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NIGHT RECONNAISSANCE
NECESSARY FOR NIGHT OPERATIONS?

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Roster Nr. 165

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PREFACE

31 January 1956

For the purpose of clarity to the reader, the following terms as used throughout the monograph are explained:

1. Night operations and night combat are used interchangeably. In either case they refer to any military tactical maneuver conducted at night. The principles discussed apply equally to any night tactical maneuver whether it be a night attack, raid, river crossing, occupation of a position, etc.
2. Reconnaissance - refers to the gathering of information by any means such as patrols, map and aerial photo study, or observation from observation posts or from the air.

On page 6 in the discussion, you will find listed four problems inherent in night operations. Further in the discussion, in the analysis and criticism of an operation, you will find these problems referred to as Problem #1, Problem #2, etc. To prevent needless thumbing through the pages back to page 6 these same problems are listed again in Annex "A". Open Annex "A" to the left and you will have the listed problems in view as a handy reference while you read the discussion.

Map illustrations of the combat examples used in the discussion Annexes "B", "C", "D", "E", and "F" are attached in the same manner. Open them to the right. Thus, you will have in view at all times, reading from left to right, the problems -

the discussion - the map illustration. This enables you to follow material being presented more clearly.

The point of view expressed in this paper is that of the author - not necessarily that of the Infantry School or the Department of the Army.

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INTRODUCTION

Ask any military man what phase of preparation and planning is most essential for the conduct of a night operation. The answer you will get most often will be "adequate daylight reconnaissance". He says this because of the emphasis put on daylight reconnaissance for night operations in our present training and in our military publications. Field Manual 7-10 (the infantry "bible") and Field Manual 7-20 have exactly the same statement concerning the matter, "Daylight reconnaissance by all leaders is highly desirable before all night operations, and essential for a night attack against a well organized defensive position. It is supplemented by reconnaissance patrols during darkness, and by the study of maps and aerial photographs." (2:18) (3:209)

I will not refute anything said in favor of adequate daylight reconnaissance, however, I believe that night reconnaissance should be considered far more important than just a supplemental means of reconnaissance. Commanders at company and battalion level should consider it a necessity for the preparation, planning, and the successful conduct of the operation.

So little emphasis has been put on this in most of our past experiences until it is extremely hard to find recorded combat examples that state anything about the use of night reconnaissance. There are two reasons for this; first, night reconnaissance was not used; second, in instances where it was used, it was considered of such minor importance that it was not mentioned in recording the operation. It is perhaps

much easier to find evidence in our study of past military operations to show that the lack of night reconnaissance has caused the failure of operations than it is to find concrete evidence pointing out how it contributed to the success of the operation.

DISCUSSION

To understand how night reconnaissance may contribute to the success of night operations, we must first consider some of the characteristics or special problems inherent in night combat. They are:

1. Gaining the element of surprise and capitalizing on the inherent fear of the darkness. This may result in success when normal daylight measures are less practicable.
2. There is a decrease in the effectiveness of aimed fire and a corresponding increase in the importance of close combat and having support weapons laid on definite targets or areas by day.
3. There is increased difficulty in movement, troop leading, maintenance of direction, contact, and control.
4. The morale of the troops is more highly sensitive to physical and psychological problems.

(5:157)

This is by no means an exhaustive list of problems that confront the commander who chooses or is forced to take advantage of the darkness. However, if the commander is able, by proper planning, to minimize the adverse effects of these, he has at the same time minimized the effects of other lesser but closely related problems.

The last problem listed, that of highly sensitive morale of the troops, is directly related to the first three prob-

lems. If you are able to surprise the enemy or keep your troops from being surprised at night, you are certainly taking advantage of your morale factor. You are further effecting the morale status of the men if you are able to give them proper fire support, properly orient them on the terrain, insure them that you can maintain directions, contact, and control, and effectively train them in close combat fighting. Hence, this discussion will be based primarily on - how can night reconnaissance help to solve our first three problems?

We can get the answer to this in no way better than to review past combat experiences and see what effect it had on them.

NIGHT ATTACK #1
(Annex "B")

On the night of 24-25 February 1945, the 3d Battalion, 63d Infantry was given the mission of capturing HILL "400" in the MONTALBAN sector of North Central LUZON. This key terrain feature, 2000 yards east of SAN ISIDRO and immediately north of the MARIQUINO River, dominated the MARIQUINO River Valley in the vicinity of the town of MONTALBAN.

North of the river, the enemy was known to have defensive positions on HILL "400" but the strength and exact locations of the positions were unknown. He had patrols operating in the SAN ISIDRO area. The enemy occupied the towns of SAN JOSE, SAN RAFAEL, and ZARAGOSA and MT. PACAWAGAN south of the river.

Between the 3d Battalion, which was located in covered positions approximately 5000 yards west of the river, and their objective was the open and exposed river valley extending north 4000 yards, disappearing in the foothills.

The battalion commander envisioned two courses of action. One, he could make a long envelopment through the foothills to the northeast. This route offered him cover and concealment. He made a personal aerial reconnaissance and rejected this route because: (1) The distance was too great. (2) He would be moving along a completely exposed flank. (3) Resupply and support would be difficult.

