# *Kharkov and Sinai*
# *A Study in Operational Transition*

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## ABSTRACT

KHARKOV AND SINAI--A STUDY IN OPERATIONAL TRANSITION
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This study tests the hypothesis that, at the operational level, there are essential elements of operational transition that the commander may use as a guide to determine the actions that must be taken to pursue the positive aim, the counteroffensive. The actions a force takes from the successful defense to the initiation of a counteroffensive is operational transition. To define the search for essential elements of operational transition, the paper begins with a review of theory and current US Army doctrine concerning the mix of offensive and defensive actions in the operational defense. It then closely examines two successful operational transitions by forces that were surprised, outnumbered and mal-positioned. The campaigns chosen for study are Manstein's counteroffensive against the Soviets on the Eastern Front from February to March 1943 and the Israeli counteroffensive against the Egyptians in the 1973 Arab-Israeli War.

The monograph first studies the linkage of ends, ways, means and risks required for successful operational defense and the transition to the offense. Second, the paper examines the elements of operational design that must be considered to produce a campaign plan that facilitates operational transition. Lastly, the study examines the elements of combat power that are critical for successful defense and pursuit of the counteroffensive at the operational level.

The monograph concludes that there are essential elements of operational transition that may be used to guide campaign planning. First, ends-ways-means-risk must be harmonized so that strategy, operational art and tactics are syncnronized to pursue the positive aim of the counteroffensive. Second, the operational commander should understand and apply the analytical tools of operational design in order to be successful in the defense and transition to the counteroffensive. These concepts are those of the center of gravity, the culminating point, the determination of decisive points and the designation of lines of operation and support. This understanding and application produces a workable, initial campaign plan that focuses on setting the conditions for the transition to the counteroffensive. Lastly, through the application of intelligence, deception, generation of operational reserves and sustainment, the operational commander must meld the operational combat power resources of leadership, maneuver, firepower, and protection into a force capable of executing his campaign plan.

The monograph concludes that the defense is the stronger form of war only if it involves an operational transition to the offensive.

This monograph also contains three appendices that may be useful to operational planners in developing campaign plans. While the discussion in the appendices is not completely supported by the two case studies presented, the appendices may provide start points for those interested in conducting further research into the subjects of operational defense and transition to the offense.

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# I. INTRODUCTION

Clausewitz's theory of war implies that a large military force must possess the capability to transition quickly from the defense to the offense. While defense may be the stronger form of war, Clausewitz argued, the commander must take decisive offensive action at some point to achieve positive results. Both Wellington in Portugal and Slim in Burma acknowledged the inherent strengths of the defense -- the ability to garner resources and delay or attrite the enemy as the attacker commits himself against either hardened positions or mobile defense forces. Both, however, also recognized the need to "...turn the tables on the attacker..." thereby "...following a successful operational defense with an offensive campaign..."[1] Thus, to enjoy the fruits of strategic success, armed forces must be able to execute the operational transition from the defense to the offense.

Since theory and doctrine suggest that operational transition is required, a defending operational commander must prepare for it. To do so, he must understand the essential elements of operational transition. Establishing these elements of operational transition will aid the operational commander in the passage from the defense to the offense.

This monograph will study the operational transition from the theoretical, doctrinal and historical perspective. To define the problem, it will begin with an analysis of the mix of offense and defense in the Clausewitzian construct of operations. From this examination of theory and doctrine, two case studies will be analyzed to determine the elements of transition pertinent to each. Finally, conclusions concerning operational transition will be drawn from a comparison of case study analysis with theoretical propositions.

## A Theoretical Basis for Operational Transition

In his monumental work, On War, Clausewitz sets the stage for the requirement of an operational transition. In Book 6 of On War, he states that the defensive form of war has the concept of "parrying the blow" with the characteristic feature being "awaiting the blow".[2] Defensive operations, therefore, consist of waiting for the enemy attack and then fending off the enemy thrusts. He goes on to say that a defensive campaign is fought with

both offensive and defensive actions. In his words, defensive operations are not "a simple shield, but a shield made up of well-directed blows".[3] This construct provides a purpose for limited offensive actions in the defense, however, the offense may have a broader function.

Clausewitz states that "defense has a passive purpose: preservation; and the attack a positive one: conquest."[4] Thus, the defense aims to hold on to what the defender presently owns while absorbing the enemy attack and attriting enemy resources. But, this is a negative aim, for often the attacker will gain some ground and, at the operational level, the attacker may take a measure of ground that is unacceptable to strategic authorities. The defender is obliged, therefore, to undertake offensive actions to regain this lost ground if the defender is to preserve his territory.

Clausewitz goes on to state the relationship between the offensive and defensive actions of the defense.

> "If defense is the stronger form of war, yet has the negative object, it follows that it should be used only so long as weakness compels, and be abandoned as soon as we are strong enough to pursue the positive object. When one has used defensive measures successfully, a more favorable balance of strength is usually created; thus, the natural course in war is to begin defensively and end by attacking...a war in which victories were used only defensively without the intention of counterattacking would be absurd as a battle in which the principle of absolute defense - passivity, that is - were to dictate every action."[5]

Clausewitz develops a plan of defense that includes more that just the reactions of offense and defense at a lower level; he notes that at some point the defender must take up the offense and pursue the positive aim of conquest. He suggests that the defender starts from a position of weakness in some form relative to the enemy and thus, seeks to reduce this disparity through a rugged defense. The defender's actions of both attacking and holding have a cumulative effect upon the enemy that results in the balance of combat power shifting to the defender. Once the defender is relatively stronger, the offensive form of war, the attack, must be used to pursue the positive aim. The defender can no longer accrue advantages by waiting on the defense and must end up by attacking or risk defeat. Thus, the pursuit of pure defense with no plan for an ultimate attack has limited value.

This implies a distinction between the reactive offensive actions of the defense at one level and the offensive actions undertaken after the defense has succeeded. Clausewitz makes this implication clearer through his statement that "defense is -- simply the more effective form of war; a means

to win a victory that enables one to take the offensive after superiority is gained."[6] Therefore, one may say that, in the initial defense, the reactive offensive elements are tactical and, once superior combat power is gained, the offensive actions of the defense are operational. Through this transition the defender becomes the attacker at the operational level. Operational offensive action in the defense is, therefore, markedly different from that of pure defense.

Clausewitz makes a distinction between reactive tactical offensive actions in the defense and those operational offensive actions of the strategic defender:

> "Even when the point of war is to maintain the status quo, the fact remains that merely parrying a blow goes against the essential nature of war, which certainly does not consist merely of enduring. Once the defender has gained an important advantage, defense as such has done its work. While he is enjoying this advantage, he must strike back...while the iron is hot...*this transition to the counterattack must be accepted as a tendency inherent in the defense -indeed, as one of its essential features.* Wherever a victory achieved by the defensive form...is allowed to wither away unused, a serious mistake is made. *A sudden powerful transition to the offensive -the 'flashing sword of vengeance'- is the greatest moment for the defender.* If it is not in the commander's mind form the start, or rather if it is not an integral part of his idea of defense, he will never be persuaded of the superiority of the defensive form...7(italics added)

Clausewitz, thus, makes clear that the operational offensive resulting from successful defense is the more powerful. Once stronger, the defender must attack. This change, from the successful defense to the initiative of the attack is operational transition. Operational transition must be planned from the beginning of the defense in order to allow focus on a positive aim. The positive aim is essential to warfighting or, as Clausewitz has said, the entire effort of war is absurd. The principal duty of every competent and successful commander on the operational defense is a powerful transition to the offense to gain a positive end.

## Current Doctrine of Operational Transition

Current US Army operational doctrine as stated in FM 100-5 Operations states that "a defensive strategy designed to deny success will require offensive components to preclude defeat."[8] AirLand Battle doctrine, like Clausewitzian theory, suggests that there must be an offensive operation in a defensive campaign to pursue a positive aim. In order to transition to the offensive, the defense must deny success to the enemy. US Army doctrine states that while "reactive measures may halt the enemy, early counterattacks improve the chances for success [in the defense]. [But] defense can greatly

damage the enemy only when early counterstrokes accompany the reactive phase of the battle."[9] Once again, there is a distinction between tactical level offensive counterattacks and operational level offensive counterstrokes.

Finally, doctrine clearly states that successful defense must conclude with a successful offensive.

> "To win, [commanders] must preserve their own force through successful defense, weaken the enemy, and then take the initiative. In some cases, commanders can secure theater objectives through the tactical offensive actions of a defensive campaign. More commonly, success will require following a successful operational defense with an offensive campaign."[10]

Doctrine and theory are, therefore, in agreement that the defender must transition to the offense to pursue a positive aim. Both draw a distinction between reactive offensive actions of successful defense, that is counterattacks, and the proactive offensive actions of the attack that grows from the defense, that is the counterstroke or counteroffensive. Since there clearly seems to be a difference at the operational level between these two types of offensive action, one reactive and one proactive, the issue arises concerning the preconditions necessary to enable the commander to pursue the positive aim. Currently, AirLand Battle doctrine addresses these prerequisites in only a superficial way.

## THESIS

This study will test the hypothesis that, at the operational level, there are essential elements of operational transition that the commander may use as a guide to determine the actions that must be taken ultimately to pursue a positive aim, the counteroffensive. To determine these elements two historical case studies will be analyzed.

### Definitions

Three definitions are critical to understanding the elements of operational transition which will be examined. They are:

> Operational Transition: The actions taken by an operational commander to set the conditions for the change in operations from the successful defense to the initiation of the counteroffensive. These actions center on the movement of large formations over vast distances, defensive operations, force generation of operational reserves, sustainment operations and, finally, counteroffensive operations.
>
> Operational Design: Four theoretical concepts central to the planning and execution of campaigns and major operations are center of gravity, culminating point, decisive points, and lines of operations/support. Campaign design links strategy, operational art

and tactics by providing analytical tools for the planner to use in determining the best use of combat power in relation to the factors of METT-T and the information provided by operational intelligence preparation of the battlefield.

Operational Combat Power: Includes the doctrinal elements of combat power: leadership, maneuver, firepower and protection as group one and adds intelligence, deception, force generation, and sustainment as elements of a second group that affects group one. These two groups form the essential elements of combat power and critical functions, plans and capabilities that impact the doctrinal elements of combat power at the operational level.

## Methodology

This monograph uses the case study approach to determine the essential elements of operational transition necessary to conduct campaigns. The criteria for study centers on three questions concerning the essentials of operational art taken from FM 100-5 Operations[11]:

1. WHAT MILITARY CONDITION MUST BE PRODUCED IN THE THEATER OF WAR OR OPERATIONS TO ACHIEVE THE STRATEGIC GOAL?
   (the linkage of strategic ends and military means)

2. WHAT SEQUENCE OF ACTIONS IS MOST LIKELY TO PRODUCE THAT CONDITION?
   (the operational design that results from balancing ends, ways, means and risk)

3. HOW SHOULD THE RESOURCES OF THE FORCE BE APPLIED TO ACCOMPLISH THAT SEQUENCE OF ACTIONS?
   (the operational level combat power elements that enable operational design)

The campaigns chosen for the study are Manstein's counteroffensive against the Soviets in February 1943, studied under the rubric of "Kharkov" and the Israeli counteroffensive against the Egyptians in the 1973 Arab-Israeli War, studied under the rubric of "Sinai". These campaigns were chosen because they depict successful operational transitions by surprised, outnumbered and mal positioned forces. The Kharkov campaign may be described as a major operation that temporarily achieved operational success and thereby stabilized the German strategic defense. The Sinai campaign represents true operational transition in that Israel shifted from a purely defensive position, fighting for her perceived survival, to a strategic offensive that resulted in the defeat of her attacker. Operational commanders may face such a situation in NATO or a short notice contingency operation.

## II. CASE STUDIES

### Case Study 1: Kharkov

One of the most successful operational transitions in history was conducted by Field-Marshal Erich von Manstein and Army Group South (AG) during the period November 1942 to March 1943. On a front of vast scale, with few outside resources and facing a numerically superior Soviet force, Manstein inflicted tremendous losses on his enemy and regained hundreds of miles of territory. He clearly understood the operational art and its proper execution. Manstein's incredible feat overcame a flawed German strategy that had its roots in the summer of 1942.

Hitler's 1942 summer offensive against Stalingrad and the oil rich Caucasus region of the southern Soviet Union had ground to a halt by the autumn of 1942. German ground forces were weary from months of war and dangerously overextended across southern Russia.[12] Though in poor condition themselves, the Soviets seized this opportunity to strike a strategic blow and in their Winter Offensive of '42-43 destroyed the German 6th Army and captured Stalingrad. The loss of Stalingrad and the German 6th Army was a grave blow to Hitler's offensive plans, but it was not strategically decisive. Nonetheless, the Soviets were uplifted by their first major victory and believed the Germans were crumbling. Based on this erroneous analysis, they launched further offensives to destroy the German southern wing in an attempt to regain the strategic initiative permanently. (See Map 1/2, pages 61, 62, and 63)

On 20 November 1942, Manstein took command of AG Don with the mission of freeing the German 6th Army from encirclement at Stalingrad and solidifying the front around Rostov. This mission included the protection of the vulnerable supply lines to AG A which was attacking in the Caucasus. Manstein faced two immediate problems: Soviet superiority of 8 to 1 and poor geographic position.[13] Consequently, with the battered forces at his disposal, he was unable to save the German 6th Army nor, with the renewed Soviet offensives, could he keep the lines of communications to AG A open. Manstein felt his only recourse was to shorten the defensive lines of AG Don and to generate sufficient combat power to halt the Soviet thrusts. To

assemble the mobile Panzer forces required for the counteroffensive, he proposed that the eastern wing of AG A and AG Don be drawn in and the operational reserves thus generated be used to smash the Soviet thrusts. However, Hitler would not allow any withdrawal. Consequently, AG Don was placed in an untenable position. The front was in such a state of disarray following the Soviet destruction of the Italian, Hungarian and Rumanian armies (fighting with the Germans on the southern wing) that Manstein was unable to accomplish his missions without additional forces. (See Map 3, page 64)

On 15 January 1943, the Soviets took advantage of the desperate German position to launch the Voronezh Front (supported by the Southwestern Front) through the 270 mile gap left by the retreating German allied armies.[14] By the end of January the Soviets had taken Kursk, crossed the Donets River and were ready to take Kharkov. Manstein's strident demands for freedom of action and the obvious strength of the Soviet drive compelled Hitler to authorize reluctantly the withdrawal of the German 1st Panzer Army from the Caucasus and position it to the rear of AG Don so that the Soviet thrusts along the Don River could be stopped. Everything depended on Manstein's ability to shift forces, constantly back and forth against the Soviet thrusts on Rostov. Manstein coolly handled the situation through sound judgement, shrewd risk assessment and operational adroitness. Using interior lines, strongpoints at decisive points, and mobile counterattack forces he slowed the Soviet advance and employed his 4th Panzer Army to save the situation at Rostov. But his success was temporary as the Soviet thrusts were too strong for him to hold indefinitely.

Although the German 1st Panzer Army was successfully withdrawn, a "super-Stalingrad" loomed before Manstein's forces projecting out from the Dneiper River between the Donets River and the Sea of Azov. The critical junctions of the road and rail network along with the major river crossing points in the area of operations were Slavyansk, Rostov, Dnepropetrovsk, and Zaporozhye. The Soviets were one half the distance to these decisive points as were the main German formations,[15] and they decided to use their numerical superiority and favorable geographic position to strike to the Sea of Azov in order to shatter AG B and cut off AG Don and AG A. (See Map 4, page 65)

Renewed Soviet attacks coupled with Hitler's obstinacy, almost caused the German operational and tactical command and control system to fail. AG B, AG Don and AG A each had divergent missions and thus, their operational plans did not complement each other. For his part, Manstein asked permission to conduct an operationally mobile defense so he could maneuver and give ground in order to grind down the Soviet offensive. Hitler refused any giving up of terrain and further complicated the issue by personally directing the combat of several critical Panzer divisions.[16]

Hitler's intervention into the operational command and control of the fluid situation in the German southern wing culminated with the loss of Kharkov.[17] The southern front was in a shambles. Faced with a potential debacle, Hitler ordered the consolidation of AG Don and AG B into AG South and placed Manstein in command.[18] Now with operational control, Manstein moved his 1st Panzer Army and 4th Panzer Army to the north bank of the Donets River there to be a strike force that could defeat any continued Soviet offensive designed to inflict further critical losses such as had befallen the Germans at Kharkov.

Manstein now prepared an operational defense that mixed tactical defense at decisive points with tactical offensive counterattacks to bleed off the steam of the Soviet attack. After stabilizing the front, the opportunity for operational transition to the counterstroke could be created. Manstein, therefore, renewed his call for a defensive line along the Mius River, concentration of operational reserves and prioritization of supplies to AG South. Hitler resisted vehemently, but after two tense conferences, on 6 Feb and 16 Feb, he reluctantly gave in to Manstein's plan.[19] (See Map 5, page 66)

Manstein knew the Soviet success would result in their over extension and encouraged this by judiciously relinquishing Rostov and the ground between the Don and the Donets River on a line from the Mius River to the west of Kharkov. Jubilant at their perceived success, the Soviets pushed on relentlessly and recklessly, thus presenting Manstein with the chance for a smashing blow. Soon the Soviet forces were exhausted[20] and Manstein launched the counterstroke. (See Map 6, page 67)

Manstein began his counteroffensive by sequencing battles to stabilize the front, then he tackled each Soviet thrust in turn. On 20 Feb, SS Panzer Corps drove forward from Krasnograd and smashed into the rear of the Soviet 6th Army while 48th Panzer Corps drove north into the their flank. This

concentric attack stunned the Soviets. 1st Panzer Army thinned its extended lines, conducting a risky economy of force, to muster 40th Panzer Corps to strike the Soviet tank formation, Popov Mobile Group, and drive north. German intelligence provided armor formations with exact information on the size, location, and direction of movement of each Soviet thrust.[21] Thus, German armor kept driving, avoiding decisive engagement, while German infantry held decisive points. In this manner, the Germans were able to be strong at every engagement, stringing together successful tactical battles into operational victory.

In quick succession, stunned Soviet tactical leaders cried for help. Vatutin would not listen to subordinate situation reports and would tolerate no slowing of the attack.[22] The Soviet's offensive combat power was so dissipated it withered.[23] Soviet operational commanders and the Soviet High Command (STAVKA) continued to commit additional formations to an already failed effort.[24] By 23 Feb Hausser's SS Panzer Corps and 48th Panzer Corps linked up at Pavlograd and the Soviet 6th Army was ruined. By 25 Feb, after a series of desperate signals between the Southwest Front commander, Vatutin, and Popov, (commander of the 6th Army strike force, Popov Mobile Group), Vatutin realized he was defeated and called a halt. But, he was past his culminating point and he could not defend his gains. (See Map 7, page 68)

STAVKA would not give up and directed the Soviet 69th Army and 3rd Tank Army south to help Vatutin's attack. They slowly moved south, the infantry with little armor support, short of supplies and with untrained conscript peasants as soldiers.[25] In addition to these miseries, Soviet formations, out of fuel and with no mutual support, became hopelessly isolated. The euphoric expansion of the offensive had dissipated the Soviet Schwerpunkt. The German counterstroke harkened to the Blitzkreig days as the Stuka dive bombers discovered the Soviet 3rd Tank Army assembly areas and smashed them. The Germans turned the tables on their enemy encircling small Soviet forces time after time and overwhelming them. (See Map 8, page 69)

By 1 March the Soviets could not continue and went on the defensive across the front. By 2 March, 4th Panzer Army on the left wing and 1st Panzer Army on the right destroyed their enemy between the Dneiper and the Donets. AG South had regained the initiative and now turned to deliver the decisive blow on the Soviet Voronezh Front. Manstein knew the Soviets would commit everything to hold Kharkov. The destruction of Soviet 6th Army and Popov

Mobile Group created a 120 mile gap in the Soviet front line.[26] But, every Soviet attempt to plug the gap was piecemeal, uncoordinated, and out of step with the tempo of the battle. By 14 March, Kharkov fell to the Germans after bitter fighting. By the 19th, Belgorod was again in German hands. Except for the isolated 17th Army on the Taman peninsula in the Caucasus, Manstein had practically regained the same positions the Germans had held at the beginning of 1942 and in the process had destroyed 52 Soviet divisions including 25 precious armored brigades.[27]

## Analysis of Kharkov

To review the criteria used in the analysis of Manstein's actions during the Kharkov counteroffensive, we return to the three questions posed by FM 100-5 Operations. First, we must understand the relationship between strategic ends, the means available to achieve those ends, and operational ways to use the given resources and manage the concomitant risks. This portion of the analysis is best studied by determining the link between the stated strategic goals as presented by Hitler and the military means available to Manstein. Second, we must determine the sequence of actions the operational commander took to produce a satisfactory military end state. This portion of the analysis is best accomplished by studying Manstein's operational design as it related to the theoretical ideas of center of gravity, culminating point, decisive points and lines of operations/support. Third, we must analyze the resources available and how they were used to achieve success. This is best done by examining operational level combat power. These three questions form the framework for investigating the operational transition from the defense to the offense.

## Ends, Ways, Means and Risk

Manstein had to overcome poor strategic guidance to avert disaster. The German General Staff traditionally translated strategic ends into operational objectives. The operational commander then created the operational design or ways to accomplish these ends by balancing means and risks. Hitler abrogated this process through his unrealistic strategic goals and the resultant "stand fast" policy. Hitler failed to understand the changing reality of his enemy, the Soviets, who were maturing in their warfighting skills while their industrial might produced quality equipment in quantities the Germans could not match. Hitler's focus on a strategy of annihilation based on a decisive battle was beyond the means of Germany. As an outgrowth of this

obstinate pursuit of the offensive, Hitler would not give up any gains in the unrealistic hope that he could rebuild his forces for the climactic attack. Hitler viewed the defensive posture of the Eastern front as only a temporary measure much like the situation in the winter of 1941-1942. Consequently, Hitler's "stand fast" directives would not allow any commander to relinquish terrain voluntarily to gain operational advantages. The strategy demanded units fight to the death against numerically superior forces in a battle of attrition. Additionally, Hitler constantly meddled in operational affairs to the point that he routinely directed the moves of operationally critical formations in pointless tactical counterattacks. The lack of strategic flexibility and foresight made the effort to balance the means available with the inherent risks almost impossible. The strategic ends Hitler defined for Manstein were all but unattainable. While Manstein did not believe an operational transition to again take the strategic offensive was possible, he felt that he must conduct a counteroffensive to achieve Hitler's aims of retaining terrain and preserving the force. Consequently, Manstein steadfastly provided advice and alternatives eventually swaying strategic authorities to concede to his plan. Recognizing that a broad transition to the offensive was not possible if the end was to defeat the Soviet Union, he tailored his limited means to meet the immediate strategic ends by superior operational design in a way that assumed great risk and required boldness.

## Operational Design

The manner in which a commander uses his force is the operational design of the campaign. As has been noted, the transition to the offensive must be the ultimate intent of a defensive campaign if decisive positive results are to be attained. In order for this powerful transition to occur, the analysis of the key elements of operational design must produce a campaign plan which has a transition from the defensive to the offensive as its focus. Thus, operational design is the linkage between the ends and the means that produce the decisive transition. Central to the determination of the campaign plan is an analysis of the theoretical concepts of center of gravity, culminating point, decisive points and lines of operation/support.

The most critical focus of operational design is the conceptual use of the center of gravity. Manstein's operational design, which revolved around the concept of center of gravity, was instrumental to his successful operational transition. For example, his attack on the Soviet 3rd Tank Army

in the north and Popov Mobile Group in the south focused on the Soviet center of gravity*. Popov Mobile Group was the most dangerous Soviet force since its line of operations took advantage of a gap in the German defensive line and had the shortest distance to travel to its objective on the Sea of Azov. Consequently, its destruction provided victory. Manstein's own center of gravity was 1st Panzer Army and 4th Panzer Army and within these the powerful formations of SS Panzer Corps, 48th Panzer Corps and 40th Panzer Corp. These protected through location and giving them logistics priority. Thus, Manstein attacked his enemy's center of gravity while protecting his own. This concentration on the opposing centers of gravity provided focus for his entire operational design.

A second critical factor in Manstein's success was his ability to extend his defensive culminating point. He did this through the delay of offensive action until he was able to generate and sustain forces, the basic reason behind shortening the lines of defensive operations. Manstein's stubborn defensive elements combined with his prudent counterattacks at the tactical level wore down the vulnerable Soviet attacks. Manstein fell back on his own lines of communications, shortening them and gaining strength. Watching the tide of battle closely, he calculated enemy deterioration and his own sustainment to determine the optimum moment to take the initiative. He was able to create operational reserves through force generation for the counterstroke thereby delaying his own culminating point. Additionally, he prioritized sustainment resources to his counteroffensive forces to insure that when he did transition to the offense he did not pass his offensive culminating point. As a result, Manstein protected his forces and slowed his own culmination while at the same time hastening the culmination of the Soviet forces.

The next facet of operational design which aided Manstein's transition was the correct selection of decisive points. The vastness of the theater of operations made the determination of decisive points a crucial issue. Manstein's operational design of the defense recognized the decisive points of Rostov, Stalino, the Mius River, Slavyanks and Grishino as critical to protecting his forces in the south. If Manstein lost these points, his southern elements would be cut off. Kransnograd, Dnepropetroysk and

* Throughout this paper the term "center of gravity" will be used to designate the mass of the enemy ground maneuver force.

Zaporozhye formed the decisive points needed to protect his lines of supply along the Dneiper River and to protect the assembly areas of his counteroffensive forces. Rugged German defense of these decisive points with infantry formations provided the Panzer forces the necessary pivot points for maneuver. By successfully defending those decisive points, Manstein was able to chose the appropriate time to transition to the counteroffensive.

