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IN REPLY REFER TO

AGAM-P (M) (21 Feb 68) FOR OT RD 68X002 27 February 1968

SUBJECT: USARV Seminar Report: Attack of Fortified Positions in the Jungle, dated 2 January 1968

TO: SEE DISTRIBUTION

1. Forwarded as inclosure is a report, subject as above.

2. Information contained in this report is provided to insure appropriate benefits in the future from Lessons Learned during current operations, and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

C. A. STANFIEL
Colonel, AGC
Acting The Adjutant General

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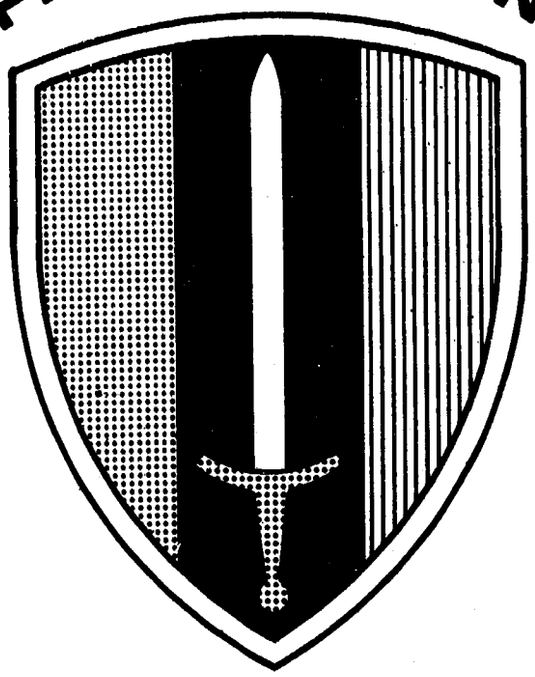
USARV

ATTACK OF FORTIFIED POSITIONS IN THE JUNGLE



SEMINAR REPORT

2 January 1968

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DEPARTMENT OF THE ARMY
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IN REPLY REFER TO
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31 JAN 1968

SUBJECT: Report of the Seminar on the Attack of Fortified Positions in the Jungle

TO: SEE DISTRIBUTION

1. The USARV Seminar on the attack of fortified positions in the jungle was conducted at Long Binh on 2 January 1968. The chairman was Brigadier General Frank H. Linnell, United States Army, Deputy Chief of Staff (Plans and Operations), JSARV.

2. The report of the seminar contains copies of the presentations made by participating commands and a summary of the consensus of the participants concerning key topics discussed.

FOR THE COMMANDER:

D. E. TUMAN
Major, AGC
Asst Adjutant General

1 Incl
as

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TABLE OF CONTENTS

SUMMARY OF THE DISCUSSIONS

The seminar was conducted to discuss the enemy use of fortified positions in the jungle and analyze the tactics and techniques used by FWMAF in attacking these positions. Several of the major units concerned had not engaged enemy fortifications in jungle terrain, but had encountered fortified positions in their tactical area of responsibility. Each speaker devoted his portion of the program to the attack and reduction of fortified positions with emphasis on those major lessons learned. A portion of the seminar was devoted to a discussion of the key points raised in the presentations and a brief summary was conducted by the chairman. The main items discussed during the several presentations have been summarized below. Complete narratives of each speaker are included as separate annexes to this report.

It was determined that the major problem was still the location of the enemy in his fortified positions and base camps. Once the enemy had been located, all available firepower and force is employed to 'root out' the entrenched NVA or VC. The search for the enemy must proceed in a slow and deliberate manner to insure that the lead element detects the position before the main body comes into direct contact. All available fire is employed to clear away the camouflage, mines, and booby traps and hopefully to destroy some of the bunkers. The attack and reduction of the position is methodical, one bunker at a time.

PLANNING: Planning should be continuous, centralized, and in great detail. Plans should be completely thought-out to insure that each rifleman fully understands what is to be accomplished, how it is to be accomplished, and what means are to be used to get the job done. The last man in the chain must understand the plan.

KNOW YOUR ENEMY: Many problems can be avoided if a close study is made of the tactics and techniques of the enemy forces operating in a specific area of operation. Data should be collected and evaluated to determine what the enemy can be expected to do.

DETECTION OF TUNNELS OR BASE CAMPS: The best way to locate tunnels or base camps is to study the area of interest looking for the following indicators:

1. Movement of VC in a specific direction after being spotted by aircraft or patrol.

2. Sniper fire from an area with no easily located routes of ingress or egress.

3. Vegetable gardens in an area not inhabited.

Once the area of search has been narrowed, aerial photography should be taken of suspect locations on a recurring basis and studied by image interpreters. This can be followed by interrogation of local populace, Chieu Hoi's, and returnees who have occupied or helped in digging the tunnel system.

USE OF TRACKER DOGS: Tracker dogs can be effectively employed to follow suspected Viet Cong who are detected moving into a suspect area. Tracker teams must be accompanied by a friendly unit for protection.

CONSTRUCTION OF ENEMY BASE CAMPS AND FORTIFIED AREAS:

1. Local inhabitants are used to construct tunnels and fortifications.

2. Bunkers are constructed from locally available materials.

3. Positions are interconnecting and mutally supporting.

4. Firing apertures are small, located close to the ground, and extremely hard to see.

5. Brush and growth in fire lanes are cleared up to 18" high and difficult to detect.

6. In some areas, particularly in I Corps, the fortifications are directional in nature.

7. Camouflage is exceptional; in most instances, bunkers cannot be detected until the unit is fired upon.

8. Bunkers are built with a very low silhouette that blends into the natural growth of the area.

9. Trench lines are constructed in depth; tunnels connect these trench lines and provide safe and easy access to the numerous bunkers and fortifications.

ENEMY TECHNIQUES AND TACTICS: The enemy will allow the friendly force to penetrate his position, seal the opening, and destroy the force trapped inside.

1. With the connecting tunnels and trenches, the enemy can move his forces and bring pressure to bear in any location.

2. Bypassed bunkers may be reoccupied, if not destroyed by the attacking unit.

3. NVA units will outflank the attacking force, probe and find the weak point, and attack the flanks and rear of the unit.

4. Booby traps and antipersonnel mines are placed on all avenues of approach, in anthills, mounds, dikes, trees, or other places which may afford protection to the attacker.

FRIENDLY TECHNIQUES OF ATTACKING A FORTIFIED POSITION:

1. Movement should be deliberate and cautious.

2. Find the enemy position with the smallest element possible.

3. Use all available fire support elements to clear out camouflage and booby traps, and destroy fortifications.

4. Bring supporting fires in close to the attacking force.

5. Attack in a methodical manner to destroy one bunker at a time.

6. Shift supporting fires to block an exposed flank and deny enemy ability to envelop the attacking force or to reinforce his positions.

7. Use 90mm recoilless rifle to destroy the bunkers and fortifications.

8. Do not bypass bunkers; have supporting engineers destroy each bunker as it is overrun, or occupy it until it can be destroyed.

9. Carry protective masks to allow employment of CS if desired by the ground commander.

10. Keep artillery and mortar forward observers well forward to insure supporting fires are being effectively and accurately used.

11. The use of white phosphorus grenades is an excellent means of forcing the enemy out of bunkers.

12. When possible, avoid advancing in the open; use cover and concealment provided by hedgerows, dikes, and tree lines.

USE OF SUPPORTING ARTILLERY:

1. Artillery fires should be massed whenever possible. This may not result in total destruction of the fortifications, but will greatly reduce the camouflage and concealment, and eliminate most of the booby traps and antipersonnel mines.

2. Artillery fire plans should be detailed and coordinated with the close air support. These fires should complement each other.

3. Blocking fires should be used to force the enemy to remain in his positions or to interdict his routes of withdrawal.

4. Riot agents (CS) are effective in forcing the enemy to abandon his bunkers and trenches. A technique of firing an artillery prep, followed by CS, followed by a TOT is very effective in producing casualties in some types of terrain.

5. Naval gunfire should be included in the fire support plan if available.

6. Delay fuzing will allow penetration of the jungle canopy and bring the rounds onto the target.

7. Artillery fire should be placed behind the enemy force and 'walked forward' toward the friendly unit to provide covering fire and enable engaged forces to withdraw and extract wounded.

TACTICAL AIR SUPPORT:

1. Pilots should be sent to ground units to develop a better understanding of the ground commander's problems.

2. Tactical aircraft must have a direct hit to destroy bunkers and fortifications. Delayed GP bombs are most effective in this role. Napalm is effective in clearing away camouflage, concealment, and booby traps.

3. 750 pound high drag bombs are the most effective ordnance to assist in knocking down trees and clearing jungle growth to establish landing zones.

4. Air Force personnel should be included in the planning phase of each operation. This will allow for better coordination of fire support for the operation, and provide an opportunity for the Air Force to make necessary map and aerial photo reconnaissance prior to the actual attack.

5. The pilot should endeavor to see the target, if possible, before engaging it. This affords the pilot a better opportunity to hit the target than he would if the FAC attempts to guide him from smoke near the target.

USE OF ENGINEERS: Engineers can be effectively employed to closely follow the attacking force and destroy bunkers, fill in trenches, construct LZ's for medevac and resupply, and police the battle area. Dozers are particularly well suited for covering up and destroying the fortifications and bunkers.

USE OF TANKS AND APC'S IN SUPPORT OF ATTACKS ON FORTIFIED POSITIONS:

1. If the terrain and vegetation will permit, tanks and APC's can be employed effectively in attacks on fortified positions.

2. The cannister round from the main armament of the tank will clear away the camouflage and expose the enemy fortifications. HE fuze delay will penetrate the position and kill the enemy inside; HE superquick can be used to open the sides of the bunker.

3. A dozer tank provides the capability to actually destroy the bunker and fill in the trench system as the attacking force moves through the position.

4. Use of tanks will reduce the effects of antipersonnel mines and booby traps.

5. APC's provide cover from small arms fire and protection against grenade fragments.

6. The weight of the armor will crush the top of the bunkers and bury the enemy inside.

7. The machine guns of the APC's can be used effectively as support fire weapons and covering fire for the assault teams.

8. Flamethrower APC's should be used if possible. These items are effective as a psychological weapon as well as for their killing effect.

BREAK OR MAINTAIN CONTACT: There are two schools of thought on actions to be taken once the enemy has been located. One method is to break contact and bring maximum firepower to bear on the enemy force, then move in and "root out" the dug in NVA or VC. The other is to keep close to the enemy force and reduce him by fire and movement.

TRAINING EMPHASIS: Training must be conducted in the use of special equipment and tactics used to attack a fortified position. This training will include the use of flamethrowers, satchel charges, LAW and other special devices used in this type of operation.

REQUIREMENTS FOR IMPROVED CAPABILITY TO CONDUCT ATTACKS ON FORTIFIED POSITIONS:

1. Munitions or devices to clear LZ's rapidly.

2. Marking device to penetrate jungle canopy.

3. Improved capability for aerial photography that will detect fortified positions in the jungle.

4. Devices for detection of the enemy tunnels and fortifications.

5. Destruction devices which are easily transported and capable of rapidly destroying tunnel complexes.

CONCLUSION

FUNDAMENTAL PRINCIPLES: It was agreed that the fundamental principles as presented in the various publications and manuals are sound. Correct application of these principles normally results in success on the part of the FWMAF. When ignored or not applied correctly, friendly casualties increased and the enemy was able to withdraw to fight another day.

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USARV INTRODUCTORY REMARKS

Before the first discussion is presented, it may help to establish a common understanding with a brief discussion of the doctrine and principles involved in attacking a fortified position in the jungle. This will be established by reviewing those key points which must be considered in conducting this type of operation. Please keep in mind that these first introductory remarks are taken from existing publications, manuals, and published doctrine.

A fortified area is referred to in FM 31-50 as an area "containing numerous defensive works. These may include fortified weapons emplacements or bunkers, protected shelters, reinforced natural or manmade caves, entrenchments and obstacles." A fortified position is "a series of strongly fortified localities disposed in such a manner as to be mutually supporting."

SLIDE 1

In the attack of fortified positions, the defender has the advantage in that he has selected a location which affords concealment and protection against fires. Fields of fire and observation allow him to cover approaches into his area. His prepared obstacles, carefully planned fires, use of antipersonnel mines, and thoroughly rehearsed counterattack plans give him additional advantages. The attacking force has limited visibility and is moving through thickets, heavy brush, briars, uphill, or all of these at once.

The attack of a fortified position follows basic principles of offensive operations, however, greater emphasis is placed on detailed planning, special training and rehearsals, increased fire support, and use of special equipment.

When attacking a fortified position in a jungle area, manmade obstacles such as heavy bunkers, protective and tactical wires, and mines will be encountered. The enemy will have to be burned or blasted out of his positions. This will require a great amount of firepower and frontages must be narrowed to insure concentration of these fires. Limited objectives must be established to facilitate control.

Planning for the attack should be continuous, centralized, and in great detail. Plans must provide for the possibility of encountering previously undetected bunkers. The scheme of maneuver, attack formations and control measures must be carefully planned in advance. Fire support is detailed and includes all weapons to be used in support of the attack. Indirect fire weapons are tasked to destroy camouflage and mines, interdict movement of reserves, neutralize artillery positions, support the attack and provide smoke. Direct fire weapons are used to destroy bunkers. Smoke from these weapons may also be used to reduce enemy observation.

The preparatory phase of such operations will involve the construction and improvement of roads, trails, and LZ's under friendly control to permit the movement of supplies, ammunition and weapons that are to support the attack. Arrangements should be made for maximum artillery preparation and continuous artillery support. The artillery may require several days to select positions necessary to provide the support desired.

Plans are established for the use of tactical air. Forward air controllers make ground reconnaissance and aerial flights to accurately locate the targets for preparatory bombing, rocket, and strafing attacks.

Jungle operations lack the characteristics of offensive operations in more navigable terrain. The operations become a series of decentralized small unit engagements. Subordinate unit commanders must exercise initiative and be allowed freedom of action.

The criteria for the successful attack of a fortified position does not materially differ from that applied to operations in more open terrain. However, due to the difficulty of planning for and launching an attack in the jungle, it is well to review basic requirements for conducting an attack as indicated on this slide.

SLIDE 2

Information on the location and strength of the enemy and the terrain can best be obtained by reconnaissance and patrolling. It is usually not possible for a commander to get a good picture of the area over which he must attack by personal reconnaissance. Patrols will be the primary means of obtaining this information. Squad leaders, platoon leaders and, in many instances, company commanders must be prepared to assault without first seeing the ground or the objective. A high standard of aerial photography and map reading is particularly essential.

Control of the attack in a jungle depends upon the commander and his subordinate leaders having current information about the progress of the attack and having efficient means to pass information to all concerned. The commander increases his control of the attack by positioning himself where he can observe the action. Communications are the key to command control in jungle operations. Good communications can be facilitated by establishing a small headquarters on a reduced scale well forward before the attack starts. This headquarters should be sited in a position favoring the use of radio equipment and aerial relays should be used, if available.

The attack is conducted with a formation similar to that used in a night attack in the open. Distance and intervals are reduced and the column formation is maintained as far forward as possible. Fire support is most essential. Artillery and mortar forward observers may have to bring supporting fires extremely close to the attacking unit. During the assault, supporting fires should continue until they are lifted or shifted by the assaulting commander.

They are then moved to cover specific targets that will assist the progress of the assaulting force or protect an exposed flank. Because of terrain and visibility restrictions, an assault line is not normally formed. Rather, aggressive fire and movement by assaulting fire teams are conducted to overcome enemy resistance. Upon reaching the fortifications, emplacements are neutralized by the assault group using direct fire weapons, grenades, special explosive charges and flamethrowers. After the objective is overrun, it must be secured immediately with a hasty perimeter, security established and preparations made to repel a counterattack.

The foregoing has merely been a reiteration of the information presented in published field manuals. The conflict in Vietnam may have changed some of these guide lines in certain instances and situations.

Much has been written about the overwhelming superiority in firepower enjoyed by the Free World Military Assistance Forces. This is a fact only from an overall viewpoint. In the initial stages of the most frequent contacts in Vietnam, when the enemy situation is being clearly developed and fire support brought to bear, the bulk of our casualties are sustained. Finding the enemy is still the primary problem. If the enemy's precise location and strength can be determined, a coordinated attack can be executed using the guide lines stated previously.

Only rarely have maneuver units been able to fix the NVA or VC in position. Even penetrating his position fails to prevent withdrawal and blocking forces have not been very successful. Heavy and continuous fires on his routes of withdrawal are more effective than attempts to block and surround with maneuver units. The enemy, however, is skillful in the use of both cover and concealment and can usually withdraw his elements using prepared withdrawal routes, connecting tunnels, or the numerous accidents of terrain which cover him from fire.

As the seminar progresses, these thoughts should be kept in mind:

Is the published doctrine sound or is it outdated?

Are there new ways to apply this doctrine which takes into account the special problems encountered in Vietnam and adapts current teaching to the real situation faced by the commanders in the field?

It is possible that operations in the past did not conform to these principles, but were successful.

We are interested in analyzing these situations to determine their value in planning future operations.

The preparatory phase of such operations will involve the construction and improvement of roads, trails, and LZ's under friendly control to permit the movement of supplies, ammunition and weapons that are to support the attack. Arrangements should be made for maximum artillery preparation and continuous artillery support. The artillery may require several days to select positions necessary to provide the support desired.

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18

SETTING

PLANNING

CHARACTERISTICS

CRITERIA

ENEMY INFORMATION

CONTROL OF THE BATTLE

CONDUCT OF THE ATTACK

SLIDE 1

THE ATTACK MUST BE ORGANIZED IN DEPTH

LINE OF DEPARTURE MUST BE SECURED

ATTACK MUST BE SUPPORTED BY ALL AVAILABLE FIRES

ASSAULTING UNITS MUST KEEP CLOSE TO SUPPORTING FIRES

MOMENTUM OF THE ATTACK MUST BE MAINTAINED

SUPPORTING WEAPONS MUST DISPLACE FORWARD RAPIDLY

AREAS ADJACENT TO THE OBJECTIVE MUST BE DOMINATED

REORGANIZATION MUST BE RAPID AND COMPLETE

MACV PRESENTATION

The purpose of this briefing is to describe typical enemy fortifications used throughout the Republic of Vietnam. Major structure systems will be discussed with emphasis on the one of greatest significance to the VC insurgency effort; tunnel complexes.

"In any war, conventional or guerrilla, fortifications play a very important role, they provide security and increase the effectiveness of sudden action. In addition, they are excellent caches for troop formations, weapons, and equipment. They also increase the combat capabilities."

The preceding statement from a captured VC document shows the importance placed on fortifications by the Viet Cong. The same document continues:

"During our countersweep operation, enemy vehicles were heavily damaged. If our fortifications were more effective, we would have attained a greater victory. Therefore, in any form of combat, raid or ambush on a post, fortifications decrease the number of casualties and assure our victory on the enemy."

In view of this doctrine and the wide spread use of all types of field fortifications throughout the Republic of Vietnam at present, it is logical to assume that continued reliance will be placed in these fortifications.

All VC fortifications have certain general characteristics. They are basic in their construction and built from materials which are readily available in the area which they are to be located. Always of prime consideration is camouflage of the structure or system using both natural and artifical material. The VC increase the utility of their fortification system by using various types of combinations of surface structures and tunnels. Mines and booby traps are an integral part of VC fortification systems.

The five types of VC fortifications to be discussed are: trenches, bunkers, foxholes, gun emplacements and tunnels.

SLIDES 1 AND 2

Trenches are found in many designs depending upon the purpose for which they are constructed. These include stairway, zigzag, serpent like and seal shaped. These trenches have usually been found with a width of about one half meter, a depth of one to one and a half meters, and with a length ranging from six to 6,000 meters. Trenches are dug with square edges. Every six to nine meters there are sometimes small holes dug into the side of trenches to provide overhead cover. These holes are usually one meter deep with a one half meter diameter. The amount of dirt between the top of the hole and the ground is normally more than three fourths of a meter. Trenches are located by the VC to provide good fields of fire and take advantage of key terrain features.

SLIDE 3

A second type of fortification employed by the VC is the bunker. A high percentage of reported bunkers have been located within a trench network or next to dwellings. Entrances are often located in a house under a bed or table, and have an outside exit. In many cases, bunkers are constructed of mud with walls averaging one half to one meter thick. The average bunker is approximately three to four meters square and one meter high. The floor is of mud and in many cases sunk about one third of a meter below ground level. The roof is normally constrcuted of logs covered with palm leaves. This is then covered and packed with mud from one to two meters thick.

SLIDE 4

Sometimes pierced steel I-beams are used for overhead cover. In at least one case, the bunker was constructed entirely of concrete. Revetment is used in some bunkers. Small logs driven one to two meters into the ground and extending upward to roof level served to reinforce the walls. Most often bunkers have one overt entrance and one or more covert exits. The primary use of bunkers is to provide cover and concealment. It is believed that those bunkers constructed within a trench complex also serve as ammunition storage and as crew served weapons emplacements.

