to gain a quick decision before lack of numbers and poor logistics could cripple him. The concept was similar to that for Gazala. The non-motorized Axis forces would fix the 8th Army in the center and north while the mobile forces made a quick penetration through the weakly defended south. Once through the mobile forces would rapidly move into the enemy rear before turning north toward the sea. The intent was to sever the logistics of the 8th Army and draw the British armor out where Rommel could destroy it in a battle of maneuver. Once the Allied armor had been decimated, Cairo and Alexandria would be seized by the Afrika Korps while the rest of the Panzerarmee finished destroying the 8th Army.

The validity of Rommel's plan rested on several assumptions. Rommel acknowledged that success would depend upon achieving surprise

and speed of movement. To gain surprise the massing of forces would be hidden. Movements would be conducted during darkness. Vehicles, particularly tanks, would be extensively camouflaged and false positions constructed to deceive British air reconnaissance as to the real points of concentration. To achieve speed the breakthrough and penetration would have to occur very quickly. There was a final assumption which Rommel stated:

...We placed particular reliance on this plan on the slow reaction of the British command and troops to reach decisions and put them into effect. We hoped, therefore, to be in a position to present the operation to the British as an accomplished fact.¹³

The timetable for the operation was tight. The penetration of the 8th Army southern defenses would take place at night, with the mobile forces immediately plunging through. Before dawn the Afrika Korps and part of the Italian XX Corps would be deep in the 8th Army rear, some 25 to 30 miles from their start point. At dawn the thrust to the north would start, with an emphasis on speed and maintaining momentum. The need for a full moon to provide illumination for movement and clearing the British southern defenses dictated that the attack occur at the end of August.

The Battle

Concentration and Penetration¹⁴

Panzerarmee Afrika attacked the night of 30/31 August 1942, but the Desert Air Force actually began the battle nine days earlier with a concentrated air campaign against Axis logistics and concentrations. At

last light on 30 August Allied air reconnaissance reported Axis mechanized columns moving forward and night bombing missions were launched. Shortly after midnight both forward corps of the 8th Army reported being attacked.

By about 0200 hours on 31 August the Axis mobile forces were attempting to open lanes through the minefields in the south. Not only were the minefields much denser and deeper than expected, they were also covered by the 7th Armored Division, supported by all artillery within range. Additionally, the Desert Air Force made continuous attacks, bombing under the illumination of flares and burning vehicles. The Axis forces slowly cleared lanes through the minefields but at the cost of time and many casualties, including the commanders of the 21st Panzer Division and the Afrika Korps.

By dawn the lead elements of the Afrika Korps had only penetrated some 8 to 10 miles to the east, as opposed to the 25 to 30 miles Rommel had anticipated. Moreover, many units were still struggling through the minefields, suffering losses and becoming disorganized under constant air attacks.

At 0900 Rommel arrived at the Afrika Korps headquarters. With his timetable already off and having lost the element of surprise, he was faced with deciding whether to continue the attack or withdraw. The attacks in the center and north had seemingly accomplished their mission of fixing XXX Corps. The attack in the south had breached the minefields and forced back the 7th Armored Division, but the bulk of XIII Corps was as yet unengaged. Rommel worried that the delay had given the 8th Army sufficient time to react by moving armored forces to

his north, near Alam el Halfa. From there they could strike his flank and rear if he continued eastward. He decided to continue the attack but to shorten the depth of his wheel to the north. The Afrika Korps would now attack Hill 132. Hill 132 was the highest point and approximately in the center of the Alam el Halfa ridge. The Italian XX Corps would make a shallower attack on Afrika Korps' left. Axis air reconnaissance had by now reported the Alam el Halfa ridge to be heavily fortified so Rommel expected strong resistance. He requested the Luftwaffe concentrate its efforts on Alam el Halfa for the next few days.

Attack on Alam el Halfa¹⁵

The Afrika Korps attacked toward Alam el Halfa ridge at about 1300 hours on the 31st. Most of the morning was lost refueling and organizing the attack. A heavy sandstorm further slowed operations but offered relief from air attack. The Italian XX Corps attack was unable to attack until 1500 hours, thus it moved behind and to the left of the Afrika Korps instead of parallel with it.

By midafternoon the Afrika Korps attack had run into the 22d Armored Brigade at the foot of Alam el Halfa ridge. The 22d Armored brigade consisted of four regiments of dug-in armor (some 166 tanks) and its organic anti-tank guns, supported by the massed artillery of the 10th Armored and 44th Infantry Divisions. The 21st Panzer Division vainly attempted to force its way through the 22d Brigade while the 15th Panzer circled to the northeast to flank the defenses. As evening fell the Afrika Korps commander halted the attack. Losses were mounting and

the poor terrain was causing excessive fuel consumption. The British defenses on Alam el Halfa had held.

Montgomery was pleased with how the battle had progressed. After both German panzer units had been positively identified as committed against Alam el Halfa he had transferred the 23d Armored Brigade from Army reserve to XIII Corps. By 1300 it had gone into position between the 2d New Zealand Division and the 22d Armored Brigade of the 10th Armored Division, adding 100 tanks to the Alam el Halfa defenses.

Rommel's forces had made little progress. Fuel was getting dangerously low. As night fell the weather improved and with it the Desert Air Force returned. In a repeat of the previous evening the Axis forces were bombed all through the evening. The British 7th Armored Division conducted raids and local attacks against the Axis supply columns attempting to navigate through the minefields and reach the Afrika Korps and Italian XX Corps. Rommel ordered the Afrika Korps to continue the attack the following day but, due to fuel shortages, only the 15th Panzer would attack.

Early on 1 September the 15th Panzer Division resumed the attack, trying to work around the 22d Armored Brigade positions to the east and take Hill 132. The Desert Air Force continued to bomb and strafe the Axis formations concentrated between the minefields, Alam el Halfa ridge and the Qattara Depression. Armored and motorized units from the 7th Armored Division continued to harass Rommel from the east. The British 8th Armored Brigade, of the 10th Armored Division, had meanwhile been ordered to move forward to the left flank of 22d Armored Brigade. They ran into an anti-tank screen established by the 15th Panzer but were

able to fight forward and make contact with the 22d Armored Brigade. The 15th Panzer Division's effort to envelop the British defense was thus prevented.¹⁶ Montgomery had now concentrated some 400 tanks in the Alam el Halfa area. That afternoon Rommel decided to go over to the defensive.

Withdrawal¹⁷

After another night of constant bombing Rommel decided to begin a phased withdrawal.

...My reasons were the serious air situation and the disastrous state of our supplies. Our offensive no longer had any hope of success, partly because we had no petrol and insufficient fighter cover and partly because the battle had now reached a stage where material strength alone could decide the issue. Had the attack on the plateau round Hill 132 been continued, it could only have developed into a battle of material attrition.

...the British had assembled powerful armoured forces...The impression we gained of the new British commander, General Montgomery, was that of a very cautious man, who was not prepared to take any sort of risk.¹⁸

The Axis forces commenced a slow withdrawal to just beyond the British minefields. Montgomery made a limited effort, on the 3d and 4th, to seize and close the minefield lanes through which the Axis columns were withdrawing. The Axis forces counterattacked however and the attempt failed. Otherwise the 8th Army was content to cautiously follow the withdrawing Axis forces with elements of the 7th and 10th Armored Divisions. The Desert Air Force maintained a constant pressure from the air despite Luftwaffe efforts to provide fighter coverage. Montgomery resisted the requests of his armor commanders to mount a

large attack on the withdrawing columns. By 6 September the Axis forces had completed their withdrawal.

Results of Alam el Halfa's

Alam el Halfa cost Rommel just under 3,000 casualties and prisoners; some 50 tanks and 400 other vehicles were destroyed. Of the Axis losses up to 4 September, 415 casualties, 170 destroyed vehicles (including one tank) and 270 damaged vehicles (including two tanks) were due to attacks by the Desert Air Force. The 8th Army suffered 1,750 casualties and prisoners and lost 67 tanks. In the air 41 Axis and 68 Allied planes were lost.

Perhaps more important than the material losses that Panzerarmee Afrika sustained however was the recognition that the initiative in North Africa had now passed to the Allies. The 8th Army had decisively stopped Rommel's bid to conquer Egypt and could prepare to launch a major offensive against Rommel with renewed confidence, particularly in their leadership.

Reflections on Alam el Halfa

Alam el Halfa was the last Axis opportunity to seize Egypt. An Axis army which had amply demonstrated a mastery of maneuver warfare was defeated by an opponent who in the past had shown a talent for beating himself if given half the chance. What happened to cause such a clear outcome? Was Rommel's effort doomed from the start? Analysis reveals several insights pertinent to the study of maneuver warfare. The more

significant of these will be addressed, beginning with the impact of air power on ground maneuver, then expanding to a broader discussion of concentration, surprise and objective.

Rommel identified three reasons for his failure,

(a) contrary to our reconnaissance reports, the British positions in the south had been constructed in great strength.

(b) non-stop and very heavy air attacks by the R.A.F., whose command of the air had been virtually complete, had pinned my army to the ground and rendered any smooth deployment or any advance by time-schedule completely impossible.

(c) the petrol, which was an essential condition for the fulfillment of our plan, had not arrived...²⁰

While each of these factors were damaging in isolation, in combination they formed an insurmountable handicap for Rommel. Because of the unexpectedly strong defenses in the south the Axis mobile forces were just clearing the minefields at dawn. As a consequence Rommel's timetable was broken. The risks he was willing to accept in bypassing most of the Alam el Halfa defenses during darkness he found unacceptable in daylight. But to overwhelm the defenses on Alam el Halfa required a massing of combat power beyond his capability. Lack of fuel precluded mounting an extensive flanking attack upon Alam el Halfa with the Afrika Korps. The lack of effective Axis air cover allowed the Desert Air Force to strike virtually at will.