The final element of Manstein's operational design was his use of lines of operation and support. German lines of operation ran perpendicular to the Soviet lines of attack. Since the Soviets did not adequately protect their flanks, due to an incorrect intelligence assessment, the Germans were able to take advantage of exterior lines of operation to conduct concentric attacks. Critical to these lines of operations was retention of the identified decisive points discussed above. For example, in the early defensive operations, German lines of support to Rostov paralleled their line of operations. Manstein had great difficulty initially holding open the lines of communications to AG A in the Caucasus due to the Soviet attacks against decisive points. However, using interior lines and a central position, Manstein moved supplies and ammunition over the rail network to stage his armor forces. The armored divisions of 1st Panzer Army struck the flanks of the Soviet attack on Rostov by using the strongpoints provided by AD Hollidt[28] as maneuver pivot points. Stripping the 6th and 11th Panzer divisions from AD Hollidt, he rapidly concentrated firepower to stop four Soviet corps attacking his lines of communications that paralleled the Sea of Azov. Through proper analysis and defense of decisive points with infantry strongpoints and the agility to mass mobile firepower at these and other decisive points, Manstein was able to protect his lines of support by operating on interior lines of operation.

Another example of Manstein's understanding of lines of operation was the direction and strength of his initial counteroffensive. He staged his counteroffensive forces, SS Panzer Corps at Krasnograd and 48th Panzer Corps and 57th Panzer Corps north of Zaporozhye, to gain a central position on the nose of the Soviet line of operation. Using the decisive points of Krasnograd and Zaporozhye as strongpoints he maneuvered the concentrated firepower of these formations on exterior lines of operations in a concentric attack to destroy the Soviet 6th Army and 1st Guards Tank Army. Though a divergent attack on interior lines would have been the easier to support,

this cautious approach would not have produced decisive results. Manstein's bolder use of exterior lines of operation resulted in operational victory.

## Operational Level Combat Power

This paper will examine Manstein's use of the elements of operational level combat power in his Kharkov campaign. Mature, capable, and credible combat power is the next critical factor in successful operational transition. Tactical considerations of combat power center on four areas: leadership, maneuver, firepower and protection. These same four points are just as important at the operational level because they are the means to the attainment of operational objectives. Additionally, at the operational level intelligence functions, deception efforts, generation of operational reserves and sustainment capability materially impact combat power.

Leadership is perhaps the most important element of operational combat power. In the Kharkov campaign, Manstein's leadership and vision were the keys to success. His ability to see the long term view permitted him to plan ahead and set the conditions for the transition to the counteroffensive.[29] Manstein also understood the mind of the enemy. His assessments of Soviet strengths and accurate estimate of Soviet intentions were crucial to the design of the appropriate strategy and operational plan that created the conditions for the counterstroke. He understood that though the Soviets were tenacious on the defensive, they were liable to panic during the uncertainty attendant to deep operations. This enabled him to take advantage of Soviet mistakes and weaknesses such as Popov's poorly supported and diffused deep strike and 6th Army's poorly conducted mobile operation.

On the other hand, Manstein also understood the capabilities of his German leaders and formations. He relied on the German philosophy of auftragstaktik and did not restrict his operational and tactical commanders in the moves of their armored formations. Instead, he gave them long range tasks.[30] German soldiers and German leadership were superior to that of their enemy, and Manstein's leadership created an operational design that played on enemy weakness and accentuated German strengths. Finally, Manstein's vision never exceeded his knowledge of his Army Group's capabilities as he turned a rout into a victory, a classic case of successful operational transition.

A second key element of combat power that gave Manstein a distinct advantage was the German superiority over their enemy in the maneuver prowess of armored formations. Throughout the battles of November 42 to March 43, German ability to synchronize maneuver to support static strongpoints spelled success. Of particular note were the Chir River battles of 48th Panzer Corps. Using mobility, agility and flexibility, the 48th Panzer Corps, and notably 17th Panzer Div, held open the lines of communications of AG A by defeating the attacks of the Soviet 5th Guards Tank Army. Another example of maneuver was the swiftness and impact of SS Panzer Corps and the Grossdeutschland Div in their defeat of the 6th Army, 1st Guards Tank Army and the 3rd Tank Army after the operational transition. Flexibility of mind and agility permitted German formations to gain maneuver success far out of proportion to their size and power.

Closely tied with maneuver is the next element of operational combat power, firepower. German firepower was essential to operational transition because it made the defense work and provided the strength for the counteroffensive. German operational design continually placed superior means at the decisive points. 11th Panzer Division's attack against the Soviet Guards Armored Corps illustrates the use of mobile firepower and the firepower of the tactical defense. As the Soviet Armored Corps attacked, they left their flanks poorly protected. The Germans allowed their enemy to penetrate to hit the strongpoint of 6th Panzer Div. Simultaneously, the 11th Panzer Div struck the extended Soviet formation from the rear. Using tanks, aircraft, and infantry in the defense, the Germans massed their firepower to destroy the Soviet Guards Armored Corps.[31] During the counteroffensive, Manstein massed the firepower of all the armor of AD Hollidt to create a powerful force under the control of 4th Panzer Army. Additionally, 1st Panzer Army concentrated all its armor into 40th Panzer Corps. Coupled with the powerful armor of SS Panzer Corps the Germans had superiority in mobile firepower.

Central to Manstein's success in the vast spaces of the Soviet front was his use of airpower. The responsiveness and lethality of German air fleets provided mobile firepower to support the Panzer formations when the artillery could not keep up with the speed and depth of the counteroffensive. With his concentrated air power ranging far ahead and in conjunction with massed artillery, German Panzers overwhelmed the dispersed Soviet formations.

The final element of combat power, protection, also played a role in Manstein's success. The critical issue was that Manstein stabilized his front to protect his counterstroke forces. He fortified the appropriate decisive points with infantry and artillery. Then he used strongpoints as pivots for mobile armor counterattacks. Armored formations did not have to worry about their flanks or shoulders since infantry, such as Corps Raus and 1st SS Panzer Div in the north and III Panzer Corps and 30th Army Corps in the south, protected the decisive points. Because of their better maneuver agility and their ability to protect their forces at the decisive points, German tactical leaders had freedom to act and to develop Schwerpunkts with their armor formations. Furthermore, Manstein was able to conserve the strength of his exhausted infantry formations. German infantry could hold out in relative comfort when compared to their Soviet counterparts who were without the benefit of the warmth of the villages that formed the decisive points.

Intelligence was a key function that contributed to German success. German intelligence concerning the moves of the Soviet armor formations was near perfect. Monitoring Soviet radio traffic allowed the Germans to halt the Soviet drives by massing at the critical time and place while taking economy of force measures in other areas. Later, this same source of information provided critical information as to the location of Soviet armor brigades. Once they fixed the Soviet brigades, the Germans massed stronger combat power against them and destroyed them piecemeal.

A major German strength was the use of deception as a key combat power multiplier that allowed the operational plan to work. Their deception efforts sought to portray weakness to the Soviets along the chosen Soviet line of operations while simultaneously protecting the German counteroffensive forces. Manstein knew that the Soviets could be deluded by reinforcing and manipulating their perceptions and expectations of success. The Soviets did not believe the Germans could ever set up a defensive line on the Mius River.[32] Likewise, every piece of information concerning German armor concentrations was interpreted by the Soviets as merely armor covering forces for a general withdrawal to the Dneiper River.[33] Additionally, the abandonment of Kharkov by 6S Panzer Corps, which was ordered by Hitler to hold at all costs, convinced the Soviets that the Germans were in full retreat.[34] Finally, Manstein's prioritization of sustainment resources to

his counteroffensive forces of 1st and 4th Panzer Armies made his other forces weaker. These weaker forces fought desperate actions against the Soviets, giving ground reluctantly, but falling back nonetheless. The cumulative effect of these actions reinforced the Soviet assessment of German weakness and their confidence in the offensive plan upon which they had embarked.

The final point of consideration concerning German strengths in the use of their combat power is the impact of force generation of reserves and sustainment operations. The effort to generate and sustain combat power is the linchpin of the campaign plan's operational transition. A lack of credible capabilities in this area will leave the operational commander with no force that he may use for decisive results when the enemy becomes appropriately weakened. The key to German success in the defense and the operational transition to the offense was the generation of armor reserves and their sustainment during the operational defense. Manstein's ability to anticipate and improvise to generate forces was critical to his operational transition. He had determined he would need additional forces to win the operational mobile defense and to transition to the offense. He worked diligently for the release of forces from AG A and AG Central to fulfill his operational design, but he failed. Though Hitler released the powerful SS Panzer Corps to Manstein to use in shoring up the defense and retaking Kharkov, Manstein kept the force out of the fight so that he might use them in a decisive manner. Likewise, his ruthless stripping of armor and artillery from his forward defending forces and the concentration of this firepower assets generated the critical reserves for the operational transition. Once these forces were staged, the bulk of German supplies were sent to these formations. Manstein, therefore, prioritized firepower and sustainment to his counterstroke forces at the expense of his forward defending elements.

A review of the preceding analysis gives focus to the essential questions of the investigation. First, Manstein understood what military conditions had to be produced in the southern wing to achieve Hitler's immediate strategic goals. Though Hitler and the German General staff were out of touch with the reality of the Eastern Front, Manstein persevered and finally persuaded his strategic authorities to harmonize the ends, ways, means and risk. Second,

Manstein's operational design correctly assessed the four essential theoretical elements of center of gravity, culminating point, decisive points and lines of operation/support. Manstein's operational design converted a large scale withdrawal into an envelopment that crushed 3 Soviet armies. Finally, German combat power resources were far superior to the Soviets in every respect but numbers. Central to Manstein's operational level combat power were the elements of leadership and maneuver coupled with his ability to generate forces as operational reserves. Through these elements of combat power and these actions, he properly applied his resources to accomplish the required sequence of actions. Manstein's operational design balanced ends, means and risk in such a way that he used operational level combat power to accomplish the strategic ends through a successful operational transition to a counteroffensive.

## Case Study 2: Sinai

A second excellent example of an operational transition is the Israeli counteroffensive in the Sinai during the 1973 Arab-Israeli War. In contrast to the Kharkov counterstroke, the Sinai campaign was more expansive since the Israelis were able to assume the strategic offensive to accomplish their ends. But, to understand the problems the Israelis faced in implementing their operational plans, we must take a closer look at the strategic and operational situation facing the antagonists.

As a result of the 1967 Arab-Israeli War both the Arabs and the Israelis were in difficult positions. The Arabs faced the seemingly invulnerable Israeli Defense Forces (IDF). The Arabs knew that their armed forces were no match for the IDF in ground maneuver battles or traditional air combat; they knew too that success lay in well-coordinated surprise attacks with overwhelming forces. In this manner, the IDF would be forced to contend with massive attacks on multiple fronts with only a small standing army. The Arab edge in warfighting was their ability to fight a defensive battle of attrition. Consequently, the Arabs had to achieve their operational objectives rapidly and then transition to the defense to wear down the Israelis. The Arab intent, therefore, was to upset Israeli security doctrine

and negatively influence Israeli national morale through a war causing heavy Israeli casualties. Arab military goals to achieve this end were;

For Egypt:
1. Cross the Suez Canal with a massive saturation of infantry antitank systems under an extensive antiaircraft missile umbrella.
2. Wear down Israeli counterattacks against the bridgeheads, cause heavy casualties to the IDF, and follow up with the deployment of operational reserves of armor and additional mobile antiaircraft systems to the east bank of the Suez Canal.
3. Mount a systematic offensive to capture the Mitla and Gidi passes thirty miles east of the canal.
4. Await international pressure that would stop the war but leave Egypt in possession of her gains.

For Syria:
1. Conduct a massive armored attack to rapidly capture the Golan Heights.
2. Assume the defense to hold the River Jordan and the Sea of Galilee.
3. Wear down Israeli forces and, if given the opportunity, attack to capture eastern Galilee.

For their part, Israel had been able to reduce her vulnerability to Arab attack by using the captured Sinai desert as a fortified buffer and barricading the Golan Heights against Syrian observation and attack. Israeli war plans were intended to prevent the initial Arab attack from gaining terrain that would be useful for political bargaining. If Israel were attacked, the IDF was directed to destroy the Arab forces and capture Arab land for use in cease fire negotiations. With a small standing army and the preponderance of national combat power in the reserves, Israel depended on early warning of any Arab attack, early mobilization of reserves and rapid deployment to the front under a protective air umbrella. However, deterrence of war was of foremost importance to Israeli security due to their unfavorable political and economic situation. As a result of the 1967 war, many nations saw Israel as the aggressor. Military measures that Israel had used in the past, such as preemptive strikes, would no longer be acceptable to the rest of the world. Though the results of the 1967 war had reduced the length of Israel's borders, the defense of these borders was more difficult since Israel had to avoid any appearance of being the aggressor.

Realizing that Arab concentration and initial advances would provoke a massive Israeli response, the Arabs sought to make their attack as powerful as possible. As a result, the Arabs increased the potential of their large standing armies through a successful long range deception plan. A series of full dress rehearsals and extensive maneuvers were conducted from December 1972 until June 1973. Israel expended precious economic and military

resources in reaction to these demonstrations and eventually a political decision was made to reduce the level of vigilance and response. In this way, the Arabs set the stage for strategic and operational surprise.

That surprise came on 6 October 1973, when the Arabs launched a powerful and coordinated Arab attack. In the Sinai, the IDF added to the initial confusion caused by the Egyptian attack by taking poor tactical measures to help the isolated defensive positions on the Suez Canal. Coupled with the ill-advised efforts to save the doomed strongpoints on the canal, the IDF launched a series of uncoordinated counterattacks against the Egyptian bridgeheads. (See Map 9, page 64) As a result, Egypt enjoyed tremendous initial success and a superiority of force. Within 24 hours of the initial attack, some 100,000 Egyptian soldiers, 1,000 tanks and 13,500 other vehicles crossed the Suez Canal.[35] The Egyptian air defense umbrella controlled the airspace over the battle area and destroyed 27 IDF aircraft.[36]

The surprise attack and the power of the Egyptian forces across the canal left the IDF in chaos in the Sinai, but the situation in the Golan Heights, where the IDF faced the Syrians, was even more desperate. The events on the Syrian front precipitated a series of Egyptian mistakes in the Sinai. Egyptian political and military failures, linked to Syrian incompetence, created the opportunity for the successful Israeli operational transition in the Sinai. Therefore, to explain the Israeli counteroffensive in the Sinai, we must first examine the events on the Golan Heights.

The Syrians opened their portion of the coordinated offensive with a broad front attack consisting of three divisions and many independent brigades, a force with some 800 tanks.[37] (See Map 11, page 76) They quickly gained tactical breakthroughs of the IDF lines and launched their armored divisions through the gaps to operational depth. The surprised Israelis opposed this onslaught with only 180 tanks. Though spread out, IDF forces reacted well by using interior lines of operations. However, they were sorely pressed and their Golan headquarters was quickly surrounded. By 8 Oct the Syrians renewed the attack north of Kuneitra and breached the defense with an armored division opening the road to the Mediterranean. These renewed Syrian thrusts presented the most serious threat ever to the heartland of Israel.

The Israeli government decided to take advantage of its central position and strategic interior lines to shift its strategic center of gravity to defeat the Syrians attacks that threatened central Israel. The strategic position of Israel favored this action since it was 100 miles from the Suez

Canal to the Israeli frontiers, but there was no such depth on the Golan Heights. Additionally, as a result of the poorly executed counterattacks of 8-9 October, the IDF Southern Command was in shock over the tragic losses of more than 260 tanks in two days.[38] Consequently, the IDF accepted risk in Sinai until they were prepared mentally and materially to deal with the Egyptian operational design. Accordingly, the IDF took economy of force measures against the Egyptians and threw the full weight of their armed forces against the Syrians.

The IDF faced a strong Syrian force that had gained success due in large measure to the ease of attacking the extended Israeli front in the Golan. Unlike the Egyptians, the Syrians had no Suez canal to overcome and, thus, they could concentrate and achieve initial success much more easily. Hence, this initial success was more a result of better strategic position than any improved tactical or operational skills. The IDF, therefore, counterattacked and gained a decisive defensive victory by first absorbing the Syrian attack with their regular forces and second setting the stage for the counteroffensive with their mobilized reserve forces. Marshalling for the counterstroke, the IDF rapidly launched the counteroffensive, destroying 1,100 Syrian and Arab tanks and driving to within 22 miles of Damascus.[39] (See Map 11/12, page 76-77) A stunned Syria cried for a resumption of Egyptian pressure in Sinai to again present Israel with a two front war. However, it was too late, with Syria virtually defeated, Israel was already preparing for its operational transition to the counteroffensive in Sinai.

Though Egyptian operational commanders were aware of Israeli plans to launch a counteroffensive, Egyptian political leaders disagreed, believing they could still manage to disrupt the Israeli forces in Sinai and take the pressure off Syria. Bending under Syrian pressure, Anwar el Sadat, President of Egypt, and Gen. Ahmed Ali Ismail, Minister of Defense, pressured Gen Saad el Shazly, Chief of Staff, Egyptian Armed Forces, for an immediate attack on the Sinai passes. Shazly was adamant that this was contrary to the operational plan.[40] He knew that an attack would face the Israeli Air Force, since the SAM umbrella was not yet ready to move forward, and Egyptian forces and leadership were not yet ready for such a bold move. Shazly and his commanders fought to stick to the original plan, but the politicians would not be swayed and ordered the attack for 14 October in answer to Syrian pleas. (See Map 9B, page 72)

The worst case scenario envisioned by the IDF was an Egyptian armored thrust into Sinai from two directions with 750 tanks on each axis.[41] Fortunately, however, the Egyptian operational plan was faulty. The plan was prepared by the Minister of Defense with presidential input for a purely political gesture with a secondary military effect of relieving pressure on Syria. Egyptian politicians disrupted the entire strategic and operational design of the campaign plan against the better judgment of Egyptian military leaders.[42] The Egyptian Army did not have the resources to attack and maintain the bridgehead while simultaneously controlling the air dimension over the battlefield.[43] Therefore, to generate the armor needed for the attack, the Egyptians reduced the west bank operational reserves to 100 tanks.[44] The Egyptians attacked on a total of six axes spread over 100 miles of front, thereby reducing their concentration and dissipating combat strength.[45] This lack of firepower allowed the IDF to use tactical interior lines and a central position to destroy each attack in turn.

Based on strategic intelligence provided by the Americans, the IDF knew the abortive Egyptian attacks of 14 October had cleaned the west bank of armored operational reserves.[46] Taking advantage of the weakened Egyptian position, the IDF prepared to launch the long awaited and thoroughly planned counteroffensive across the canal. Applying the principle of mass, the Israelis placed six armored brigades and two infantry brigades at the crossing sites[47] as a strike force to trap and destroy the enemy center of gravity, which was either of the two Egyptian armies now on the east bank. Taking advantage of the enemy lack of Egyptian initiative on the east bank, the Israelis used only two armored brigades to pin the entire two army bridgehead in a risky but effective economy of force measure. Pitting strength against weakness at a decisive point with an indirect approach, the Israelis massed eighty percent of their available combat power on one axis. (See Map 10, page 73)

On 16 October Israeli tanks succeeded in crossing the canal at Deversoir, between the Egyptian 2nd and 3rd Army. The pre-war Egyptian operational plan to counter such a contingency was a concentrated armored counterattack at the point of penetration. Unfortunately, the forces designated and trained for this branch of the operational plan were destroyed in the 14 October attack.[48] Failing to grasp the magnitude and danger of the Israeli strike, the Egyptians directed the 2nd Army to destroy the Israeli bridgehead on the east side of the canal by attacking from the north. The 25th Arm Bde, of the

Egyptian 3rd Army below Deversoir, attacked the Israeli bridgehead from the south.[49] The poorly coordinated attacks resulted in a confused, half-hearted effort. The 2nd Egyptian Army attacked with large, but ad hoc forces. However, valiant defensive efforts by IDF paratroopers checked the Egyptian advance. The powerful Israeli exploitation force (Magen's Division) reacted rapidly moving from its assembly areas to concentrate in defensive positions from which they ambushed the Egyptian 25th Armor Brigade. The concentrated fire of 3 tank battalions annihilated the Egyptian brigade.[50] The Egyptian counterattacks against the Israeli bridgehead failed and the pre-war Egyptian operational design crumbled as Israeli tanks rumbled to the west bank of the Suez Canal. (See Map 10A/10B, page 74-75)

By 18 October, Israeli armor had devastated enemy rear services on the west bank, destroying convoys, headquarters, guard units, and the deadly SAM batteries. With Egyptian air defense cover destroyed and maneuver reintroduced to the battle on the east bank, the Israelis pursued the kind of war at which they excelled. Armor thrusts in conjunction with close air support bagged eight thousand Egyptian prisoners.[51] By nightfall the Israelis split into two divisions on the west bank, one under Maj. Gen. Sharon heading north and one under Maj. Gen. Adan moving south and west trapping the Egyptian 3rd Army on the east bank.

On 19 October, when the Soviet Union began the concerted effort to halt the war, the Egyptian army and Syrian forces were simultaneously collapsing. On 22 October the UN declared a cease fire. By 24 October the Egyptian 3rd Army consisting of two reinforced divisions equalling 45,000 men and 250 tanks was completely cut off, without food or water, dominated by enemy armor and out of range of air defense coverage. The Egyptian 2nd Army's lines of communications were protected from Sharon's revitalized armor division by only a thin Egyptian tank screen. Thus, the IDF had overcome tremendous odds and complete surprise to achieve a stunning military victory which was curbed only by the influence of the superpowers.

## Analysis of the 1973 Arab-Israeli War

The analysis of the 1973 Arab-Israeli War presents an interesting contrast to the German-Soviet Eastern Front campaigns. While the Germans and the Soviets fought an absolute war with the unlimited aims of annihilation, neither the Egyptians nor the Israelis could fight such an extended battle. Both sides fought the '73 War for limited ends, with limited means under the

watchful eye of the superpowers, namely the United States and the Soviet Union. In searching for the answers to the questions posed by the study it must be kept in mind that any operational design had to take the possible responses of the superpowers into mind. In almost every realm, these outside influences held great sway, especially in the areas of sustainment, force generation and intelligence. The antagonists were, therefore, simultaneously allied with one superpower and under pressure from the other.

Once again, the analysis will center on answering three broad questions:

1. What military condition must be produced in the theater of war or operations to achieve the strategic goal? (the linkage of strategic ends and military means)

2. What sequence of actions is most likely to produce that condition? (the operational design that results from balancing ends, ways, means and risk)

3. How should the resources of the force be applied to accomplish that sequence of actions? (the operational level combat power elements that enable operational design)

## Ends, Ways, Means and Risk

Foremost, Israeli political ends demanded that no war take place but that if it did, Israeli forces must gain the initiative without risks. Israeli strategic ends demanded a short, aggressive, and decisive war to prevent Israeli economic ills from becoming too great. Economically, Israel could not maintain a standing army equal to the the combined strength of the Arabs. Instead, they based their defense on a well-trained, highly motivated, expandable army available in 72 hours. Israeli defense policy centered on deterring war but their defense plan also had the element of preventing the Arabs from capturing territory which they could use as a political bargaining chip.[52] Operational design, therefore, focused on absorbing the initial Arab attack while rapidly transitioning to the counteroffensive. It was essential that the IDF capture Arab territory to use as a bargaining tool in any negotiations following a cease fire.

Historically, key ingredients in such campaign plans were superior intelligence, early mobilization and preemptive air strikes. Ironically, Israel's victories, especially the '67 War, hampered such actions. These had placed them in the position of the aggressor in the world community's view while Arabs were seen as both hapless and helpless against the IDF. However, Israel could not use these ways for fear of political repercussions with its only ally, the US. As a result, the defense strategy of Israel contained many contradictions.

To overcome these political restraints, the Israelis chose to use a static linear defensive line along the Suez Canal. The controversial Bar-Lev line presented the IDF with an operational dichotomy.[53] The quiescent, defensive nature of the line portended attrition warfare, the opposite of successful IDF doctrine. This created dissension over whether to adhere to historical IDF warfighting doctrine and immediately strike deep or fight to hold the Suez. Failure to activate the alert plan intended to protect the small strongpoints of the Bar-Lev line resulted from undue political-diplomatic influence. Political pressure kept the IDF from taking prudent security measures for fear the international community, and especially the US, would regard this action as the harbinger of Israeli preemptive strikes.

Israeli operational design did not accurately measure the risk of opposing Arab actions, therefore, ends and means were not balanced. The inability to reconcile the risks with the means and ends almost precipitated disaster. Fortunately, Arab mistakes, mostly Egyptian, allowed the IDF to recover and, after short but vicious attrition battles, return to an operational design based on their doctrine of maneuver.

## Operational Design

Israeli actions on the Southern Front during the 1973 Arab-Israeli War provides a second example of the importance of sound operational design and flexibility in achieving successful operational transition. Initial Israeli mistakes were based on a flawed ends-ways-means-risk equation and poor consideration of the essential elements of operational design. Realizing their errors, the Israelis effectively employed all four elements of operational design to develop their counteroffensive concept. They focused on the enemy center of gravity. They matched their operations with their capabilities and, thus, did not exceed their culminating point. Israel correctly identified the decisive points and massed against them. Finally, Israel's lines of operations and support were proper and adequate. A more detailed look at these issues will illustrate how these essential elements of operational design assisted the Israeli operational transition.

