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THE BATTLE OF EL ALAMEIN
OCTOBER-NOVEMBER 1942

Type of operation described: A FIELD ARMY
ATTACKING PREPARED POSITIONS IN THE DESERT

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INTRODUCTION

This monograph covers the Battle of El Alamein (officially known as the battle of Egypt) which commenced 23 October 1942 and ended 11 November 1942 with the expulsion of the Axis forces from Egypt.

In order to promote better reader understanding, the events leading up to this operation will be described briefly.

The reader will recall that in the fall of 1942 all European countries, except those remaining neutral, and the United Kingdom, had either been overrun and occupied, or had otherwise come under Axis domination. On the Russian front the Germans were completing their summer offensive which ended with the Russians defending Stalingrad, their backs against the Volga River in the south. The United States, a relatively newcomer in the war, was principally engaged in the Pacific and in moving troops and supplies to England in preparation for operations as yet only in the planning stage. In North Africa the Axis Forces were poised at the gateway to the Nile Delta with a depleted but unbeaten British Eighth Army as the only barrier between them and the rich rewards of Alexandria, the Suez Canal and the Middle East. In short, the world situation looked black for the Allied Nations.

THE SITUATION IN NORTH AFRICA

In North Africa a see-saw campaign had been in progress since 1940. In September of that year the Italians, under Marshal Graziano, had advanced into Egypt only to be repulsed and driven back to El Agheila by the British under General Wavell. (See Map 1) (1)

(1) A-2, P.12.

In March 1941 the British, who had been greatly weakened by diversion of a large part of their force to Greece, were attacked and driven back to Salum in Egypt by combined German and Italian forces under Field Marshal Erwin Rommel, who had assumed command of Axis forces in North Africa. (See Map 1) (2) In retreating, however, the British managed to retain Tobruk, and the fact that this garrison was able to hold out probably saved the British in Egypt. Rommel had to stop and return to besiege this stronghold in order to eliminate its threat to his lines of communication. (3) (See Map 1)

Between June 1941 and January 1942 the British, who had been heavily reinforced, succeeded in driving Rommel's numerically inferior forces back again to El Agheila. However, in so doing they lost heavily due to Rommel's superior tactics and their own improper employment of troops. (4) Consequently, on 21 January 1942, Rommel was able to launch a surprise counter-offensive, which by June 1942 drove the British back to El Alamein. (5) (See Map 1) In this second offensive he was successful in reducing the British stronghold at Tobruk, thereby eliminating its threat to his rear and securing its port facilities for his own use. (6)

In selecting a "last stand" defensive position, General Auchinleck, who had succeeded General Wavell in command of the British Forces in North Africa, decided to defend The El Alamein Line which had been laid out in 1941. (7) It was a wise choice inasmuch as it enabled the British commander to concentrate his forces along a thirty-five mile front, free from the threat of envelopment, since his right flank was anchored on the Mediterranean sea, and his left on the edge of the Qattara Depression, an insurmountable land barrier which has been described as "impassable by cars and unsafe for loaded camels". (8) (See Map 1)

(2) A-2, P.12-13; (3) A-2, P.13; (4) A-2, P.16; (5) A-2, P.17;
(6) A-2, P 17; (7) A-3, P 41; (8) A-1, P.1, A-3, P.41, A-3, P.45.

The British initially established a defensive line extending from El Alamein Station generally southwest to the El Taqa Plateau, (See Map 2) This gave them the advantage of commanding ground. (See Map 2) However, before Rommel's offensive finally ground to a halt, the British southern (left) flank had been pushed back until the line ran south from Alamein Station to Qaret El Himeimat. It barely held to the security provided by the Qattara Depression. (See Map 2) This line remained essentially the same for the ensuing three months, during which both sides consolidated and reinforced. The commanding terrain was now in the hands of the Axis Army. (9) (See Map 2)

El Alamein is a station on the Mediterranean coast route sixty miles west of Alexandria. (See Map 1) Beyond Alexandria to the east and south lies the fertile Nile Delta and Cairo. Farther east is the Suez Canal, a vital link in Britain's so-called "life line". (10) By destroying the British in Egypt, the Axis would gain control of the Mediterranean, dominate the Middle East, and secure for themselves the vitally needed oil supplies of Iraq and Iran. (11) Between Rommel and these rich prizes stood only the British Eighth Army and a difficult supply problem. (12)

It was at this point that Allied Air strategy began to play an increasingly important part in the campaign. Axis reinforcements and supplies were brought from Italy across the Mediterranean to the seaports of Tripoli, Benghazi, and Tobruk. (See Map 1) Based on Air reconnaissance from Malta, which discovered and reported Axis shipping movements, the RAF, reinforced by heavy bombers of the U.S. Air force, constantly attacked shipping destined for Axis ports. Medium bombers attacked ports and coastal shipping, and rail and road lines leading to the front. As a result of this strategy, Axis shipping losses increased to as high as 50 percent, with the result that the German and Italian forces became critically short of oil and gasoline. Axis air power was diverted from an offensive to a defensive

(9) A-3, P.42; (10) A-5, P.1, A-3, P.41; (11) A-3, P.41; (12) A-3, P.42-43.

role, protecting shipping or acting as transport for critically needed supplies. Rommel's operations were accordingly restricted and he lost the initiative. On the other hand the British were gaining time. Reinforcements were arriving. U.S. Airforce units, U.S. medium tanks, and 105-mm self-propelled guns made their initial appearance in considerable numbers in the British Eighth Army.