The commander decided on a second course of action - to attack due east over the valley floor at night since there was

no cover and concealment available for 3000 yards. He decided to use a fully supported attack and was assigned one 105mm artillery battalion, one 155mm artillery battalion, and one platoon of 4.2" mortars. He dared not base his attack on stealth and surprise alone due to the presence of enemy patrols in the SAN ISIDRO area.

On the night of 22-23 February, reconnaissance patrols went out and selected routes of advance and natural stream lines for use as phase lines. The phase lines along the streams were designated #1,2,3, and 4. A trail was picked as Phase Line #5 and a draw for #6. The patrol was unable to go past Phase Line #6. Key personnel were briefed on the terrain from information gained by the patrol.

Essentially the plan of attack was as follows: The battalion was to move to the edge of the woods, arriving there at 1600, and set up a perimeter defense. This was an attempt to deceive the enemy as to the battalion's future plans. The battalion was to cross the line of departure (edge of the woods) at 2200 in column. Security to the front was provided by reconnaissance and security patrols sent out by the leading company, and each unit was responsible for its own flank protection. The fire support was coordinated as follows: The 81mm and 4.2" mortars were to fire on Phase Lines #1,2,3, and 4; 105mm artillery fire on Phase Lines #5 and 6 and HILL "Y"; 155mm artillery on HILLS "Z" and "400". The 155mm artillery had a secondary mission of placing fire on SAN ISIDRO and ZARAGOSA. Support fire was to be lifted on call from the leading company commander or in the event of radio failure at

a prearranged scheduled time by phase lines.

The battalion moved out at 2000 in single file. The reconnaissance patrols, to the front and rear, were kept under visual contact. Phase Line #1 was crossed at 2120 without incident. At Phase Line #2, the moon became brighter and necessitated deploying into four columns with twenty-five yards interval between columns. Just forward of Phase Line #3, an enemy outpost was discovered on the left flank at Point "A". It was quickly neutralized with grenades. At Point "B", short of Phase Line #4, enemy security groups were heard talking. These groups were bypassed and Phase Line #4 was reached at 2220. Here, the battalion commander discovered he had lost contact with his rear elements. He halted the advance for a half hour while these units were guided forward and control was reestablished.

At Phase Line #5, a map discrepancy almost resulted in disaster for the attack. The map had shown HILL "Y" to be just forward of Phase Line #5, therefore, the artillery fire was lifted at this point. Moving forward, the units found it to be over 500 yards from Line #5 to the hill. Fortunately, the enemy had withdrawn and the hill was taken without incident. It was then occupied by "L" Company while "I" and "K" Companies moved on to Phase Line #6, the line of deployment for the assault on HILL "400".

Moving up in the assault, "I" Company became hopelessly entangled in dense underbrush at Point "C". The confusion and noise alerted the enemy who brought heavy fires on "I" Company from HILL "Z" (Point "E"), HILL "400" (Point "F"), and MT.

PACAWAGAN forcing them to withdraw. "K" Company, in the cover of the draw, held in position.

The following day, artillery fire reinforced by the Cannon Company placed effective fire on HILL "400". At the same time, the 81mm mortars cleared out the underbrush at Point "C". "K" Company jumped off at 1630 and seized the objective before dark.

The 3d Battalion had ten killed and thirty-five wounded while two-hundred thirty-four Japanese dead were counted.

(1:2)

ANALYSIS AND CRITICISM

Here, we have an example that clearly illustrates how night reconnaissance can materially contribute to the success of an operation; conversely, how lack of reconnaissance can result in failure. In saying that this operation might be considered a success or a failure, we are considering the fact that the objective was taken (successful operation), although it was not seized at night as planned (failure of the plan). It is not our object here to debate the success or failure of the operation.

The night reconnaissance patrol selected avenues of approach and identifiable terrain features for phase lines. By using the selected phase lines, the battalion commander was able to maintain control, regain contact when lost, and keep informed of the progress of his unit. These phase lines were also used in fire support planning for deciding which weapons

to use on each phase line and as a fire control measure in case communications went out. (Problems #2 and 3) The patrol oriented the key personnel on the terrain enabling them to maintain direction and effectively control support fire.

(Problems #2 and 3)

The reconnaissance and security patrol sent out in advance of the leading company eliminated one enemy security unit and detected and bypassed another. (Problem #1)

Two unknown factors cropped up during the attack, either one of which could have caused the operation to fail. First, the fact that HILL "Y" was over 500 yards from Phase Line #5, and, second, the existence of the underbrush that bogged down "I" Company's assault and alerted the enemy. (Problem #1)

Neither the information that was gained at night nor the two unknown factors could have been discovered by normal daylight reconnaissance because: (1) There was little or no concealment in the area, and the enemy had it under observation preventing daylight patrols. (2) The extreme range from the line of departure to the objective prevented a detailed terrain study from a ground observation post. (3) The enemy security units were not in position in the daytime. (4) Map study did not give enough detailed information of the terrain. (5) The battalion commander from his aerial observation post could not make a close enough terrain study to gain all the necessary information.

NIGHT ATTACK #2
(Annex "C")

In mid-September 1942, the Russians seized HILL "726", some ten miles north of OLENIO, RUSSIA, just west of MOSCOW. With this hill position, the Russians made a dent in the German main line of resistance which afforded them a sweeping view of the German rear area, thus hampering movement. Its rapid recapture was of vital importance to the Germans.

