

INSTRUCTOR TRAINING DIVISION
GENERAL INSTRUCTION DEPARTMENT
THE ARMORED SCHOOL
Fort Knox, Kentucky

ADVANCED OFFICERS CLASS #1

25 FEBRUARY 1947

MILITARY MONOGRAPH

TITLE: **Tank Warfare in the Libyan Desert. July - December, 1941**

SCOPE: 1. **Final Training**
2. **First Encounters with the Axis Forces by First Army Tank Brigade.**

8 R. Tanks, "Valentines".
42 R. Tanks, "Matildas".
44 R. Tanks, "Matildas".

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 - a. **Strategical Outlines.**
 - b. **Topographical Outlines.**
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TANK WARFARE IN THE LIBYAN DESERT
July - December 1941

1. Introduction

These are brief notes on the training, conditions and first encounters with the Axis Forces by the First Army Tank Brigade in general, and the 44th Royal Tank Regiment in particular and some lessons learned between July and December 1941.

a. The Strategical Outline.

The reasons for the fighting in the Libyan Desert, hundreds of miles away from anything were not obvious to the soldier "out in the blue", but they might be summed up as follows:

- (1) The protection of the Middle East.
- (2) The protection of our Mediterranean Shipping routes.
- (3) As an advance base for an attack on Italy and Southern Europe.

By June, 1941 the Mediterranean was virtually closed to British shipping and convoys were compelled to make the 13 weeks voyage to Suez by way of the Cape, which took seven times more shipping than the direct route via Gibraltar. The Axis, a word meaning the combined German and Italian forces, on the other hand, fighting on interior lines had a far shorter land and sea passage from the homeland to the battlefield.

b. The Topographical Outline.

The Libyan Desert stretches from the Nile Delta to Tripoli, a distance of some 900 miles and a similar distance to the south. For the most part it is an almost flat, and to the new arrival, featureless gravel plain. Near the coast in Egypt there is a low coastal plain rising in three easy stages to the main plateau some 200 feet above sea-level. These three stages or escarpments come together at Halfaya Pass on the Egyptian-Libyan frontier, 300 miles east of Alexandria, making an impassable obstacle to everything except infantry.

The coastal plain is, therefore, cut off from the main desert plateau in this sector. Low hills with noticeable vegetation rise in the coastal area between Derna and Benghazi, known as the Djebel, but the remainder is covered by a sparse cornel scrub which fades out some 30 miles inland. The Desert was also devoid of all natural resources including water except for a few brackish wells along the coast, so that everything necessary for an army had to be brought in by motor transport across the desert; by the single line railway that was specially laid before the offensive in November; or by sea, by small vessels, hugging the coast-line; and in the case of water, by pipe-line from the Delta.

c. The Tactical Outline.

Because of this lack of definite features and local resources, few parts of the Desert were of any particular value; the intention of the rival commanders in most cases being to destroy the other without destroying himself in the process.

Consequently, we saw, as the campaign progressed, long and sudden withdrawals by first one side and then the other, repeated not once, but twice and even three times. Now these withdrawals were governed by local conditions. At each end of the arena, as this huge battlefield might be called, were stop lines; for the Germans, that narrow neck of land between the sea and the salt marshes at El Agheila, and for us another neck of land between the sea and the Qattara Depression, a salt marsh 300' below the level of the Desert plateau, at El Alamein. Here on a narrow front the defender could build up his supplies once more, quicker than the attacker, with his supply line stretched to the uttermost.

In between these stop-lines were what might be termed check-lines where one's opponent could be held for a time, generally with a small port at one's back for supplies, which in turn became the attackers immediate objective.

Tobruk is a good example. Once an opponent had been forced beyond his stop-line, then he could be considered defeated, but not until then.

To make the campaign more fluid still, the southern flank was open to both forces, but this in turn was a limited opening. Only a small force like the Long Range Desert Group could make a wide sweep behind the enemy lines, while a large force could seldom be expected to make a wide sweep than 30 miles without having supply difficulties, tied as it was to the coast for security and economy.

d. December, 1940 - June, 1941.

After Wavell's successful campaign in December, 1940, Rommel and his Afrika Korps had appeared on the scene, and by April, 1941 had advanced as far as the Egyptian frontier, with little hindrance from us, as a result of our commitments in Greece and elsewhere. Tobruk held out, and to relieve this garrison and to destroy the Axis forces, if possible, an attack was made on his frontier positions in mid-June, in spite of the fact that we were out-numbered in tanks.