Rommel, realizing this and hoping to gain a victory before the British achieved a preponderance of force, launched an attack on 30 August 1942. This offensive described by General Montgomery as "The Battle of Alam Halfa", (13) was unsuccessful and resulted in no material change in the battle positions. (14)

THE SITUATION IN THE BRITISH EIGHTH ARMY

On 13 August 1942 General Sir Bernard L. Montgomery arrived in North Africa and replaced General Ritchie in command of the British Eighth Army. He found morale low. Plans for still further withdrawals were being prepared. Weapons and equipment in the hands of the British troops compared unfavorably with those of the Germans. His mission was to destroy the Axis forces in North Africa. In accordance with this mission a new defensive policy was formulated which contemplated no additional withdrawals. The defensive position was reorganized. The principle of mass in the employment of armor and artillery was emphasized and instructions issued to prevent the piecemeal employment of these weapons which had made possible many of Rommel's previous successes. Also in conformity with the new defensive policy, additional stocks of supplies were brought forward to the front line area. A policy of close cooperation was inaugurated between Army and Air Force headquarters. Lastly, sweeping changes in command were effected. (15)

(13) A-1, P.5; (14) A-3, P.42-43; (15) A-1, P.2-4.

PREPARATION FOR THE BATTLE

At the conclusion of Rommel's 30 August offensive, described above as the "Battle of Alam Halfa", both sides commenced intensive preparations for the struggle to follow. Since Rommel had lost the initiative due to his supply difficulties, he concentrated on improvement of his defensive position. The British on the other hand took advantage of this respite to build up the Eighth Army on the basis of training, equipment, and reserves in obvious preparation for an all-out offensive.(17) They had the tremendous advantage of short local supply lines from bases in Alexandria and Cairo, and although the supply lines from Australia, England, and the United States to reach those bases were tremendously long, they were also comparatively well protected.

During this build-up phase, the commander of the British Eighth Army seemed in no haste to launch a counter-offensive. He took a calculated risk in allowing Rommel to steadily improve his defenses and to possibly receive heavy reinforcements. He withdrew major units from the line and sent them to the rear for re-equipping and training. He organized, equipped and trained a reserve corps, strong in armor, to be used in spearheading mobile offensives and for exploitation once a gap had been established in the enemy's defensive line. Since the coming battle was obviously going to be a position engagement, a type of warfare never before used in desert operations, troops were trained in tactics and techniques previously considered obsolete since World War I. And above all, he instituted intensive training in the technique of breaking through mine fields at night.(18)

Concurrently with the build-up process, plans were being formulated and rehearsed for the coming British offensive. Considerations affecting the planning were principally the disposition of Axis forces, the moon, and the terrain.(19)

(17) A-3, P.43, A-1, P.11; (18) A-3, P.43-44, A-4, P.1, A-9, P.7;
(19) A-1, P.13-14.

The Axis positions just prior to the battle were held by one German infantry division, five Italian infantry divisions, and a German parachute brigade. In addition there were small German and Italian armored and motorized units scattered throughout the line. (See Map 3) The infantry divisions were disposed generally along the main defensive line with the German infantry for the most part in the north. Some Germans were used to reinforce Italian sectors in the south. The center was loosely held by Italian infantry. (See Map 3) Two armored divisions, the German 15th Panzer and the Italian Littorio, were in general reserve in the north. (See Map 3) Farther to the west on the coast was the German 90th Light (motorized) Infantry Division engaged in coast defense duties, but available in case of need. Still farther to the west was the Italian Trieste Infantry Division. To the south in general reserve were two more armored divisions, namely, the German 21st Panzer and the Italian Ariete. (See Map 3) (20) In making these dispositions, the German Army commander apparently hoped and expected that the British attack would come against his weakly held center, in which case he could employ his usual offensive armored tactics and crush their penetrating forces between two converging armored attacks from the north and the south. Then he could send his armor through the gaps which the British had prepared for their own advance in order to exploit the British rear. (21) The positioning of the Axis armor reserves (See Map 3) should be carefully borne in mind, since it was to exert a dominant influence in both the conduct and outcome of the battle. (22)

The terrain considerations were threefold. The northern coastal sector extending north from Kuweisat Ridge (See Map 2) is generally flat and favors armored operation. The Axis commander had guarded

(20) A-1, P.13. (21) A-6, P.32; A-3, P.47; A-5, P.14. (22) A-3, P.47.