The Israeli focus on the Egyptian center of gravity was essential to their successful operations. To be successful, the Israelis first had to identify the Egyptian center of gravity. The major ground components were the two armies on the east bank, 2nd Egyptian Army in the north and 3rd Egyptian Army in the south. The IDF determined that one or both of these armies constituted the Egyptian center of gravity. If either could be

defeated or trapped, this would lead to an Israeli victory. However, making these armies vulnerable was no easy task. Defeating them demanded that the Israelis neutralize the Egyptian air defense belt as well as their extensive antitank weapons. To accomplish this, the IDF attack first had to defeat the air defense umbrella, so that IDF airpower could be brought to bear. Then the ground attack could encircle and cut off the enemy armies indirectly. Accordingly, the IDF concentrated on crossing the canal with superior combat power to neutralize the Egyptian center of gravity indirectly. This demanded the creation of an Israeli force of some strength.

Israeli generation of operational reserves for the counteroffensive was critical to success. The operational reserve became Israel's center of gravity, and was generated by conducting economy of force operations that effectively masked the Egyptian bridgehead of two armies with only two Israeli armor brigades. The release of forces from direct contact with the Egyptians provided the base for the Israeli counteroffensive force. Adding to the base were the mobilized armor and infantry reserve brigades rushing to the Sinai. Once the counteroffensive force was ready, the Israelis held the force out of contact with the enemy, thus declining combat against the formidable enemy defensive positions. This pause in aggressive operations allowed the Israelis to ready three fresh divisions for the transition to the counteroffensive.

The second critical issue in the Israeli operational concept was to insure they did not reach their defensive culminating point. The total surprise gained by the Arabs directly affected the Israeli actions throughout the war. Having lost the initiative in the Sinai, the IDF responded poorly, attacking Egyptian infantry with little combined arms integration. During the first four days of war, the shortage of reserve forces strongly influenced command decisions, the most critical being to send scarce reserves to stop the more immediate threat in the Golan. This combined with the pace of tank losses on 8-9 October predicted a quickly approaching Israeli culminating point. Consequently, the Israelis adopted economy of force measures from 9 October to 14 October to create an operational pause that slowed their rate of attrition and built up their forces through mobilization. Extensive tank recovery efforts and rapid integration of reserves allowed the Israelis to place their potential culminating point out of reach. As a result, they conducted an operational transition to the offensive less than one week after their initial disasters.

Correct identification of decisive points greatly contributed to their successful operational design. The IDF had identified the decisive points for the battle of Sinai as the Gidi and Mitla passes and a crossing site on the Suez Canal. Israeli placement of armor forces protected the decisive points of the Sinai passes. These Israeli armor formations defeated the Egyptian attacks which attempted to seize the passes on 14 October. The decisive point for the canal crossing had been the subject of much study for the IDF Southern Command in Sinai. To support this contingency planning, the Israelis prepared roads, bridges and staging areas. These infrastructure improvements helped the IDF maneuver to hold the Egyptian attacks and provided the launch points for the counteroffensive across the canal. Coincidentally, Maj. Gen. Sharon's reconnaissance battalion discovered the seam between the two Egyptian armies. This information, coupled with the long standing IDF plan to cross the canal, settled the issue of which crossing point to use. On 16 October the IDF crossed the canal at the decisive point of Derversoir, in what was the most crucial phase of their operational transition.

A critical advantage of the Israelis was their understanding of lines of operation, the last element of operational design. The IDF used the strategy of the central position and strategic interior lines to shift its strategic center of gravity. Strategically, the Arabs operated on exterior lines of operations and the IDF on interior lines. Fundamentally, this requires those on exterior lines to maintain pressure on an enemy with a central position. However, Arab failure to do this allowed the IDF to shift the bulk of its combat power first to the Golan Heights to defeat the Syrians and second to the Sinai to defeat the Egyptians. At the operational level, the Israelis successfully massed a three division force, their center of gravity, on a single line of operations for the Suez crossing. Once across the canal, these divisions split in divergent attacks to cut the Egyptian lines of communications while maintaining their own intact. Additionally, Israel's strategic interior lines of operation and support were critical to the force generation and sustainment effort in support of the operational transition. Their propitious understanding of lines of operation enabled the Israelis to successfully use their combat power to complete their operational transition with decisive results.

## Operational Combat Power

Perhaps the Israelis' greatest strength was their ability to apply the leadership element of operational combat power to allow them to rapidly transition from the defense to the offense. IDF operational design demanded excellent leadership at all levels especially at the tactical level on the ground and in the air. The improvisational skills of these leaders were critical to overcoming serious force structure problems that had grown from offensive concepts emphasizing the tank and the airplane. Leadership at the front made the tough decisions, set the example and suffered tremendously - of the 2521 killed, 606 were officers.[54] As Maj. Gen. Avahram Adan, a division commander in the Sinai stated: "Courage, devotion, and high professional standards...these qualities...enabled us to take calculated risks. We were confident that any time a small unit would find itself facing an 'oversize' mission, that unit would surpass itself and would not disappoint."[55] The Israeli officer's ability to quickly improvise produced ad hoc, but effective tactical formations. Though personality conflicts at the operational level wracked the IDF commands, Israel's tactical prowess and improvisational skills resulted in a victory based on speed, firepower, tactical air support and combined arms operations. Frequently, the operational commander based his plan on his knowledge of and confidence in the quality of his subordinate commanders.

The Israelis were less successful in their initial application of the next element of combat power, namely maneuver. Specifically, the IDF suffered serious problems in their ability to maneuver in the early stages of the war resulting in many unnecessary casualties, but the IDF leadership quickly sought solutions to their shortcomings. Primarily the IDF was not force structured for a combined arms effort. The Israeli command envisioned a fluid tank battle with close air support on their terms. Consequently, they rushed tanks forward without transporter support, with little ammunition, and inadequate crews. Artillery, a critical part of the combined arms team, received little priority in moving forward. Though the IDF pressed for a free-wheeling tank battle in the Sinai desert, the maneuver battle did not develop. Instead, effective Egyptian infantry, in a tactical defense and equipped with antitank guns and missiles, opposed Israeli armor. Soon, the IDF discovered the entire Suez front was on the operational defense. Deficient in artillery and mortars, the Israelis' direct approach could not dislodge the enemy infantry.[51] Commanders hastily threw IDF reserve units

into the fight. As a result, the battle became decentralized and command direction was lost.

The following quote from Ze'ev Schiff, a renowned Israeli military reporter, indicates the tremendous problems the Israelis faced in combined arms maneuver at the outset of the war:

> "To facilitate tank mobility, the IDF neglected other elements that are traditionally considered a part of the armored team. The fact that the IDF's budget was limited only served to intensify this neglect; artillery...was slighted. Also put on low development priority was the infantry. When the Israeli tanks were unsuccessful in opposing the Egyptian infantry the Israeli infantry was called in, but in the first part of the war there few...infantry units in Sinai."56

During the operational pause of 9-14 October the IDF reassessed the situation and their analysis generated changes in tactics that resulted in expert maneuver operations. Some examples of their revitalized maneuver prowess bear discussion. The economy of force operations masking the two Egyptian armies on the east side of the canal continually perplexed the Egyptian division commanders. They thought they were facing much larger forces since they were effectively paralyzed by incessant Israeli maneuver. The dynamic thrust by the IDF counteroffensive force at the Derversoir canal crossing wrecked the Egyptian defenses on the west bank of the canal. The rapid reaction of Magen's division in the ambush of the Egyptian 25th Armor Brigade demonstrated agility and teamwork. The Israelis eventually recovered using combined arms to great effect. The tactics of the "armored anvil", whereby armored infantry and artillery slowed and checked the attackers while mobile, hard hitting counterattacking armor forces struck the enemy flanks, destroyed the Egyptian attacks of 14 October and the Egyptian efforts against the IDF crossing site on the canal.

Israeli use of firepower provides an example of the absolute necessity to have fire superiority in order to successfully transition. On the southern front, the Israelis could only transition after they achieved firepower dominance. Specifically, Israeli firepower capability was initially inappropriate for the war the Arabs presented to the IDF. As a result of the 1967 war, the IDF had vested much of its firepower in its air force as an integral part of a tank-airplane team that had been so effective in open, maneuver war. This team did not work against the interlocking maze of antitank missiles and antiaircraft missiles presented to the IDF by the Egyptians. Consequently, the IDF counterattacks of 8-9 October failed because

of insufficient artillery to suppress the enemy antitank nests. Unable to stop these missile attacks on the tanks, the IDF also found itself with insufficient infantry firepower to go in and root out the enemy infantrymen. Using old style cavalry charges, the IDF battered itself against the antitank nests precisely as the Egyptian operational design had envisioned.[57] The most telling advantage the Israelis enjoyed was their expert air-ground integration. The aircraft provided the operational fires required to support the operational ground plan. Both the air and ground effort were complementary and critical to the maneuver success of the Israeli main attack on the west bank of the canal. It was not until the IDF stopped the direct attacks on the two Egyptian armies and massed their available firepower at the decisive point of Derversoir that they were able to bring their airpower back into the fight. When they regained the use of this key element of firepower, they overcame the Egyptian defenses and succeeded in their operational transition.

Israeli application of the element of protection also demonstrated its criticality. Initial IDF actions did little to protect their force. Lacking respect for their enemies, they attacked without an adequate combined arms team. Uncoordinated attacks led to confusion, missed opportunities and significant losses in men and equipment. Once the command realized their mistakes, they stopped their attacks and waited on the defensive near the critical Sinai passes. Using economy of force measures, the IDF effectively screened the Egyptians. In this manner, the IDF protected their forces while accepting and integrating the reserve formations. After they were strong enough for the operational transition, the IDF concentrated their firepower and attacked on a single axis which enabled them to better protect their forces. Additionally, destruction of the Egyptian air defense belt was vital in allowing Israeli airpower to cover the movement of ground forces.

Lastly, intelligence and deception played a critical role in the use of operational level combat power in this war. The last two elements of operational combat power, Israeli defense plans and decisions depended on accurate intelligence. Amazingly, Israeli perceptions of their enemy placed them at risk. Failure to discern that the Arabs could posture themselves for limited military solutions to political ends was a strategic failure. Failure to account for changes in Egyptian force structure, notably the additional modern antitank and antiaircraft systems, and how these changes determined Egyptian operational design, nearly resulted in calamity. The IDF believed

the Arabs could not attack without markedly improved air forces and increased maneuver capabilities in armored warfare. To the Israelis chagrin, the Egyptians had made great strides in overcoming these weaknesses and were militarily capable of gaining limited strategic ends. The lack of intelligence analysis allowed the IDF to be surprised.

The Arab plan envisioned a successful crossing, capture of the Bar-Lev line and occupation of the east bank. Thus, a key to the Arab plan was deception which gained for them an initial operational edge over the IDF. Intelligence information was crucial to anticipated Israeli defensive reactions designed to reduce the risks of the new security situation that faced Israel. As previously stated, Israel was not able to conduct preemptive strikes for fear they would be labeled the aggressor. Consequently, the IDF Southern Command established a series of elaborate alert stages for the Sinai. Unfortunately for the Israelis, at the critical time, the Israeli cabinet would not authorize the initiation of these prudent alert measures and aggressive actions. As reported by Israeli war correspondent Ze'ev Schiff;

> "In the face of this [decision], an order was issued by the General Staff that armored forces were not to move toward the canal, for fear that a change in the disposition of armor would incite the Arabs to act. Israeli tanks, as a result, were not in position at the canal when the fighting began, and the main armored units were to the rear, in central Sinai."58

Fortunately for the IDF, the leadership recovered and intelligence and deception played a key role in the counteroffensive. Intelligence sources quickly gathered information on the new weapons and tactics the Egyptians were using. This data, coupled with combat experience, enabled the tactical and operational commanders to devise methods to neutralize the antitank missiles. Successful intelligence also provided the air force with information on Egyptian antiaircraft missiles and command/control systems. Using intelligence from American sources, Israeli analysts reported the absence of credible Egyptian armor reserves on the west bank, the cornerstone requirement of the operational transition that carried the IDF across the canal. However, the critical handmaiden of intelligence was deception.

Using Maj. Gen. Sharon's intelligence information concerning the weakly defended boundary between the Egyptian 2nd and 3rd Armies, the IDF Southern Command quickly selected Derversoir as the crossing site. The IDF concealed its intention to cross the canal at Derversoir, and consequently, the

Egyptians were lulled to sleep and failed to protect this decisive point. The most spectacular deception effort was the use of the economy of force brigades against each Egyptian bridgehead. Each Israeli brigade commander kept one of his three available battalions constantly moving before the east bank Egyptian positions. The other two battalions rested, recovered and repaired tanks, and otherwise prepared to go into action at a moment's notice. These deception efforts completely fooled the Egyptian division commanders on the east bank. When the Egyptian operational commanders attempted to withdraw badly needed portable antitank weapons to the west bank to counter the Israeli canal crossing, the Egyptian tactical commanders on the east bank vehemently protested. These division commanders refused to transfer their antitank weapons for fear of a major Israeli attack on their positions.[59]

Force generation and sustainment efforts may be the most critical capabilities the operational commander has in determining the appropriate time for the operational transition from the defensive to the offensive. The lack of force generation and sustainment means may be characteristic of a war that has limited strategic ends and is controlled by superpower influence. The IDF's small standing forces and the requirement to rely on limited reserves initially delayed Israeli force generation efforts. Additionally, Israel lacked the industrial base to provide endless resources for modern war. Furthermore, as a result of the 1970 ceasefire agreements ending the War of Attrition, Israel had limited stocks of material and depended largely on US assistance.

Consequently, Israel's stock of warmaking materials was so low that without US help their strategic culminating point would have arrived within days. As the sole IDF supplier, the US faced a 7000 mile resupply flight line with time working against the Israelis. Fortunately, IDF force generation capability was enhanced by their remarkable ability to conduct battlefield recovery of their equipment as well as the use of captured material. By 9 October 300 battle damaged tanks had been repaired and five additional armored brigades moved into Sinai.[60] In the Sinai these skills allowed the economy of force mission to survive while the IDF fought its decisive battle in the Golan Heights. Upon completion of that battle, the IDF, with US support, had generated sufficient combat power to forestall its defensive culminating point and allow transition to the offense on its own terms.

The Israelis had some tense moments, but they recovered. Initially surprised and unprepared operationally and tactically to deal with the new Egyptian threat, the IDF floundered, unable to grasp that Egypt sought only limited operational and strategic goals. After the mistaken counterattacks of 8-9 October, the IDF went over to the defensive in the Sinai and shifted most of its resources to defeat the Syrians on the Golan Heights. Meanwhile, the IDF Southern Command took the measure of the Egyptians and, after careful consideration of the analytical elements of operational design, developed a fresh campaign plan. Within a week, the IDF conducted an operational transition on two fronts, first defeating the Syrians and then crossing the Suez Canal to defeat the Egyptians. This case study also shows the criticalness of the three requirements of operational transition. First, the Israelis were eventually successful in balancing ends, ways, means and risk to produce the military conditions that led to their strategic success. Second, their operational design produced the sequence of actions that achieved the operational end state. Finally, they generated operational level combat power resources and used them to set the conditions for success.

## III. Conclusions

This study has tested the hypothesis that, at the operational level, there are essential elements of operational transition planning that the commander may use as a guide to determine the actions he must take to ultimately pursue a positive aim through a counteroffensive. A review of the theory of the counteroffensive, as presented by Clausewitz, and US Army doctrine, of taking the offensive after a successful defense, indicates clearly that an operational transition must take place. What is missing in both theory and doctrine is a discussion of how the operational commander postures his force to conduct this transition. This study provides a start point for the operational commander by identifying some essential elements that make operational transition a success.

This analysis points out some essential elements of operational transition that the commander may use to transition to the offense. First, it is imperative that ends, ways, means and risk be in harmony. Second, the campaign plan must be based on understanding and applying the key elements of operational design. Finally, the operational commander must have sufficient,

mature and skilled operational level combat power for the scale of operations demanded by the directed ends. The historical case studies provide some conclusions as to the impact of failure and success in these three areas that may benefit future campaign planners and operational commanders.

First, it is imperative that ends, ways, means and risks be in harmony. The conditions of the theater and the strategic goals must be understood by the strategic and operational leadership. Additionally, the campaign plan must be understood and approved by strategic authorities, understood and executed by operational level staffs and properly executed by the tactical leaders.(See Appendix 1, page 41)

Second, the campaign plans must be based on the considerations of the four theoretical elements of operational design. The concept of center of gravity is an essential planning tool and the commander should focus on an indirect approach to defeating the enemy center of gravity while protecting and building up his own center of gravity. The idea of the culminating point is also important since the commander's task is to increase his relative combat power by wearing down the enemy center of gravity and hastening the enemy's culminating point. Concurrently, the commander must generate operational reserves for the counteroffensive and slow his own culminating point. Lastly, the concepts of decisive points and lines of operation/support give form to the confines of the campaign's theater of operations. Decisive points are determined based on time, space, mass and momentum analysis. Lines of operation/support are the outcomes of the synchronization of the information provided by understanding center of gravity, culminating points, concentration, economy of force, and the decision for a direct or indirect approach. (See Appendix 2, page 44)

The campaign plan developed is dependent not only on the analysis of the elements of operational design but also the relative worth of the combat power available. The ability of the given forces may be analyzed using the elements of combat power. The case studies provide some clues concerning the required capabilities of the operational commander's combat power in ensuring successful operational transition. The tactical level elements of combat power that also have operational impact are: leadership, maneuver, firepower and protection. The case studies also indicate that intelligence, deception plans, force generation of operational reserves and sustainment operations

have an impact on operational combat power. Finally, preparation of the forces and terrain for the operational transition was essential to both the Germans and the Israelis.

First, we will review the impact of leadership on successful defense and operational transition and the leadership skills are required. In every instance, quality leadership enabled success and poor leadership led to defeat. Quality leadership demands cohesion and harmony of effort at every level of war. While this may be virtually impossible to achieve, the operational commander has the duty to try consistently to meld the disparate levels of leadership into a coordinated instrument of national power. Manstein sets a fine example of how this may be accomplished under trying circumstances. Operational leadership is complex, requiring a thorough understanding of ends, ways, means and risk, coupled with a knowledge of military theory and vision. Central to leadership in operational transition is knowing when to accept and when to decline battle. As German and Israeli actions illustrate, effective leadership emphasizes superior, action oriented, independent command styles. German and Israeli leaders took risks, unleashed their subordinates by giving them mission type orders and altered the plan based on subordinate input. Commanders who have inner confidence, independence, initiative, patience and timing tend to be able to undertake bold, risky battles of decision. Just as success operationally requires the cumulative effect of a series of successes in orchestrated battles, there is a cumulative effect of obstinance, dissension and leadership mistakes that can produce defeat.

The second element of operational level combat power is maneuver. No operational plan suffices in every detail for an entire campaign; changes will be required and this demands flexibility. Every level of war must have commanders with the flexibility of mind to seize opportunities for transition. Therefore, branches and sequels are integral to operational design and are the basis for operational transition. In order to rapidly pursue branches and sequels, the commander must have maneuver forces that are quick of mind and agile in maneuver. Both the German and Israelis had prepared for their operational transitions, the Germans by thorough reconnaissance and knowledge of the area of operations, road and rail net development, and buildup of supply depots and the Israelis construction of roads, bridges, and crossing site improvements along the Suez Canal coupled

with extensive rehearsals of assault crossing operations. Both the Germans and the Israelis had prepared for their operational transitions, the Germans by thorough knowledge of the area of operations, road and rail net development, and buildup of supply depots and the Israelis by their construction of roads, bridges and crossing site improvements along the Suez Canal. These skills are essential in allowing the commander to react positively to uncertainty, chance and friction. These attributes explain how small forces such as depleted German Panzer formations and Israeli armor brigades were are able to have a cumulative impact far beyond their size. Operational transition demands forces that are capable of rapid task organization changes, able to think on the move, and competent in the maneuver of both combat forces and logistics elements.

The next point in operational level maneuver is firepower. Firepower at the operational level focuses on two dimensions, air and ground firepower. Ground firepower is a function of the creation of strength against weakness at the decisive point. Manstein's destruction of the isolated elements of the attacking Soviet armies massed firepower against weakness as did the IDF efforts against Deversoir. Critical to massing firepower was the synchronization of large formations and their simultaneous or sequential use in battle to achieve synergistic effects. Again, 4th Panzer Army's actions from the end of February to 14 March serve as an example of moving large formations over vast distances to mass firepower. As discussed above, the ability of the commander's forces to maneuver is critical to the application of firepower in the ground dimension at the operational level. Our analysis also reflected the importance of firepower in the air dimension. German use of their air fleets provided intelligence and operational fires. Furthermore, IDF use of airpower was instrumental in their victory since both elements required the support of the other to be effective. Forces that operate in the air dimension are more responsive and are therefore operationally significant.

The fourth element of combat power at the operational level is protection of the force. This simple concept is one of the most difficult dynamics to control at the operational level. Protection is only possible when leadership, maneuver, firepower, intelligence, deception and sustainment are functioning properly. There are two essential ideas in protection at the operational level: the decisive points must be held to make the defense work

and the counteroffensive forces must be safeguarded. Critical to this scheme is knowing when to accept battle and when to decline battle. Both the Germans and the Israelis refused battle to set the stage for superiority at the decisive point. When choosing to engage the enemy, the commander must conduct continuous operations to allow the enemy no respite. Manstein's unrelenting pursuit of the Soviets to Belgorod creating a cascading effect. Continuing IDF armor pressure on the Egyptian bridgeheads from the front and in the rear caused Egyptian commanders to waste resources in desperate attacks. In the conduct of the defense, timely withdrawal is needed to reduce exposure and limit damage. Most often this requires depth and the conduct of a mobile defense as conducted by Manstein. Logistical support must be prioritized to committed forces and at the appropriate time these same resources must be focused on the counteroffensive force. Manstein ruthlessly adhered to this idea. The IDF accomplished this through the mobilization of reserves. At the same time, deception plans must allow the commander to rest his own forces. Moreover, deception plans must insure the operational reserves remain hidden.

Now that we have looked at the four elements of operational combat power that impact the commander's plans we will examine the impact of intelligence, deception, force generation and sustainment on operational transition. Expert intelligence gathering analysis and dissemination is essential to operational transition. Proper analysis and understanding of the center of gravity and the culminating point are useful only if the commander is thoroughly aware of the conditions of the theater. This demands thorough operational intelligence preparation of the battlefield (OIPB). The OIPB discerns for the commander the decisive points, probable enemy lines of operations and support based on terrain and intentions. Also, the best friendly lines of operation and support are determined based on terrain and enemy intentions. Key elements of analysis include understanding the minds of the commanders of the major enemy forces, a thorough understanding of the enemy command structure and decision making process, and finally, the probable relationship of ends, ways, means and risk on the enemy side. Failure to detect the enemy main effort or to discern the true enemy intention early will menace the force. Hitler's misunderstanding of Soviet intentions and capabilities plagued Manstein's efforts to create a workable campaign plan. Likewise, IDF miscalculation of Arab intent and capabilities

almost led to defeat. Only by understanding enemy and friendly intentions within the framework of the elements of national power and enemy doctrine can the operational commander hope to succeed in operational transition.

Deception is critical to the campaign plan since economy of force efforts are essential to operational transition. Deception plans must reinforce and manipulate enemy perceptions and expectations. To accomplish that, the deception must be believable to the enemy. Proper deception involves not only inexpensive means such as communications and electronic deception, but must also include the movement and actions of forces. Thus deception entails taking risks if the enemy is to believe the ruse. Manstein manipulated Soviet perceptions and expectations by allowing the penetration to develop and lose steam. Vatutin was completely fooled since German operations coincided with his own plan. The abandonment of Kharkov is an example of an accidental deception that "proved" the Germans were withdrawing to the Dneiper. For the Germans, the most plausible deception was the one that confirmed the Soviet belief in their plan, which was easily done. IDF deception was tactical in nature but its plausibility lulled the Egyptians to sleep since they failed to shore up the seam between 2nd and 3rd Army.

The final two capabilities required for operational transition are force generation and sustainment. These two capabilities have but one purpose in regard to operational transition, that is to generate operational reserves for the counteroffensive. Even with limited resources, operational reserves must somehow be generated if a decisive stroke is to be made through operational transition. Manstein accomplished this by stripping armor from his static formations and husbanding 4th Panzer Army for the counteroffensive. The Israelis used economy of force measures and rapid national mobilization to generate reserves for the operational transition. Every asset must be used efficiently to strike the enemy center of gravity. In this way, there was sufficient mass when operational transition occurred so that the force had decisive impact. Force generation and sustainment take on dominant characteristics at the operational level. The assessment of the commands' ability to generate forces and keep them supplied will greatly influence the analysis of the elements of operational design and dictate whether or not an operational transition is achievable. Operational transition is directly related to a force's logistical power. (See Appendix 3 and 4, pages 47 to 51)

Finally, we have come full circle and arrive back at the original thesis of this monograph: at the operational level, there are essential elements of operational transition that the commander may use as a guide to determine the actions that must be taken to ultimately pursue the positive aim, the counteroffensive. The study has examined theory, doctrine and historical campaigns. Theory and doctrine direct us to undertake an operational transition in order to be victorious. History provides us some examples of successful operational transitions and from these we have gleaned essential elements that help the commander make critical campaign decisions.

First, ends-ways-means-risk must be harmonized so that strategy, operational art, and tactics are synchronized towards the strategic goals. Second, the operational commander must understand and apply the principles of operational design as manifested by the ideas of center of gravity, culminating point, decisive points and lines of operations/support. This understanding and application produces a workable, initial campaign plan that has as its focus the setting of the conditions for an operational transition to the counteroffensive. Lastly, the operational commander must meld the operational combat power resources of leadership, maneuver, firepower, and protection into a capable force through the use of intelligence, the creation and execution of deception plans, the generation of operational reserves, and the sustainment of all forces.

Thus, the notion that the defense is the stronger form of war is valid only if it involves an operational transition. The victory of the defense rests in its ability to transition to the offensive on a grand scale and achieve the desired strategic end state.