Together with this handicap and the appearance of the 88 mm. A.T. gun heavy casualties were suffered by our forces and the attack was called off. Both sides, then very weak fell back "to lick their wounds."

To cover the re-organization of Desforce, west of Matruh, a screen was left forward to watch "Rommel", as the Axis forces were called by the British soldier, in his defensive positions along the Egypto-Libyan boundary, which ran from Halfaya Pass on the coast, to the defended redoubts of Sidi Omar, 20 miles to the southwest.

This covering force, operating on a frontage of more than 20 miles to a depth of 30, consisted of only one motorised infantry battalion, supported by a Regiment of Artillery, in turn covered by a Regiment of South African Armored Cars.

2. First Army Tank Brigade Arrives in Egypt.

It was at this moment that the First Army Tank Brigade landed in Egypt after a 13 weeks voyage, and three wonderful days in Durban. As an example of the intensity of the recent "June Show" and the losses we were then suffering in the Mediterranean no tanks were available for this Brigade from those which sailed with us and which had been diverted through the Mediterranean.

Within a week, however, by pulling back those battalions that had been in the recent fighting, for refitting in the Delta, enough "Matildas" were made available for one battalion in the Brigade to be fully equipped, and so the 44 R. Tanks moved up to a position some 15 miles south of Mersa Matruh and 80 in rear of the foremost elements previously mentioned, and began local training and acclimatizing.

3. Training and Preparation for Battle.

Unknown to us, we had eighteen weeks for training and acclimatizing, but as no time could be laid down and we were in a comparatively forward area there was no time to lose. To both sides it was obviously a supply race, the only questions being, who would strike first, and when. This phase of training could be divided up as follows:

- (1) General training in direction finding for all ranks.
- (2) Tank Training.
- (3) Practice in supply problems, protection on the march and in night leaguers.

All were instructed in navigation, the use of the sun-compass and other aids and this was carried through to a high degree of precision by Bn. Transport of "B" echelon as it is called.

While tank crews spent less time on this subject, ^{than "B" Echelon personnel} they in turn reached a very high standard in radio procedure and discipline which went far to

making the Regiment as effective as it was, in battle. All members of a crew were trained in each other's job, and for that matter this principle was carried right through the Regiment and into every department, so that no man was indispensable and this also proved to be of great value in battle.

In the bigger field it was realized that much of the success of an operation depended on supply, and, with experience gained in the June fighting, exercises were held with skeleton supply columns to test new methods. As a result two systems that effected the employment of Battalion Transport were adopted as follows:

(1) For supply from second to first line; Battalions would send the necessary number of vehicles to a rendezvous where they might or might not be "brigaded" into one large convoy in column in a pre-arranged order - for example ammunition trucks would be on the right, rations and tank spares in the center and fuel on the left flank. To avoid heavy casualties from the air, no vehicles at any time closed in nearer than 200 yards from another. This convoy, from 25-50 vehicles for a two-day replenishment, would then move off in 6 to 8 columns covering an area of anything up to a thousand square yards, on a selected bearing, to the meeting point laid down by Brigade for this convoy. Here the Royal Army Service Corps Company attached to the Brigade, would be met, coming from the Detailed Issue Dump. When about a mile apart, both would halt, by flag signal, the R.A.S.C. Company would then unload on to the desert, and when completed would withdraw. The first-line convoy would now come up to the dumps, which had been laid out in the same pattern as I have already described, so that there was no confusion or muddle, and then they in their turn would load up and return to camp. The advantages were that at no time was a target presented to hostile aircraft, and it did not disclose the whereabouts of the Brigade as the R.V.

was frequently changed; but it did take longer than tail to tail loading, and planning had to be a little more detailed. As no air attacks developed during this operation the extra trouble can be considered to have been worth while.

(2) The other supply problem was how to get "soft-skinned" vehicles up to the tanks when just back from the battle, or even in action. The plan adopted was for each squadron to provide a small group of vehicles carrying enough supplies of all kinds for one day's fighting, which, on account of its importance, was commanded by an officer. This officer was well trained in navigation and practiced with his small command in day and night marches. Ammunition loads were mixed and thought given to reducing loss to a minimum. However, after "Crusader" this was discontinued as it was found that a tank escort was frequently needed by the "Packet", as this small convoy was called, and tanks could seldom be spared. Consequently it was decided to keep one "Packet" always up with the tanks, and risk losing it by shell fire. The "Matilda", the heavy "Infantry" tank with which the 44th R. Tanks was armed had a short track life and in order to keep them battle-worthy, training was restricted to 50 miles a month so that maneuvers and formation drill had to be practiced to and from the ranges; and in the approach march to the forward area in the latter half of September.

