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STUDENT REPORT

HISTORICAL BATTLE ANALYSIS
EL ALAMEIN AND THE PRINCIPLES OF WAR

MAJOR DENNIS C. GREEN

84-1065

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EL ALAMEIN AND THE PRINCIPLES OF WAR
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requirements for graduation.

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Examines the World War II battle of El Alamein for purposes of highlighting the application or violation of the principles of war by both the Allied and Axis forces. Presents battle description, principles of war analysis, and questions for use in a guided discussion of this material. 4		

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Overview

The battle of El Alamein is considered to be the climatic engagement of the North African campaign during World War II. Fought along fixed lines of defense, this conflict was an anomaly in a campaign dominated by the tactics of surprise and maneuver. In this paper, I will first describe in detail the battle and then determine to what extent the principles of war as set forth in AFM 1-1 were violated or applied by both the Axis and Allied forces. Finally, questions will be provided as an aid in conducting a discussion of this material.

Section I

THE BATTLE

This section will be devoted to describing the battle as it unfolded from October 23, 1942, the start of the Allied Operation Lightfoot, until November 4, 1942, the date that the Allied breakthrough was complete. In addition, a brief summary of the events just prior to El Alamein will be included so that the relative situations of the Axis and Allied forces on the eve of the battle will be understood. Lastly, the outcome of the battle, and the resulting strategic and psychological impacts will be explored.

The Alamein line marked the easternmost advance of the Axis Army, commanded by Field Marshal Erwin Rommel. Rommel's attempt at a quick breakthrough and rapid advance to Alexandria was thwarted by the Eighth Army under General Bernard Montgomery at Alam Halfa during the first week of September, 1942. Now with supplies of fuel, food, and ammunition at critically low levels, Rommel settled in behind a fixed front anchored in the south at the Qattara Depression running north to the coast just west of El Alamein [Figure 1]. Here he hoped to be resupplied in time for a final thrust to the Nile before the rapidly building Allied Army grew overpowering (11:289).

Meanwhile, the Mediterranean logistics battle was raging with increased intensity and the Allies were clearly winning. With information gained from Ultra, British bombing of Italian supply convoys and North African ports had devastating effects on Axis logistics plans (13:144). Rommel calculated that he had received

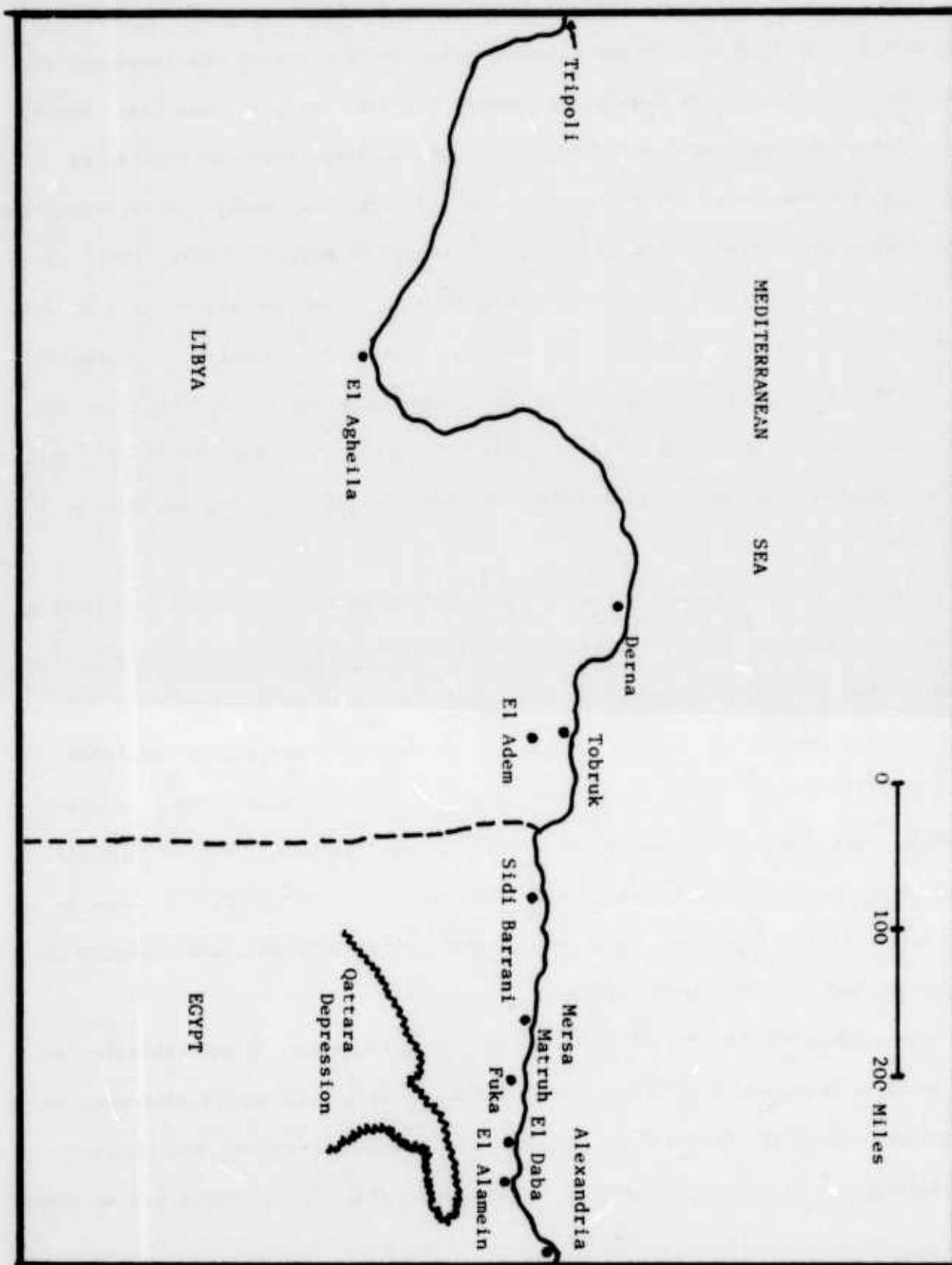


FIGURE 1 (11:1)

only 40% of the minimum level of supplies needed during the first eight months of 1942 (11:287). Despite repeated promises of help from both Hitler and Mussolini, the flow of Axis war material ebbed further during the remainder of the year. On the eve of the battle, Rommel had fuel for only four days, ammunition for nine days, bread for three weeks, and no fresh fruit or vegetables (3:158). In contrast, the Allied situation was improving daily. Benefiting from rail lines and surface roads to Cairo made secure by Royal Air Force (RAF) air superiority, the Eighth Army was building up significant advantages in men, armor, and artillery pieces [Table 1]. In addition, the Allies received approximately 270 of the new American Sherman tanks which were superior to anything that the Axis Army could put in the field (2:258). Thus, the one-sidedness of the logistics struggle dealt Rommel a decidedly bad hand for his upcoming showdown at El Alamein.

Another situation that was in flux during September was that of each army's command structure. Rommel's chronic low blood pressure and severe stomach disorders that plagued him throughout 1942, grew decidedly worse after Alam Halfa and finally forced him to leave for Europe and medical treatment on September 23. In his place General Georg Stumme, an able officer but inexperienced in desert warfare, took command. Rommel, having confidence in Stumme's ability but uneasy over his lack of experience, left instructions to be notified at once of any major Allied activity. This did not sit well with Stumme, who resented this apparent lack of confidence (11:293).

On the other hand, the Allied command was strengthened by the installation of Montgomery as the Eighth Army Commander and General Sir Harold Alexander as Commander-in-Chief, Middle East. General Sir Claude Auchinleck, Montgomery's predecessor, had both duties and it was apparent that his attention was at times

TABLE 1

RELATIVE NUMERICAL STRENGTHS OF ALLIED AND AXIS FORCES
(13:92) (10:9)

MEN (approx)

Allied Army ----- 200,000
Axis Army ----- 100,000 (50,000 German)

TANKS

	<u>75mm</u>	<u>2 pdr</u>	<u>6 pdr</u>	<u>37mm</u>
Allied Army	422	410	78	119

	<u>75mm</u>	<u>50mm</u>
German	38	173

	<u>47mm</u>
Italian	278

Total Allied Army ----- 1029
Total Axis Army ----- 489

ARTILLERY (approx)

Allied Army ----- 980
Axis Army ----- 500 (200 German)

ANTI-TANK GUNS (approx)

Allied Army ----- 900
Axis Army ----- 850

diverted away from Africa to events in Greece. As for Montgomery, no desert commander had greater cooperation and support from his superiors. Montgomery said of Alexander, his personal friend, "He was the perfect Commander-in-Chief to have in the Middle East, so far as I was concerned" (2:259).

ROMMEL'S DEFENSE PLAN

Using the impassable Qattara Depression as a southern anchor, Rommel felt that he could negate the numerically superior Allied Army by digging in behind a minefield barrier. In Rommel's view, this was preferable to a mobile defense for several reasons. First, the relative strength in armored divisions had become too unequal. Rommel wanted his armor to avoid confronting the massive firepower of a direct Allied armored advance. Second, Allied air superiority made open desert tank maneuvers extremely vulnerable to bombing attacks. This Axis problem surfaced again and again during the battle. Another critical factor was that the Axis motorized divisions were desperately short of fuel. In a mobile defensive action, this could mean disaster. Finally, the geography at El Alamein [Figure 2] gave the defense the advantage of making the enemy attack through minefields while being exposed to concentrated artillery fire (11:297-8). Thus Rommel chose to await the inevitable Allied offensive behind a fortified, infantry-held line.

