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# THE LIBYAN CAMPAIGN

November 1941 to January 1942

CAMPAIGN STUDY, No. 1

AUGUST 25, 1942

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## FOREWORD

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This summary of the recent Libyan Campaign, from November 1941 to January 1942, is based on reports of both British and U. S. official observers, and on official and unofficial reports of participating British commanders.

This bulletin is concerned with the operations as a whole and is designed to emphasize lessons pertinent to the entire campaign, as well as to furnish a background for detailed accounts of individual actions which will be published in the near future. The Battle of the Omars, which has already been described in Information Bulletin No. 11, is an example of the many individual actions which made up the campaign.

Detailed information on the later stages of the campaign is lacking, and consequently this part of the action is summarized briefly, no attempt being made to indicate the exact daily dispositions of British or Axis units.

Since the role of the British armored forces was particularly important and since the operations of the other arms were dependent upon the armored action, the movements and engagements of the 7th Armored Division have been described and commented upon in more detail than have those of other units.

# THE LIBYAN CAMPAIGN, NOVEMBER 1941—JANUARY 1942

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## 1. TERRAIN <sup>1</sup> (Map No. 1)

### a. General

The terrain of the Cyrenaican theater, over which the campaign of November 1941 to January 1942 was fought, is desolate, bare, and devoid of almost all the usual terrain features. The theater may be divided roughly into three parts: the coastal area, the plateau area, and the Great Sand Sea area. As far as military operations are concerned, only the plateau area and the coastal area are important. The coastal area contains the one good road, most of the desert's limited supply of water, and the all-important seaports. However, battles for possession of the coast line are fought not on the coastal area itself but rather on the interior plateau. The few terrain features shown on maps are birs (old cistern mounds), cairns, gots, and poorly defined tracks and trails. Troop movements are carried on almost exclusively by the use of compass and odometer, for the few landmarks of the desert are difficult to distinguish one from another.

<sup>1</sup> The following list represents an attempt to collect and translate the most common components of the Arabic place names in the Libyan Desert (variant spellings are indicated in parentheses):

Abd—servant, slave.	Hagfet—bend, curve.
Abu—father.	Ma'tan (Ma'a ten)—mine.
Ain—spring.	Mersa (Marsa)—port, harbor.
Alam—landmark, sign.	Qabr (Gabr)—grave.
Bir—well (usually dry).	Qor—broad mountaintop or hilltop.
Bu—short for Abu (father).	Ras—headland, cape.
Dahar—peak, ridge.	Sidi—my lord.
Ed, El, Er, Es, Esc, Et,	Trig—road.
Ez—the definite article	Umm—mother.
“the.”	Wadi—gully.
Giof—hollow.	Zauiet—corner, small
Got (Ghot)—lowland, depression.	mosque.
Garet (Gueret)—village.	
Gasr—castle, palace.	

A precipitous escarpment divides the coastal plain from the plateau in the area east of Salum, and movement of vehicles or men up or down the escarpment is almost impossible except through the larger wadies, or dried-up stream beds, several of which have been made into fairly negotiable passes. From Salum to the west the dividing line between the coastal strip and the plateau is generally marked by the Trig Capuzzo, which was once the caravan route.

### b. Plateau

The plateau, which extends westward from Egypt through Cyrenaica and far into Tripolitania, is marked generally on the north by the escarpment and on the south by the Sand Sea, although in most of Cyrenaica the plateau slopes gently off to the south and blends imperceptibly into the Sand Sea. Except for the area of the Jebel Achdar (Green Mountains), where the terrain is extremely rugged, the plateau is generally suitable for tank operations. Observation is usually excellent except for duststorms, dust stirred up by moving vehicles, or mirage. The flat or gently-rolling surface provides armored units an opportunity for maneuver comparable to that of ships on a large body of water. East of the Jebel Achdar, the average width of the plateau, between escarpment and Sand Sea, is about 150 miles.

Between Salum and Tobruk the escarpment is not so well defined as on the Egyptian side. It rises from the sea in a series of steps which vary in number and height.

South of the Trig Capuzzo large portions of the plateau are covered with a litter of eroded and broken limestone slabs, which render large-scale movements of vehicles slow and costly. About 30 miles farther inland the Trig el Abd parallels the Trig Capuzzo, and south of it the plateau's

surface is generally flat and hard, providing excellent country for tank and motor-vehicle maneuver. The smooth surface of clay and hard-packed sand is broken only by occasional gots, saucerlike depressions which contain bunch grass and waist-high shrubs similar to mesquite.

The Wadi Sciaba, a broken, wind-eroded valley, stretches southwest from the vicinity of Bir el Gubi for many miles and forms an appreciable military barrier.

#### c. Ports

In Cyrenaica the main ports are Bardia, Tobruk, Derna, and Bengasi. Bengasi, with an excellent water supply in addition to its harbor facilities, is the most important port in the theater, although Tobruk also has a fairly large and well-sheltered harbor.

#### d. Water

Water supply is one of the greatest problems in desert warfare, for most of the Cyrenaican theater is waterless, with only scattered wells along the narrow coastal plain. Bardia, Derna, and Bengasi all have water. Inland on the plateau, however, there are only a few wells, notably at Siwa and Giarabub.

#### e. The Jebel Achdar

West of Tobruk the broken coastal strip gradually narrows down to practically nothing at Timimi, 70 miles to the northwest. There the open plateau approaches the sea.

Stretching to the west from Timimi is the rugged country of the Jebel Achdar, the broken mountain mass which occupies most of the northern portion of the hump of Cyrenaica. Measured at its greatest length, this mass is some 160 miles long, east to west, dropping to a huge escarpment at the western end. Just north of Barce this escarpment winds away in a southwesterly and southerly direction, fading out into the desert near Antelat, about 70 miles southeast of Bengasi. At this point the escarpment is some 22 miles from the shore.

South of the mountains the track from Mekili through El Abiar to Bengasi marks both the southern limit of the foothills of the Jebel Achdar and also the northern limit of the territory suitable for the movement of sizable forces in this area. Southeast of the Jebel Achdar stretches a considerable area of sand. Mekili stands at the junction of the foothills and the sand area, con-

trolling a pass on the east-west road south of the mountains.

With the exception of this sand area, the open desert stretches from the Jebel Achdar some 150 miles south to the northern edge of the Great Sand Sea. This open desert is mostly the same flat, hard-packed plateau which is found farther east above the escarpment.

#### f. Roads and Tracks

North of the Jebel Achdar, the Italian-built coastal road from Bardia through Tobruk to Derna is a two-way asphalt highway in reasonably good condition. From Derna to Bengasi it branches into two and sometimes three routes, furnishing comparatively good communication through the foothills of the northern mountain slopes. This area, which is well watered although rather broken, was to be the site of the extensive Italian colonization movement projected by Mussolini for the development of his African Empire.

South of the mountains the only reasonably well-defined east-west routes are the track through Mekili to El Abiar and Bengasi; the Trig el Abd, which traverses the sand area south of Mekili through very difficult terrain; and the desert track from Giarabub through Gialo to Agedabia. Of these, the Mekili-El Abiar-Bengasi route is the only one customarily used by units of appreciable size.

The key to Cyrenaica is Bengasi, which must be held so that the army of occupation may be subsisted by water-borne supply. Motor supply across the desert south of the Jebel Achdar is possible but uneconomical.

From Bengasi the coastal road continues southward to Agedabia and southwest to El Agheila, running some 400 miles to Tripoli. It passes through a strategic defile between the southern portion of the Gulf of Sirte and the waterless desert north of the Jebel Soda.

Near the southeastern and southern coasts of the Gulf of Sirte, notably south and southwest of Antelat at the southern end of the great escarpment, the smooth desert of the interior gives way to an extreme maze of wadies and salt marshes. This type of terrain continues around the coast of the Gulf of Sirte and all the way to the vicinity of Tripoli, and confines heavy military traffic to trails and tracks. Agedabia, lying 95 miles south of Bengasi on the coastal road, forms a communication bottleneck of great importance, since it is the

intersection of practically every north-south route in the area.

The Wadi el Feregh, which runs generally eastward from a point on the coast 20 miles west of El Agheila, forms the southern limit of the terrain that is practicable for operation of large bodies of motorized troops in the west portion of Cyrenaica. Consequently, possession of the 30-mile stretch from Agedabia to El Haseiat, which lies on the Wadi el Feregh, bars all east-west movement in this area except for that of small patrols which may break their way through the maze of valleys and marshes to the south. In addition, possession of this strip keeps clear an area for the deployment of troops which may be either defending against the east or attacking from the west.

For a great distance west of the junction of the Wadi el Feregh and the coast, there is no route south of and paralleling the coastal road. This road forms the only practicable avenue for the movement of troops as far as Homs, some 225 miles to the west. It is very difficult, if not impossible, to turn defensive positions along this road from the south flank, for the maneuver would involve laborious infantry marches through extremely broken, arid terrain.

## 2. TACTICAL BACKGROUND (Map No. 1)

### a. British Activity

Prior to the beginning of the campaign on November 18, the British maintained the 4th Indian Division<sup>2</sup> in the frontier area as a covering force. The armored-car screen ran generally from a point on the coast just east of Halfaya Pass southwest to the vicinity of Bir Sheferzen, and from there south through Fort Maddalena to Giarabub.

In preparation for the wide envelopment along the northern edge of the Sand Sea toward Agedabia,

the 29th Infantry Regiment of the 5th Indian Division was stationed at Siwa and Giarabub as a garrison to cover collection of supplies.

Frequent clashes between the frontier patrols, often reinforced by tanks, characterized the period just prior to the attack as each side endeavored to obtain definite information about the disposition of enemy installations. Intelligence obtained through these patrol encounters indicated to the British that extensive fortifications had been constructed by the defending Axis forces in the triangle Halfaya-Sidi Omar-Bardia. Defensive areas were distributed generally throughout the triangle and were obviously of sufficient strength to require strong attacks for their reduction.

Frequent reconnaissances far into the interior of Libya were made by British long-range desert-patrol groups, which consisted of R. A. F. armored-car units. While the principal mission of these patrols was topographical reconnaissance, they also had secondary missions of harassment, disruption of Axis communications, and encouragement of subversive activity by the native tribes in the Jebel Achdar. The squadron operating from Siwa succeeded in making a reliable map of the entire area of Cyrenaica as far west as El Agheila. The squadron based at Cufra Oasis penetrated into the coastal area of Tripolitania as far west as Homs (175 miles east of Tripoli) and verified the fact that there were no practicable routes parallel to the coastal road north of the Jebel Soda.

The British armored-car screen was supported by small mobile combat teams composed of artillery, motorized infantry, machine guns, and antitank and anti-aircraft guns. Three such columns guarded the coastal area south of Buq Buq, and two more, echeloned in considerable depth, were stationed on top of the escarpment with advance elements near Qaret Ruweibit. A general line of partially organized defensive areas was established. In September this British line was further strengthened by a mine field, with a minimum width of 50 yards, extending from Buq Buq 45 miles to the south. Three battalion defensive areas in the coastal sector and two above the escarpment were wired and mined in all-around defense.

Late in September the British 7th Armored Division moved into the El Agali area south of

<sup>2</sup> The U. S. designations which most closely correspond to the strength of British units are used in this bulletin. Actual strength is shown in figure 1, and in more detail in appendix A, and may be compared with the strength shown by the approximate U. S. designation. The following principal changes have been made:

<i>British</i>	<i>U. S.</i>
Artillery troop	changed to Artillery battery.
Artillery battery	changed to Artillery battalion.
Armored squadron	changed to Armored company.
Armored regiment	changed to Armored battalion.
Armored brigade	changed to Armored regiment.
Infantry brigade	changed to Infantry regiment.

the 4th Indian Division and extended the covering force as far south as Qaret Azza. Defensive dispositions were taken by the support group of this division. The tank elements provided a mobile force to cover the south flank, and had the mission of encircling any German attempts to drive in the covering force and destroy the dumps in the vicinity of Rabia. The Germans had made such an attempt on September 14 and had nearly succeeded, their advance elements reaching a point less than 5,000 yards from the western edge of the Rabia dump.

#### b. Axis Dispositions<sup>3</sup>

(1) The Italian 55th Savona Division and two German battalions held defensive areas in the triangle Halfaya Pass-Sidi Omar-Bardia. Extensive mine fields had been placed to assist in the defense of this area. The barrier formed by the fortified triangle gave the Axis commander "elbow room" in which to deploy his mobile reserve to meet any British thrust across the frontier. Because of these Axis defenses, the British could not safely bring a mobile force across the frontier closer to the coast than Bir Sheferzen, some 20 miles southwest of Salum.

(2) The Italian Ariete Armored Division was at Bir el Gubi, and the Trieste Division in the vicinity of Gambut.

(3) Four Italian divisions (the Brescia, Trento, Pavia, and Bologna) and one German division (the ZBV, less two battalions) besieged Tobruk.

(4) The 15th and 21st German Armored Divisions were in the coastal area north of the Bardia-Tobruk road. The very rough, hilly country to the south afforded them protection from tank attack. The several passes through these hills were strongly held with antitank weapons and infantry. Thus General Rommel's armored force was protected by an excellent terrain screen through which it could emerge to attack the British.

(5) The air strength available to Rommel was definitely inferior to that of the Eighth Army.

### 3. ORDER OF BATTLE

#### a. British

The British order of battle is indicated in figure 1.<sup>4</sup>

<sup>3</sup> Map No. 2 should be used with this section.

#### b. Axis

The Axis order of battle as estimated by British Intelligence was approximately as follows:

##### (1) German.—(a) 15th Armored Division.<sup>5</sup>

48 light tanks.  
93 medium tanks.  
50 armored cars.  
40 field guns.  
57 antitank guns.  
10 antiaircraft guns.  
Strength; 12,000 men.

##### (b) 21st Armored Division.

48 light tanks.  
89 medium tanks.  
50 armored cars.  
50 field guns.  
69 antitank guns.  
46 antiaircraft guns.  
Strength: 12,000 men.

##### (c) Provisional Infantry Division.

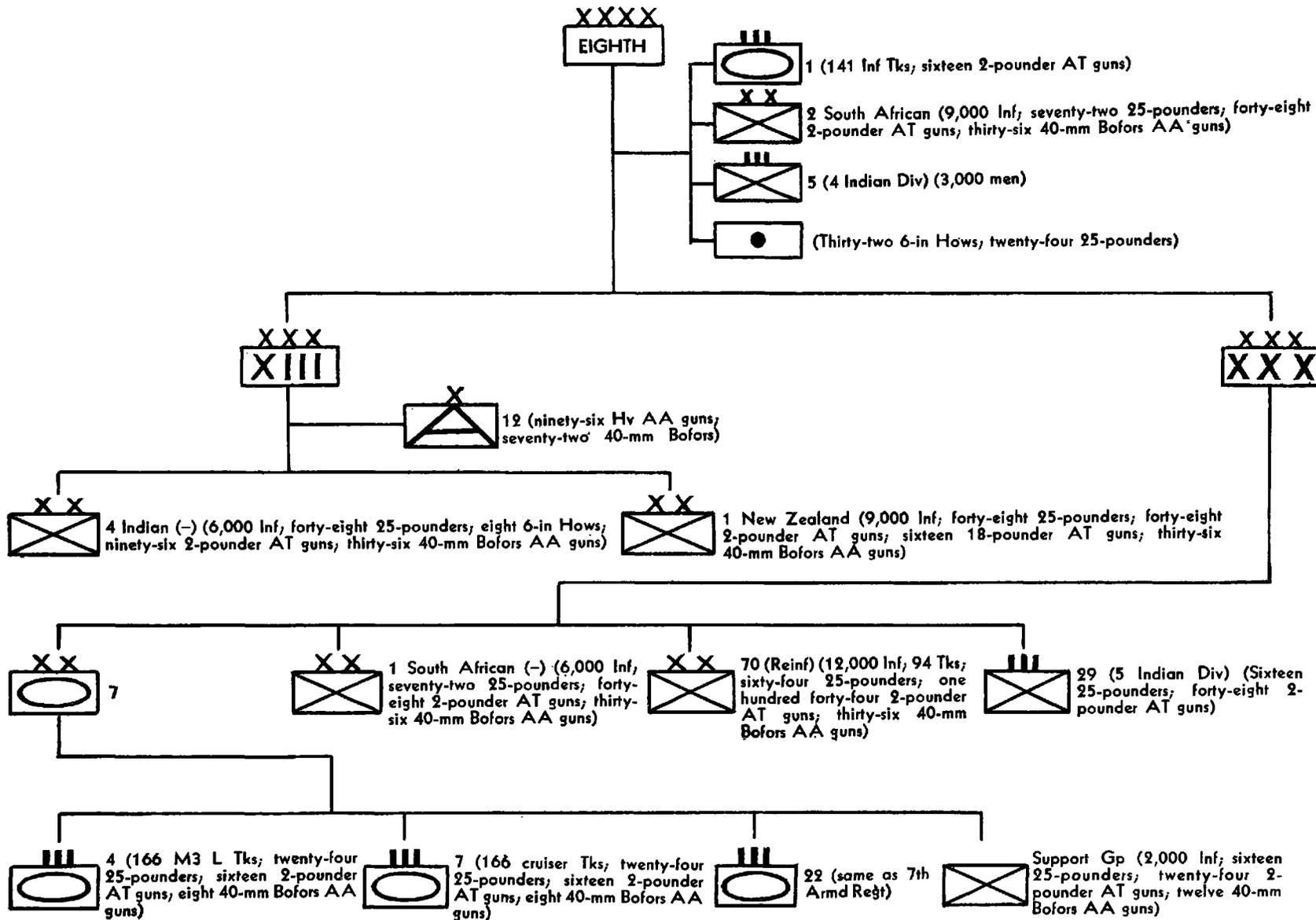
Strength: 2,500 men.

<sup>4</sup> British tanks have the following characteristics:

Type	Weight	Crew	Armament	Armor basis
A-9 and A-10	12 tons.	6	{ One 40-mm gun... Three machine guns.	0.55 inch.
A-13	18 tons.	4	{ One 40-mm gun... Two machine guns	1.5 inches.
A-15	20 tons.	5	{ One 40-mm gun... Three 7.92-mm Besa machine guns.	1.5 inches.
Mk. II (infantry tank).	28 tons.	4	{ One 40-mm gun... One machine gun.	2.75 inches.