this dangerous avenue of approach to his position with three successive defensive lines, including mine fields, organized in depth and intended to cause the British attack to lose momentum and direction. (23) South of Kuweisat Ridge (See Map 2) the terrain is more typical of average desert regions; rocky areas are interspersed with deep sandy depressions known as "wadis". (24) The terrain is much more defensible especially against armor. Consequently this sector had not been so well organized as the north, but existing defenses were arranged to canalize British penetration. (25) Approaches in both sectors were guarded by mine fields varying from 5000 to 9000 yards in depth. (26)

Furthermore, the open nature of the terrain all along the front seemed to preclude any sort of tactical surprise. The only possibilities in this direction appeared to lie in the achievement of deception concerning the direction of the main effort and the date and time of the attack. (27)

The moon cycle influenced to some extent the selection of D-day and H-hour. During preceding desert operations it had become axiomatic on both sides that night attacks under moonlight favored successful desert offensives. By 15 October 1942 the moon cycle was favorable. On 24 October the moon was full. (28)

One other consideration influenced the date and time of the attack. On 19 October 1942 the RAF mounted a preliminary air offensive on the enemy's forward area. The tempo of this offensive

(23) A-3, P.45; A-1, P.13-14. (24) A-3, P.45. (25) A-1, P.13.
(26) A-1, P.13. (27) A-1, P.14. (28) A-1, P.13; A-3, P. 44.

was stepped up daily with the threefold purpose of gaining and maintaining air superiority, isolating the battlefield by destruction of enemy lines of communication, and impairment of enemy morale. The importance attached to the first of these is illustrated by the fact that the setting of zero hour was withheld until the RAF commander could assure the Army commander that British Air had achieved complete superiority. This assurance was given on 23 October 1942.(29)

THE BATTLE PLAN

Based upon the considerations of enemy dispositions and terrain, British forces were disposed as follows: The sector extending north from Ruweisat Ridge was entrusted to 30 Corps, consisting of 9th Australian Infantry Division, 51st (Highland) Infantry Division, 2nd New Zealand Infantry Division, 1st South African Infantry Division, and 4th Indian Infantry Division, extending in that order from north to south. (See Map 3) South of Ruweisat Ridge was the 13 Corps, consisting of the 50th Infantry Division, including a Greek Brigade, 44th Infantry Division, and a ^{FRSE} fighting French Brigade in that order from north to south. Directly in rear of the 44th Infantry Division stood the 7th Armored ^{WAF} Division in general reserve. Behind the 30 Corps line in the north ^{to east} stood the newly formed 10 Corps consisting of the 1st and 10th Armored Divisions. It should also be noted that the 2nd New Zealand Division in the 30 Corps line was motorized and included the 9th Armored Brigade. (See Map 3) (30)

General Montgomery planned to make his main effort by 30 Corps against the enemy's most heavily defended positions in the north. 30 Corps was to attack on a four division front with a task of forcing two gaps in the German position through which 10 Corps was to pass. (See Map 4) (31)

(29) A-3, P.46; (30) A-1, P.14; (31) A-1, P.15.

In the sector south of the Kuweisat Ridge 13 Corps was to launch two attacks. One by the 44th Infantry Division was to be directed toward Gibel Kalakh, with the mission of forcing a breach in the two known mine fields to their front through which the 7th Armored Division was to pass. Still farther south the Fighting French forces were to attack toward El Taqa Plateau. (See Map 5) It must be emphasized, however, that the entire 13 Corps operation was intended to be diversionary. The 7th Armored Division had been provided to furnish depth to the British position, and to pass through and exploit in the event that the infantry found a soft spot and was unexpectedly successful. 13 Corps was strictly enjoined not to press this attack in the face of heavy casualties, since it was anticipated that some of the forces, particularly armor, might be required later to assist in the northern operation. 10 Corps, after passing through the gaps provided by 30 Corps, had as its ultimate mission the destruction of enemy armor. It was initially to maneuver, however, so as to prevent enemy armor from counter-attacking 30 Corps. It was then to swing south and exploit the enemy's rear. 30 and 13 Corps, after penetrating the enemy forward defenses, were to "methodically" mop up his positions. (32)

In the meantime, in order to provide deception, an elaborate cover plan was implemented for the purpose of deceiving the enemy as to the time and direction of attack. This consisted first of passive measures designed to conceal the movement of troops, and second of active measures intended to make the enemy believe the main effort would be directed at his southern flank.

The first of these was accomplished by establishing a "constant" density" of vehicles, guns, and supplies. Early in October, by pooling artillery and transport, and by constructing elaborate dummies, the necessary density of guns, transport, and supplies to support an attack was established on the ground in forward areas.

Then as units of 10 Corps and the 51st Highland and 2nd New Zealand Divisions were moved forward to advanced assembly areas, their actual artillery and transport accompanied them and replaced dummies in the forward areas. At the same time, dummies were used to replace the actual items which had been moved forward from the rear. By maintaining this "constant density" in both areas, Rommel's forces were denied the conclusions which they otherwise could have drawn from a study of aerial photographs taken on successive days. Thus, secrecy as to the actual date of the attack was achieved. As near as can be determined the Axis commanders still thought that the 10 Corps was fifty miles to the rear at the time that the attack actually commenced.