HILL "726" was defended by an infantry company of about seventy-five men. The defense system was organized in the form of strong points. The positions were well prepared, had good overhead cover, and were well camouflaged. Weapons and ammunition were placed so as to be used to the maximum advantage. The Russians had placed a belt of wooden mines, to which German mine detectors did not respond, completely around the hill. Gaps were left in the minefield to permit the passage of friendly patrols.

Company "G", 464th Infantry was given the mission of retaking the hill and restoring the main line of resistance. Company "G" made five or six attempts to retake HILL "726", but failed. In each case, the attack was halted at the very beginning because of heavy casualties incurred from mines and massed mortar fire.

Captain Viehman, the Commander of "G" Company, observed that the Russians confined their activity to the hours of darkness. The Russian reconnaissance patrols were very active, but only between midnight and dawn. During the day

their positions appeared deserted. Before the final attack, German reconnaissance patrols were able to identify the lanes that had been left in the minefields.

With the information he had gained, Captain Viehman decided to launch a surprise attack at dusk on 2 October. Using the cover of darkness, the assault troops moved from their assembly area into the jump off positions unnoticed by the Russians.

At a scheduled time, the two companies along the flanks of the German main line of resistance, facing the right and left sides of the hill, as well as machineguns, located on the southern slope, poured fire into the Russian positions. The German troops, on the main line of resistance, further diverted the enemy's attention by shouting. As this noise and shooting was going on, the assault elements attacked and penetrated the Russian minebelt through two previously identified gaps.

The defending Russians, confused by the fire and shouting, did not realize the true direction of the attack. They were taken completely by surprise; however, they did not panic or abandon their positions, but fought till the bitter end. After about an hour of hand-to-hand fighting, the entire hill was in German hands along with over twenty prisoners. They began immediately to consolidate for defense, and, an hour later, withstood a counterattack by about forty Russians. Only three of the counterattackers were able to get away. (7:40)

ANALYSIS AND CRITICISM

We are not told whether the patrols that discovered the gaps in minefields were day or night patrols; however, due to the fields of fire and observation afforded the Russians, it is safe to assume that this had to be night patrols. Finding these gaps was the key to the success of the operation. It enabled Captain Viehman to select his avenues of approach to the objective. (Problem #3)

In this case, the obstacle happened to be a minefield, but the principle could apply equally as well to other obstacles that cannot be detected by observation from observation posts such as areas contaminated by CBR agents. You have to actually get out on the ground to find this type of obstacle.

By observation at night the commander had been able to determine when the enemy was active and when he occupied his positions. This enabled the commander to select the most appropriate time to make his attack. (Problems #1 and 3)

NIGHT RAID
(Annex "D")

Late in the afternoon of 5 October 1944, the 1st Battalion, 115th Infantry, with a combat engineer company attached, was ordered to seize the town of SCHIERWALDENRATH, capture or destroy the defending garrison and withdraw. The battalion was presently occupying positions in KREUZRATH.

The 3d Battalion located in BIRGDEN was to conduct an attack simultaneous with that of the 1st Battalion to secure the "Island", a built up area between BIRGDEN and SCHIERWALDENRATH. This would provide the 1st Battalion a short route of withdrawal.

The 1st Battalion Commander necessarily decided to make a night attack due to the fact that there was about 1500 yards of open terrain between him and the objective that afforded him no cover or concealment. It would have to be an unsupported attack based on surprise and stealth because the battalion commander was informed that there were no supporting weapons, neither tanks, air, nor artillery available. He decided to attack at 0400 hours on the 7th.

On the following day, the 6th, the company commanders were able to reconnoiter the area in front of BIRGDEN and KREUZRATH from an observation post in a church tower in BIRGDEN. Information about the objective itself was gained from an American Lieutenant who had been in the town on a previous occasion. This reconnaissance was supplemented by the study of aerial photos.

On the night of the 6th, a combat patrol was sent out with two reconnaissance missions; one, locating enemy security detachments and machineguns; another, was to orient personnel on the terrain. These personnel were to be used as guides.

As a result of this thorough reconnaissance, the battalion commander was able to issue a detailed order. Company commanders were able to orient every individual and brief him on his duties.

The moon on the night of the 7th was bright, but a ground fog blanketed the area limiting the visibility to about 150 yards.

At 0400 the battalion crossed the line of departure and, using the previously oriented guides, crossed the entire field without incident. The entire move was one of stealth and silence. As the battalion reached the objective, there were a few scattered shots on the left flank and then silence again. Two machineguns opened up, but it was too late, the assault companies had reached the enemy perimeter of defense without being detected. They drove right through the German main line of resistance and continued on to their objectives.

The objective had been taken by complete surprise and it had paid off. The attacking companies had been able to get through the main line of resistance before effective fire could be brought to bear on them, and had moved on and caught the reserves in the cellars. They soon surrendered or were taken care of with grenade fire.

By 0610 all attacking companies were on their objectives

which they held against superior counterattacking forces until the engineer company was able to complete its demolition mission.

As soon as the mission was accomplished, the battalion withdrew to BIRGDEN. The town was completely destroyed. Ninety-nine prisoners were taken and fifty-four dead were counted. (7:28-33)

ANALYSIS AND CRITICISM

A combination of daylight and night reconnaissance paid off in the successful accomplishment of this mission. From the observation post, the company commanders had been able to study the terrain. By aerial photo study along with information gained from the lieutenant who had been in the town, the layout of the town was learned. This is all good, however, there were certain items of information that could only be gained by night reconnaissance.