<sup>5</sup> German tanks have the following characteristics:

Type	Weight	Crew	Armament	Armor basis
Mk. I (light) (obsolete).	5.7 tons	2	One machine gun.	0.71 inch.
Mk. II (light) (obsolescent, used only as a command vehicle).	9 tons.	3	{ One machine gun... One 20-mm heavy machine gun.	1.31 inches.
Mk. III (medium).	20 tons.	4	One 37-mm or 50-mm gun.	2.76 inches.
Mk. IV (medium).	22 tons.	5	{ Twin machine guns... One 75-mm gun... Two machine guns.	2.36 inches.



TACTICAL BACKGROUND

Figure 1.—Composition of the British Eighth Army.



Figure 2.— German Mk. III tank.

(2) *Italian.*—(a) *Ariete Armored Division.*

138 medium tanks.<sup>6</sup>

24 field guns.

16 antitank guns.

16 antiaircraft guns.

Strength: 5,000 men.

(b) *Brescia Infantry Division.*

24 field guns.

13 antitank guns.

Strength: 6,300 men.

(c) *Trento Infantry Division.*

24 field guns.

24 antitank guns.

Strength: 7,300 men.

(d) *Pavia Infantry Division.*

30 field guns.

14 antitank guns.

Strength: 7,200 men.

(e) *Savona Infantry Division.*

24 field guns.

24 antitank guns.

Strength: 7,800 men.

(f) *Trieste Infantry Division.*

24 field guns.

8 antitank guns.

Strength: 5,300 men.

(g) *Bologna Infantry Division.*

48 field guns.

22 antitank guns.

Strength: 8,000 men.

(8) *Corps Troops.*

125 field guns.

27 antitank guns.

246 antiaircraft guns.

German strength: 6,400 men.

Italian strength: 3,700 men.

<sup>6</sup> The Italian M13 tank, the type employed in the Ariete Armored Division, has the following characteristics: weight, 15 tons; crew, 4; armament, one 47-mm gun, one 20-mm machine gun, two caliber .30 machine guns; armor basis, 30-mm.

### c. Recapitulation.

	British	Axis	German	Italian
Troops.....	130,000	83,000	32,900	50,000
Tanks.....	755	416	278	138
Armored cars.....	7180	100	100	"
Field guns.....	488	413	215	198
Antitank guns.....	536	274	153	121
Antiaircraft guns.....	416	318	Distribution not known	

The figures for Axis strength, which are based on British intelligence estimates, may be slightly low.

## 4. PLANS AND PRELIMINARY MOVEMENT OF THE BRITISH<sup>8</sup>

### a. Primary Objectives

The primary objectives of the British attack were:

- (1) Defeat of Axis forces in Cyrenaica.
- (2) Capture of Tripoli and occupation of land and air bases for a later attack on Italy.

### b. Secondary Objectives

The secondary objectives were:

- (1) Relief of Tobruk.
- (2) Capture of Bengasi.

### c. First Plan

The first plan considered by the British involved sending a strong, mobile force south of the Axis forces, from Giarabub to Gialo (see map No. 1). Having slipped across the hump of Cyrenaica to the Axis rear areas, this force would then be in a position to cut the Axis communications between Tripolitania and Cyrenaica. This plan was discarded, however, because of the difficulty of moving a sufficiently large force across the hundreds of miles of wasteland and because of the vulnerability of the long British lines of communication, which would be exposed to the Axis forces in the north.

### d. Final Plan

(1) *Controlling factors.*—

(a) In order to destroy Rommel's armored force some move had to be made to draw the German armored divisions out of their positions along the coast.

<sup>7</sup> Includes only the cars with the 7th Armored Division. The number in other units is unknown.

<sup>8</sup> With a few exceptions, map No. 2 should be used with this section.

(b) A drive toward Tobruk, coupled with a breaking-out of the besieged British garrison there, would achieve this.

(c) Lines of action open to the Axis forces included declining battle and slipping through to the west, or driving to the south to cut the British lines of communication. It was considered most likely, however, that Rommel would use his armored divisions to strike the flank of the British forces moving toward Tobruk.

(2) *Decision.*—The consequent decision involved a main attack toward Tobruk and two secondary attacks, one to be a holding attack against the Axis frontier positions, the other to be a quick dash to capture Gialo (see map No. 1), deep in the Axis rear areas. Details were as follows:

(a) *XXX Corps.*—The XXX Corps had the primary mission of destroying the enemy armored forces, but was also assigned the secondary mission of protecting the south flank of the XIII Corps.<sup>9</sup>

1. The 7th Armored Division (the 4th, 7th, and 22d Regiments) was to move from its assembly area south of El Agali (map No. 1) in a westwardly direction, south of the Trig el Abd, until it reached the vicinity of Gabr Saleh. It had the mission of seeking out and destroying the Axis armored elements in the frontier area.
2. The 1st South African Division less the 2d Regiment was to move under the protection of the 7th Armored Division as far as Gabr Meliha, and had the mission of protecting the left (south) flank of the XXX Corps.
3. The 2d South African Regiment of the 1st South African Division was held out as corps reserve.

<sup>9</sup> In a preliminary plan, the Eighth Army detailed the 4th Armored Regiment to protect the south flank of the XIII Corps. In the final plan, the 4th Armored Regiment was returned to the command of the XXX Corps, which was given the mission of protecting the south flank of the XIII Corps in addition to its primary mission of drawing out and destroying the German armored divisions. The XXX Corps commander attached the 4th Armored Regiment to the 7th Armored Division, with a stipulation that in case it became necessary to use the regiment for the protective mission, it would revert to corps command.

(b) *XIII Corps.*

1. The 4th Indian Division (less the 5th Regiment) was to contain the Axis forces in the frontier area.
2. The 1st New Zealand Division, with the 1st Army Tank Regiment<sup>10</sup> attached, was to drive west from the El Agali sector with its left on the Trig el Abd. It was to proceed across the frontier about 15 miles into Libya, bypass the fortified area of the Omars, and then turn north-east to cut communication between the Axis frontier defenses and Axis mobile forces to the west.
3. The 5th Indian Regiment of the 4th Indian Division was to be held out as corps reserve.

(c) *Eighth Army Troops.*

1. The besieged garrison of Tobruk was to break out and make contact with the XXX Corps upon the call of the XXX Corps commander.
2. The 2d South African Division, which formed the army reserve, was comparatively untrained and only partially motorized. It was to be retained in the El Agali area in the initial stages of the action.
3. A battalion of commando troops, accompanied by a supporting naval force, was to land at Gazala on November 18, disrupt the Axis supply line, and capture the large airdrome near Timimi.
4. While the Axis forces were engaged along the escarpment with the principal elements of the Eighth Army, the reinforced 29th Motorized Infantry Regiment was to leave its assembly area at Giarabub (map No. 1) and, by a fast desert crossing, capture the Gialo Oasis about 200 miles to the southwest. It was then to be prepared to cut off retreat of the Axis forces by occupying the area south and southwest of Agedabia.
5. All troops were to be prepared for a pursuit in case the Axis forces withdrew to the west.

(d) *R. A. F.*—The R. A. F. was to defeat the Axis air forces in Libya, prevent effective use of the harbors of Bengasi and Tripoli, destroy enemy airdromes and airplanes, and maintain local air superiority over the elements of the Eighth Army.

(e) *Royal Navy.*—The Royal Navy was to prevent convoys from traversing the Mediterranean to Bengasi and Tripoli, and to furnish local naval support where needed. This latter mission included shelling Gazala and the Halfaya Pass-Salum area in coordination with land attacks upon those positions.

**E. Preliminary Activity**

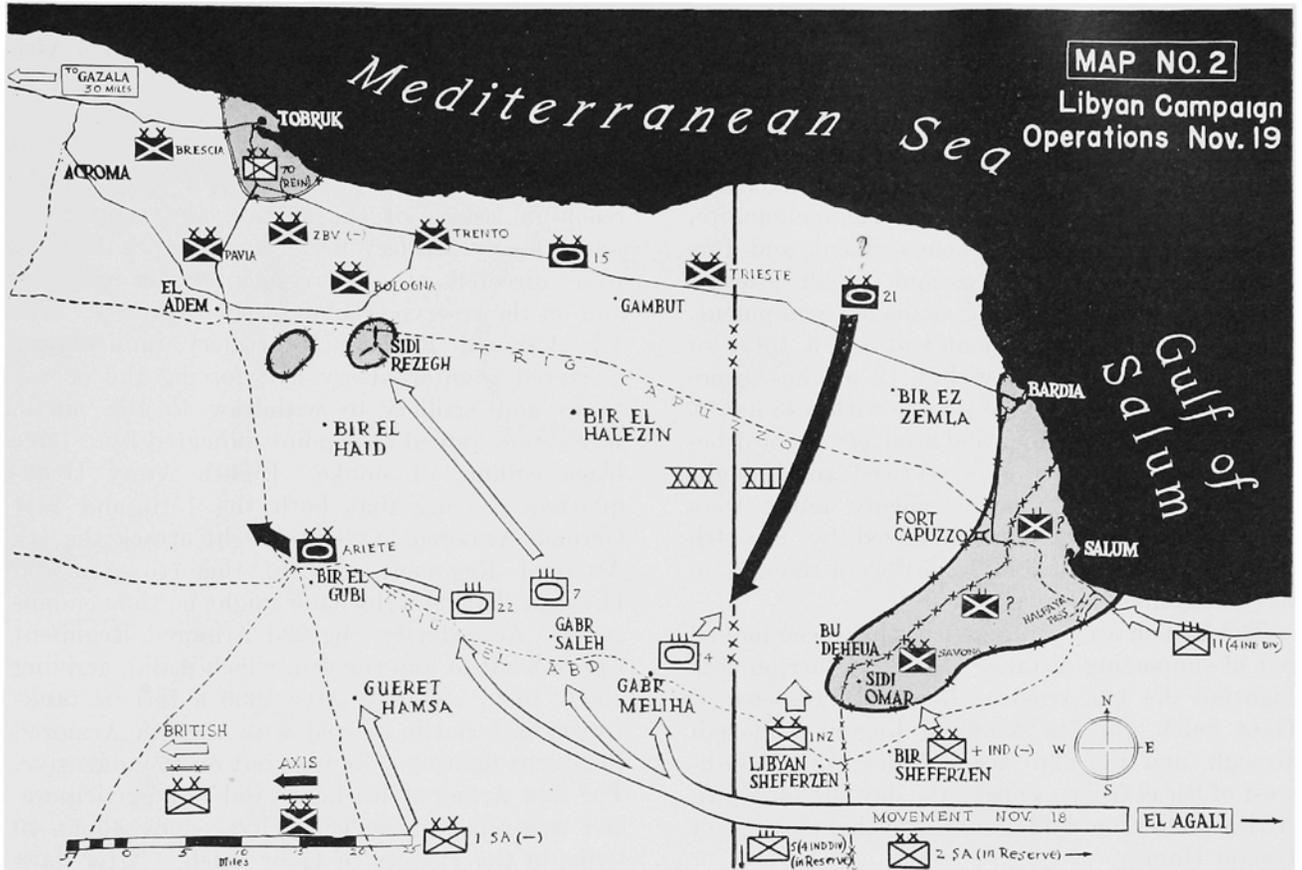
The British Navy began aggressive anticonvoy patrol from Alexandria and Gibraltar several days prior to the opening of the campaign.

On November 14 British air operations began with widespread ground-strafting of road traffic throughout Cyrenaica and strong attacks on Axis airdromes. On November 16, 50 parachutists landed near Timimi and Gazala with the mission of destroying Axis supplies and aircraft on the airdrome. This operation was partially successful. On November 18, a small commando party of about 60 men made a night attack upon General Rommel's headquarters with the intention of capturing the German commander himself. Although they killed or captured several members of his staff, they missed a chance to take the main prize, for General Rommel happened to be away from his headquarters.

The 1st South African Division had moved into its assembly position the night of November 17-18, and by noon on the 18th all units of both the XIII and XXX Corps were in their assembly positions on or near the Libyan-Egyptian border. During the night of November 17-18, gaps had been cut in the wire in the vicinity of Fort Maddalena, and three regiments of armored cars advanced rapidly into the desert, where forward dumps and antiaircraft protection had already been provided.

The 7th Armored Division marched about 100 miles on November 18, experiencing little mechanical trouble. By nightfall, the 7th Armored Regiment was in the vicinity of Gabr Saleh, and the 22d Armored Regiment to the west of the 7th. The 7th Armored Division's secondary mission of protecting the flank of the XIII Corps had already begun to separate the armored units, for the 4th Armored Regiment had to be held back,

<sup>10</sup> This was composed of the Mk. II infantry tanks described in footnote 4.



and bivouacked for the night at Gabr Meliha. Farther to the south, the 1st South African Division advanced to a point about 20 miles southeast of Gueret Hamsa and bivouacked there for the night.

## 5. OPERATIONS

### a. November 19 (Map No. 2)

(1) *XXX Corps*.—No enemy forces other than a few patrols had been seen on November 18. Consequently, on the 19th, the *XXX Corps* was ordered to move its elements farther to the northwest. On the morning of the 19th, the 22d Armored Regiment advanced toward Bir el Gubi and there attacked the Italian Ariete Armored Division, taking 200 prisoners, inflicting heavy casualties, and destroying a large number of enemy tanks. During this engagement the 22d Armored Regiment lost 54 of its own tanks, many of which were recovered later.

The 7th Armored Regiment moved from the vicinity of Gabr Saleh to Sidi Rezegh, capturing

120 prisoners, taking the airdrome, and destroying 19 airplanes.

The 4th Armored Regiment, equipped with American light M3 tanks, advanced from its assembly area near Gabr Meliha. The first hostilities for this regiment occurred early in the morning when enemy motor transport several miles northwest of Gabr Meliha attempted unsuccessfully to draw a part of the regiment into an antitank trap. After several minor skirmishes had taken place, in the middle of the afternoon the 7th Armored Division headquarters informed the 4th Armored Regiment that an enemy column of 100 tanks was approaching from the northeast.

The attack by this enemy column was preceded by an air attack on the British regimental headquarters. During the entire action, enemy artillery kept the regimental command post under constant artillery fire, forcing the commander to keep his party moving from one position to another. During the attack the 4th Armored Regiment employed artillery in close support, but, although

cooperation was excellent, the regiment suffered from a lack of antitank guns in direct support. The Germans used mobile antitank guns<sup>11</sup> located well to the flanks of their advancing units. This German fire was relatively effective, but the British managed to inflict heavy casualties on enemy antitank personnel by their tank machine-gun fire.

Darkness terminated the engagement, and during the evening both Axis and British recovery units were busy collecting damaged equipment. The 4th Armored Regiment had lost a total of 23 tanks during the day, but 12 of these were recovered and returned to service within 48 hours. Seven more tanks, which had been left forward because of lack of fuel, were serviced and brought into the bivouac. Nineteen enemy tanks were known to have been immobilized by the 4th Armored Regiment, and 7 more were thought to have been knocked out.

The British armored regiments had been moved out of supporting distance of one another, and at nightfall the 4th Armored Regiment was east of Gabr Saleh, the 7th Armored Regiment at Sidi Rezegh, and the 22d Armored Regiment southwest of Bir el Gubi. During the day the 1st South African Division had moved to the vicinity of Gueret Hamsa.

(2) *XIII Corps*.—On November 19, elements of the XIII Corps were in position in their assembly areas as follows: the 4th Indian Division at Bir Sheferzen, the 1st New Zealand Division in the vicinity of Libyan Sheferzen, and the 11th Indian Regiment of the 4th Indian Division on the coastal plain southeast of Halfaya Pass and Salum. The 4th Indian Division found strong resistance in the fortified positions of the Omars and moved north only a few miles. To avoid exposing its right flank, the 1st New Zealand Division also advanced only a short distance, taking up a new position northwest of Libyan Sheferzen.

#### **b. November 20 (Map No. 3)**

(1) *XXX Corps*.—On November 20 the 1st South African Regiment was given the mission of containing the Italian infantry forces remaining in the field fortifications at Bir el Gubi. It is not known when the 5th Regiment was ordered to proceed toward Tobruk, but at nightfall on the

20th it was still in the vicinity of Bir el Gubi. Either on this day or the next the 1st South African Division ceased to function as such and its two regiments began to operate separately.

In the morning the 4th Armored Regiment moved northwest from its position east of Gabr Saleh in search of the enemy, and soon came under heavy artillery fire. Again concentrations were directed at the regimental headquarters and on the reserve echelon of the regiment. The 4th Armored Regiment's artillery immediately delivered counterbattery fire, forcing the enemy tanks and artillery to withdraw to the north, where they rallied at a point indicated by a huge black column of smoke. Eighth Army Headquarters, fearing that both the 15th and 21st German Armored Divisions might attack the 4th Armored Regiment, warned the 7th Armored Division that its right flank might be thus endangered. Accordingly, the 22d Armored Regiment was ordered to join the 4th, which it did, arriving about 1600. Shortly after 1600 a furious tank-versus-tank battle started with the 4th Armored Regiment fighting gallantly, but on the defensive. The 22d Armored Regiment did not participate, and was reported as being engaged by about 40 tanks in the vicinity of Gabr Saleh. After dark the desert was dotted with burning tanks of both sides. In the early part of the evening the Germans sent up a large number of Very lights along their forward flanks and front to locate casualties and indicate rallying points.