The British air superiority had four significant impacts beyond even the direct physical damage of units. The first impact was upon intelligence. Axis aerial reconnaissance was severely degraded whereas Allied reconnaissance was uninhibited. The second impact is less easily quantifiable but nevertheless important; the moral and physical drain of

being subjected to air attack in an open yet confined area around the clock for several days. Sheer fatigue degraded the combat effectiveness of the Axis troops. Finally, the effect of air attack on mobile ground operations was similar to multiplying the effects of Clausewitzian "friction." Everything became much more difficult and took longer to accomplish. Lastly, the Allied air interdiction effort greatly exacerbated an already tenuous Axis logistical situation and represented the deep strike aspect of the 8th Army plan for Alam el Halfa.

It is tempting to speculate what might have happened had the Desert Air Force been armed with effective anti-armor weapons and scatterable mines been available. Given such technology, Montgomery might have destroyed Panzerarmee Afrika entirely.

The practical result of British air operations was to blind, slow and tire an Axis force already accepting great risk numerically and logistically. When the added impact of interdicted supply lines and the physical destruction of personnel and equipment are added, the advantage which the 8th Army gained from air superiority at Alam el Halfa becomes clear.

The ability of air power to multiply the friction experienced by ground forces is, in itself, a potent operational factor. Increased friction translates to greater effort and more time, which results in slower operations. Rommel drew the logical conclusion,

...As a general rule, any slowing down of one's own operations tends to increase the speed of the enemy's. Since speed is one of the most important factors in motorized warfare, it is easy to see what effect this would have.²¹

From this perspective, air power can thus be considered as similar to a defensive minefield or other means of equalizing mobility differentials.

Could Rommel have won with better air support and adequate fuel? Probably not, changing the air and logistics status of Panzerarmee Afrika would only marginally alter considerations of objective and concentration.

In earlier discussions, particularly those concerning Jomini and Clausewitz in Chapter 2, it was proposed that the underlying principle of war was to achieve superior concentration at the decisive point. During this battle both Rommel and Montgomery identified the decisive point as being Alam el Halfa ridge. In the simplest sense the battle was decided by who could project the greatest combat power at that point. Montgomery not only won that contest, he won it before the battle began when he disposed his forces in strength on Alam el Halfa and insured they would stay there. From this perspective therefore, Montgomery used his intelligence advantage to negate Axis efforts to employ initiative and surprise.

Rommel acknowledged he could only succeed if he achieved surprise. Clausewitz defined surprise as a product of speed and secrecy. Rommel forfeited secrecy by adopting the course of action his adversary expected. He lost speed in the 8th Army minefields. Better Luftwaffe support and more fuel would not have placed Rommel any further east at dawn on 31 August. More fuel would have enabled the Afrika Korps to attack in greater strength and on a wider front against Alam el Halfa. It is doubtful they would have succeeded. The British 44th Infantry

Division, dug-in on top of the ridge, was never even engaged during the actual battle.

Rommel's greatest opportunity for success after dawn on 31 August rested upon Montgomery repeating the mistake of earlier British commanders by sending forth unsupported armored brigades to fight the battle Rommel wanted to fight. The same type of battle which Auchinleck planned to fight before he was replaced by Montgomery. By keeping his divisions concentrated on the decisive ground Montgomery insured he would avoid defeat, and given Rommel's logistical predicaments that was tantamount to victory.

Was Rommel's attack doomed from the start? Certainly the particular maneuver he attempted failed. Whether he would have succeeded by making the main effort in the north, along the coastal road, is impossible to say. Regardless of whether attacking north or south the Axis forces faced a tough problem achieving a penetration through which the armored columns could move. With better intelligence on the British dispositions on Alam el Halfa Rommel might have opted to attack in the north. If the penetration had succeeded he would have faced one armored brigade (the 23d) rather than the bulk of two armored divisions.

Lastly, Montgomery's generalship deserves some specific mention. Montgomery inherited an army with poor doctrine and a talent for beating itself. He planned and conducted a defensive battle that optimized his army's strengths, weight of weaponry and numbers, while minimizing its weakness in conducting large-scale mobile warfare. His integration of static and dynamic forces, organized in depth and buttressed by massed

air and artillery fires was a masterpiece. He also demonstrated the incredible advantages that timely and accurate intelligence can provide.

Conclusion: Lessons for Deep Maneuver

The battle of Alam el Halfa provides primarily negative lessons for deep maneuver, that is, what conditions to avoid. It demonstrates with greater clarity than did the previous battles the need for surprise, the potential of air power to influence ground maneuver and the absolute limitations which logistical constraints can impose upon a ground commander.

The commander considering deep maneuver should carefully analyze the impact of enemy air power upon ground maneuver units attempting to operate deep. Effective air gives the enemy commander an accurate, timely view of the battlefield and thus removes most of the uncertainty deep forces can generate. Enemy air also threatens the maneuver force with delay, disruption and defeat. The effect of heavy enemy air pressure is akin to multiplying the friction which pervades every aspect of warfare. Effective enemy air thus tends to slow ground operations and, in effect, increases the foe's relative tempo of operations. Employment of large mechanized forces in deep ground maneuver without at least air parity is an exceptional risk only likely to succeed given other variables, such as prolonged extreme weather, an inordinate amount of air defense assets or an exceptionally effective deception operation.

The critical need for surprise in deep maneuver was underscored at Alam el Halfa. Deep maneuver forces gain advantage by concentrating forces and fires before the enemy can react effectively. If the deep

maneuver force cannot achieve this advantage, either by secrecy, deception or sheer speed of operations, then the commander should seriously consider refocusing the entire maneuver. Rommel could not achieve sufficient mass at the decisive point of Alam el Hafa, and did not see any means of employing maneuver to shift the focus of the battle elsewhere.

Finally, Gazala again demonstrates that logistics is the key constraint upon the freedom of maneuver of deep maneuver forces. Without an adequate logistic support structure, the deep maneuver force does not possess the flexibility to radically change its orientation in response to new situations.

Endnotes and Map Credits

1. Major General F.W. von Mellenthin, Panzer Battles, (New York: Ballantine Books, 1980), p. 172.
2. Mellenthin, p. 172 and 178; Walter Warlimont, Inside Hitler's Headquarters, 1939-1945 New York: Frederick A. Praeger, Publishers, 1964), p. 246; Sherwood S. Cordier, "Alam Hafa-Last Chance in Last Africa," Military Review, November 1970, p.68.
3. While the German Air Force was able to fly reinforcements and replacements to Rommel, including some 24,606 men in July and August alone, this flow could not offset losses. Additionally, the forces brought by air were without heavy weapons. Since the beginning of Gazala the Germans alone had lost over 12,000 casualties and prisoners. Some 17,000 veterans of the Afrika Korps were sent back to Germany. These men had been in North Africa since the beginning and formed the veteran corps of the Afrika Korps. Rommel had reluctantly decided to send them home because of their deteriorating health and his concern they would fail in crisis. Rommel was concerned about his own failing health and requested Berlin to appoint Guderian to replace him. Berlin refused and responded that no suitable replacement was available. Erwin Rommel, The Rommel Papers (New York: Da Capo Press, 1983), pp. 262-272; Major General Ian S.O. Playfair, The Mediterranean and Middle East, vol. 3, History of the Second World War, United Kingdom Series (London: Her Majesty's Stationary Office, 1960), p. 379.

4. Rommel, pp. 265-270.
5. Rommel, pp. 264-265 and 272-273; Mellenthin, pp. 170-172; Basil H. Liddell Hart, History of the Second World War (New York: G.P. Putman's Sons, 1970), p. 291; Paul Carell, The Foxes of the Desert (New York: E.P. Dutton and Company, Inc., 1961), pp. 248-249.
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7. Rommel, pp. 272-273; David Irving, The Trail of the Fox (New York: Avon Books, 1978), p. 234.
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9. Ronald Lewin, Ultra Goes to War (New York: Pocket Books, 1980), p. 311; F.H. Hinsley, British Intelligence in the Second World War: Its Influence on Strategy and Operations, vol. 2 (New York: Cambridge University Press, 1981), pp. 407-416.
10. de Guingand, pp. 146-148.
11. Ibid., pp. 144-146.
12. Rommel, pp. 273-274; Mellenthin, p. 174; Carell, pp. 252-253.
13. Rommel, p. 274.
14. de Guingand, p. 146; Playfair, pp. 385-387; Air Support, p. 70; Rommel, pp. 276-277; Mellenthin pp. 174-175; Carell, pp. 257-259; "German Attack at El Alamein 31 August-5 September 1942," Campaign Studies, Information Bulletin No. 35 (Presidio of San Francisco: Western Defense Command and Fourth Army, 15 August 1943), pp. 3-5; Major General G.L. Verney, The Desert Rats: The History of the 7th Armoured Division 1938-1945 (London: Hutchinson, 1954), pp. 123-124.
15. de Guingand, pp. 146-149; Playfair, pp. 386-388; Air Support, pp. 70-71; Rommel, pp. 277-280; Mellenthin pp. 175-176; Carell, pp. 259-261; German Attack at El Alamein, pp. 4-5; Verney, p. 124.

16. Had the 15th Panzer Division succeeded in bypassing the 22d Armored Brigade it would still have been faced with the entire 44th Infantry Division, dug-in and waiting higher up on the ridge.

17. Rommel, pp. 280-283; Mellenthin, p. 176; Playfair, 388-390; German Attack at El Alamein, pp. 6-7; Verney, pp. 124-125.

18. Rommel, p. 280.

19. Rommel, p.283; Playfair, pp. 390-391.

20. Rommel, p. 283.

21. Ibid., p. 285.

Map 6a: Adapted from Cordier, p. 65.

Chapter 7: Considerations for Deep Maneuver

Introduction

Of all theatres of operations, it was probably in North Africa that the war took on its most advanced form...It was the only theatre where the principles of motorized and tank warfare, as they had been taught before the war, could be applied to the full, and further developed.