Being a former infantryman, Rommel was very knowledgeable of trench arrangements and mechanical devices for minefields (3:157). His defense system was five to eight miles wide running the entire length of the front. The first mine belt was 1,000 to 2,000 yards in depth, lightly manned by infantry outposts. It was covered with anti-tank mines, trenches, and blockhouses. A second belt, the main defense line, was located 2,000 yards behind the first and was heavily

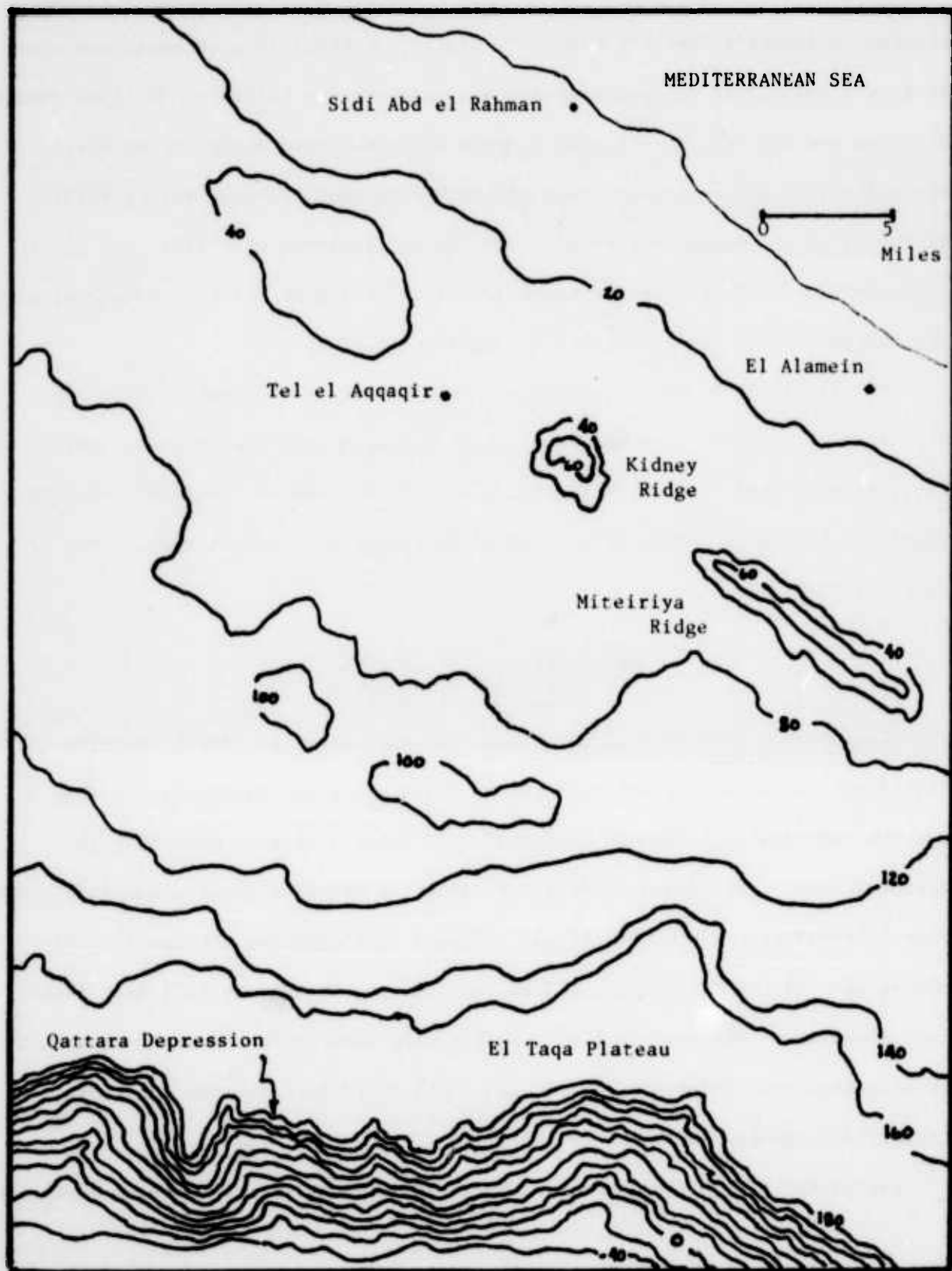


FIGURE 2 (10:3)

manned by both German and Italian infantry. The line was filled with explosives, artillery, and antitank guns. In all, over 500,000 mines and explosives were planted in Rommel's "Devil's Garden." Finally, a third line of tanks and artillery were positioned to counterattack any breakthrough (3:158). The 15th Panzer Division and the Italian Littorio Armored Division stood ready in the north, while the 21st Panzer Division and the Ariete Armored Division held similar positions in the south [Figure 3]. The Panzer divisions were split due to the fuel shortage. Rommel figured he could only move either division in one direction without exhausting his critical fuel supplies (11:308).

To bolster the 50,000 ill-equipped Italian infantry, Rommel insured that each Italian unit had a German counterpart positioned on either side. This "stitching pattern," as the British called it, achieved the desired result but it prevented Rommel from massing his German troops in critical areas under assault (3:158).

MONTGOMERY'S PLAN OF ATTACK OPERATION LIGHTFOOT

Montgomery's plan of attack was based on two elements. First, deceive the Axis Army into believing the main thrust would occur in the south, and then use the vast Allied firepower superiority to stage a massive move into the northern line. The German command knew that the Allied offensive was soon coming, thus tactical surprise could only be achieved by disguising the location of the surge. If the deception could be carried out, Montgomery felt that significant elements of the enemy's army would be tied down in the south and the thinly stretched Axis defensive line in the north could be broken by a massive artillery and armored onslaught (8:118).

Successfully deceiving an enemy was a difficult task in the desert as little

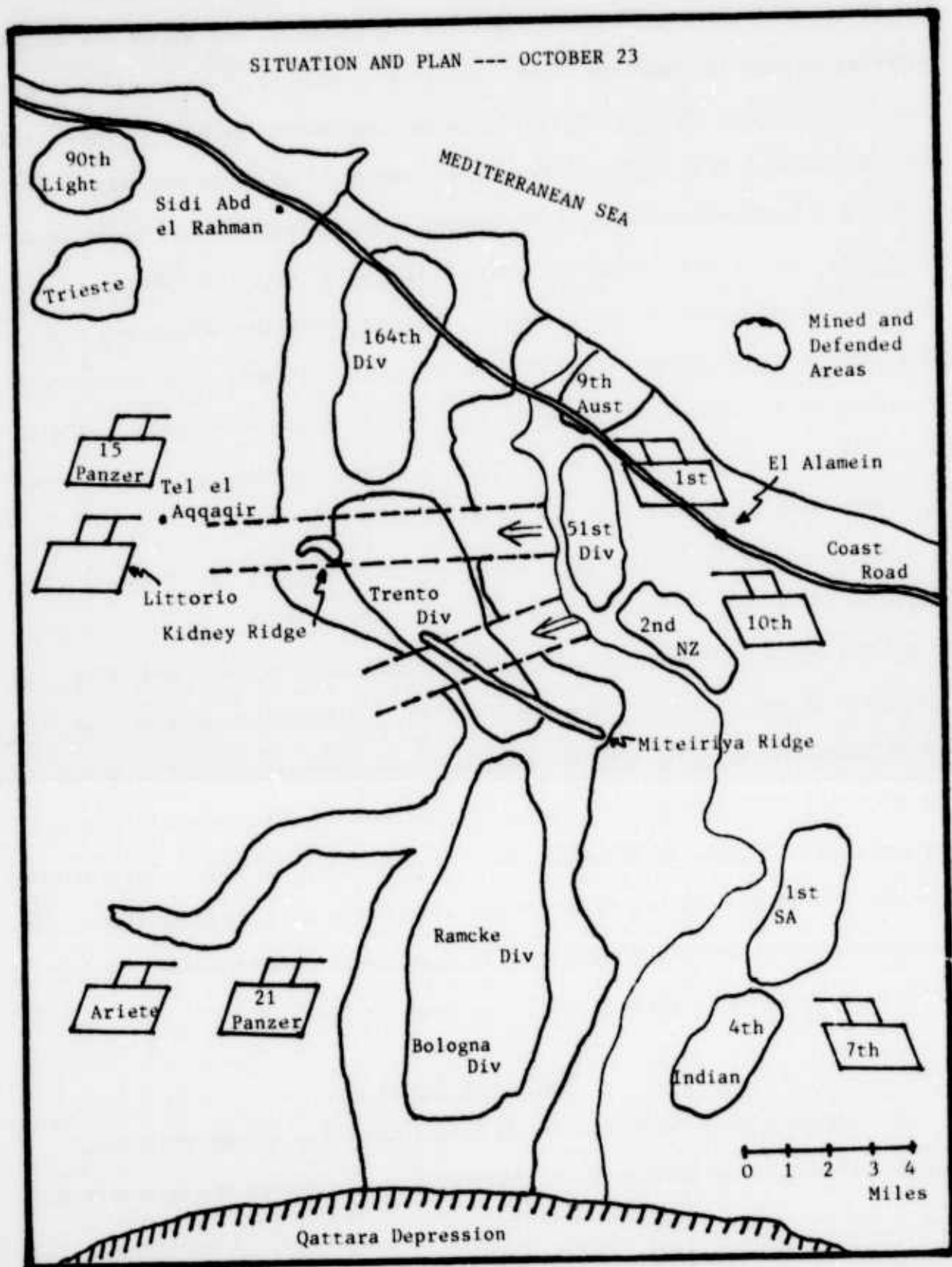


FIGURE 3 (7:21)

natural cover was available to hide the buildup of an impending offensive. Thus manufactured wooden guns, phoney mess halls and barracks, and entire tented towns were set up near the southern lines. Dummy tanks made up of sacks and poles were constructed by the hundreds (3:161). The most successful deception project was the construction of a bogus pipeline that extended 20 miles to the south. Progress in its extension was carefully gauged so as to indicate completion in early November. To the north, over 700 wooden frames were placed over tanks to indicate a depot full of boxes, not mobile armor. Over 360 artillery pieces and accompanying ammunition stores were partially buried in the sand. Thus the Luftwaffe experts grew accustomed to seeing a static mass of boxes in the north while the southern sector seemed to be rapidly filling up with massive amounts of tanks, guns and infantry support elements (3:161).