# Essential Elements of Operational Transition

Ends, Ways, Means, and Risks Harmonized

Strategy-Operational Art-Tactics Properly Synchronized

Appropriate Operational Design Based on Understanding of:

- --Center of Gravity
- --Culminating Point
- --Lines of Operation and Support
- --Decisive Points

Sufficient Combat Power for Scale of Operations

Mature, Skilled Combat Power at the Tactical Level

- --Leadership
- --Maneuver
- --Firepower
- --Protection
- --Intelligence (key at opn'l level)
- --Deception (key at opn'l level)

Ability to Conduct Force Generation and Sustainment

Credible Operational Reserves for Operational Transition

Appendix 1:Essential Elements of Ends--Ways--Means--Risks

Though beyond the scope of this monograph, the research concerning the two case studies indicated a relationship between ends, ways, means and risk. This relationship may be important to campaign planners. The monograph states that it is imperative that ends, ways, means and risks be in harmony. Strategic and operational leaders should understand the conditions of the theater in which the campaign will be fought and the strategic ends which are sought. As indicated the operational commander must seek understanding and approval from strategic authorities and ensure the campaign plan is executed. The model in figure 1-1 is a useful tool in understanding the relationships between ends--ways--means--risks and the ideas of operational design and combat power.

The difference between the strategic ends desired and the military means available is the degree of risk involved. Managing these risks requires an operational design that carefully considers combat power. Risk is normally assumed to some degree in the placement of forces. Thus, consideration of the elements of operational design provides the framework for proper decisions concerning the critical and dynamic concepts of economy of force and concentration of the means. Therefore, balancing risk eases the tension between the principles of concentration and economy of force. These two principles are the basis upon which the commander generates forces for operational transition. The linkage, therefore, between ends and means is ways. Since reconciling risk is critical to balancing the equation, this effort is the key to harmonizing ends, ways, and means.

The link between ends and means is the way in which the force is used. The way the force is used is described in the campaign plan. Additionally, the campaign plan manages the risk that results when ends and means are compared. The campaign plan is developed based on the analysis of the essential elements of operational design. For our purposes we have used the concepts of center of gravity, culminating points, decisive points and lines of operations/support as analytical tools.

In our case studies, we see different solutions to balancing the equation. Manstein understood the means were inadequate to achieve the ends without taking exorbitant risks. Therefore he worked diligently to change Hitler's strategic policy so that the available means could be used successfully. Conversely, the Israeli ends were realistic, but the means available were initially employed poorly. Once the IDF adjusted to the conditions of the war in the Sinai, they developed a campaign plan, or way of using means, that achieved the ends with the available forces.

The final step in harmonizing ends, ways, means and risk is insuring the campaign plan is understood at each level. First, the campaign plan must be understood by strategic authorities so that approval is gained for the

actions the commander proposes. As Manstein's efforts illustrate, this plan may not be easily reconciled with political restraints and resource constraints. Nonetheless, the commander continues the advisory process until harmony is achieved in the equation. Second, he must ensure understanding of his intent and execution of the plan by the operational level staff. Lastly, the plan must be understood and executed by the tactical commanders. In this manner the commander begins the synchronization of strategy, operational art and tactics to attain the military end state.

It is important to understand that this effort only begins the process of linking means and ends. At the operational level, there are more ways to combine forces to generate combat power. Uncertainty is greater but there is more time to react. However, as it takes more time to move forces, anticipation becomes critical . The end result is more risk and the penalties for being wrong can be severe. The means needed to entirely eliminate risk and chance are beyond the capacity of any nation. The differences between ends and means cannot, therefore, be perfectly forecasted due to chance, uncertainty, friction, fog, and the moral domain of war. Furthermore, the commander faces constantly changing strategic guidance based on the outcome of combat. The operational commander must keep constant focus on the dynamic of ends-ways-means-risk. The truth, or, the end state, changes and so must the operational design. Great captains efficiently use limited means through innovative operational design to attain strategic ends while operating under fractured strategic leadership and changing end states.

**Figure: 1-1**

Operational Design

-the way one uses means to gain ends

Key Analytical Tools for Planning are

1 Center of Gravity attack of the enemy's and protection of your own

2 Culminating Point hastening the enemy's and slowing your own in relation to time and space

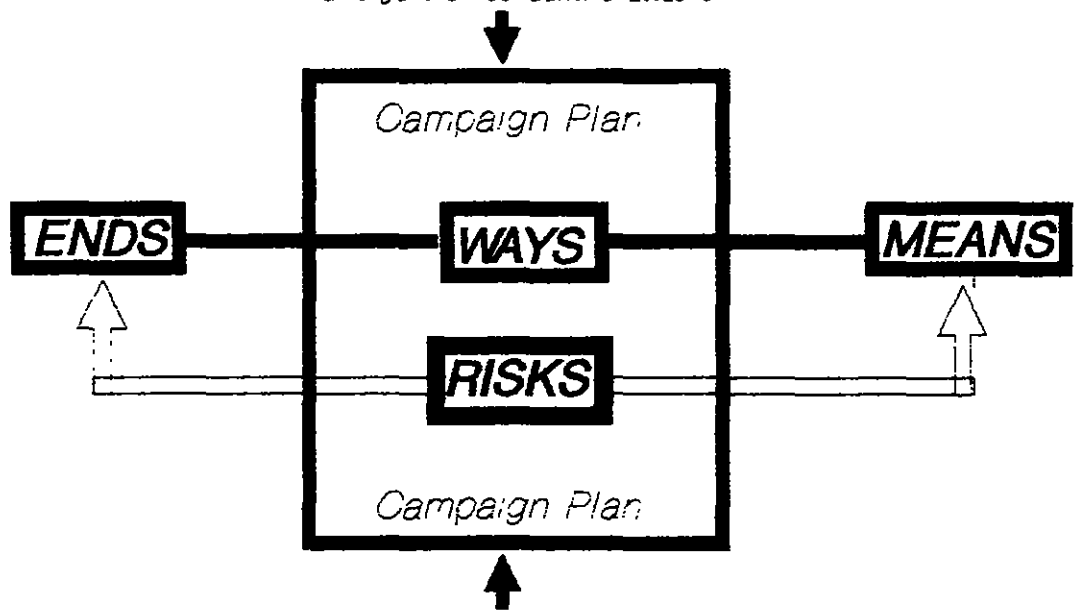
3 Decisive Points time and space relationships of movement and action of friendly and enemy centers of gravity to create vulnerabilities

4 Lines of Operation and Support concentration and economy of force are based on determining

interior or exterior lines

direct or indirect approaches

divergent or concentric attacks




Operational Level Combat Power

Leadership-Maneuver Intelligence-Deception

Firepower-Protection Force Generation-Sustainment

Appendix 2: Essential Elements of Operational Design in Campaign Planning

The case studies propose additional ideas concerning the analytical tools of operational design used to develop campaign plans. While not proved in the campaigns studied, these ideas do provide areas for additional thought for operational planners.

The concept of center of gravity is the focus of the commander's actions. Essentially, the commander attempts to identify the enemy center of gravity through intelligence means and attack it while protecting his own center of gravity from effective enemy counterblows. The case studies indicate the commander has greater success if he focuses on an indirect approach to defeating the enemy center of gravity. The effort to expose the center of gravity usually will require sequenced operations. Manstein's actions indicate that when forces are few, operations must be sequenced to first protect critical assets and later to attack the enemy center of gravity. Likewise, the IDF had to sequence ground and air operations to uncover and defeat the Egyptian center of gravity. The operational defensive design should first provide for the conduct of a defense that attrites the combat power of the enemy center of gravity; second, hold the shoulders and decisive points to create friction and provide maneuver pivot points; third, facilitate the generation of counterstroke forces; and finally, the plan must call for the conduct of an operational transition to the counteroffensive to destroy the weakened enemy forces. Sequenced operations at this level will require the movement of large formations over vast distances, defensive operations, force generation and sustainment operations and finally, offensive operations.

The idea of the culminating point is also important since the commander's task is to increase his relative combat power by attriting the enemy center of gravity and hastening the enemy's culminating point. At the same time, the commander must generate forces and slow the arrival of his own culminating point. The timetable for operational sequencing is determined so that success is achieved before the culminating point is reached. However, perfect prediction of the time and place of the culminating point is not possible. Defensively, operational planners must trade space for time while forcing culmination on the enemy by combat attrition and friction. This demands strength of will and coup d'oeil to know when to accept battle and more importantly when to decline battle, key ideas in operational art. Like Manstein, the command must be prepared to fall back onto its own logistical infrastructure, declining decisive battle and protecting its offensive forces to forestall the culminating point. As operations in the Kharkov and Sinai campaigns suggest, to prepare for the counterstroke, the commander must institute a kind of operational pause by shortening and thinning his lines, prioritization of assets to counterstroke forces and sequencing operations. Key to the concept of the culminating point is accurate assessment and sustainment of one's own combat power while reducing the enemy's combat power. As the case studies show, for both the Germans and the Israelis, this demands accurate intelligence.

Essential to slowing the arrival of the culminating point is the ability to change plans and operational agility in combat power. This requires expert intelligence collection and analysis. Intelligence information allows the commander to anticipate and recognize when and where the culminating point will occur so that appropriate measures can be taken. Successive operations and proper sequencing are important to operational transition since these actions hasten enemy culminatin and may forestall that of friendly forces.

Lastly, the concepts of decisive points and lines of operation/support give form to the sandbox that is the campaign's theater of operations. Decisive points are determined based on time, space, mass and momentum analysis. Operational skills in this area are closely linked to the accuracy of the operational level intelligence preparation of the battlefield. Essentially, determination of the decisive points is based on precise understanding of time and space relationships in the movement of the forces that make up the enemy center of gravity. This understanding of movement times demands a concomitant analysis of the relative agility of friendly and enemy formations and their attendant vulnerabilities in movement. The markedly greater agility and maneuver skills of both the Germans and the Israelis provided them an advantage in speed over their enemies. Likewise, their airpower provided greater agility in operational fires. Thus, they could move to decisive points more rapidly than could their enemies. The determination of decisive points is then possible and this provides the operational commander the information needed to designate the lines of operation and support.

Basic decisions on lines of operation/support center on areas of concentration and areas where economy of force operations are taken. Understanding the principles of the central position and interior or exterior lines of operation are also important when one considers the location and movement capability of the enemy center of gravity and how the concept of the culmination point impacts both sides. The analysis of the vulnerabilities of the enemy and friendly centers of gravity assists in determining whether or not a direct or indirect attack takes place and also whether or not the attack is divergent or concentric. Lines of operation/support are the outcomes of decisions based on understanding the essential elements of operational design. The concepts of center of gravity, culminating points, concentration, and economy of force are the basis for the decision on a direct or indirect approach.

# Essential Elements of Operational Design

Understanding Theoretical Concepts

* Center of Gravity
  - -protection of own center of gravity and attack of enemy center of gravity
* Culminating Point
  - -the scale of operations must not exceed the available means
  - -relative to each other: accurate assessment of enemy's and own
  - -intelligence: monitoring of enemy's command and control means for operational decisionmaking
  - -the time and space relationships that wear on forces
  - -the impact of war and stress on the moral domain and the willingness to fight
* Lines of Operations and Support
  - -facilitates operational defense, trade space for time
  - -facilitates operational defense if required to hold
  - -facilitates operational transition through staging and alternate LOCs
* Decisive Points
  - -facilitate holding shoulders and creating maximum friction for enemy
  - -identification of those that, if attacked, most efficiently destroy enemy center of gravity
  - -identification of those that are best objective points for counteroffensive

Linkage of Strategy--Operational Art--Tactics

Reasonable Scale of Operations Relative to Means and Ends

Knowing When to Accept Battle and When to Decline Battle

Anticipation of Enemy Actions/Flexibility of Own Actions: Branches & Sequels

Campaign Planning that Sequences Battles:

* Credible Means to Threaten Enemy
* Presence of Defensible Terrain
* Contain Initial Enemy Thrusts
* Withdraw in Time to Reduce Exposure and Limit Damage
* Ability to Trade Space for Time
* Prepared Strategically and Operationally for Some Withdrawals
* Ability to Wait and Sustain Efforts
* Rugged Defense
  - -at Decisive Points to wear down Attacker
  - -ability to hold shoulders as Maneuver Pivots
  - -relationship Between Strong, Fixed Elements Around which Mobile Force Maneuvers
* Operational Defense must Resist and Contain Enemy Thrusts
* Development of Contingencies to be able to Recover from Enemy Blows
* Constant Effort to Seek and Take Advantage of Opportunity to Conduct Operational Transition
* Fight Battle in Depth to Disrupt--Delay--Destroy Follow on Forces
* Plan to Defeat Enemy Reserves

Take Advantage of Opportunity to Conduct Operational Transition

* Presence of Credible Operational Level Reserves and Maneuver Space
* Operational Plan that Achieves Rapid Penetration to Operational Depth
* Strong Reserves to Strike When Enemy Reaches Culminating Point

Appendix 3: Essential Elements of Combat Power

Operational combat power consists of leadership, maneuver, firepower, and protection. Additionally, intelligence, deception operations, generation of operational reserves and sustainment capabilities impact the commander's use of his combat power. The case studies provide additional information concerning some aspects of combat power elements studied that are of use to operational planners.

Compared to their enemies, the Germans and Israelis were restricted in virtually every warfighting means, but they were successful. Fire support, force structure, strength, ammunition, fuel resupply and infantry mobility were very limited. Logistical infrastructure in the theater of operations was poor. Though vulnerable in many elements of combat power, weak, small formations achieved great results. The case studies indicate that German and Israeli forces with excellent maneuver training, soldier skill and dedication, and tactical-operational leadership were able to overcome great odds. Additionally, German and Israeli formations had greater relative agility, more advanced understanding of air-ground integration and an advantage in their ability to synchronize combined arms.

Maneuver at the operational level must be for decisive results, and its target must be a decisive point that will make the enemy center of gravity vulnerable. The weakness must be linked to neutralizing or destroying the enemy center of gravity. Tactical maneuver skills are indispensable to this effort, but modern warfare's lethality demands precise use of operational maneuver and fires for decisive results. Manstein's use of 4th Pz Army against the Soviet spearheads and the IDF use of three armor divisions in an indirect approach to isolate the Egyptian 3rd Army demonstrates the use of operational maneuver for decisive results.

Operational firepower must be planned and controlled by operational level commanders to synchronize the actions of ground maneuver and firepower means. This synchronization should produce a decisive result. The primary purpose of firepower is to provide the maneuver force freedom of action and to deny the same to the enemy (or in the case of the IDF, providing secure skies for air attacks to complement ground actions). Due to the increased speed, agility and firepower of modern forces, the integration of operational level fires with maneuver (air or ground) must be controlled at the level seeking a decisive operational result and this demands skill in complex joint air-ground operations.

To conduct force generation and sustainment for operational transition, the commander must somehow create a situation analogous to an operational pause. To be useful in planning, the "pause" must be conducted in a controlled manner that assesses risks to the forward units and has a vision of the counterstroke. The pause must be undertaken with an understanding of the friendly and enemy culminating point. Manstein did this by withdrawing 4th Pz Army, husbanding SS Pz Corps and 48 Pz Corp. The IDF created an

operational pause by holding 3 armor divisions out of the battle for 6 days. Careful planning generates forces and builds logistical robustness for the use of the decisive element, the operational reserves, in the counteroffensive.

Careful combinations of all functional forces are required to achieve maximum effect, but there is a tendency to piecemeal forces. Both Soviet and Egyptian commanders wasted armor reserves in this way, while Manstein and the IDF husbanded these resources, often to the detriment of the forward defense. Resources, however, cannot always be forecasted. Both Manstein's loss of AG A as well as Egyptian political influence over the operational reserves created tremendous operational problems. The commander must accordingly have the ability to generate and sustain forces internally. Uncontrollable changes in forces available consequently demands efficiency in the use of available forces if operational transition is to occur.

# Essential Elements of Combat Power

## Leadership

* Ability to Anticipate Beyond the Obvious
* Broad Vision to link Tactics and Operational Art to Attain Strategic Ends
* Action oriented, Independent, Confident, Capable of Rapid Decisionmaking, and having Initiative
* Willingness to:
  - -take Risks
  - -unleash and trust subordinates
  - -alter plan: flexibility of mind
* Superior Observation/Acquisition--Analysis/Decision--Action Cycle
* Soldiers:
  - -who believe leaders are adhering to the social contract
  - -confident in commanders
  - -instilled with a fighting spirit
  - -aggressive

## Maneuver

* Maneuver for a Decisive Result
* Against a Vulnerable Target that will Weaken Enemy Center of Gravity
* Ability to Rapidly Mass and Concentrate Large Units and Combat Power at the Decisive Point
* Certain Minimum Level of Mobility Consistent with the Requirements of the Theater
* Greater Relative Agility in Relation to Enemy
* Flexibility of Mind to Alter Plan, Maneuver Forces and Fires

## Firepower

* Operationally Significant to Create A Decisive Result
* Focused on Operational Means, currently in the Air Dimension
* Concentration of Means on one Aim at the Decisive Point
* Planned and Controlled by Operational Level Commanders
* Operationally Synchronized Between Air and Ground Elements for Complementary Effect
* Intended to Insure Friendly Freedom of Action and Deny Same to Enemy

## Protection

* Know When to Accept Battle and When to Decline Battle
* Deny Enemy any Respite through Continuous Operations
* Deception Plans to Conceal Intent of Operational Defense and Counteroffensive
* Hidden Operational Reserves
* Logistical Support to Committed Forces but Prioritized to Counteroffensive
* Timely Withdrawal
* Exposure and Damage Limitation
* Mobile Defense
* Adequate Engineer Assets to Provide Survivability

# Essential Elements of Combat Power

## Intelligence

- * Superior: Observation/Acquisition--Analysis/Decision--Action Cycle
- * Intelligence:
  - -Macro View of Elements of National Power on Both Sides
  - -Understanding of:
    - -mind of the major enemy commanders
    - -enemy command and control procedures and decision making processes
    - -enemy view of ends--ways--means--risk
  - -Tactical Intelligence Analysis
- * Expert Intelligence Collection, Analysis and Dissemination

## Deception

- * Reinforce and Manipulate Enemy Perceptions and Expectations
- * Believable to Enemy

## Force Generation and Sustainment

- *Waste No Resources
- *Efficient Use of all Resources to Strike at Enemy Center of Gravity
- *Man--Arm--Fuel--Fix--Transport--Protect: Forces Committed to Forward Defense and Counteroffensive Forces
- *Balance Needs of Committed Forces with Requirements of Forces for Operational Transition
- *Creation of "Operational Pause" Situation to Generate and Sustain Operationally Significant Reserves
- *Ability to Reform, Reconstitute and Refit Forces that were Committed to Forward Defense for the Counteroffensive, Especially When Operations are Sequenced
- *Careful Combinations of Forces to Gain Sufficient Mass for Decisive Impact
- *Sustainment of Speed and Mass throughout the Duration and Depth of the Operation by:
  - * Maneuvering Logistics
  - * Establishment of LOCs in Depth
  - * Regulating Consumption
  - * Establishing Alternate Sources of Supply

## Appendix 4: Essential Elements of Operational Reserves

Though a description of operational reserves was not the intent of this monograph, the case studies provide some pertinent information concerning operational reserves that may be of use to operational planners.

The operational commander's ability to affect the battle is directly linked to an operational reserve. Reserves may have to be established by reducing forward tactical forces, taking risks, and economy of force operations. A lack of dedicated operational reserves demands extensive and judicious economy of force operations to generate the counteroffensive force. Such a campaign plan demands strength of will since other forces must initially absorb the enemy blows. While fighting off the enemy attacks, extensive deception measures must be taken to buttress the mindset of the enemy so that he believes he is gaining success and care must be taken to hide the operational reserves. Furthermore, secrecy must be maintained as to when, where, and how the force will be used. Timing is critical to the use of the reserves, too early and too strong reactions in the form of counterattacks dissipate the operational Schwerpunkt for the counterstroke. Thus, when the decisive moment and point of enemy culmination is reached, the operational commander is left with no decisive force unless he has taken steps to reconstitute a reserve.

The operational reserves must be credible and capable of taking the counteroffensive to achieve strategic ends. These forces must be of sufficient strength to destroy enemy command and control or neutralize the enemy mass by defeat in detail. Reserves must be combined arms ground maneuver forces supported by air. Modern combat demands an element of "airmindedness" in leaders as this is the medium that increases combat tempo, helps gain time, and provides synergistic power to the operational maneuver and fires of smaller reserve forces. The operational reserve must have mobility to maneuver deep to achieve decisive operational objectives.

# Essential Elements of Operational Reserves

*Should:

-Be An Element of Operational Decision to Achieve Strategic Ends

-Be Planned with the Goal of Weakening the Attacker

-Coincide with Indicators of Enemy Culmination Point

-Involve a Relationship Between a Strong, Fixed Element Around Which a more Mobile Force Maneuvers

-Be Able to Maneuver to Objectives at Operational Depth

-Have Mobility to Strike Deep to Disrupt Enemy Command and Control

-Have Marked Agility Advantage over Other Forces

-Be A Decisive Counteroffensive Against Flanks and Rear of Successive Portions of Enemy Force

-Involve Simultaneous Attacks in Depth to Disrupt Enemy Rear Areas and Secure Decisive Points

* Commanders Should:

-Be Willing To Take Risks to Achieve Decisive Results

-Understand the Nature of the Opportunity, the Time and Space Relationships and the Timing of the Use of the Reserves

*Counteroffensive Forces Should:

* Be The Best and Most Powerful Forces
* Use Extensive Deception to Protect Forces
* Be Ground Based Force Supported by Air Assets
* Be Combined Arms Formation of Sufficient Mass to be Decisive
* Be Self Contained and Self Supporting for Anticipated Length of Operation
  - -fuel
  - -ammunition
  - -recovery and repair capability
  - -medical support
  - -communications for operating in depth
* Have Air and Ground Coordination
* Be Mobile and not so Large as to Sacrifice Agility
* Be Employed in Sequenced Operations to Gain Mass
* Have the Ability to Task Organize on the Fly
* Have Speed Advantages over the Enemy in Both the Air and Ground Dimensions
* Bypass Enemy Resistance and allow Follow and Support Forces to Reduce these Points
* Be Positioned IAW Anticipated Use

# ORDER OF BATTLE

Information for the tables concerning the order of battle for the Kharkov campaign was compiled from the research of Col. David Glantz's work, From the Don to the Dneiper: A Study of Soviet Offensive Operations Dec 1942-Aug 1943, pages 446 to 465.