The same result was accomplished by the construction of dummy supply dumps and a dummy pipeline, the work on which was timed to indicate completion early in November. In addition, these dummy installations were located so as to mislead the enemy into believing that the main effort would be directed at his southern flank. Similarly, dummy radio traffic from nonexistent armored units was intensified in order to create the illusion that armored forces were moving toward the southern flank. Under the guise of additional defensive organization, slit trenches were dug and camouflaged well forward of the British defensive position. These were intended to conceal the attacking infantry prior to the assault.(33)

Complete informational coverage was provided. Troops, down to the last man, had the plan of battle explained to them. The Army commander personally briefed every officer "down to the rank of Lieutenant Colonel" on the forthcoming operation.(34)

During the night of 22-23 October all last minute troop dispositions were completed. The front line infantry units occupied

(33) A-1, P.17; (34) A-1, P.18.

their slit trenches on the line of departure unobserved. The enemy did not shell these positions, indicating that thus far tactical surprise had been gained.(35) H-hour was set for 2200 hours 23 October 1942. Plans and preparations were complete.

CONDUCT OF THE BATTLE

The Artillery Preparation

The use of artillery in the initial phase of the action deserves detailed treatment, since its massed employment was an innovation at this point in the Second World War. It played an important part in deciding the outcome of the battle. For days prior to the jump-off, British Intelligence had painstakingly pinpointed Axis Artillery and AT Gun positions. This was done from aerial photos and flash spotting, and a large number of positions were known at the time of the attack.(36) At the same time, of course, the enemy was doing likewise. Consequently, alternate positions were prepared and all guns moved just prior to opening fire. This precaution rendered what little enemy counter-battery fire that did come in relatively ineffective.(37) The principle of mass was employed to the utmost. Over 1000 field and medium guns were used under Army control. While the artillery dispositions were made all along the front, the heaviest concentration was in the area of main effort in the north. Here, over a ten mile front, 800 guns were spaced 23 yards apart.(38)

At 2140 hours (H-20) the preparation commenced. Smoke was fired initially so that enemy crews would be manning their guns. After this, a counter-battery preparation was laid on for 20 minutes against enemy gun positions and selected strong points. At 2200 hours all fires of this massed effort were brought down on

(35) A-1, P.18; (36) A-4, P.4; (37) A-4, P.4; (38) A-4, P4, A-3, P.47, A-6, P.32.

the enemy main line of resistance in a rolling barrage which was closely followed by the assaulting infantry. This barrage continued under Army control for seven minutes after H-hour, after which, control of artillery elements reverted to their parent units. They continued to assist throughout the battle by firing timed barrages, concentrations, and counter-battery fires.(39)

400 rounds per gun was expended in this initial preparation. Its effect can best be evaluated from statements of Axis prisoners to the effect that it exceeded anything that they had previously experienced even on the Russian front.(40) The rolling barrage advanced at the rate of 100 yards each 2½-3 minutes, and continued to a depth of 7000 yards from the line of departure.(41)

The Penetration

At 2200 hours a coordinated infantry attack jumped off along the entire line. In 30 Corps sector, four infantry divisions attacked abreast along an 8-mile front. These divisions, the 9th Australian, 51st Highland, 2nd New Zealand, and the 1st South African, in that order from right to left, had the task of opening two paths for the 1st and 10th Armored Divisions of 10 Corps. The area of attack was bounded by Tel El Eisa on the right and the southern end of Miteiriya Ridge on the left. This was the British main effort. (See Map 4). In conjunction with this thrust, 4th Indian Division carried out large scale raids along Kuweisat Ridge. (See Map 4) The enemy had been especially sensitive about the center of his line, apparently expecting the main effort to come there. 4th Indian Division's effort aided him in this misconception.(42) A feint attack was made north towards the sea by a brigade of the 9th Australian Division.(43)(See Map 4)

(39) A-4, P.4; (40) A-3, P.47; (41) A-4, Appendix E; (42) A-1, P.19; (43) A-4, P.4.