SLIDES 5 AND 6

In addition to trenches and bunkers the VC also use foxholes. Generally they are used to permit an individual to accomplish his assigned fire mission. Again the general fortification characteristics are found: simple, easily constructed, and well camouflaged. They are constructed to provide maximum protection with minimum time and labor to provide prone, kneeling, or standing firing positions.

SLIDES 7 AND 8

The next type of VC fortification to be discussed is the gun emplacement. Gun emplacements fall into four main categories: L-shaped, U-shaped, T-shaped, and O-shaped emplacements. These different types are used to provide firing positions for a prone, kneeling, or standing defender. The L-shaped emplacement is used for two firing positions; standing and kneeling. The U-shaped emplacement is employed as a defense position using a .30 caliber machine gun. It can also be used for firing weapons in the standing and kneeling position. The T-shaped fortification is used for light machine guns. It can be used for standing and kneeling positions. The O-shaped fortification is used with heavy machine guns for air defense against planes and paratroopers. This fortification is designed for the standing position. Supplemental holes are dug into this fortification to be used as shelters during bombardment.

The final major VC structure system is the tunnel. Tunnels are extensively employed by the VC in many phases of their tactical and logistical operations in

the Republic of Vietnam. There is no question that tunnels play an extremely significant part in VC operational doctrine.

W. G. Burchett, an Australian correspondent, who lived with the VC and wrote a book of his experiences states that there are as many as 4300 tunnel systems in South Vietnam. Many of these tunnels date back to 1945 during the resistance war against the French.

These same tunnels and additional ones are being used by the VC as underground base areas, access and escape routes, and fortified villages.

We might point out that it is unwise to read too much detail into patterns of known tunnels locations because the number of known locations in an area may merely indicate the intensity of the operations of our own field forces.

SLIDE 9

A tunnel commonly found is of the access and escape route type. This means that the VC use the tunnel to infiltrate or exfiltrate an area. A tunnel such as this was found at Cu Chi and is seen on the slide. The VC constructed the tunnel to run from the main road across a clear area and into the heavy foliage of plantation. The overall length of this tunnel was a little over 2,000 meters.

Another type tunnel is called the underground base area. This may house a command post, ordnance shop, or hospital. This type tunnel is not as common as the ones found in a fortified village or access/escape route. It is normally located deep in the VC controlled areas. It is this type of tunnel that may have several rooms, such as a small four by six foot or a large ten foot square with a 14 foot ceiling. They may also include electric lighting or other sophisicated features.

SLIDE 10

The next slide is concerned with methods of construction. The diagram of the tunnel complex is a composite of the features found in tunnels and seldom if ever are all of these features found in one complex. However, one feature which is common to almost all tunnels is the method of excavation. The laborers are divided into a number of cells and assigned tunnel sections. The cells are placed approximately 20 meters apart along the axis of the planned tunnel. Each then digs a well or shaft to the desired depth where a working area is enlarged. From this point the cells begin digging toward each other. As the tunnel grows the personnel are formed in a line to pass the earth's spoil out the excavation shaft. The spoil is spread evenly over the ground or under the jungle canopy to prevent detection. Once the main tunnel has been excavated a bamboo wall is placed over the mouth of the shaft inside the tunnel and the shaft is filled and camouflaged.

As the tunnel becomes more extensive, lower levels may be constructed to provide additional room and better protection. Rooms may be added and even reveted to provide strength against bombing. However, in most areas the soil is such that revetment is not necessary.

The degree of sophistication is dependant upon the purpose of the tunnel and the frequency of its use. Most of the tunnels in South Vietnam are hiding places or escape routes therefore they may be extensive in length, but not complex in design.

However, in their construction, care is taken to provide security measures throughout the tunnels. False corridors are constructed as are trapdoors and false walls. A U-shaped design is often found to give the impression that the corridor is a dead end when actually a trap door leads the way out. This design makes it difficult for gas to be effective throughout the tunnel.

Even if the mouth of the tunnel is discovered and blown, the occupants escape through lower corridors and are not injured Further, the spoil from the blast blocks the rest of the tunnel and makes it even safer.

Common methods of illumination include; carbide lamps, flashlights of various types, candles, and in larger complexes small generators.

Tools for digging are very simple. A bucket and pick or shovel are the main tools. There are reports of tunnel digging machines, but their use has not been confirmed.

Secrecy of location is considered of utmost importance. All means are taken to camouflage and conceal tunnel entrances, some of which are impossible for an average sized American to pass through. Others are hidden in tombs, in walls, or underwater.

Tunnel detection is the next topic of discussion. The first step in detecting or locating tunnels is to reduce the large geographical area of interest to a smaller area of probable locations. This can be best accomplished by studying general indications of tunnels such as the following:

Movement of VC in specific directions after being spotted by aircraft.

Sniper fire occurring from areas from which there are no obvious avenues of withdrawal.

Vegetable gardens far from places of habitation.

Once the probable area of interest has been localized, it is necessary to locate the actual tunnel specifically. Methods available through intelligence channels include image interpretation using both conventional air photography and radiometry.

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Conventional air photography can locate tunnels if the appearance of the surface and vegetation are changed from normal. This requires skilled personnel and most often repetitive coverage using increasingly detailed photographs. Often, using conventional air photography is prohibited because of dense vegetation such as double or triple canopy jungle that obscures the ground.

To augment the use of conventional air photography, radiometry is used. this method uses infrared and microwave energy to measure the surface temperature of the ground to locate voids and tunnels. This method can survey large regions using aircraft sensing equipment. The equipment is complex and vegetation and water can obscure the effects of a tunnel.

Most often, these two methods are used together. First radiometry is used to locate small fires, etc., that may indicate the presence of surface or subsurface structures. Conventional air photography is then used to make a detailed study of the suspected area.

Occasionally, the specific location of a tunnel can be obtained by interrogation of the local populace, Chieu Hoi's, returnees, PW's, who may have occupied, or helped in digging the system. Due to the method used in construction of the tunnel systems, that of using an excavation shaft to reach the level of the tunnel and then closing this shaft once the tunnel is complete, the individual may not be able to locate an entrance or exit, unless he has seen or used the completed tunnel.

The following points summarize this presentation:

The VC place great emphasis on using whatever construction materials are locally available and whenever possible, adopt local installations.

They use local civilian laborers and take extensive security measures to insure secrecy of location of their fortifications.

Concealment and camouflage are used to the maximum extent possible by the VC. These are the primary considerations in the construction of surface structures, tunnels, and field fortifications.

Caves, tunnels, field fortifications, and surface structures are used in conjunction with each other.

Fortifications play a very important role in both conventional and guerrilla warfare in that they provide security and allow surprise. They are also excellent places to conceal troops, weapons, equipment, and they increase the combat capabilities and effectiveness of these units.

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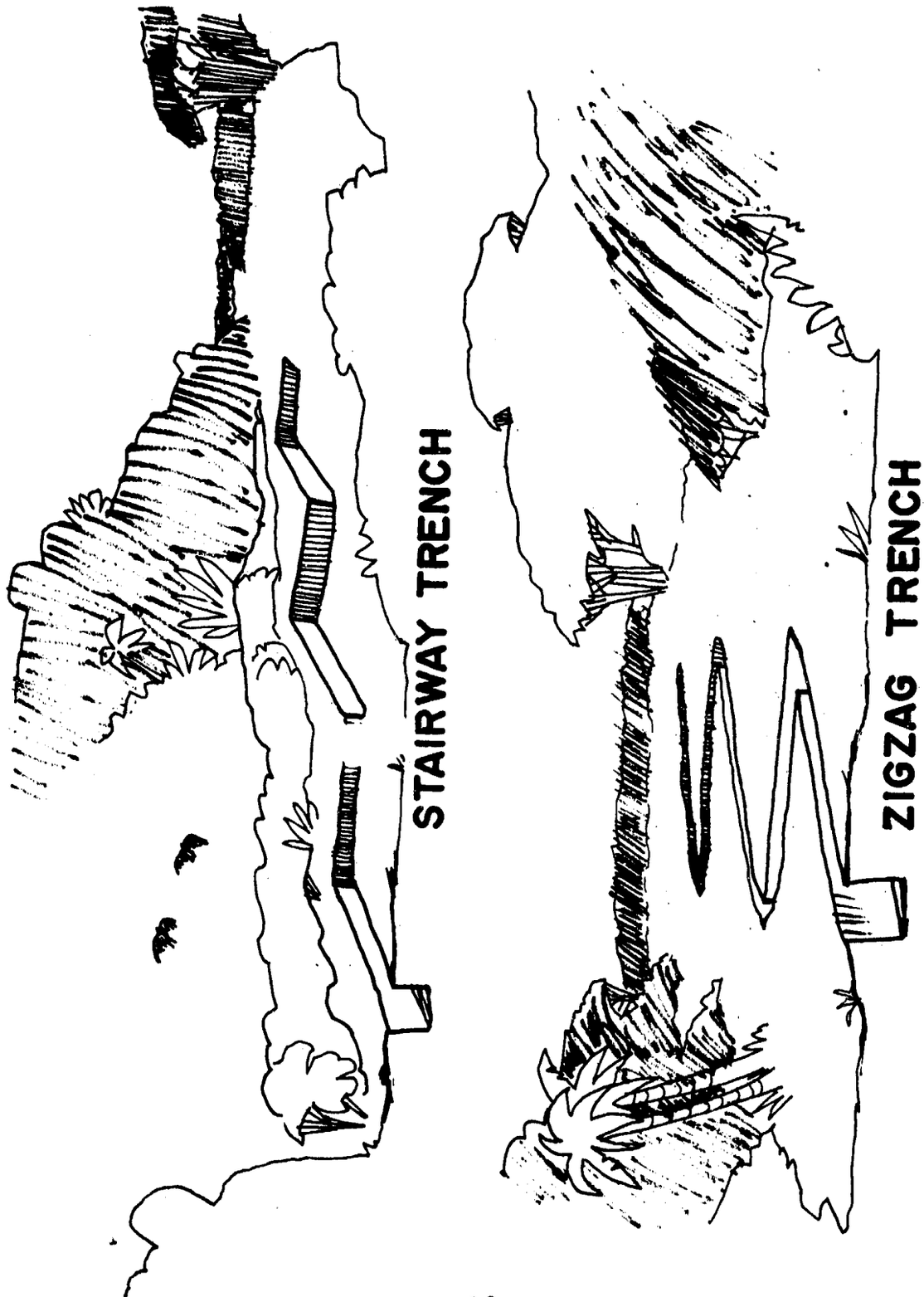
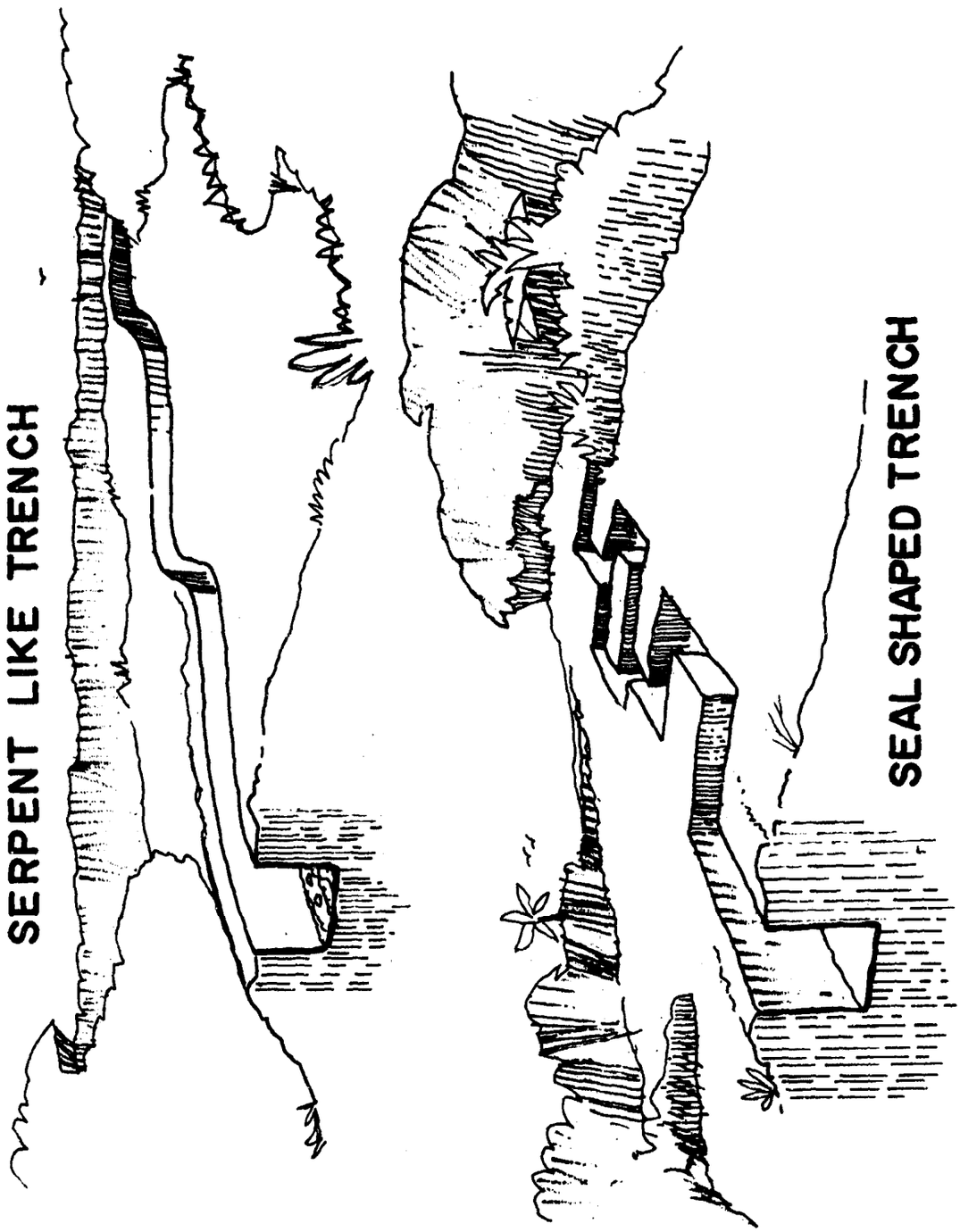
There is a substantial amount of planning before actual tunnel construction.

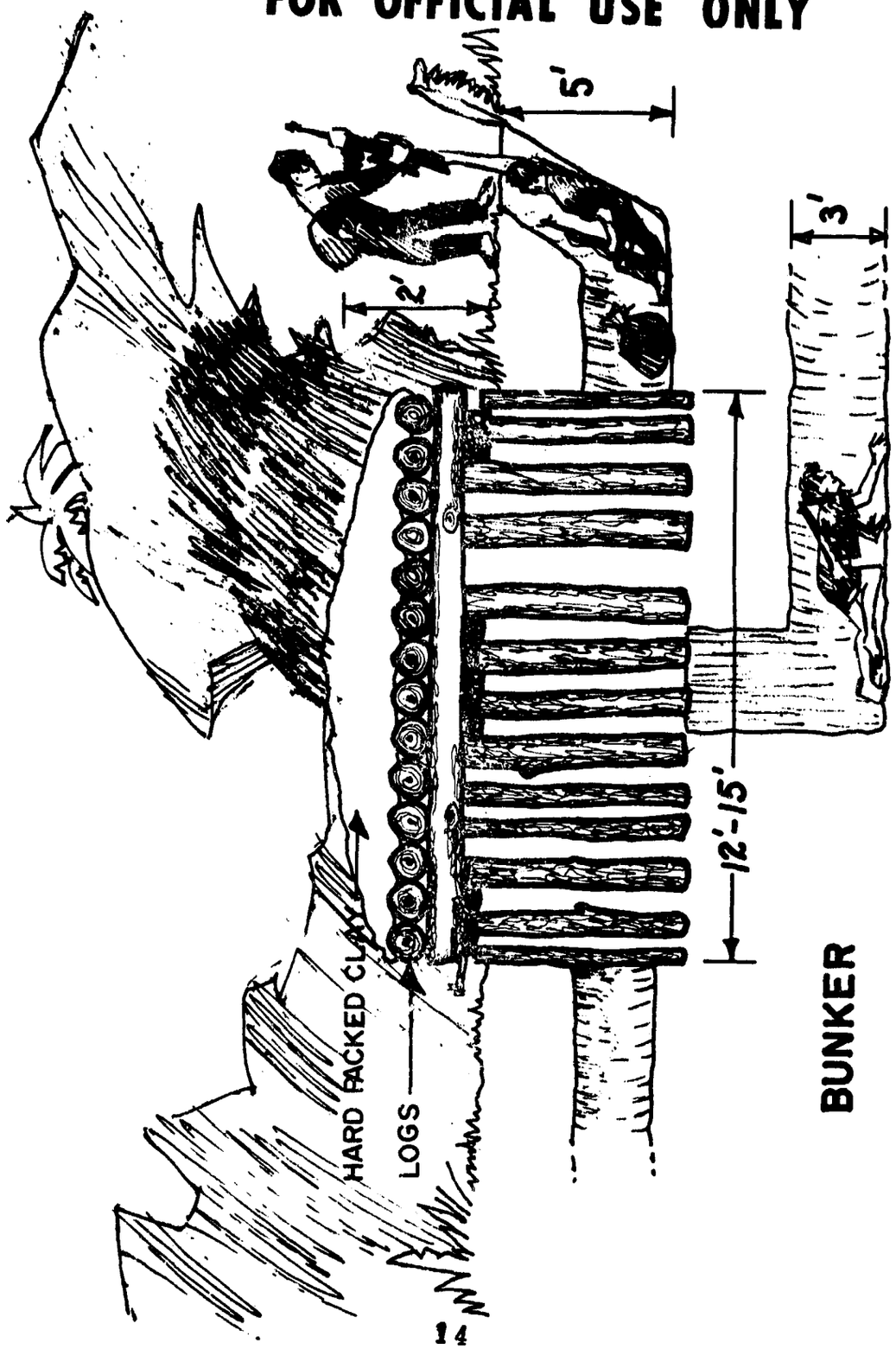
The degree of sophistication is dependent upon the purpose of the fortification, and the frequency of its use.

Detection of fortification locations is extremely difficult.

Further information concerning tunnels can be found in one of our studies, "VC Tunnel Systems in South Vietnam", which includes a narrative and pictorial section pertaining to the previously discussed material and a section which shows all of the known tunnel locations plotted on maps at a scale of 1/50,000. Dissemination of this study to all major field elements has recently been completed.