SOVIET
December 1942

Southwestern Front: 365,476 men/920 tanks + ? 249 tnks/4659 guns-mortars

*1st Gds Army*
- 4th Gds Rifle Corps=3 Divs
- 6th Gds Rifle Corps=3 Divs
- 153rd Rifle Div
- 18th Tank Corps *(160 tnks)*
  - 3 Tnk Bdes
  - 1 Mot Rifle Bde
- 24th Tnk Corps *(159 tnks)*
  - 3 Tnk Bdes
  - 1 Mot Rifle Bde
- 25th Tnk Corps *(160 tnks)*
  - 3 Tnk Bdes
  - 1 Mot Rifle Bde
- 126th Sep Tnk Regt *(12 tnks)*
- 141st Sep Tnk Regt *(13 tnks)*
- 407th Tnk Dest Regt
- 3rd Mixed Aviation Corps
- 12 ea M-30 MRL btrys

*Totals: 110,796 men*
*504 Tnks*
*1,523 guns/morts*
*1,321 guns*

*3rd Gds Army*
- 14th Gds Rifle Corps=4 Divs
- 197th Rifle Div
- 278th Rifle Div
- 50th Gds Rifle Div
- 90th Sep Rifle Bde
- 94th Sep Rifle Bde
- 1st Gds Mech Corps
  - 3 ea Mech Inf Bde
  - 2 ea Tnk Regt
- 22nd Mor Rifle Bde
- 243rd Sep Tnk Regt
- 114th Sep Tnk Regt
- 119th Sep Tnk Regt
- 1st Mixed Aviation Corps
- 5 ea arty regts
- 8 ea tnk dest arty regts
- 4 ea antiair ary regts
- 2 ea mort regts

*Totals: 110,000 men*
*234 tnks*

Reinforcements:
3rd and 1st Gds Army=30,000 men

Voronezh Front: 90,000 men/250 to 432 ? tanks/1,213 guns mortars

*5th Tank Army*
- 40th Rifle Div
- 47th Gds Rifle Div
- 119th Rifle Div
- 321st Rifle Div
- 333rd Rifle Div
- 346th Rifle Div
- 1st Tank Corps *(? 183 tnks)*
  - 3 ea tnk bde
  - 1 ea mot rifle bde
- 8th Cav Corps=3 Div *(? 40 tnks)*
- 54th Mech Corps *(183 tanks)*
  - 3 ea mech bde
  - 2 ea tnk regt
- 168th Tank Regt *(? 13 tnks)*
- 188th Tank Regt *(? 13 tnks)*
- 5 ea arty regts
- 6 tnk dest regts
- 6 antiair arty regts
- 2 mort regts
- 2 MRL regts

*6th Army*
- 15th Rifle Corps = 3 Div
- 127th Rifle Div
- 160th Rifle Div
- 17th Tank Corps *(168 tanks)*
  - 3 tank bdes
  - 1 Mot rifle bde
- 115th Tnk Bde *(56 tnks)*
- 82nd Sep Tnk Regt *(13 tnks)*
- 212th Sep Tnk Bde *(13 tnks)*
- 8th Arty Div = 9 Arty Regts
- 3rd Mixed Aviation Corps
  - 5 ea tnk dest arty regts
  - 2 ea antiair arty regts
  - 3 ea MRL regts
  - 5 ea sep MRL btrys

Reinforcements
5th Tank and 6th Army=30,000 men

## Axis Order of Battle
### December 1942

Army Detachment Hollidt 60,000 Germans/50,000 Rumanians/30 tnks
- 1st Army Corps=4 div (-)
- 17th Army Corps=2 div(-)
- 2nd Army Corps
  - 2 ea Pz div(-)
  - 1 ea cav Div (-)
  - 1 ea inf div (-)
- 48th Pz Corps
  - 336th Inf Div(-)
  - 11th Pz Div (30 tanks)
  - 7th Luft Field Div

- 3rd Rumanian Army
  - Grp Spang
  - Grp Stahel(Luft Div)
  - Grp Stumpfel
    - 4th Army Corps(rem)
    - 5th Army Corps(rem)
    - 3 ea Sec Div

8th Italian Army
- 2nd Army Corps = 3 div/corps arty
- 35th Army Corps= 2.6/corps arty
- 29th Army Corps= 3 Div *(50 tanks)*
- Alpine Corps= 4.5 div/corps arty
- 4 ea hvy arty btrys
- 6 ea mort bns
- Totals: 100,000 men
  - 50 tanks
  - 624 guns

### Axis Reinforcements

8th Italian Army
- 27th Pz Div (50 tnks)
- 385th Inf Div
- 387th Inf Div
- 30th Army Corps(Fretter Pico)
  - 3rd Mtn Div
  - 304th Inf Div
  - 19th Pz Div

*Total: 65,000*

Army Detachment Hollidt
- 306th Inf Div
- 7th Pz Div
- 6th Pz Div
- Grp Pfeiffer

*Total: 45,000 men*

*Total Axis Reinforcements:110,000*

### Correlation of Forces

| 8th Italian Army | | 6th Army and 1st Guards Army | |
|---|---|---|---|
| Initial | 100,000 men | Initial | 171,000 men |
| Reinforcements | 70,000 men | Reinforcements | 30,000 men |
| **AD Hollidt/3d Rumanian Army** | | **3rd Guards Army/ 5th Tank Army** | |
| Initial | 110,000 men | Initial | 200,000 men |
| Reinforcements | 40,000 men | Reinforcements | 30,000 men |
| Total Initial | 220,000 men | Total Initial | 371,000 men |
| Reinforcements | 110,000 men | Reinforcements | 60,000 men |
| Grand Total | 330,000 men | Grand Total | 431,000 men |

ORDER OF BATTLE
Manstein's Counteroffensive
Jan-Mar 1943

Soviet Forces

Voronezh Front (Golikov) (190,000 men and 315 tanks)

40th Army (90,000 men and 100 Tanks)
- 100th Rifle Div
- 183rd Rifle Div
- 305th Rifle Div
- 309th Rifle Div
- 340th Rifle Div
- 107th Rifle Div
- 303rd Rifle Div
- 25th Guards Rifle Div
- 129th Rifle Bde
- 4th Tank Corps *(50 Tanks)*
  - 3 Bdes/1 Mot Rifle Bde
- 116th Tank Bde
- 192nd Tank Bde
- 59th Sep Tank Regt
- 60th Sep Tank Regt
- 61st Sep Tank Regt

Reinforcements:
- 25th Gds Rifle Div
- 253rd Rifle Div
- 219th Rifle Div
- 1st Czech Div
- 19th Rifle Div
- 86th Tank Bde
- 17th Rifle Bde
- 1st Gds Cav Corps
- 113th Rifle Div

Total Personnel: 57,577 men

69th Army (Kazako) (40,000 men and 50 Tanks)
- 161st Rifle Div
- 180th Rifle Div
- 219th Rifle Div
- 270th Rifle Div
- 37th Rifle Bde
- 137th Tank Bde
- 292nd Tank Regt

Tank Strength: 29 Jan = 165
14 Feb = 100
18 Feb = 110
27 Feb = 39
16 Mar = 22

3rd Tank Army
- 12th Tank Corps
  - 3 tnk Bdes
- 15th Tank Corps
  - 3 tnk bdes/1 mot rifle
- 6th Gds Cav Corps
- 48th Gds Rifle Div
- 62nd Gds Rifle Div
- 111th Rifle Div
- 184th Rifle Div
- 179th Tank Bde
- 201st Tank Regt

Front Reserve
- 86th Tank Bde
- 150th Tank Bde
- 3d Tank Corps *(150 Tanks)*
- 2d Tank Corps *(175 Tanks)*

## Southwestern Front (Vatutin)

**6th Army (Kharitonov)**
40,000 men/40 tanks
- 15th Rifle Corps
  - 6th Rifle Div
  - 172nd Rifle Div
  - 350th Rifle Div
- 267th Rifle Div
- 106th Rifle Div
- 115th Tank Bde
- 212nd Tank Regt

**1st Guards Army (Kuznetsov)**
70,000 men
- 4th Gds Rifle Corps
  - 35th Gds Rifle Div
  - 41st Gds Rifle Div
  - 195th Rifle Div
- 6th Gds Rifle Corps
  - 44th Gds Rifle Div
  - 58th Gds Rifle Div
  - 78th Rifle Div
  - 244th Rifle Div

**Mobile Group Popov (Popov)**
- 4th Gds Tank Corps
  - 3 Bdes/1 Mot Rifle
- 3rd Tank Corps
- 10th Tank Corps
- 18th Tank Corps
- 57th Gds Rifle Div
- 38th Gds Rifle Div
- 52nd Rifle Div
- 9th Tank Bde
- 11th Tank Bde
- 3 each Ski Bdes

Popov's Strength = 55,000 men
Tank Strength 25 Jan = 212
30 Jan = 180
7 Feb = 140
16 Feb = 145
21 Feb = 25
22 Feb = 50
26 Feb = 50

**3rd Guards Army (Lelyushenko)**
100,000 men/110 tanks
- 14th Gds Rifle Corps
  - 14th Gds Rifle Div
  - 50th Gds Rifle Div
  - 61st Gds Rifle Div
- 18th Gds Rifle Corps
  - 59th Gds Rifle Div
  - 243rd Rifle Div
  - 279th Rifle Div
- 60th Gds Rifle Div
- 266th Rifle Div
- 203rd Rifle Div
- 2nd Gds Tank Corps
- 23rd Tank Corps
- 2nd Tank Corps
- 1st Gds Mech Corps
- 8th Gds Cav Corps

**5th Tank Army (40,000 men)**
- 321st Rifle Div
- 47th Gds Rifle Div
- 333rd Rifle Div
- 266th Rifle Div
- 203rd Rifle Div
- 23rd Tank Corps

**Front Reserve**
320,000 men
- 1st Gds Tank Corps *(150)*
- 25th Tank Corps
- 1st Gds Cav Corps
- *Total Tanks 362*

ORDER OF BATTLE
Manstein's Counteroffensive
Jan-Mar 1943

German Forces

AD Lanz (50,000 men)
- 24th Pz Corps
  - 385th Inf Div
  - 387th Inf Div
  - 213rd Inf Div
- 320th Inf Div
- 298th Inf Div
- SS Pz Div "Das Reich" (-)
- Corps Cramer
  - "Grossdeutschland" Div
  - 168th Inf Div (-)
  - 88th Inf Div (-)
- Remnants of 5 other Divs

1st Pz Army (40,000 men)
- 40th Pz Corps HQ
- 30th Army HQ
  - Grp Kreising (3d Mtn Div)
  - 335th Div (-)
- 3rd Pz Corps
  - 7th Pz Div
  - 19th Pz Div
  - 27th Pz Div

AD Hollidt (100,000 men)
- 29th Army Corps
  - Grp 79 (2d Rum Army Remants)
  - Grp Security Regt 177
- Group Heith
  - 384th Inf Div
  - 336th Inf Div
- 17th Army Corps
  - 62nd Inf Div
  - 306th Inf Div
  - 294th Inf Div
  - 8th Luftwaffe Fld Div
- 48th Pz Corps
  - 5th Pz Div
  - 22nd Pz Div
  - 304th Inf Div
  - Grp Shuldt
  - Grp von Hundersdord
  - Grp Steinbauer

4th Pz Army (70,000 men)
- 5th Army Corps
  - Kos Regiment
- 111th Inf Div
- 15th Luftwaffe Fld Div
- 57th Pz Corps
  - 23rd Pz Div
  - SS Mot Div "Viking"
  - 17th Pz Div
- 3rd Pz Div
- 16th Mot Div
- 11th Pz Div

Reinforcements to Manstein during February 1943

Reinforcements by 11 Feb

AD Lanz
- SS Pz Corps
  - SS Pz Div "Das Reich"
  - SS Pz Div "Liebstandarte"
  - 298th Inf Div
  - 23rd Pz Div
  - SS Mot Div "Viking"
  - 17th Pz Div
- 3rd Pz Div
- 16th Mot Div
- 11th Pz Div

1st Pz Army
- 30th Corps
  - 335th Inf Div
  - 304th Inf Div
- 3rd Pz Corps
  - 17th Pz Div
  - 3rd Pz Div
- 40th Pz Corps
  - 11th Pz Div(1 Regt 333rd Inf Div)
  - 7th Pz Div (-)
  - 333rd Inf Div (-)
  - SS Mot Div "Viking"

48th Pz Corps
- 6th Pz Div (-)
- 302nd Inf Div
- 22nd Pz Div

Reinforcements by 16 Feb

AD Lanz
- SS Pz Corps
  - SS Pz Div "Totenkopf" (1 Regt)
- Corp Raus
  - Grossdeutschland Div
  - 168th Inf Div
  - 88th Inf Div (-)
- SS Pz Div "Totenkopf" (-)
- 40th Pz Corps
  - 19th Pz Div (-)

AD Hollidt
- 304th Inf Div

Reinforcements as of 24 Feb

AD Kempf (formally Lanz)
- Corps Raus
  - SS Pz Div "Totenkopf" (1 Regt)
  - 320th Inf Div
  - 167th Inf Div
  - SS Pz Div "Liebstandarte"

4th Pz Army
- 48th Pz Corps
  - 17th Pz Div
  - 153rd Fld Trng Div
- SS Pz Corps
- 15th Inf Div
- Grp Steinbauer

1st Pz Army
- 304th Inf Div
- Grp Schuldt

AD Hollidt
- 5th Army Corps
  - 454th Security Div
  - 444th Security Div
  - Kos Regiment
- 29th Army Corps
  - 15th Luftwaffe Div
  - 16th Mot Div
  - 79th Inf Div
  - 23rd Pz Div
- 17th Army Corps
  - 6th Pz Div (-)
  - 306th Inf Div
  - 302nd Inf Div

Arriving
- 46th Inf Div
- 198th Inf Div
- 332nd Inf Div
- 2nd Army
  - 7th Army Corps
  - 255th Inf Div
  - 57th Inf Div
  - 4th Pz Div

## Task Organization of Forces on 4 March 43

AD Kempf
- "Grossdeutschland" Mot Div
- Corps Raus
  - SS Pz Div "Totenkopf" (-)
  - 167th Inf Div
  - 168th Inf Div
  - 320th Inf Div
  - 88th Inf Div (-)

4th Pz Army
- 57th Pz Corps
  - 15th Inf Div
  - 17th Pz Div
- 48th Pz Corps
  - 6th Pz Div
  - 11th Pz Div
- SS Pz Corps
  - SS Pz Div "Das Reich"
  - SS Pz Div "Totenkopf"(-)
  - SS Pz Div "Liebstandart"
- Grp Steingbauer
  - 46th Inf Div (-)
  - 153rd Fld Trng Div

1st Pz Army
- 30th Army Corps
  - 304th Inf Div, Grp Schuldt
  - Grp Kreising + 1 Regt 46th Inf Div
  - 335th Inf Div
- 3rd Pz Corps
  - 62nd Inf Div
  - 19th Pz Div
  - 3rd PZ Div
- 40th Pz Corps
  - SS Mot Div "Viking"
  - 7th Pz Div (-)

AD Hollidt
- 5th Army Corps
  - 454th Sec Div
  - 444th Sec Div
- 29th Army Corps
  - 15th Luft Fld Div
  - 79th Inf Div
  - 16th Mot Div
- Grp Meith
  - 23rd Pz Div
  - 384th Inf Div
  - 336th Inf Div
- 17th Army Corps
  - 294th Inf Div
  - 306th Inf Div
  - 302nd Inf Div
  - 6th Pz Div
- 2nd Army
  - 7th Army Corps
    - 75th Inf Div
  - 52nd Army Corps
    - 57th Inf Div
    - 332nd Inf Div
    - 4th Pz Div
    - 255th Inf Div

AD Kempf
- Corps Raus
  - 320th Inf Div
  - 167th Inf Div
  - "Grossdeutschland"
  - 168th Inf Div
- 4th Pz Army
  - 57th Pz Corps
    - 15th Inf Div
    - 17th Pz Div
  - 48th Pz Corps
    - 106th Inf Div
    - 6th Pz Div
    - 11th Pz Div
  - SS Pz Corps
    - SS Pz Div "Das Reich"
    - SS Pz Div "Totenkopf"
    - SS Pz Div "Liebstandarte"
  - 39th Inf Div
  - 153rd Fld Trng Div (-)

1st Pz Army
- 30th Army Corps
  - 304th Inf Div, Grp Schuldt
  - Grp Kreising, 1 regt 3rd Mtn Div
  - 335th Inf Div
- 3rd Pz Corps
  - 62nd Inf Div
  - 3rd Pz Div
  - 333rd Inf Div
- 40th Pz Corps
  - SS Mot Div "Viking"
  - 7th Pz Div
  - 19th Pz Div
  - 3rd Mtn Div

2nd Army
- 7th Army Corps (-)
  - 75th Inf Div
- 53rd Army Corps
  - 57th Inf Div
  - 332nd Inf Div
  - 255th Inf Div

AD Hollidt
- 24th Pz Corps
  - Koruck 200
  - 444th Sec Div
  - 445th Sec Div
  - 111th Inf Div
- 29th Army Corps
  - 15th Luft Fld Div
  - 16th Mot Div
- Grp Meith
  - 23rd Pz Div
  - 336th Inf Div
- Grp de Salengre
- 17th Army Corps
  - 294th Inf Div
  - 306th Inf Div
  - 302nd Inf Div
  - Grp Burgstaller

Combat Strength of Arab Countries, 1973

| | Nation | | |
|---|---|---|---|
| | Egypt | Syria | Jordan |
| Soldiers | 255,000 | 105,000 | 59,000 |
| Tanks | 1,940 | 1400 | 280 |
| SP Artillery | 1,000 | 40 | 40 |
| Missle Sites | 90 | 30 | |
| Combat Aircraft | 600 | 320 | 40 |

Israel

Tanks.....1,225

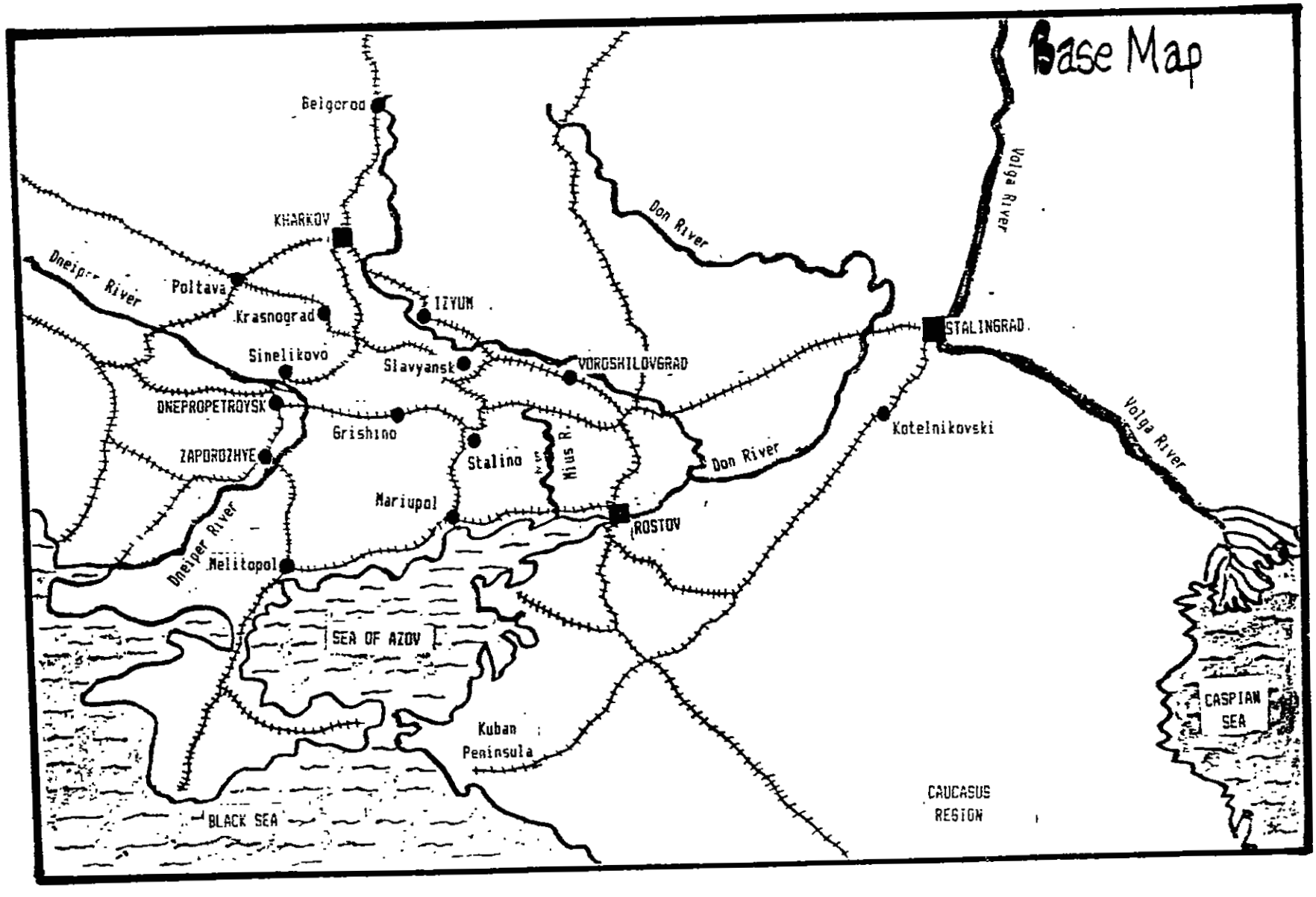
Armored Fighting Vehicles.....1,515

Armored Personnel Carriers.....500

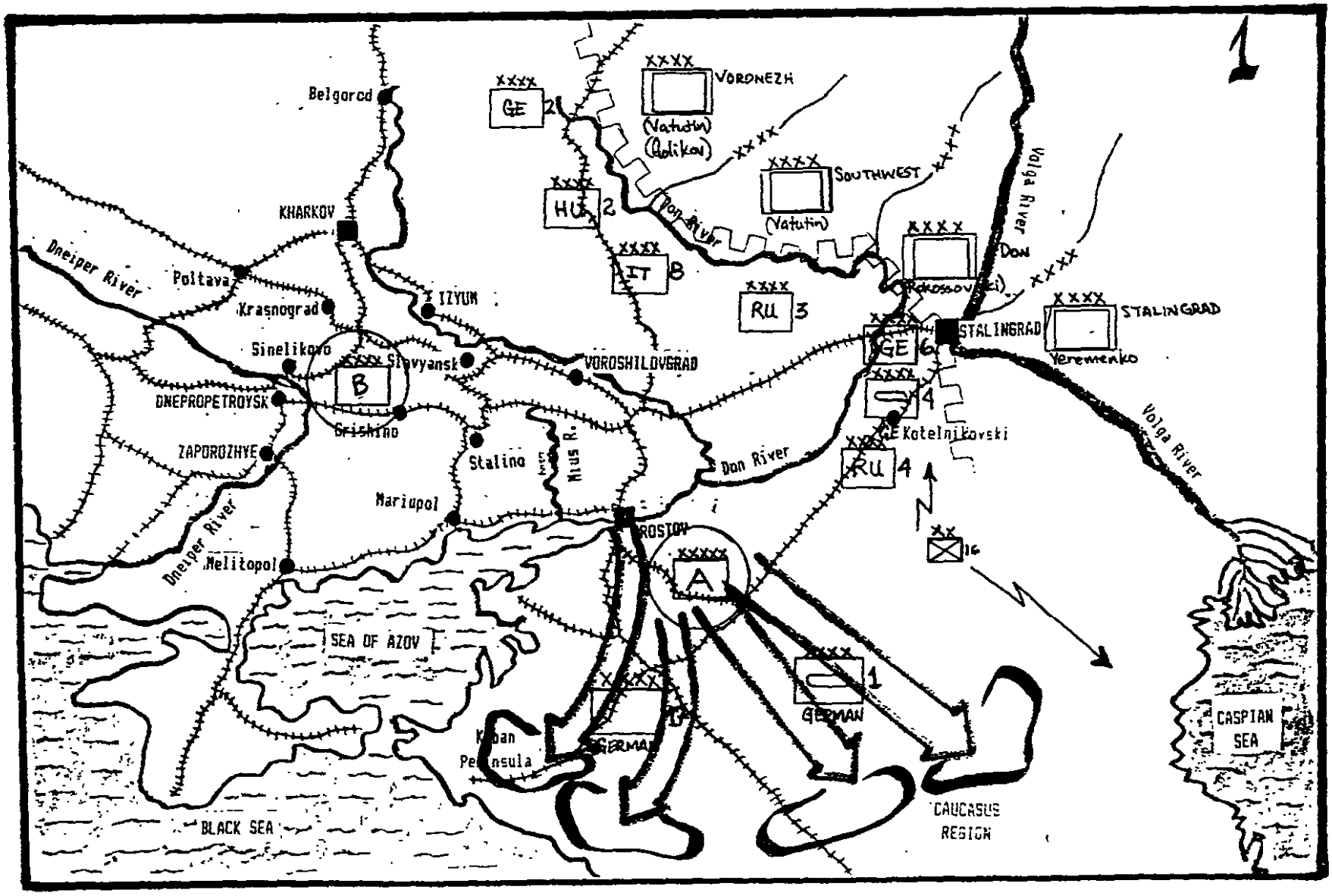
Personnel in Standing Force.....75,0000

Personnel at Full Mobilization.....275,000

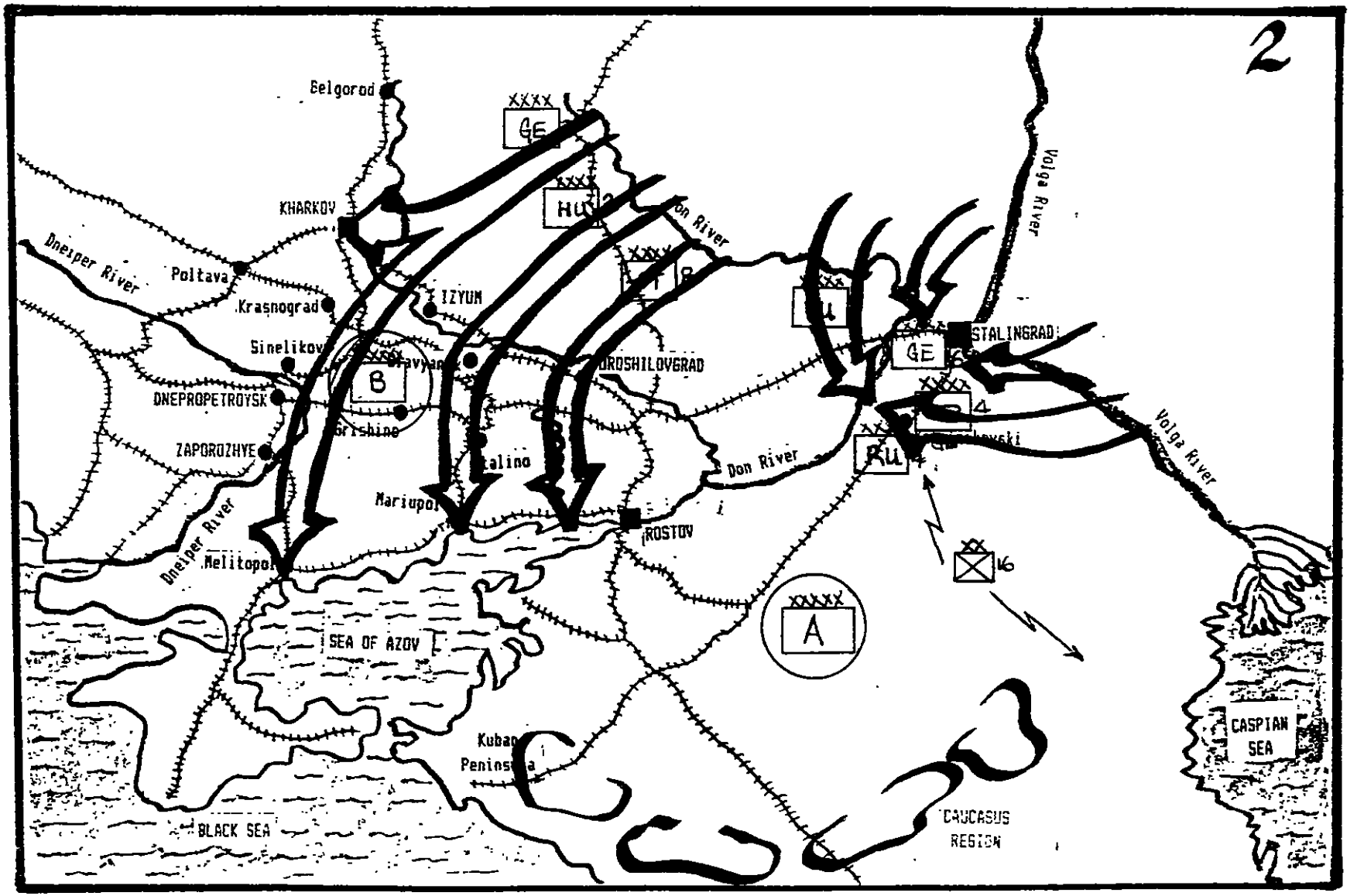
From, A History of the Israeli Army by Ze'ev Schiff.