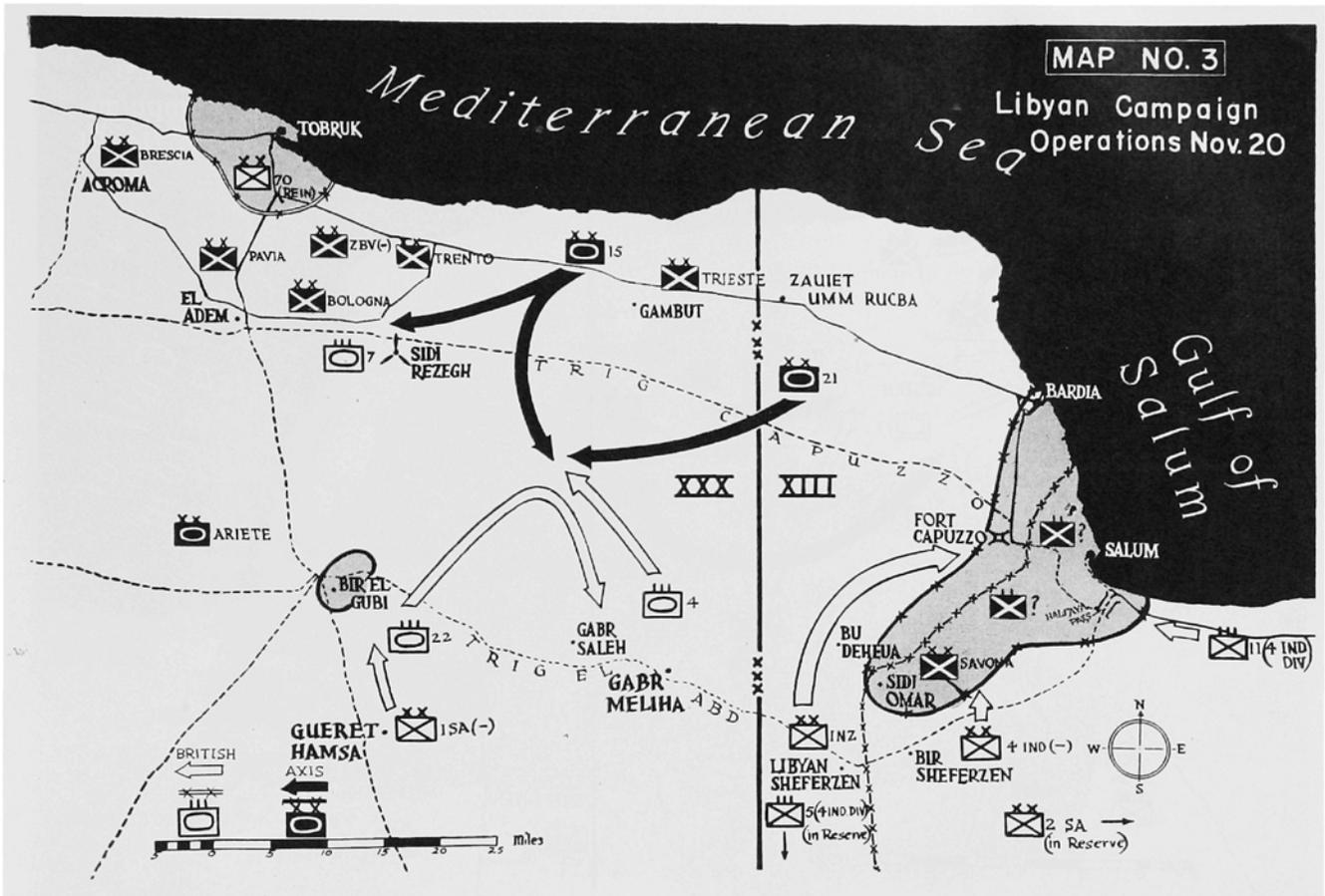
Losses of the 4th Armored Regiment during the day had totaled 27 tanks, many of which were recovered in the next few days. It was estimated that they had inflicted 30 tank casualties on the enemy.

The 7th Armored Regiment was attacked by enemy armored forces near Sidi Rezegh but succeeded in driving them off. The Support Group of the 7th Armored Division had by now joined with the 7th Armored Regiment.

In the evening, the commander of the XXX Corps ordered the Tobruk garrison to break out the next morning, November 21.

At nightfall on the 20th, the 7th Armored Regiment and the 7th Support Group were at Sidi Rezegh, the 4th Armored Regiment north of Gabr Meliha, the 22d Armored Regiment at Gabr Saleh, and the 1st South African Division near Bir el Gubi.

<sup>11</sup> One of the most common antitank guns used by the Germans was the ordinary 47-mm antitank gun mounted on a Mk. I tank chassis.



(2) *XIII Corps*.—A unit of the 4th Indian Division seized the high ground at Bu Deheua, providing protection to the interior flanks of both the 4th Indian and the 1st New Zealand Divisions. The 1st New Zealand Division was then ordered to advance rapidly to the north to cut the lines of communication between Bardia and the Axis forces a few miles to the northwest of Zauiet umm Rucba. Using its perimeter-defense organization, the 1st New Zealand Division advanced successfully through hostile territory, taking Fort Capuzzo, which was not occupied. Because of continued resistance in the Omars, the 4th Indian Division was not able to advance.<sup>12</sup>

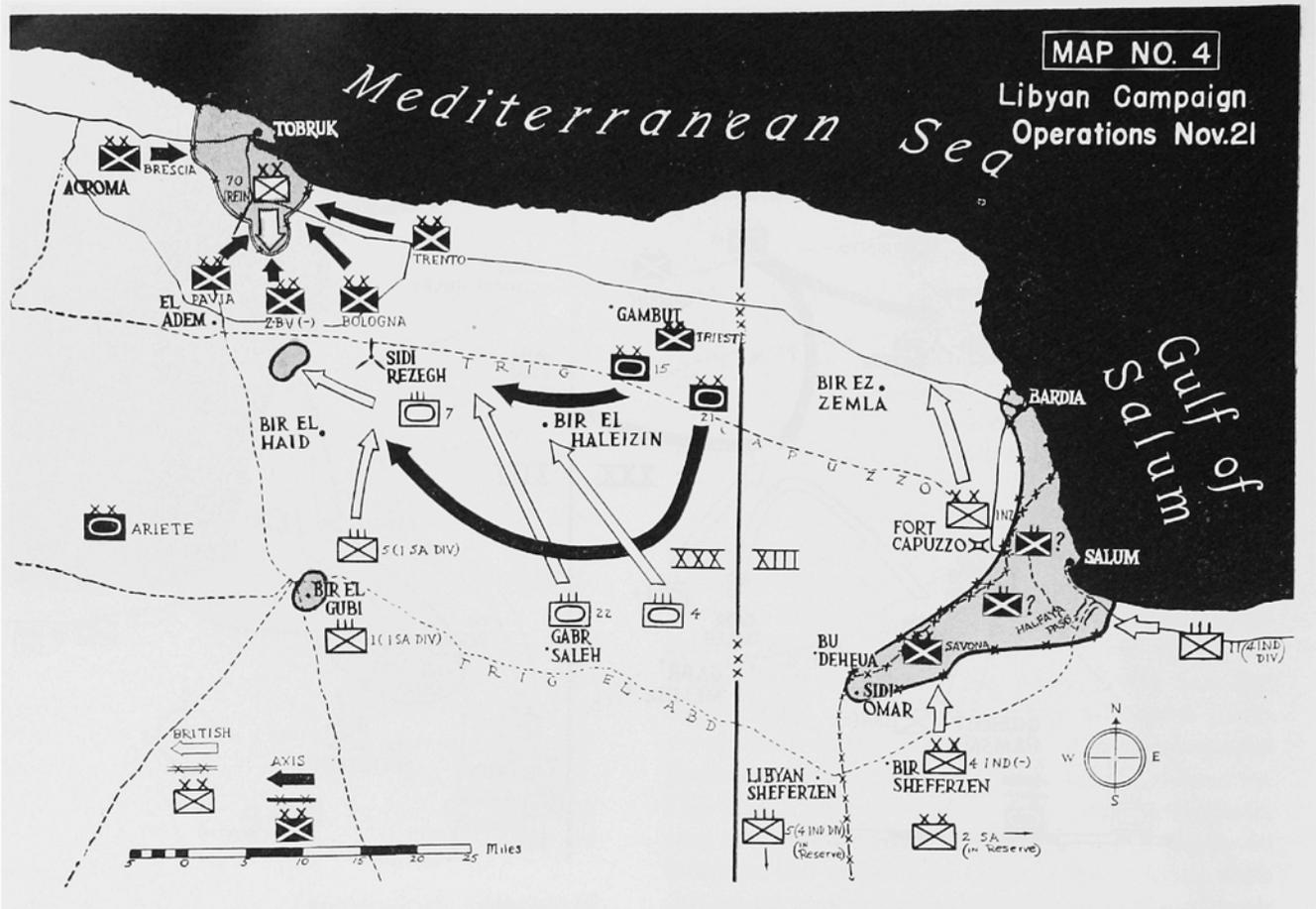
#### c. November 21 (Map No. 4)

(1) *XXX Corps*.—Early on the morning of November 21 the 22d Armored Regiment ad-

<sup>12</sup> There is no information available on the operations of the 11th Indian Infantry Regiment, which was to contain the Axis forces in the strongly defended Halfaya Pass position. Apparently their actions were confined to demonstrations.

vanced to the north and later engaged in a furious tank battle near Sidi Rezegh, on top of the escarpment. During this engagement they suffered particularly heavy casualties from antitank guns concealed in the wadies.

At dawn on November 21 an enemy armored force had been reported moving southwest toward Gabr Saleh. Later it turned northwest toward Sidi Rezegh. The 7th Armored Regiment and the Support Group were attacking on the high ground of the escarpment in an attempt to secure a location for observation. The commander of the 7th Armored Regiment held out one armored battalion to meet the threat of the Axis forces approaching from Gabr Saleh, and the attack on the escarpment continued. Although the losses of the supporting tanks were heavy, the British infantry reached their objective. Seven hundred prisoners were taken, and 6 enemy tanks were destroyed. First with one battalion and later in greater strength, the commander of the 7th Armored Regiment engaged the enemy force approaching from the direction of Gabr Saleh. Very heavy fighting



took place throughout the entire area, but the British finally drove off the Germans after the commanding officer of the Support Group of the 7th Armored Division attacked successfully with an emergency force of 12 tanks, which he led into action in his motorcar.

Late in the afternoon the 4th Armored Regiment, which was advancing to the northwest, was ordered to continue toward Sidi Rezegh to assist the 22d. This movement was carried out in rain and approaching darkness, and forward elements of the regiment, while pursuing enemy transport, which were probably put out as bait, lost five tanks to point-blank fire from concealed antitank guns. Because of unfavorable navigating conditions the 4th Armored Regiment abandoned the movement and bivouacked for the night at Bir el Haleizin.

At the end of the day the 4th Armored Regiment was reported to have about 85 tanks still in service, and the 7th Armored Regiment, which

had been heavily engaged around Sidi Rezegh, was reported to have about 30.

The 5th South African Regiment had been ordered to the north toward Sidi Rezegh. En route they encountered enemy tanks and were held up 10 miles south of the escarpment.

The 1st South African Regiment, south of Bir el Gubi, had been heavily shelled during the day by the Italians. They had planned to attack Bir el Gubi in cooperation with one battalion of the 22d Armored Regiment, but gasoline for the tanks was not delivered in time. When, after several changes of plans, the fuel arrived and the attack was about to take place, the armored battalion received orders to proceed northeast, apparently to join forces with its regiment, which was suffering heavy casualties in the battle south of Sidi Rezegh. The 1st South African Regiment was left in an unsatisfactory condition, for although they had a few armored scout cars, very little fuel was available and no reconnaissance



Figure 3. German 50-mm antitank gun.

could be carried out. At this time there were only eight antitank guns in the whole regiment and almost no ST<sup>13</sup> grenades, which constituted the individual soldier's primary defense against enemy tanks.

During the day the Tobruk garrison attempted to fight its way out of the circle of Axis troops.

(2) *XIII Corps*.—On November 21 the 1st New Zealand Division reached the Tobruk-Bardia road and cut the Axis water-pipe line near Bir ez Zemla.

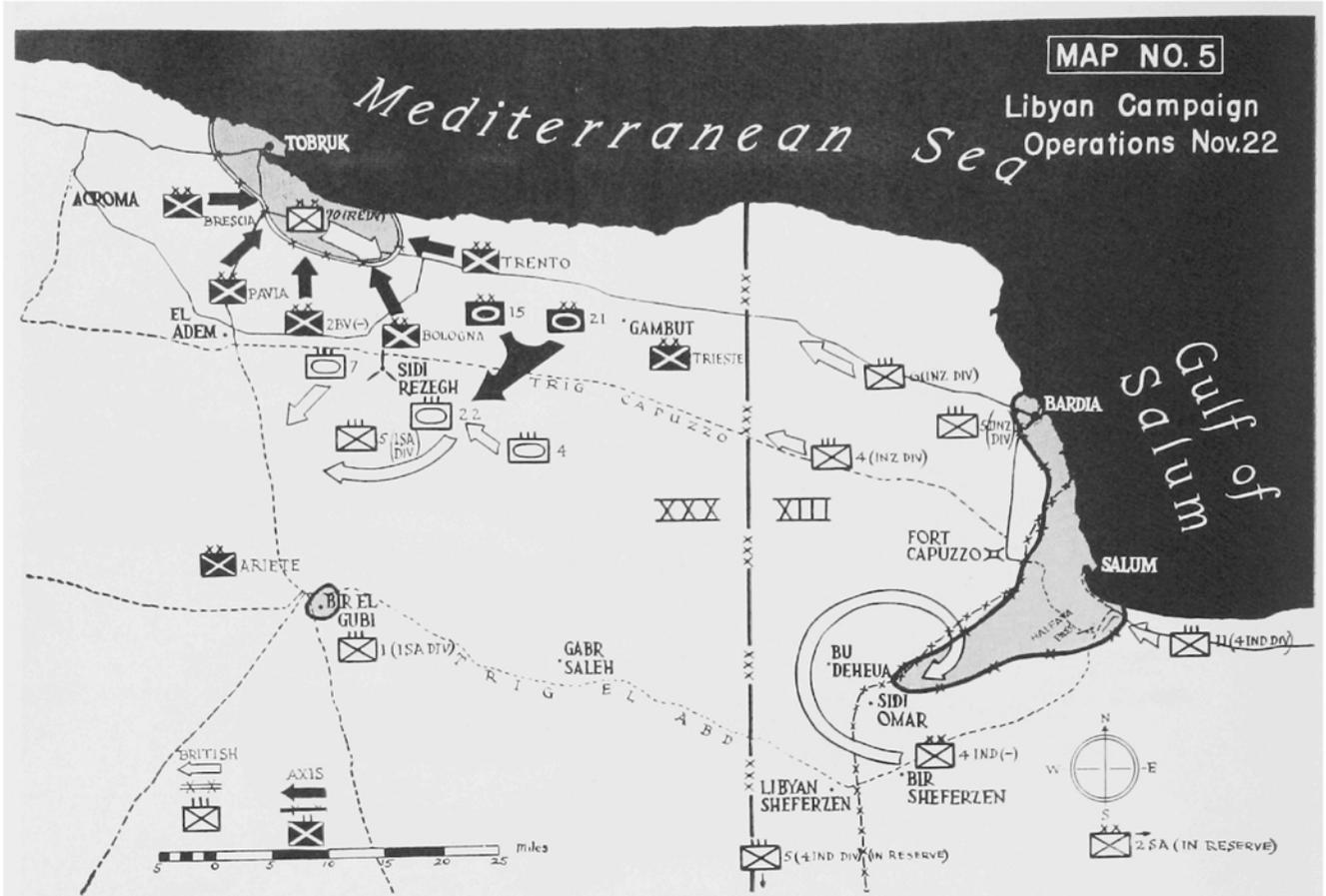
#### d. November 22 (Map No. 5)

(1) *XXX Corps*.—The morning of November 22 opened with the British armored forces concentrated around Sidi Rezegh, greatly reduced in tank strength and with the Support Group also

<sup>13</sup> Sticky type, or ST, grenades have a preparation which causes them to stick to a metal object long enough for the explosion to take place.

badly weakened by losses. The 5th South African Regiment was a short distance to the south. The enemy attacked the British forces in Sidi Rezegh in the middle of the afternoon, causing heavy casualties on both sides but producing no decisive result. A British attempt at an enveloping movement was foiled by the appearance of additional German tanks. The action was prolonged and severe. Smoke, dust, and sand obscured everything and gun-laying was extremely difficult. The 7th Armored Regiment was left in position, and the other two (the 4th and 22d) moved to protect the flanks of the 5th South African Regiment, which feared an attack.

At dusk on the 22d, the Germans vigorously attacked the 7th Support Group in the vicinity of Sidi Rezegh, and this unit was forced to withdraw to the south. They had fought valiantly for 3 days but were forced back by sheer weight of numbers, having suffered about 50 percent



casualties and the loss of most of their artillery.

After the tank battle had ended for the day and the British units had moved away to form night bivouacs, the Germans launched two surprise attacks.

The 4th Armored Regiment Headquarters, southeast of Sidi Rezegh, observed about 50 tanks approaching in the dusk. Believing them to be units of the 4th returning from Sidi Rezegh, the headquarters did not engage them with the few tanks available until they were within about 700 yards of the command post, when they were identified as German. The result was that the headquarters vehicles and tanks received intense fire from the attackers and were thrown into great confusion, during which a number of motor vehicles were destroyed. The whole group, including the supply trains, artillery, and infantry moved in confusion to the northeast, where they received intense machine-gun fire from German infantry. The group then moved 10 miles to the south, still under intermittent attack.

Those units of the 4th Armored Regiment which had been engaged in the tank battle during the day were notified, and started to the relief of the

besieged headquarters group. While en route, a group of enemy motor vehicles were discovered and attacked. The vehicles dispersed quickly, however, and a large group of German tanks appeared and destroyed eight of the British tanks. After the headquarters group and the returning tank units had made contact and bivouacked for the night, a Very signal was sent up to indicate the bivouac's location to stray tanks that had not yet returned. Soon afterwards a British tank appeared and entered the bivouac. This tank turned out to be a decoy, however, and immediately afterwards German tanks surrounded the bivouac area. Taking the British by surprise, they opened fire, closed in, and captured one tank battalion and nearly all the headquarters.

(2) *XIII Corps*.—On November 22 the 4th Indian Division attacked the fortified position of the Omars with tanks and infantry. During the 22d and 23d they captured the position, taking about 3,600 prisoners and much matériel and equipment.<sup>14</sup>

<sup>14</sup> See Information Bulletin No. 11, "The Battle of the Omars."

On the 22d the 1st New Zealanders were given the mission of assisting in the relief of the Tobruk garrison, which was ordered to delay its attempts to break out until the New Zealanders could get there. Leaving the 5th Regiment to contain Axis forces in Bardia and Salum, the remainder of the division started toward Tobruk, the 4th Regiment on the Trig Capuzzo and the 6th Regiment on the Bardia-Tobruk highway.

**e. November 23 (No Map)**

(1) *XXX Corps*.—Throughout the day roving Axis columns moved against isolated British forces, with the object of creating confusion among the armored troops and cutting lines of communication. Each column was made up of about 30 tanks, motorized infantry, several batteries of 105-mm howitzers, and a number of antitank guns. This form of harassing attack was partially successful; at times during the day the 7th Armored Division commander did not know the location of some of his subordinate units, nor the exact location or strength of enemy units.