Montgomery wanted to stun the Axis positions with a massive artillery barrage and air attack. Then the 30 Corps, comprised of the 9th Australian, 51st Highland, 2nd New Zealand, and the 1st South African Divisions, would clear two corridors through the minefields just north of the center of the Axis line. When these lanes were secured, the 10 Corps, made up of the 1st and 10th Armored Divisions, would sweep through and position themselves near Kidney and Miteiriya Ridges [Figure 3] for the expected Panzer counterattack (15:262). While holding off the Axis armor, the Eighth Army would crumble the Axis infantry first. Thus Montgomery's plan contained a reversal of traditional armor tactics: setting out to destroy an enemy's infantry before its armor (8:119).

THE BATTLE BEGINS

At 2140 on October 23rd, the Allies opened a barrage of immense proportions over the entire defense line, eventually concentrating in the northern

sector. German officers recalled that it seemed that the "stars were shaken in their heaven," and that far behind the front line, "men were jarred to their teeth" (4:102). In all, 1200 guns were used and approximately 540 guns of a caliber greater than 105mm concentrated their fire on the area between Kidney Ridge and Deir el Shein (15:163).

Under this barrage the Allied infantry moved into the minefields clearing the way for the tanks. Stumme ordered Axis artillery to remain silent and conserve their meager ammunition supplies. Thus the Allies assembled and advanced without disruption. In the north, 70,000 men and 600 tanks moved against the 12,000 Italians and Germans of the Trento and 164th Infantry Divisions (2:260). Under this pressure, the Italian 62nd Infantry Regiment was the first to break and fall back. The 164th Division had two battalions obliterated (15:163). Further south, the 4th Indian Division and 7th Armored Division played the final card in the Allied deception plan by making diversionary attacks with the objective of pinning down the 21st Panzer Division (15:162).

By 0100 on the 24th, the Allies had penetrated the main defenses to a depth of six miles. This was a prodigious achievement especially compared to later assaults at Normandy where over six hours was spent on Omaha beach. However, by dawn the offensive was grinding to a halt. The infantry encountered more and more mines and Axis resistance grew. The mine clearing teams could not reach the western edge of the Axis minefield and the armor was jammed in behind in small cleared cul-de-sacs. Upon these immobile forces, Axis artillery directed a heavy and accurate fire which kept the Allied armor hung up for the entire day (2:260).

To the south, the 13 Corps did not succeed in penetrating the two belts of Axis mines and was stuck in between throughout the 24th. However, the enemy, still unsure of the Allied main thrust, kept the 21st Panzer Division in the area

and thus enabled Montgomery to achieve his objective (2:260).

In his headquarters to the west, Stumme heard the opening barrage but could not get any information as Axis communication lines had been shattered. He decided to go up closer and see for himself. Unlike Rommel's custom, Stumme only took another staff officer and left without an accompanying signals truck or escort vehicle. When the car came under unexpected British fire, the staff officer was killed and Stumme tried to leap clear. The driver quickly swung the car around and when he looked back, Stumme had vanished (15:164). Twenty-four hours later his body was found, but during the interim the Axis Army floundered while the command structure tried to determine his uncertain status. A similar, but not so tragic episode would plague the 1st British Airborne Division Commander, Major General Robert Urquhart at Arnheim. Although significant, the British experience could in no way compare to the plight of the Axis Army on the evening of October 24. Rommel was notified immediately and left his hospital bed to rush back to North Africa.

On the evening of the 24th, the Allied assault force attempted another thrust along both corridors of the break-in. The more northern attempt toward Kidney Ridge partly succeeded when some tanks of the 2nd Armored Brigade got clear of the western edge of the minebelt, but not of the Axis defense system. The other drive toward Miteiriya Ridge stopped, hung up in the minefields by 0400 on the 25th. Finally during the late morning, four armored brigades got through the minefields, captured Kidney Ridge and started preparing for the expected Axis counterattack [Figure 4] (2:262).

With the majority of the Allied armor stuck and in confusion, a concentrated Axis counterattack would have had crushing results. However, Rommel was still out of Africa and Stumme's replacement, General Wilhelm von Thoma, a six week

African campaign veteran, was still unsure of the location of the main Allied surge. Finally he decided to leave the 21st Panzers in the south and attack Kidney Ridge with the 15th Panzer Division in a cautious, piecemeal fashion. Picked apart by artillery and air attacks, the German tanks were thrown back and ended the day of the 25th with only 31 out of 119 tanks operational (11:305-6).

Rommel arrived during that evening and found the Axis Army in a crisis supply situation. Only three issues of fuel remained (one issue was needed for one day of battle; any less would result in the armor not being able to react to enemy moves). Ammunition was critically low. In some places the Allies had fired 500 rounds for every one Axis shot in return (11:305-6). Rommel immediately recognized the Allied intent and started to bring the 21st Panzer Division up from the south to join the remnants of the 15th Panzers. This was accomplished in less than 24 hours (2:267).

Meanwhile during the 26th, the Allies finally took Miteiriya Ridge, 48 hours behind schedule. However, much of the force was still stuck in the narrow corridors of the initial breach [Figure 4]. Allied casualties mounted and subordinate commanders opposed further assaults through the minefields. Montgomery, who met with his corps commanders each morning and evening insisted that the armored divisions would fight their way through as originally planned. He promised that timid commanders would be immediately replaced (8:129).

With the 21st Panzer Division in position, Rommel counterattacked with as concentrated an armored force as the Axis could now muster. They came in with the setting sun of October 26th at their backs. However, the opportunity that was present 48 hours earlier was now lost. The now well dug-in Allied forces on Kidney Ridge repulsed the attackers, inflicting high losses (2:267).

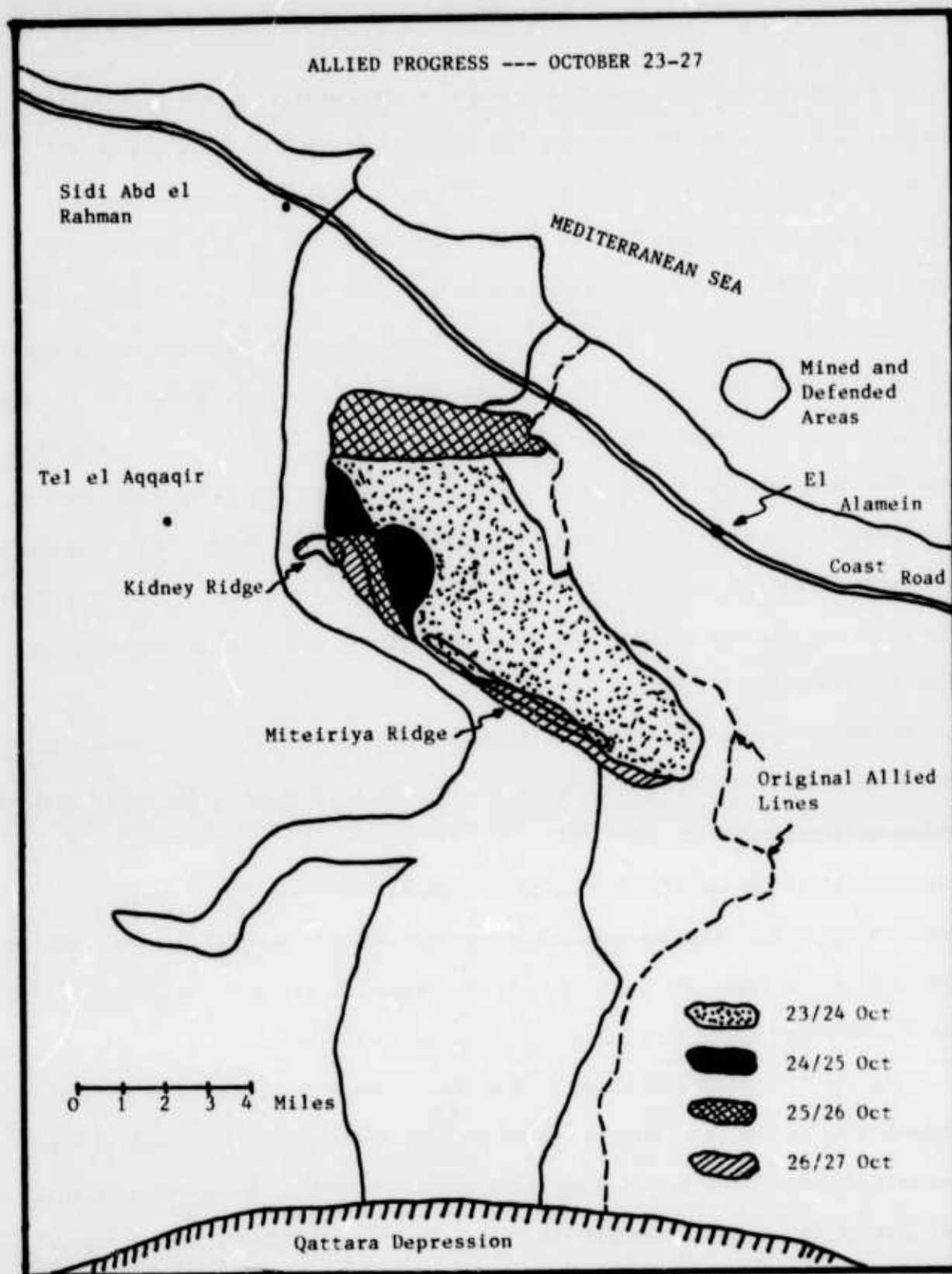


FIGURE 4 (7:25)

STALEMATE

Have we got one single general who can even win one single battle?