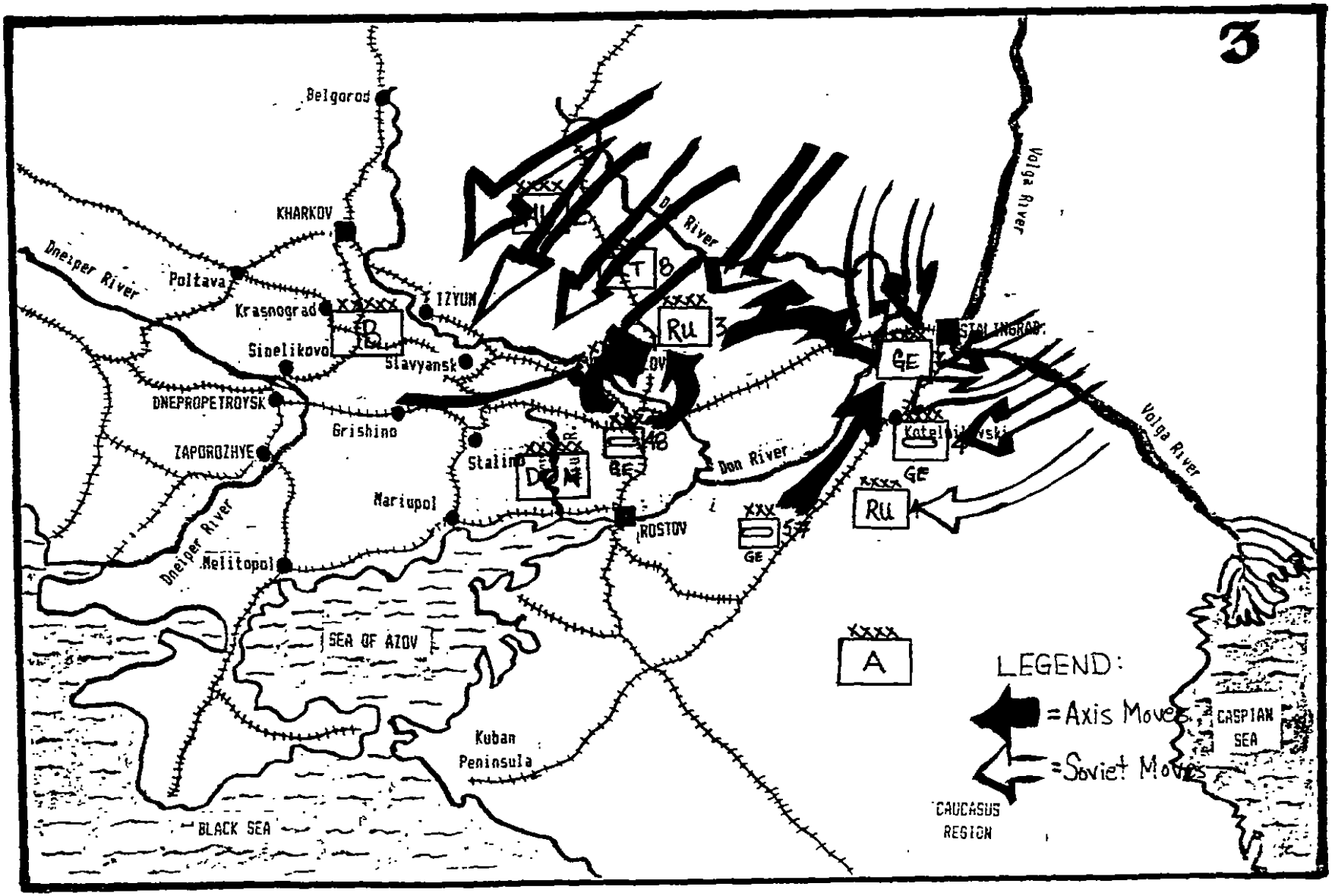

BASE MAP: AREA OF OPERATIONS--GERMAN SOUTHERN WING



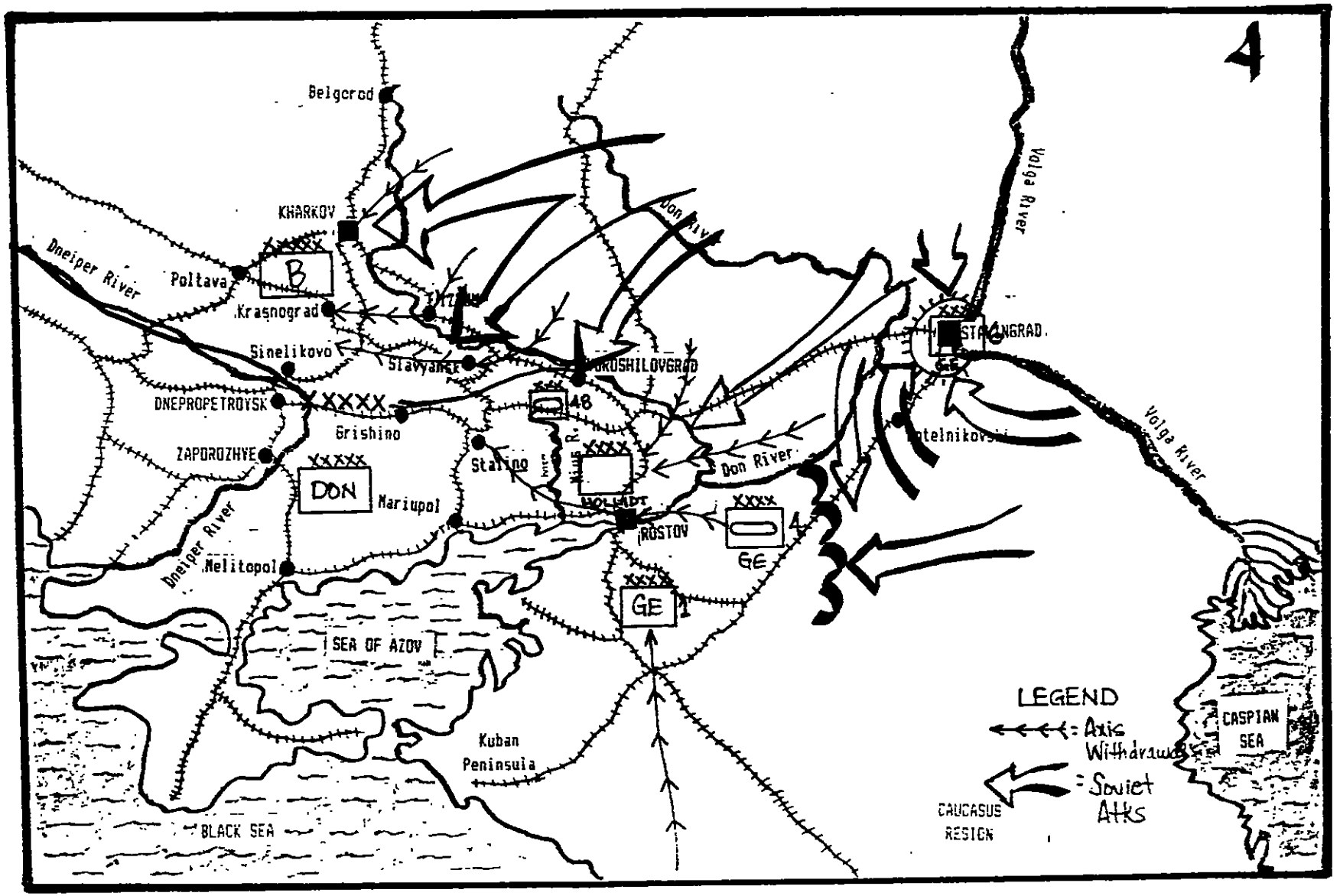

MAP 1--AUTUMN 1942



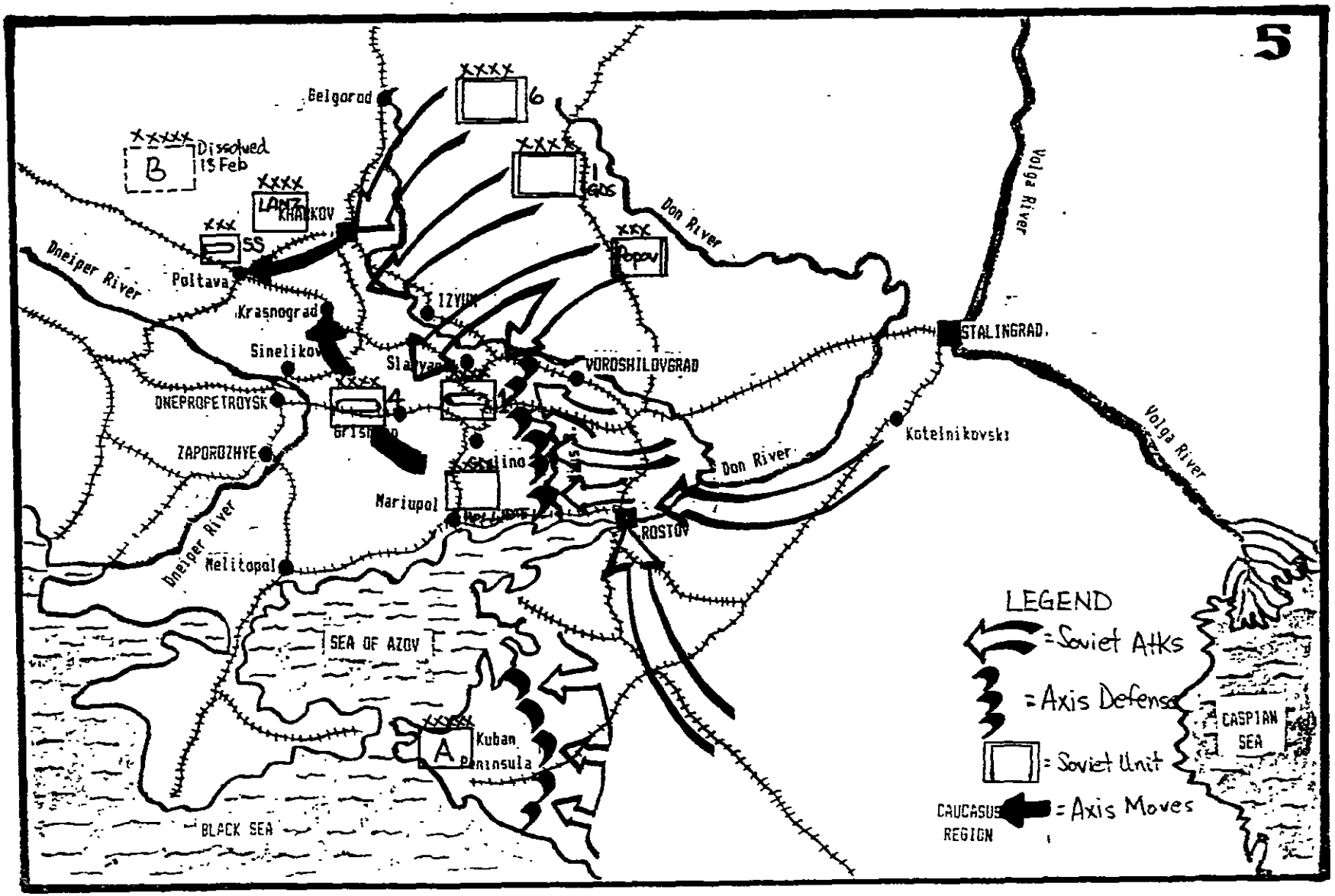

MAP 2--SOVIET PLAN TO DEFEAT GERMAN SOUTHERN WING



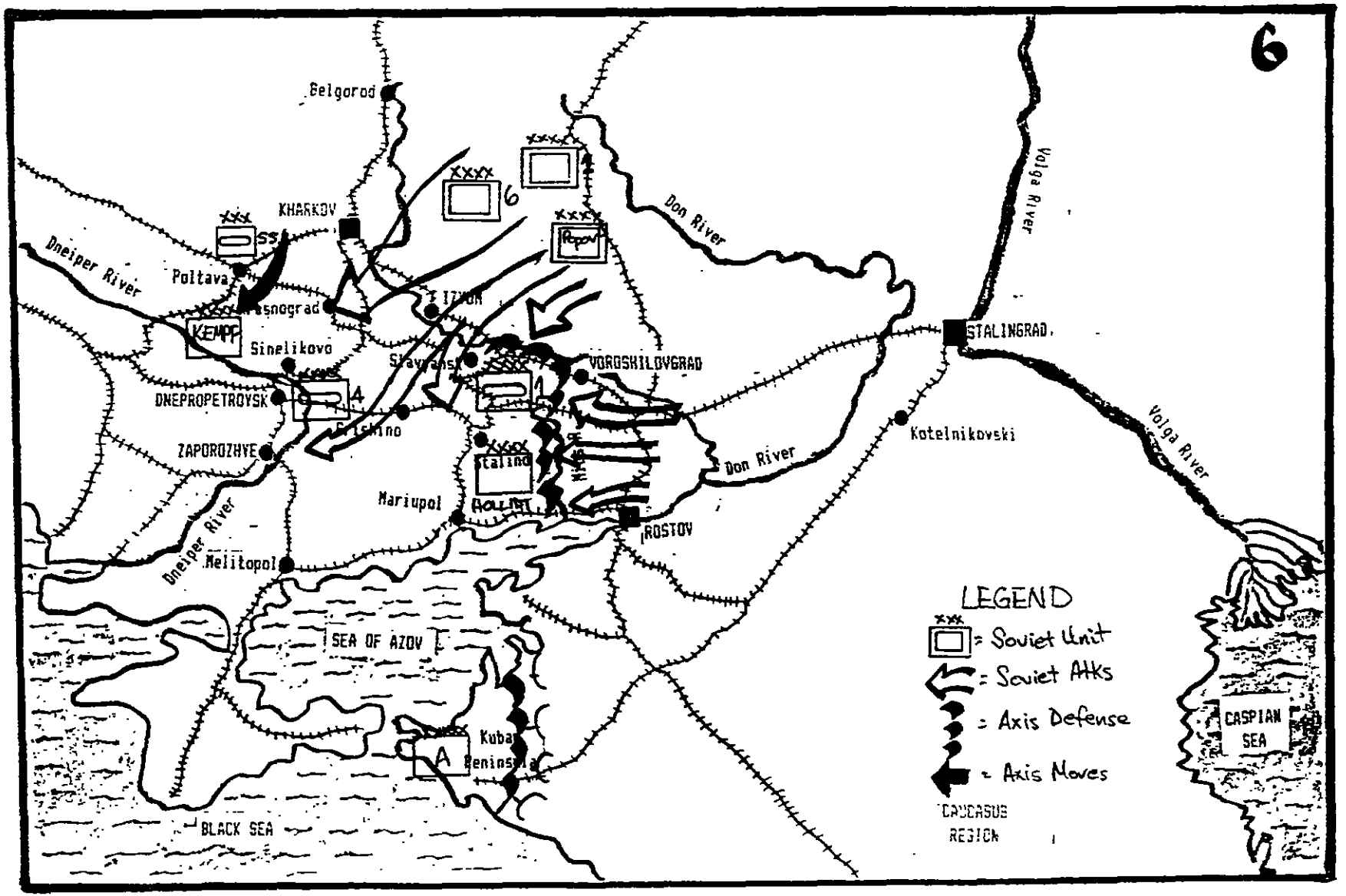

MAP 3: AG DON ATTEMPTS TO RELIEVE ENCIRCLED 6th ARMY WITH 57th PZ CORPS
4th PZ ARMY TRIES TO HOLD AFTER COLLAPSE OF RUMANIAN FORCES
AG B UNDER GREAT PRESSURE FALLS BACK RAPIDLY



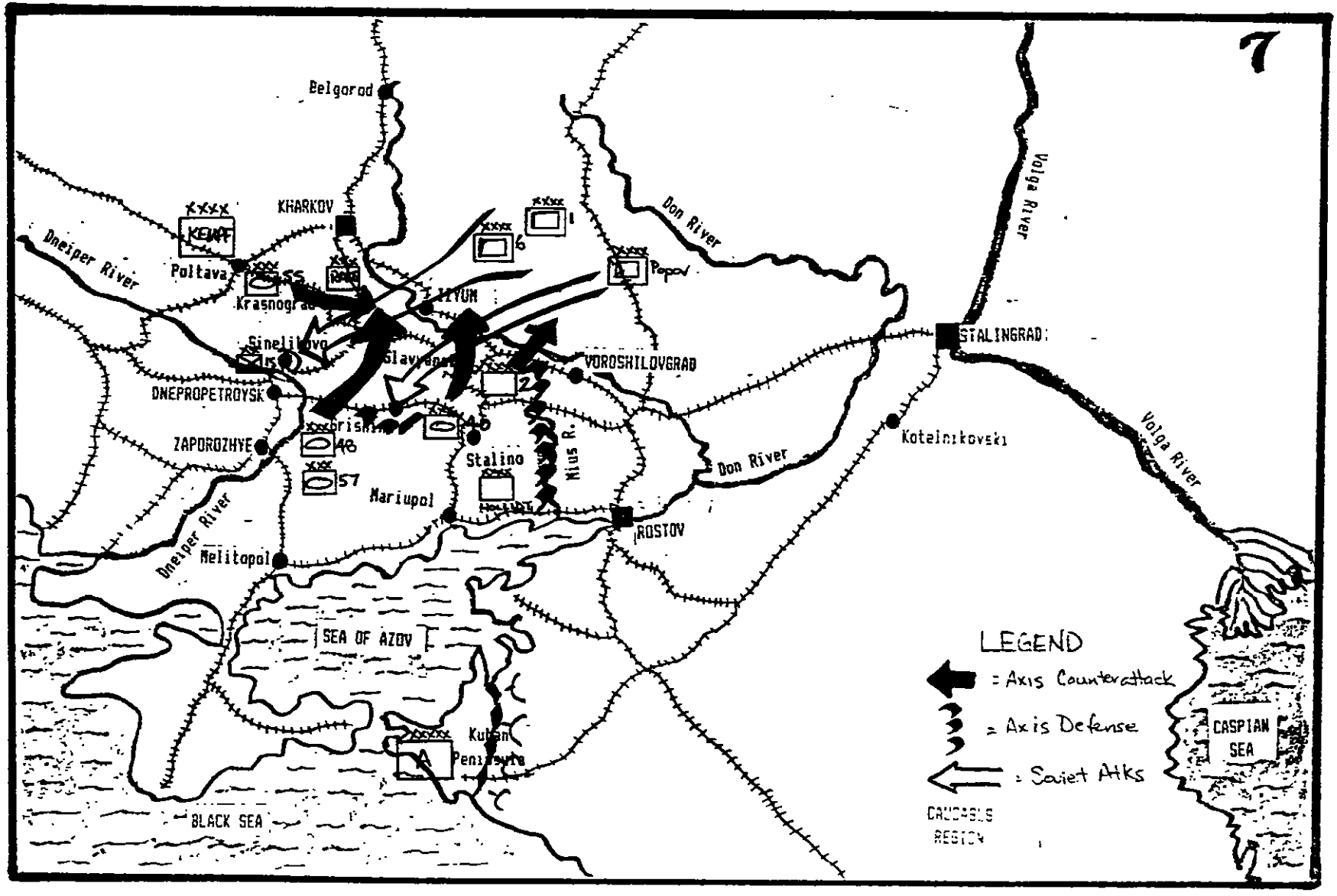

MAP 4: 1st PZ ARMY EVACUATES CAUCASUS AND COVERS 4th PZ ARMY's MOVE TO PROTECT GAP AFTER AG B FOLDS



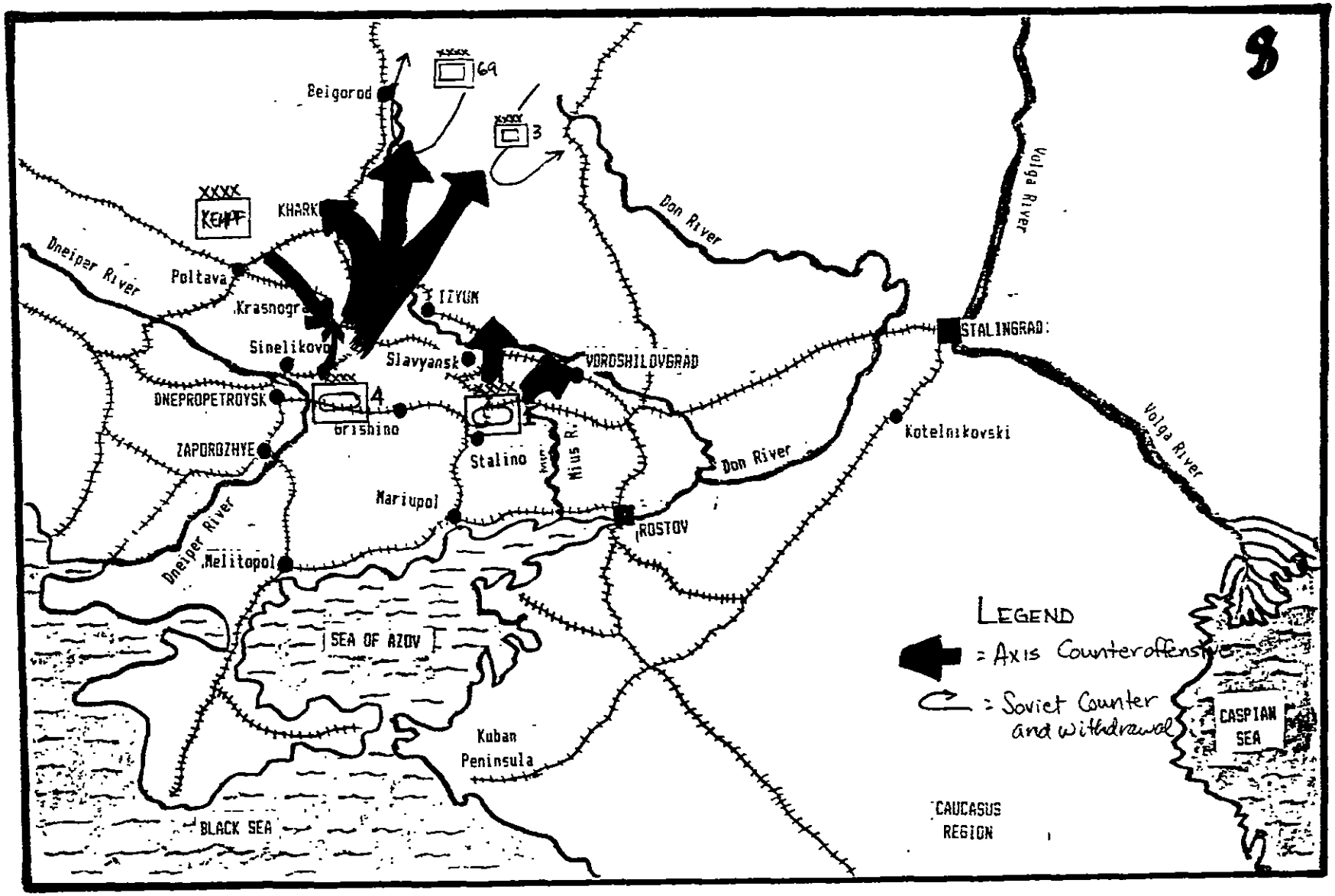

MAP 5: AD HOLLIDT HOLDS MIUS RIVER 1st PZ ARMY LOSES LOCs/4th PZ MOVES TO SECURE FLANK IN THE FACE OF AG 8's COLLAPSE



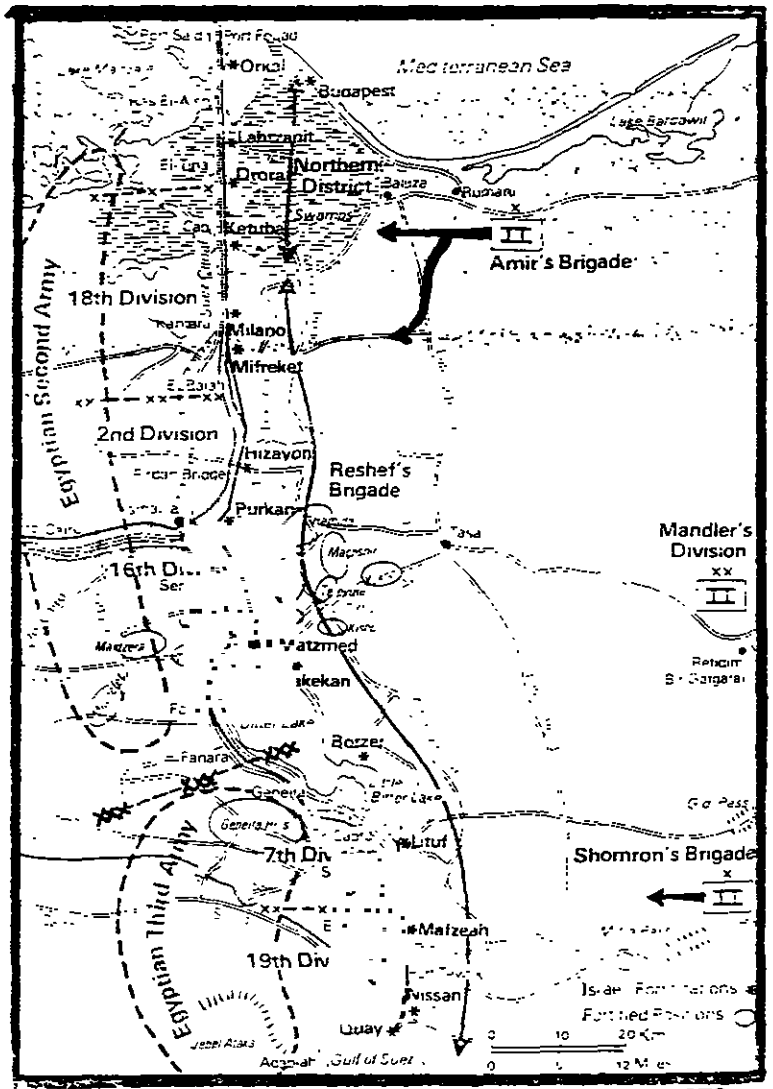

MAP 6: AD HOLLIDT HOLDS MUIS RIVERLINE/1st PZ STABILIZES DONETS RIVER
SOVIETS EXPLOIT GAP LEFT BY FALL OF AG B WITH 6TH ARMY
SS PZ CORPS EVACUATES KHARKOV AFTER BITTER BATTLE/SOVIETS MOVE IN