From the experience now gained Brigade re-wrote ¹Standing Orders, and as the organization was three Regiments, each of three assault squadrons and a H.Q. Squadron, which consisted mainly of supply trucks, the normal formation was "trefoil"; and a Regiment, when on the march, would generally move with a squadron deployed in front followed by ²R.H.Q. with a Squadron on either flank in column of ³Troops with the transport or "soft-skinned" vehicles in column in the center.

¹S.O.P.

²Regimental Headquarters (Bn. Hqs)

³Platoons

At night, the formation, if together, would form a large triangular defense system each Battalion self-contained, again three sided, with the "soft-skinned" in the center of each Battalion or Brigade H.Q. group. The importance of everybody being responsible for all round defense was impressed on all concerned.

The transport was now brigaded some ten thousand yards in rear and they in turn rehearsed simple maneuvers 300 and more together, which proved during "Crusades" to have been well worth while when this large and defenseless mass was attacked by German tanks. When this attack came, knowing what was required of them, they moved off in good order, changed direction several times, and a few hours later, when the enemy tanks had moved on, returned to their original camp site intact. This would have been impossible, simple though it was, if there had not been previous training in this very matter.

Other lesser points that we learned were the importance of having a standard squadron layout, so that even if we had moved into a new area less than an hour before dark we could find our way around without difficulty after sunset. All vehicles, tanks and "soft-skinned", carried three days iron rations and water for each member of the crew. Transport drivers were trained to keep in pairs when off the beaten track, in case of mechanical breakdowns; how to drive through soft sand, and to drive accurately by day or by night. One learned also how to identify distant objects at midday, distorted by mirage; how to make oneself comfortable at each halt by adding litter of all kinds to ones slender stock of household goods. Old mine-boxes make fine shelters from the sun, and a reasonably good bed-sitting room can be made by digging, and the remains of canvas tanks if one is fortunate enough to camp on the site of a disused and bombed-out dummy tank battalion for example.

4. Rommel's Armoured Reconnaissance, 14 September 1941.

Just before the Brigade moved up into the forward area in mid-September, with the 7th Armored Division now re-equipped, taking over from us at Matruh, "Rommel" made a sudden reconnaissance in force. He advanced swiftly one morning in two columns, originally some ten miles apart, with 70 tanks or 25% of his total armour in one, and motorized infantry in the other. By 10 a.m. he had advanced nearly 40 miles, and both columns had united and refueled, having encountered nothing more solid than a fleeting glimpse of two companies of motorized infantry each supplied by a battery of guns and screened by a South African Armoured car Regiment. During the night "he" withdrew as swiftly as he had come, having accomplished nothing more than to find out that our main forces must be back at Matruh and that the 38th Royal Tank Regiment which he attacked during the evening, after a Stuka dive-bombing attack were only wood and canvas dummies.

When refuelling at midday "he" had been bombed by a flight of aircraft but his dispersion and insistence on digging slit trenches at every halt prevented the "Marylands" from inflicting more than slight damage, and only one tank, which received a direct hit, and seven fuel and ammunition lorries were left behind on the field, an impressive display of German vehicle recovery.

It did, however, give the Brigade its first chance of studying a Mark III at first hand; and there was much speculation on how the "Matilda" with her heavy armour but less mobility and fire-power would do against it. It might be a good thing to review the tanks used by both sides, at this juncture, which were about to meet one another in operation "Crusades". Appx "B".

5. "Crusades".

The object of "Crusades" was first, to destroy the enemy armour and

secondly to relieve Tobruk; intentions much the same as they had been in June but with this difference; we were now superior in numbers, and for the first time since the war began we would be attacking with German forces at a disadvantage, and for this reason alone victory was important. The operation or rather campaign, the fourth in Libya to date, was also of interest because the 4th Armoured Brigade, part of the 7th Armored Division was armed with 166 of the new American M-3 light tanks, as yet untried in action.

The plan was for a bold sweep up from the southern flank towards Tobruk by XXX Corps, consisting of three armoured brigades 395 tanks strong, while XIII Corps of two infantry divisions and the 1st Army Tank Brigade of 150 "infantry" tanks were to engage the coastal forces, cover XXX right flank, and mop-up. Tobruk garrison were also to make a sortie when called on by XXX Corps. Both Corps were, however, to swing south of the strongly held frontier defenses which ran from Fort Capuzzo on the coast for 20 miles Southwest into the Desert ending in the positions at Sidi Omar.

a. Sidi Omar.