Early on the morning of November 23, the 5th South African Regiment was in a bivouac area northwest of Sidi Rezegh. A little after 0700 a small Axis tank attack developed from the southwest, but was repulsed by the 18-pounder antitank guns on that flank. Some supply vehicles were destroyed in this attack. A part of one battalion was cut off and forced to retreat toward the south.

About an hour and a half later another tank column attacked from the south, but this was counterattacked by tanks of the British 22d Regiment. Although the counterattack was successful in repulsing the Axis attack, five German tanks went straight to the north through the regimental defenses. Three escaped and two were destroyed.

At 1200 another Axis attack was made from the southeast. Like the others, however, this was apparently little more than a reconnaissance in force, probing for weak spots in the British defenses, and was also repulsed by the 18-pounder antitank guns. At the same time three large enemy columns with tanks, artillery, and motorized infantry were reported in the south moving northwest toward the regiment.

At 1300 heavy artillery fire was put down on the British battalion in the north of the perimeter,

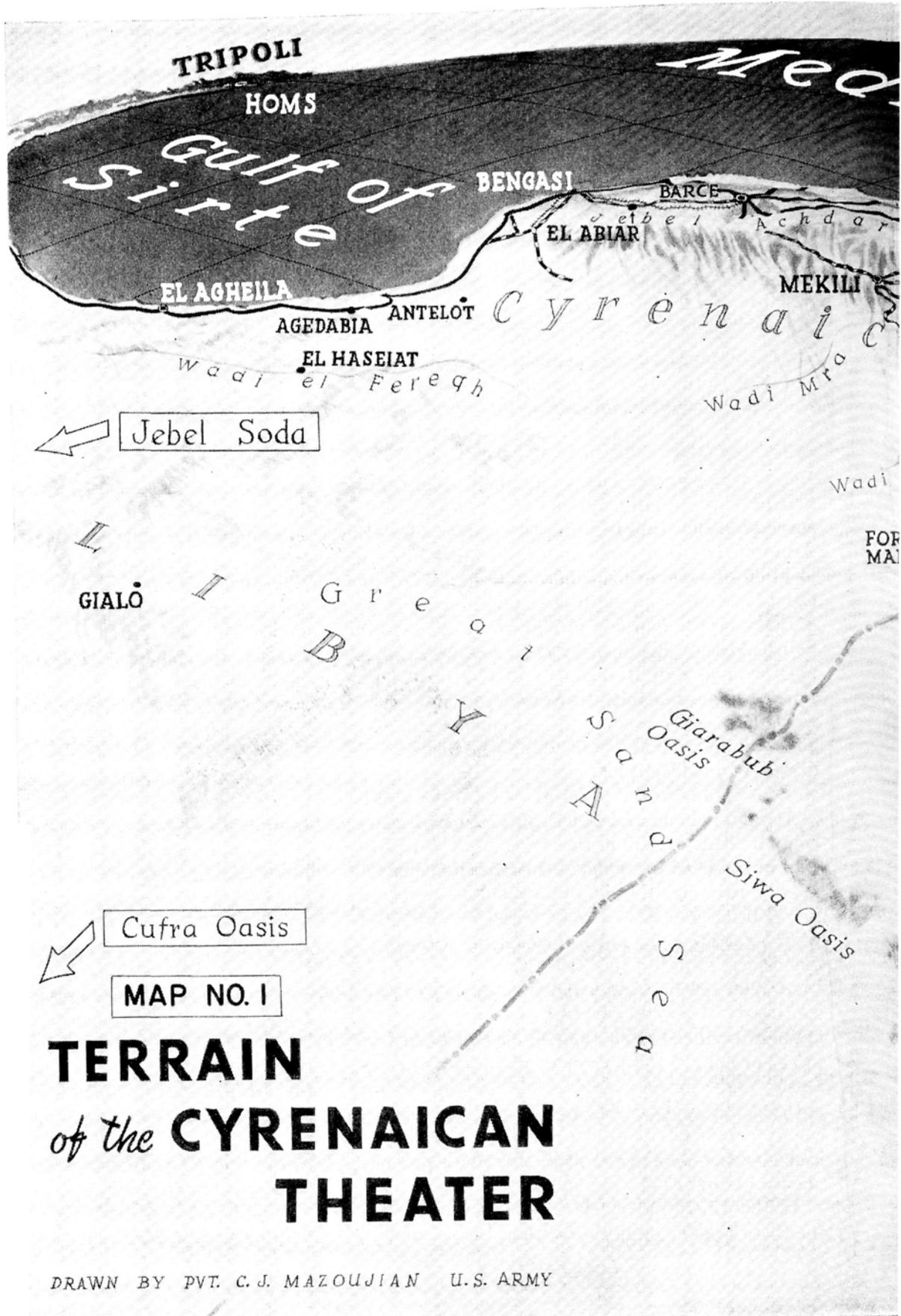
and this fire effectively cut their communications with the rest of the regiment. This was followed in a little over an hour and a half by a strong infantry attack on the same battalion. At 1500 the commanding officer of the regiment received information of a strong tank concentration to the northwest of the regiment. Attempts to reestablish communications having failed, two companies were detached from the other battalions and sent to take up a position in rear of the northern battalion. At this time the 5th South African artillery reported its ammunition as almost exhausted.

Apparently these attacks from the north were feints to lure the British into placing all their reserves in that quarter, for at 1600 a heavy tank attack closely followed by motorized infantry and motorcycles developed from the southwest. This attack was successful, for all the British troops and motor transport had been placed in the perimeter and none held back to form a mobile reserve. The attack of the tanks overran the 25-pounders, the antitank guns, and regimental headquarters, finally splitting into two columns which moved against the infantry. An infantry attack had been launched from the east in conjunction with this tank attack and was apparently very successful. Following this penetration of the 5th South African's defense area, the Axis troops pressed home their attack vigorously and destroyed practically all the vehicles and rear-area installations in sight.

Estimates vary considerably as to the number of ~~killed and wounded~~, but the British apparently lost over 3,000 men in addition to nearly all their artillery and antitank guns. The 5th South African Regiment took no further part in the operation as an effective fighting unit.

On this day the remnants of the 7th Armored Division were withdrawn to Gabr Saleh. The 7th and 22d Armored Regiments had lost most of their tanks, and the only armored unit left was the 4th Regiment, which was reported to have about 30 tanks remaining.

(2) *XIII Corps*.—The XIII Corps was regrouped on November 23, and all British infantry units north of the 39th grid were placed under its command, making the XIII Corps consist of the Tobruk garrison and the 1st New Zealand Division.



**TERRAIN**  
*of the* **CYRENAICAN**  
**THEATER**

DRAWN BY PVT. C. J. MAZOUJIAN U.S. ARMY



DERNA

TIMIMI

TOBRUK

SIDI REZECH

BIR EL GUBI

SIDI OMAR

BARDIA

SALUM

SIDI BARRANI

HALFAYA PASS

BUQ BUQ

RABIA

HALFWAY HOUSE PASS

QARET AZZA

BIR SHEFERZEN

QARET

RUWEIBIT

DALENA

CRETE



MATRUH

EL DABA

ALEXANDRIA

CAIRO

NILE R.

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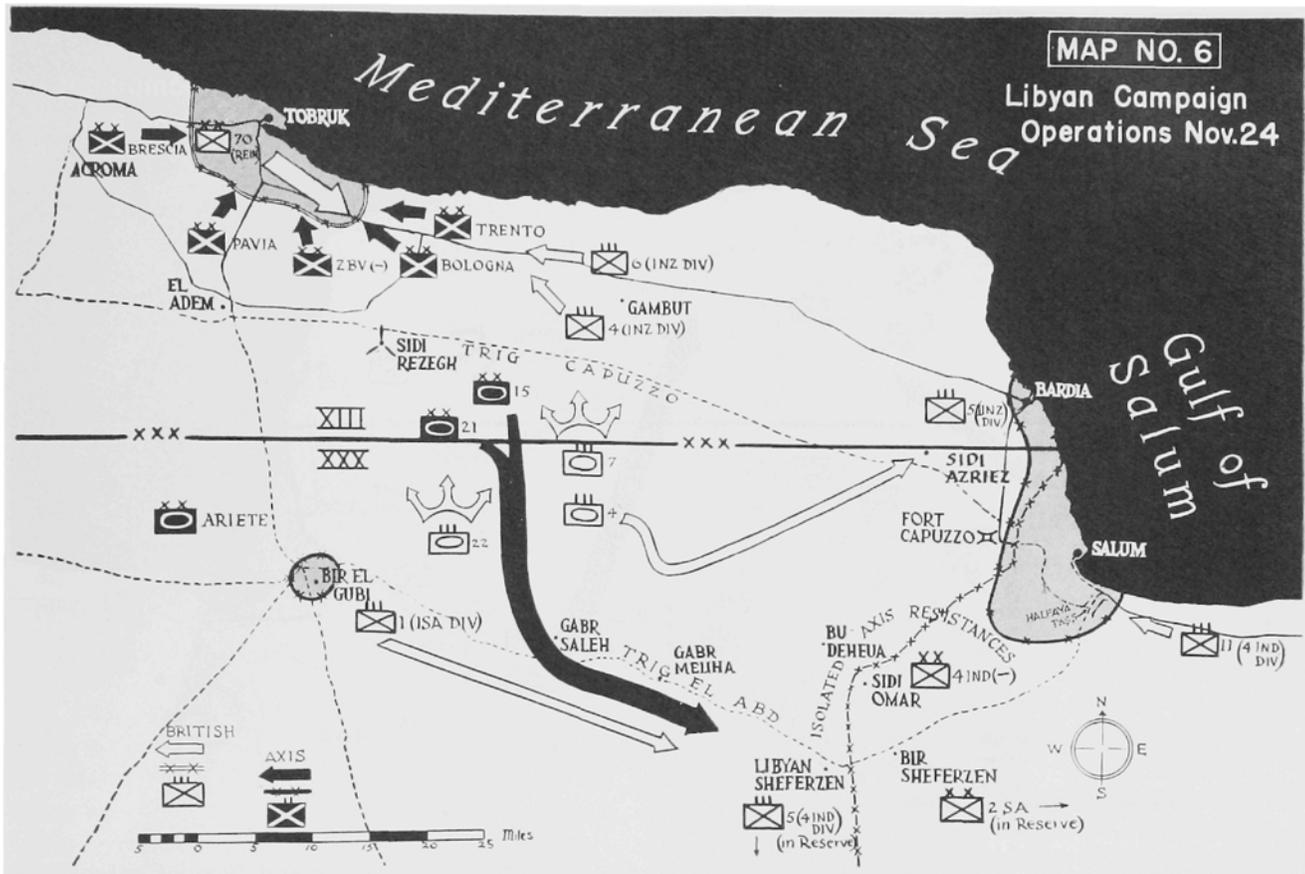


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Figure 4. Two views of the German 88-mm antitank gun.



#### f. November 24 (Map No. 6)

(1) *XXX Corps*.—Axis mobile raiding columns continued their operations of the day before and were particularly successful in destroying artillery ammunition. The 1st South African Regiment was ordered to hold a defensive area around Gabr Meliha.

During the day a German column reported northeast of Gabr Saleh was pursued by the 4th Armored Regiment, which was successful in causing heavy casualties to enemy tanks and destroying many enemy motor vehicles. Moving in the direction of Sidi Azeiz they found and engaged other Axis transport. In one case, firing at point-blank range, they destroyed a complete transport section of one Axis column.

Instead of attempting to destroy the badly depleted and dispersed British forces, Rommel turned with all his available armored force through Gabr Saleh along the Trig el Abd toward Bir Sheferzen, as if he were making a drive on Egypt. In this area were the rear headquarters of the *XXX Corps*, tanks returning for repair, supply columns moving up, and empty motor

transport moving to the rear. The rear headquarters and administrative sections dispersed into the desert. Transport columns, crippled tanks, and other vehicles started a rapid withdrawal to the east. Despite the confusion, there were few British casualties.

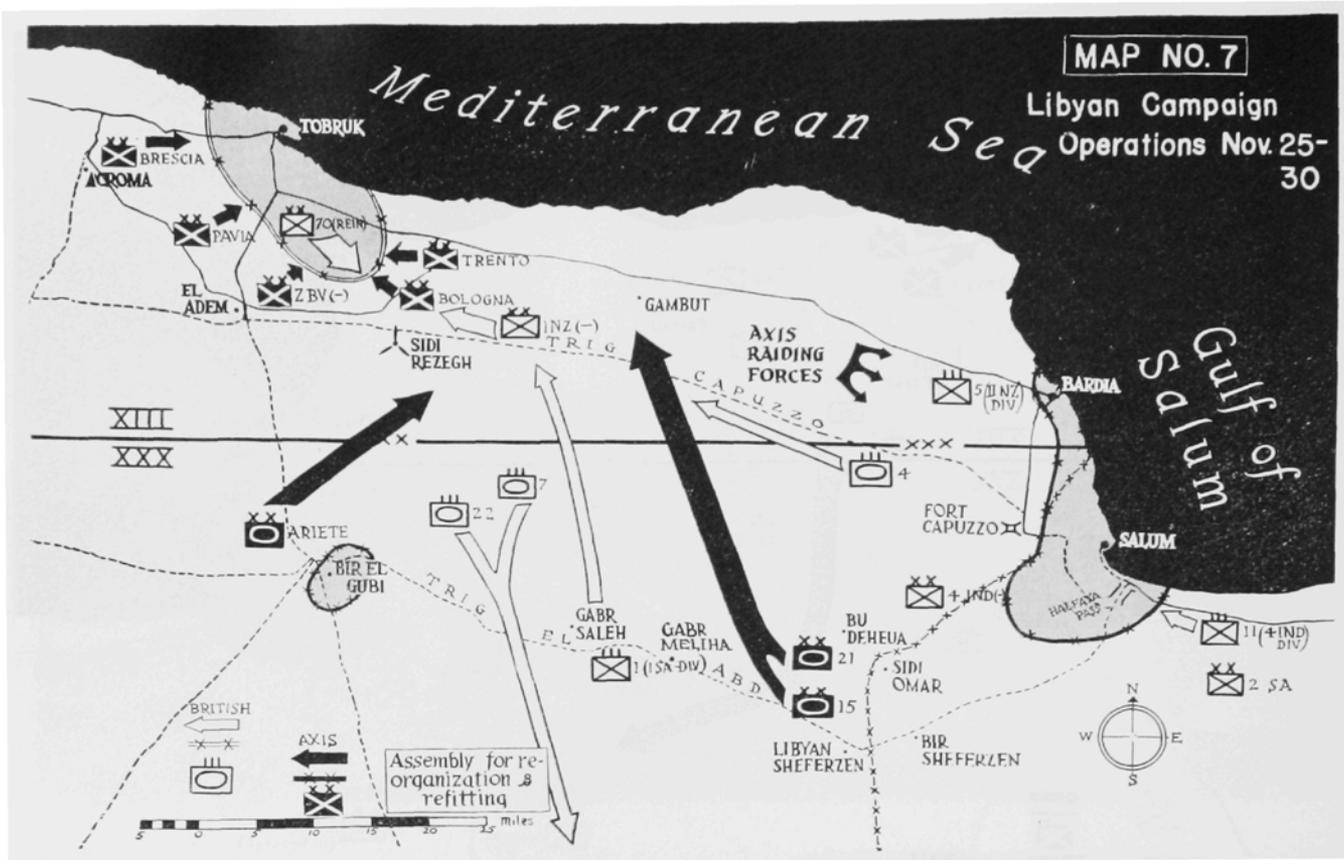
The 1st South African Regiment was attacked and retired toward the frontier.

(2) *XIII Corps*.—On November 24 the two New Zealand regiments, after taking Gambut (probably held by units of the Italian Trieste Division), had moved east to a point near Sidi Rezegh and started to drive for Tobruk.

#### g. November 25 (Map No. 7)

(1) *XXX Corps*.—On November 25 the enemy armored divisions were concentrated around Sidi Omar and Bir Sheferzen, with some elements at Gabr Saleh. Headquarters and supply units of the 4th Indian Division were attacked by German columns and forced into the Omar mine-field enclosure.

The 1st South African Regiment was in position between Gabr Saleh and Gabr Meliha on the morning of November 25 when they found themselves



entirely encircled by units of the German 21st Armored Division. At 0700 the Germans began to fire a heavy artillery preparation from two medium batteries. The armored cars, out on reconnaissance since dawn, had reported at 0615 armored formations in strength to the northeast and south of the 1st South African Regiment's perimeter. Within half an hour after the artillery preparation started, it was intensified and supplemented by three additional enemy batteries firing from the northeast and southeast. A little later about 60 tanks supported by motorized infantry and heavy mortars attacked from the east. In this attack many Mk. IV tanks were employed. The attack itself consisted of two waves on a 1,000-yard front. The first wave consisted of light tanks and the second of medium and heavy tanks. The 1st South African Regiment artillery delivered heavy and accurate counterbattery fire throughout the attack.

Some guns were held out, however, to engage the motorized infantry that nearly always follows the tanks. Although the attack lasted for about an hour, the Germans failed to penetrate the 1st South African defenses and finally withdrew their

forces. At 1000 another and heavier attack was launched and this time the tanks were supported by German airplanes. During the attack the German tanks laid down smoke screens to hide their movements, but the mobile observation posts employed by the 1st South African artillery continually moved to good positions and kept the German armored units under heavy artillery fire.

After the Germans had withdrawn, having achieved little success in 45 minutes of fighting, some units of the 4th Armored Regiment equipped with light American M3 tanks came to the aid of the defending infantry. A still heavier assault was expected, but apparently the arrival of these tanks caused the Germans to forego any further attempts. The artillery duel continued throughout the day, however, with the British inflicting heavy casualties on the Axis motorized infantry, which remained well within range.

On this day the reinforced 29th Infantry Regiment captured Gialo. The 22d and 7th Armored Regiments were sent to the south to refit, as indicated on map No. 7.

(2) *XIII Corps*.—Attacks on the 5th Regiment of the 1st New Zealand Division at Fort Capuzzo

and outside Bardia were repulsed, but only after the capture of the 5th Regiment Headquarters and one battalion of 25-pounder guns. During this and preceding days, several supply columns had been destroyed by Axis raiding parties. The loss of large amounts of artillery ammunition in these columns later contributed to the defeat of the remainder of the New Zealand Division southeast of Tobruk.