Rommel

The purpose of this study was to deduce considerations applicable to planning successful deep maneuver by large ground forces. In this endeavor four battles from the North African campaign of 1941-42 were analyzed in some detail. From this analysis a number of insights and lessons relating to deep maneuver of use to commanders and staffs have been identified. The focus of this concluding chapter is to discuss those considerations deemed generically applicable to operational deep maneuver by ground forces.

The chapter begins with a general discussion of the efficacy of deep maneuver, then proceeds to a discussion of specific considerations. The emphasis is upon planning considerations with some discussion of maneuver execution where necessary.

Why Deep Maneuver?

Before discussing considerations for deep maneuver it is useful to place the issue into perspective by briefly examining why deep maneuver is employed. Deep maneuver by ground forces is only one of several alternative offensive maneuvers available to the commander. Of the four battles studied, only in two of them ("Crusader" and Gazala) did the

original planned deep maneuver ultimately lead to success on the battlefield. Additionally, because of the danger inherent in operating beyond the support of other major friendly ground formations, deep maneuver contains a significant element of risk. Accordingly, deep maneuver is only justified if the potential results outweigh the risk.

If deep maneuver is such a risk, why use it? The answer is threefold. First, deep maneuver offers the potential to attain decisive results out of proportion to the size of the force involved. Deep maneuver changes the rules of the game. It attacks one or more of the enemy's centers of gravity by creating a new critical or decisive point where the enemy is not prepared, or is unable to mass quickly enough to offset the local superiority of the maneuver force. Deep maneuver thus can create an unexpected decisive point over a large geographic area, the entire depth of the enemy rear. In doing this, it may cause the initiative to pass to the force that uses it. Second, because of the ability to achieve results out of proportion to the force committed, deep maneuver offers the commander a means to defeating a numerically superior enemy force. Finally, because deep maneuver avoids striking at enemy strength, it can attain decisive results at a relative low cost in human lives and equipment.

Deep maneuver thus presents the commander with a credible offensive option which can significantly multiply his effective combat power. At Gazala, Rommel demonstrated this by employing deep maneuver to attack and defeat a numerically superior and well equipped enemy force defending the ground of its choice.

Considerations for Deep Maneuver

Some patterns have emerged during the study of deep maneuver in North Africa. More specifically, certain conditions were identified which, when present, favored success in deep maneuver. Likewise, when deep maneuver failed these conditions were generally lacking. Key among these necessary conditions were: a clear operational concept; accurate and timely intelligence; surprise; superior relative speed of operations; freedom, or flexibility, of maneuver; adequate logistical sustainment; the ability to concentrate and synchronize available combat power; and doctrinal sufficiency. All of these conditions are interrelated, that is, they do not stand alone and should not be considered as independent factors. With this caution, each of these conditions will be discussed as considerations which the commander or staff officer planning or executing deep maneuver would be wise to examine.

A Clear Operational Concept

Deep maneuver of ground forces is not an end in itself. It is justified only if the potential results outweigh the risk and expenditure of failure. The first consideration thus is how deep maneuver fits into the larger operational concept. The operational concept of the campaign provides the unifying framework within which the issues of objectives, force organization and timing must be considered. Each of these areas will be expanded in the following discussion.

To derive a valid operational concept, the commander must have an appreciation for what Clausewitz called the enemy's center, or centers, of gravity. In North Africa the primary centers of gravity of both the Allied and Axis forces were their armored formations. Although constituting a relatively small portion of the total combat forces committed in North Africa (the bulk of which were either motorized or foot-mobile infantry), the armored brigades, divisions and corps were the key to defeat or victory. Secondary centers of gravity for each force were the logistical communications of the non-armored forces. The Axis forces under Rommel selected an additional center of gravity to attack, the mind of the Allied commander.

Having identified the enemy's centers of gravity, deep maneuver then becomes a means of threatening or attacking that center, or centers, to achieve the desired operational impact. Fundamental to the success of deep maneuver in attacking a center of gravity is the ability to select an appropriate objective which will constitute a critical or decisive point. However, a critical or decisive point has no independent existence. It must be considered from the perspective of the enemy. If the enemy does not interpret the application of combat power by the deep maneuver force at a particular time and place as threatening a center of gravity, then the effort becomes operationally insignificant. The failure of Rommel's deep maneuver toward Egypt during Operation "Crusader" illustrates this point. The British simply refused to react to Rommel's presence in their rear. By not yielding the initiative to Rommel, the British made his deep maneuver irrelevant to the larger operation taking place around Sidi Rezegh.

The commander should have a clear picture not only of the effect that his deep maneuver should produce, but how long it will take to produce it. For example, the physical impact upon forward combat formations of a deep thrust to interdict or disrupt enemy supply lines may take much longer to become significant than the destruction of several echelons of command. Rommel's thrust during "Crusader" again illustrates this point. While he succeeded in disrupting the rear of the 8th Army, his actions had no immediate impact upon the combat capabilities of the Allied forces attacking, and before the impact could be felt the battle had been decided. In contrast, the inept performance of the British armor at Gazala can in part be attributed to the devastating impact of Rommel overrunning and scattering several key command headquarters during the battle.

In North Africa the basic approach to attacking the opposing forces center of gravity was to attempt the physical destruction of his armored forces. Despite differences of technique and degrees of success enjoyed, both sides employed essentially similar operational concepts. To destroy the enemy armor it was necessary to bring it to battle. The simplest means of doing this was not to attack it directly; armored formations are hard to hold onto long enough to destroy if they decide to avoid battle. Rather, the approach was to threaten cutting off or encircling the enemy's non-armored (that is, primarily infantry) formations. The enemy's armored formations would then respond by attacking the deep maneuver force and thus open themselves to destruction. Once the enemy armor had been defeated, or even significantly weakened, the overall enemy defense would fail. The

British eventually succeeded during "Crusader" using this approach. The rate of Axis armor losses at Sidi Rezegh reached the point where Rommel conceded defeat and withdrew, abandoning his forward defenses. Rommel used the same idea effectively during Gazala, especially in luring the British armor into attacking during the Cauldron portion of the battle. Once the British armor had been destroyed, the entire defense crumbled, despite the fact that over half the Allied ground combat units were never decisively engaged.

The preceding demonstrates the efficacy of a clear operational concept. Without a clear operational concept it is impossible to correctly identify what should constitute the main effort or schwerpunkt. This should not be interpreted as meaning this is the only operational concept which would have worked in North Africa, and by no means does it constitute a recommended solution for other theaters or campaigns. For example, another conceptual approach is the use of deep maneuver forces to seize ground, block movement or prevent mobilization in a way that facilitates maneuver of the whole force (such as the Israeli seizure of the Mitla Pass or current employment ideas for the Soviet operational maneuver group).

The process of developing an operational concept and selecting appropriate objectives for the deep maneuver force is only part of the equation which the commander must consider. Allocation of forces and resources is also a critical component. Put another way, will the tool prove appropriate and adequate for the task? This in turn raises the problem of allocating sufficient combat power for the deep maneuver force and then insuring that strength is not dissipated. While some of

these issues will be addressed in later sections, particularly those on sustainment and combat power, some discussion regarding economy of force is appropriate here.

There are two perspectives on economy of force. Both apply to planning the employment of deep maneuver forces. From the first perspective, economy of force dictates the allocation of minimum combat power to secondary efforts. Deep maneuver by large forces is most effective when coupled with concurrent operations by other forces to divert and fix enemy forces. Without these supporting operations the enemy has the option of diverting considerable forces to eliminating the threat to his rear. The difficulty comes in reaching a balance in the degree of effort devoted to the deep maneuver force versus the supporting operations. This difficulty is minimized however if the operational concept is kept firmly in mind. Any effort which does not directly contribute to the operational objective should not be supported at the expense of the deep maneuver force. The problem does not stop at the initial allocation of forces however. The British in North Africa suffered from the recurrent failing of not maintaining focus upon their operational objective during their execution of deep maneuver.

~~"Battleaxe" and "Cousades" both saw the~~ British command give way to the temptation of diverting forces to take advantage of other apparent opportunities.

The other perspective on economy of force is to optimize the employment of all forces which can contribute to success. From this perspective the most "economical" use of airborne, air assault or armored forces may be in deep maneuver. From this perspective, Rommel

proved particularly effective in using his relatively immobile infantry formations to fix the forward defenses of the Allies at Gazala.

Lastly, in discussing the need for a clear operational concept the importance of moral factors cannot be overlooked. As already mentioned, Rommel saw the mind of his opponent as a center of gravity to be attacked. Most victories are won when the enemy commander or his soldiers lose heart. While deep maneuver may have a direct impact upon the battlefield by destroying combat formations (particularly those lured into attacking piecemeal) it is likely to have just as great a psychological impact upon the enemy army and its commander. Indeed, it is quite possible to defeat an entire army simply by convincing the enemy commander or a few key subordinates that the battle is lost. Soldiers seem naturally afraid of enemy forces in their rear. A deep maneuver operation may thus have an operational effect far greater than what would be expected purely from the physical damage inflicted or supplies interdicted.

Despite the foregoing, North Africa also demonstrates the danger of over-reliance upon the moral effect of deep maneuver. It can be a fundamental error to assume that a particular tactical or operational maneuver will produce a specific psychological effect. When threatened with encirclement during "Battleaxe" the British forces broke. During "Crusader" the British command had the fortitude to ignore Rommel lunging into their rear. The personality and experience levels of armies change with time and new leaders. With these changes, what was once viewed as threatening and a cause for panic, may merely elicit a raised eyebrow.

How then should the commander view the moral effect of deep maneuver? Examination of the North African campaign indicates that while moral effect can reinforce or even multiply the physical effects of deep maneuver, it can not totally substitute for it. That is, the deep maneuver force must actually possess sufficient combat power to achieve a significant effect independent of psychological impact. The deep maneuver force must pose a credible physical threat; mere bluff and deception are insufficient in themselves.