It was this task of reducing the Sidi Omar salient, so inconvenient to our lines of supply and flank security, that a squadron of the 44 R. Tanks was called on in cooperation with two squadrons of 42 R. tanks, also of 1st Army Tank Brigade, and units of the 7th Indian Infantry Division.

The Sidi Omar positions were shaped roughly like a dumb-bell with its longer axis running northeast to southwest nearly 9000 yards long by 3000 yards across each end and the neck barely 600 yards. The whole system was surrounded by wire and mine-fields.

Inside, judging by aerial photographs and patrols, an elaborate system of trenches had been dug during the four months preceding the attack and the whole defense system was tied in with an anti-tank fire plan of Italian 47 mm and German 75 and 88 mm. Each end had a garrison of a battalion of German infantry, two machine-gun companies and two or more field artillery batteries, plus some Italian 20 mm. anti-aircraft guns and engineers, a grand total of some 3600 officers and men.

On November 21, XXX Corps had advanced 30 or more miles to the northwest and one New Zealand Division, part of XIII Corps, were in the Berdia area, but the Halfaya - Sidi Omar salient still threatened our flank and accordingly at 4 p.m. the Divisional Commander ordered 1st Indian Brigade to seize the Omar position next day. This attack had been anticipated and aerial photographs had already been studied but as may be seen from sketch No. 2, one night was not much time for patrols to search for gaps in the minefield or for the artillery to register and destroy pin-point targets like dug-in 88's.

The plan was to attack the position in two phases from the N.N.E. or rear, and then after consolidation of the first part advance again down to the southwestern tip, as follows:

Phase I - Attack Omar Nuovo from the north with an infantry battalion (R. Sussex) supported by two ¹squadrons of tanks (42 R. tanks).

Phase II - Attack Libyan Omar from Omar Nuovo Southwest with an infantry battalion 416 Punjab supported by two squadrons of tanks (Sqn. 42 R. tanks and B Sqd. 44th).

Both phases supported by three ²Field Regiments of artillery.

¹ Squadron = Company.

² Field Regt. = Field Artillery Battalion.

In general, Phase I proceeded according to plan. Thirty-two tanks accompanied by Bren-gun carriers, advanced abreast across the open plain in two groups, each of two waves of eight tanks, with infantry in the rear wave. Unfortunately, the tanks ran on to a "hasty" minefield and eleven were at once disabled, and some minutes were lost before a carrier found a way through. This delay enabled some 88's to knock out 12 more tanks, and the enemy infantry keeping concealed, took a heavy toll of 1 Royal Sussex at close range, but they pressed home the attack with bomb and bayonet without tank support, and took the objective.

These heavy casualties might have been avoided if more time had been spent in reconnaissance and artillery preparation. It was found that in spite of bombing earlier that morning and the artillery fire, little damage had been inflicted on the enemy prior to the attack. Although the infantry dismounted from their lorries less than a mile from the objective they were concealed by smoke but on account of the dust and the F.O.O.s failing to find a suitable position from which to observe, the flanks for example, artillery fires were not adjusted as the battle proceeded. The 42 R. Tanks, having reorganised their 9 remaining tanks, the 4th Battalion, the 16th Punjab Regiment attacked the Libyan Omar position 3000 yards to the southwest supported by 42nd and "B" Squadron, 44th R. Tanks.

Fear of mines and the restricted passage through to Libyan Omar caused the tanks to bunch as they advanced, but again a "hasty" minefield was encountered inside the defenses and three tanks were disabled and the remainder slowed down enough for German artillery and anti-tank guns to knock out 19 more. The infantry did not follow up as they had done at Omar Nuovo and the attack was called off, to be resumed by them next day with the three remaining tanks, when the position was taken.

Total losses were: - British 91 killed 328 wounded
Axis 25 killed 150 wounded 3600 captured.

The Battle of the Omars is impressive when one considers the relative strengths of the two forces. Two thousand British infantry men, supported by tanks and artillery attacked and captured positions which were fortified by extensive minefields and entrenchments, supported by strong anti-tank artillery, and garrisoned by an enemy double the size of the attacking force.