The assault elements making these efforts were composed of infantry supported by small detachments of engineers. They advanced rapidly in rear of the timed artillery barrage, stopping only to deal with anti-personnel mines, and for brief 15-minute check pauses.(44) Direction was maintained by compass and by the expedient of firing Bofors tracer on flat trajectory down brigade boundaries at each lift in the artillery barrage.(45) Forward troops indicated their positions by firing tracer vertically. This enabled supporting artillery and unit headquarters to plot forward positions by intersection. Front line troops in turn could determine their positions by resection on lines of searchlights shining vertically in the rear.(46)

The initial division objectives were from 5000 to 7000 yards forward from the line of departure. Their locations were dictated to some extent by the estimated depth of enemy minefields which must be breached in order to permit the passage of armor. In order to preserve battalion strengths, limited objectives were assigned them. Upon reaching their objectives, battalions would reorganize, form an all-around defensive position and a fresh battalion would pass through to continue the assault. This method also provided depth to the forward positions in anticipation of the coming of daylight and the inevitably expected German counter-attack.(47)

Fighting was bitter, but due largely to the element of surprise and the effectiveness of the artillery, assault troops advanced rapidly, and by daylight their objectives, with very few exceptions, had been secured.(48) (See Maps 4 & 6)

Following close behind the attacking infantry came especially trained minefield task forces, organized purposely for the task at

(44) A-4, P.48; (45) A-4, P.4; (46) A-4, P.4; (47) A-4, P.48;
(48) A-1, P.19, A-4, P.5.

hand. Their responsibility was the breaching of gaps through the AT minefields. Gaps were cleared initially to a width of eight yards to permit passage of infantry vehicles and close support weapons. Later these gaps were widened, first to 24 then to 40 yards, to provide for uninterrupted passage of the armored columns.(49)

At 0200 hours, 24 October, the 1st and 10th Armored Divisions crossed their line of departure and made for the corridors forced by the infantry. The 1st Armored was to pass through the corridor to the north toward Kidney Ridge, and the 10th Armored had as its goal Miteiriya Ridge in the vicinity of El Wishka through the southern gap. (See Map 4) Both divisions, however, were held up by additional minefields and a strong screen of enemy AT guns. They only partially penetrated the enemy main positions, and were still behind the attacking infantry with the coming of daylight.(50)

In the 13th Corps sector to the south, two attacks were in progress. The 44th Division advanced between Himeimat and Munassib (See Map 5) with the mission of forcing a gap through which the 7th Armored Division could follow. Simultaneously, the 1st Fighting French Brigade on the extreme left flank attacked toward El Taqa Plateau. (See Map 5) These attacks were only partially successful. The 44th Division penetrated only one of the two main minefields to their front. The French Brigade reached their objective, but due to the difficult terrain were unable to get their AT guns forward, and were driven off by an armored counter-attack on the part of Kiel Group. 50th Division activity was limited to a raid south of Ruweisat Ridge. (51)(See Map 5)

Thus on 24 October a good bridgehead had been secured in the 30th Corps sector on the British right flank. The armored divisions, however, had been unable to break through the enemy main positions. In the south (13 Corps), positions were relatively unchanged although bitter fighting was in progress. (52)

(49) A-4,P.4; (50) A-1,P.19; (51) A-1,P.20; A-3,P.47; A-4,P.5;
(52) A-1,P.21.

Operations 24-25 October

The 1st Armored and 51st Infantry Divisions resumed their attack in the northern corridor at 1500 hours, 24 October. By 1800 hours they had passed through the westernmost mine belt, and were taking up positions on a line just short of Kidney Ridge. (See Map 6) In the southern corridor, 10th Armored Division renewed its attack and although considerable difficulty was encountered, the division negotiated the last remaining minefield and had taken up positions on Miteiriya Ridge. (See Map 6) by 0800, 25 October. British armor was now in position where it could meet enemy counter thrusts and protect the infantry units which were engaged in mopping up and consolidating their positions. It had not, however, met the main enemy mobile striking force. (53)

In the southern sector (13 Corps) 44th Division succeeded in gapping the remaining minefield to its front and a brigade of the 7th Armored Division was passed through. This force encountered heavy resistance and, in keeping with the policy of conserving the armored strength on the left flank, the attack was broken off and the 7th Armored Division retired to a relatively quiet sector in the vicinity of Munassib. On this same date 50th Division launched an attack north of Munassib. This attack was principally diversionary and was not pressed when thick wire and anti-personnel mines were encountered. (54) (See Map 5)

Operations 26 October

In the original plan it had been contemplated that the 2nd New Zealand Division would "carry the ball" in forcing the corridor to the southwest across Miteiriya Ridge. In the initial attack it alone had completely achieved its objective. Now, however, it met

(53) A-1, P.21; A-4, P.5; A-3, P.48. (54) A-1, P.21; A-3, P.48; A-4, P.6.

stiffened resistance, and it became apparent that continued "all-out" effort in this direction would result in heavy losses. Consequently, it was directed to hold and mop up, and 9th Australian Division was ordered to attack north toward Thompson's Post and the sea, with the mission of isolating and destroying the German forces in the coastal salient created by the initial penetration. (See Map 6) This attack was mounted during the early morning hours and a two mile advance was accomplished. (See Map 6) The 1st Armored Division made slight progress toward Kidney Ridge. (See Map 6) In the remainder of 30 Corps sector the infantry divisions continued to mop up and consolidate their gains. During the night, 1st Armored Division captured Kidney Ridge. (55) (See Map 6)

On 13 Corps front the situation remained static. The continuous threat had served to contain the enemy reserve armor in that area. Up to this time the Axis commander was apparently still in some doubt as to the location of the British main effort.