Accurate and Timely Intelligence

Accurate and timely intelligence is an absolute requirement for the realistic planning of deep maneuver. Without accurate intelligence there can be no accurate assessment either of centers of gravity or the critical points that can affect them. Intelligence is thus essential as a consideration at both the operational and tactical level. Sending a force deep without adequate intelligence is not boldness or risk, it is simple gambling. Access to adequate intelligence during planning is therefore just as important to a deep maneuver force as is combat power or mobility. Without it, the operational concept for deep maneuver is pure fantasy. Rommel's fiasco at Alam el Halfa and his initial difficulties at Gazala illustrate the result of inadequate intelligence whereas Montgomery's success was made possible by accurate intelligence.

The importance of intelligence in deep maneuver increases proportionately with the need to achieve superior tempo of operations. Without accurate intelligence there is not only real doubt as to the

correct "targeting" of the deep maneuver force, but also of its ability to penetrate into, and quickly move through, the enemy rear.

Intelligence during the course of the deep operation is also essential. It is intelligence that must provide the commander with the information which enables him to determine not only how to fight his battle, but even when he has won it! The sight of burning vehicles and fleeing enemy can delude the commander into believing he has won when in fact he is merely experiencing a pause between rounds. Rommel fell prey to this trap at "Crusader" and chose to strike toward Egypt rather than completing the destruction of the British armor around Sidi Rezegh.

Surprise

Surprise means hitting the enemy at a time or place or in a manner which is unexpected. Surprise is normally an essential condition for successful deep maneuver. It is the underlying condition which makes the attempt to create a favorable condition by deep maneuver feasible. At the risk of oversimplification, the commander uninterested in achieving surprise either has total contempt for his foe or has overwhelming superiority in mobility or numbers and logistical independence (an example would be Sherman's refusal to follow Hood into Tennessee). For most commanders however the situation will not be so favorable and surprise will be an important consideration. Clausewitz identified speed and secrecy as the two essential components of surprise. To speed and secrecy may be added use of the unexpected by means of avoiding predictable patterns (a failing of Rommel; his "fix" in the north and "hook" in the south became a virtual trademark) and

exploitation of enemy weaknesses. Speed or "tempo" is a consideration deserving special attention and will be addressed in some detail in a later section on speed of operations. Secrecy will be addressed under the guise of security.

The principle of security means never allowing the enemy to acquire an unexpected advantage. Security thus involves not only denying the enemy information of our intentions but also deceiving him as far as possible. The need for security is basic for a deep maneuver force, most particularly in advance of the operation beginning. Once the operation begins then speed of movement can to some extent compensate for lapses in security. But poor security before the operation begins forfeits surprise, and that is enough to court disaster. Rommel forfeited surprise before Alam el Halfa. The British forfeited surprise before "Battleaxe." The British achieved surprise in launching Operation "Crusader."

Speed and secrecy are interdependent. A weakness in one may be offset by strength in another. Thus a very rapid operation will achieve a degree of surprise even if secrecy was lost. The British were expecting Rommel to attack at Gazala. But Rommel achieved surprise largely by the rapidity of his initial attacks. Conceptually the converse may be especially true. If the deep maneuver force is one of inherently slow mobility (the non-motorized infantry which the Chinese maneuvered behind the 8th Army in Korea, for example), then secrecy or security becomes of overwhelming importance. A highly mobile force may overcome a lapse in security by increasing the speed of operations. A

low-mobility force with poor security is doomed as a deep maneuver force.

Speed of Operations

Relative speed of operations (tempo, for short) in deep maneuver is a critical consideration because of the very nature of deep maneuver. A deep maneuver force endeavors to achieve local superiority at a particular place in the enemy's rear long enough to have an operational impact. This is impossible if the enemy can mass forces at the new "decisive point" as quickly as can the deep maneuver force.

Tempo is not an absolute measurement. Rather, it is a relative estimate of the abilities of both sides to sense, decide and react. Any decrement in the rapidity of one side's ability to sense, decide and react is equivalent to increasing the rapidity of the opponent. Thus tempo is much more than simply the rate of crossing terrain. For the commander considering the use of a large force in deep maneuver simple statistics on the speed of his armored vehicles (or the marching pace of his infantry) are only part of the equation.

An attacking maneuver force facing an enemy with equal or superior ground mobility can still gain an advantage in tempo of operations. There are many means of doing this; some examples would be by interfering with the enemy's ability to sense (his intelligence system) by various security or deception measures (the British were quite successful at this at "Crusader" and Alam el Halfa); degrading his ability to decide by attacking his command and control system (witness the results of Rommel overrunning British armored headquarters during

Gazala); or employing terrain or obstacles that negate his mobility advantage (such as the Axis strongpoints during "Battleaxe" and British obstacles and defenses at Alam el Halfa).

Another approach is to increase the rapidity of the attackers' ability to sense, decide and react. This serves to increase the operational agility of the maneuver force. The Germans demonstrated three means of doing this. First, by placing a high priority on tactical reconnaissance. Second, streamline the chain of command by leading from the front. Third, encouraging aggressive initiative among subordinates (Auftragstaktik).

The British command structure prior to Montgomery was cumbersome and inefficient. An essential part of having an agile deep maneuver force capable of high tempo operations is unity of command. Deep maneuver forces cannot simply follow a timetable (they never survived the initial contacts in North Africa) or, when the unexpected does intervene, stop and have a committee meeting to reach consensus on what to do next. The only thing that can confidently be predicted in advance is that chance and friction will strike sooner or later. A delicate balance must be struck between the need for responsive, obedient subordinates (to avoid dissipation of effort) and subordinates capable of seizing opportunity in the absence of instructions. Certainly the Germans achieved this ability to practice Auftragstaktik far better than the British did.

There is more to the issue of unity of command than lines of authority and good subordinates. Unity of command without effective leadership at the top is pointless. There are endless considerations

concerning leadership in deep maneuver, but the most germane to this study are the issues of boldness and leading forward.

An operational commander should carefully reflect upon the character of the officer who will command the deep maneuver forces. Boldness is not a luxury in deep maneuver, it is a necessity. So are good nerves. The logic for this is simple but compelling. Operational agility and speed are critical to success in deep maneuver. But the deep maneuver commander will never have all the information he needs to make a fully informed decision. The bold commander interprets uncertainty as opportunity and seeks to wrest advantage from chance. The more cautious commander pauses in the face of uncertainty and seeks more information before reacting. The cautious commander may avoid defeat but will probably not seize a victory that is dependent upon rapidity. If avoidance of defeat is the operational concept then deep maneuver is an inappropriate means of achieving it. It is incumbent upon the operational commander to put the right man in command of the deep maneuver force.

Leading forward is as much a way of thinking as a technique. Despite advances in technology, it is doubtful that any dry flow of information will be able to replace the impact of leaders being well forward where they can directly influence the operation. Leaders being well forward serves to cut the hierarchical layers of reporting information and transmitting orders. In high tempo operations chance and friction will intervene to upset the most carefully thoughtout plans. The commander should be located where he can exercise immediate influence to maintain the momentum of the operation. Rommel and his key

subordinates were invariably to be found well forward, at the critical point of the battle. Conversely, the British commanders seemed to be stuck in their headquarters and frequently had no clear idea of what was actually happening at the point of decision.

Freedom of Maneuver

A deep maneuver force must retain maximum flexibility and freedom to maneuver. This imperative follows directly from the need to seize, retain and exploit the initiative. Momentum must be maintained until the objective has been obtained. There are four aspects of this issue worthy of discussion; restrictions due to operational requirements, the impact of enemy air operations, restrictions due to terrain and restrictions due to logistical constraints. The last aspect, logistics, will be discussed in a separate section.

Restricting the freedom for maneuver of the deep maneuver force by constraints, by having it cover the flank of slower forces, for example, or protect a logistical tail, can only serve to degrade its ability to retain the initiative. Likewise, employing a force for deep maneuver which cannot operate independently for some period of time also inevitable degrades its mobility and capability of retaining the initiative. The vulnerability of forces subject to such constraints was amply demonstrated by the British failure at "Battleaxe" and the awkward situation Rommel found himself in during the Cauldron phase of Gazala.

The Germans discovered the impact of enemy air upon freedom of maneuver at Alam el Halfa. Conducting deep maneuver without the benefit of air support not only significantly degrades the combat power that can

be generated at the decisive point, it also invites counterattack by enemy air. Maneuvering under air attack, or even the threat of air attack, drastically increases the force of friction on the battlefield. Everything takes longer to accomplish. As a consequence, and not even considering the physical damages inflicted, the tempo of deep maneuver is slowed. The commander considering deep maneuver without effective air support must seek to minimize the impact of enemy air power.

Commanders have tried various solutions to solve the problem of enemy air power. One approach is to attack the enemy airfields. The Israeli's did this with pre-emptive strikes in 1956 and 1967. MacArthurs deep amphibious thrusts (Hollandia and Inchon, for example) struck directly at enemy air bases. The theater objective driving Wavell's attack during "Battleaxe" was to recapture the airfields of eastern Libya. Other solutions include use of air caps, missile defenses, night operations and operating in covered terrain. Unfortunately, many of these solutions may either be infeasible (such as pre-emptive strikes) or else require sacrifices in operational tempo and freedom of maneuver.

A critical component of freedom of maneuver is the influence of terrain. A force maneuvering in depth must always have a number of maneuver options available to it. If the avenues of mobility are overly constrained or restricted (as the the British analyzed the terrain during "Battleaxe" and as both sides saw it during Alam el Halfa) then the operational flexibility of the deep maneuver force is severely restricted.

Logistical Sustainment

There are two aspects to logistical sustainment that the commander must consider. First is the impact of logistics upon the deep maneuver force. The greater the "tail" the attacker must drag about and secure, the greater the decrement of his operational tempo. Perhaps even more critical is the impact of sustainment upon operational flexibility. A deep maneuver force restricted to a certain radius of action or time for completing the action will necessarily have less freedom of maneuver. This may result in the need to accept greater operational risk. In all events, the commander must carefully consider how the deep maneuver force will be sustained. The critical elements of sustainment for deep maneuver appear to be fuel, ammunition and vehicle repair (especially combat vehicles). It is essential that the deep maneuver force have a reasonable chance of reaching, in Clausewitzian terms, a favorable decision point before passing the culminating point.