#### **h. November 26**

*XIII Corps.*—On November 26 the 70th Division of the Tobruk garrison reached the position indicated on map No. 7. The 1st New Zealand Division had occupied Sidi Rezegh, and these two forces made contact the next day. On this day, 37 cruiser tanks arrived as replacements for the British armored units.

#### **i. November 27 and 28**

At about 1200 on November 27 the R. A. F. reported that Rommel's armored units had turned and were moving westward on the Trig Capuzzo. The 7th Armored Regiment had been sent to Cairo to be reequipped, and the remnants of the 7th and 22d were formed into a composite battalion and attached to the 4th Armored Regiment. Upon receiving the report of Rommel's movement the reinforced 4th Armored Regiment moved to the northwest and attacked his flank. There was a very heavy battle, and the Axis tank forces were finally forced to withdraw. Most of them moved back through the passes in the hills to their protected bases in the north. This action continued on a diminishing scale throughout the next day, November 28, when 44 more cruiser tanks arrived to reinforce the British armored units.

The junction of the Tobruk garrison and the New Zealand Division effectively cut the Italian Bologna Division into two parts, but this was accomplished only after the expenditure of large amounts of artillery ammunition and heavy losses of personnel. Extension of the Tobruk area began at once with a view to withdrawing the forces to the southeast.

#### **j. November 29**

On November 29 the 1st South African Regiment was to move to Sidi Rezegh to reinforce the 1st New Zealand Division, but because of confusion in transferring units from one corps to another, the regiment failed to join.

On November 29 an order of Rommel's was intercepted. The order indicated that the 15th and 21st Armored Divisions were to attack southward to cut the junction of the New Zealanders and the Tobruk garrison, while what remained of the Italian Ariete Armored Division was to move north to prevent the British from escaping to the east. The 4th Armored Regiment with the remainder of the 22d, a total of 50 tanks, was sent northwest to attack the Axis armored divisions on the flank and, if possible, in the rear.

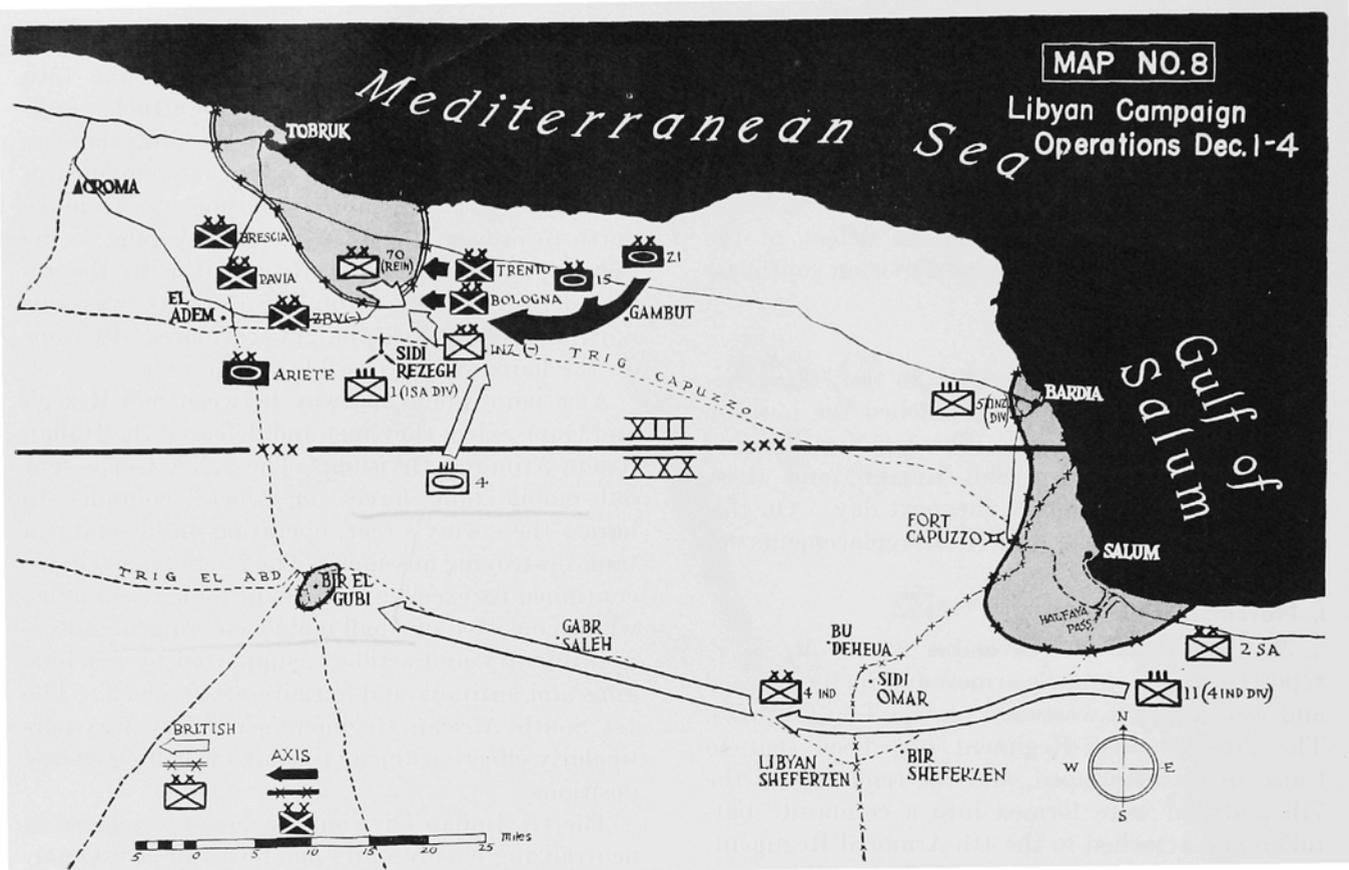
At a point about halfway between Sidi Rezegh and Gabr Saleh, they met and defeated the Italian Ariete Armored Division. The XXX Corps sent out mobile tank forces, or "Jock" columns, to harass the enemy's rear, operating on hit-and-run tank-destroying missions. The 7th Support Group continued its excellent use of the "Jock" columns, which consisted of small mobile columns of motorized infantry and artillery, supported by machine guns and antitank and antiaircraft artillery. The 1st South African Regiment's artillery was particularly effective during the day in shelling enemy positions.

The 4th Indian Division was heavily engaged in neutralizing enemy units northwest of Sidi Omar. During the day the 7th Armored Division received 31 tanks as reinforcements.

#### **k. November 30**

On November 30 orders changing the British units from one command to another caused considerable confusion, and the XIII Corps experienced some difficulty in controlling dispersed units. The commanding general of the XXX Corps visited units himself to clear up their positions, arranging particularly for the 1st South African Regiment to join the 1st New Zealand Division at Sidi Rezegh. As the enemy was very strong in front of the 1st South African Regiment, the general himself led them, first to the east, then to the north on the escarpment, and ordered them to attack that night, in order to take pressure off the New Zealanders.

Since the moon was nearly full, visibility was good, and consequently the commander of the 1st South African Regiment feared a counterattack by the many Axis tanks in the vicinity. To provide against the threat, he attached a platoon of four 2-pounder antitank guns to each of his infantry battalions.



Although no details of how the attack was carried out are available, it is reported that the Germans did counterattack with their tanks, as expected. A few tanks succeeded in breaking through the perimeter defense of one of the battalions,<sup>15</sup> but they were engaged by the attached platoon of 2-pounder antitank guns. These held their fire until the tanks were in effective range and knocked out several, setting three afire and hitting one at a range of only 10 yards. The tanks then withdrew, and the enemy infantry, which was following, was taken under fire and repulsed. During this whole counterattack the British battalion suffered casualties of only 6 killed and 22 wounded. The details of the action for the rest of the regiment are lacking, and it is known only that the attack resulted in a stalemate, although the gap between the 1st South Africans and the New Zealanders was kept open.

#### 1. December 1 (Map No. 8)

On December 1 the 1st New Zealand Division (less the 5th Regiment) was attached to the XXX

<sup>15</sup> This was reported to be the only time in the campaign when Axis armored units successfully penetrated the defense of any unit of the 1st South African Regiment.

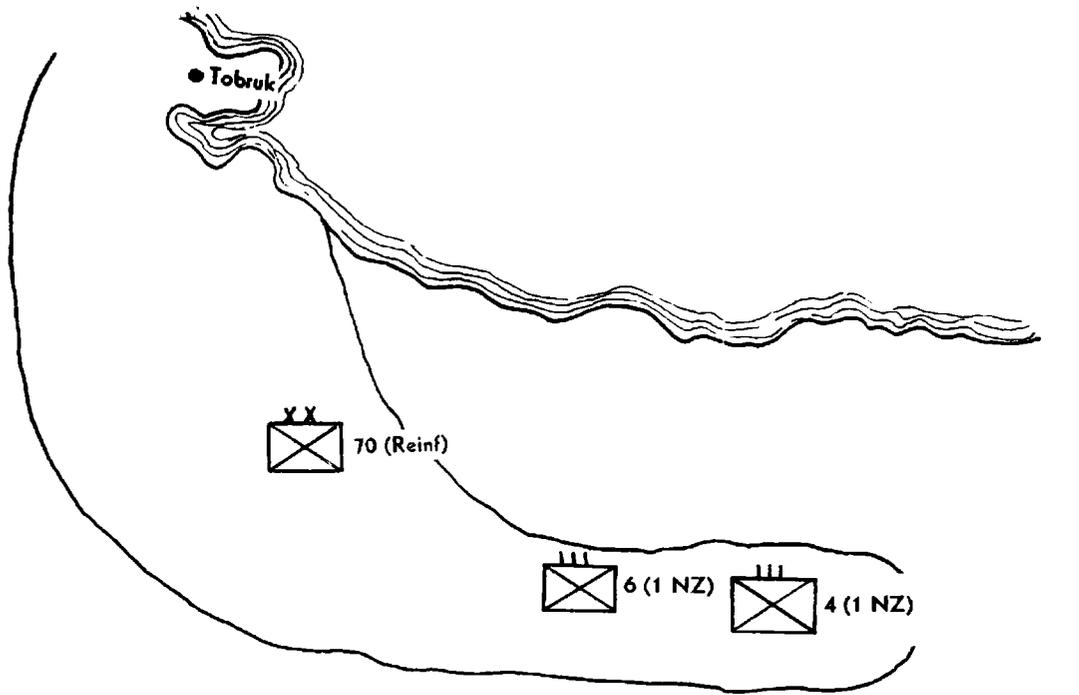
Corps. The positions of its regiments are shown in fig. 5. A violent Axis attack by tanks and infantry started on December 1. The attack was apparently an attempt to restore the lines of communication between the Axis forces to the east and west of Tobruk.

The New Zealand Division at this time was suffering an acute shortage of 25-pounder artillery ammunition, and since no supply columns could get through to them, attempts were made to meet this need by transport plane. The results, however, were not satisfactory.

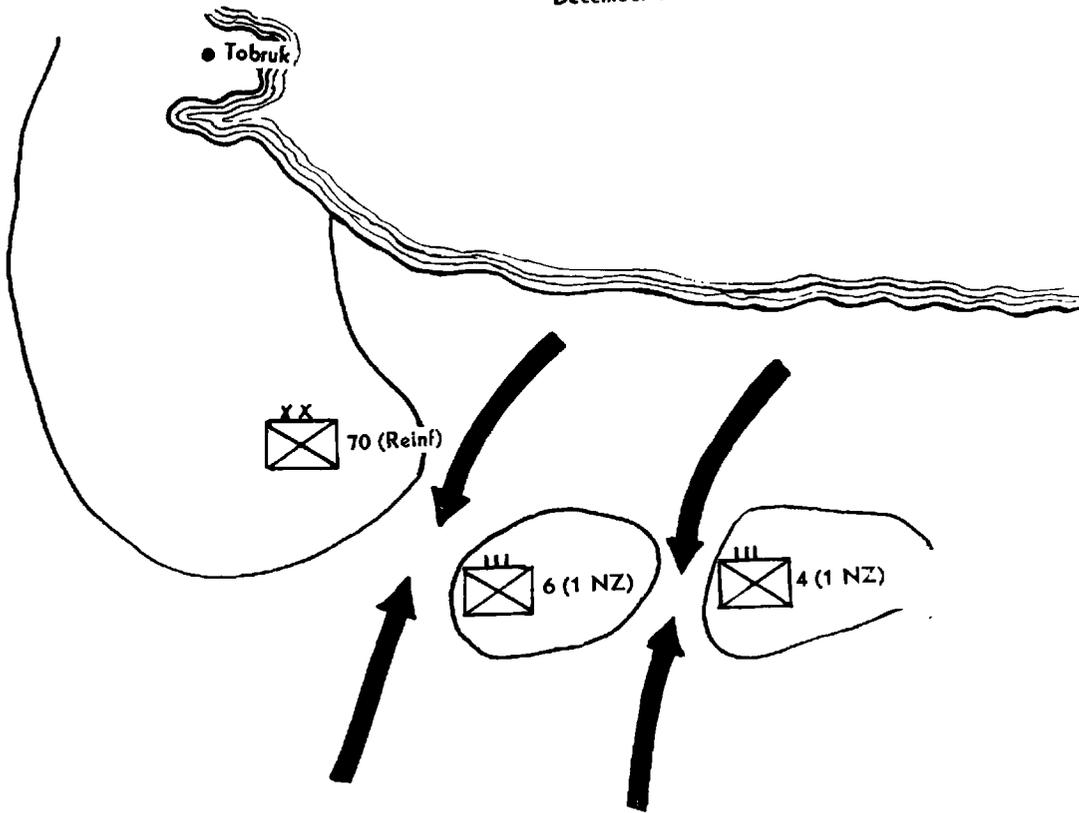
#### m. December 2

On December 2 the Commanding General, XXX Corps, at his command post near Gabr Saleh, was told to resume the offensive toward El Adem. What remained of the 7th Armored Division was to harass the enemy in the area along the coast. The 11th Indian Infantry Regiment, originally employed against the Halfaya Pass position, was on the way to Bir el Gubi, to be followed by the rest of the 4th Indian Division. This division was to come under command of the XXX Corps.

During the morning, Axis forces broke through between the 6th New Zealand Regiment and the

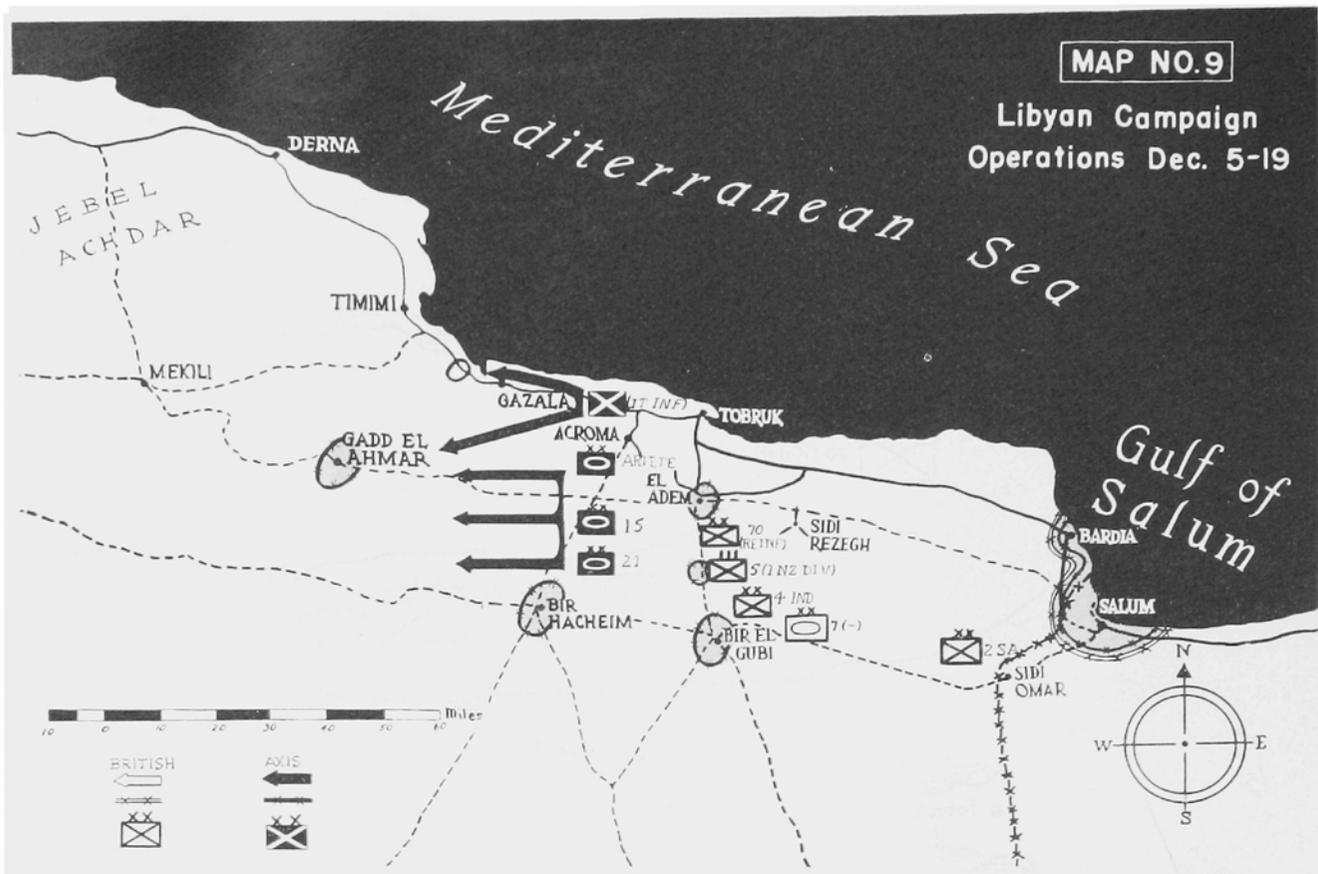


December 1



December 2

Figure 5.—Destruction of the 4th and 6th New Zealand Regiments.