The night patrol had located the security units and two machineguns of the enemy which enabled the assaulting companies to reach their objective quietly and without incident. (Problem #1) Personnel were oriented on the ground to be used as guides to help maintain direction during the advance and to bypass the enemy security units. (Problems #1 and 3) This could only be done at night because: (1) The security units were not in position in the daytime. (2) The guides had to see the ground at night. Even though you study the ground from an observation post in daylight, it is not sufficient

because the ground does not appear the same at night as it does in the daytime. (Problem #3)

RIVER CROSSING
(Annex "E")

On the night of 4-5 November 1943, the 3d Battalion, 168th Infantry was to cross the VOLTURNO River with the mission of seizing the high ground (the left nose of HILL "400") approximately 3000 yards beyond the river.

There were estimated to be two companies of enemy with numerous automatic weapons between the river and the high ground. It was thought that the area was heavily mined. The terrain picked for the avenue of approach was low and level for about 1500 yards and then rose sharply to the objective. The level area was dotted with olive groves and vineyards growing on supporting wires.

The battalion commander, his staff, and company commanders had several days in which to study the terrain to their front by long range observation from the battalion observation post. Further reconnaissance was limited to map and aerial photo and mosaic study. Patrols, sent out by battalion, had been driven back by automatic weapons fire each time as soon as they had worked their way across the river. From this reconnaissance, the river was selected as the line of departure. The road running generally perpendicular across the sector was designated as the Phase Line #1. The railroad parallel to the road was to be Phase Line #2.

The battalion started crossing the river at 2300 under cover of intense artillery fire. Advance patrols had strung ropes across the river for use as guides. Few casualties were

suffered from sporadic small arms fire during the crossing. The leading companies had advanced only about 50 yards from the river bank when suddenly they encountered minefields and booby-traps rigged in the grapevines. Severe casualties were suffered from these obstacles. Within an hour after the crossing, all three rifle company commanders had been wounded. They had been wounded while actually crawling at the head of their units disarming the "S" mines. The effect of the minefields on the control was serious and the advance was thrown into confusion. Contact was lost between the leading companies, but by use of the pre-determined phase lines, control and contact was regained so that a coordinated attack could be made.

Heavy underbrush on the sharply rising ground made the advance difficult. The assault was initiated immediately because of the danger of being caught short of the objective at dawn. The enemy withdrew in confusion, so the assaulting companies secured the objective without any close fighting.

(6:14-17)

ANALYSIS AND CRITICISM

"Timely, adequate intelligence is essential for a successful river crossing." (4:5) To provide adequate intelligence, you must have information on various subjects including "natural and man-made obstacles, to include data on location and extent of natural and man-made obstacles, and their possible effect on movement of both foot troops and vehicles."

(4:6)

In this river crossing adequate intelligence was not available. With the reconnaissance means used, long range observation and map and aerial photo study, the battalion commander was unable to discover whether or not there were actually minefields between him and the objective, and, if so, where and how many.

We do not know whether the patrols sent out were daylight or night patrols. First, let us assume that they were daylight. It is highly possible that small patrols operating at night could have been able to detect the minefields and the heavy underbrush in the area. Second, let us assume that the patrols during the planning were night patrols and were still unsuccessful in reconnoitering the far bank of the river. In this case, during the actual conduct of the crossing, it would have been highly beneficial to have reconnaissance and security units leading the assaulting companies. Since it was suspected that the area was mined, these reconnaissance and security units equipped with detectors, if available, and trained personnel to disarm mines, could have detected the obstacle and cleared it. Allowing the rifle units to enter the minefields and the company commanders to undertake the job of disarming the mines resulted in confusion and loss of control. (Problems #3 and 4)

OCCUPATION OF A POSITION AT NIGHT
(Annex "F")

In June 1942, in LIBYA, a German Infantry Battalion composed of only two companies (the "9th" and "10th") and an artillery battery arrived at a new position at 0230 and began at once to prepare for defense. They left a space about 500 yards between the companies for the "11th" Company which was to move up into position later.

Before moving into position, no reconnaissance was carried out. Neither reconnaissance nor security units were put out in consolidation of the position. At dawn, the German Battalion Commander immediately became aware that the companies were in very close contact with the British positions and completely dominated by them, being overlooked from the front, the left flank, and the rear. The field of fire from the German positions was limited to a few yards. The space between "9th" and "10th" Companies, left unoccupied, was found to be a knoll which prevented visual communications between the two companies.

The British immediately opened up an intensive fire of all weapons which prevented the withdrawal of the battalion and cut telephone communication. Following up the fire by sending out tanks and armored cars, the British outflanked and overran the "9th" Company. The artillery in support of the "9th" Company tried to lay down defensive fires, but was unable to bring direct fire to bear because they were in a low position. The artillery fire was neutralized by British counterbattery fire.

Having neutralized the "9th" Company, the British then concentrated on the "10th" Company. When the artillery fire subsided and the dust and smoke cleared, "10th" Company found about twenty tanks and armored cars on top of it. The fire from these completely nullified the weak counterfire from the "10th" Company. An anti-tank gun managed to get off a few rounds, but the commander in charge of the gun told the company commander that his armor-piercing shells merely bounced off the tanks. Thus, the "10th" Company was overrun.