Operations 27 October

During the night of 26-27 October the enemy, apparently no longer in doubt as to the area of critical danger, moved his reserve armor north and released the 90th Light Division from their coast defense mission. He was finally concentrating his forces to meet the main thrust. (56) During the day five heavy armored counter-attacks were launched in the vicinity of Kidney Ridge, (See Map 6) but all were repulsed. Severe tank losses were incurred by both sides, but possession of the battlefield enabled the British to recover their own tanks and destroy those of the enemy. (57)

(55) A-1, P.22; A-3, P.48-50; A-4, P.5. (56) A-1, P.23, A-4, P.6;
(57) A-1, P.24; A-3, P.50; A-4, P.6.

Operation 28 October

A lull now occurred in the ground action along the front. The attacking divisions in the 30 Corps sector had pretty well "shot their bolt". The two armored divisions of 10 Corps had gained advantageous positions, but were still facing a strong AT gun screen beyond which was mobile armor. They could advance only at extremely heavy cost.

In the face of this situation it became apparent that the side which was able to first reassemble a powerful striking force would have the advantage. This the enemy prepared to do. He commenced assembling his force to the west of Kidney Ridge (See Map 7) on 28 October, but British Air superiority proved his undoing. As his armor was assembled, the RAF bombed the formations with such ferocity and to such a prolonged extent that he was unable to organize an attack. (58)

At the same time the British Army commander was also regrouping. He withdrew the 2nd New Zealand Division from the line and its place was assumed by the 1st South African Division, whose front in turn was taken over by the 4th Indian Division. Command of 4th Indian Division was assumed by 13 Corps, whose boundary was brought north. (See Map 7) Inasmuch as 13 Corps had successfully completed its diversionary mission in the south, the 7th Armored Division, together with an infantry brigade each from the 44th and 50th Divisions, were brought north and added to the striking force. The 1st Armored Division was likewise withdrawn, as was also a brigade of the Australian Division, whose sector was taken over by 51st Division. (See Map 7) By thinning the line in this manner a substantial striking force was reorganized and grouped for a final thrust. (59)

Operation 29 October

During the night 28-29 October, the new attack was commenced

(58) A-1, P.24; A-3, P.52; A-4, P.6. (59) A-1, P.24; A-3 P.52; A-4, P.6-7.

by launching the Australians toward the north. A narrow salient was established in rear of a regiment of the German 164th Division. The Australians were successful in holding this salient against repeated counter-attacks which the Germans launched during the ensuing two days in an attempt to free this isolated unit. (See Map 7)

The enemy reacted vigorously to this new threat in the north. He moved the 21st Panzer Division up from Tel El Aqqaqir to a position opposite the Australian salient, replacing it with his last reserve, the Italian Trieste Infantry Division. He added the 90th Light Division to the 21st Panzer Division and vigorously attempted to reduce the salient. (See Map 7) He appeared to be fully alive to the British intent of driving down the road and rail axis along the coast. Another reason for this reaction was the enemy's understandable desire to protect El Rahman, which controlled entrance to the Rahman Road, the Axis lateral supply route. (See Map 7)(60)

Operations 30 October

On this date the only major ground action was the deepening of the Australian salient toward the coast. (See Map 7) They were successful in reaching the road but did not reach the shore and close the trap. (See Map 7) The enemy was able during the day to reinforce the isolated regiment of the 164th Division with Armored elements from the 90th Light Division. The British continued regrouping for the decisive thrust. (61)

Operations 31 October-2 November

It has been noted that British operation thus far had caused the enemy to concentrate the majority of his German forces astride the main line of his communications in the north. In so doing, he had again split his armored reserves, leaving the badly mauled 15th Panzer Division south of Aqqaqir in company with the Italian armor. (See Map 7)

(60) A-1, P.22,25; A-4, P.7; A-3, P.52-53; A-13, P.207.

(61) A-3, P.53; A-13, P.207.

During 31 October-1 November, the enemy was further occupied by additional efforts on the part of the Australians to reach the coast. These efforts were successful on 1 November, but the majority of the isolated enemy had in the meantime fought their way out of the trap.(62) While the Germans were thus occupied, the British Army commander swung the entire weight of his reserve forces toward the Italian-held sector at Aqqaqir.(See Map 8)

This attack heralded the third and final phase of the battle. It began as usual with an artillery preparation similar in intensity to that of the initial attack. At the conclusion of the artillery preparation the 2nd New Zealand Division, to which two brigades from the 50th and 51st Divisions had been attached, spearheaded the action behind a rolling barrage. Close behind the New Zealand Infantry came their own 9th Armored Brigade, which was followed in turn by 1st and 7th Armored Divisions of 10 Corps. The main sector of this action was generally west of Kidney Ridge toward Tel El Aqqaqir.(See Map 8) The attack was a complete success. Tactical surprise was achieved for the second time during the battle and before dawn the infantry had reached their objectives and forced a salient in the enemy line 6000 yards deep along a 4000 yard front. (See Map 8) Through this lane streamed armored car units, some of which broke out completely and commenced operating southwest in the Axis rear. Also through the gap thus created came the armored units mentioned above, but with the coming of daylight these encountered a strong enemy armor and AT gun screen in the vicinity of the El Aqqaqir feature.(63)(See Map 8)