STAIRWAY TRENCH
ZIGZAG TRENCH


SERPENT LIKE TRENCH
SEAL SHAPED TRENCH



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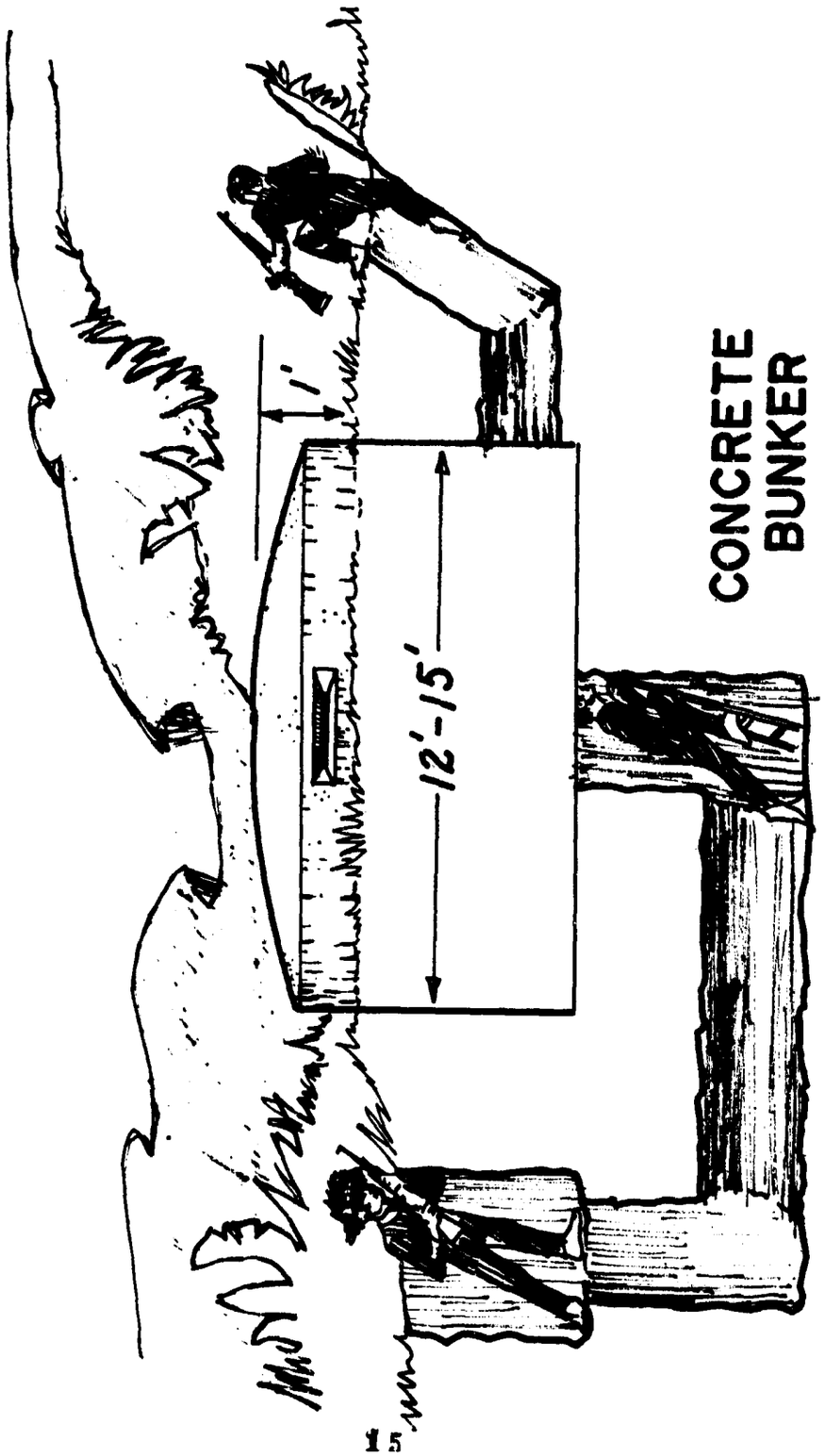
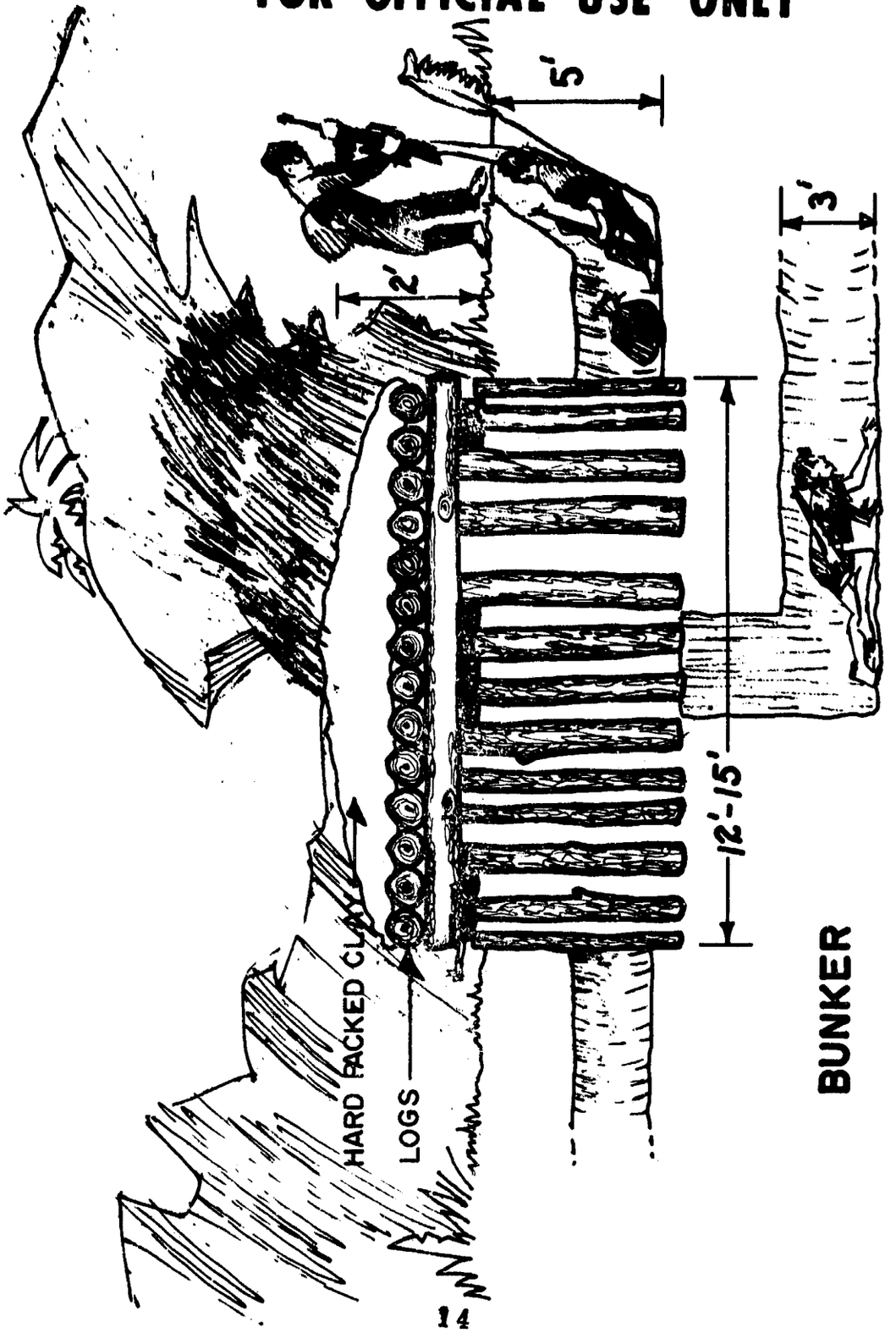
SLIDE 3

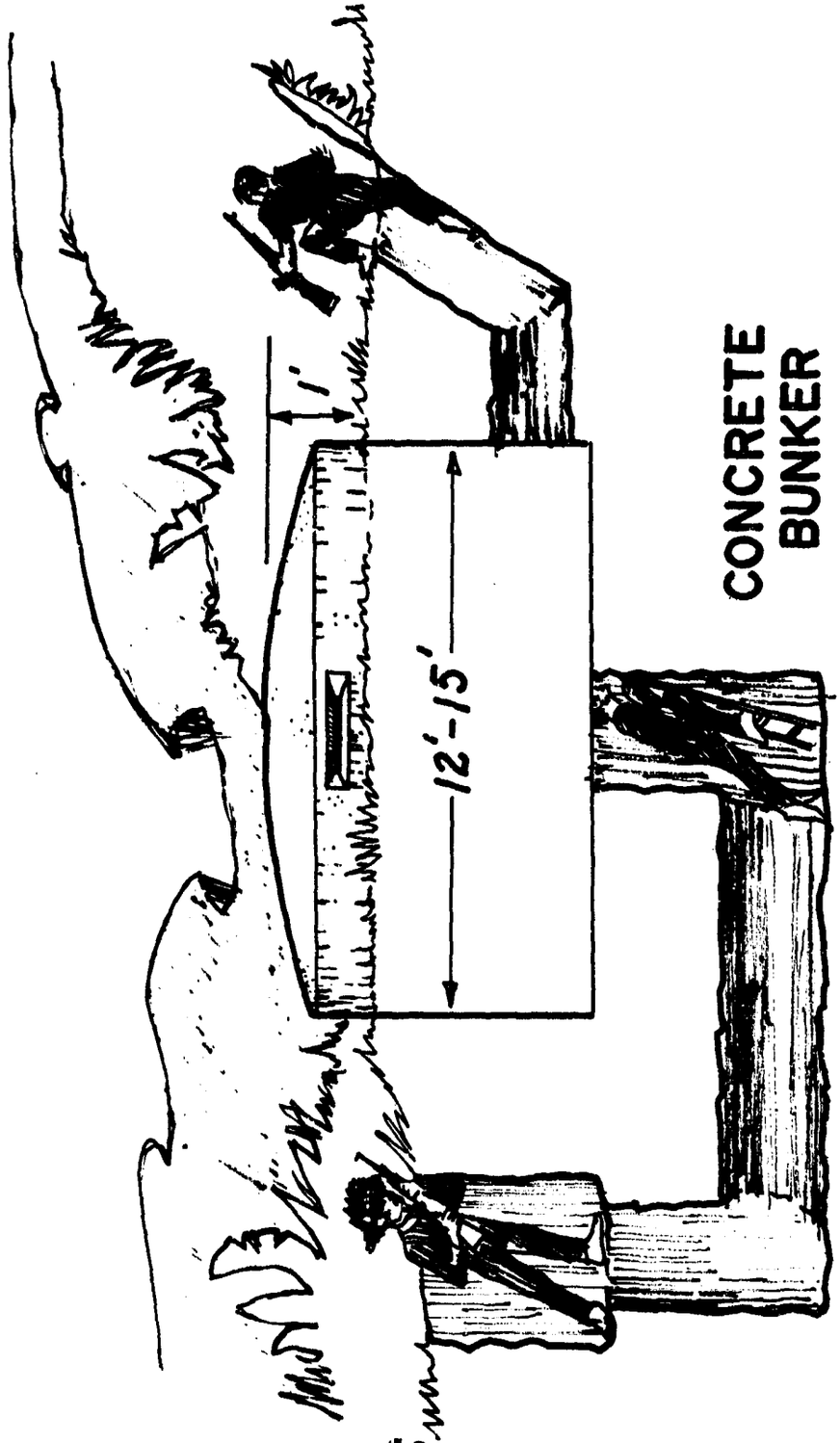


SLIDE 4



BUNKER

SLIDE 3



SLIDE 4

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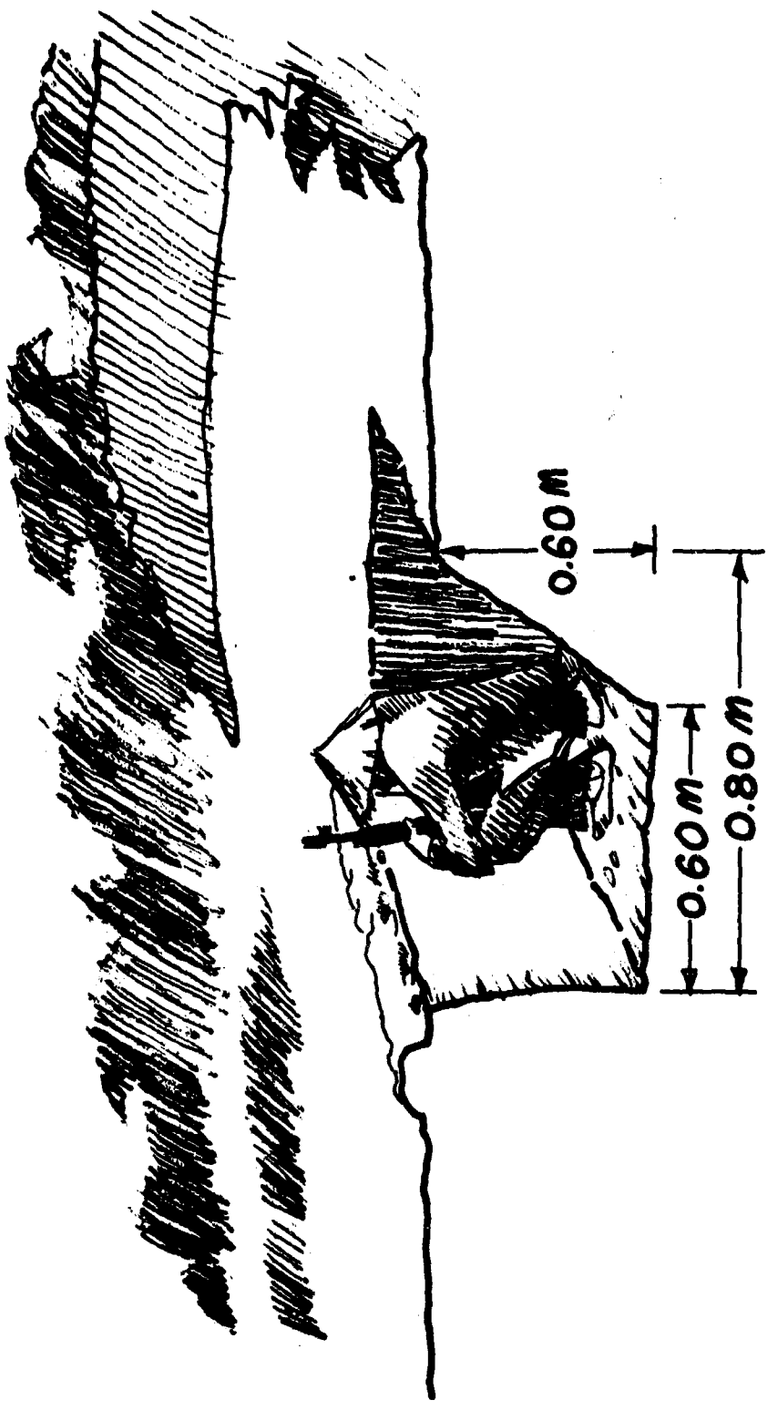
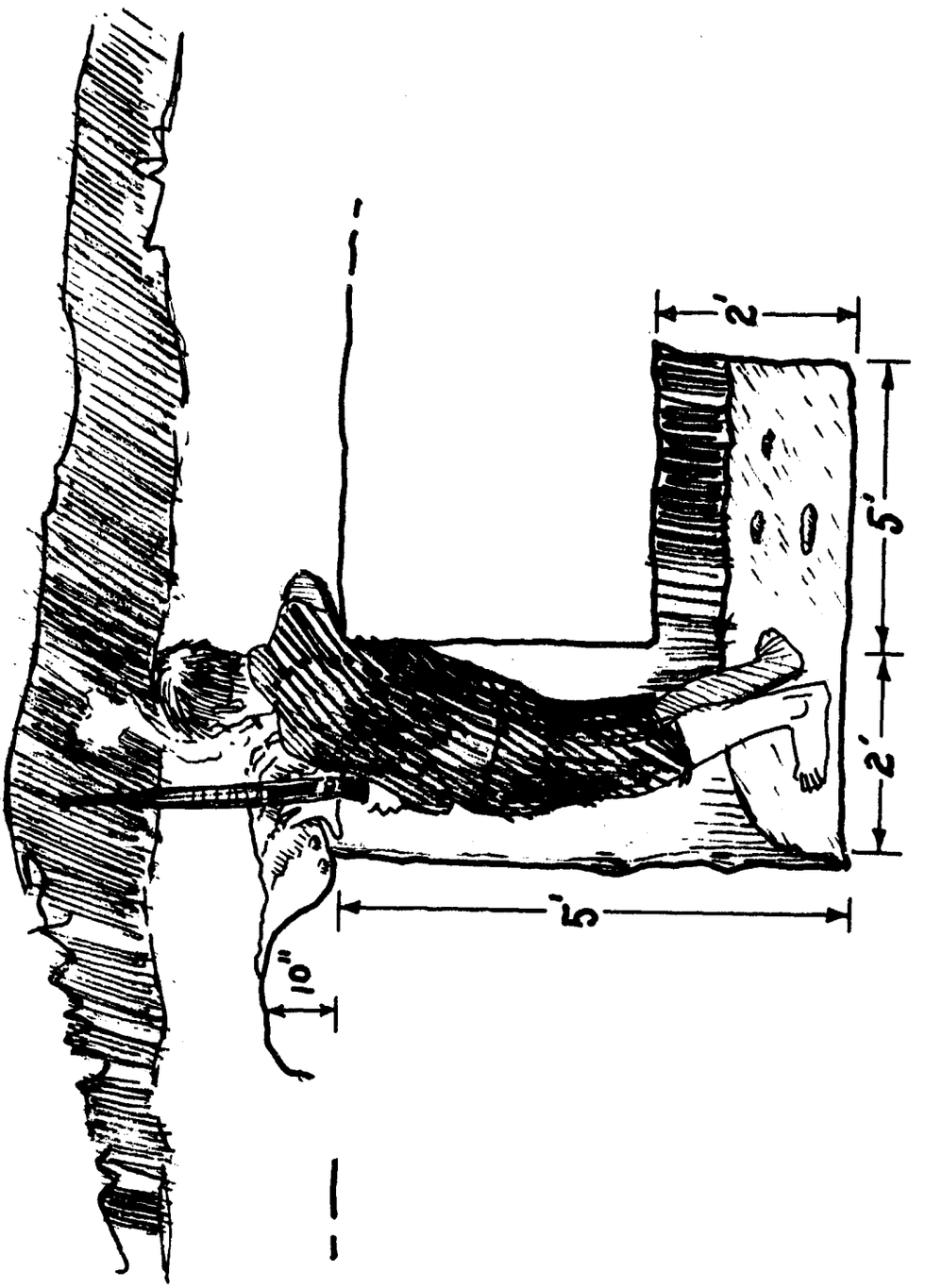
FOXHOLE FOR KNEELING POSITION



SLIDE 6

ONE MAN FOXHOLE (ROUND)



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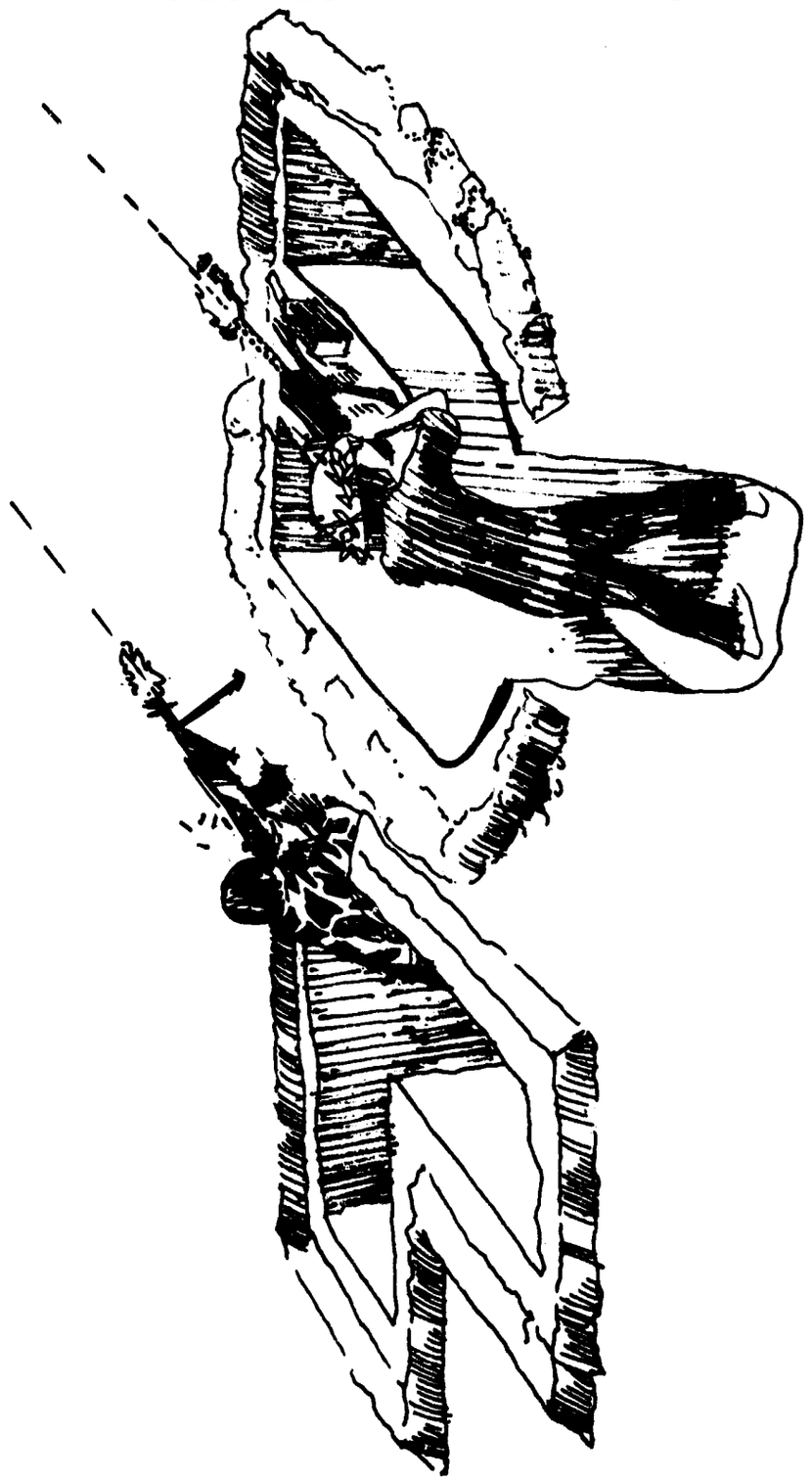