After neutralizing the infantry units, the British armor advanced on the artillery battery position and captured the adjutant who was wounded, other officers of the battalion headquarters, some infantrymen, and the few artillerymen who stayed with their guns. Only a few of the men were able to escape. (9:16)

ANALYSIS AND CRITICISM

This is a prime example of how lack of reconnaissance, especially night reconnaissance, resulted in the destruction of an infantry battalion. The Germans were denied daylight observation and reconnaissance of the terrain due to the fact that they arrived in the area after dark. However, by use of night patrols, they could have learned many things about their situation. They could have detected that the surrounding terrain dominated their positions, and that this dominating terrain was occupied by enemy units. Knowing this, the Germans could have selected better defensive terrain to occupy. (Prob-

lems #1 and 3) They could have positioned their infantry weapons so as to get longer fields of fire and their artillery so that it could give maximum support. (Problem #2)

Two other means of reconnaissance could possibly have eliminated this situation: (1) By thorough map study, it may have been possible to select better defensive positions. (2) Aerial photo study could possibly show or at least give indications of enemy positions in the area.

CONCLUSIONS

Night reconnaissance is necessary for the proper planning and conduct of night operations when:

1. There is not adequate time available to make a daylight reconnaissance.
2. The distance from the line of departure to the objective is extreme, preventing detailed ground study from an observation post behind the line of departure.
3. The defending enemy has observation and fields of fire covering the area between the line of departure and the objective.
4. The enemy has security units occupying positions out to his front at night and withdraws them before daylight.
5. In the approach, leading the assaulting elements.

The very same conditions that dictate a need for night combat usually dictate a need for night reconnaissance to gain information necessary for planning and conducting the operation. When this is the case, you need night reconnaissance to:

1. Investigate the terrain and select avenues of approach and identifiable features to be used as phase lines and control points.
2. Orient key personnel on the terrain to be used

as guides.

3. To become familiar with the terrain at night because it will not appear the same at night as it does in the daytime.
4. Locate obstacles such as minefields and CBR contaminated areas.
5. Locate enemy security units.
6. To plan and coordinate your fire support.

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ANNEX "A" (PROBLEMS INHERENT IN NIGHT OPERATIONS)

1. Gaining the element of surprise and capitalizing on the inherent fear of the darkness. This may result in success when normal daylight measures are less practicable.

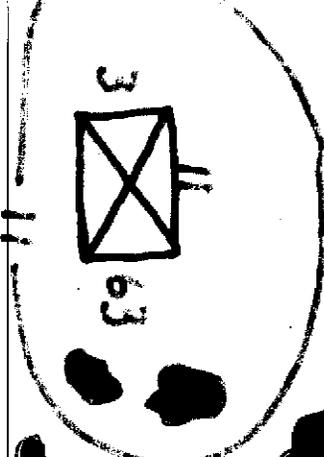
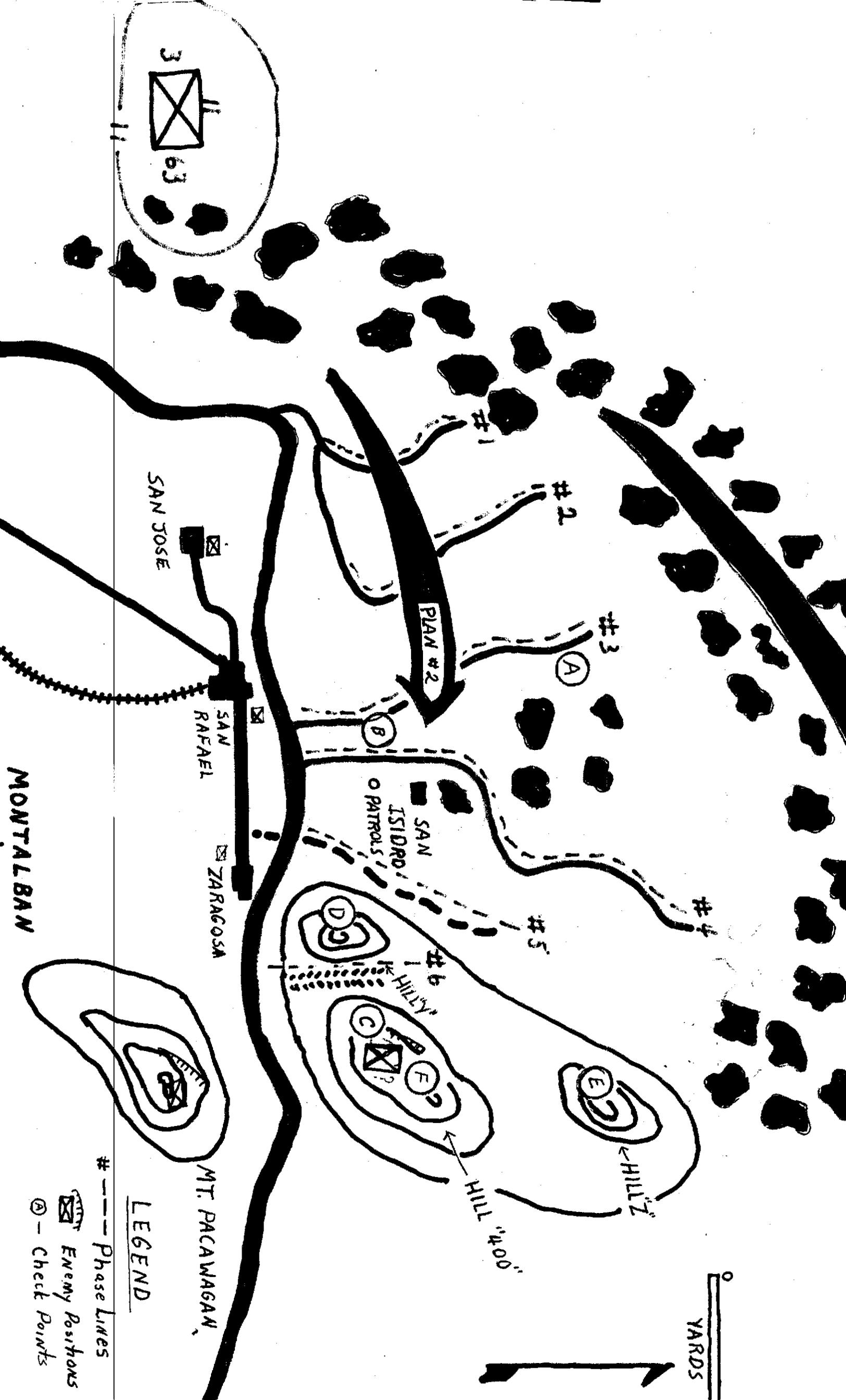
2. There is a decrease in the effectiveness of aimed fire and a corresponding increase in the importance of close combat and having support weapons laid on definite targets or areas by day.