- Churchill to Alanbrooke
October 29, 1942

There followed almost three days of fierce fighting during which each side sustained heavy losses but achieved little improvement. Rommel attempted a final counterattack on the 28th, but RAF bombing broke up the attack before it reached the Eighth Army. Down to less than 81 German and 197 Italian tanks, Rommel now expected Montgomery to end the struggle by launching a decisive attack with massed forces (6:205). But the high allied casualties made even Montgomery pause. He had already lost 6,000 men killed, wounded, or missing, and approximately 300 tanks out of action (4:120). "I began to realize from the casualty figures that I must be careful" (15:165).

With the 30 Corps in total disorganization, Montgomery decided to regroup his forces and start in a new direction--a right turn towards the coast. Kidney and Miteiriya Ridges became defensive positions and were given to the 13 Corps. The 9th Australian Division advanced towards the coast and cut off significant elements of the German 164th Infantry Division [Figure 5]. The Australians' orders were to reach the coast and stay put so as to draw German strength to the north leaving the defense of the Axis center to the Italians. If this "unstitching" of the German-Italian-German defense net occurred, then the decisive blow could be launched back at the original break-in point but this time at solely Italian positions (13:126).

Rommel played into this plan by committing what remained of the 21st

9TH AUSTRALIAN DIVISION'S DRIVE
TO THE COAST --- OCTOBER 28-29

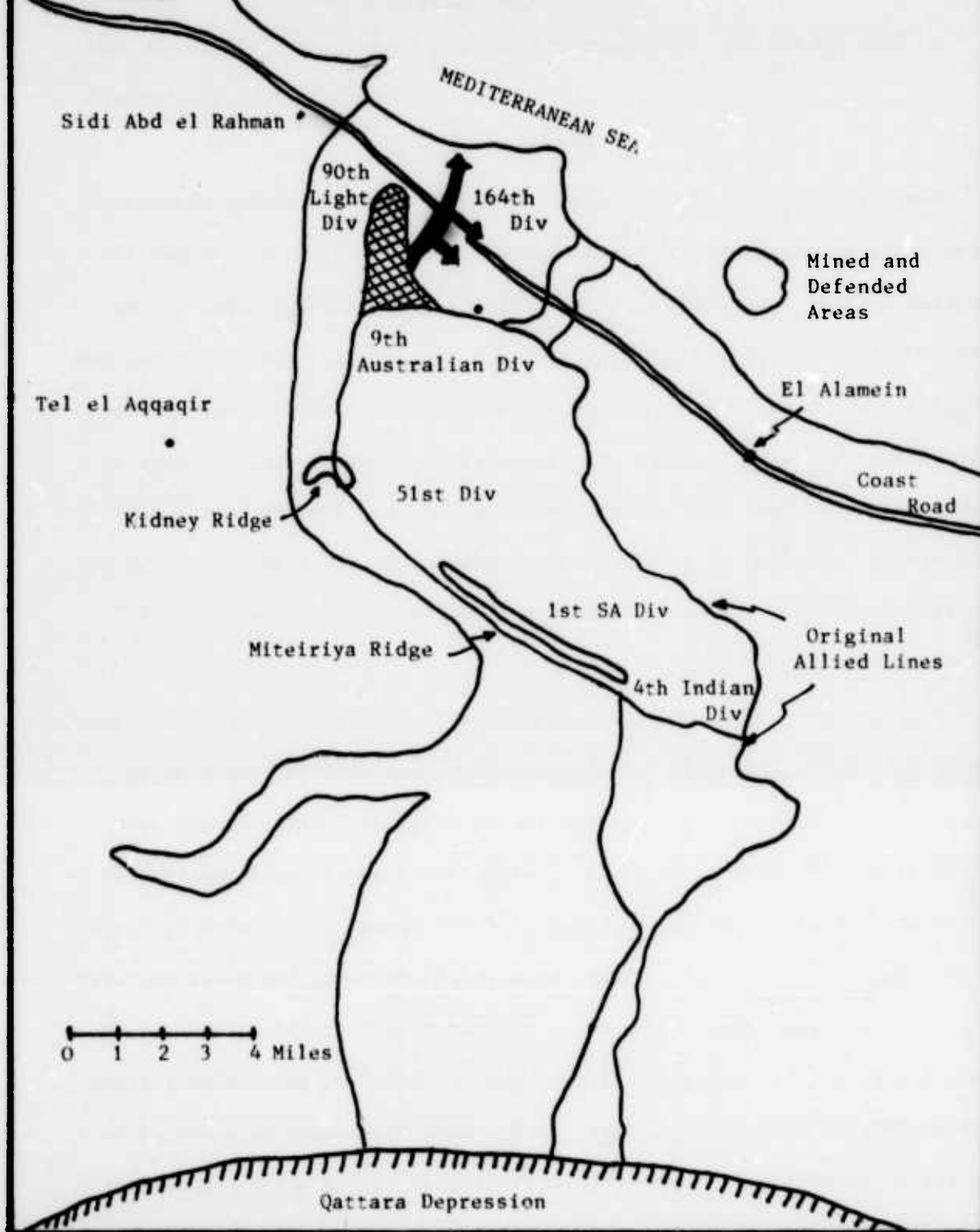


FIGURE 5 (7:29)

Panzer Division and the 90th Light Division to stop the Australians and rescue their comrades. Through October 30th and 31st, the Germans attacked the tough Australians and finally connected with most elements of the 164th Division, but not without cost.

THE BREAKOUT OPERATION SUPERCHARGE

Montgomery's decisive attack, named Operation Supercharge, was scheduled to commence on the night of October 31-November 1. Under a tremendous artillery barrage similar to that in the initial October 23rd attack, the 2nd New Zealand Division would blow open a gap just north of the existing northern corridor. Through this gap, the 10 Corps would head for the open desert with the 1st and 10th Armor Divisions, and the 7th South African Armor Division [Figure 6]. Due to what Montgomery called "stage management problems," the attack was delayed for 24 hours (8:132-6).

At 0100 hours on November 2, Supercharge began. Almost 800 Allied tanks, backed by 360 guns attacked the Axis Army, which had fought without rest and reinforcement for seven days. Again the fighting was furious. The British 9th Armored Brigade lost 87 tanks alone. Finally at dawn, the Allies burst out into the open desert. The only enemy strength available to challenge them was the survivors of the 15th and 21st Panzer Divisions, a force of 90 tanks opposing almost 700 Allied tanks. Later that afternoon, a fierce tank battle occurred at Tel el Aqqaqir and the German tank strength went down to 35 (2:269).

During the night Rommel began the retreat back to Fuka. The end was evident days earlier and Rommel was ready for the mandated pullback. His intention was to withdraw to an area running south from a point 10 miles east of El Daba. As the southern front disengaged and pulled back, the 125th Regiment moved to a

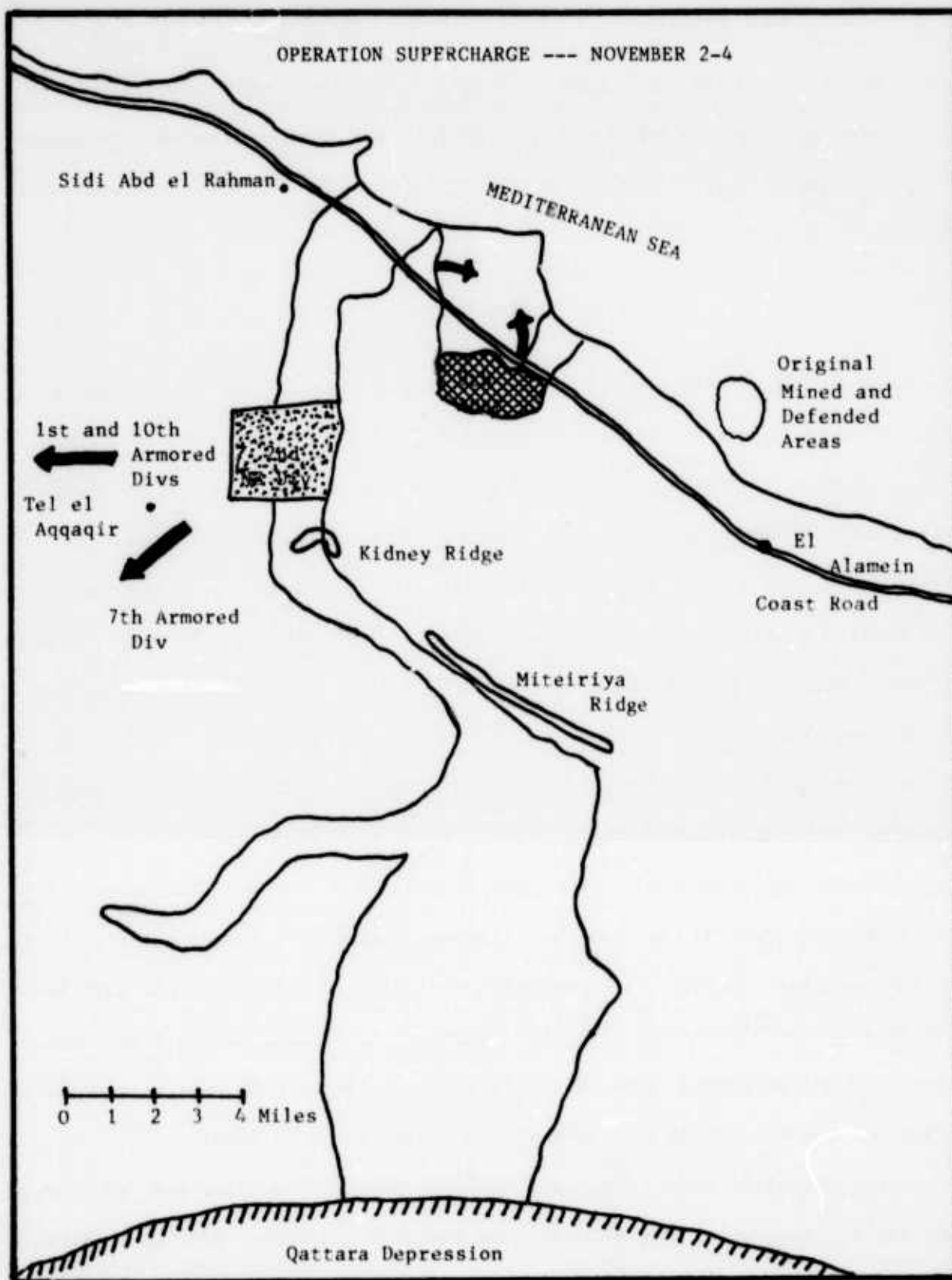


FIGURE 6 (7:32)