From this short but costly operation, the following points applicable to tanks might be considered:

- ✓ (1) Even the best of tank country can be rendered well nigh "tank-proof" by a sound net-work of minefields, covered by fire.
- ✓ (2) Ample time must be given for reconnaissance, if objective and routes to it are intricate.
- ✓ (3) If surprise cannot be gained on account of the open nature of the terrain, a night attack is often better; for example the attack on Bardia 6 weeks later.
- (4) Tanks should not be employed without room to maneuver. A tank attack from outside the perimeter from several directions might have accomplished the same thing with less casualties.
- ✓ (5) If tanks and infantry lose support of one another, the greater part of their effectiveness is lost.

b. Sidi Resegh.

During the period, from 19 November to 1 December, First New Zealand Division advanced up the west side of the Egyptian frontier wire and while Fifth Brigade invested Bardia on the coast, Fourth and Sixth Brigades advanced 60 miles westwards to Sidi Resegh and Belhamed joining

forces with the Tobruk garrison at Ed Duda after a final march by night of ten thousand yards through enemy positions. They were now surrounded on three sides by an enemy who was reacting very sharply to this maneuver.

The position was further aggravated by the fact that ammunition was with the artillery down to 60 rounds per gun, while the two squadrons of infantry tanks (44th) were only 16 strong. These tanks moving constantly from flank to flank to counter enemy armour which kept appearing, led the enemy to believe that this force was stronger than it really was.

On the 28th a very successful attack was launched in the ^{area} ~~area~~ between Sidi Rezegh and Belhamed held by the two brigades, a distance of 4 miles, by the composite tank squadron, two carrier troops of the divisional cavalry and a company of infantry, supported by two artillery regiments firing timed concentrations ahead of the advancing troops and machine guns from the flanks on Belhamed. This particular operation proved what could be done with well trained troops, if the attack is well planned and carefully coordinated.

Hundreds of enemy casualties were inflicted and a number of guns destroyed for the loss of one killed and ten wounded. See Sketch No. 3.

On 29th and 30th of November 6th Brigade was very heavily attacked by Rommel's main force from three sides and was virtually destroyed. On 1st December the Division withdrew, on advice from XIII Corps, with 5 tanks in the rear guard, all that remained of the original two squadrons. Their presence had, however, prevented enemy armour from over-running the infantry and the Divisional Commands sums up as follows:

- (1) ¹We must always give the maximum supporting fire to armoured fighting vehicles in the attack.
- (2) If, during an attack, A.T. fire is very heavy, tanks should take up "hull-down" positions and the infantry go through and destroy them.

¹The New Zealand Division in Cyrenaica and lessons of the Campaign 4 Jan 42.

- (3) In the Desert tanks can and should be used in attacks at night, especially during moonlight nights. The commander who loses tanks by bad tank tactics may capture the objective, but lose the whole battle for want of tanks later to repel enemy counter attacks.
 - (4) It will often be necessary to give active cover to the tank recovery personnel on the battlefield.
 - (5) Before an operation tanks and infantry should train together.
- c. "B" Echelon.

From 19 November to early December the transport of the Brigade, some 450-500 vehicles were concentrated for ease of handling, and during the period of the bitter fighting around Sidi Rezegh were stationed some 20 miles to the southwest, entirely on its own.

Without armour, its mobility was its only defense, throughout the seven days it was there. Patrols, consisting of an officer in a truck with a radio, were posted some 3 or 4 miles out to give timely warning of the enemy's approach. Each day an enemy threat developed on a different side, but only once was an attack made; and then due to timely reconnaissance, and rehearsal in massed movement as I have already described, this ungainly mass was able to withdraw, make a wide sweep and return some two hours later intact to its original camp site.

The "Packet" system failed. A group of six or so unarmoured vehicles had no chance of breaking or slipping through the ring round the New Zealanders. In subsequent actions at least one "packet" was always up with the tanks regardless of battle conditions, which proved to be the best solution, although at times they suffered severely.