3. There is increased difficulty in movement, troop leading, maintenance of direction, contact and control.

4. The morale of the troops is more highly sensitive to physical and psychological problems. (3:157)

ANNEX "A" (PROBLEMS INHERENT IN NIGHT OPERATIONS)

Instructions - Open this page to the left and leave this loose side out so that you will have the listed problems as a handy reference as you read the discussion.



SAN JOSE

SAN RAFAEL

ZARAGOSA

SAN ISIDRO PATROLS

MT. PACAWAGAN

PLAN #2

HILL "A"

HILL "400"

HILL "Z"

LEGEND

--- Phase Lines

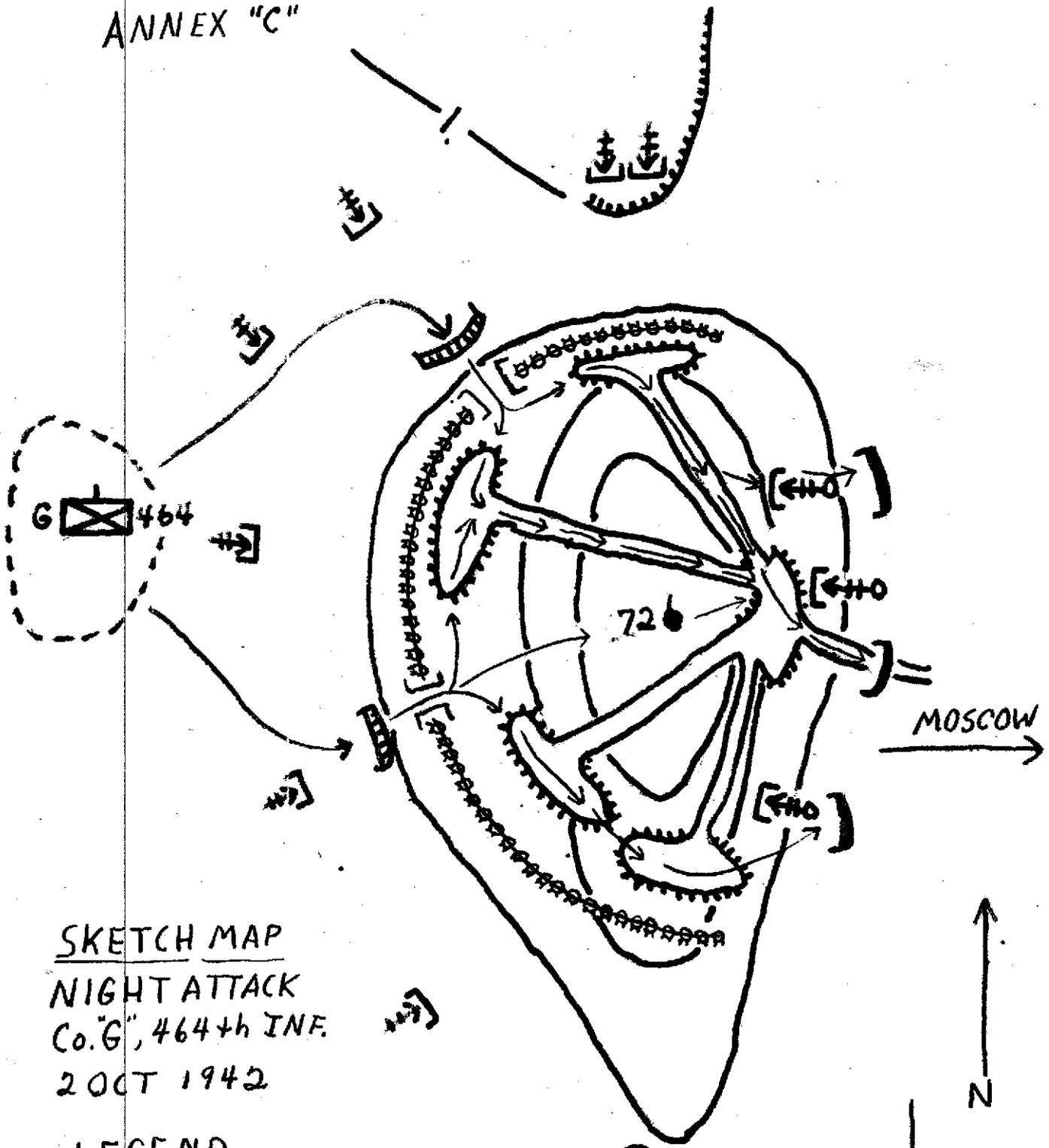
[Symbol] Enemy Positions

(A) Check Points

YARDS

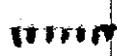
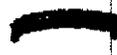
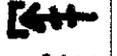
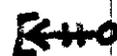
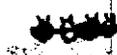
MONTALBAN

ANNEX "C"



SKETCH MAP
NIGHT ATTACK
Co. "G", 464th INF.
2 OCT 1942

LEGEND

-  German MLR
-  German Assault Pos.
-  German Defense Pos.
-  German Machinegun
-  Russian Strongpoint and Commo. Trench
-  Russian Mortar
-  Wooden Mines



OLENIO
(10 Mi.)

ANNEX "D"

LANGBROICH
←

SCHIERWALDENRATH



(ISLAND)