position near Sidi Abd el Rahman. The 90th Light Armor Division and the Italian Corps were now to withdraw slowly enough to enable the infantry divisions to keep up. As the Allies continued to exercise unbelievable caution, Rommel's hopes grew that much of the infantry could be saved (11:319). The Axis disengagement was proceeding well when at noon on November 3, Rommel received orders from Hitler to hold all positions and fight to the death. In Rommel's words, "We were stunned, and for the first time during the African campaign I did not know what to do. A kind of apathy took hold of us as we issued orders for all existing positions to be held on instructions from the highest authority" (11:321). The Allied tank superiority was now about 10 to 1, but the night of the 3rd passed with little Allied movement. Rommel concluded that he could have escaped with his entire force (11:323).

Finally on the morning of the 4th, the Allies attacked and broke through quickly. The entire Ariete Division was encircled. Rommel could not stand for such needless losses. At 1530 hours he directed that the retreat begin again.

So now it had come, the thing we had done everything in our power to avoid--our front broken and the fully motorized enemy streaming into our rear. Superior orders could no longer count. We had to save what there was to be saved (11:325).

THE OUTCOME THE STRATEGIC AND PSYCHOLOGICAL IMPACTS

The Eighth Army had not destroyed Rommel's Army, but it had inflicted such serious damage that for the rest of the African campaign the Axis force ceased to be an offensive threat. The German units were reduced to skeletons while the Italian divisions of Ariete, Trento, Trieste, and Littorio were all but wiped out. Of the approximately 100,000 Axis men which began the battle, 2,000 were killed and over 30,000 taken prisoner. Many more thousands were captured during the

second week in November. Over 1,000 guns and 400 tanks were destroyed. Rommel pulled away from Alamein with only 36 operational tanks. Allied losses were 13,500 killed, wounded, or missing and 500 tanks knocked out (12:271). Although Montgomery proclaimed Alamein "a complete and absolute victory," it had hardly been a "cakewalk."

The outcome at Alamein ended all Axis hope for capturing Egypt and was the beginning of the end of Axis occupation of North Africa. However, some historians feel that strategically, the battle should have never been fought. It is pointed out that the November Operation Torch landings in Morocco and Algeria would have forced Rommel to retreat in a few weeks and join other German forces in Tunisia, regardless of the outcome at El Alamein (2:256). Montgomery could have waited for this to occur and avoided the torture of battling through heavily defended minefields. The battle merely hastened what was already inevitable, but at a great cost.

Despite the questionable strategical impact, the victory was of tremendous psychological importance to the Allies. Alamein was the first time Rommel had been decisively defeated. The shattering of Rommel's image of invincibility would prove useful in boosting troop confidence for later confrontations with him in Normandy. Secondly, Churchill wanted a resounding victory over Rommel before the Allied landings in Morocco and Algeria, so that French and Spanish opinion would be properly influenced (10:2). Montgomery's success could not have come at a better time. Finally, this was the last purely British victory against the Germans and this had two effects. Churchill knew that future campaigns would be joint operations with heavy American influence. The British victory at Alamein gave him the clout he needed to impact the strategy development for the European campaigns. In addition, the victory restored the Eighth Army's

pride and confidence, and was a tremendous morale booster back in Britain. In those dark days of 1942, the Alamein success could not have come soon enough. Indeed, Alexander signalled Churchill to "ring out the bells" (2:271).

Section II

EL ALAMEIN AND THE PRINCIPLES OF WAR

In this section, the degree in which each side applied or violated each principle of war, as defined by AFM 1-1, will be examined. Excerpts of each principle's definition has been extracted from AFM 1-1 to provide a backdrop for discussion. Although the universal applicability of these principles to any given battle has been continually reaffirmed, the circumstances of each military engagement disproportionately increase the importance of one or more above the rest. Thus the identification of the principle(s) whose application or disregard played a decisive role in determining the outcome at El Alamein will be provided.

OBJECTIVE

...The objective defines what the military action intends to accomplish and normally describes the nature and the scope of an operation...Success in achieving objectives depends greatly on the knowledge, strategy, and leadership of the commander. The commander must insure that assigned forces are properly used to attain the objective....

The Axis Army had a clear and concise objective at El Alamein: to defend themselves from behind a fortified barrier and survive until their supply situation could be improved, allowing for the resumption of offensive actions. As the Axis fortunes worsened during the fighting, a new and ill-advised political objective was briefly imposed by Hitler: avoid the propaganda debacle of a humiliating retreat by holding positions at all costs. Hitler expected Rommel to achieve victory against overwhelming forces or lead his army to death at El Alamein (11:321).

As we have seen, Rommel chose to engage the Allied Army from behind a static, minefield protected line. The lack of fuel and ammunition, coupled with a vast numerical disadvantage in tanks, made a mobile defense extremely risky and offensive operations out of the question. Possessing assurances from both Hitler and Mussolini that additional men and materiel were on the way to North Africa, Rommel felt that his defensive strategy would be needed only for a short duration and the drive to the Nile could be resumed.

The failure of the Axis forces to achieve their military objective was primarily due to the overwhelming strength and size of the Allied Army. Indeed, the astonishing length of time that passed until the Eighth Army breakthrough can be attributed to Rommel's brilliantly devised defensive network and the tenacity of his men. It seems clear that the men and leaders of the Axis Army largely understood the objective and, despite being at a tremendous disadvantage in numbers and firepower, very nearly achieved it.

For the Allies, the objective at El Alamein was equally clear: the destruction of the Axis armor and the termination of the Axis threat to Egypt. Montgomery was well aware of the task before his army. His answer to Rommel's minefields was to reverse the traditional order of engaging enemy armor and infantry units. Instead of first destroying the Axis armor, Montgomery planned to decimate the German and Italian infantry within the minefields while holding off expected armored counterattacks. The Allied infantry had the job of clearing passages through the mines for the armor. To perform this task, Montgomery put the minesweeping teams through extensive training (6:115). The armor was then to pass through the Axis defensive system and, from reinforced positions, await the Axis counterattack.

Just prior to the battle, Montgomery ensured that his men were equally clear

as to what their goal should be. To this end he used a series of addresses to officers down to the rank of lieutenant-colonel. In General Oliver Leese's words, "He was completely convinced he was going to win the battle. He made everything crystal-clear" (2:259). After hearing Montgomery, the officers returned to their units with, as historian Correlli Barnett relates, "...the feeling that they were personally in the Army Commander's confidence and trust. These sentiments they passed on to their men" (2:259).

As the Axis resistance stiffened and Operation Lightfoot bogged down, Montgomery never swayed from his original goals. Upon hearing repeated calls from his subordinate commanders to cancel any further assaults through the uncleared minefields, Montgomery offered to replace any officer who would not follow the planned offensive scheme. The high Allied casualty totals only made Montgomery change the direction of his assault. He continually kept the objective out in front and was ultimately rewarded on November 5th when Rommel fled westward in full retreat with only about 36 tanks operational.

OFFENSIVE ACTION

Unless offensive action is initiated, military victory is seldom possible. The principle of offensive is to act rather than react. The offensive enables commanders to select priorities of attack, as well as the time, place, and weaponry necessary to achieve objectives....

The Axis forces were constantly on the defensive throughout the entire battle. Almost immediately following the initial artillery barrage, German and Italian units were reacting to Allied thrusts, trying to plug gaps as they appeared along the front.

The Axis violation of this principle was caused by their lack of fuel, ammunition, and air support. Rommel could not fight a mobile defensive engagement, much less initiate any offensive maneuvers. Given the grave nature of the

supply situation, the Axis Army had no choice but to dig in behind the minefields and wait for the Allies to attack at the time and place of Montgomery's choosing. As the battle unfolded, the shortage of fuel inhibited the Axis forces from consolidating armor units early, particularly the 15th and 21st Panzer Divisions, and delivering potentially devastating counterattacks against the hung-up Allied armor. What little opportunity existed for any Axis offensive moves was sacrificed to conserve fuel and ammunition.

The Allies, on the other hand, applied unrelenting pressure along the entire front throughout the duration of the battle. This was true not only at the point of the breakthrough attempt in the north, but in the southern sector as well where the 4th Indian Division maintained constant contact with the enemy. This type of pressure against the thinly stretched Axis forces had telling effects as Operation Supercharge was launched against troops that had little rest for eight days.