GUN EMPLACEMENTS

GUN EMPLACEMENTS

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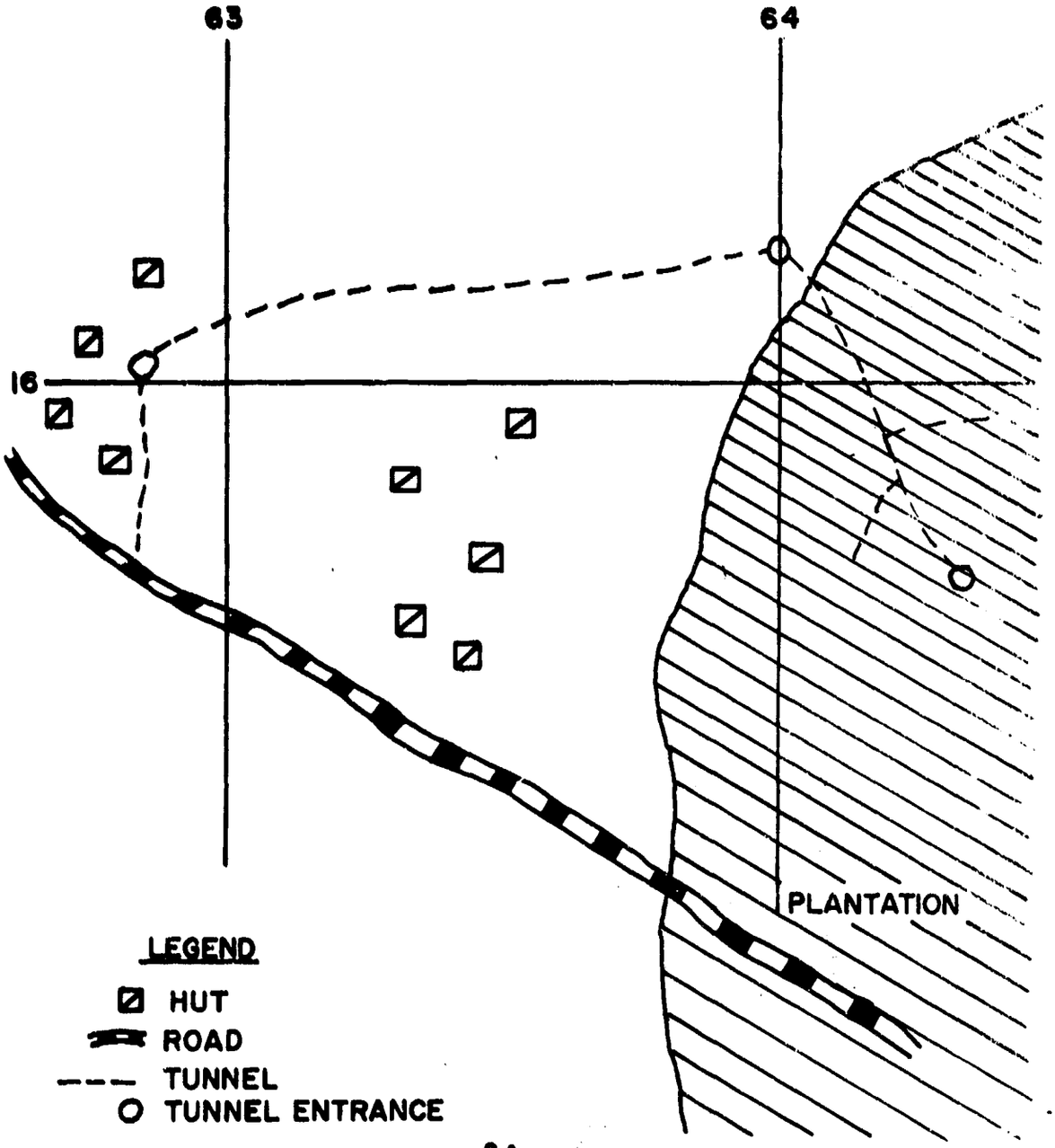

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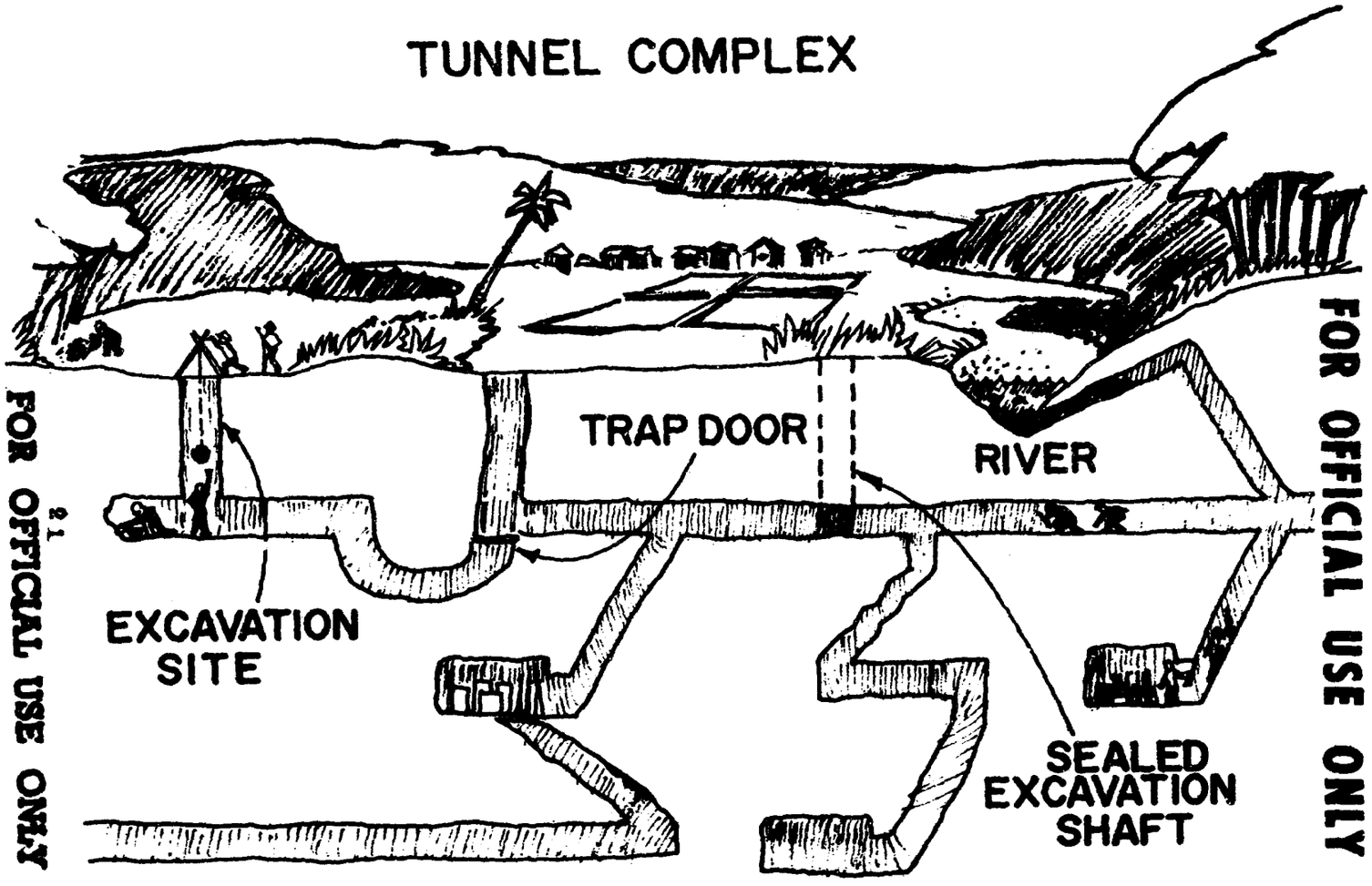
TUNNEL COMPLEX



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SEVENTH AIR FORCE PRESENTATION *

SLIDE 1

The ordnance that is most effective against hard targets and most readily available is the general purpose (GP) bomb with delayed fuzes to permit penetration. Napalm, if slammed in against the target can cause considerable destruction and the CBU-19, if properly used, can cause considerable problems to the occupants. High winds and temperatures tend to minimize the effects of the CS agents. Early morning hours are generally the best time period. Neither the napalm nor the GP bombs are effective unless an almost direct hit is scored. The effectiveness can be improved if Air Force personnel participate in the planning phase of the operation. If a target is pinpointed several days in advance, the chance of reducing it is increased. The key to hitting a target is for the strike pilot to know the precise location and to be able to eyeball it.

The ordnance listed on the bottom half of the slide is not considered appropriate for hard targets. However, sometimes a combination of hard and soft ordnance works out very well. The hard ordnance or CBU-19's cracks them open and the soft ordnance cuts them down.

Ordnance that is not considered practical for fortified targets are CBU munitions (except use of CBU-19's as already explained) rockets (except with the high explosive armor piercing heads) and 20mm.

SLIDE 2

General purpose bombs with instantaneous fuzes are effective against soft targets. Soft targets under heavy tree canopies may require short delay fuzed bombs to open the canopy prior to employment of antipersonnel munitions. The CBU-2 and 14 and unfinned napalm may be ineffective in heavy tree canopy. However, CBU-25, 12 and 22 and finned napalm can be used effectively under these conditions. Other effective munitions include napalm, rockets, 20mm and fragmentation bombs and clusters.

Not considered practical are the heavier bombs because of the limited number available and because of their size and weight, an aircraft can carry only a small number at a time. For example, the F-4C can now carry one 2,000 pound bomb whereas it can carry ten 750 pound bombs.

SLIDE 3

Support of ground forces could be improved if a better description of the

* Portions of this briefing have been omitted from this presentation in order to remove classified information. Such omissions do not materially reduce the value of the presentation.

target is received, so better and more effective munitions could be selected. For example, requests are frequently received to attack a base camp. That does not tell a planner very much. The planner must know if it is dug in, in the jungle, triple canopy, etc.

When hard TOT's are requested, flexibility in planning is reduced. This does not mean to imply that hard TOT's will not be honored, but if they are not required, they should not be requested. Also, better and more responsive aircraft loads can be provided if the time is flexible. Even an hour leeway would help to provide a better load. Another problem is that everyone wants air support early in the morning. Support missions must be spread out throughout the day to get the most out of the aircraft.

More immediate response can be achieved by diverting airborne aircraft, but when this occurs, already planned prestrikes are taken away from another unit. Advantage; quick response. Disadvantage; another unit is deprived of its preplanned strike.

It has also been found that there have been some abuses of the scramble system for routine strikes. This is like calling "wolf". It degrades the ready alert posture for those who really need it. Units that need it should not hesitate to call for it, but they should not use this source for routine operations.

The effectiveness of ordnance on various type targets should be studied prior to calling for air strikes. The FAC can be helpful in providing recommended weapons effects on request.

HARD OR FORTIFIED TARGETS

SUITABLE ORDNANCE

GP BOMBS (DELAYED FUZING)

NAPALM

CS AGENTS (CBU-19)

NOT PRACTICAL

CBU MUNITIONS (EXCEPT CBU-19)

ROCKETS (EXCEPT WITH HEAP HEAD)

20MM

SLIDE 1

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SOFT AND UNFORTIFIED TARGETS

SUITABLE ORDNANCE

GP BOMBS WITH INSTANTANEOUS FUZING (MK 81, 82, M-117)

NAPALM

ROCKETS

CBU MUNITIONS (ALL)

20MM

FRAGMENTATION BOMBS AND CLUSTERS

NOT PRACTICAL

M-65, M-66, MK-84 AND M-118

SLIDE 2

PROBLEM AREAS

TARGET DESCRIPTION WITH REQUEST

POSITION-NATURE-ORIENTATION

HARD TOT

PLANNING FLEXIBILITY

USES OF IMMEDIATE AIR STRIKES

DIVERT VS PREPLANNED

SCRAMBLES VS POSTURE

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25TH INFANTRY DIVISION PRESENTATION

The objectives of this presentation are to describe the type of enemy fortifications found in the jungle and paddyland of the 25th Infantry Divison tactical area of operations and lessons learned in attacking them.

The terrain in the jungle portion of the area is generally flat with gently rising hills of from 30 to 50 feet high. It is covered with a mass of tangled vines and brush. Primary and secondary growth plus a thick canopy prevail. Scattered open areas are marshy in both wet and dry seasons and teeming with insects, especially mosquitos, scorpions, leeches, and spiders. Animals and reptiles are a minor problem. Troop movement is usually about one half MPH and visibility is usually from five to ten meters. Navigation is extremely difficult and daylight travel time must be carefully planned to arrive at or begin establishing a base camp no later than 1600 hours.

Enemy bases are usually complexes consisting of two or more camps about five hundred to a thousand meters apart, and are usually located in the vicinity of streams and trails. The camp is composed of heavy log structures dug in about six feet which serve as aid stations, food and fuel storage, mess facilities, command posts, etc. They are surrounded by a defense line of fighting positions situated according to avenues of approach and escape. There is usually a secondary defense line which contains heavier weapons. The bunkers are as low as possible with small firing ports. Fire lanes are cut about two feet high and three to six feet wide with the fire as close to ground level as possible and usually at extreme close range. Trenches and tunnels sometimes connect the bunkers and facilitate escape to the rear.

Movement by ground troops should be by platoons and employ the "cloverleaf plan" covering as much terrain on either side of a trail or stream as possible. A security team should travel from fifty to a hundred meters ahead of the platoon.

At first contact, another platoon should quickly move to assist in positioning and fire support. The wounded should be moved only when fire superiority has been gained.

If the location is a base area, the artillery FO should bring high angle fire over a 1,000 meter square to the front. Available air strikes can be guided by smoke and star clusters. A C&C aircraft can assist both. All initial supporting fires should use a delay fuze to reach ground level. The canopy can be blown away later.

Other friendly units should be altered to seal possible routes of escape and be on reaction status. They should avoid contact. The weapons platoon should establish command security and the remaining rifle platoon provide rear and flank security.

Engaged troops should initially gain fire superiority with small arms fire. The 90mm RR using the caninster round is effective for direct fire through heavy brush. M79, LAW, and 90mm RR fire can then be used to neutralize the bunkers.

After supporting fires have been shifted, the assault should consist of two platoons engaging as few bunkers as possible progressively by fire and movement. If resistence is heavy, the process should be repeated with supporting fires using fuze delay.

The assault should continue after nightfall and never cease until the camp is completely overrun. The canopy should be open enough to allow flareship effectiveness. If the company in contact becomes ineffective, it should be relieved or assisted by another company and the assault continued.

H&I and blocking artillery fire should cover the outer limits of the friendly units in the vicinity.

At the completion of the battle, friendly units should search in all directions for other possible nearby camps.

Terrain in the paddyland is flat and consists mostly of inundated rice, sugar cane, and pineapple fields laced with canals, streams, hedgerows, and retaining dikes leading to streams, rivers and swamps. Houses are surrounded with thorn hedges and bamboo. The banks of the canals and streams have brush, tall ferns, bamboo, and trees which conceal bunkers, shelters, caches and sampans and facilitate observation and sniping.

The fortifications are built into the dikes and banks of the canals and streams. They are usually a foxhole with sun baked mud and log overhead cover, 2x3x4 feet, and anywhere from five to twenty feet apart. Larger bunkers are about 3x4x6 feet and may be reinforced with logs, concrete and miscellaneous items. Camouflage consists of gathered brush and living vegetation. The dikes may be tunneled facilitating escape from a bunker and may have tiny firing ports.

The Rach Lach Battle of 12 July 1967 will be discussed to demonstrate the problems encountered when the 1st Battalion, 27th Infantry "Wolfhounds" and the 116th Aviation Company "Hornets" of the 269th Aviation Battalion were conducting heliborne combat assaults in the Hau Nghia Province along the Oriental River. Two assaults in the morning had been made with negative results. At 1230 hours a supporting gunship observed a sampan and several VC near the river approximately two thousand meters north.

SLIDE 1

Gunships engaged the canals in that area and Company C was landed to sweep toward the river. Six running VC were sighted and a platoon pursued them. The attacking forces were engaged by enemy fire from fortified positions which halted their progress.

Because a squad size force was estimated, Company B was landed to the rear of the enemy to block withdrawal routes. While landing, they drew heavy fire from fortified positions on three sides. The platoon of the lead aircraft immediately assaulted to the north and overran the enemy. However, they were forced to return to assist the rear platoon and both platoons were forced to defend against effective AW and RR fire. Due to the proximity of friendly and enemy elements in contact, artillery fire could not be utilized effectively by either Companies B or C.

Due to the heavy damage of the landing aircraft and gunships, two hours passed before Company A was landed to maneuver from the south. Heavy resistance halted Company A which now made it quite evident that the friendly forces were involved with a reinforced company of a battalion. Artillery and air strikes were employed in the area as much as possible and all three companies fought to neutralize the enemy fire, evacuate wounded, and receive emergency supplies.

At daylight, fire reconnaissance indicated the enemy had completely left the area. A search and destroy sweep of the battle area resulted in the destruction of eight 5x10x14 foot cement bunkers and 128 mud bunkers.

Some of the lessons learned in this and other engagements are as follows:

In moving through paddy lands, troops should always control at least two paddy dikes or canals. For search and destroy operations, platoons can travel on line if forward hedgerows, dikes, or streams have been checked by security teams.

Helicopter landing zones should preferably be 300 meters from possible enemy fortifications and should include dikes or other means of cover. The LZ's and especially the surrounding terrain features should be prepared with supporting fires and watched by gunships.

Since the enemy is usually expected to be guerrillas of squad to platoon strength, artillery should be employed at a range of 500 to 1,000 meters behind the area of first contact and then walked closer to prevent their escape while gunships engage targets of opportunity.

If not more than a squad is estimated, an immediate assault should be made by fire and movement. The VC will attempt to flee the area or hide in stream banks, tunnels or bunkers. Grenades and small arms should be used to search all suspected hiding places. Mines and booby traps sometimes indicate a nearby base or cache site.

If a platoon or larger force is estimated, other friendly units should seal the area but not become engaged. Gunships should observe while all available supporting fires are adjusted over the area by the air observer and the commander in contact. Ground troops should use disciplined fire. Small arms should be used to gain superiority. 90mm RR, LAW, and M79

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fire should be used to destroy fortifications.

A steady fire and movement assault with two platoons should be conducted with gunship support. If heavy contact is encountered, the process should be repeated using fuze quick and time on supporting fires.

The assault should continue after nightfall with flareship support. All suspected routes of escape should be covered with VT and PD fuzed artillery H and I fires. If possible, armed flareships, gunships, "fireflies", and "people-sniffers" should be guarding the escape routes.

A thorough search and destroy sweep should be conducted after daybreak.

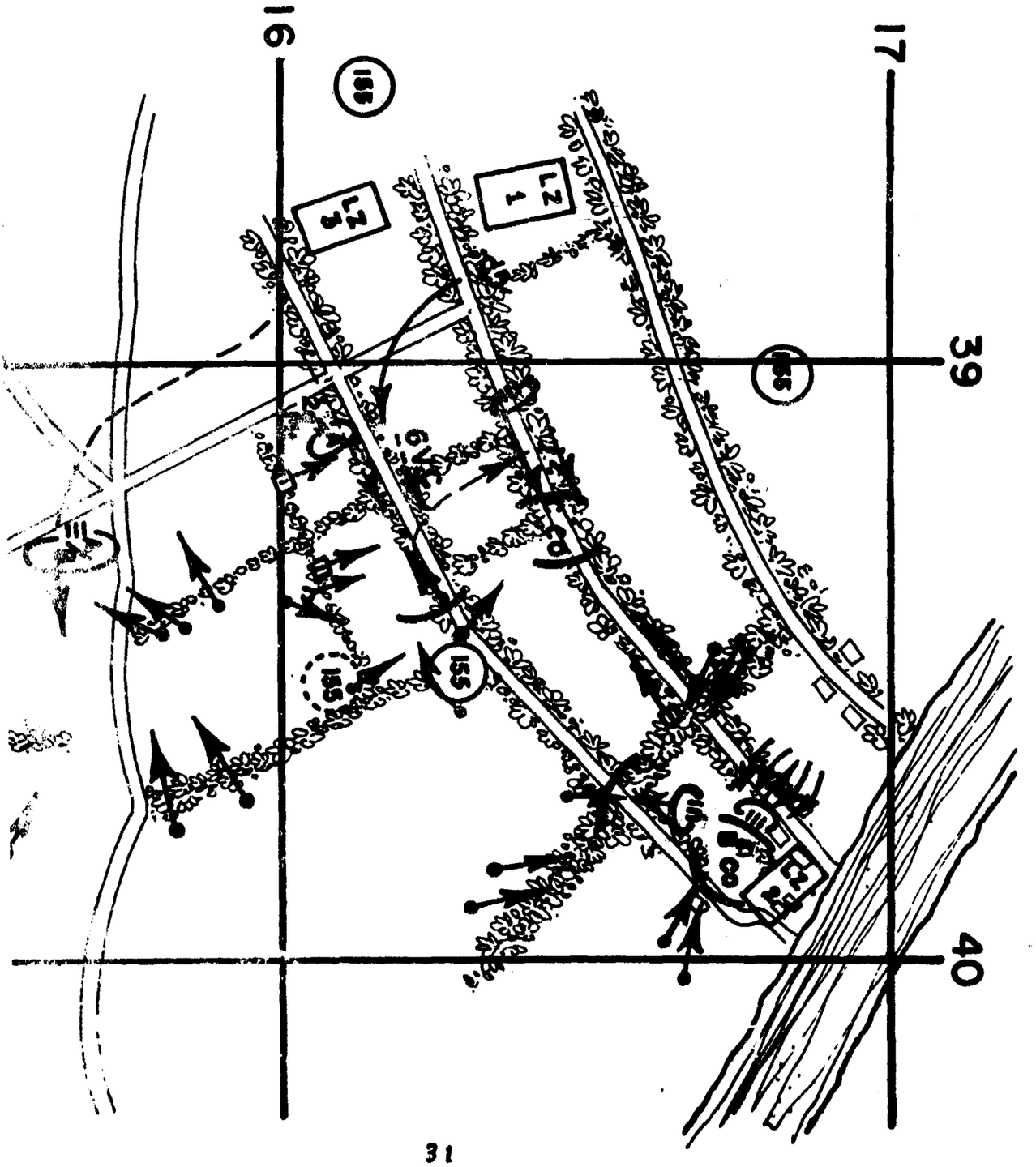
The following points are considered most important and summarize this presentation:

Security in movement allows freedom of action upon contact.