6. Conclusion.

In conclusion, looking back over this early period, some of the more memorable points that come to mind are:

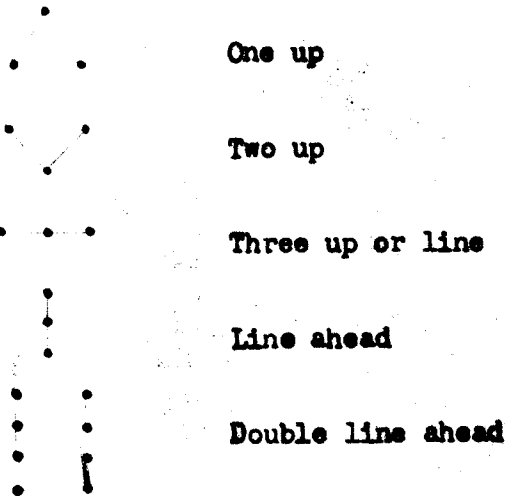
- (1) Independence and self-reliance must be instilled into all ranks down to the most Junior soldier; for real security begins with the individual and spreads outwards.
- (2) Improvisation is not practiced enough in training, but is always to the fore in action. For example, one seldom has a complete squadron after the first encounter, and from then on the need for improvisation becomes more and more apparent.
- (3) Training. Much of the training that was of real value to the Brigade was learned on the spot between July and November. If well trained, half the battle is won before contact with the enemy is made, and the old saying that the Battle of Waterloo was won on the playing fields of Eton is as true today as when the phrase was first coined.

APPENDIX A

1. Glossary

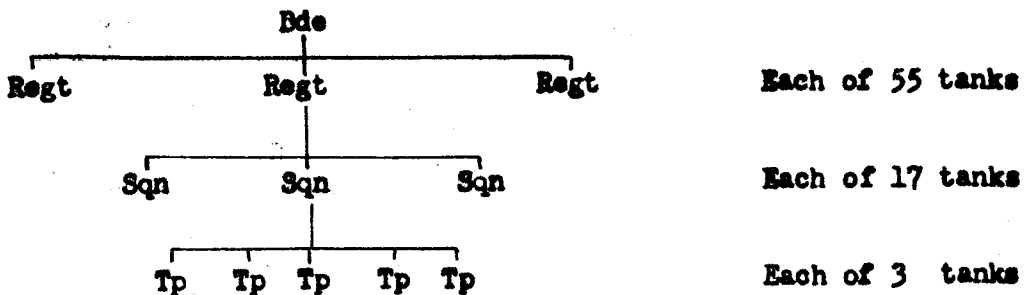
- Bde = Brigade
 Regt = Regiment or Battalion
 Bn = Battalion
 Sqn = Squadron or Company
 Fd Regt = Field Regiment or Battalion Field Artillery
 "B" Echelon = 1st Line Transport not in battle, distinguishing it
 from "A" Echelon or those vehicles up with the tanks in battle.
 R.V. = Rendezvous
 Start-line = Line of Departure
 Armd Bde Gp = Armoured Brigade Group, including infantry, artillery,
 engineers, etc, that is to say not tanks only.
 Tp = Troop or platoon.