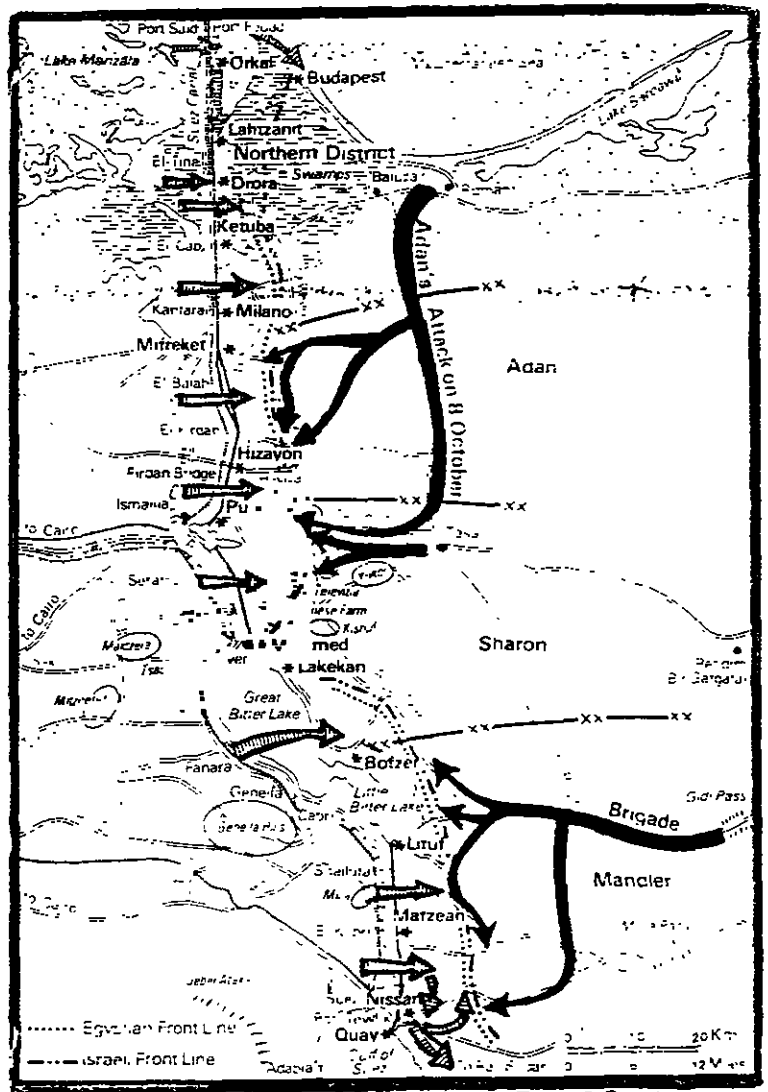

MAP 7: MANSTEIN'S COUTEROFFENSIVE--SS PZ CORPS DESTROYS 6th/1st GDS ARMIES
40th PZ CORPS AND 2nd CORPS OF 1st PZ ARMY DESTROY POPOV MOBILE GP




MAP 8: MANSTEIN'S COUNTEROFFENSIVE STRIKES NORTH
RETAKES KHARHOV AND BELGOROD
1st PZ ARMY COMPLETES DESTRUCTION OF POPOV MOBILE GRP. DONETS R. TAKEN



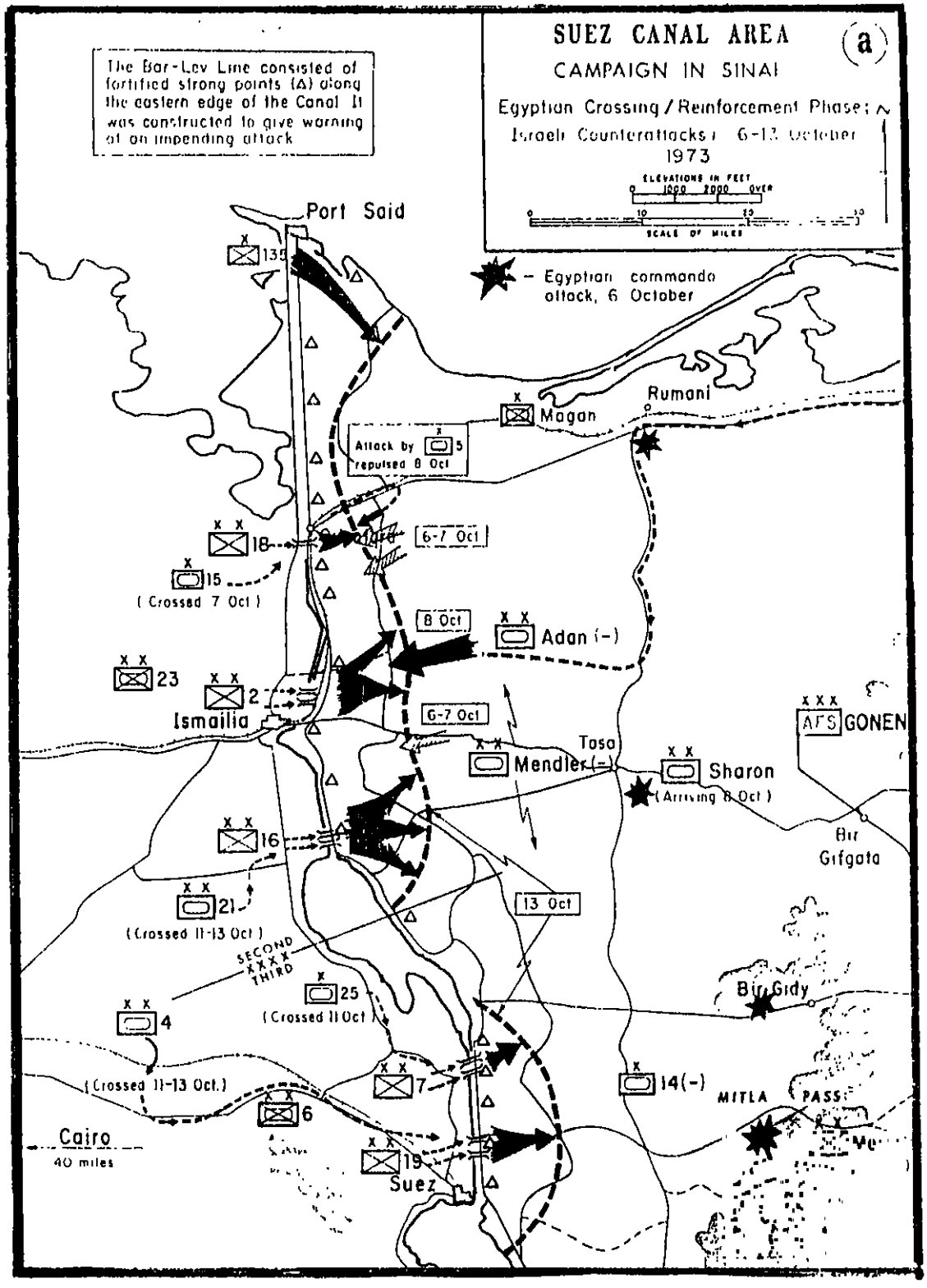

Deployment of Forces, 14.00 hours, Saturday 6 October 1973




Israeli Attack on Egyptian Bridgeheads, 7 and 8 October

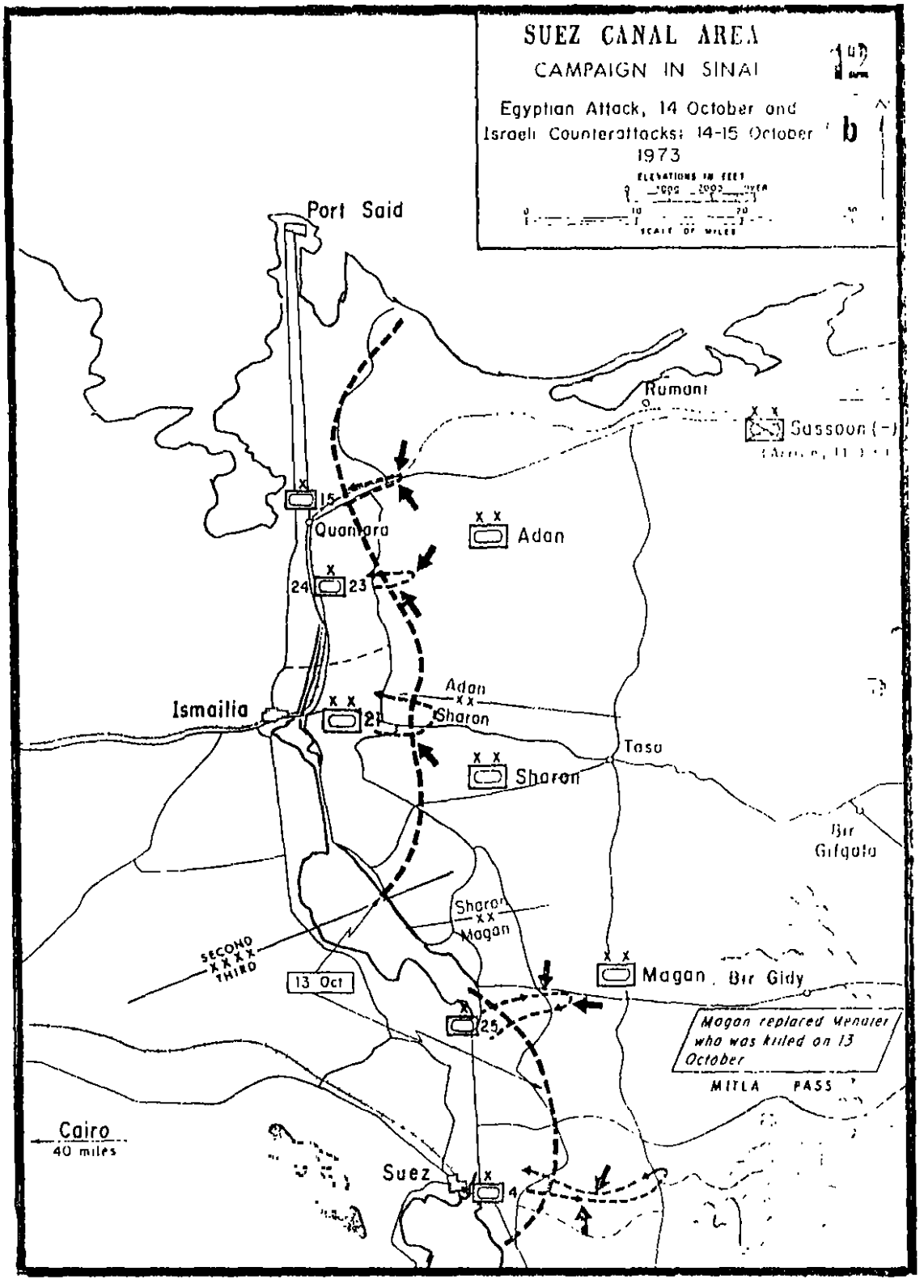
Map 6

Chaim Herzog, The Arab-Israeli Wars, (New York: Vintage Books, 1984), p.230 and 252.



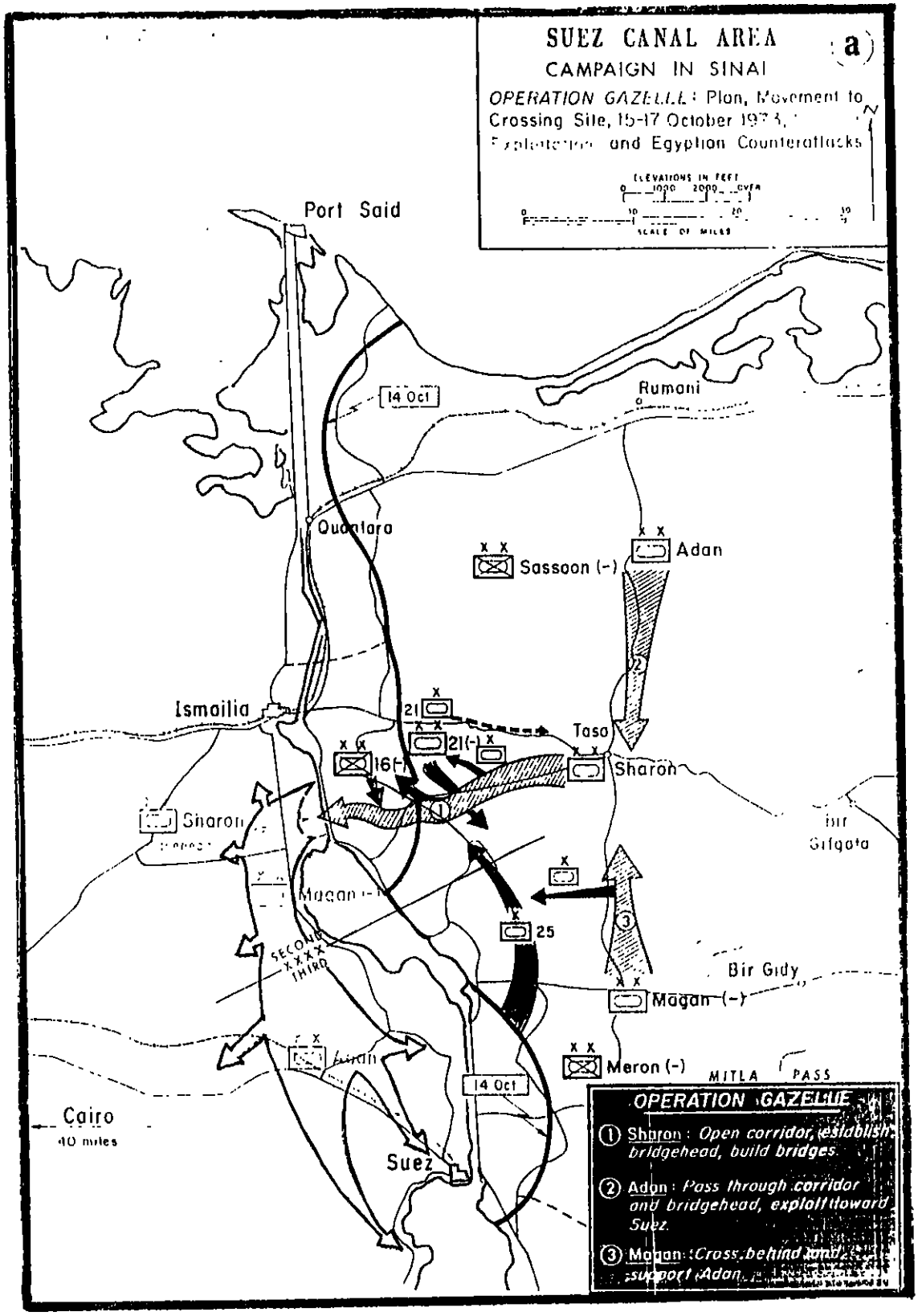

MAP 9A

Thomas Greiss, The West Point Military History Atlas for Arab-Israeli Wars, (New Jersey: Avery Publishing Group, 1986), p.12.



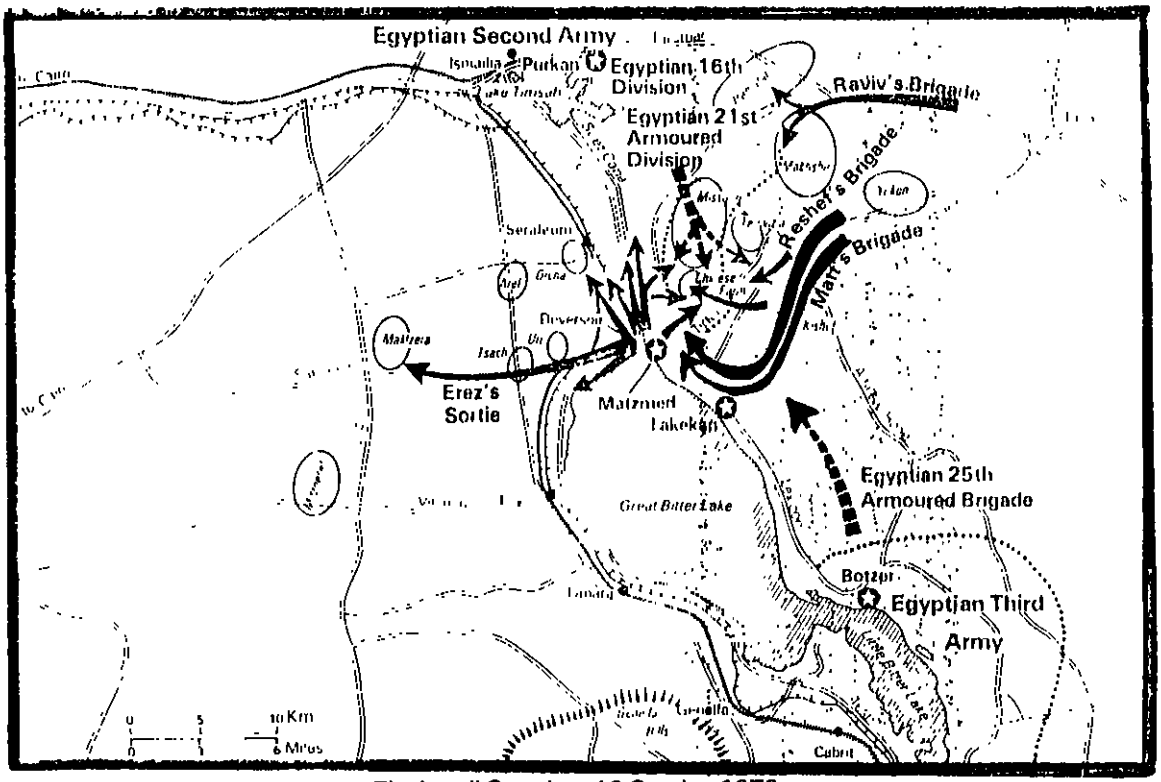

MAP 9B

Greiss, p.12.

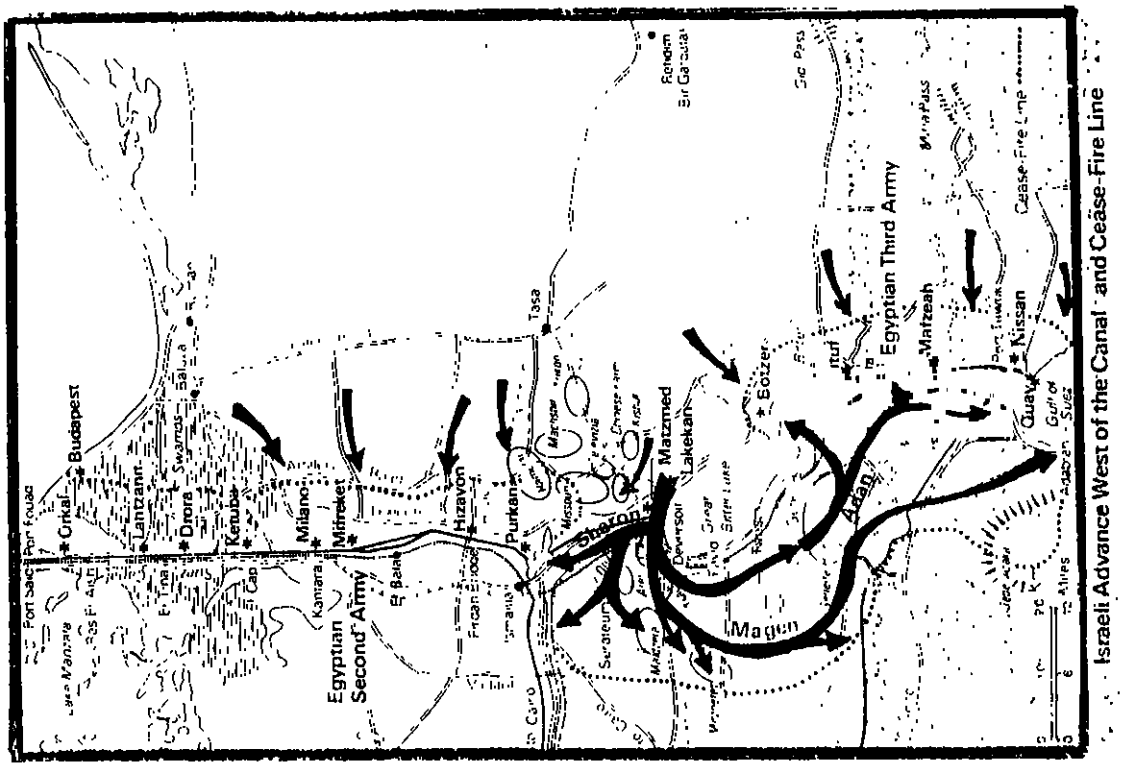



MAP 10

Greiss, p. 13.

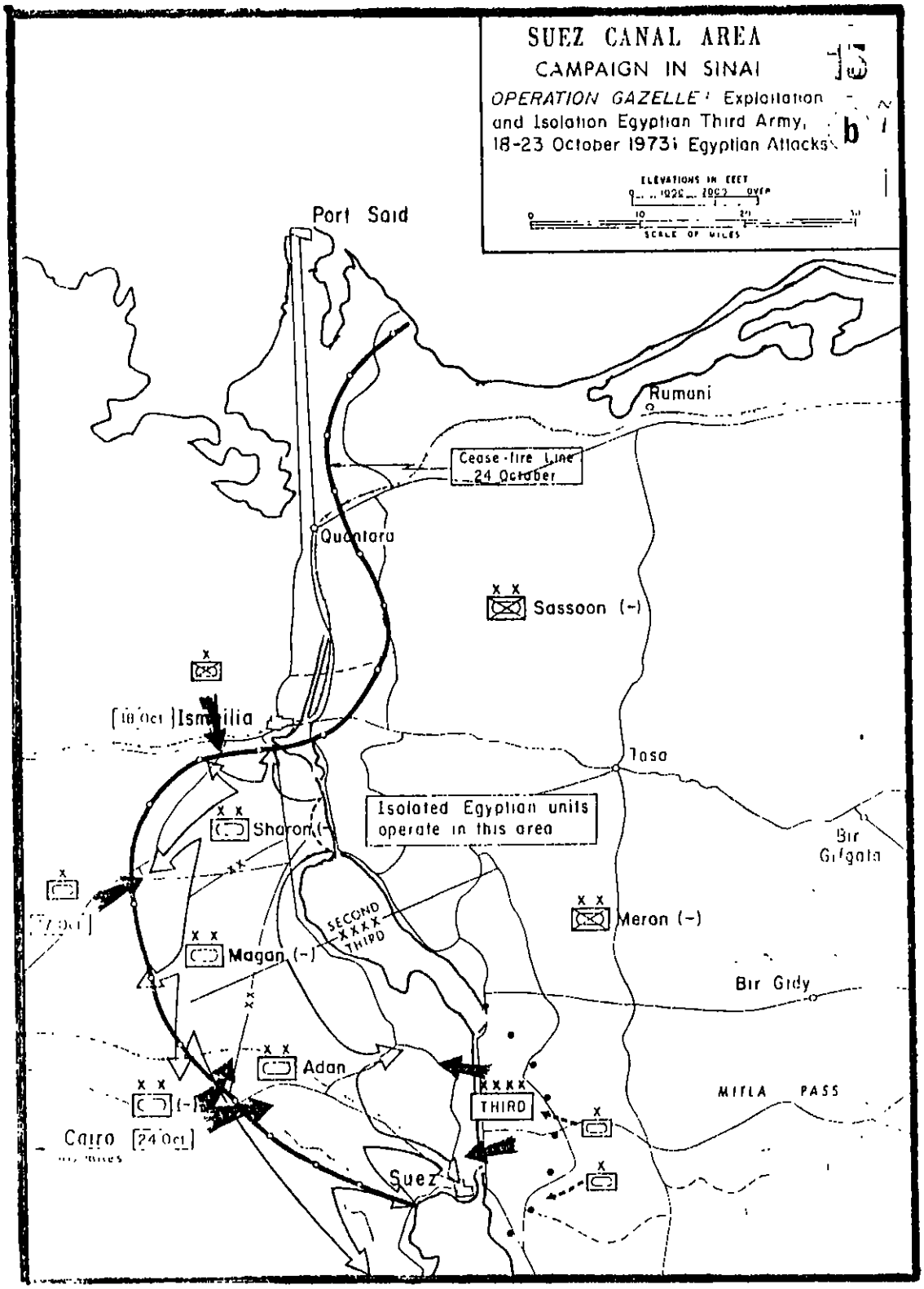



The Israeli Crossing, 16 October 1973



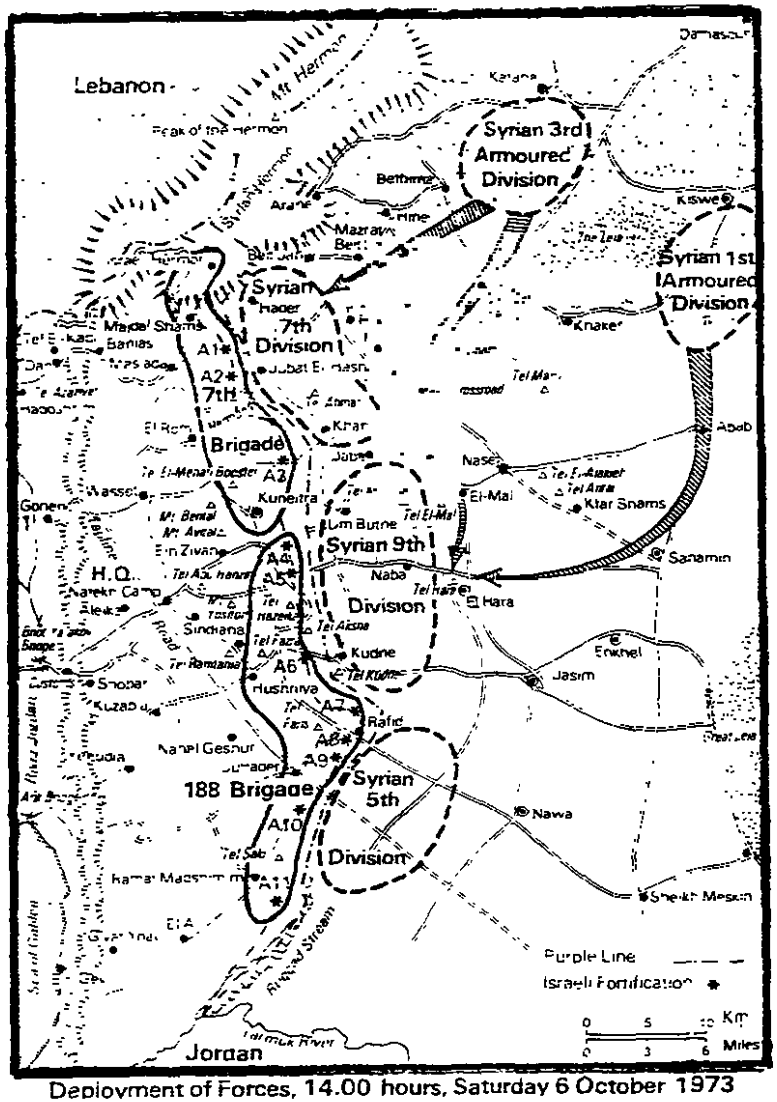

MAP 10A

Herzog, p. 268 and 281.