The second area of sustainment the commander must consider is the state of enemy logistics. If the intent is to sever the enemy's main supply line and thus deprive his combat formations of fuel and ammunition, then the status of the enemy's forward stocks becomes an essential piece of information. Perhaps just as importance is the degree of logistical risk the enemy is prepared to take. If the enemy is sensitive to any threat to his lines of communication then a deep maneuver force interdicting them could have a fairly quick operational impact. Unfortunately for Rommel during "Crusader," the British logistical system proved far more resilient than he had anticipated.

Concentration and Synchronization of Combat Power

The principle of mass refers to concentrating combat power at the decisive point. In order for a deep maneuver force to achieve optimum combat power two conditions must be met. The requisite forces must be maneuvered to the appropriate location and the effects of the combat power available to those forces must then be maximized.

The first aspect of concentration involves the physical massing of forces. Success in doing this appears largely dependent upon having a clear operational focus or main effort (Schwerpunkt). Since this aspect has already been addressed in an earlier sections, including the discussion on economy of force, it is sufficient to remember that trying to be strong everywhere results in being strong nowhere. The British violated this basic tenet on numerous occasions in three of the four battles studied (without Montgomery's forceful control they would probably have violated it at Alam el Halfa also). During "Battleaxe," "Crusader" and Gazala, the Germans seemed invariably successful in achieving local superiority of forces at the decisive point. Thus, the normal matchup of forces in battle would be an Allied brigade (armor or infantry) against an Axis division or corps.

The second aspect of concentration involves maximizing the effects of the available weapons systems that have been massed. That is, the various arms and systems of available combat power must be synchronized to produce a synergistic effect. In achieving this synergistic effect doctrine, training, and organization can be more important than the actual numbers and types of weapons involved.

The Germans demonstrated a keen appreciation for the efficacy of synchronizing the employment of their weapon systems. By skillful use of combined arms techniques, particularly in integrating the capabilities of armor, anti-armor, infantry and artillery forces, they were able to achieve superiority of firepower over Allied forces of equivalent or larger size. Thus they were able to capitalize upon the opportunities which skillful maneuver afforded them. Given that deep maneuver forces will invariably be limited with respect to the numbers and types of weapon systems and the amount of ammunition they can take with them, this ability to synchronize the employment of all means for delivering combat power quickly is critical.

Air power is a particularly important element in the ability of the deep maneuver force to achieve mass. Due to requirements for mobility and speed of movement, the maneuver force may not have all the fire support systems normally available to it. In addition, by definition (Chapter 1) the deep maneuver force will be beyond the support of other ground units. Thus, close air support represents a critical component of the maneuver force combined arms team. Air power also represents probably the most efficient way of screening the exposed flanks of a deep maneuver force. Indeed, it was probably thanks to the Desert Air Force during "Battleaxe" that the British forces were successful in withdrawing before being encircled.

Doctrinal Sufficiency

Doctrine has a tremendous influence upon an army's ability to successfully conduct deep maneuver with large forces. Doctrine governs

to a large degree an army's view of the world. It is a major determinate of force structure, organization, equipment and training. Therefore its influence is both pervasive and insidious. Deep maneuver with large forces requires the ability to sustain high tempo operations over extended periods of time, to synchronize the movement and employment of large forces and diverse weapons systems. It requires a certain level of sophistication in understanding the operational level of war. And it demands a thoroughly professional core of leaders, well trained and willing to take risk. The commander contemplating deep maneuver should take a careful look at his force, its doctrine and the extent to which it has adequately trained to internalize and verify the efficacy of its doctrine. If his examination reveals an army not trained or equipped for mobile warfare then he must realize he faces a significant operational weakness and should consider alternatives to deep maneuver.

Conclusion

Deep maneuver by ground forces is a viable means of seizing and retaining the initiative during offensive operations. It can yield results out of proportion to the size of the force employed. Correctly used, deep maneuver can enable the commander to defeat an enemy superior in strength and defending the ground of his choice. Deep maneuver is, however, an inherently risky undertaking and is only justified if the possibility of success is reasonable and if the potential results well outweigh the possible cost of failure.

In contemplating sending ground forces deep, the commander must rationally consider the chances for success of such a maneuver and how to increase the likelihood of success. An aid to the commander or staff officer in this endeavor is considering the lessons from past instances of deep maneuver successes and failures. Historical analysis of the North African campaign of 1941-42 reveals certain conditions which were characteristically present when deep maneuver was successful. Successful deep maneuver forces in North Africa possessed or achieved a clear operational concept; accurate and timely intelligence; surprise; superior relative speed of operations; freedom, or flexibility, of maneuver; adequate logistical sustainment; the ability to concentrate and synchronize the effects of all available combat power; and an internalized doctrinal approach to war which emphasized all the preceding.

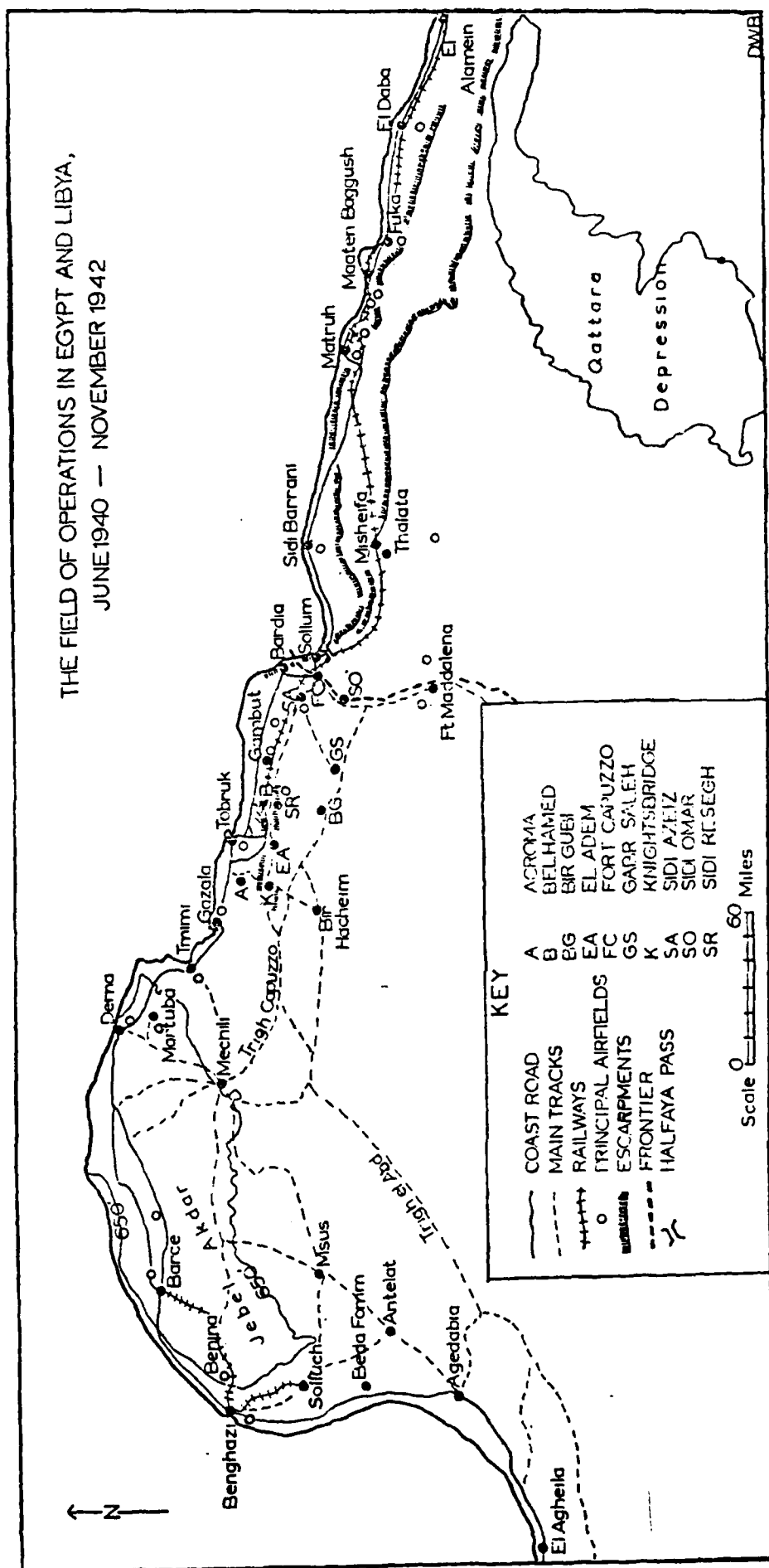
Will the deep maneuver force possessing these characteristics inevitably be successful? Hardly, there are no guarantees in war. However, the deep maneuver force not possessing them is courting disaster if faced with a competent foe.