2. Formations



3. Organization

Army Tank Bde



MEDITERRANEAN SEA

SKETCH #1

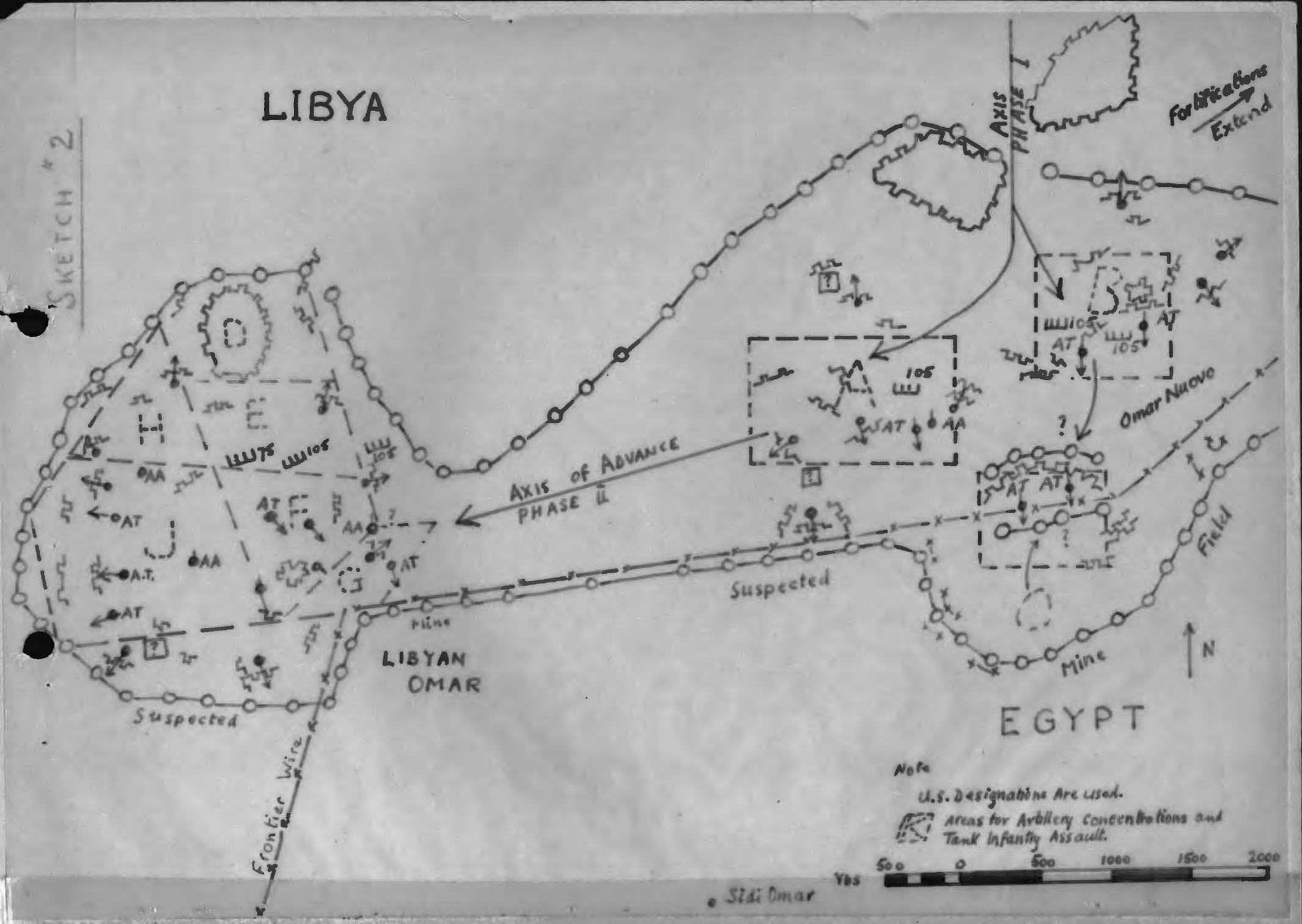


0 25 50 75 MILES

———— Macadam road
----- Trail.

LIBYA

SKETCH # 2



Fortifications
Extend

AXIS
PHASE I

AXIS OF ADVANCE
PHASE II

Omar Nuovo

N

EGYPT

Note





U.S. Designations Are Used.

Areas for Artillery Concentrations and
Tank Infantry Assault.