Use of all available supporting fires and technical aids is more effective and more easily coordinated when a limited number of friendly units are engaged.

Continue the attack after nightfall and develop night activities.

Develop contact SOP and take time to make estimates and plans upon contact.


16
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LZ 1
LZ 2
LZ 3
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155
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1ST INFANTRY DIVISION

Enemy fortified positions found in the 1st Division's area of operation are generally well constructed, with tunnels or trenches connecting the bunkers, extensive overhead cover, camouflage, and mutually supporting firing positions. The firing bunkers are well hidden and it is seldom possible to determine the size of the base camp from a single location on the ground. It is seldom possible to see more than one bunker at a time. The terrain in the immediate vicinity of each bunker may contain a protective antipersonnel mine field. Finally, each anthill, mound of earth, or tree trunk that offers cover from VC small arms frequently contains a claymore, dud mortar, or artillery round wired for command detonation.

On many occasions the VC allow their base camps to be entered without opposition in order to inflict casualties on the attacker inside their positions. This tactic, if successful, denies the effective employment of close air and artillery, and causes the attacker to commit more elements to extract his dead or wounded.

SLIDE 1

An example of a base camp that has been encountered in the 1st Division's area is depicted on this slide. A platoon sized patrol, operating from a company patrol base, spotted a small above the ground complex and smelled rice cooking. As the patrol moved closer they heard voices and laughter. Three VC were spotted and taken under fire. One VC was killed and the other two escaped. The patrol moved in and found two bunkers and rice cooking. The patrol withdrew and called in artillery. At this time, the extent of the base camp was thought to be that which the patrol had reported. After the artillery preparation was fired, the company commander returned to the area with two platoons to conduct a search. The company had passed through the area when it received sniper fire. The company took cover and the VC began to detonate artillery and mortar rounds previously emplaced in the area. The company had discovered the base camp which consisted of a central bunker, 18 inches high and tunnels 100 to 150 meters long, connecting five outer bunkers to the central bunker. All bunkers had overhead cover and camouflaged firing apertures. There were mortar and artillery duds rigged for command detonation buried in anthills and suspended in trees in the immediate vicinity of the bunkers. The bunkers were positioned to provide mutual support and deny observation of the entire complex from one location on the ground.

As a result of experiences gained through a series of encounters with VC base camps, ranging from squads to regiments, the 1st Division has developed a standard procedure for the attack of a base camp. Battalion and company size operations are normally conducted to systematically locate and destroy VC base camps and supply caches. Normally a base camp location can be accurately predicted by good map reconnaissance. Dense undergrowth or heavy bamboo, seemingly inaccessible terrain and a readily available water supply

indicate a possible base camp location. Certain unmistakable signs in the jungle also indicate their presence. Latrines, well used trails converging on a central area, cooking facilities, signs of woodcutting, an increase in the number of booby traps, and engagement by snipers or stay behind forces are some of these signs. Commanders of the 1st Infantry Division feel that when a base camp is encountered, it should be discovered by the point fire team of the main body or a fire team on a cloverleaf from the main body. These teams, if undiscovered by the VC, should return to the main body and air strikes using hard bombs and napalm should immediately be brought to bear on the base camp. If the lead element has drawn fire, air and heavy artillery should be used first to break contact, then to destroy the fortified positions, cause casualties among the defenders and neutralize the command detonated devices which are almost impossible to locate and destroy by any other means.

The location of the base camp must be marked for the FAC who is going to direct the air strikes. This can be done with smoke. A distance and an azimuth should be provided by the unit that discovered the base camp. The FAC will have to adjust each strike in order to effectively uncover the bunkers underneath the jungle canopy. The bombs will open the jungle canopy to allow the FAC to see whether he is putting his strikes in the right place. If the base camp is within range of a heavy artillery battery, it too should be used in the softening process and be controlled by an aerial observer. The entire process is slow and methodical. The commanders concerned must be satisfied with the results of the softening process before ordering the infantry to enter the base camp.

SLIDE

The key to entry of a base camp is security, alertness, and a methodical approach. Infantry units must never form up on line and sweep through a base camp. Base camps should be entered at a single point. Bunkers should be located and taken under fire one at a time. Not more than two individuals should approach a bunker, one to place a charge or throw a grenade, and the other to cover him. Two men should be near the remainder of their fire team at all times. After the bunker has been neutralized, it must be occupied to prevent the VC from returning. Security to the flanks and rear is imperative. The unit should proceed generally in one direction until all bunkers in that area have been neutralized. Succeeding units are then passed through the unit gaining entry and extend the search throughout the base camp. The searching unit should always have a secure rear in case fire is received from an inhabited bunker which has escaped detection by the search force or damage by air and heavy artillery. Experience has shown that a small number of VC in a fortified position can hold off a force many times its size. Also, in any given jungle area, there will be not one but a series of base camps. The VC will move from one to another and unless some system is used to locate and destroy all of these base camps in the given area, the VC threat will continue.

The 1st Infantry Division's present policy on the attack of a fortified position was formulated after an engagement of a VC battalion in a base camp in August 1966. At the time of the battle, the Division had a policy of maintaining contact under all circumstances. The results of this particular engagement, called the Battle of Bong Trang, in which four US battalions participated, pointed out the need for a reevaluation of that policy in its application to the attack of a fortified position.

SLIDE 3

The Battle of Bong Trang was an exceedingly fierce engagement of a battalion of local force Viet Cong, the Phu Loi Battalion. It was fought in the Bong Trang Woods about four miles east of Lai Khe and 25 miles north of Saigon near Highway 1A on 25 August 1966 during Operation Amarillo.

The 1st Battalion, 2d Infantry had the mission of opening Route 1A from the Bong Be River brigde south to the intersection of Routes 1A and 2A (Claymore Corner). The 1st Battalion, 6th Infantry cleared Route 16 from the above mentioned intersection south to the bridge at the village of Binh Co.

A long range patrol which had been sent out the previous evening from the 1st Battalion, 2d Infantry reported encountering a base camp occupied by an estimated VC battalion at 0640H on the morning of 25 August. In reaction to the contact, two companies from the 1st Battalion, 2d Infantry, using APC's and the 1st Battalion, 26th Infantry were moved from their locations along the road to the vicinity of the contact area. One battalion, the 1st Battalion, 16th Infantry, air assualted west of the base camp and moved east to link up with the 1st Battalion, 26th Infantry. The other battalion the 2d Battalion, 28th Infantry, was placed in a blocking position to the north.

The enemy fortifications in the area were well constructed, consisting of trenches with overhead cover, open trenches with firing positions, protective shelters cut into the sides of the trenches, fighting positions for individual and crew served weapons, and protective bunkers. Overhead cover was well constructed and consisted of multiple layers of saplings and a 12 to 18 inch layer of earth. Firing apertures were two to three inches above the ground level, making direct hits extremely difficult. The fighting positions were arranged in depth and were mutually supporting. There were well constructed above the ground structures used for cooking.

SLIDE 4

As each element arrived in the vicinity of the base camp, it was committed immediately. The 1st Battalion, 16th Infantry, arriving from the west attacked to the northeast with two companies on line. One platoon of the right flank company had heavy contact and was stopped. The other platoon, meeting no resistance, kept moving in the direction of the attack. The left flank company, meeting no resistance initially, moved out and later

came into heavy contact. By direct assault on at least four separate occasions, the company attempted to eliminate or reduce the resistance to their front. The last assault was conducted with 14 men. The final offensive action of that day was the right flank company's attempt to attack through the left flank company's position.

During the Battle of Bong Trang. the attacking battalions were committed without the benefit of a prior preparation by hard bombs, napalm, or heavy artillery, even though air and artillery were used during the contact. They were subjected to intense small arms fire from hidden firing positions. The attacking battalions had only a limited capability to produce casualties among the enemy force occupying fortified positions.

After the battalions were committed, the use of air strikes was restricted due to the configuration of battalions around the southern half of the base camp. The conduct of the attack of two companies, side by side, through the jungle points out the difficulty of control when the objective is ill defined and the visibility is restricted.

The 25 August 1966 contact with the Phu Loi Battalion marked the last encounter with the 1st Division as a battalion size force. The results of this engagement were 171 VC KIA and 6 PW. US casualties were 30 KHA and 183 WHA.

Since the fall of 1966, the 1st Division has not had a major unit engagement with the VC in a fortified position without a prior preparation using air and artillery. Many base camps have been encountered and destroyed but with a higher kill ratio than would have been possible without hard bomb and napalm preparation. During Operation Billings, 12 to 26 June 1967, a company entered a base camp that had been hit by air strikes two days prior. The base camp contained 53 bunkers and 35 bodies.

Another example of the application of the lessons learned at Bong Trang is the operation conducted by the 2d Battalion, 2d Infantry in the Heartshaped Woods, 18 May to 1 June 1967. The purpose of the operation was to clear approximately 800 acres of jungle containing a huge complex of base camps. Occupied base camps were encountered almost daily. Each was subjected to a preparation using hard bombs, napalm, and artillery prior to entry and search. The result of this 15 day operation was 27 base camps destroyed. Five battalion size, five company size, nine platoon size, and eight squad size camps were destroyed. The Heartshaped Woods was cleared by Rome plows, thus permanently denying the area to the VC.

Another example of destroying base camps while decreasing US casualties is the concentrated use of the B-52 prior to conducting search and destroy operations. During Phase I of Shenandoah II in the Long Nguyen Secret Zone, a total of eleven B-52 strikes were used against a complex of base camps. There were 1,447 enemy bunkers and military structures destroyed during the operation. Finally, it should be mentioned that there is an increase in the

use of 90mm recoilless rifle, and flamethrowers once the infantry actually enters a base camp, since these are the most effective weapons available within the battalion for the reduction of VC fortified positions.

This presentation is summarized as follows:

The 1st Infantry Division policy on the attack of a fortified position calls for finding the base camp with the smallest possible force, moving back and using hard bombs, napalm, and heavy artillery to destroy the fortified position.

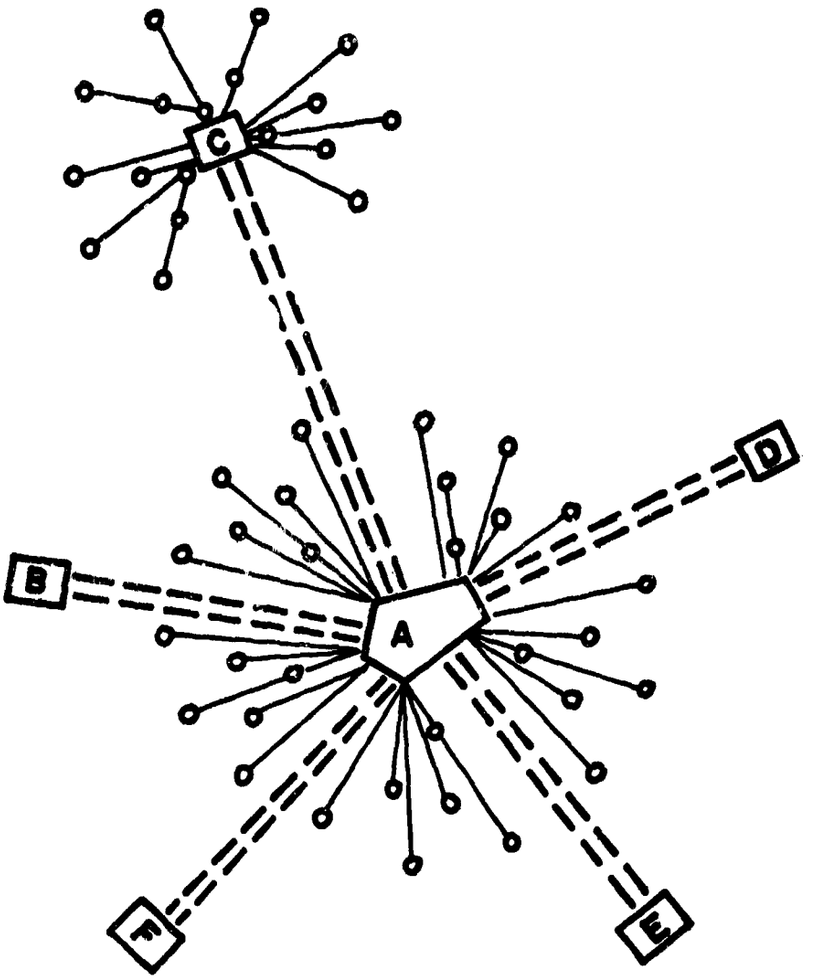
The manner in which a base camp is discovered should allow for the withdrawal of the element making the discovery. The discovery should be timely enough to prevent the engagement of the main body.

Upon discovery of a base camp, the fire team or security element making the discovery will return to the main body and hard bombs and napalm will be placed on the base camp. If the security element is in contact, then air strikes and artillery will be used to both break contact and enable the force to withdraw so the base camp can be destroyed. If heavy artillery is available, it will also be used to complete the destruction.

The infantry will enter the base camp after the air and artillery preparations are complete. The entry into a base camp requires a systematic approach. The tendancy to form on line and sweep the area must be curbed. The bunkers should be reduced one at a time and constant security maintained.

The key points to remember are : early detection, withdrawal prior to contact, accurate and sufficient air strikes, and a systematic and thorough search upon entry.

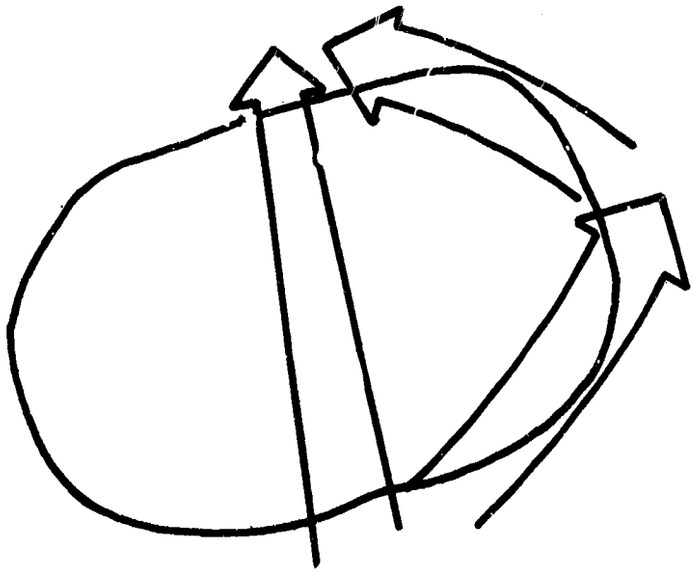
VC FORTIFIED POSITION



100 METERS

5V

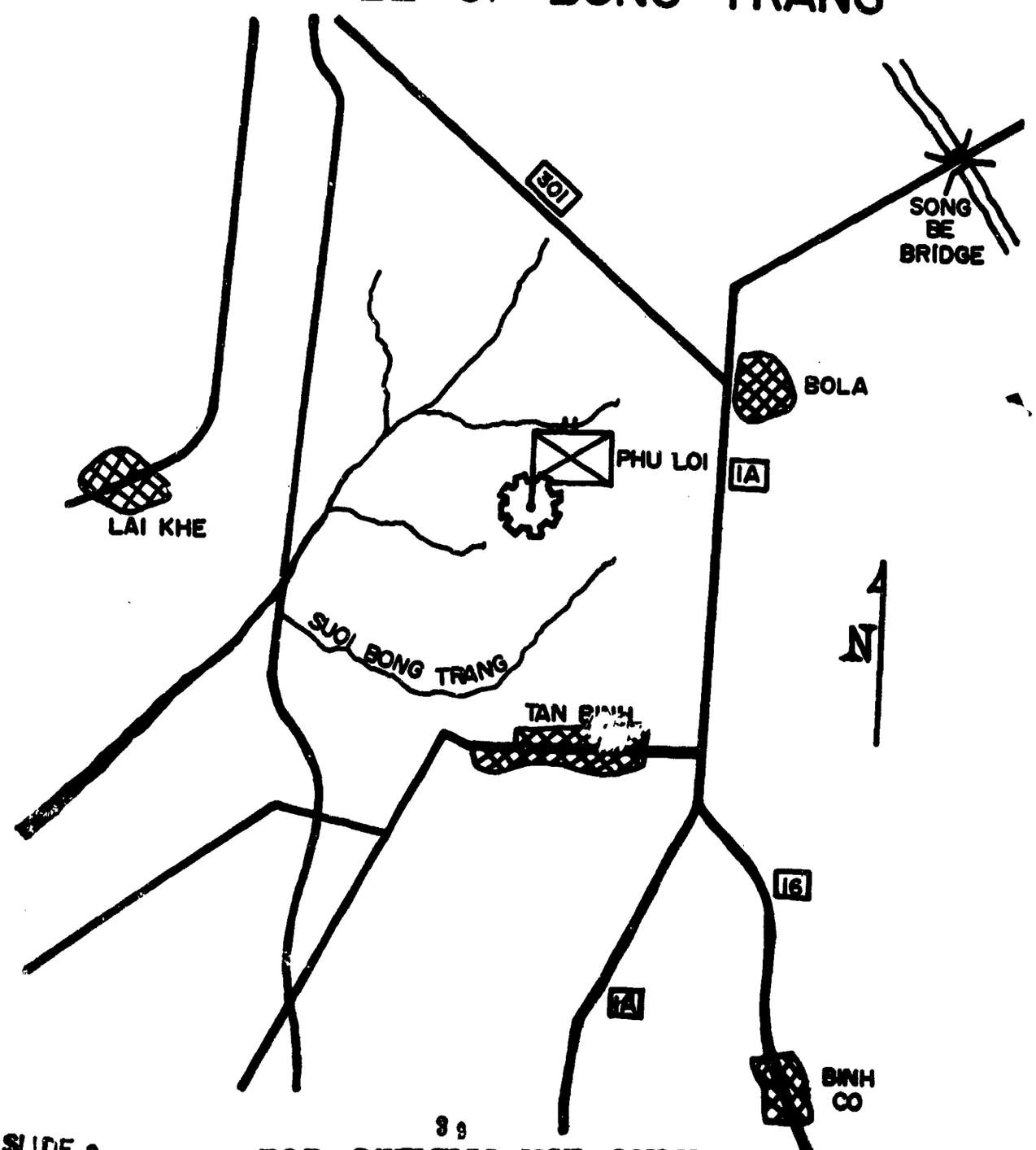
ENTRY INTO A BASE CAMP



53

FOR OFFICIAL USE ONLY

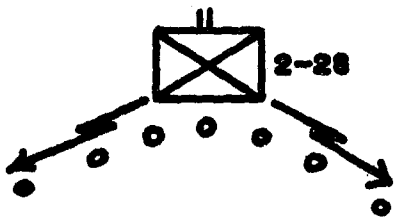
BATTLE OF BONG TRANG

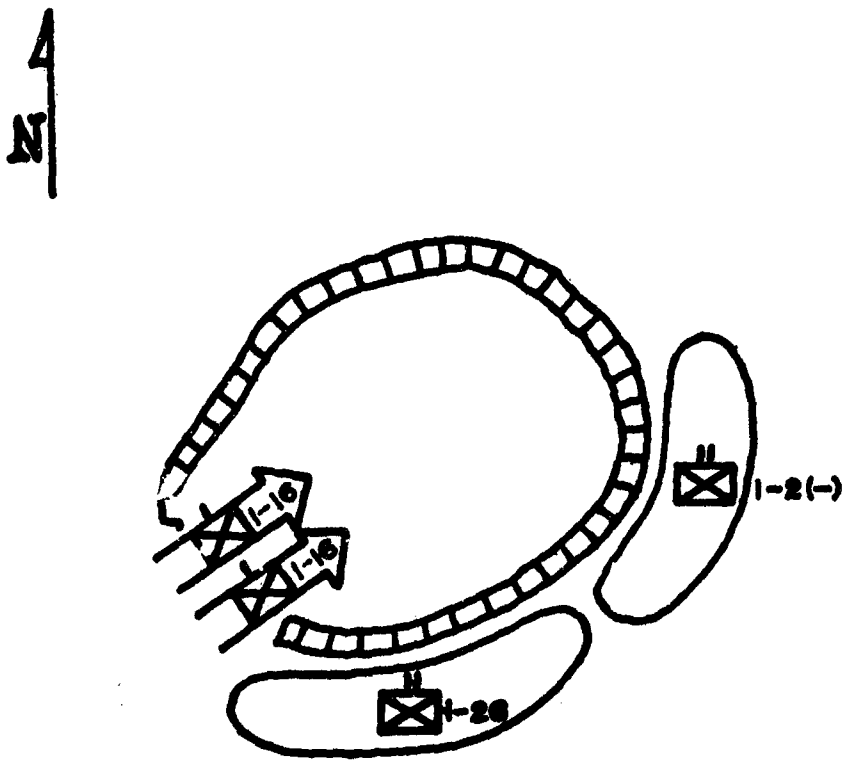


SLIDE 9

FOR OFFICIAL USE ONLY

BATTLE OF BONG TRANG





173D AIRBORNE BRIGADE PRESENTATION

During the Battle of Dak To, 1 through 23 November 1967, the 173d Airborne Brigade, under operational control of the 4th Infantry Division, participated in several significant engagements against heavily armed NVA forces occupying fortified defensive positions. This discussion will be limited to the final major action in the Battle of Dak To, the 173d Airborne Brigade's attack to seize Hill 875.