Tobruk forces, effectively isolating the two New Zealand Regiments. By afternoon of December 2, a wedge had been driven between the 4th and 6th Regiments, and their complete destruction appeared imminent (see fig. 5). All artillery ammunition was exhausted and no support of any kind could be given.

By dark only remnants of the New Zealand Division existed. The personnel losses included all the senior artillery and infantry commanders, and the equipment losses all but a few 25-pounder guns and most of the antitank weapons. At dark the remnants of the two regiments escaped to the southeast and were withdrawn from the front.

Had the 5th New Zealand Regiment, which was near Bardia, been called in time, it might have provided enough reinforcements to permit a successful withdrawal, although it too was short of artillery ammunition.

The Tobruk garrison artillery expended over 40,000 rounds of artillery ammunition between November 25 and December 2, practically its whole supply. Following the battle of December 2, the Tobruk forces virtually withdrew from action and again took up the defensive.

#### n. December 3

On December 3 the enemy repeatedly attempted to make contact with his forces along the frontier. Contact was prevented by British mobile columns, which inflicted many casualties.

#### o. December 4

On December 4 the 11th Indian Infantry Regiment, with some assistance from the 7th Armored Division, mopped up all but a few of the resistances in the Bir el Gubi area.

The 4th Armored Regiment engaged an enemy column of about 30 tanks and motor transport a few miles north of Sidi Rezegh. Eight of the tanks (Italian M13's) were destroyed. Tank replacements arrived, bringing the total strength of the 4th Armored Regiment to 126.

#### p. December 5 (Map No. 9)

On December 5 General Rommel apparently decided to withdraw to a position west of Tobruk. Although it is not known exactly why Rommel decided to withdraw, his supply situation was undoubtedly becoming serious, and despite an excellent maintenance and recovery system, the Axis had not received as many actual tank re-

placements as the British.<sup>16</sup> There was west-bound traffic all day on the Trig Capuzzo. To cover his withdrawal, Rommel sent a covering force to Bir el Gubi. The 11th Indian Infantry Regiment attacked this force, met too strong a resistance, and had to withdraw, covered by the 22d Guards Regiment.

**q. December 6**

During the day, the remnants of the enemy armored divisions were still operating around Bir el Gubi, harassed by elements of the 7th Armored Division. The 4th Indian Division, with the 22d Guards Regiment attached, held a defensive position southeast of Bir el Gubi.

**r. December 7**

On December 7 the XIII Corps moved on towards El Adem. It became apparent that the enemy was trying to establish centers of resistance between El Adem and Bir el Gubi, and the Eighth Army commander ordered that all resistance there be cleared up and that the drive to El Adem continue. The 4th Armored Regiment attacked the enemy tanks at Bir el Gubi in an action which lasted all day but produced no decisive result.

Reconnaissance elements of the 7th Armored Division made contact with the Tobruk garrison at Sidi Rezegh, and the 1st South African Regiment made contact with them along the Bardia-Tobruk road.

**s. December 8**

On December 8 the enemy began to withdraw to the northwest, and the 4th Armored Regiment tried unsuccessfully to intercept them. The 4th Indian Division attempted to reach a position from which they could strike the enemy's northern flank.

**t. December 9**

The enemy again withdrew, with the 4th Armored Regiment pursuing. The 11th Indian Infantry Regiment also engaged in the pursuit. On the afternoon of December 9 the 7th Indian Infantry Regiment of the 4th Indian Division reached El Adem.

<sup>16</sup> It should be emphasized here that this bulletin is based almost entirely on British reports and on reports of U. S. observers working with the British. Consequently, attention is unavoidably drawn to the mistakes of the British, whereas the records of the mistakes and difficulties which the Axis experienced are not available.

**u. December 10**

The 4th Indian Division was directed to pursue the enemy toward Gazala, its south flank protected by the 4th Armored Regiment. On December 10 the bypass from Acroma to El Adem was designated as the boundary between the XIII and XXX Corps.

**v. December 11**

On December 11, Axis armored and infantry units fought an effective rear-guard action at Gazala against British troops advancing from Bir el Gubi and Tobruk. British armored units did not participate. The 4th Armored Regiment and the 22d Guards Regiment were attached to the XIII Corps.

**w. December 12**

By this time elements of the Tobruk garrison, the 4th Indian Division, the 5th Regiment of the First New Zealand Division, the 2d Regiment of the 1st South African Division, and the 4th Armored Regiment were engaged in the pursuit. Although they pushed back the southern flank of the Axis rear-guard forces, the 5th New Zealand Regiment was unable to reduce the Axis resistance in Gazala. The 15th and 21st Armored Divisions were being used mainly as a covering force for the withdrawal of the Axis infantry units.

**x. December 13**

On December 13 the Axis armored forces counterattacked the 5th Regiment of the 4th Indian Division at Bir Hacheim. The R. A. F. bombed and strafed enemy motor vehicles along the coastal road between Derna and Cirene. (See map No. 10.)

**y. December 14**

On the 14th, British forces finally drove the Axis forces out of their positions at Gazala, and forced them to evacuate the position that night. The New Zealand and Polish troops took 1,300 Axis prisoners at the fall of Gazala. The 4th Indian Division continued pressure on the Axis rear guard near Gadd el Ahmar. In the meantime British forces in the frontier area were mopping up isolated resistances, although Bardia, Salum, and Halfaya Pass continued to hold out.

**z. December 15 and 16**

During these 2 days elements of the 4th Armored Regiment succeeded in flanking the Axis positions

at Gadd el Ahmar and attacked both front and rear. When the enemy withdrew, however, lack of fuel prevented the British armored units from pursuing the retreating enemy. While the Axis rear-guard troops were conducting this delaying action, the bulk of their armored and motorized forces were moving rapidly to the west along the trails and coastal road. The R. A. F. was ranging farther to the west and bombed the area near Agedabia and El Agheila.

**aa. December 17**

By December 17 the Axis armored forces had retired to Derna and were apparently continuing on to Bengasi along the coastal road. The Italian retreat was by way of Mekili toward Bengasi. The R. A. F. continued their bombing of the withdrawing Axis troops, particularly in the Agedabia and El Agheila sector.

**ab. December 18**

On December 18, units of the 4th Indian Division captured the Derna airdrome while armored units pursued the enemy in the Mekili sector.

**ac. December 19**

Both Mekili and Derna itself fell on the morning of the 19th, and the British columns continued their pursuit.

**ad. December 20 (Map No. 10)**

On December 20 the lines of communication and the frontier area were taken over by headquarters of the XXX Corps. The Italian divisions withdrawing along the Mekili-Bengasi road were reported as being severely disorganized. A mobile armored group, equipped for speed with the light American M3 tanks, was sent to the southwest toward Antelat with a mission of cutting off the Axis forces, particularly the German armored divisions which were now reaching the vicinity of Bengasi. The British 22d Armored Regiment relieved the 4th, which returned to the frontier area.

**ae. December 21**

By this time most of the German armored divisions were reported to have reached Agedabia. The Axis troops were reported to be busy preparing defensive areas around Agedabia. It was becoming apparent that the Axis would probably not attempt to hold Bengasi.

**af. December 22**

On the 22d a British patrol occupied Antelat.

At this time elements of the 4th Indian Division were driving along the coastal road in the vicinity of Barce, and infantry units were pursuing along the Mekili-Bengasi road and approaching El Abiar. The armored group which had been sent down to cut off the Axis forces was attempting to flank Agedabia, and the 29th Infantry Regiment of the 5th Indian Division, which had made the initial dash across the desert, was attempting to cut communications between El Agheila and Agedabia. Evacuation of Bengasi was in full swing, and a solid line of transport was reported between Bengasi and Ghemines. On this day British commando troops raided the Agedabia airport and destroyed 37 Axis airplanes. One hundred Axis airplanes were reported grounded at El Agheila for lack of gas. At this time British Intelligence estimated the strength of the 15th and 21st Armored Divisions at Agedabia as about 50 tanks. The Italian Ariete Armored Division was also heavily depleted, although there is no estimate of its strength.

**ag. December 24**

On the 24th of December Bengasi fell, and it was believed that a considerable number of Italians on the coastal road north of that city had been cut off. With the capture of Bengasi it became theoretically possible to supply the British units by sea-borne transportation. However, the Royal Navy was hesitant about undertaking the supply because of the heavy concentration of Axis airplanes at Crete. Also the Bengasi harbor had been left in poor condition; all the lighters and cranes had been either removed or destroyed, and the German air force had mined the harbor.

**ah. December 25**

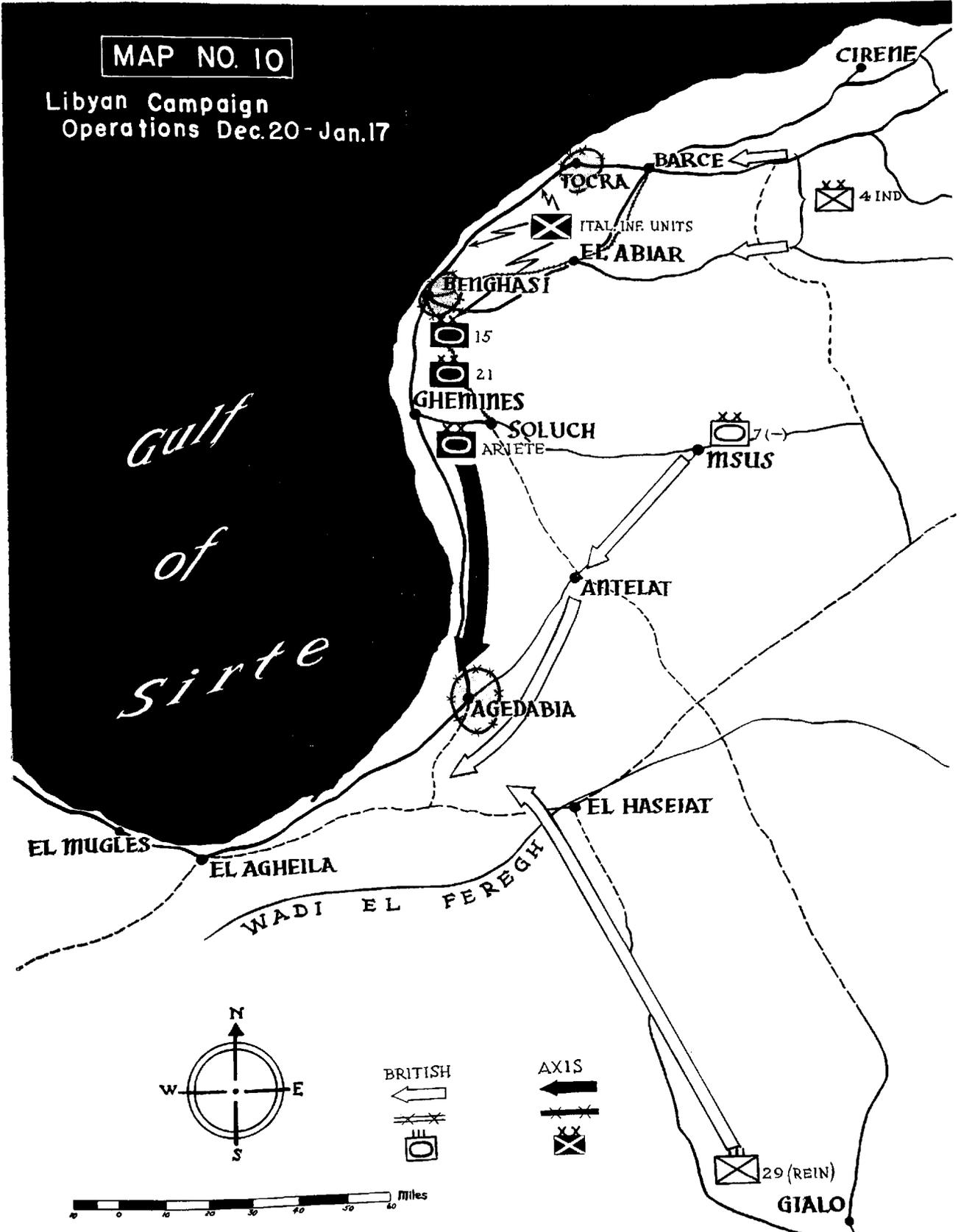
Italian troops cut off between Bengasi and Barce prevented the R. A. F. from using the Barce airfield, although they did manage to utilize the Bengasi field. One hundred axis airplanes were found damaged or destroyed at the Bengasi airfield. Many of them were probably destroyed by the Axis troops themselves when they found that without fuel the airplanes could not be evacuated. British supply and maintenance difficulties had caused the delay in armored reinforcements needed to cut off Rommel from Tripolitania.

**ai. December 26 and 27**

On the 26th and 27th British troops northeast and south of Agedabia continued attempts to cut off and destroy the Axis forces in that area. In

MAP NO. 10

Libyan Campaign  
Operations Dec. 20 - Jan. 17



the north they finished mopping up the remnants of the isolated Italian forces between Barce and Bengasi.

**aj. December 28, 29, and 30**

On the 28th and 29th the British continued their attempts to cut off the Axis forces in a battle between Agedabia and El Agheila. Twenty-two Axis tanks were reported destroyed and 20 damaged, but in accomplishing this the British 22d Armored Regiment lost all but about 22 of its own tanks. The number it had prior to the battle is not known.

On the 29th and 30th the Axis received supplies which were landed on a temporary jetty at El Mugles. A tank-versus-tank battle took place in the vicinity of El Haseiat in which it was reported that 40 Axis tanks and 50 British tanks participated. In this engagement the Axis managed to establish and defend a series of strongly fortified positions from Agedabia to El Haseiat. The Axis forces were apparently being supplied by the coastal road despite British attempts to cut these communications.

**ak. January 1**

By January 1 the Axis had succeeded not only in establishing fortified posts from Agedabia to El Haseiat, but also all the way to El Agheila. During this day and the next the British successfully assaulted and reduced the Axis-held position of Bardia, taking over 8,500 prisoners and liberating 1,150 British troops.<sup>17</sup>

**al. January 2 through January 7**

Axis armored and infantry units fought their way from Agedabia to El Agheila and there established strong defensive positions. Finally, on the 7th, British troops occupied Agedabia.

Air and artillery attacks against Halfaya Pass and Salum positions had been intensified, and the Axis garrisons, which had subsisted for some time on very short rations, were reported to be receiving supplies by parachute in a last attempt to stave off the fall of these two positions.

## 6. LESSONS

### a. General

The final British plan, which envisaged proper employment of the superior numbers of troops and equipment available, was well conceived.

<sup>17</sup> An account of the taking of Bardia has been published by the Military Intelligence Service as Information Bulletin No. 21, "The British Capture of Bardia."

Also, the primary objective of destroying the Axis forces in Cyrenaica was partially attained, and General Rommel was driven out of Cyrenaica. In accomplishing this, the British were forced to meet General Rommel on his own battlefield, on which he had prepared extensive fortified positions and had disposed his troops, particularly the armored units, to the best possible advantage for the defense.

The British soldier proved himself to be a courageous, cheerful, and tenacious fighter. Every U. S. observer has emphasized this courage, which was displayed in the defense and the offense, against tanks or against infantry. Only because of difficulties with supply and communications, and the fact of a superior Axis force in the Mediterranean, were the British compelled to halt at the entrance to Tripolitania.

### b. Plans and Their Execution

(1) *British*.—The British plan had contemplated the ordering-out of the Tobruk garrison only after the 7th Armored Division had been successful in neutralizing the enemy armored units. This would have allowed the British armored units to cooperate closely with the break-out of the Tobruk forces. The order for the breakout, however, was given by the XXX Corps commander on the night of November 20; consequently the 7th Armored Regiment was sent to the north to assist in this action before the Axis armored force had been effectively neutralized; this move dispersed the British armored forces and subordinated the primary mission of destroying the enemy tanks to the secondary mission of relieving the Tobruk garrison. This order for the break-out of the Tobruk forces was, however, unavoidable. The railhead capacity was not sufficient to take care of all the requirements of the Eighth Army, and the opening of Tobruk harbor was necessary in order to supplement the rail deliveries with sea-borne supplies. The error apparently lay in dispersing the British armored forces in the attempt to accomplish the opening of Tobruk.

On November 19 the 4th Armored Regiment was at a distinct disadvantage, for, isolated from the 7th and 22d, its light American M3 tanks had to be used in a "close slugging match" against the more heavily armed and armored Axis tanks.<sup>18</sup> Ordinarily these light tanks would have been used

<sup>18</sup> See footnote No. 11.

as a mobile reserve, supporting British cruiser tanks, and their speed would have been utilized in making quick flanking movements.

Again on November 20, as on November 19, the commanding general of the 4th Armored Regiment was forced to use the light American M3 tanks in an improper role. If the 22d Armored Regiment (en route from Bir el Gubi) had participated, a British attack might have been made, and an enveloping movement could have been executed. As it was, the 4th Armored Regiment was forced to assume the defensive and meet the strong Axis force without help. The 22d Armored Regiment had been engaged by about 40 Axis tanks and so did not come to the assistance of the 4th as expected.

Not only did the dispersion of its regiments allow the 7th Armored Division to be attacked in detail, but by the same token it prevented the 7th Armored Division from delivering a coordinated attack against the Axis tanks. It would have been particularly advantageous for the British to deliver such an attack on this day, when they had a superior number of tanks.

The 4th and 22d Armored Regiments were separated again on November 21, and the Germans were able to engage the 22d alone before the 4th had time to come to its rescue.

Although the British armored forces were concentrated by the night of November 21, heavy casualties had now reduced their striking power.

On November 21, against the 4th Armored Regiment, the Germans were successful in using one of their characteristic tricks—that of drawing an advanced armored unit into a concealed antitank position by using weakly protected motor transport as bait.

The British would probably have lost the armored battle if the reserve tanks had not arrived on and after the 8th day of the operations. They proved more valuable as a reserve than they would have been had they participated from the beginning of the campaign.

(2) *Axis*.—The German intention of forcing the British units to enter Libya below the fortified triangle was successful. General Rommel was thus able to maneuver in the area between Bardia, Sidi Omar, and Tobruk. It was not until the reduction of the fortified positions in the Omars on November 23d that the British had more direct access to the battlefield for their lines of communication.

### c. Combined Arms

In a tank-versus-tank action in the desert, the primary role of armored forces is to destroy enemy armored vehicles, but to accomplish this requires the coordinated action of all arms. This was particularly true in the Libyan Campaign, in which British and American tank armament was inferior to that of the Axis. In many of their attacks against British armored units the Axis used antitank guns in close support, and British sources indicate that there were as many British tanks immobilized by these antitank guns as by Axis tanks.