Sidi Omar

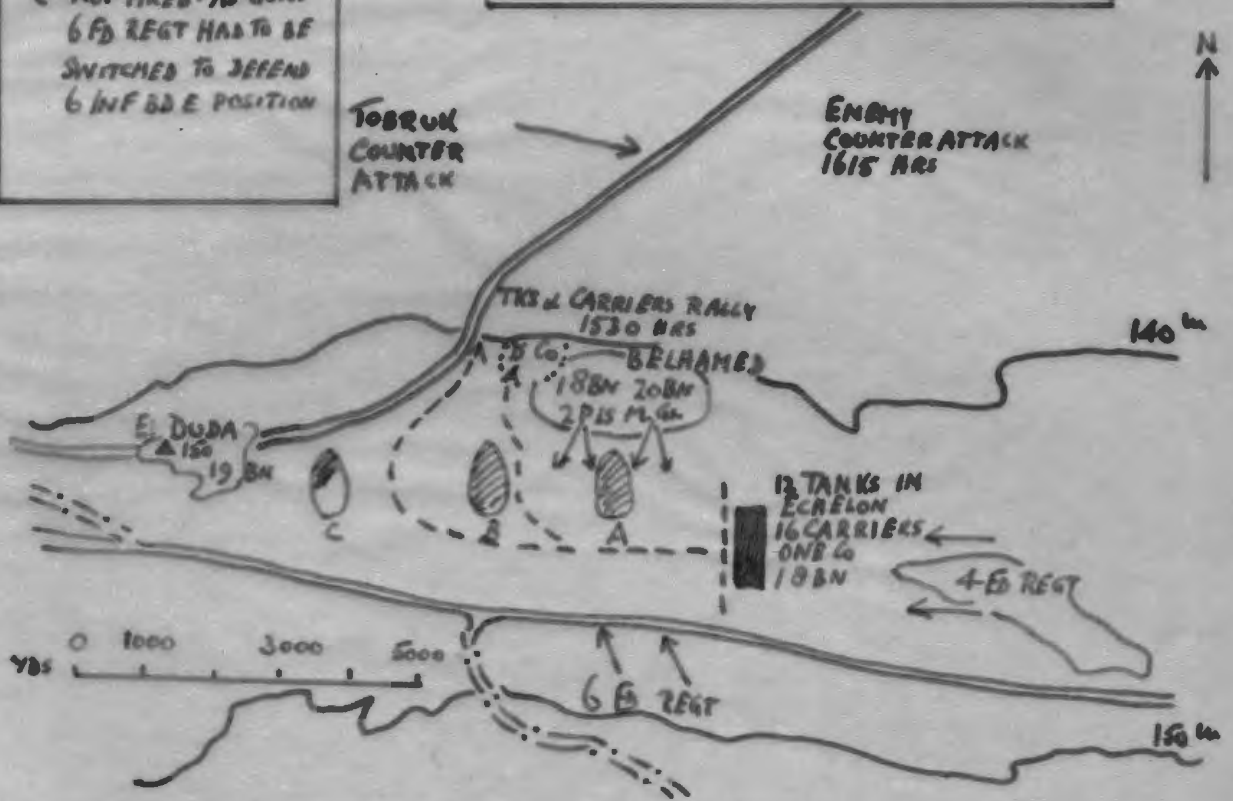
LEGEND

TANKS 
 CARRIERS 
 ARTY. 
 CONCENTRATIONS 

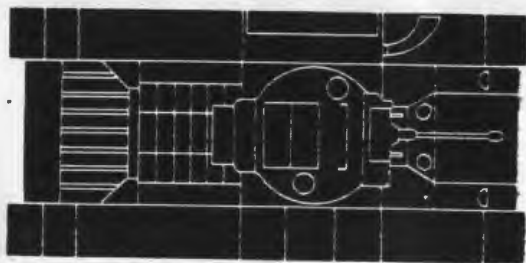
- A 1400-1403 HRS
4 NZ FD REGT 216 RBS
- B 1437-1440 HRS
6 NZ FD REGT 216 RBS
- C NOT FIRED - AS GUNT
6 FD REGT HAD TO BE
SWITCHED TO DEFEND
6 INF BDE POSITION

ATTACK BY 7 TANKS ON LOW GROUND
 BELOW BELHAMED 28 Nov 1400-1530 HRS
 600 PW'S TAKEN - OWN CASUALTES - 1 KILLED
 10 WOUNDED.
 1615 HRS COUNTER ATTACK FROM NORTH
 70 TANKS AND 500 INFANTRY.

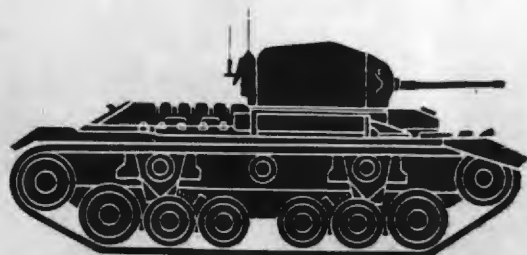
TOBRUK MET THIS WITH COUNTER-ATTACK
 FROM NORTH TAKING 400 PRISONERS.



VALENTINE TANK



17.8'



7.5'

CHARACTERISTICS:

Turret: Roughly cylindrical, with top sloping down in front and rear; large gun mantlet.

Hull: Low and wide, with corrugated horizontal rear deck; slopes down at rear; prominent, angular driver's cab set well forward; low-slung front end.

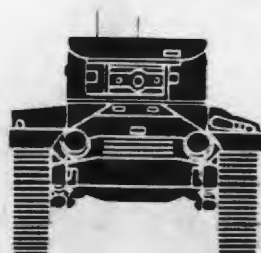
Armament:

One 2-pounder in turret.

One coaxial 7.92-mm machine gun.

Traction: Long, low full track; six bogie wheels, front and rear wheels larger than inner four; gap between forward and rear sets of three wheels; large driving sprocket in rear, idler in front.

8.7'



INTEREST DATA: This is a British vehicle, but Russia is now the principal user. The tank is fitted with three different but similar types of turrets. One model mounts a 6-pounder as main armament.

NOVEMBER 1943
FROM DATA CURRENTLY AVAILABLE
WAR DEPARTMENT FM 30-40

SPEED — 15 MPH

FORD — 3.0'

GRADIENT — 32°

STEP — 2.0' EST.

BRIDGE — 19 TONS

TRENCH — 7.8'

RESTRICTED



VALENTINE TANK