In the meantime the enemy had not been idle. The initial British advance had penetrated between his divided armor. As has

(62) A-1, P.26; A-3, P.53; A-13, P.207. (63) A-1, P.27; Ap3, P.55; A-4, P.7.

been noted, 15th Panzer Division, by now badly depleted, and remnants of the Italian Littorio and Ariete Armored Divisions were south of the salient. To the north was 21st Panzer. (See Map 7) Rommel now proceeded to concentrate his armor and counter-attack furiously. A major tank battle developed before Tel El Aqqaqir and raged for the remainder of 2 November and well into 3 November. In this great armored battle, the greatest of the desert campaigns, the British emerged victorious. In this operation the British armor indeed fulfilled their mission. The majority of the Axis armor was destroyed and Tel El Aqqaqir was taken 3 November. Beyond this point, however, the British tanks were unable to advance and exploit their success due to the fact that Rommel had drawn off his remaining tanks and AT guns and set up an effective AT defense west of El Aqqaqir. (64) (See Map 8)

Operations 3 November

While the tank battle was raging during 2-3 November, the 51st Division had been able to extend its salient slightly to the south. (65) Consequently, when the British armor was unable to penetrate the antitank defenses west of Aqqaqir by nightfall of the 3rd, an infantry attack by 51st Division and a brigade of the 4th Indian Division was hurriedly laid on with the purpose of outflanking the German right. (See Map 8) This attack jumped off on the night 3-4 November, and was successful in rolling up the enemy screen, permitting the British armor to roll through into open country. (66) From this point on, Axis units began to withdraw all along the line and the chase was on.

THE PURSUIT

Operations November 4-11

As the New Zealanders and the armored units of 10 Corps poured through the broken Axis line, and it became apparent that a general

(64) A-4, P.7; A-1, P.27. (65) A-4, P.7. (66) A-1, P.28; A-3, P.208; A-4, P.8.

enemy withdrawal was rapidly mounting, the British Army commander issued orders calculated to surround the retreating enemy at the bottlenecks of Fuka and Matruh on the coast road. (See Map 1) (67) Accordingly, a striking force composed of 2nd New Zealand Division with an attached Armored brigade, and 10 Corps consisting of 1st and 7th Armored Divisions, was regrouped for this task. The New Zealanders on 5 November made an all-night march on Fuka, while the armored divisions made a wide end sweep to the west and north, aimed at cutting off the enemy's retreat at Matruh. The New Zealanders were successful in their mission and occupied Fuka on 6 November. On this date, however, a torrential rain set in and continued for several days. This retarded the armored forces traveling across country, and impaired British air activity to such an extent that Rommel was able to clear Matruh prior to the arrival of the British armored force on 8 November. (68) (See Map 1)

In the 13 Corps sector to the south, mobile columns were formed to drive through the remaining four Italian divisions. Of the six Italian infantry divisions participating in the battle, only the Folgore and Trieste Divisions had been allowed to accompany Rommel on his retreat. The remaining four, the Trento, Bologna, Brescia, and Pavia had been left by the Germans without transport, food, or water. They offered no resistance and were easily captured.

To the north an additional attempt was mounted to cut off the fleeing Axis forces without success. On 11 November, Rommel's remaining troops cleared the Libyan border. The Battle of Egypt was over. (69)

(67) A-1, P.28; A-4, P.8; A-13, P.209. (68) A-1, P.29; A-4, P.8.
(69) A-1, P.32.

ANALYSIS AND CRITICISM

In analyzing this operation, comparison with previous desert operations cannot be avoided. Heretofore, the tactical advantage had been with the Axis, even while they were in retreat from a numerically superior British force. The British had consistently committed their armor piecemeal into the battle, enabling Rommel, the "tank master" who concentrated his, to "gobble them up". He is said to have lectured captured British officers on this subject. Furthermore, the British, prior to the Alamein operation, had attempted to compensate for the everpresent scarcity of troops by splitting divisions and employing their components as brigades and brigade groups. This violated the principle of tactical unity and resulted in units intended as primarily tactical to be also saddled with an administrative burden. Furthermore, units within the division level fight best when utilized in the division with which they trained. It must also be mentioned that continuous close cooperation had been entirely lacking between ground forces and supporting elements of the RAF.

These tactics had enabled Rommel, after being pushed back to El Agheila by 17 January 1942, to seize the initiative and initiate a surprise counter-offensive which swept the British back by June 1942 to The El Alamein Line.

From this point on "the shoe was on the other foot", and the Axis commander made the mistakes.