More importantly, by maintaining the offensive and forcing Rommel to constantly react to his moves, Montgomery caused the "unstitching" of the German-Italian-German defensive web. Rommel was forced to send German units to counter the Australian advance along the coast on October 31st. This enabled the subsequent Supercharge attack to launch against diluted Italian defensive positions left unsupported on the northern flank.

SURPRISE

Surprise is the attack of an enemy at a time, place, and manner for which the enemy is neither prepared nor expecting an attack. The principle of surprise is achieved when an enemy is unable to react effectively to an attack....

By resigning themselves to be in a defensive, reacting mode during the battle, the Axis forces obviously had little opportunity to employ this principle. Allied air superiority and information gained from Ultra assured constant pinpointing of

Axis infantry and armor movements, thwarting any ideas of concealment that Rommel might have considered.

What did surprise the Allies was the tenacity of the Axis troops, and the degree of density and complexity of the minefields (13:111). As Operation Lightfoot started bogging down on October 25th, it was apparent that Montgomery had underestimated Rommel's defensive network and the will of the German and Italian soldiers to defend it. However, few details of the size or disposition of the Axis forces remained unknown to the Eighth Army.

In contrast to the Axis position, the Allies could dictate the time and place of the attack. As we have seen, Montgomery made elaborate plans to deceive the enemy into thinking that the attack was to be launched in November, and that it would be concentrated in the southern sector of the front. However, it appears that the deception was only partially successful. The October timing of the attack seemed to have greatly surprised the Axis command. Rommel, although very ill, would not have chosen October to be in Europe had he expected an imminent attack. The massive movements of Allied men, tanks, and artillery pieces were obviously accomplished with little Axis detection. This can be confirmed by the evening intelligence report to Axis headquarters on October 23rd. It read: "Enemy situation unchanged" (12:97).

However, the Axis commanders were not that convinced that the concentrated assault would occur in the south. It can be seen from the deployment of Axis armor [Figure 3], that Rommel envisioned an attack along a broad front, not concentrating on any particular sector until a breakthrough seemed probable (11:296). During the first 24 hours of the battle, the tentative movements of the Axis forces without Rommel suggests that the concealment of the location of the main Allied thrust had been achieved. However, the deception was obviously

given a tremendous boost by the inexperience of Rommel's replacements. One has to wonder if Rommel would have been similarly confused during Alamein's early hours.

Upon his return to Africa on the evening of the 25th, Rommel quickly made the decision to bring the 21st Panzer Division up to the northern sector.

I did decide to bring the whole of the 21st Panzer Division up north, although I fully realized that the petrol shortage would not allow it to return. In addition, since it was obvious that the enemy would make his main effort in the north...half of the Army artillery was drawn off from the southern front (11:308).

Thus it appears that the Allies benefited as much from the inexperience of Generals Stumme and von Thoma as from their diversionary maneuvers.

SECURITY

Security is taking continuous, positive measures to prevent surprise and preserve freedom of action. Security involves active and passive defensive measures and the denial of useful information to an enemy...Security protects friendly forces from an effective enemy attack through defensive operations and by masking the locations, strength, and intentions of friendly forces....

Because of its vastly inferior air force, the Axis forces were exposed to RAF bombing attacks in all areas of their operations. On some days Allied aircraft flew 800 bomber sorties and 2,500 fighter sorties (2:328). Everything from infantry units to supply vehicles to communications outposts were hit. Nowhere could Rommel operate with freedom from RAF harassment, including the rear areas. The best example of this was on October 28th when a final Axis armored counterattack was broken up solely by air strikes before it could reach Allied positions (6:205).

The continual Allied air operations caused the Axis forces other problems. It has been previously pointed out that RAF air reconnaissance prevented any concealment of Axis forces location and strength. In addition, the incessant

bombing and strafing did much to wear down the spirits of Rommel and his men. During the battle, Rommel wrote his wife, "...You can imagine how I feel. Air raid after air raid after air raid!" (11:317).

Finally, Ultra--the cipher-breaking device which enabled the Allies to read the German High Command messages--gave Montgomery detailed knowledge concerning Axis deployments and supply situations. The extent that Montgomery actually used this information is not clear. All advantages could not be acted on for fear of alerting the Germans to the security leak. However, it is apparent that during Alamein, "...while the Panzerarmee was fighting blind, the Eighth Army had the incalculable advantage of Ultra" (13:75).

The factors which prevented the Axis forces from employing the principle of security obviously had the opposite effect on the Allies. The Luftwaffe initially produced at most 60 dive-bomber and 100 fighter sorties per day and these numbers decreased steadily (11:328). The lack of Axis air reconnaissance and harassing capabilities enabled Montgomery to conceal force movements, assemble and mass attacking armor and infantry units with relative impunity, and provide areas of sanctuary for units held in reserve.

MASS

...Concentrated firepower can overwhelm enemy defenses and secure an objective at the right time and place....The impact of these attacks can break the enemy's defenses, disrupt his plan of attack, destroy the cohesion of his forces, produce the psychological shock that may thwart a critical enemy thrust, or create an opportunity for friendly forces to seize the offensive....

Being vastly outnumbered in infantry, armor, and guns made the principle of mass difficult to apply for the Axis Army. However, their failure to concentrate armored forces for the counterattacks launched on the 24th and 25th doomed what small chance they had of repelling the Allied offensive. As mentioned earlier,

by not bringing the 21st Panzer Division north to join the attacking forces, General von Thoma set an objective for the 15th Panzer Division that its size prohibited achieving. The virtual decimation of the 15th Panzers during these operations doomed any further Axis attempts of seizing the offensive through massed firepower.

In contrast, Montgomery applied the principle of mass in almost every aspect of his plan of attack. The opening artillery barrage of over 1200 guns was the best example of this. The shelling stunned the Axis forces causing tremendous damage to infantry, armor and artillery units. The artillery fire also disrupted Axis communications prompting General Stumme to begin his ill-fated quest for battle information. The use of torrential artillery fire was repeated over and over, most notably before Operation Supercharge. Rommel acknowledged, "The British artillery once again demonstrated its well-known excellence" (11:330).

Air and armor operations were other areas where Montgomery used overwhelming firepower. As previously pointed out, air strikes were continually made against Axis positions. Bomber flights of 18 or more aircraft hit Axis armor and infantry concentrations as frequently as every daylight hour from 24 through 30 October (11:307-26). Similarly, the Allied tank advantage was over 2 to 1 when Alamein began. Despite losing a force greater than the entire Axis initial strength, Montgomery enjoyed an unbelievable 10 to 1 advantage by November 4. Massed armor assaults were not difficult to achieve given these advantages, and Montgomery used the tactic again and again with success.

ECONOMY OF FORCE

...using economy of force permits a commander to execute attacks with the appropriate mass at the critical time and place without wasting resources on secondary objectives....

Being outnumbered and outgunned at almost every encounter, the application of this principle was a continuous necessity for the Axis Army. At almost every sector along the front, Axis units held off vastly superior Allied forces for nearly nine days. However, this situation was one of Axis desperation not a planned conservation of men and equipment.

Montgomery consistently used overwhelming forces to achieve objectives. One could point to the disproportionately high Allied casualty figures (13,500 killed, wounded or missing versus 2,000 Axis killed) as evidence of wasted resources. But given the lethal nature of Rommel's minefield defense and the requirement for a frontal assault against dug-in defenders, it is apparent that any less use of manpower or equipment may have resulted in an Allied setback. Also, to his credit, Montgomery kept the 7th Armored Division relatively untouched throughout the first eight days of the battle. Thus it was ready and able to spearhead Operation Supercharge against worn-out Axis defenders

MANEUVER

...Maneuver is the movement of friendly forces in relation to enemy forces....Effective use of maneuver can maintain the initiative, dictate the terms of engagement, retain security, and position forces at the right time and place to execute surprise attacks. Maneuver permits rapid massing of combat power and effective disengagement of forces....

The lack of fuel severely restricted the Axis Army's ability to apply the principle of maneuver. Rommel had proved during mobile battles that the Germans were superior in training and command to the British. However, the prospect of running short of fuel during mobile defensive actions was a nightmare that Rommel could not accept.

The fuel situation was so critical that Rommel was forced to divide his most effective armor units, the 15th and 21st Panzer Divisions, to protect both the

northern and southern sectors. There was enough fuel for each of these units to move in only one direction but not back to their original positions. Thus at Alamein, the extent that Rommel could apply the principle of maneuver was limited to a somewhat mobile reserve tasked to rush forward and plug gaps in a fixed, forward defense line.

Montgomery's plan called for an ambitious timetable for getting the armor through the minefields and out into the open desert. There his numerically superior tank force could use the principle of maneuver to chase down, encircle, and destroy the Axis armor. But when the infantry was unable to clear passages through the minefields, the great numbers of tanks became a liability. Packed into small, cleared cul-de-sacs, the Allied armor took a tremendous pounding from Axis artillery. With so many targets, the Germans and Italians could scarcely miss. The situation was analogous to a boxer trying to throw punches in a crowded room. Only on November 4th could the Eighth Army breakout and employ the commonly used desert warfare tactic of maneuver.

As stated in the overview, Alamein was an anomaly in the North African campaign. The circumstances of the battle did not lend themselves to the tactics of maneuver but more to that of World War I style trench warfare.

TIMING AND TEMPO

Timing and tempo is the principle of executing military operations at a rate which optimizes the use of friendly forces and which inhibits or denies the effectiveness of enemy forces...attacks against an enemy must be executed at a time, frequency, and intensity that will do the most to achieve objectives....