The area of operations fell within Kontum Province in the Central Highlands and was centered approximately 20 kilometers west of the Dak To Special Forces Camp. The terrain in this area is characterized by high mountain ranges interlaced by river valleys and streams. The mountains are covered with a continuous double and triple canopy ranging from 40 to 100 feet high. The weather during this period was excellent with temperatures ranging from a low of 55 degrees at night to a daytime high of 91 degrees.

Prior to the commencement of this operation the following enemy units were believed to be in the area of operations: 1st NVA Division; 32d NVA Regiment; 66th NVA Regiment; 24th NVA Regiment; 174th NVA Regiment; and the 40th NVA Artillery. Developments were to later show that the enemy forces were well equipped and supplied with an abundance of ammunition and food. By 15 November all NVA units were confirmed as being within the area except for the 174th NVA Regiment. On 16 November, information received from prisoners of war and captured enemy documents identified the presence of elements of the 174th NVA Regiment in the vicinity of Hill 875. It was suspected that the 174th NVA Regiment had a mission of covering the withdrawal of the 32d and 66th Regiments west towards the Cambodian and Laotian borders.

Subsequently, it became evident that the NVA had prepared a complex defensive system on Hill 875. Examination following capture of the hill showed that the defensive positions had been prepared three to six months previously. This permitted the growth of natural vegetation and added to the concealment of bunkers and contributed to their effectiveness.

SLIDE 1

The first slide is a sketch depicting the complexity of the trench and bunker system. It should be noted that the trench systems are interconnecting, connect with all bunkers, and, although not visible, tunnels connect various bunkers. There were three identified trench systems, all connected by tunnels. This system facilitated the movement of forces to reinforce threatened areas. It also enabled the enemy to reoccupy areas previously cleared. Therefore, it was necessary to cover all bunkers and trenches that were cleared to prevent their reoccupation.

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SLIDE 2

The next slide depicts Hill 875 after its capture. This is a portrayal of the extent to which tactical air and artillery were placed on the hill. In spite of the hill being stripped by air and artillery supporting fires, most of the fortifications withstood the bombardment.

SLIDE 3

Next is shown a sketch to depict a typical bunker found on Hill 875. Overhead cover varied from three to fourteen feet and consisted of a combination of logs and dirt. Bunkers were flush with the ground and presented virtually no target for direct fire weapons such as 90mm recoilless rifle and the 66mm LAW. As previously noted, most bunkers had short tunnels leading outward or from connecting trenches. Many of these tunnels were "U" or "L" shaped. Thus, when attacks were made against the bunkers the enemy would seek protection in the tunnels and then quickly recover to occupy their defensive positions. These same tunnels offered excellent protection against flamethrowers. In one instance, 12 LAWS were fired into a bunker aperature, yet when troops moved forward to clear the bunker they were met by a hail of grenades and automatic weapons fire.

In combating this defensive system, we found that white phospherous grenades were very effective in driving the enemy from their bunkers; whereas fragmentary grenades appeared to have little effect. The use of heavy naplam mixture directed into bunker apertures and subsequently ignited by grenades proved successful and destroyed bunkers; twenty pound satchel charges also proved effective. However, throughout the initial attacks one of the most difficult tasks was to locate the bunkers so that supporting fire could be employed. All bunkers were mutually supporting with excellent, well concealed fields of fire.

Time will not permit a detailed discussion of the 173d Airborne Brigade's attacks against Hill 875. However, a brief synopsis of events leading up to the final capture of Hill 875 is presented to provide an understanding of the tenacity of the enemy defense and the tremendous amount of supporting fires employed.

The events leading up to the final attack on Hill 875 were as follows:

On 18 November, the 26th Mike Special Forces Company made contact with a large NVA force on the east slope of Hill 875 and withdrew back into the valley.

On 19 November, the 2d Battalion, 503d Infantry was alerted to move towards Hill 875 with a mission of clearing the area. The attack on Hill 875 was made with Companies D and C abreast, Company A was held in reserve and was to provide flank and rear security for the battalion. The attacking companies came under small arms fire as they approached the northern slope of the hill at 1030 hours. As packs were dropped and the troops deployed to assault, the enemy fires increased and included heavy mortar and rocket attacks. Despite

friendly air strikes and artillery, the attacking companies were only able to push a short way up the hill during the next four hours. At 1430 hours the NVA launched a sudden and well coordinated attack against the battalion rear and flanks.

SLIDE 4

The reserve company, now located at the bottom of the hill and in process of preparing an LZ, was split and two platoons and the command post group was overrun. The remainder of the battalion formed a defensive perimeter on the forward slope of the hill. The perimeter received small arms, mortar and rocket fire throughout the night.

SLIDE 5

On 20 November, the 4th Battalion, 503d Infantry, initiated movement to linkup with the 2d Battalion. Following a movement of 6000 meters, Company B established contact with the 2d Battalion at 1700 hours and the Battalion closed into the perimeter at 2200 hours. All attempts to resupply or evacuate wounded for the 2d Battalion by helicopter were prevented by enemy automatic weapons fire.

On 21 November, following consolidation of the defensive perimeter, construction of a new LZ and the commencement of evacuation of casualties from the 19 November actions, the 4th Battalion launched an attack against Hill 875 at 1500 hours. Despite seven hours of continuous air preparation, the main attack immediately came under heavy automatic weapons, mortar and rocket fire. As occurred with the 2d Battalion, the NVA again attempted to attack the flanks and rear of the 4th Battalion, but were beaten off without friendly losses. By 1800 hours the attack was still 50 to 75 meters short of the top of the hill, although two trench lines had been penetrated and several bunkers were destroyed. As night fell, the companies were ordered to pull back 50 meters and consolidate their positions.

SLIDE 6

On 22 November, from 0700 to 1830 hours, continuous airstrikes were placed on Hill 875 and adjacent areas using bombs, napalm and rockets. Friendly forces withdrew another 75 meters during the day to permit heavier bombs to be placed on forward enemy bunkers. Countermortar fires had to be continued throughout the day and night. In addition, a two company task force from the 1st Battalion, 12th Infantry was airlifted into the valley near the southeast slope of Hill 875 and was placed under operational control of the 4th Battalion, 503d Infantry.

SLIDE 7

On 23 November, at 1100 hours, the final attack was launched against Hill 875. The 4th Battalion, 503d Infantry attacked the northern slopes and Task

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Force 1st Battalion, 12th Infantry the southeast. The attack met sporadic resistance and the hill was secured by 1200 hours, enemy mortars continued to fall on the hill [illegible] 1330 hours. On the following day, the 173d Airborne Brigade was relieved of responsibility for the security of the hill.

The commander's evaluation of lessons learned during the Battle of Dak To were as follows:

When the tactical situation permits, there should be a coordination meeting between ground commanders, artillery liaison personnel and forward air controllers to incorporate tactical air into artillery fire support plans. Closer coordination and planning of tactical air and artillery support should allow for the use of both systems simultaneously and negate the need for frequent check fires.

Enemy bunkers considered neutralized should not be bypassed until they have been thoroughly checked for reinforcing tunnels. Because of the extensive overhead cover used, more emphasis should be placed on munitions with delayed fuze assemblies.

The NVA used tree positions to their advantage on both defense and offense. This technique gives them a capability of preventing resupply or evacuation missions from being flown by placing automatic weapons fire on LZ's. Greater emphasis must be placed on defensive measures designed to locate, engage and destroy enemy snipers. CBU bomb clusters are effective, but can not be used in close proximity to friendly forces unless they have overhead cover.

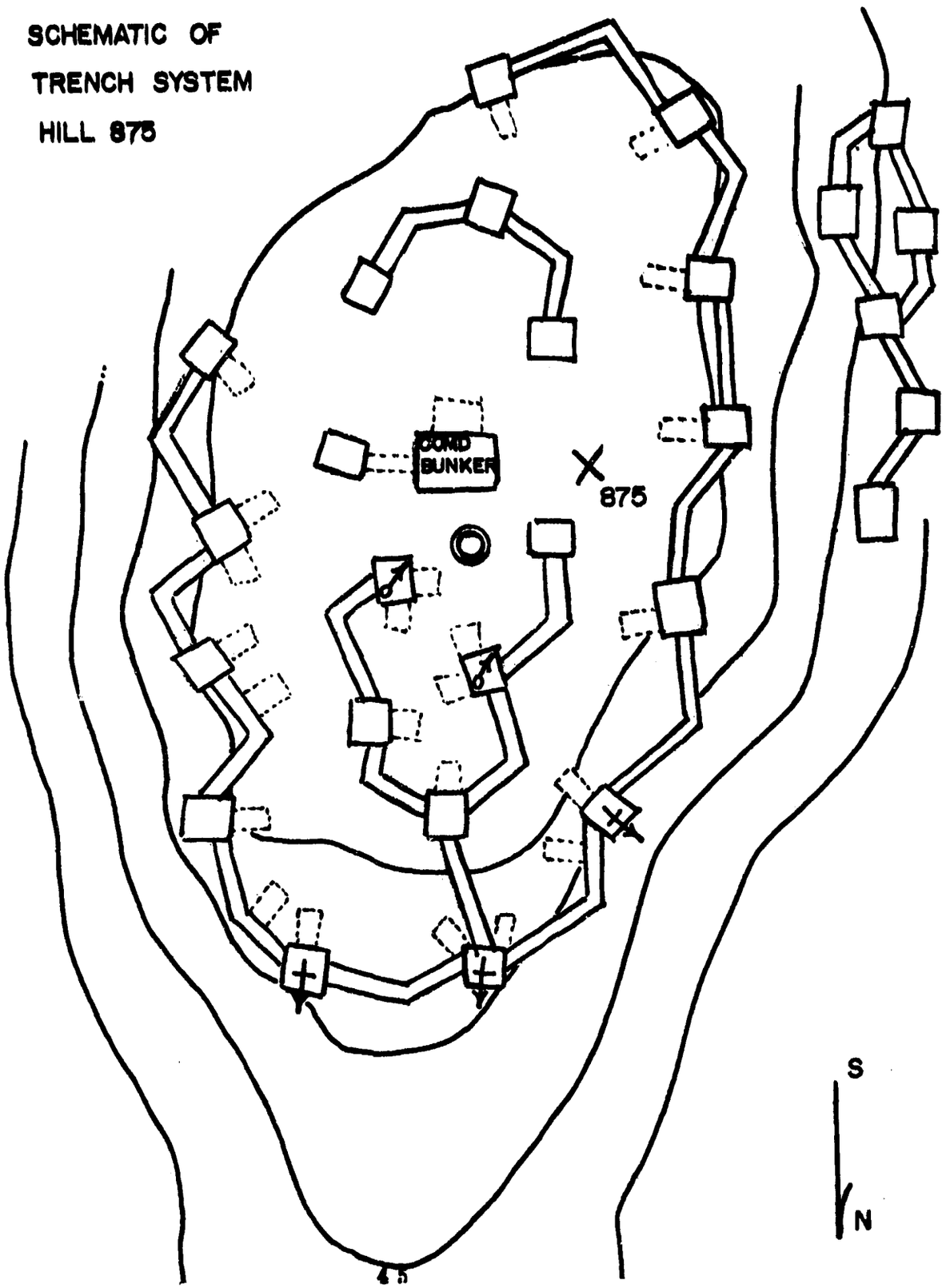
The NVA demonstrated a tactic designed to encircle a portion of a unit with the objective of defeating it in detail. When a friendly unit encountered a fortified position it could expect a sharp assault from the flanks or rear. The NVA continually probed friendly flanks and rear, but on discovery would break contact. Contact peripheral security must be maintained to neutralize this tactic.

The use of flamethrowers, satchel charges, LAW's and other special munitions were restricted because of infrequent training with special munitions. Specialized training in the attack of bunker complexes to include the use and employment of special munitions should be conducted periodically as the tactical situation permits.

The use of smoke to mark positions and to assist in the identification of helicopter landing zones should be restricted to an absolute minimum when the enemy has a strong mortar or rocket capability.

White phosphorous grenades are extremely effective in clearing bunkers and trench systems.

SCHEMATIC OF
TRENCH SYSTEM
HILL 875



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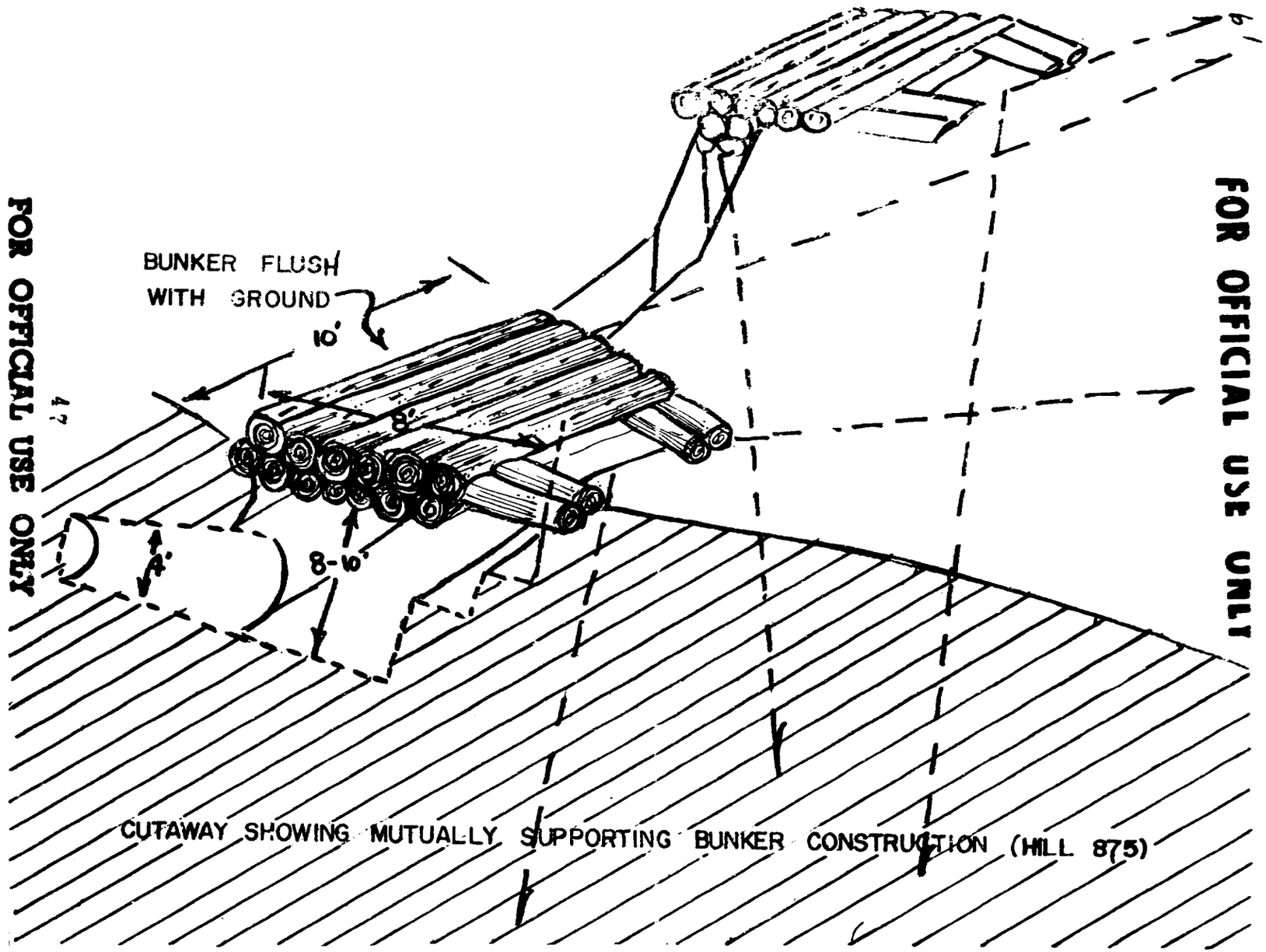

CUTAWAY SHOWING MUTUALLY SUPPORTING BUNKER CONSTRUCTION (HILL 875)