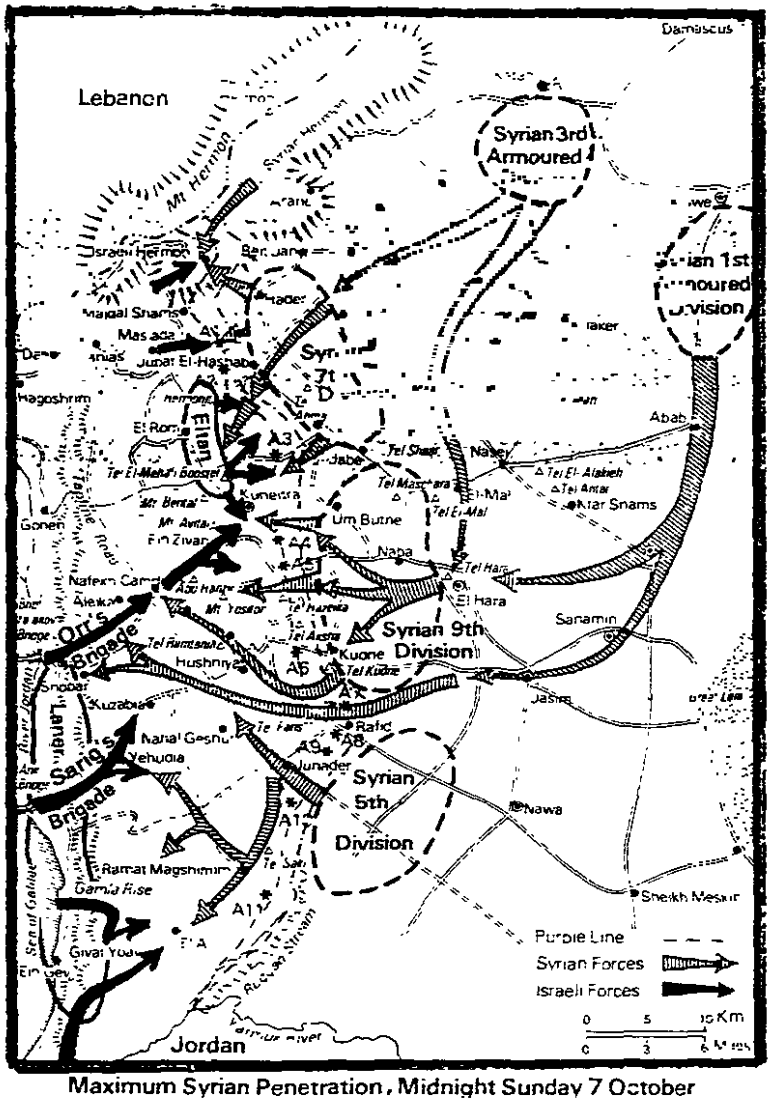



MAP 10B

Greiss, p.13.



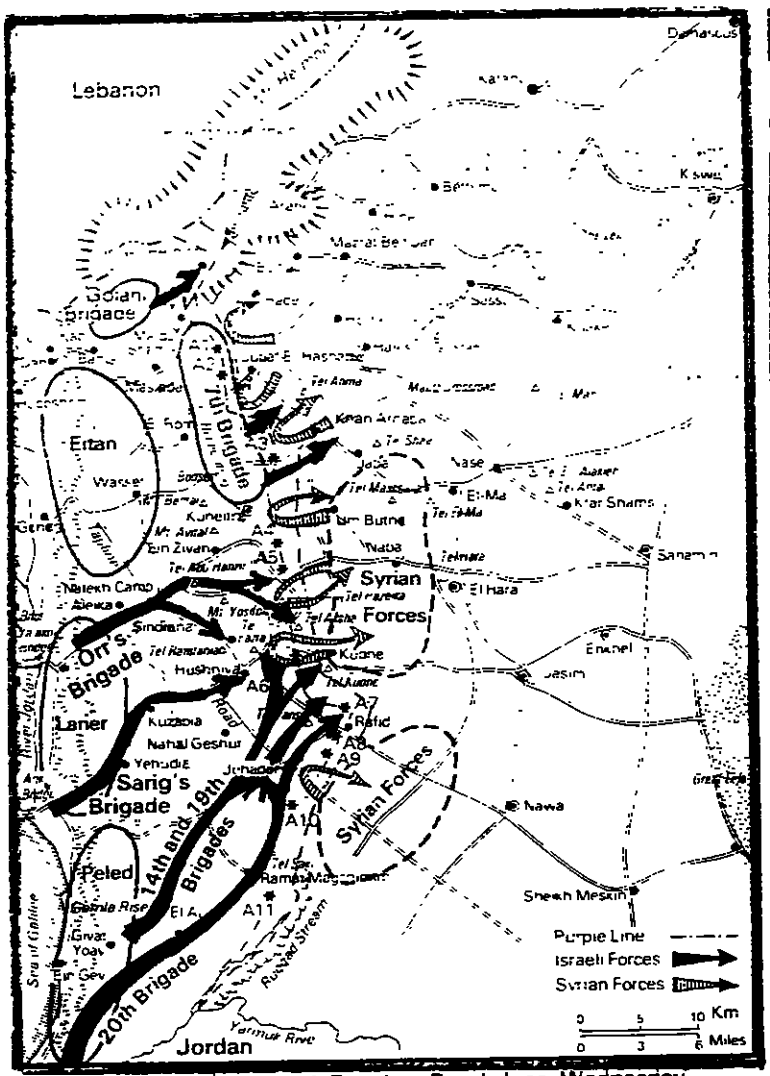

Deployment of Forces, 14.00 hours, Saturday 6 October 1973



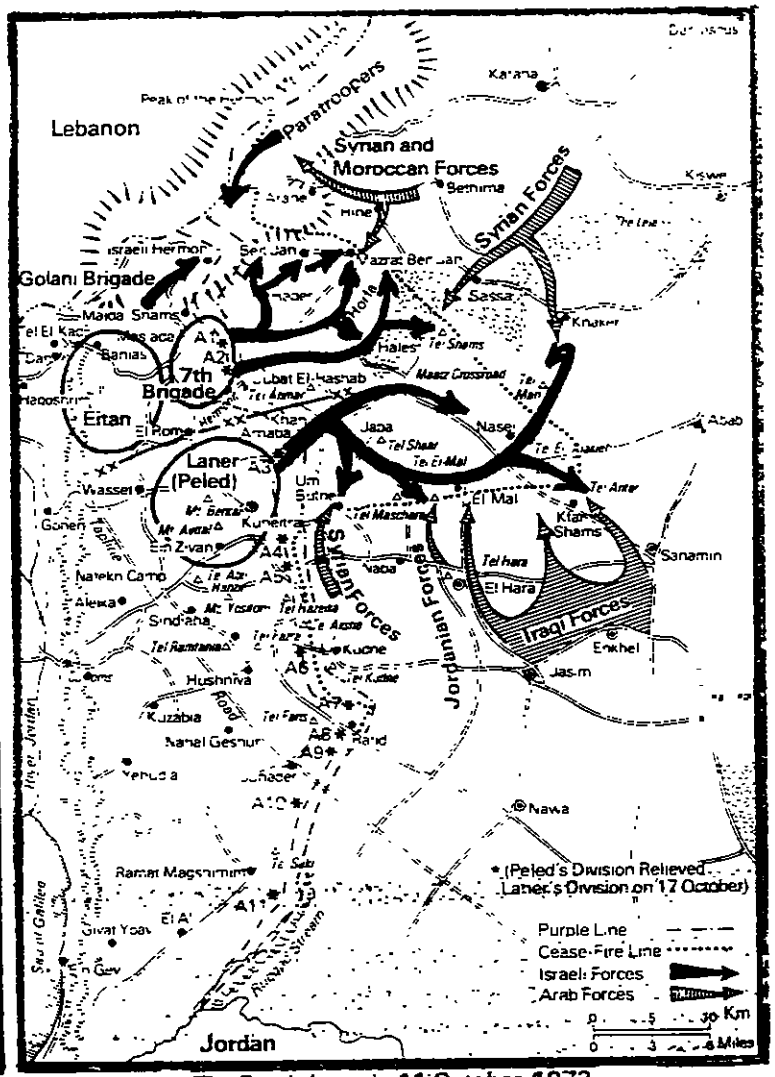

Maximum Syrian Penetration, Midnight Sunday 7 October

MAP 11

Herzog, p.268 and 290.




Israeli Counterattack Reaches Purple Line, Wednesday Morning 10 October




The Breakthrough, 11 October 1973

MAP 12

Herzog, p. 292 and 295.

## Endnotes

1. US Department of the Army, Operations FM 100-5, (Ft. Leavenworth, Kansas: CGSC, 1986), p.15 and p. 139.

2. Carl von Clausewitz, On War, edited and translated by M. Howard and P. Paret (Princeton: Princeton University Press, 1976), p.357.

3. Ibid.

4. Ibid., p.358

5. Ibid.

6. Ibid., p.370.

7. Ibid.

8. FM 100-5, Operations., p.129

9. Ibid., p.129 and 130.

10. Ibid., p.139.

11. Ibid., p.10.

12. Erich von Manstein, Lost Victories, edited and translated by A.G. Powell (Novato, California: Presidio Press, 1982), p.368. The Volga River flank of AG A was screened by only one division, the 16th Motorized Infantry Division covering 250 miles. The defensive frontage of AG B along the Don River and the Chir River was held by Hungarian, Italian and Rumanian Armies. The bulk of the German formations were fighting to capture Stalingrad and the oil fields of the Caucasus.

13. Ibid., p.370. The German southern wing consisted of 32 divisions covering 435 miles facing a Soviet force of 341 divisions.

14. F.W. von Mellenthin, Panzer Battles, (New York: Ballantine Books, 1971), p.250.

15. Manstein, p. 383. 48th Pz Army prevented the enemy from moving in against the rear of 1st Pz Army until such time as the latter had wheeled back from the Caucasus on to the defensive front facing east. 48th Pz Corps had to insure the enemy did not thrust down the lower reaches of the Don River to Rostov and cut off both 4th Pz Army and AG A. The collapse of the Rumanians meant 57th Pz Corps, consisting of only two divisions - 17th Pz and 23rd Pz Div, was to hold against the Soviets. AG Don could not get enough forces to help 4th Pz Army. Even when AG A offered the help of 3rd Pz Corps, OKH denied the move. AG Don persisted and managed to get 7th Pz Div freed to send to 4th Pz Army, but Hitler personally intervened and halted the move and stationed the division in Rostov. Not until mid January did help arrive in the form of SS Viking Div and 16th Mot Inf Div. During this time, the 4th Pz Army faced two Soviet armies, the 2nd Gds Army and the 51st Army consisting of 1 tank corps, 3 mech corps, 3 rifle corps and 1 Cavalry Corps. The 4th Pz Army kept its forces concentrated in vital strongpoints resisting at decisive points. The infantry manned these strongpoints while the armor was driving in the enemy flanks with strong mobile forces, while other less threatened parts of the front were covered only by flimsy early warning screens.

16. *Ibid.*, p.383. "Hitler showed little understanding for the old-established German principle of leadership and repeatedly sought to meddle in the operations of subordinate headquarters by issuing specific orders of his own...Nothing could be done about such orders when they related to the movements of adjacent army groups or the action to be taken with formations which were still OKH reserves. However, when they directed that a particular line be held to the last man...the force of circumstances usually proved stronger in the end."

17. Paul Carell, Scorched Earth, (New York: Ballantine Books, 1971), p.194-195. Although operational control was solidified, strategic influences on tactics threatened the operational design. Before Manstein gained authority over AD Lanz (12 Feb), Hitler had ordered its SS Pz Corps to hold Kharkov at all costs. Manstein felt it operationally indecisive to hold Kharkov; if ground were given up , if resources could be husbanded, Kharkov could be retaken easily in the operational counterstroke. AD Lanz understood how hopeless Hausser's situation was in Kharkov. But, under direct orders from Hitler, AD Lanz ordered SS Pz Corps to hold. Almost surrounded, Hausser ordered the evacuation on 16 Feb and fought his way out of the city. Hausser's forces fought doggedly and upset the Soviet timetable, forcing the dissipation of precious armor to take Kharkov. In an unknown side advantage, Hausser's heroic stand also confirmed the Soviet idea that the Germans were indeed withdrawing. Hitler placed the blame for the debacle on Lanz and replaced him with Kemph.

18. Manstein, p.421. Though AG B was weak, it provided a vital coordination link with AG Central. This quick change in command structure made for some anxious moments as units left in contact tried to tie in with the newly formed AG South. AG South was faced with trying to make sense of the dispositions and capabilities of the inherited formations so that a coherent plan could be developed for a front that stretched from Belgorod to the Black Sea. Signals were hard to establish and AD Lanz was locked in combat at Kharkov and could not be extracted for repositioning. "...although the removal of HQ Army Group B complicated the handling of operations at the most delicate spot on the Eastern Front, it still served one useful purpose. By bringing Army Detachment Lanz under Southern Army Group, it enabled our headquarters to exercise exclusive command at the decisive place and time." This initial confusion was a significant advantage to the Soviets." OKH saw the need for unity of command and created AG South consolidating AG Don and AG B, but Hitler refused to consider the placing of Kleist's 400,000 trapped men of AG A under Manstein. Removal of AG B was initially detrimental since little effort was given to proper handover, but German agility stabilized the situation.

19. Ibid., pp.426-427. "My purpose in putting forward these ideas was to persuade Hitler to consider operations on a long-term basis for once...When I objected that our own divisions were also at the end of their tether, he replied that they would be brought fully up to strength and issued with new weapons during the muddy season...He would not recognize, however, that during that same period the enemy (could) bring...1.5 million men to the front. Neither would he admit that with the number of tanks the enemy could produce in two months...he could refit about 60 armoured brigades."

20. Carell, p.207 and 208. Popov was struck by the SS Viking Div which led with a devastating artillery attack. 11th Pz Div and 333 Inf Div joined the attack cutting Popov's overextended lines of communications. Lacking follow and support infantry forces and too far forward to turn around, Popov lost his supply lines. Further indications of supply problems are found in the famous quote of Popov, "All wheels are standing still."

21. Ibid., p.209. Since the 6th of February the Germans had broken the Russian signal codes and were privy to all the conversations between Popov Mobile Group and Vatutin. The Germans knew, even before the Soviet regimental commanders, where the Soviet battalions were going to be sent. The Germans had perfect tactical intelligence that enabled them to shift forces and take calculated risks with the result that they were always ready at the right spot at the right time.

22. Ibid., p.213. On 23 Feb, Popov signalled all that remained to him was a handful of tanks, and they were out of fuel. He had no artillery left, next to no ammunition, and no food supplies. As Vatutin explained this to Stalin he was rebuffed and Vatutin signalled Popov, "I wish to remind you emphatically that you are to use all available means to you in order to...annihilate the enemy...I am holding you personally responsible."

23. John Erickson, The Road To Berlin, (Boulder, Colorado: Westview Press, 1983), p.53. "In particular, the tank forces urgently needed increased repair facilities; all Front repair units were up with the tank corps, so that the armour in the rear went completely untended, partly because the two mobile tank repair workshops promised to the Front had not arrived."

24. Ibid., p.54. "The German drive on Belgorod made the reinforcement of the Voronezh Front a very urgent matter. Rokossovskii on the Central Front was ordered to move the 21st Army south of Kursk; 64th Army was ordered to move from Stalingrad area and Katukov's 1st Tank Army received orders to block the German thrust...Kazakov's 69th had to hold off the SS troops...not that Kazakov could do much with divisions ground down to less than 1000 men each...[with] no tanks and less than 100 guns...[T]o Katuzov's disgust the command of 2nd Gds [sent to reinforce his sector] did not seize their chance to attack the SS tank units in the flank; HQ 2nd Gds remained on the east bank of the Donets directing their brigades by radio but failing to follow up their chance. With 69th over the Donets, 21st Army moved to the north of Belgorod, 1st Tank concentrated at Oboyan, and 64th Army moved to the north of Belgorod, 1st Army moved to the line of the Donets; thus Kursk was secured from the south [to form the southern face of the 'Kursk' salient]".

25. Erickson, p.52.

26. Carell, p.216.

27. Ibid., p.221.

28. AD Hollidt consisted of the Meith Group, the Fretter-Pico Group, four regular infantry divisions, two Luftwaffee Field Divisions, and various pasted together allied and German alarm units. German alarm units were hastily formed security units made up of remnants of destroyed formations. The main strength of the formation lay in the 6th and 11th Pz Divisions.

29. Manstein, p.422.

30. von Mellenthin, p.254.

31. Ibid., p.244-245.

32. Carell, p.194-195. "The enemy is withdrawing in retreat and massed columns are withdrawing behind the Dneiper...regardless of supplies or enemy rearguards, (all attacking fronts) to thrust through the retreating enemy, reach the Dneiper before the onset of spring mud, and thus cut off Manstein's retreat to the river."

33. Erickson, pp.49-50. "Vatutin had decided on this 'broadening' of the his offensive on 12 February. Golikov had set his sights on the Dneiper, even though his senior commanders, their divisions down to 1000 men, a handful of guns and perhaps 50 mortars, pleaded for a pause. Both the Voronezh and Southwestern Fronts had done some prodigious fighting and covered great stretches of ground, following

nothing less than a train of destruction as retreating German units blew up bridges, buildings and airfields, tangled railway lines and damaged the few roads as much as possible. Both Vatutin and Golikov, however, embarked on an expansion of their offensives as a result of three factors: overestimation of their own capabilities, wholly erroneous interpretations of the intelligence of German movement and STAVKA approval. Vatutin had already dipped deeply into his reserves...All three Soviet fronts had substantial intelligence of German movement. On the afternoon of 19 February and at dawn on 20 February Soviet reconnaissance planes reported large concentrations of German armor in the Krasnograd area (this was 4th Pz Army), troop movements at Dneprovpetrovski and what looked like armor regrouping on the south-east of Krasnoarmeisk. These concentrations-lying slap across the path of Vatutin's right wing-were immediately interpreted at Front HQs as German tank cover for withdrawal of the main body of German forces from the Donbas."

34. Carell, p. 199.

35. Saad El Shazly, The Crossing of the Suez, (San Francisco: American Research, 1980), pp.222-223. 200 aircraft struck Israeli medium artillery positions, three airfields, air defense "Hawk" batteries, administration centers, command posts, and radar stations. 2000 artillery tubes fired a 53 minute preparation using 10,500 shells and a brigade of "FROG" surface to surface missiles was launched. Chaim Herzog, The Arab-Israeli Wars, (New York: Vintage Books, 1984), p.242. Arab losses in the assault crossing amounted to only 208 KIA, the Egyptians had thought they would lose as many as 10,000 soldiers.

36. Shazly., p.223-235. By 2230 hrs, 6 October, eight heavy bridges and four light bridges were working with thirty one ferries. Sixty of the planned seventy breaches in the east bank rampart were opened except that three in the southern crossing areas were inoperable due to mud slides. The Egyptians had lost five aircraft, twenty tanks and almost three hundred men. Ze'ev Schiff, A History of the Israeli Army, (New York: MacMillan Publishing Company, 1985), p.217. Though the Israeli Air Force succeeded in protecting Israel proper, it was unable to provide support to ground forces during the early days of the conflict; the Arab missile systems were too extensive. With the assistance of the Soviet Union the Egyptians and Syrians had built networks of antiaircraft missiles even denser than those used by North Vietnam. In 18 days of combat, the IDF lost more than 25% of its airframes (104). Egyptian and Syrian air forces lost 456 planes.

37. Schiff, p.213 and p.214.

38. Shazly, p.238.

39. Schiff, p.208.

40. Avraham Adan, On the Banks of the Suez, (Novato, California: Presidio Press, 1980), p.234. The "operational hold", or defensive operations designed to attrite the IDF as it smashed itself on the Egyptians, was having little effect after 9 Oct when the IDF went over to a defensive posture and shifted the strategic main effort to Syria's attacks. On the 11th and 12th it became clear that the Syrian effort was in grave circumstances. In light of these events, the Syrians demanded that Egypt go ahead with the plan to take the Sinai passes and force the IDF into transferring forces to the Sinai. It was obvious that the two Arab nations had a disconnect in their operational plans. The Syrians claimed that the Egyptians were to take their initial canal crossing all the way to the passes and indeed some sixty kilometers into the Sinai and then go over to the operational defense. The Egyptians denied this stating that their posture of 11-12 October was only about five miles short of their intended positions (they had not achieved a line roughly analogous to the Artillery Road). Nonetheless, the Egyptians agreed to attack on 13 October, however, the Egyptian operational commanders were so reluctant to take this action, that the attack did not take place until 14 October.

41. Ibid., p.237.

42. Shazly, p. 246-247. Both Army commanders, fully aware of the intent of the operational design and their means/strengths stated they could not attack, one threatened resignation (2nd Army). After a conference, there was only one concession, on the date of the attack, now to be on 14 October. While this gave the Egyptians one more day, it also gave the Israelis one more day to finish business on the Golan and get to Sinai. An additional restriction to operations was the requirement that the bridgehead not be weakened at all and that the operational reserves be used for the attack. The operational reserves consisted of 330 tank, the total in two divisions the 4th Arm Div and the 21st Arm Div. The 4th was behind the 3rd Army and the 21st posted behind the 2nd Army. Each div had two brigades with one hundred tanks per brigade and one mechanized brigade. The 21st Div had half of its tanks forward to provide fire support to the infantry holding the bridgeheads. The 4th Div was also to leave one brigade on the west bank as a reserve, thus the operational design that depended on at least 330 tanks as a mobile reserve was now reduced to 100 tanks in reserve.

43. Ibid., p.244-245. Egypt had 1700 tanks with 1020 on the east bank in the defensive positions and 330 in operational reserve on the west bank to destroy any enemy penetration. Losses up to date were 240, the Egyptians had only 780 tanks across the canal. Though the Israelis had lost 610 tanks to date, they had the means to replace them. Thus the Israelis had 900 tanks and the Egyptians 780 and this was not enough to attack the passes as was now proposed in the euphoria of the moment.

44. Ibid., p. 247.

45. Shazly, p. 248. Adan, p. 237.

46. Shazly, p. 252.

47. Shazly, p. 258.

48. Ibid., p. 253.

49. Ibid., p. 254 and 255.

50. Schiff., p.271. 96 Egyptian tanks and a large number of armored personnel carriers moved into the giant antitank ambush set by the Israeli division waiting to cross the canal. Only four vehicles escaped the maelstrom, one was the brigade commander. The Israelis lost four tanks.

51. Adan, p. 442.

52. Herzog, p. 315.

53. Ibid., p. 246.

54. Schiff, p. 320 and 321.

55. Adan, p. 471.

56. Schiff, p. 216.

57. Schazly, p.240. The IDF attacked the Egyptian 18th Div on the morning of 8 October and was repulsed. The Egyptian 2nd Div was hit in the afternoon of 8 October with two armored brigades in the direction of El-Ferdan and was annihilated. One Israeli armored brigade struck the Egyptian 16th Inf Div at Derversoir and was destroyed.

58. Schiff, p. 213.

59. Shazly, p. 261.

60. Ibid., p. 236

61. Operational intelligence preparation of the battlefield must take a macro view of the elements of national power on both sides; political, economic, psychological, geographic and military. Still, the basic aspects of numbers, norms and doctrinal procedures continues to be important. To this complete analysis the commander brings his understanding of theoretical concepts and his knowledge of METT-T to determine the operational design.

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