The Axis forces violated this principle in two critical situations. First by forbidding his artillery to fire upon Allied assembly areas during the opening of the battle, Stumme allowed the Eighth Army to penetrate and occupy the mine-

fields at a relatively small cost. In Rommel's words,

This was a mistake, in my view, for it [artillery fire] would have at least reduced the weight of the British attack. When the artillery did finally open fire it was unable to have anything like the effect it might have had earlier, for the British had by that time been able to install themselves in the defense posts they had captured during the night (11:303).

The second lost opportunity for the Axis Army was the previously discussed decision not to consolidate the 15th and 21st Panzer Divisions for an October 25th counterattack against the vulnerable, minefield-bound Allied 30 Corps. The small, piecemeal Axis attack was easily beaten off. Upon his return to Africa, Rommel tried an attack on the 26th with a larger, more appropriate force. But the Allies moment of vulnerability had passed and they now held reinforced positions on Kidney Ridge from which they held off all assaults.

For their part, the Allies took great care in choosing the day to launch Operation Lightfoot. The decision to attack on October 23rd was based on two factors. Montgomery estimated that the battle would last 10 to 12 days. He knew that the Operation Torch landings were scheduled for mid-November. For political reasons, he wanted to engage and defeat Rommel before the Torch landings would cause the Axis forces to slip out of his grasp back to Libya. A second factor was that to have any chance of successfully clearing corridors through the minefields, the attack would have to be at night under a full moon. Allied training was based upon this type of environment. Since Montgomery felt that his army was not ready in September, October 23 was the next date that fulfilled all the requirements (2:255).

UNITY OF COMMAND

Unity of command is the principle of vesting appropriate authority and responsibility in a single commander to effect unity of effort in carrying out an assigned task. Unity of command provides for the effective exercise of leadership and power of decision over assigned forces for the purpose of achieving a common objective....

The Axis Army suffered two shocks to its command structure during a five week period. First, Rommel's deteriorating health forced him to seek treatment in Europe on September 23rd. His replacement, General Stumme, was considered an able officer but inexperienced in desert warfare. Rommel's orders to be notified of any Allied attack was resented by Stumme and probably undermined his command authority with subordinate officers. To be put in the role of "minding the store" only until the real action starts would strain the credibility of any commander.

The second Axis command crisis was caused by Stumme's death on the first night of the battle. His decision not to take a communications truck with him (as was Rommel's custom) when he went to the forward area cost him his life. Stumme's uncertain status created 24 hours of turmoil and confusion for the Axis forces. Stumme's replacement, General von Thoma was only a six week veteran of the desert campaign. His indecisiveness was apparent. Historian Warren Tute commented,

They [the Allies] did not then know that General Stumme had been killed, but whoever had taken over from Rommel had shown an unusual and welcome indecisiveness in his handling of the battle so far which told Allied Intelligence that...the Germans were not sure whether the main attack would be pressed in the north or in the south (15:166).

As mentioned earlier, von Thoma's decision to leave the 21st Panzer Division in the south, and maintain the status quo in the deployment of forces until

Rommel's return, was a critical mistake.

In short, the Axis command problems during the first days of the battle had a significant impact on the outcome. Their violation of the unity of command principle helped sacrifice what little chance they had of repelling the Allies.

On the other side, the Allies had taken significant measures to improve their command structure. Sir Claude Auchinleck had worn the twin hats as Eighth Army Commander and Commander-in-Chief, Middle East. This was changed in August 1942 with Sir Harold Alexander taking over as Commander-in-Chief and Montgomery assuming command of the Eighth Army (2:229).

To his subordinate commanders, Montgomery quickly left no doubt who was in charge. When Churchill wired him and demanded a September attack, Montgomery refused. He would not attack until he was fully prepared and if an offensive must be made, then someone else would have to be found to do it (15:157). To prepare for El Alamein, Montgomery began to mold the Eighth Army in his image. Historian Correlli Barnett wrote,

Montgomery launched himself into the work of training and reorganizing the battle worn army with an icy fire, a relentless energy...He toured endlessly through his command, his bleak eyes seizing on the idle, the slack, and the incompetent, his metallic voice questioning, ordering, denouncing and dismissing (2:252).

During the battle, Montgomery retained a tight grip of this army by meeting in the morning and evening of each day with his corps commanders. However, the best example of his involvement came on October 24th when Operation Lightfoot was grinding to a halt. Montgomery recalled,

The 10 Corps Commander was not displaying the drive and determination so necessary when things begin to go wrong...It was clear to me that I must take instant action to galvanize the armored divisions into action. I therefore sent for Lumsden and told him he must 'drive' his divisional commanders, and if there was anymore hanging back I would remove them from their commands...This action produced immediate results (8:129).

Thus looking at the principle of unity of command in the context of the first days of the battle dramatically highlights the Allies strengths and the Axis deficiencies.

SIMPLICITY

To achieve a unity of effort toward a common goal, guidance must be quick, clear, and concise--it must have simplicity. Simplicity promotes understanding, reduces confusion, and permits ease of execution in the intense and uncertain environment of combat...Simplicity is an important ingredient in achieving victory, and it must pervade all levels of a military operation.

The notion of simplicity is obviously relative. In an apparent violation of this principle, Rommel continually asked his forces to rapidly react and move to counter Allied assaults. The most difficult and dangerous action that the Axis Army undertook was the retreat westward to Fuka beginning the evening of November 2nd. Rommel faced two major problems regarding the retreat. First, his armored units were so firmly locked in battle that disengagement was extremely difficult. His second concern was his shortage of vehicles which made the withdrawal of infantry units extremely slow (11:319).

However, the fact that most of the men, including the Italians, were long-time desert war veterans enabled the Axis Army to execute these complex actions without difficulty. During the retreat Rommel managed to recover almost all of his operational motorized units. Had not Hitler's ultimatum delayed the retreat for 24 hours, most of the Italian infantry could have been saved as well (11:323). Thus it can be argued that in a relative sense, Rommel correctly applied the simplicity principle; his ordered maneuvers did not exceed his army's capabilities.

In contrast to Rommel's confidence in the abilities of the Axis Army,

Montgomery's conservative battle plan was a tightly controlled operation reflecting his lack of faith in his army's capabilities. "The standard of training of the Eighth Army formations was such that I was not prepared to loose them headlong into the enemy" (2:249).

Thus Montgomery felt that the skill of the Allied Army would not justify ambitious, complicated maneuvers. As a result, all advances were made slowly, always under the cover of artillery fire and aerial bombardment. General Leese, 30 Corps Commander later explained,

Monty's handling of armor was very different from the old British tactics--there was no swanning, but proper co-operation of armor and artillery, and close-in with infantry in attacks on fixed positions. We never, never advanced with our armor--always slowly, supported by our guns. We tried to get the Germans to attack us (2:246).

Montgomery's adherence to this simplistic form of operation undeniably increased the ease of execution for his relatively inexperienced troops.

LOGISTICS

Logistics is the principle of sustaining both man and machine in combat by obtaining, moving, and maintaining war fighting potential. Success in warfare depends on getting sufficient men and machines in the right position at the right time....

North Africa, it was said, was "a tactician's paradise but a quartermaster's hell" (15:136). For the Axis forces, the lack of logistics support was the main factor in their defeat at El Alamein. As was mentioned earlier, RAF bombing of Italian shipping in the Mediterranean and Axis-held ports in Libya had devastating effects on Rommel's resupply efforts.

Rommel had supply problems in all areas, but by far the most critical items were fuel and ammunition. We have seen that the fuel shortage severely limited Rommel's options in deploying armored units and in using mobile defensive opera-

tions to counter Allied assaults. The lack of adequate ammunition stocks further exacerbated the Axis artillery deficiency. The shortage caused the Axis to reduce the rate of consumption in the few guns that they possessed. The ammunition problem never improved and drastically reduced the Axis Army's firepower throughout the battle.

While Rommel's army was continuously growing weaker through the lack of support, Montgomery was enjoying the results of an almost constant reinforcement and resupply effort. Thanks to the RAF, the Allies had secure rail lines and surface roads to Cairo. The Japanese naval defeat at Midway and the Allied landing at Madagascar reduced the danger to Indian Ocean shipping from Japanese and German submarines. Thus a steady flow of men and materiel poured into Egypt from Australia and India, as well as by the Cape of Good Hope route (10:1).

As a result, the Eighth Army went into battle with several advantages. Its tank force was over twice as large as the Axis force, and included approximately 270 of the new Sherman tanks which were superior to anything Rommel could put into the field. The RAF had assembled the most powerful air force ever seen in the desert; almost 750 aircraft compared to the 350 possessed by the Axis air forces. Ammunition stocks were sufficient to sustain the Eighth Army for seven days at twice the planned usage rate. Finally, from the 1st through the 23rd of October, an average of 2,500 tons of rations were delivered daily (10:3-16).

It is evident that although the Allies spent the majority of 1942 being pushed back across the desert, they had taken important steps to build a broad and solid logistics foundation. Their success and the Axis failure in observing this principle were the prime ingredients in determining the outcome at Alamein.

COHESION

Cohesion is the principle of establishing and maintaining the warfighting spirit and capability of a force to win...Cohesion depends directly on the spirit a leader inspires in his people, the shared experiences of a force in training or combat, and the sustained operational capability of a force....

After nearly two years of almost unbroken successes against the Allies, the Rommel mystique was very strong among the Axis forces. Rommel was always at the scene to maintain fingertip control of the battle. A comrade once observed, "Where Rommel is, the front is" (3:32). This willingness to share living conditions and exposure to danger with his men solidified his legend. Over the two year campaign, Rommel became an idol, a father figure to both the Germans and the Italians.