KREUZRATH

BIRGDEN

LD

3  115

A  115  115

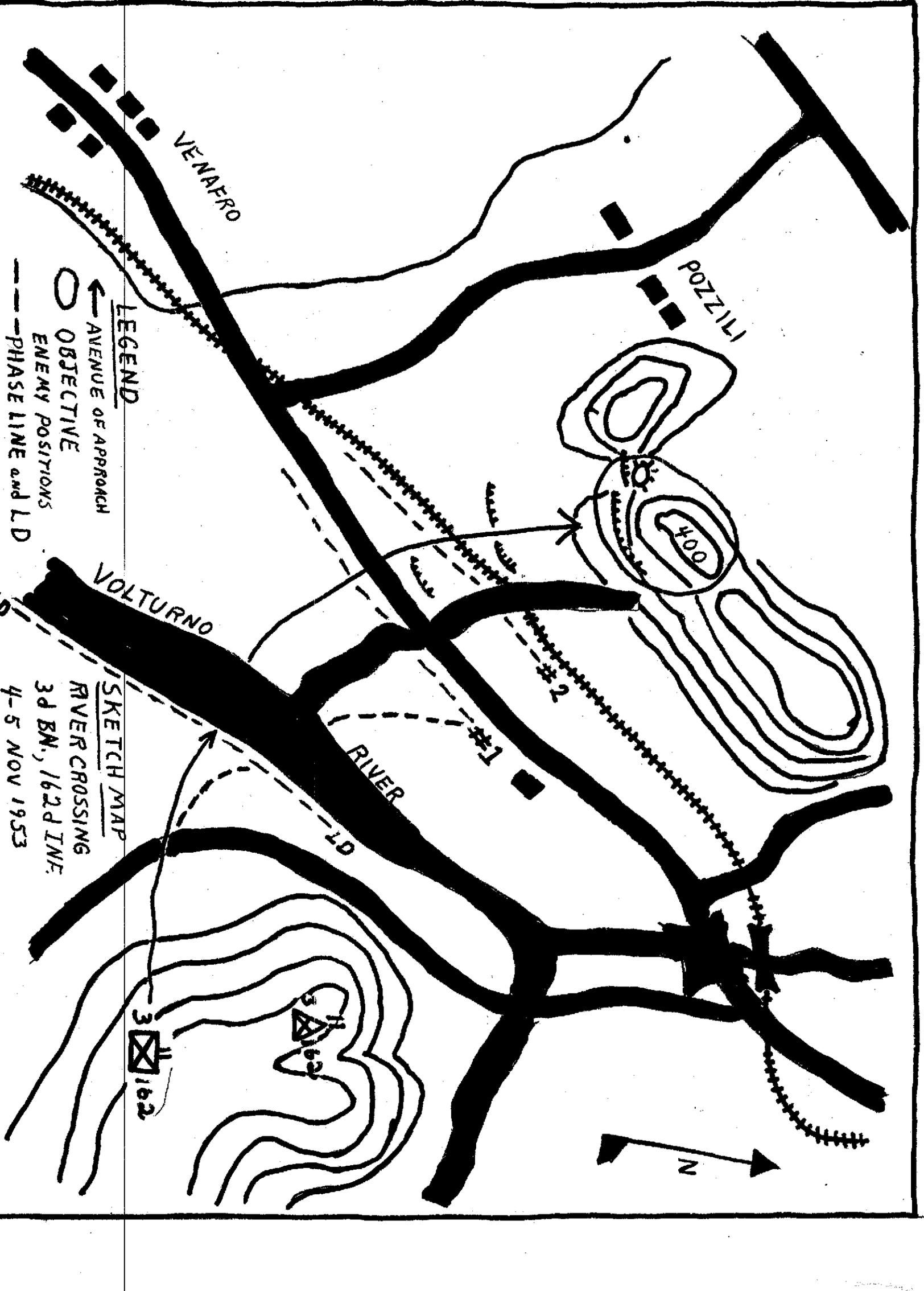
LEGEND

-  OBJECTIVE
-  BUILT UP AREA

SKETCH MAP
NIGHT RAID

1st Bn., 115th INF.
6-7 OCT 1944





VENAARO

POZZILI

LEGEND

- ← AVENUE OF APPROACH
- OBJECTIVE
- ENEMY POSITIONS
- - - PHASE LINE and LD

VOLTURNO

RIVER

SKETCH MAP