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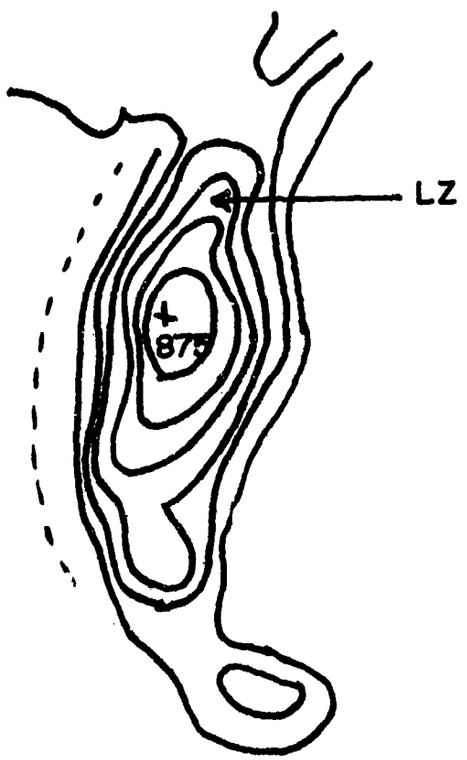
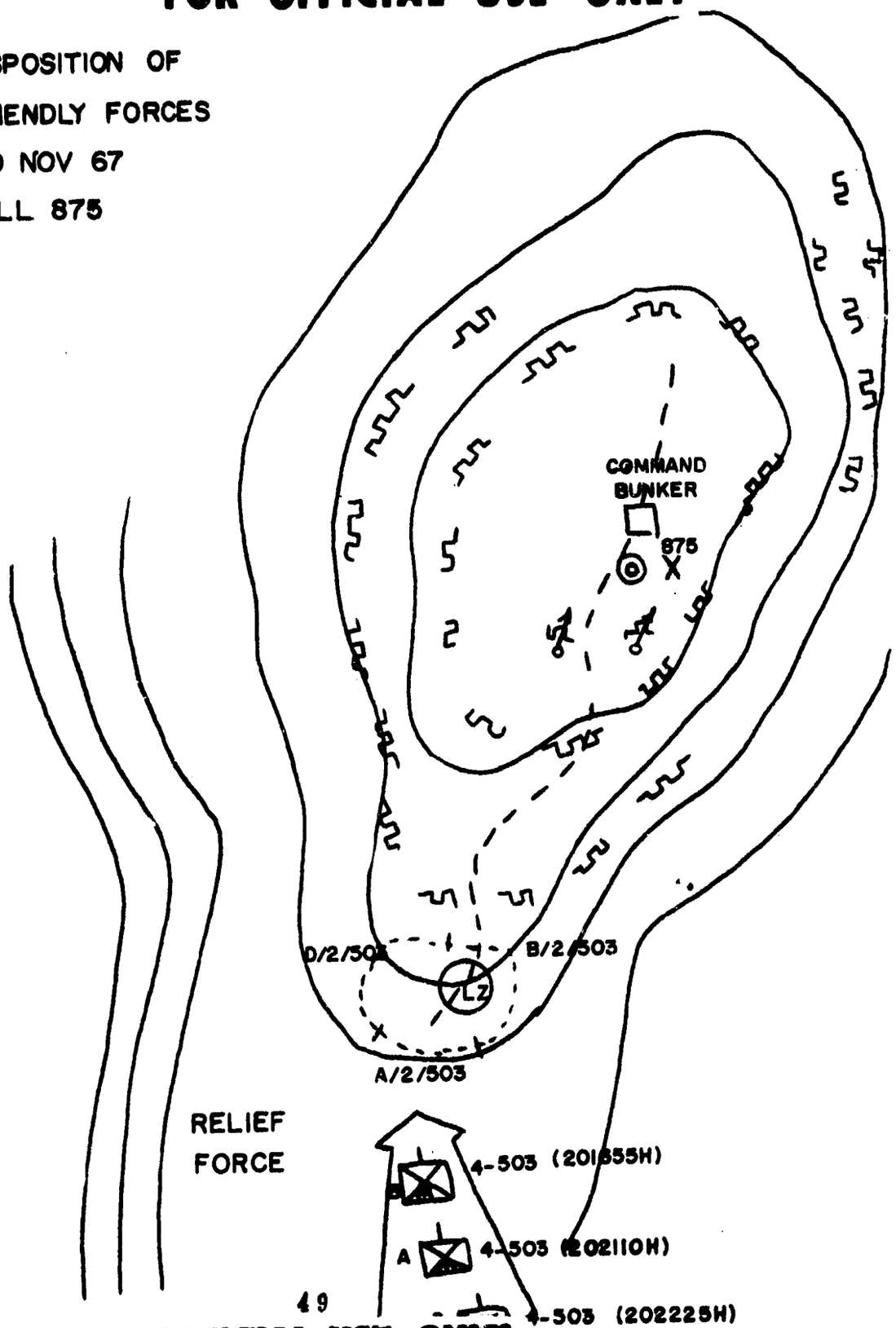
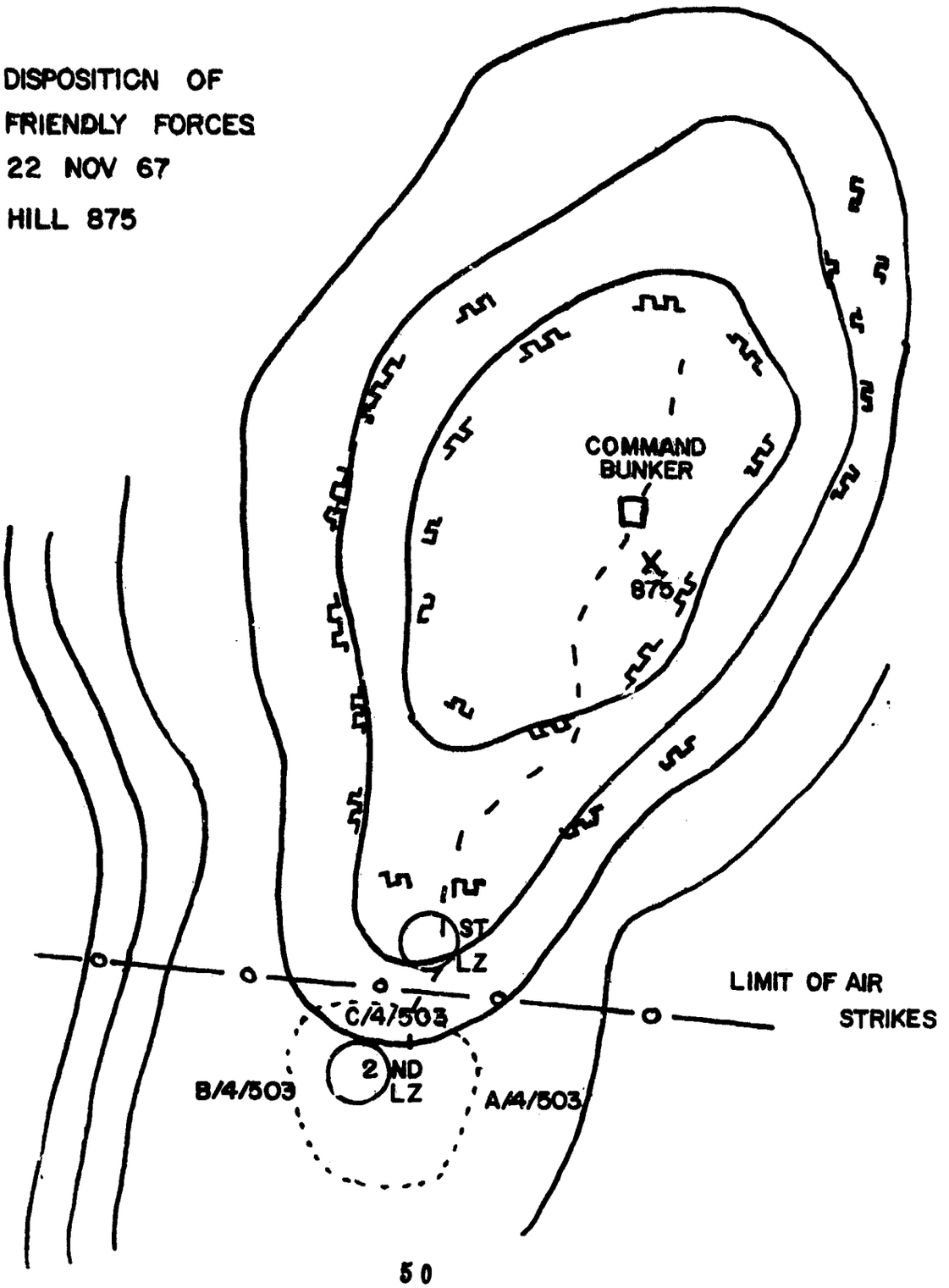


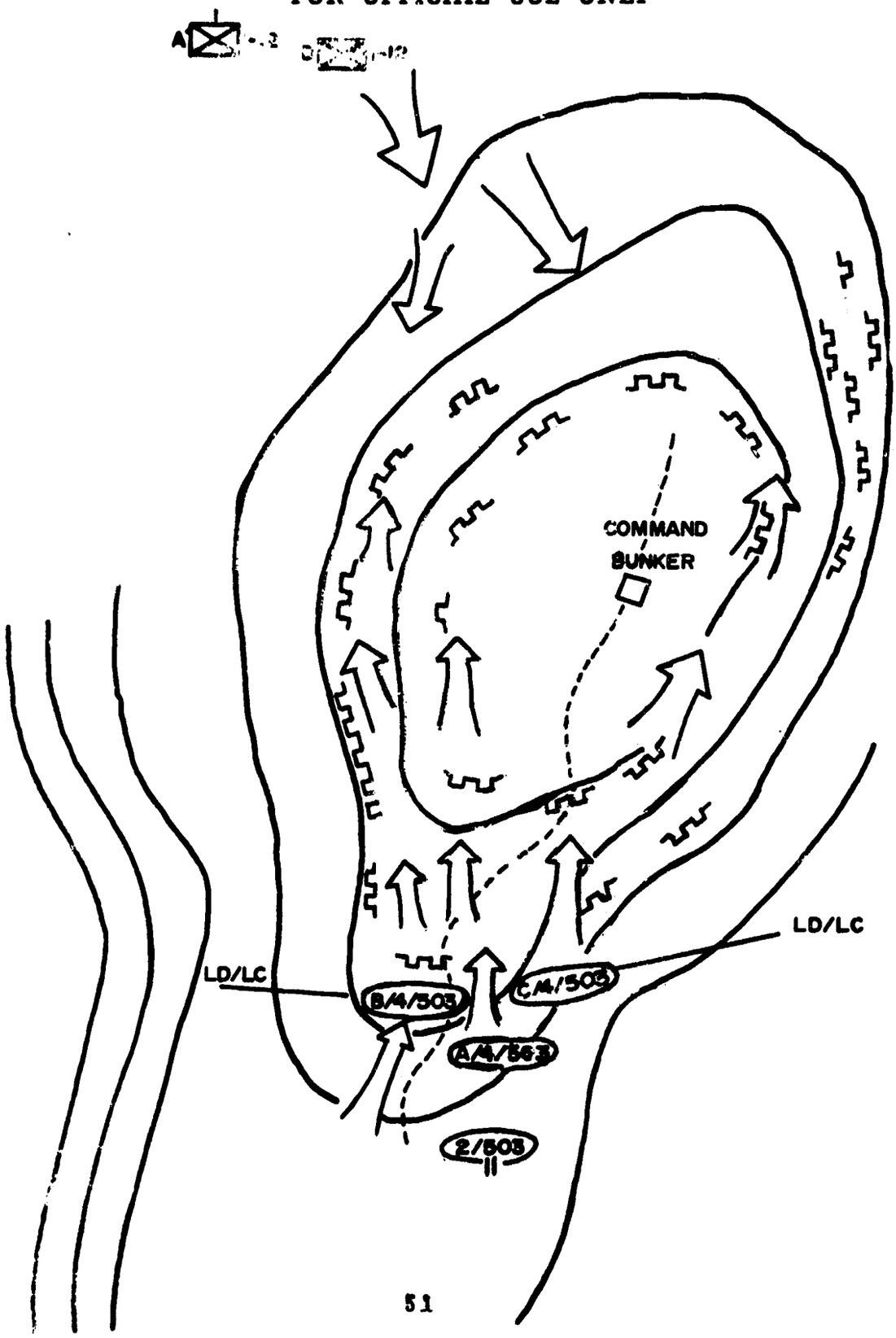
PHOTOGRAPH (35mm SLIDE) SHOW INITIAL LZ
CUT BY 2/503 INF.

DISPOSITION OF
FRIENDLY FORCES
20 NOV 67
HILL 875



DISPOSITION OF
FRIENDLY FORCES
22 NOV 67
HILL 875




COMMAND
BUNKER
LD/LC
LD/LC
B/4/503
C/4/503
A/4/503
2/503

66

4TH INFANTRY DIVISION

During this presentation the tactics and techniques employed by the 4th Infantry Division in attacking fortified positions in the jungle will be reviewed. In addition, two representative actions conducted by units of the 4th Infantry Division during operation Francis Marion and MacArthur against fortified NVA positions will be discussed. During the disucssion of the two actions, various NVA tactics and techniques will be cited. The lessons learned by the two US forces involved will conclude this presentation.

There are two seasons in the MacArthur area of operations (AO), a dry season and a monsoon season. The monsoons begin in May and end in October. The dry season begins in the middle of October and ends in late April. Short transition periods of approximately three weeks occur between the seasons.

The terrain in the northern portion of the division AO is generally precipitous with heavily forested jungles. Some hill masses rise to heights of over 1,700 meters. The trees often reach over 150 feet in height and trunk diameters of from four to five feet are not uncommon. In the more heavily forested areas, triple canopy occurs quite frequently over large areas. The terrain in the central and southern portions of the AO is not quite so precipitous. Hills range from 400 to 700 meters and single and double canopy are predominant. Rolling hills rising from river valleys permit the use of tanks and APC's in most areas.

SLIDE 1

A brief summary of a 2d Battalion (M), 8th Infantry battle on 30 April to 1 May 1967 will be discussed to demonstrate tactics and techniques of the NVA.

The terrain in the area permitted the use of tanks, and when paths were made by tanks, APC's could also be used. The foliage consisted of dense undergrowth with bamboo clusters and small trees with diameters of three to five inches.

The battle took place at the beginning of the monsoon season. Occasional showers were experienced at night and the days were relatively clear. Visibility in the area of contact was very limited, ranging from three to ten meters depending upon the density of the undergrowth in a particular area.

Tanks were successful in providing a path for the APC's in the dense undergrowth. The infantry troops found it to their advantage to fight mounted in the APC's, proceeding close to the enemy bunkers and hurling grenades and firing .50 caliber MG's, M60 MG's and M16 rifles from the carriers.

The NVA, in many cases, left their bunkers and attempted to rush the APC's using automatic weapons and hand grenades. This tactic proved very unsuccessful

and many NVA were either crushed by the tanks and APC's or sustained heavy casualties due to the cannister rounds and .50 caliber MG's fired from the tanks and APC's.

Over 48 tactical air sorties were flown in support of this battle in a two day period. Over 4,000 rounds of artillery, primarily 155mm and 8 inch, were fired in support of the ground action.

The 3d Battalion, 12th Infantry's actions from 3 to 21 November 1967 at the Battle of Dak To will be described as another example of enemy, fortifications, tactics, and techniques.

SLIDE 2

The terrain in the battle area was very precipitous and heavily forested. The hill masses rose from 900 to over 1,300 meters. Double canopy predominated, but triple canopy was not uncommon. The weather was clear and warm. Average daily temperature was approximately 85 degrees with temperatures dropping to 50 degrees and less at night.

Over 903 air sorties were flown in support of the 1st Brigade in a 15 day period. The 3d Battalion, 12th Infantry, an attached unit of the 1st Brigade, received a major share of those sorties together with the 173d Airborne Brigade. A daily average of 6,000 rounds of all types of artillery were fired in support of the ground action. 119 B-52 sorties were flown in support of the 1st Brigade during the 15 day period.

The following conclusions were made concerning enemy tactics and techniques:

The enemy can reinforce units in contact and has the ability to shift forces rapidly.

A small friendly force is allowed to enter the periphery of the defense, and an attempt is made to seal off the friendly force.

Outflanking and eventually surrounding friendly forces are to be expected in any attack on fortified positions.

The enemy places mortar fire on its own positions when friendly forces have ruptured his defensive position.

The enemy places mortar fire on friendly landing zones near areas of contact to interrupt and harass resupply aircraft.

Snipers are placed strategically in trees around and in fortified complexes and near tunnel networks.

The enemy uses 60mm mortars like hand grenades.

The following lessons were learned concerning the 2d Battalion, 8th Infantry battle:

Tanks and APC's can work together effectively, depending on terrain.

Keep pressure on the enemy. Fix him in position. Use all combat support available. Prevent exfiltration by heavy volume of fire.

Tanks can provide paths for APC's through heavy undergrowth.

90mm cannister round is very effective in heavy undergrowth.

Reconnaissance should be made by fire when necessary.

Tanks can be used to crush enemy bunkers.

The following lessons were learned concerning the 3d Battalion, 12th Infantry battle:

Do not commit additional forces when fortified enemy positons are discovered. Use small forces to detect enemy positions.

Heavy air ordnance is required to strip canopy and penetrate bunkers.

Use napalm and artillery to fix enemy in position.

A high enemy body count is not normally experienced in actions against fortified enemy positions.

Reconnaissance should be made by fire when necessary.

Be extremely watchful for enemy flank and rear attacks.

Gunships should accompany resupply aircraft into LZ's.

Troops should carry a heavy basic load when LZ's are scarce.

90mm recoilless rifles and M72 LAW's were found to be effective against enemy fortified positions. XM576 multipurpose round for M79 launcher is also effective in the jungle.

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SLIDE 1

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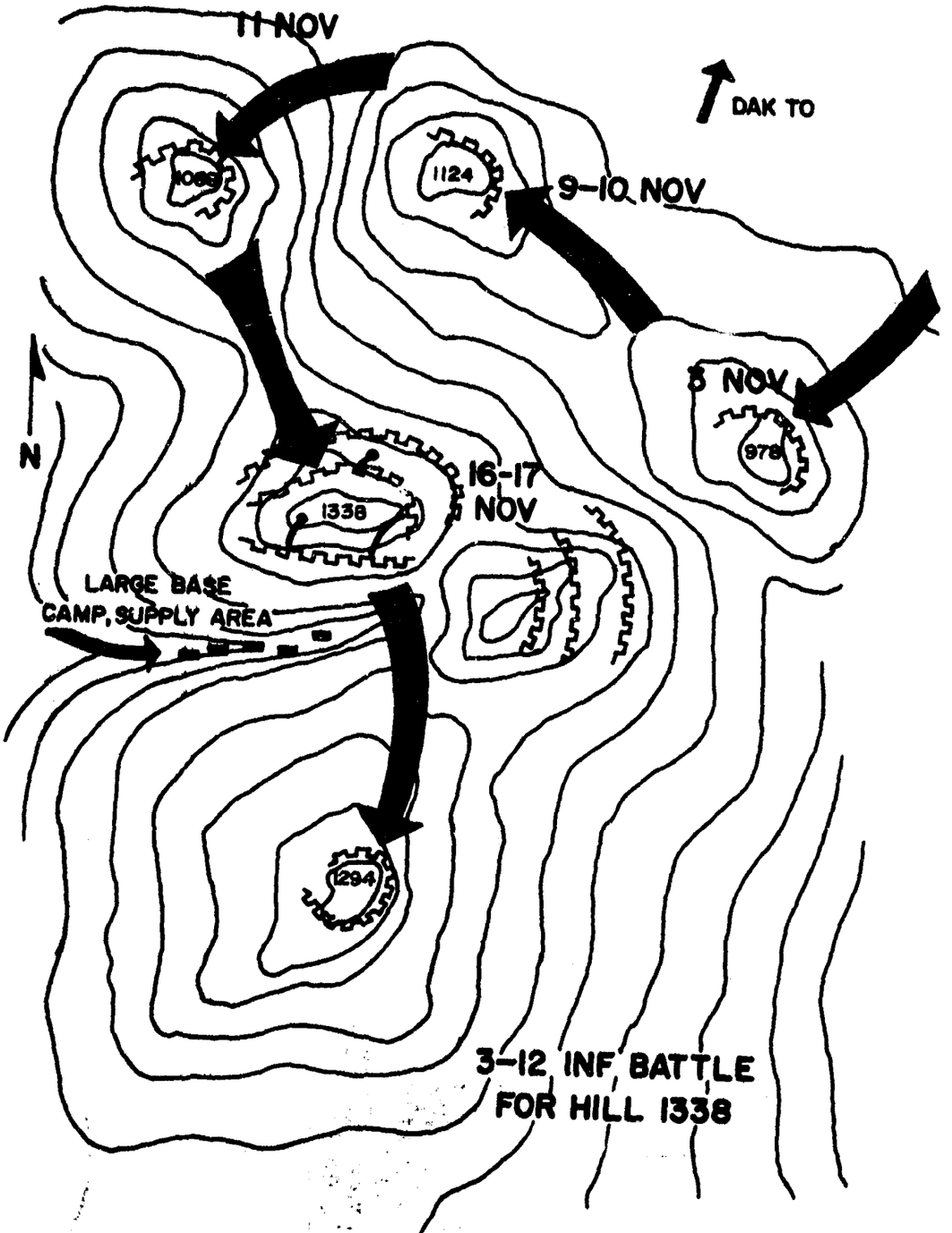
11 NOV
DAK TO
1088
1124
9-10 NOV
8 NOV
978
N
16-17
NOV
1338
LARGE BASE
CAMP, SUPPLY AREA
1294
3-12 INF BATTLE
FOR HILL 1338

SLIDE 9

1ST AIR CAVALRY DIVISION PRESENTATION

This discussion of an attack upon a fortified position refers to a portion of the Battle of Tam Quan which occurred from 6 to 9 December on the Bong Son Plains in the 1st Air Cavalry Division's area of operation. The discussion will be limited to those actions by 1st Cavalry Division units only and will not cover the important part played by the 40th ARVN Regiment, 22d Division. The chronological sequence of events as they occurred will be presented followed by a summary of lessons learned.

SLIDE 1

Initial contact was made in the late afternoon on 6 December 1967 by helicopter gunships from B Troop, 1st Squadron, 9th Cavalry. The flight leader spotted an antenna sticking out of a bunker at this location. He engaged the target with rocket and machine gun fire and received heavy automatic weapons fire in return. An infantry platoon fron the cavalry troop was then inserted into the area and upon reaching the edge of the village was pinned down by enemy fire. Another infantry platoon from the cavalry troop was air assaulted into an adjacent rice paddy and was likewise pinned down. The Battle of Tam Quan had thus begun.

The battle area was characterized by a large paddy island covered by palm trees and dense bamboo thickets separated by numerous hedgerows. A hamlet was located on the northern and southern ends of this paddy island complex. The enemy had constructed deep interconnecting trenches all along the edge of the island. Spider holes with covered tops and log and earth bunkers interlaced this trench network. Many of the trench works were covered over with logs and earth to provide overhead cover. All of these fortifications had excellent fields of fire across the open paddies that surrounded the complex. Most of the positions were mutually supporting.