Endnote

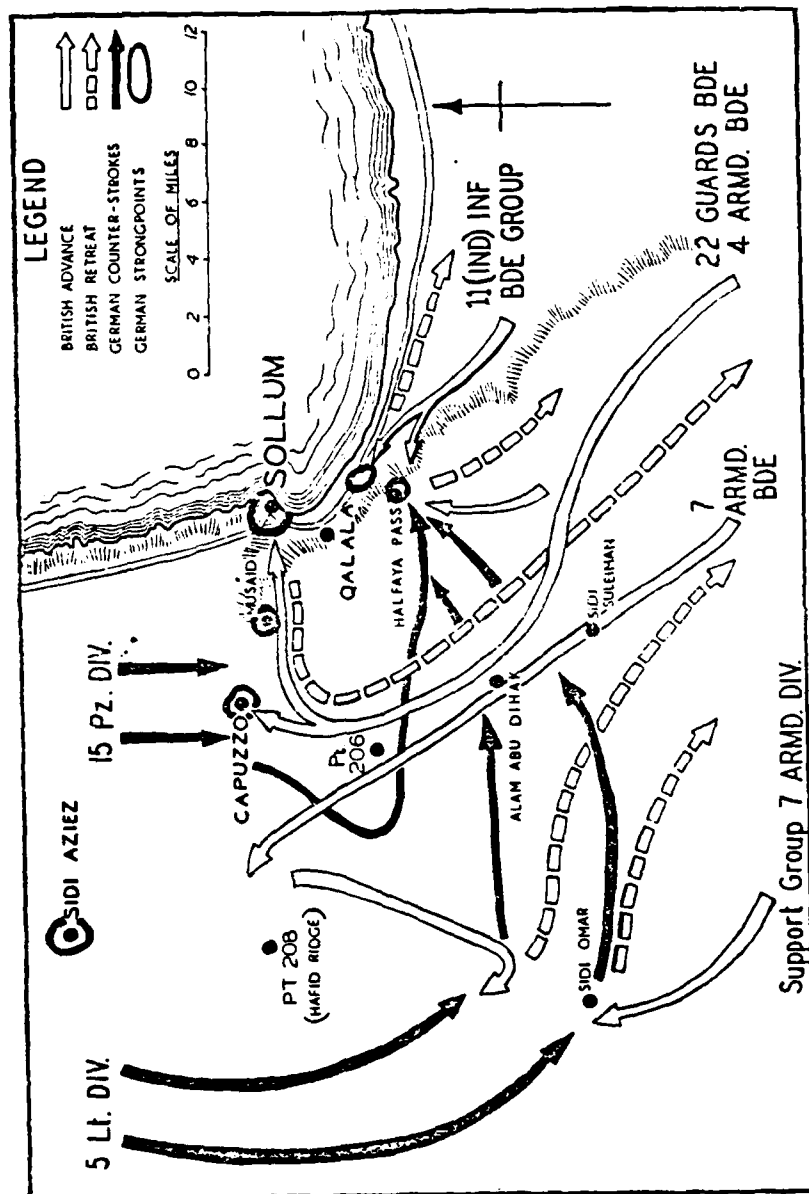
Erwin Rommel, The Rommel Papers (New York: Da Capo Press, 1983), p. 197.