RIVER CROSSING
3D BN, 162D INF.
4-5 NOV 1953

400

31162

31162

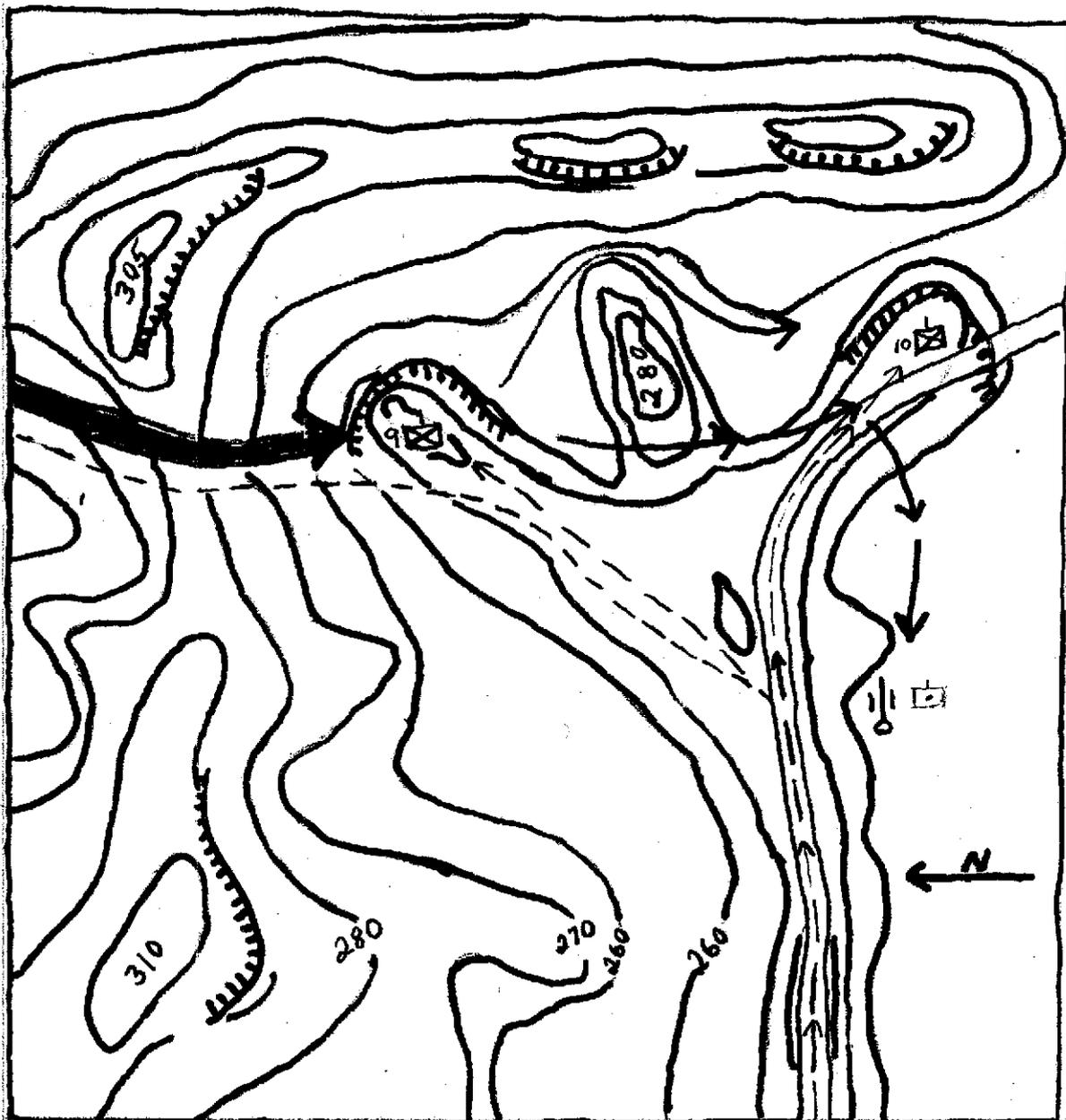
N

Q7

#1

#2

ANNEX "F"



SKETCH MAP

GERMAN POSITIONS
"9th" and "10th" Cos.
JUNE 1942
LIBYA

LEGEND

- ← GERMAN ROUTE
- ← BRITISH ADVANCE
- GERMAN POSITIONS
- BRITISH POSITIONS
- 10 FT-CONTOUR INTERVAL
- 0 500 1000 YARDS