(1) *German tactics*.—(a) *Offense*.—During the battles around Sidi Rezegh the Germans gave several illustrations of their typical offensive methods. It happened that here they felt the high ground to be of sufficient value to them to warrant strong attacks and comparatively heavy losses.

The Germans usually spent the morning in carrying out detailed reconnaissance, in which armored cars, tanks, and small motorized infantry units were employed. Much of the reconnaissance was designed to lure the British into opening fire, thus disclosing gun positions. Apparently the enemy's observation post kept all the area under very close watch during these operations, for it was found that any British field pieces or antitank guns which had revealed their positions by firing during this period were made the first object of the enemy's artillery concentration when the main attack began.

Shortly before noon the Germans would bring up their tanks, antitank guns, and small elements of motorized infantry to lines about 2,000 yards from the British defensive positions. During the noon hour the enemy would refuel his tanks behind a strong screen of antitank guns, which were "placed . . . in such a manner that it was not possible to . . . attack him while he was replenishing." Throughout this period British units were kept under constant observation.

Usually the main attack was launched in mid-afternoon, beginning with accurate and heavy artillery fire on the British field-artillery and antitank-gun positions, thereby emphasizing the necessity for having alternative positions for all supporting weapons. This artillery concentration was supplemented by fire from the 75-mm guns on the Mk. IV tanks. The general direction

of the attack itself was almost invariably out of the setting sun, the artillery preparation caused smoke and dust, and under these conditions the British were hampered by greatly decreased visibility. Any movement of British motor vehicles, tanks, and artillery in the direction of the enemy was immediately brought under artillery fire.

The main attack was usually distributed among several different points, but strong compact formations were used in every case. The apparent objective of the Germans was to neutralize all the defensive positions simultaneously. The tanks and artillery concentrated on British tanks and artillery during the attack, and soon after it was launched, German antitank guns were brought forward almost to the tanks leading the attack, in order to provide them with close support. These antitank guns would usually be sited among abandoned vehicles, and proved difficult to engage because of their inconspicuous position and silhouette.

As soon as a penetration was accomplished, it was exploited to the maximum; additional tanks were sent through the gap, closely followed by motorized infantry heavily armed with antitank guns and automatic weapons.

Usually a German position was consolidated at about the hour of darkness, making it particularly difficult to counterattack and to take advantage of the inevitable lack of control which characterizes this period.

A feature of these attacks around Sidi Rezegh was the determination and aggressiveness with which they were executed. Throughout the entire campaign the Germans indicated that, when they considered victory to be of sufficient importance, they would carry out the attack as vigorously as possible with little regard to casualties. When victory was not considered important enough to warrant heavy losses, attacks were never pressed.

(b) *Defense*.—In the successful rear-guard action which the Germans fought during the withdrawal, one principle characterized their tactics. They defended a position, with effective coordination of all arms, only as long as they could do so without the risk of defeat. During this phase the Axis proved very susceptible to strong threats against their lines of communication.

In organizing a defensive area the Germans chose ground which was particularly suitable for re-

sistance to mobile attacks by tanks or motorized infantry. They organized a series of defense areas with the tanks echeloned back on the most dangerous flank or sited to cover gaps in the defenses. The reconnaissance usually operated only a short distance from the area. The antitank guns were sited well forward, and infantry and field guns were placed behind them. Particular care was apparently taken in selecting the best ground available for observation posts, for the artillery fire was extremely accurate. The flanks were always well protected by antitank guns. Within the defensive perimeters there were two reserves, the first consisting of additional antitank guns, and the second of tanks. Occasionally the tanks were sent outside the antitank-gun screen for the purpose of luring the British tanks into the gun range. Often the tanks were kept in two groups for the purpose of making a double envelopment of attacking British troops.

The withdrawal from one defensive position to another was divided into two phases. The first phase consisted of replenishment and withdrawal of all administrative vehicles and a proportion of other unarmored vehicles. In the second phase the tanks moved forward to demonstrate or attack, and behind them the remainder of the troops and artillery would move to the rear. This movement was carried out in close, compact columns at high speed with the tanks still protecting them. This second phase was nearly always accomplished under concealment of approaching darkness.

Consequently, it was often not known until morning whether the tanks had gone forward to demonstrate and to draw the British tanks on the antitank guns, or whether they were being used in a withdrawal. While covering a withdrawal the Axis tanks were extremely aggressive in order to divert attention from the retreating troops.

(2) *British mobile task forces*.—A typical organization for one of the British mobile task forces, or "Jock" columns, consisted of the following:

- One 8-gun battalion of 25-pounders.
- One motorized infantry company.
- Three or four 4-gun platoons of antitank guns.
- One 3- or 4-gun battery of anti-aircraft guns.
- One armored-car company.
- Detachment of engineers.
- Specially organized supply detachment.

Requisites for successful operation of such a column are: an alert and experienced commander,

a minimum number of vehicles, extensive preliminary training in cooperation, and a sufficient number of radio sets for quick control.

#### d. Armored Units

(1) *Matériel.*—Having been tested in battle for several years, German tanks were more reliable than the British, although the British power-operated turrets proved a great advantage over the several models of German tanks which do not have them. It became more obvious in this campaign than in any other operation that a 57-mm gun (6-pounder) is desirable in all tanks, for throughout the whole campaign British armored units were hampered by the inferior range of their tank weapons. This was particularly true in the pursuit, when Axis tanks, fighting a rear-guard action, kept just out of range of the British tank weapons but within their own range. The German 50-mm tank gun has a muzzle velocity of 2,600 feet per second. Mounted in a Mk. III tank, it was the most destructive tank gun in the campaign. The German Mk. IV tanks mounted the 75-mm gun, which was used primarily as mobile close-support artillery. The tanks employed by the British mounted the American 37-mm tank gun or the British 2-pounder (40-mm) tank gun, with muzzle velocities of 2,750 and 2,600 feet per second, respectively. The larger caliber, coupled with a high muzzle velocity, meant that the German tanks could nearly always open effective tank fire at greater ranges than could the British.

The consensus among British officers is that armored vehicles should carry maximum weapons as follows:

- Armored cars, 37-mm.
- Light tanks, 50-mm.
- Medium tanks, 90-mm.

(2) *Tactics.*—In the open terrain of the desert, because of the longer range of the German 50-mm tank guns, British movements to the enemy flank or rear were not effective, for the Germans could inflict serious tank casualties before British tanks could close to their effective range. Smoke was sometimes used in an attempt to overcome this deficiency. Smoke was put down to windward of the enemy tanks. Tanks then closed up behind the smoke, and as enemy units were uncovered, they were subjected to fire at short range and destroyed in detail.

#### e. Infantry Tactics

The action of the 1st South African Regiment on November 25 and November 30 indicates how troops in position can defend themselves from normal tank attacks if they are properly equipped with antitank guns.

Germans were usually very cool in the face of tank assaults, and on several occasions they came up on the blind side of British tanks, particularly the infantry tanks, and attacked them with bombs.

#### f. Artillery Matériel and Tactics

(1) *Matériel.*—Equipment exerted a great deal of tactical influence. Not only did the Axis tank guns outrange the British, but the antitank guns also had a greater range than those employed by the British. The German 88-mm gun accounted for a number of British tanks (see Information Bulletin 11, Appendix A, "The German 88-mm Multipurpose Gun"). The 50-mm antitank gun was also extremely effective. In nearly every armored action the Germans used antitank guns in close support of their tanks.

The British 25-pounder gun, using HE shell, was very effective against Axis tanks; tanks were either immobilized or destroyed after one direct hit. Few hits were obtained, however, except by direct laying. Although the 25-pounder is not an antitank gun, it was often used as such because the 2-pounder was too light to be effective.

(2) *Tactics.*—In the Mk. IV tank the Germans had the practical equivalent of close-support artillery, and they utilized its 75-mm gun in placing preparatory fire during nearly all of the attacks. Except for the fact that their artillery was not quite so mobile, the British armored units also received good close support from their 25-pounders.

In the 1st South African Regiment, particularly, armored cars were used as mobile observation posts in directing artillery fire and proved extremely effective. British officers of armored units believe, however, that their artillery observation post should be located in a tank which is indistinguishable from the regular combat tanks so that the enemy will not concentrate his fire on that vehicle.

The use of mobile observation posts was particularly effective in the 1st South African Regiment, enabling them to keep the mobile enemy attacking forces under fire before these actually launched an assault. The mobile observation

posts also proved successful in neutralizing the effectiveness of the German smoke screen during the attack on November 25.

### g. Reconnaissance and Security

One of the first considerations of all commanders is security. To insure it, armored forces normally use armored-car screens, motorized infantry, antitank guns, air observation, and all types of reconnaissance and counter-reconnaissance in addition to tanks themselves. In this operation armored-car screens and patrols, motorized infantry, and tanks were used for security. The armored cars were particularly effective: as one British commander put it, "Armored cars are a commander's eyes and ears." The disastrous results of a lack of armored-car security was demonstrated on the afternoon of November 22, when a German column succeeded in slipping to the left flank of the 4th Armored Regiment and later captured its headquarters and most of the 8th Hussars. Another instance occurred on November 25, when a German antitank unit supported by tanks was able to site its guns about 100 yards from the 1st South African Regiment bivouac under cover of darkness and open fire at daybreak.

Throughout the first phase of the campaign the British invariably had at least two armored-car battalions operating and very often utilized all three of the regiment. These proved their value for reconnaissance in every action, and the information they obtained proved particularly useful to the "Jock" columns on their harassing missions during the fifth and sixth days of the battle.

Another need is to insure security for lines of communication and for the various supply and other rear installations. It was because they had a sufficient guard at their dumps at Rabia that the British foiled an Axis attempt to destroy them on September 14, before the campaign began. During General Rommel's drive to Sheferzen on November 24, British lines of communication were disrupted and units were so scattered that there was some doubt as to whether the campaign could be continued. Only the British replacements and the depletion of Axis tanks made possible a successful reorganization and continued assault by the British.

Harassing attacks, of the sort carried out by Axis columns on November 23 and 24, succeeded

in creating confusion among the British commanders, who lost contact with some of their subordinate units. These attacks proved effective as counter-reconnaissance, preventing the British commander from obtaining clear and accurate intelligence.

### h. Leadership

There was an excellent example on November 30 of the value to be gained when a general officer pushes well forward to the scene of action and takes control. At a moment of bad confusion, the commander of the XXX Corps went up himself for reconnaissance and contact. He personally led the 1st South African Regiment around an enemy force and into position.

### i. Administration

Despite the confusion caused by Rommel's drive to the east on the 24th, at least partial control was maintained over British fighting units. Services continued to function, and ammunition and rations were delivered. This was due primarily to good signal communications and an experienced corps staff. Sufficient radio communication was available and was well used. The extensive training both of units and staff stood the British in good stead during this period when things were very badly confused.

Rommel probably intended to cut the British communications, throw all supply and administrative functions out of gear, and attack the British bases. A more successful move might have been to continue the assaults on British units which had suffered so heavily from his previous attacks, for this would have given him a chance to destroy them before they received reinforcements on the 26th, 28th, and 29th.

### j. Services

(1) *Supply*.—No attempt has been made here to include a discussion of supply, since this subject will be taken up in detail in a separate bulletin. It should be emphasized, however, that supply operations were of the greatest importance in determining the outcome of the campaign, and apparently the supply situation was one of the vital factors that influenced Rommel's decision to withdraw.

Services must not consider themselves noncombatant troops. Because of the increased mobility of modern warfare, troops in rear areas may expect to be attacked by enemy tanks or motorized units

and must defend themselves. On the afternoon of November 25 a mobile enemy column with tanks attacked a British recovery section which was engaged in repairing some disabled British tanks. Fightable tanks were quickly manned by tank personnel who happened to be in the vicinity, and a 1½-hour battle ensued, during which two German Mk. III tanks were destroyed.

(2) *Maintenance and recovery.*—The German maintenance, recovery, and repair system was excellent. Many skilled mechanics were maintained in forward echelons. The tanks themselves were often recovered while the battle was still in progress, in order to avoid the necessity of leaving them behind if the forces had to withdraw. On several occasions one tank was towed out of action by another during the battle, both firing as they moved.

The British encountered a disciplinary problem in the enforcement of regulations against "cannibalization," or stealing of parts. On many occasions necessary parts were found to have been removed from motor vehicles that were being sent back for minor repairs. The result was delay in obtaining additional parts, and a consequent lack of transportation for the unit that was depending upon the return of its vehicles.

(3) *Communications.*—Although tactical signal communication was satisfactory, there was a definite lack in adequate administrative signal communication. The W/T (wireless telegraphy) sets were often found to be not powerful enough to overcome the night-time interference and thus were inoperative when they were most necessary—when the administrative plans for the next day's operations were being drawn up.

Ammunition supply vehicles for artillery supporting armored units usually remained several miles in rear of the batteries. They were equipped with a radio receiving set; and when ammunition was required, they responded quickly to the call. There was no report of ammunition shortage in any of the artillery units operating with the 7th Armored Division.

At the beginning of a tank battle, radio communication in supporting artillery units usually worked very well. As the tank battle developed, however, and the observers' vehicles were immobilized or destroyed, direct laying replaced other methods. One U. S. observer reports that this happened in 90 percent of the tank battles during the campaign.

(4) *Engineers.*—British engineers were particularly valuable in preparing forward landing fields for the air force, clearing paths through mine fields, and destroying immobilized enemy tanks. The policy of destroying enemy tanks was started about December 2, when it was found that much captured equipment was being recaptured before it could be serviced and put into use by the British themselves. In the period December 2–4, engineers reported that they destroyed 63 German and 9 Italian tanks which could have been re-serviced if the Axis had recaptured them. On December 5 over 30 Italian and German tanks were reported destroyed by engineer detachments.

#### k. Personnel

The fortitude of British personnel was praised by all who observed the operation. As a U. S. observer states it, "They were magnificent in standing up with lighter tanks and shorter-range guns and 'slugging it out' with heavier German tanks."

The campaign convinced the British that it is essential to select superior troops to man armored units.

#### l. Air Support

Although the British obviously had air superiority, neither the 7th Armored Division nor the 4th Armored Regiment had either combat or reconnaissance air support. If on November 19 the 4th Armored Regiment had had direct air observation, the information about the approaching enemy tank column would have been received earlier, and would probably have influenced the commander's disposition of his three battalions. This was true of several other actions in the campaign.

Reports on air operations during the campaign are incomplete, but they do indicate that most of the British airplanes were employed on long-range bombing missions. The main targets were enemy airdromes, advanced landing fields, and dumps and supply trains. The R. A. F. reported that by January 12, when the British finally reached El Aghcila, a total of 211 German and 146 Italian aircraft had been found destroyed by bombing on the main airdromes in the Cyrenaica theater. Most of this bombing was carried out at 18,000 to 20,000 feet. The British airplanes avoided the very heavy antiaircraft fire by desynchronizing their engines and dropping about 2,000 feet before bombing.

Because of the shortage of gasoline for tanks and motor vehicles in the forward areas, the Axis attempted to fly gasoline and other supplies into these areas with numbers of JU-86's. These airplanes, after landing at advanced fields, presented targets for the R. A. F. Here as well as at the main airdromes much of the British success was due to the failure of the Axis to disperse its aircraft properly. It was also reported that the Axis suffered from poor maintenance in the advanced areas and from poor servicing in groups.

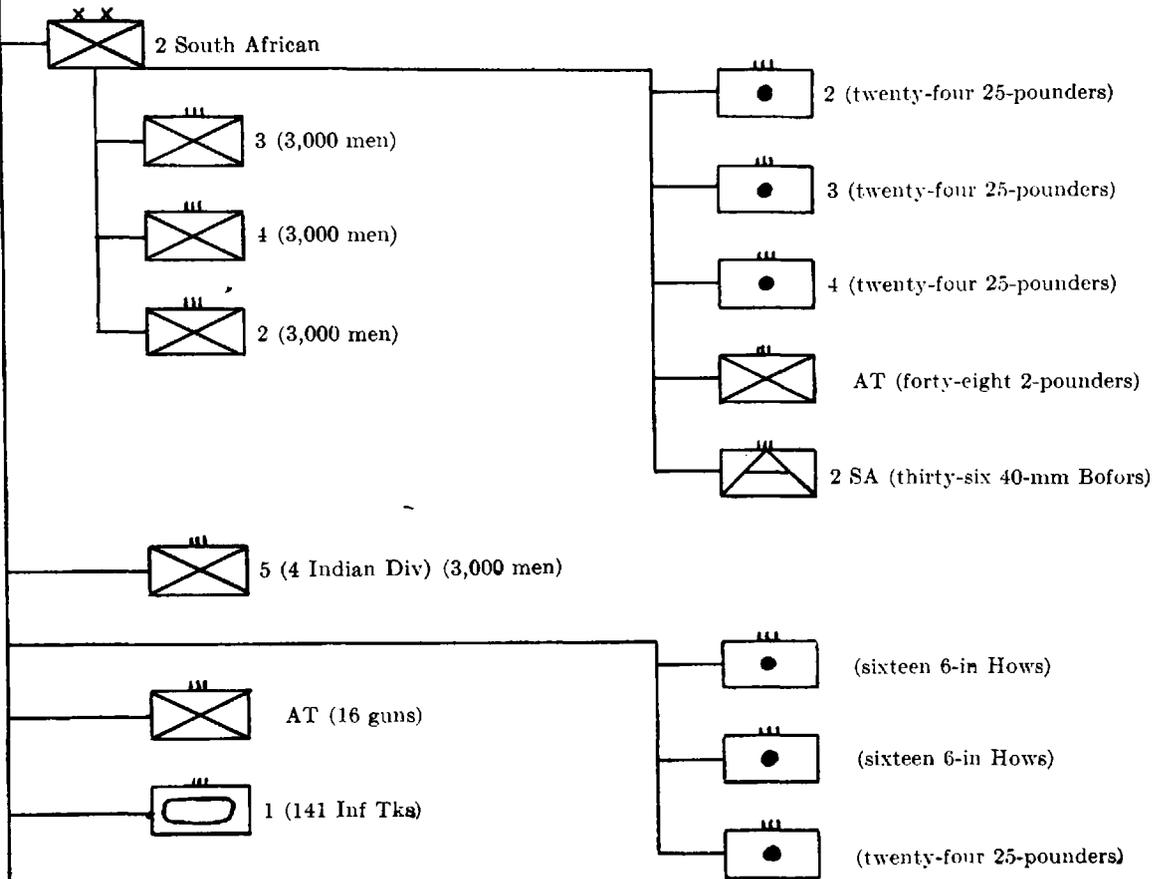
The R. A. F. had learned from previous experience the costliness of improper dispersion, and made a practice during this campaign of scattering its aircraft over extremely large areas, sometimes with airplanes as much as a half a mile apart. Maintenance and servicing were carried out by