His first error was one of strategy. There is no doubt but that an infantryman attempting to fight his way through the Axis positions would have considered them organized in great depth. From a strategical viewpoint however, the Axis position was thinly

held. This may have been done on Hitler's orders, but in any event adoption of a position affording much greater depth was indicated and the failure to do so contributed in large measure to the Axis defeat.

The second big mistake on the part of the Axis commander was in the disposition of reserves. Rommel, the wily master of tank warfare, had violated his own axiom and split his armor. As has been seen, the 15th and 21st Panzer Divisions of the renowned Afrika Korps were some 25 miles apart on opposite flanks of the line when the British launched their attack. Several reasons have been advanced as to why the Axis armor was so disposed, among which was the fact of Rommel's temporary absence from command. It is not the purpose of this study to justify the actions of individual commanders, but rather to point out that by so dividing his forces, the Axis commander responsible, paved the way for his own defeat.

The third major Axis mistake was the failure to immediately appreciate where the British main effort was being delivered. The 21st Panzer and Italian Ariete Armored Divisions were held in the south until the night of 26 October, at which time they were brought north in an attempt to concentrate, but by that time it was too late.

Fourth was the over-reaction to the threat of the 9th Australian Division in the extreme north. The concentration of German troops in that area permitted the British commander to swing his attack south and break through the Italian held line. It seems likely that the Australian attack could have been contained by a smaller force, but at this stage of the battle, anything the Axis could have done would probably not have affected its eventual outcome.

The underlying cause for all Axis errors appears to have been over-confidence bred from 18 months of successful operations against

the British in North Africa. Rommel appears to have underestimated his adversary without getting accurate current information upon which to base such an estimate. Nothing is worse in warfare.

The British on the other hand seemed to profit from their previous mistakes. Divisions were fought as such. Armor was concentrated and fought under Army and Corps control. Artillery was used in mass throughout each phase of the operation.

By use of the cover plan previously described, and by their disposition of troops, the British were able to invoke the principle of surprise and deceive the enemy as to the time and direction of attack.

Upon arriving in North Africa and assuming command of The Eighth Army, General Montgomery moved his headquarters to a site adjacent to the headquarters of the Desert Air Force. Thereafter, to all intent and purpose, the two commands operated as one - the principle of cooperation.

These were the principles contributing mainly to the British victory, but in addition, the British had the advantage of the offensive, and, by combining this principle with that of movement, were able to keep the enemy off balance and to make him "dance to their tune".(70) Long training and rehearsal had insured that plans, difficult in scope, were simple in execution.

One major mistake on the part of the British commander was his stop to regroup before commencing the pursuit.(71) The margin by which he missed cutting off the main Axis body at Matruh was one day, which might have been avoided had the pursuit been undertaken immediately.

The effects of the British victory at El Alamein are incalculable even at the present time. The result of an Axis victory and the attainment of their objectives in Egypt and the Middle East

(70) A-4, P.12. (71) A-1, P.29.

would have surely had a momentous effect on the progress of the war. One can confidently repeat General Montgomery's prediction, given before the battle, that El Alamein would be "one of the decisive battles of history and a turning point in the war".(72)

LESSONS

Some of the lessons to be learned from this operation are:

1. Intelligent, well planned, unified cooperation between Air and Ground forces is essential to success in large ground operations.

2. Air superiority is essential to victory in large scale ground battles. *Victory in Kuwait depends on El Alamein.*

3. Close cooperation and teamwork between Infantry and associated Ground arms is vitally important to success. This must not be merely a matter of lip service, but must exist on an intimate and personal basis right down through command to include the troops of all arms. This cooperation can be gained only by intensive training prior to battle.

4. In order to be effective, Armor must be concentrated. Success through piecemeal commitment of this arm cannot be achieved.

5. Defense in depth is paramount in any size operation

6. Tactical surprise gives the attacker a great advantage, and may insure quick success against a well prepared position which would otherwise prove difficult, if not impossible, to overcome. Surprise can be achieved by exercise of imagination and determination even in areas where it might be thought impossible.

7. Timed artillery barrages can be used to great advantage. In order to realize the full value of these, attacking infantry must follow as closely as possible. Infantry stayed within an average of 100 yards of the rolling barrages in the El Alamein battle.

8. There is an everpresent danger that infantry operating with tanks will come to depend on the tanks to too great an extent. If this happens and they are confronted by a determined enemy in close combat, they may be found wanting. This must be avoided by careful training and indoctrination.

9. Commanders should guard against the practice of disturbing tactical unity in assigning forces to a task.

10. In order to preserve high morale, commanders must maintain an aggressive outlook even while temporarily on the defensive. This attitude must not only be maintained but it must also be communicated to the troops.

11. Diversionary attacks can be used to great advantage in preventing the enemy from ascertaining the location of the main effort and concentrating his forces to meet it. In order to achieve their purpose such attacks must be prosecuted vigorously.

12. There must be no time gap between the breakthrough and the pursuit if the enemy is to be destroyed.