Rommel's management of his Italian troops is an excellent example of his ability to promote the warfighting spirit in men. When he assumed command of the Axis forces, Rommel noted the marked feelings of inferiority that permeated the Italian ranks. This stemmed mostly from the confusion and disorganization that characterized their disastrous defeats at the hands of the British in December, 1940 (11:100). However by October, 1942, the Italian units fought at Alamein with tenacity and courage despite possessing significantly inferior weapons.

While Rommel, over a two year period, had developed a tremendous degree of cohesion throughout his units, Montgomery had the difficult task of restoring the morale and confidence in his discouraged army in barely two months. Montgomery had two objectives to attain. First, dispel the aura of invincibility that surrounded Rommel and second, establish the Eighth Army's faith in his abilities as a commander.

The Allies had become so mesmerized by the Rommel legend that Montgomery

felt it necessary to issue an order requiring his commanders to make it plain to all that Rommel was nothing more than "an ordinary German General" (13:65). The stopping of Rommel at Alam Halfa in September did much to strengthen Montgomery's assertion of the German's mortality.

Montgomery sought to supplant Rommel as the object of his men's wonderment. His flamboyant style and unrestrained self-confidence were the replacements for Rommel's blownup image. His use of prominent headgear was begun here and became his trademark. In order to succeed, to gain his men's loyalty, Montgomery felt that he must embark on a publicity campaign (2:251). He was constantly out among the troops, supervising training, evaluating subordinate commanders, admonishing and lecturing. Montgomery constantly pointed to their supply superiority, their air force strength, always striving to inspire confidence and raise spirits. The courage and dogged determination which characterized the Eighth Army's performance at Alamein testifies to the success of his campaign.

SUMMARY

Obviously a myriad of factors are involved in the determination of the outcome of any battle. However, the results at El Alamein were dictated primarily by logistics support. The ability of both sides to successfully apply other principles of war was predicated on this one factor. The Allies excellent logistics support enabled them to employ mass, offensive, and simplicity to overwhelm the Axis forces. Montgomery correctly recognized that the Axis Army could not sustain a battle of attrition. Because of his logistics support, he had the means and, to his credit, he hammered the Germans and Italians over and over until they broke.

The failure of the Axis forces to secure logistics support forced them to

violate other principles of war. The lack of ammunition and greatly inferior numbers of men, tanks and aircraft severely limited their opportunities to use mass. Rommel's shortage of fuel ruled out maneuver and required an immobile defensive posture. In addition, the defeat of the numerically overwhelmed Luftwaffe cost Rommel the security and freedom of action for his forces.

In conclusion, the principles of war are meant to be used as a guide, a collection of truths that have proved valuable in waging war. The battle at El Alamein is another illustration of how these principles are interrelating and interacting elements. Also it is apparent how the relative importance of each principle varies with the situation. It has been continually emphasized that war cannot be conducted by utilizing a checklist. However, El Alamein, as much as any other modern engagement, was won by using a methodical, by the book approach. The outcome at El Alamein strongly reinforces the validity of the principles of war.

Section III

DISCUSSION QUESTIONS

This section contains questions that can be used as an aid in a guided discussion concerning El Alamein and the principles of war. The answers provided are not intended to be all inclusive but will hopefully provoke further insights into the utility of the principles of war.

Question #1

Why did Churchill press Montgomery to attack Rommel and what were Montgomery's reasons for waiting until late October?

Answer

Churchill desperately wanted a major military victory in North Africa to boost British morale and to gain political influence. Allied fortunes were at a relative low point during the fall of 1942. The German drive to Moscow had been slowed at Stalingrad but the climax of that struggle was months away. The majority of the news from North Africa had been negative throughout the year. Rommel's myth of invincibility was very strong and Egypt's security seemed very tenuous. Churchill realized what a tremendous uplift a decisive victory over Rommel could be to both the British public and the Eighth Army.

The political need for a victory was probably more important for two reasons. First, the November Torch landings in Morocco and Algeria required minimum resistance from Spain and Vichy France. The Allies needed a decisive victory over Rommel to prove that the days of Axis control and influence in North Africa were numbered. Secondly, Churchill realized that Operation Torch marked the

beginning of increasing American control over the formulation of strategy, tactics, and future priorities. Alamein would be the last predominant "British show" and a decisive victory there would give him and the British military the added prestige to significantly impact decisions concerning the future course of the war.

Montgomery was aware of the Operation Torch November deadline but he saw it in different terms. He felt that the Allied landings would force an Axis withdrawal back to Tunisia and deprive him of the chance to decisively defeat Rommel at Alamein. Thus Montgomery's attack had to precede the Torch landings just enough to allow his army time to finish Rommel at Alamein. He seemed more comfortable with a direct head to head engagement than with the prospect of chasing the wily Rommel across open expanses of desert.

Montgomery's concern for the training deficiencies of the Eighth Army was another reason for waiting until late October to attack. He used the first three weeks of the month to prepare his army as best he could for the upcoming climatic battle. He also needed a full moon to give his men a realistic chance of clearing corridors through the minefields during a night attack. The dates for optimal lunar conditions occurred during late September and the third week of October.

Thus Montgomery waited until late October to take maximum advantage of the time given him. Although the need for victory was great, the consequences of a defeat were exceedingly more significant.

Question #2

How did the Axis violation of the principles of logistics affect their ability to apply other principles of war?

Answer

By not securing their lines of logistics support, the Axis forces were

forced to forego many military options. The overwhelming Allied superiority in men, tanks, and artillery pieces severely limited Rommel's opportunities to employ the principle of mass. Lack of ammunition forced Axis gunners to limit artillery barrages which greatly facilitated Allied penetration of the minefields. The shortage of fuel supplies severely constricted Rommel's options of tank deployment. As a result, he could not move armor about the front and was rarely able to mass the firepower of his tanks for even local engagements. Although Ultra was the predominant reason for the Axis loss of intelligence security, the failure to adequately equip the Luftwaffe cost them battlefield security. The Luftwaffe's inability to match the waves of RAF aircraft resulted in constant Allied air surveillance and repeated bombardment in rear areas and armor staging zones. Finally, the lack of fuel forced Rommel to abandon his preferred method of operations, mobile tank warfare, in favor of an immobile defensive plan. The insufficient Axis logistics support restricted Rommel's use of maneuver. He was forced to turn away from his army's forte to a World War I type scenario in which the Allies were well versed and could fully employ their superior artillery strength.

Question #3

How did Montgomery employ the principle of simplicity in his battle plan?
What was the drawback of his decision not to risk ambitious maneuvers?

Answer

The level of training of the Eighth Army convinced Montgomery that any battle plan could not include any ambitious or complex maneuvers. All advances were preceded by heavy artillery barrages. Territory gains were consolidated and armor units always awaited the forward placement of artillery prior to any further movements. The decision to stop and destroy the Axis infantry occupying

the minefields, before looking to engage the enemy's armor, was made to give the Allied tanks an added advantage of fighting from reinforced positions.

Montgomery felt that the conservative plan comprising the "simple" steps of having his armor penetrate the minefields, dig in and await the Axis counterattack was less risky than to attempt to pursue the enemy armor in the open desert.

The big drawback to this conservative plan was that it greatly slowed the Allied advance. Rommel was frequently baffled by the timid movement of the Eighth Army, particularly during the battle's final days when the Axis Army was on its knees. The exceedingly cautious pursuit by the Eighth Army was a primary factor for Rommel's success in saving what was left of his armored force.

Question #4

The use of the principles of mass and economy of force appear to be contradictory actions. How did Montgomery employ each of these principles during the battle?

Answer

Montgomery used massed firepower continually throughout the battle. The Eighth Army's significant numerical advantages in men, tanks, artillery pieces, and aircraft made this tactic possible. Especially noteworthy were the artillery barrages and aircraft bombing. The opening barrage signalling the start of Operation Lightfoot involved over 1200 guns and displayed shelling of a magnitude not seen since World War I. The barrage accompanying Operation Supercharge was almost as impressive and achieved similar devastating results. The continual waves of RAF bombers were equally successful in shattering Axis communications, resupply efforts, and troop morale. Infantry and armor concentrations could not escape the Allied air assault as the RAF sent in almost hourly bomber flights with relative impunity.

While Montgomery frequently used overwhelming forces to achieve objectives, he never committed resources to secondary or inconsequential goals. Even though the 30 and 10 Corps were making unsatisfactory progress through the minefields during the first eight days of battle, Montgomery kept the 7th Armored Division back. This paid off later when he was able to launch this relatively fresh unit against weary Axis defenders as part of Operation Supercharge. Another example of Montgomery's balancing of mass and economy of force was his use of the 9th Australian Division on October 29 to draw and pin down large numbers of German forces. The Australian advance towards the coast forced Rommel to commit German units to that area, exposing the center of the Italian defense to Montgomery's massed assault--Operation Supercharge.

Question #5

Defensive has been removed from the list of principles in AFM 1-1 and is now mentioned under the principle of security. In light of battles such as Alamein, should defensive be reinstated as a principle to balance offensive, as is the case of mass and economy of force?

Answer

This is a question that is being pondered by many in the military establishment. History has shown the cyclic dominance of offensive over defensive and vice versa. World War I highlighted the advantages of a defensive strategy while the advent of mobile tank warfare made offensive actions the key to most victories in World War II. At Alamein, the Axis forces violated a majority of the principles of war yet were able to fiercely resist an overpowering army for almost twelve days. The Axis resistance can be attributed mainly to their strong defensive positions and their tactical defense plan.

In view of this and other historical examples, plus NATO's apparent reliance

on defensive advantages in defending Europe, one can argue the merits of increasing the emphasis on defensive strategy as a credible military option. As with the principles of mass and economy of force, commanders should strike a balance between offensive and defensive. The achievement of the objective may require a strategy of mixing offensive and defensive actions at appropriate times and circumstances.

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