MAPS

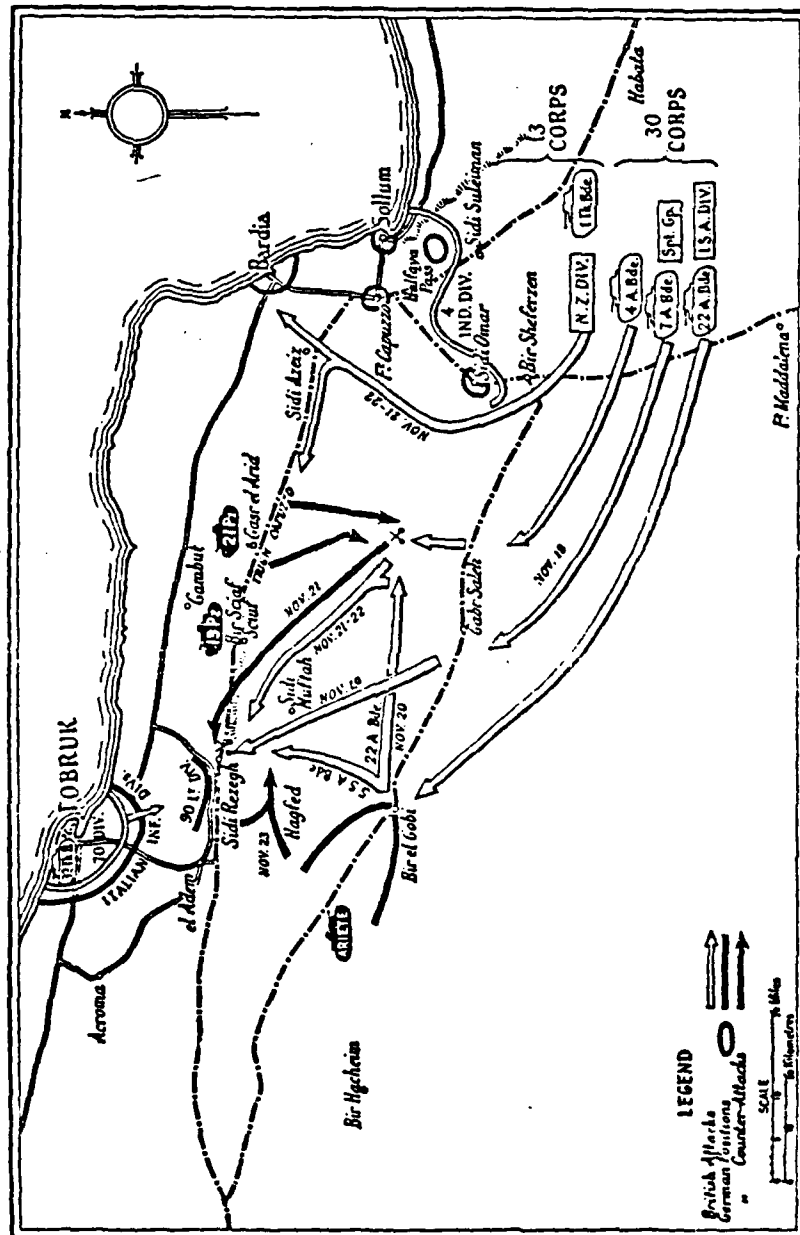
THE FIELD OF OPERATIONS IN EGYPT AND LIBYA,
JUNE 1940 — NOVEMBER 1942



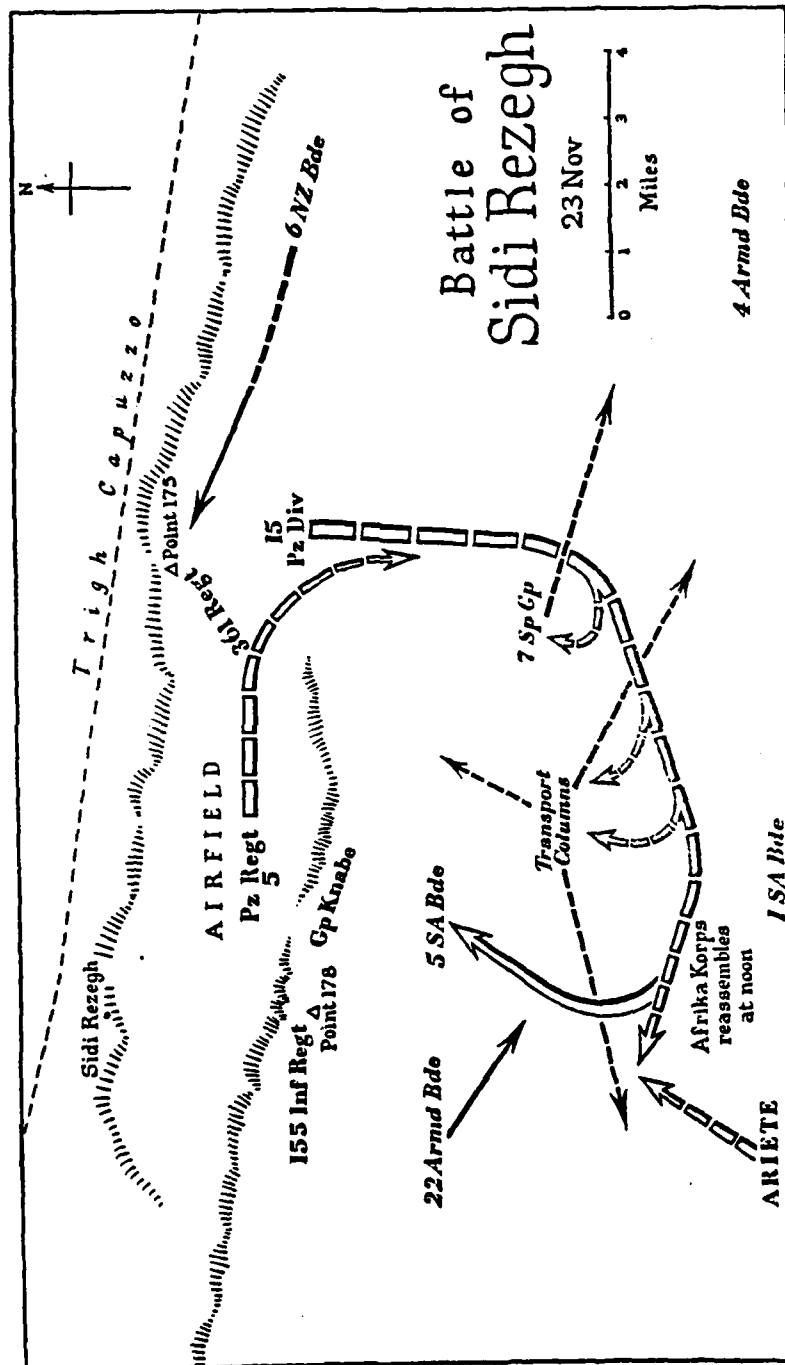
THE CAMPAIGN AREA
MAP 3a



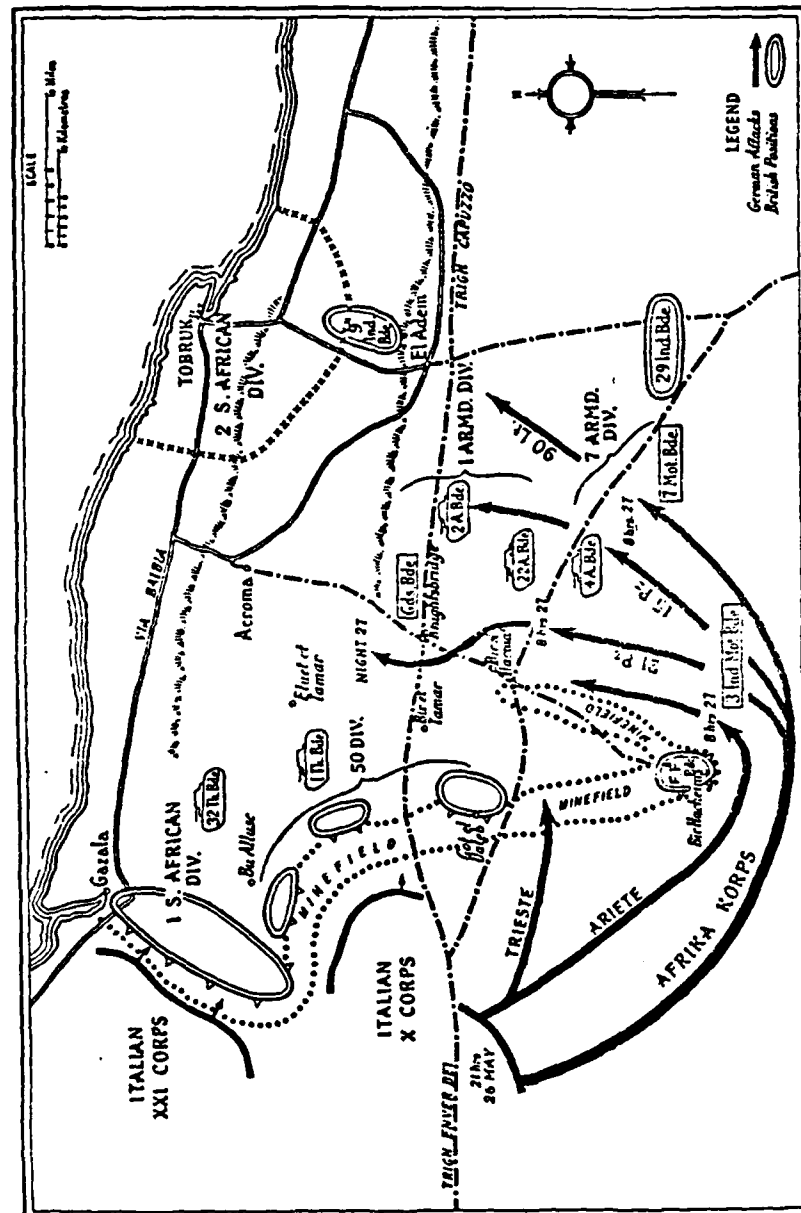
OPERATION "BATTLEAXE"
MAP 3b



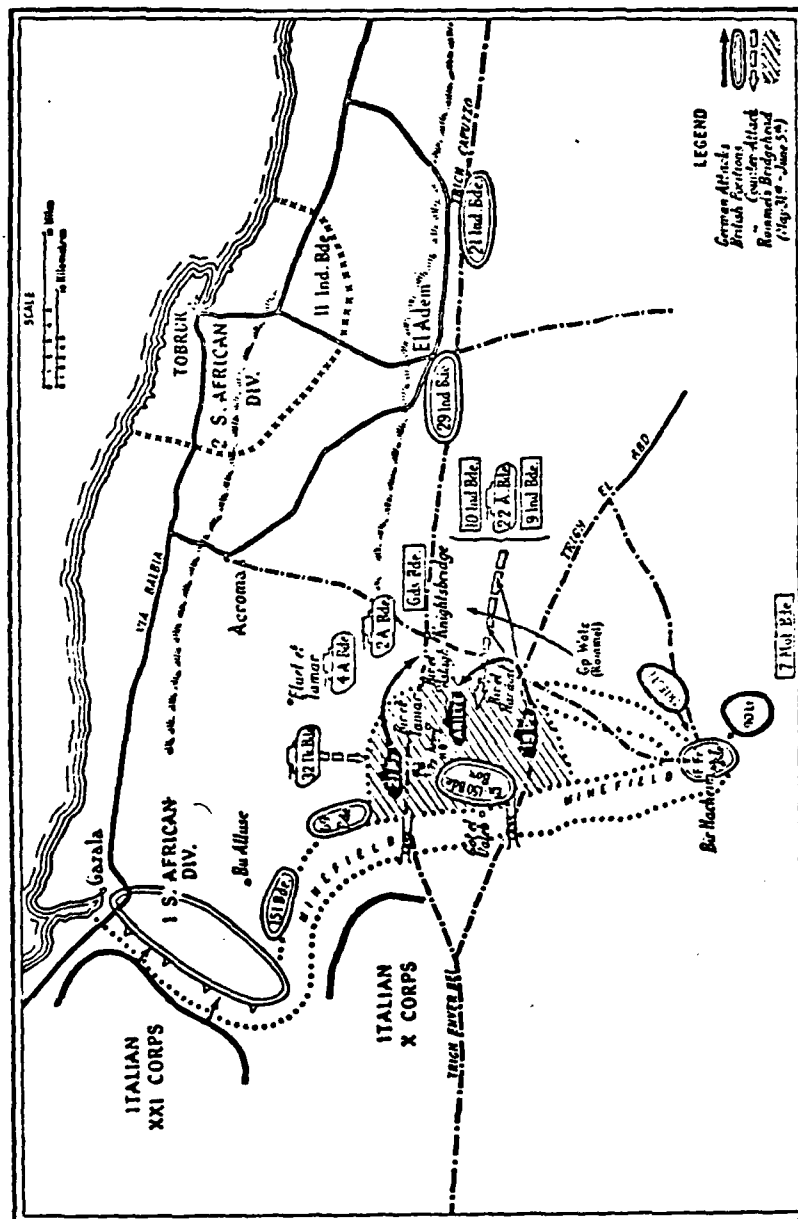
OPERATION "CRUSADER"
(18-23 November)
MAP 4a



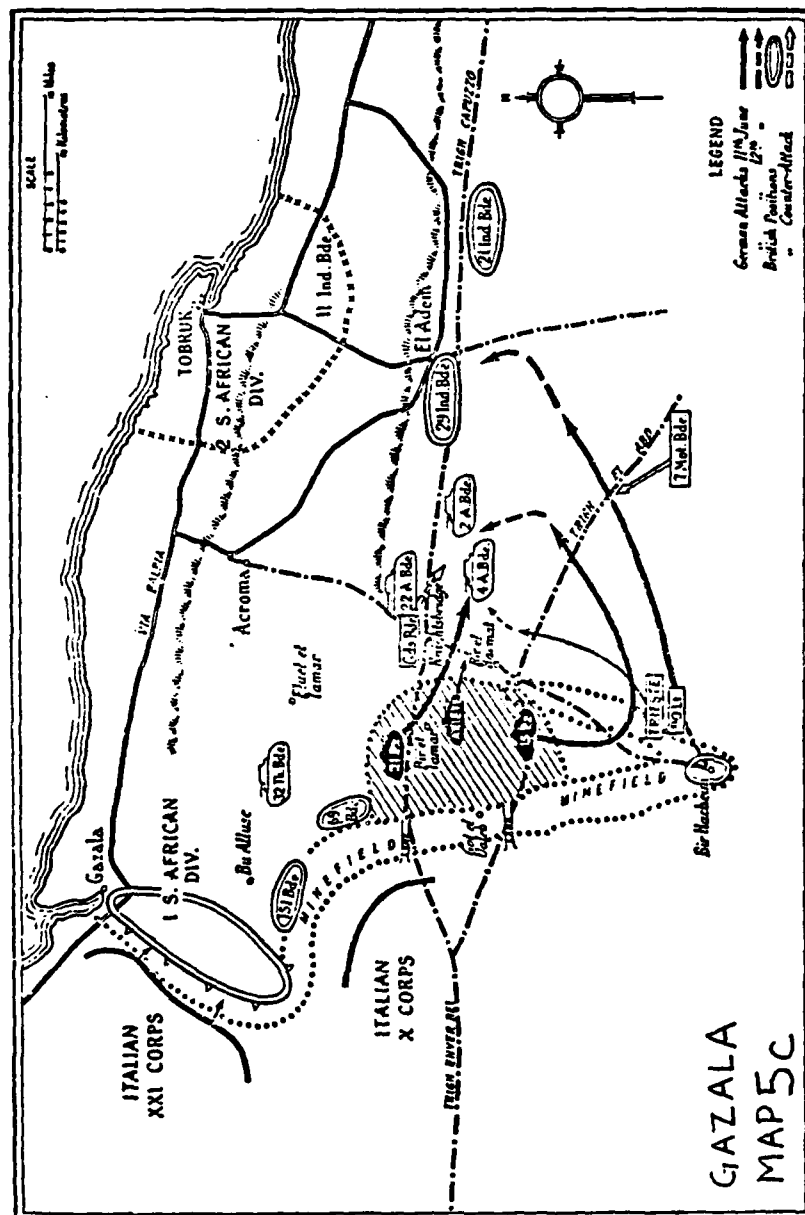
OPERATION "CRUSADER"
(23 November)
MAP 4b



GAZALA
MAP 5a



GAZALA
MAP 5b



GAZALA
MAP 5c

APPENDIX A

Appendix A

Forces in Operation Battleaxe¹

British and Commonwealth Forces

Commander-in-Chief, Middle East: General Sir Archibald Wavell

XIII CORPS

Lieutenant-General Sir N. M. de la Beresford-Peirse

7th Armored Division (Major-General Sir M. O. Creagh)

4th Armored Brigade

4th Royal Tank Regt (Matildas)

7th Royal Tank Regt (Matildas)

7th Armored Brigade

2nd Royal Tank Regt (mixed cruisers)

6th Royal Tank Regt (Crusaders)

Support Group

1st, 3rd, 4th and 106th Royal Horse Artillery

1st Bn, King's Royal Rifle Corps

2nd Bn, The Rifle Brigade

Divisional Troops

11th Hussars

4th Field Squadron

143 Field Park Squadron

4th Indian Division (Major-General F.W. Messervy)

11th Indian Infantry Brigade

2nd Queen's Own Cameron Highlanders

1st/6th Rajputana Rifles

2nd/5th Mahrattas

22nd Guards Brigade

1st Buffs

2nd Scots Guards

3rd Coldstream Guards

22nd Guards Brigade Attack Company

Divisional Troops

Central Indian Horse
25th Field Regt
31st Field Regt
4th, 12th, 18th and 21st Field Company
(Sappers and Miners)
11th Field Park Company

German and Italian Forces

Commandante Superiore: Generale d'Armata I. Gariboldi

DEUTSCHES AFRIKA KORPS

Generalleutnant E. Rommel

Corps Troops

two regiments Italian artillery in Bardia
one regiment flak (88mm)

**15th Panzer Division (Generalleutnant W.
Neumann-Sylkow)**

Panzer Regt 8
Reconnaissance Bn 33
Btry P.A.K. (anti-tank)
Btry flak (88mm)
Rifle Regt 104
 Bn motorized infantry
 Bn motor-cycle infantry
 Bn foot infantry (Halfaya Pass)
Divisional Artillery

Trento Division

three infantry battalions and one artillery regt
in area Sollum-Musaid-Capuzzo

5th Light Division (Generalleutnant von Ravenstein)

Panzer Regt 5
Reconnaissance Bn 3

¹Adapted from Barrie Pitt, The Crucible of War: Western Desert 1941
(London: Jonathon Cape, 1980), p. 296 and pp. 486-487.