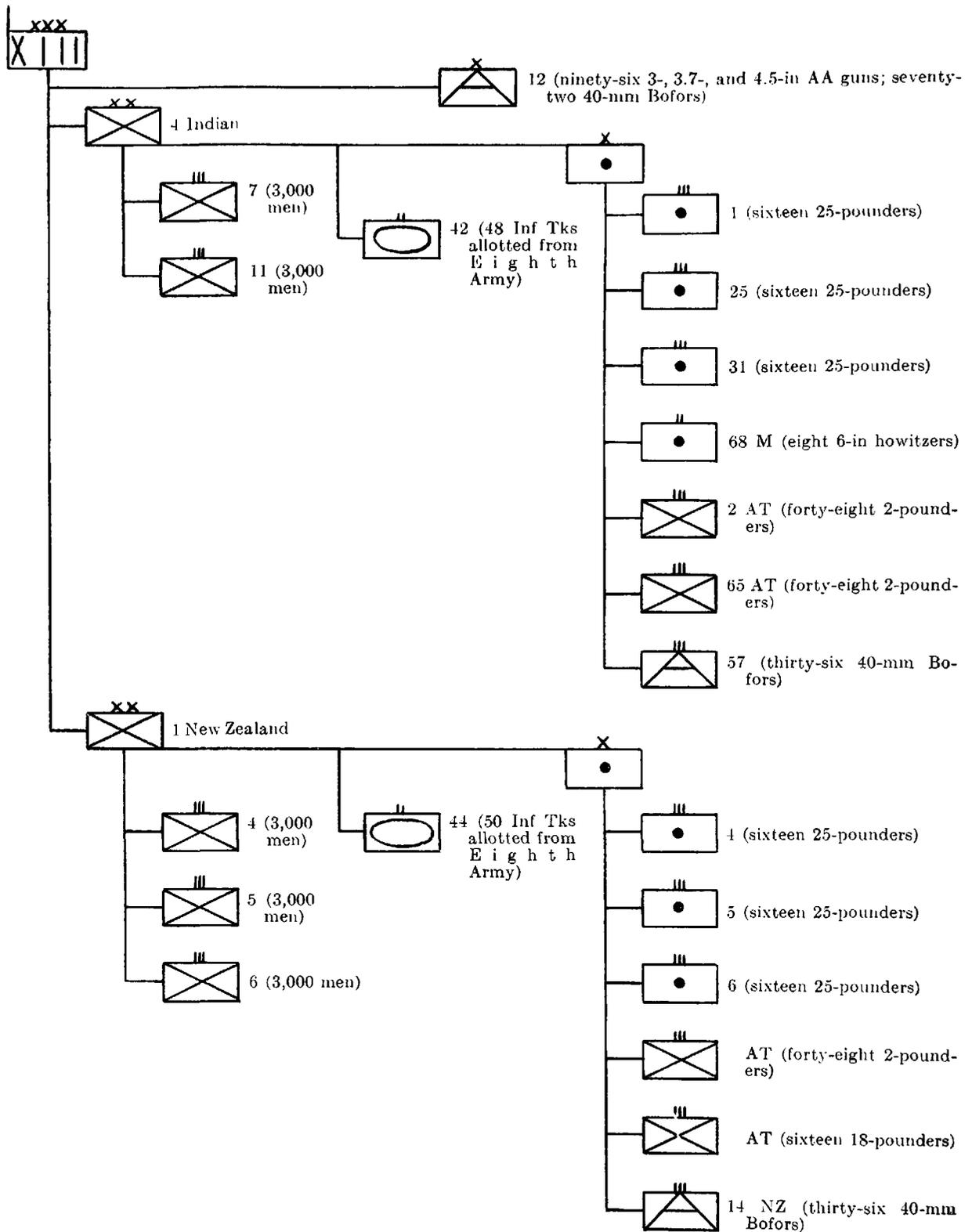
trucks, which easily covered the distances from one airplane to another.

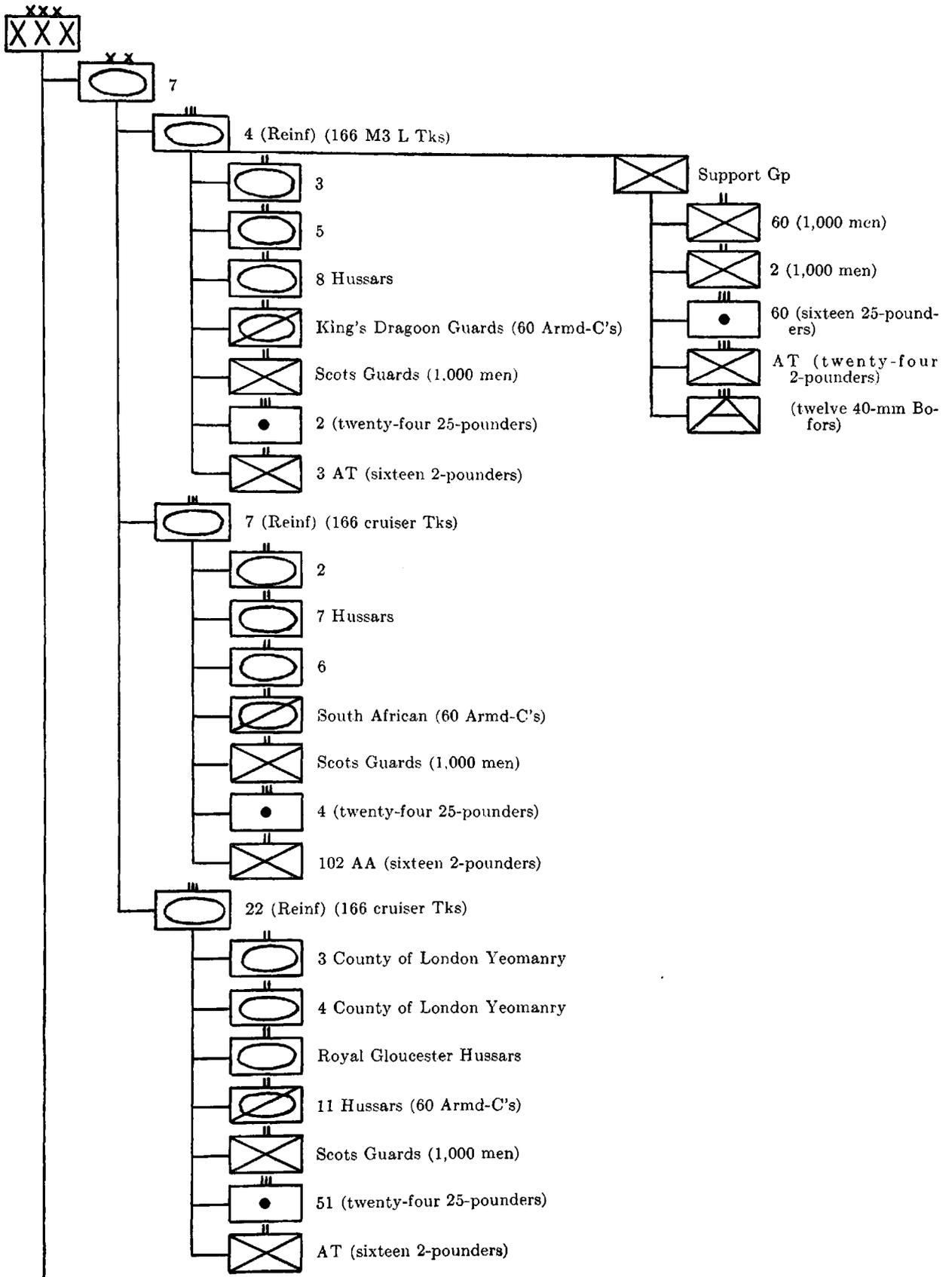
In the campaign all air support was operated through army or corps headquarters, and there were many cases where an armored regiment could have functioned more effectively had it been able to observe the enemy movements by air and to receive information immediately. Direct bombardment support would have been most effective and of great assistance to armored units. Although they did not have air superiority, the German armored divisions employed close-support aviation on several occasions. It is reported that in one case, after a preliminary attack on a strongly defended British position, German tanks withdrew, and exactly 20 minutes later Axis airplanes appeared to bomb and strafe the British position.

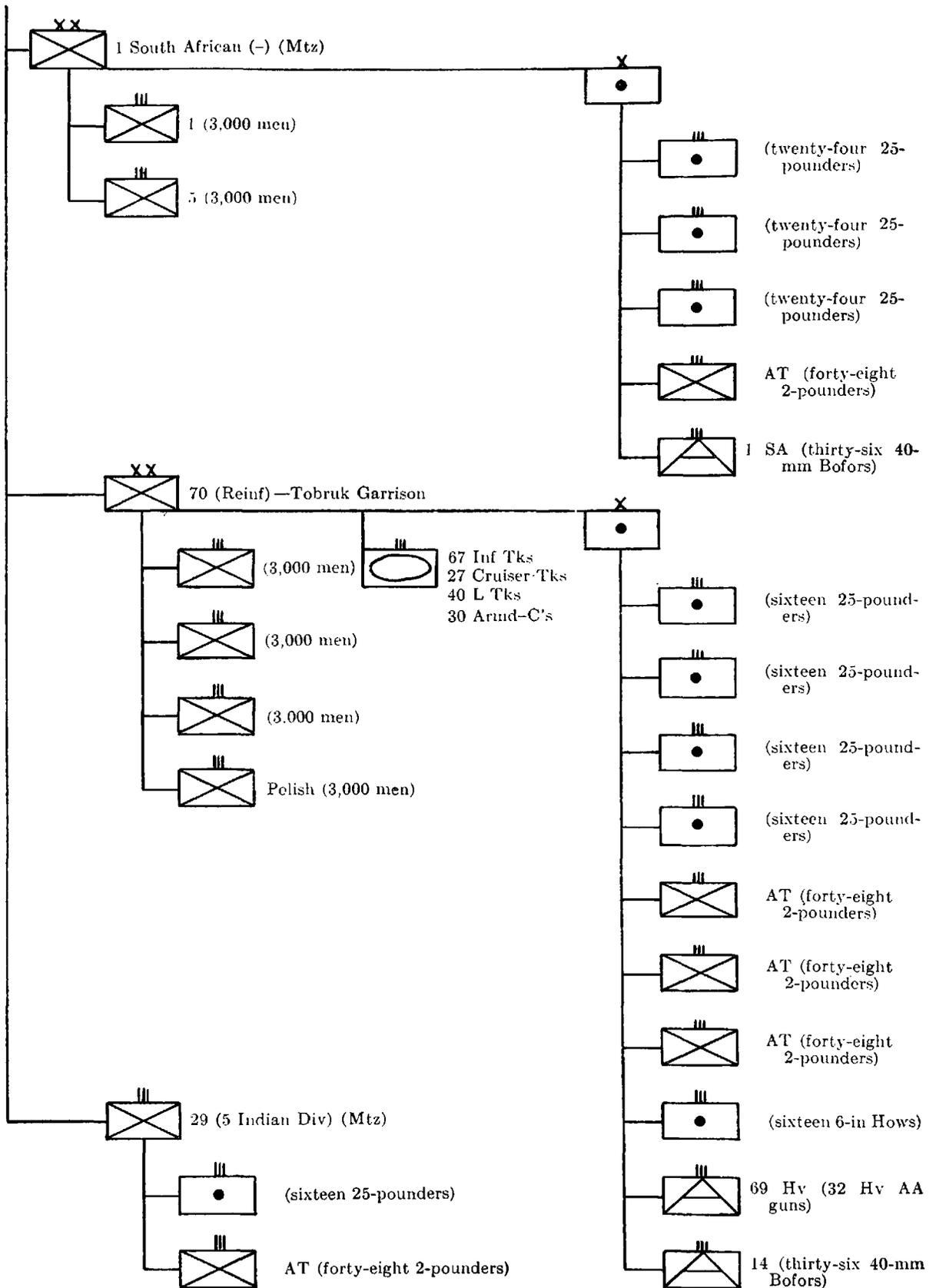
# Appendix A. ORGANIZATION OF THE EIGHTH ARMY

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EIGHTH









# Appendix B. THE GERMAN 15TH ARMORED DIVISION.

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## 1. GENERAL

Information on the composition<sup>19</sup> of the German 15th Armored Division, employed in the North African Campaign, has been pieced together from information in captured documents. It is probable that the organization discussed below has been modified in certain minor respects. One large difference has been noted in comparing the 15th Armored Division organization with the normal organization of a German Libyan armored division. The 15th Division organization calls for a brigade of infantry, composed of two rifle regiments, whereas the normal German armored division in North Africa has usually employed only one infantry regiment of two rifle battalions.

## 2. DETAILED ORGANIZATION

### a. Staff

- 1 section of motorcyclists.
- 1 motorized map section.
- 2 light machine guns.

### b. 8th Tank Regiment

#### (1) Headquarters.

- 1 signal communication section (in this section are 1 Mk. III tank and 2 Mk. I tanks).
- 1 company repair shop (protected by two 20-mm antitank-antiaircraft machine guns).
- 1 reconnaissance section of 2 Mk. II tanks and 3 Mk. I tanks.

#### (2) 1st Tank Battalion.—(a) Headquarters.

- 1 section of six 20-mm antitank-antiaircraft machine guns on self-propelled mounts.
- 1 platoon of motorcyclists.
- 1 signal section of 2 Mk. II tanks and 4 Mk. I tanks.

#### (b) Tank Company.

- 8 Mk. IV tanks.
- 6 Mk. II tanks.

#### (c) Tank Company.

- 2 Mk. III tanks.
- 6 Mk. II tanks.

#### (d) Tank Company.

- 12 Mk. III tanks.
- 8 Mk. II tanks.

#### (e) Armored Combat Train.

(3) 2d Tank Battalion.—(a) Headquarters (same composition as that of 1st Battalion).

#### (b) Tank Company.

- 8 Mk. IV tanks.
- 6 Mk. II tanks.

#### (c) Tank Company.

- 9 Mk. III tanks.
- 6 Mk. II tanks.

#### (d) Tank company.

- 12 Mk. III tanks.
- 8 Mk. II tanks.

### c. 15th Infantry Brigade

#### (1) 104th Motorized Infantry Regiment.

Staff.

Regimental headquarters units, composed of—

- 1 signal section.
- 1 pioneer section.
- 1 motorcycle section.
- 1 antitank section (three 50-mm antitank guns).

1 infantry-gun company, composed of—

Two 150-mm guns.<sup>20</sup>

Nine 75-mm guns.<sup>21</sup>

2 infantry battalions, each composed of 3 companies of motorized infantry, each equipped with—

- 18 light machine guns.
- 2 heavy 20-mm guns.
- Three 50-mm mortars.

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<sup>19</sup> The principles taught by the Germans for the tactical handling of armored divisions are set out at length in *The German Armored Division*, Information Bulletin No. 18, Military Intelligence Service.

<sup>20</sup> These should probably be 150-mm howitzers.

<sup>21</sup> These should probably be 75-mm howitzers.

- 1 machine-gun company, equipped with—
  - 8 machine guns.
  - Six 81-mm mortars.
- 1 heavy weapons company, composed of—
  - 1 section of pioneers (3 machine guns).
  - 1 antitank section (three 37-mm guns).
  - 1 gun section (two 75-mm infantry guns<sup>21</sup>).

(2) *115th Motorized Infantry Regiment*.—Composition is similar to the 104th Regiment except that the 1st Battalion is equipped with armored vehicles only.

#### d. 15th Motorcycle Battalion

#### e. 33d Motorized Artillery Regiment

- (1) *1st Battalion*.
  - Staff.
  - 1 signal section.
  - 1 motorized topographical section.
  - 3 batteries, each composed of—
    - Four 105-mm howitzers.
    - 2 machine guns.
- (2) *2d Battalion* (similar to the 1st).
- (3) *3d Battalion*.
  - Staff.
  - 1 signal section.
  - 1 motorized topographical section.
  - 3 batteries, each composed of—
    - 4 heavy 150-mm howitzers.
    - 2 machine guns.
- (4) *326th Armored Observation and Sound-Ranging Battery*.

#### f. 33d Divisional Reconnaissance Group

- Staff.
- 1 motorized signal section (2 machine guns).
- 1 squadron of armored cars, armed with—
  - 10 weapons of unknown caliber.
  - 25 machine guns.
- 1 squadron of motorcyclists.
- 1 heavy squadron.

<sup>21</sup> These should probably be 75-mm howitzers.

- 1 light motorized column, armed with 3 machine guns.

#### g. 33d Motorized Signal Battalion

- Staff.
- 1 armored radio company, of 25 armored radio cars.
- 1 signal company, of 22 armored cars.

#### h. 33d Engineer Battalion

- Staff.
- 3 engineer companies.
- 1 bridge train.
- 1 light engineer column.

#### i. 33d Motorized Antitank Battalion

- Staff.
- 1 signal section.
- 3 antitank companies, each equipped with—
  - Two 50-mm guns.
  - Nine 37-mm guns.
  - 6 light machine guns.

#### j. Services

- (1) *33d Ration Section*.
- (2) *33d Butcher Section*.
- (3) *33d Bakery Section*.
- (4) *33d Postal Service Section*.
- (5) *33d Military Police Detachment*.
- (6) *Medical Service*.
  - 2 medical companies.
  - 3 motorized ambulance sections.
- (7) *Supply Services*.
  - 14 truck transport columns.
  - 33d Motor Transport Company.
  - 3 repair-shop companies.<sup>22</sup>

<sup>22</sup> Previous information on the composition of the 15th Armored Division indicated that one reconnaissance squadron of nine airplanes was included in the organization. Also one light antiaircraft company and one medium antiaircraft company were included in the organization. These two companies contained twelve 20-mm guns, eighteen 37-mm guns, and twelve 88-mm guns.