APPENDIX B

Appendix B: Crusader Forces

British and Commonwealth Forces

Commander-in-Chief, Middle East: General Sir Claude Auchinleck

EIGHTH ARMY

Lieutenant-General Sir Alan Cunningham (until 26 November)

Lieutenant-General N.M. Ritchie

Army Troops:

- 2nd South African Division
 - 3rd South African Infantry Brigade
 - 4th South African Infantry Brigade
 - 6th South African Infantry Brigade

Oasis Group

- Tobruk Garrison (70 Division)
 - 32d Tank Brigade
 - 14th Infantry Brigade
 - 16th Infantry Brigade
 - 23d Infantry Brigade
 - 1st Polish Carpathian Brigade

- Matruh Fortress
 - 2d South African Infantry Brigade

Long Range Desert Group

XIII Corps (Lieutenant-General A.R. Godwin-Austen)

Corps Troops: Medium, heavy, anti-tank and anti-aircraft artillery

- 4th Indian Division
 - 5th Indian Infantry Brigade
 - 7th Indian Infantry Brigade
 - 11th Indian Infantry Brigade

1st Army Tank Brigade

- New Zealand Division
 - 4th New Zealand Infantry Brigade
 - 5th New Zealand Infantry Brigade
 - 6th New Zealand Infantry Brigade

XXX Corps (Lieutenant-General C.W.M. Norrie)

Corps Troops: Light anti-aircraft artillery and one reconnaissance squadron

7th Armored Division
4th Armored Brigade Group
7th Armored Brigade
22d Armored Brigade
7th Support Group

22d Guards Brigade

1st South African Division
1st South African Infantry Brigade
5th South African Infantry Brigade

German and Italian Forces

Commandante Superiore: Generale d'Armata Ettore Bastico

PANZERGRUPPE AFRIKA

General der Panzertruppen Erwin Rommel

Deutsches Afrika Korps (Generalleutnant Ludwig Cruewell)

15th Panzer Division
Panzer Regt 8
15th Rifle Brigade
Reconnaissance Battalion 33

21st Panzer Division
Panzer Regt 5
Rifle Regt 104
Reconnaissance Battalion 3

Afrika Division (later renamed 90 Light Division)
Infantry Regt 155
Afrika Regt 361
Sonderverband 288
Reconnaissance Battalion 580
Anti-tank Battalion 605

Corpo d'Armata XXI (Generale di Corpo d'Armata Navarrini)

Bologna Division
Trento Division
Pavia Division
Brescia Division
Sovona Division

CORPO D'ARMATA DI MANOVRA XX (under direct command of Commandante superior)

General di Corpo d'Armata Gambarra

Ariete Armored Division
132 Armored Regt
8th Bersaglieri Regt
132d Artillery Regt

Trieste Motorised Division
65th Infantry Regt
66th Infantry Regt
9th Bersaglieri Regt

¹Adapted from Barrie Pitt, The Crucible of War: Western Desert 1941, (London: Jonathon Cape, 1980), pp. 488-490.

APPENDIX C

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CONSIDERATIONS FOR DEEP MANEUVER: LESSONS FROM NORTH
AFRICA 1941-1942(U) ARMY COMMAND AND GENERAL STAFF COLL
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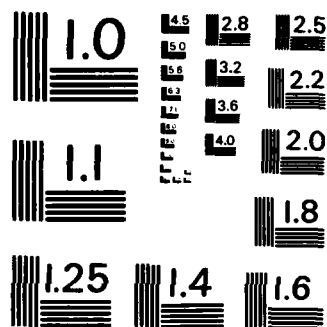
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Appendix C: Gazala Forces (26 May)

Allied Forces

Commander-in-Chief, Middle East: General Sir Claude Auchinleck

EIGHTH ARMY

Lieutenant-General N.M. Ritchie

XIII Corps (Lieutenant-General W.H.E. Gott)

1st South African Division
1st South African Infantry Brigade
2d South African Infantry Brigade
3d South African Infantry Brigade

2nd South African Division (in Tobruk)
4th South African Infantry Brigade
6th South African Infantry Brigade
9th Indian Infantry Brigade

50th Infantry Division
69th Infantry Brigade
150th Infantry Brigade
151st Infantry Brigade

1st Army Tank Brigade

32d Army Tank Brigade

XXX Corps (Lieutenant-General W. Norrie)

1st Armored Division
2d Armored Brigade
22d Armored Brigade
201st Guards Brigade Group

7th Armored Division (Major-General Messervy)
4th Armored Brigade
7th Motor Brigade
3d Indian Motor Brigade
29th Indian Infantry Brigade Group
1st Free French Brigade Group (Bir Hacheim)

Army Troops

5th Indian Division
10th Indian Infantry Brigade Group
2d Free French Brigade Group
"Dencol" (small combined arms column)

Enroute from Iraq:

- 10th Indian Division
 - 20th Indian Infantry Brigade
 - 21st Indian Infantry Brigade
 - 25th Indian Infantry Brigade

Enroute from Egypt:

- 11th Indian Infantry Brigade
- 1st Armored Brigade

Axis Forces

Commandante Superiore: Generale d'Armata Ettore Bastico

PANZERARMEE AFRIKA

Generaloberst Erwin Rommel

Deutsches Afrika Korps (Generalleutnant W.K. Nehring)

- 15th Panzer Division
 - Panzer Regt 8
 - Infantry Regt 115
 - Panzerjager Abteilung 33
 - Reconnaissance Battalion 33
 - Artillery Regt 33

- 21st Panzer Division
 - Panzer Regt 5
 - Infantry Regt 104
 - Panzerjager Abteilung 39
 - Reconnaissance Battalion 3
 - Artillery Regiment 155

- 90th Light Division
 - Infantry Regt 155
 - Infantry Regt 200
 - Sonderverband 288
 - Panzerjager Abteilung 190
 - Reconnaissance Battalion 580
 - Artillery Regiment 190

Corpo d'Armata XX (Generale di Corpo d'Armata Baldassarre)

- Ariete Armored Division
 - 132d Armored Regt
 - 132d Artillery Regt
 - 8th Bersiglieri Regt

- Trieste Motorized Division

65th Infantry Regt
66th Infantry Regt
9th Bersiglieri Regt

Gruppe Cruewell (Generalleutnant L. Cruewell)

Corpo d'Armata X
Brescia Division
Pavia Division

Corpo d'Armata XXI
Trento Division
Sabratha Division

¹From Barrie Pitt, The Crucible of War: Year of Alamein 1942 (London: Jonathon Cape, 1982), pp. 455-457 and I.S.O. Playfair, The Mediterranean and Middle East, vol. 3, History of the Second World War, United Kingdom Series (London: Her Majesty's Stationary Office, 1960), pp. 217-218.

APPENDIX D

Appendix D: Alam el Halfa forces (31 August 1942)¹

Allied Forces

Commander-in-Chief, Middle East: General H. Alexander

EIGHTH ARMY

Lieutenant-General Sir B.L. Montgomery

XIII Corps

2d New Zealand Division

5th New Zealand Infantry Brigade

6th New Zealand Infantry Brigade

132d Infantry Brigade

44th Division

131st Infantry Brigade

133d Infantry Brigade

7th Armored Division

4th Light Armored Brigade

7th Motor Brigade Group

10th Armored Division

8th Armored Brigade

22d Armored Brigade

XXX Corps

9th Australian Division

1st South African Division

5th Indian Division

Army Reserve

23d Armored Brigade

Axis Forces

Commandante Superiore: Generale d'Armata Ettore Bastico

PANZERARMEE AFRIKA

Generalfeldmarschall Erwin Rommel

Deutsches Afrika Korps

15th Panzer Division

21st Panzer Division

90th Light Division

Corpo d'Armata XX

Ariete Armored Division

Trieste Motorized Division

Littorio Armored Division

Corpo d'Armata XXI

164th German Infantry Division

Trento Division

Corpo d'Armata X

Bologna Division

Brescia Division

Units of the 8th Army main effort, XIII Corps, shown down to brigade level; other units of 8th Army and Panzerarmee Afrika shown down to division level. While the German 164th Division and a German parachute brigade operated with the Italian divisions, there is some doubt as to the actual command arrangements within the Italian X and XXI Corps. I.S.O. Playfair, The Mediterranean and Middle East, vol. 3, History of the Second World War, United Kingdom Series (London: Her Majesty's Stationary Office, 1960), p. 384 and Major R.C.W. Thomas, The Battles of Alam Hafa and El Alamein (London: William Clowes and Sons, Limited, 1952), p. 8; Michael Carver, El Alamein (New York: The MacMillan Company, 1962), p. 54.

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