The 1st Battalion, 8th Cavalry was given the mission to attack and destroy the enemy force and to assist in the extraction of the two cavalry platoons that were pinned down. A platoon of armored personnel carriers, attached to the 1st Battalion, 8th Cavalry was dispatched from landing zone (LZ) ENGLISH to the contact area to secure a LZ on the west of the village complex. At 1750 hours, just prior to dark, Company B, 1st Battalion, 8th Cavalry was air assaulted into this LZ, which by then was partially secured by the APC platoon. No enemy contact was made during the landing. As the second platoon attempted to move to the northeast, it was immediately engaged by the enemy from camouflaged spider holes, trenches and bunkers. The platoon leader was killed and several men wounded. As darkness fell, Company B consolidated its position on the LZ and prepared defensive positions. The armored personnel carrier platoon which had earlier attempted to flank the enemy positions returned to the Company B perimeter. The deep ditches around the paddy island had prevented them from accomplishing their mission. Helicopter flare ships began providing continuous illumination and by 2100 hours the flare ships of "Spooky" and later "Moonshine" were on

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station. With the help of the APC's, the two cavalry platoons were extracted under fire and by 2200 hours, small arms and automatic weapons fire virtually ceased. Continuous artillery fire pounded the immediate area of contact throughout the night and blocking fires were employed to interdict enemy routes of egress and reinforcement.

In the early morning of 7 December, Company A, 1st Battalion, 8th Cavalry was air landed on the LZ to join Company B in the attack. A second reinforced platoon of APC's from LZ LOBOY closed the area at 0850 hours. A very heavy concentration of artillery fire began to pound the area of contact at 0900 hours. Fires were provided by three 105mm howitzer batteries, a 155mm howitzer battery and later in the day an 8 inch howitzer battery.

At 0915 hours, both companies reinforced by the APC's jumped off in the attack to the East. Immediately they ran into stiff resistance from well prepared enemy positions. The units were ordered to consolidate their positions. Aerial rocket artillery, conventional artillery and tactical air strikes were then employed to pound the enemy positions. This continued unrelentingly for three and one half hours. Two flamethrower APC's arrived to reinforce the attacking units and at 1255 hours, after an intense riot agent (CS) attack, followed by an artillery time on target mission, both companies again attacked to the east on parallel axes. Progress was slow but steady. The enemy employed rocket launchers and recoilless rifles in an effort to stop the advancing APC's which were interspersed throughout both companies. One APC was hit by a recoilless rifle but the back-blast gave away the enemy position and it was destroyed by a burst of flame from one of the flamethrower APC's. There was ample evidence as the troops advanced that the artillery and tactical air had greatly taken its toll prior to the attack. The enemy still fought tenaciously, however, from scattered pockets and trench lines in and among the attacking companies. Countless grenades bounced off of the APC's as they advanced. In many cases the NVA soldiers were killed by APC's running over them and crushing them while still in their positions. The companies, advancing under scout helicopters, finally succeeded in penetrating the trench and bunker network. After having moved some 500 meters from the line of departure, they were ordered to stop and again consolidate their gains. Two D-7 bulldozers were brought into the contact area to construct a causeway across a stream and to clear LZ's behind the attacking companies. This facilitated medevac and resupply. The dozers, secured by the infantry, worked continuously to fill in the trench lines and destroy the bunkers in the secured area. Many enemy positions containing bodies and NVA equipment were covered over as the dozers cleared the areas within the companies' perimeter. By 1515, Company D, 1st Battalion(M), 50th Infantry arrived in the battle area and at 1530 jumped off in an attack on a wide front across the rice paddy area to the East. The unit's mission was to cut the village complex of Dai Dong in half. Enemy resistance was light, however, the company bogged down in its effort to negotiate the dikes surrounding the objective. Company D was then ordered to join with the other two companies

in a perimeter defense. During the night of 7 December constant illumination was again provided in the area and extensive artillery pounded the area of contact with blocking fires interdicting the routes of egress.

On the morning of 8 December Company C, 1st Battalion, 8th Cavalry replaced Company B and prepared to attack. At 0815 a ten minute artillery preparation was fired followed by a riot agent attack delivered by aerial rocket artillery. Five minutes after the riot agent attack, another artillery preparation began, starting with a five battery time on target. The riot agent attack proved very effective as the enemy began running from his bunkers and trenches. The second artillery preparation caught them in the open resulting in 23 KIA. As the artillery fires were lifted, Company D, 1st Battalion (M), 50th Infantry jumped off in the attack to the east, reconning by fire. Progress was rapid and upon reaching the eastern edge of the village they returned to the starting point.

At 1230 hours another artillery preparation followed by a riot agent attack and another artillery preparation were fired and Companies A and C, 1st Battalion, 8th Cavalry interspersed with Company D, 1st Battalion (M), 50th Infantry attacked to the northeast. Sporadic fire was received initially but was quickly eliminated and the attack progressed smoothly. Again, the two D-7 bulldozers closely followed the attacking elements, destroying bunkers, filling trenches, and cutting LZ's. By late afternoon all companies had returned to their night defensive positions. Constant illumination was again provided and artillery pounded the area while blocking fires interdicted the routes of egress.

On the morning of 9 December Companies A and C, 1st Battalion, 8th Cavalry along with Company D, 1st Battalion(M), 50th Infantry began their final attack through the Dai Dong complex after a heavy artillery and riot agent attack. There was little enemy resistance and the final objective was reached at 1530 hours.

The results of the battle were:

204 NVA KIA
1 NVA captured
20 small arms captured
6 crew served weapons captured

Total US losses were:

9 KHA
77 WHA

As in any actic . of this size there are lessons to be learned. The following is a summary of the major lessons learned in Phase I, Battle of Tam Quan:

The technique of firing an artillery preparation followed by a GS attack, followed by a second artillery preparation, is highly effective. A captured NVA soldier stated that the gas attack that he was in was very effective and that his comrades were caught by surprise by the CS. Many of them got up to run away and were killed by artillery. Dead NVA were found on the battlefield with peices of charcoal in their nostrils; evidently a primitive type mask. Clear plastic type gas masks were also found. They had provisions for urine soaked rags to be inserted under the nose to supposedly negate the effect of the CS. The CS evidently took its toll in an indirect way.

Air strikes should be used whenever possible to dislodge enemy troops in bunkers. The 750 pound fuze delay bomb is particularly useful for destruction of fortifications. Air strikes should be scheduled if at all possible when planning an attack. You cannot utilize TAC air, artillery and aerial surveillance by scout helicopters at the same time.

Flame thrower APC's are invaluable in this type fighting. They should be utilized as much as possible since their psychological effect is as great as their actual killing effect. The refueling point for flamethrowers must be as close as possible to the battle area, otherwise valuable time is lost in rearming this highly effective weapon.

Engineers should closely follow the attacking elements to destroy bunkers, fill in trenches, police the battle area, and construct LZ's for medevac and resupply. Many NVA were buried alive by the dozers when they refused to come out of the elaborate bunker networks. Our units were being constantly sniped at from within their perimeters until the dozers arrived.

Aerial surveillance by scout helicopter throughout the battle is essential. Pilots, flying in protective masks, were able to precede the units in the attack. Often they spotted NVA in the trench lines and engaged them while the infantry maneuvered to complete the destruction of the enemy force. It is interesting to note that the enemy was initially located by scout helicopters.

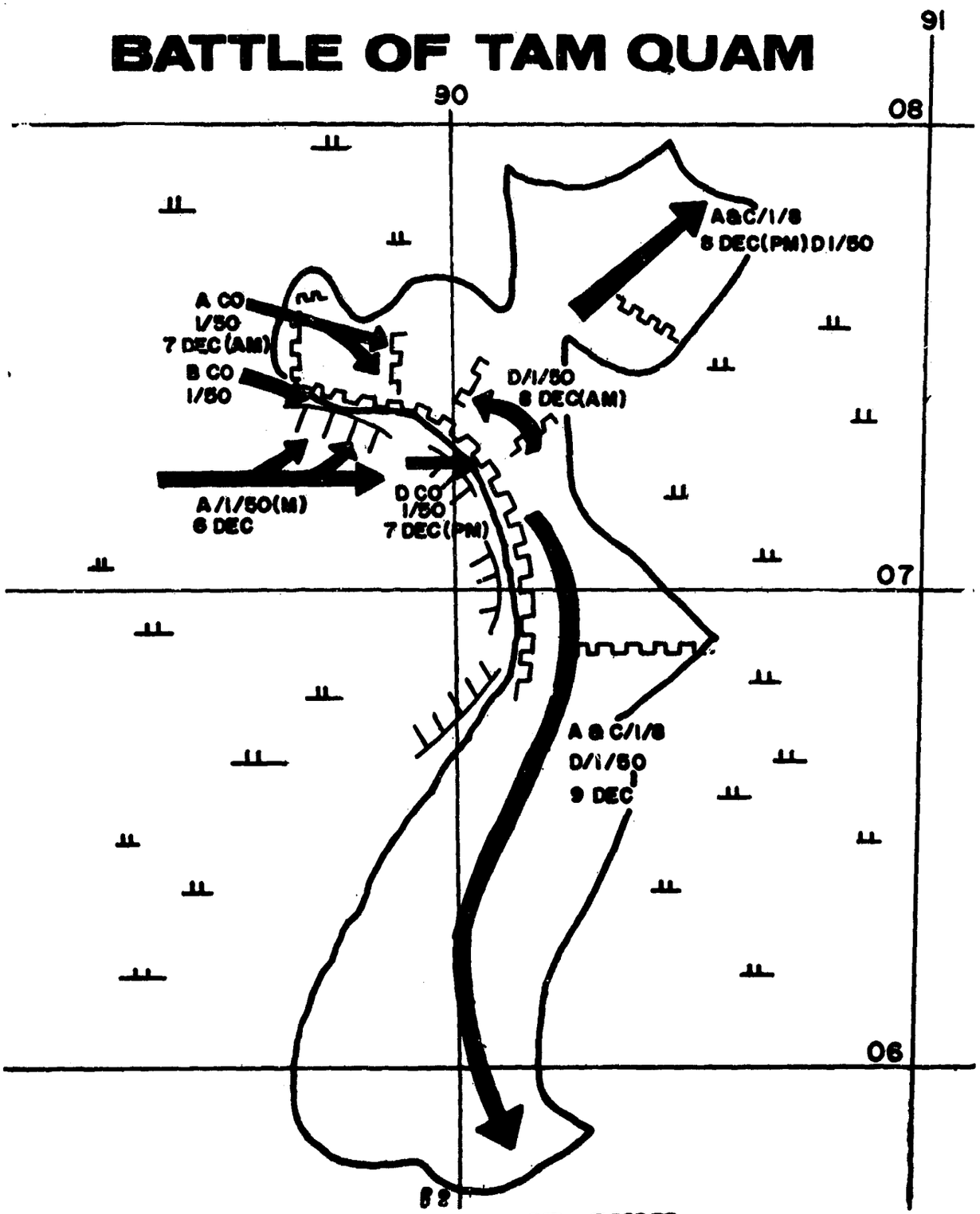
Artillery fires should be massed whenever possible. The effect of five batteries of artillery was evident to the advancing troops. Many bunkers and spider holes were uncovered by the artillery and would probably have gone unseen by advancing infantrymen until it was too late.

Units should carry marking panels with them at all times. Panels allow speedy aerial identification and greatly assist when trying to adjust close-in supporting fire or TAC air strikes. All armored personnel carriers should be marked on the top with a colored panel.

Artillery blocking fires greatly assist in containing an enemy force once he has been located. They should be adjusted accurately by an aerial observer if at all possible. They tend to confuse the enemy and impede reinforcement. It is interesting to note that despite our blocking fires, the 22d Regiment was able to reinforce the contact area with the 7th Battalion on the late afternoon of 6 December.

Protective masks must be immediately available to units in contact to insure the unhindered use of CS agents. When outside units are attached for deployment into combat, an immediate check should be made on the status of their protective masks.

BATTLE OF TAM QUAM



III MAF PRESENTATION

This discussion is divided into three categories based on the geography of the Northern I Corps. The first is the mountain jungle or rainforest, typified by the Hai Lang National Forest area. The second is the Piedmont area like that found around Con Thien. The last is the coastal region similar to the Cua Viet River area just south of the DMZ. In each instance the position described is a NVA position rather than VC.

In the rain forest, the enemy uses the canopy to conceal rear areas. Hospitals, depots, base sites and training areas are located in these areas because aerial observation does not penetrate the thick vegetation. In view of constant exposure to air strikes, overhead protection must be strongly constructed to withstand near misses of the heaviest types of ordnance. Heavy construction materials are readily available in the form of hardwood logs and laterite soil. The location of enemy bunkers is generally in the side of a slope and dug down and into the hill or ridgeline. These sites are always close to streams. Apertures which are roughly 18 inches by 24 inches are the only means of entry into the bunkers and afford observation and fields of fire in 100 degree to 180 degree arcs. These fortifications usually face down hill and overlook trails or streams the enemy consider avenues of approach into the area. The main weakness of the rain forest bunker is its directional nature. Once detected, envelopment or encirclement renders the position untenable. Because of the size of the aperture, it is relatively easy to use the M79 grenade launcher from the front or a hand grenade or satchel charge from the side or rear.

SLIDE 1

The following example of attacking fortified positions occurred during Operation Shawnee in May 1967. Company C, 2d Battalion, 4th Marine Regiment was moving southeast out of the Hai Lang National Forest Reserve on the 26th day of the operation. As the company moved out of the higher hills, a well worn path was found about two meters wide with hand rails and steps. Several enemy were killed in a meeting engagement and the company left the trail and moved cross country, on high ground but in the same direction. At the top of a hill it was noted that every third or fourth tree had been freshly cut down and that a trail led down hill. The company moved down the trail and ran into an unoccupied fighting position that had fresh diggings around it. About 15 meters farther down the hill was a company base camp with mess hall, quarters and equipment for about 80 people. The sentries were in bunkers facing down hill to the east and south covering two trails leading into the area. The bunkers gave them an advantage only when engaging an enemy attacking up the trail. One NVA soldier was killed and the rest fled before the second set of bunkers could be covered. If the situation does not permit an envelopment, conventional tactics employing a base of fire element using machine guns, M79's, LAW's and 3.5 inch rockets, with a maneuver element using hand grenades,

gas grenades, and sachel charges should be employed.

The Piedmont area will be discussed next. Much of this area is former farm land with terraced fields, thick hedgerows and occasional densely wooded areas. The NVA will set up each position to fit the gound and make total use of camouflage and concealment afforded by existing vegetation. Size and comfort are sacrificed for concealment and tactical advantage. Bunkers and spider traps are connected by narrow trenches concealed in hedge lines. The positions rarely extended above ground level more than 12 to 18 inches and firing apertures can be as narrow as six inches. Narrowness of trenches and apertures reduces the chance of a shadow giving the position away both from the air and ground.

When a trench is dug, it is either within a bamboo and thorn hedgerow or in the shadow of a treeline. Each position differs slightly to cope with problems of concealment, drainage, and tactical deployment. Generally, all positions do follow certain guide lines. The living bunkers are drained by gravity and interconnected by trenches. The fighting holes and bunkers are narrow, and deep enough for a man of Vietnamese stature to crouch and be completely hidden. Most have coverings of only about six to ten inches in thickness. All positions are completely camouflaged with natural materials. Often positions are constructed so that living vegetation constitutes the concealment making continuous changing of camouflage unnecessary.

Bunkers are positioned so they coincide with elevated ground to allow for drainage, and within hedgerows, groves and thickets to provide concealment. Fields of fire are generally not prepared by cutting, but by positioning the bunker where it covers a natural opening, or a paddy. If it is necessary to cut fields of fire, they are cut from 12 to 18 inches off the deck. This renders the fields of fire difficult to locate unless the attacker is close to the ground. Circular or triangular positions are generally not employed. Fortifications are linear with a series of bunkers and fighting holes to tie down open flanks. Trenches and bunkers can be found running perpendicular to the main line of fortifications making the position for all practical purposes a fortified "L" or "X" shaped ambush. Hedgerows close at hand are reinforced with barbed wire, and booby traps are placed in the vegetation. These hedgerows form a barrier which serves the same purpose as barbed wire fences do in friendly positions and also provides warning of approaching forces.

SLIDE 2

In attacking a position similar to the one described above, F Company, 2d Battalion, 4th Marine Regiment was allowed to advance within ten feet of the enemy while deployed on line. When the enemy opened fire wounding many of those closest to his positions, he kept the Marines pinned down and caused subsequent casualties among those who attempted to pull the wounded back to safety. Because of the close proximity of the wounded to the enemy position,

it was impossible to use supporting fires to reduce the resistance. When a second rifle company was brought in on the enemy's front, they received small arms and mortar fire. Neither company could fix the enemy positions due to the completeness of the camouflage. A third company moved into position to assault what appeared to be the enemy left flank. This attack fell short when it met stiff resistance from a trench line and bunkers to the front, and a similar system on their right flank. The enemy positions were so well concealed that they could continue to fire west and still remain hidden from the friendly troops but a short distance away, to the rear of the bunkers. After remaining in contact for about six hours, the three rifle companies withdrew to a position about three hundred yards from the enemy area. Air strikes and artillery were employed on the enemy positions with good effect. Later, the battalion returned to the position and found the enemy had made a hasty departure. The position was studied closely and then destroyed with demolitions.

This experience pointed out the necessity of early detection of the enemy in order to allow use of supporting fires. Open ground should be avoided, and if possible, units should advance along tree lines covered by a base of fire. The point should be alert for signs of enemy activity. Hedgerows prepared with booby traps, punji stakes and barbed wire, give away the enemy position and serve as a warning. Scout dogs have proved their value in this type situation. The enemy will fight only when he feels he has the advantage. Without overwhelming superiority in supporting arms, he has only the advantage of surprise, achieved through skillfully prepared and camouflaged positions. Remove this advantage and his position becomes untenable. If contact is initiated by the enemy, tear gas should be dispensed either from the E8 backpack tear gas launcher or M79 grenade launcher. Artillery should be fired about friendly forces and into the enemy's rear to stop his envelopment, reinforcement, or withdrawal. A steady base of fire from the covering element should be delivered on the base of all vegetation in order to hit the camouflaged firing points. An aerial observer should cover the surrounding area to determine if the enemy is moving to reinforce, withdrawing or preparing an attack of his own. Immediately prior to tear gas being fired, troops should mask, but not before in order to maintain the element of surprise. While masking, troops should cover each other. Napalm should then be dropped by close support aircraft as close to friendly troops as the situation permits, remembering that extra caution should be exercised in marking the forward friendly units. If tanks, landing vehicle tracks (LVT) or CONUS are available, they should precede the ground attack in order to shield the infantry as they close in on the enemy. If tanks or other armored vehicles are unavailable, the assault on the enemy position should be preceded with 3.5 inch rockets, LAW's, small arms, and M79 grenades firing on suspected and known enemy positions.

Bunkers and fortifications in the coastal region from the Cua Viet River north follow the same general outline as those found in the Con Thien area. They are positioned linearly with appendage-like extensions of supporting fortifications. In this area, however, camouflage is not an easy matter since vegetation consists of pine and sparse scrub bushes with no hedgerows or thick groves. Although aerial observation is restricted somewhat, ground

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observation to an alert point is not difficult and friendly maneuver is not as restricted as in the Peidmont area several miles inland. In approaching an area suspected of being fortified, conventional preparations and bunker busting tactics are highly successful.

SLIDE 3

For example, a squad sized patrol of F Company, 2d Battalion, 4th Marine Regiment observed from a distance of 200 meters, 50 to 60 NVA soldiers marching south. Artillery was called and the enemy broke and ran into what turned out to be a position for a reinforced company. The balance of F Company mounted three LVTP-5 (amphibian tractors) normally held in position for mobile reaction. Within 18 minutes, the company was in position and an air strike was being conducted. At the conclusion of the air strike, naval gunfire and artillery were called on suspected enemy artillery and mortar positions in the DMZ and the area 1000 meters north of the ground contact. One platoon was sent forward up the beach between the water and an eight meter high sand berm, while the remainder of the company laid down a base of fire. The enveloping platoon moved forward with their advance masked from enemy fire by two LVTP-5's. The enemy quit his position and ran through the artillery fire north. Pursuit was made to within 1500 meters of the DMZ. When the area was searched it was found that the enemy's positions gave him no advantage at all to the east, the direction of the envelopment.

In all three situations things remain constant. The enemy's fortifications are normally directional, giving him advantage only in one, but sometimes two or more directions. Camouflage is excellent; often the weakness of the position is disguised completely. Early and accurate identification of the enemy positions is necessary so the attacker can make a realistic estimate of the situation before he becomes totally committed. Artillery and air should be used to interdict enemy movement even if they cannot be used on the enemy positions under direct attack. It has been found more advantageous to assign specific objectives without time limitations; the field commander may then adjust his tactics to the changing terrain and enemy situation.

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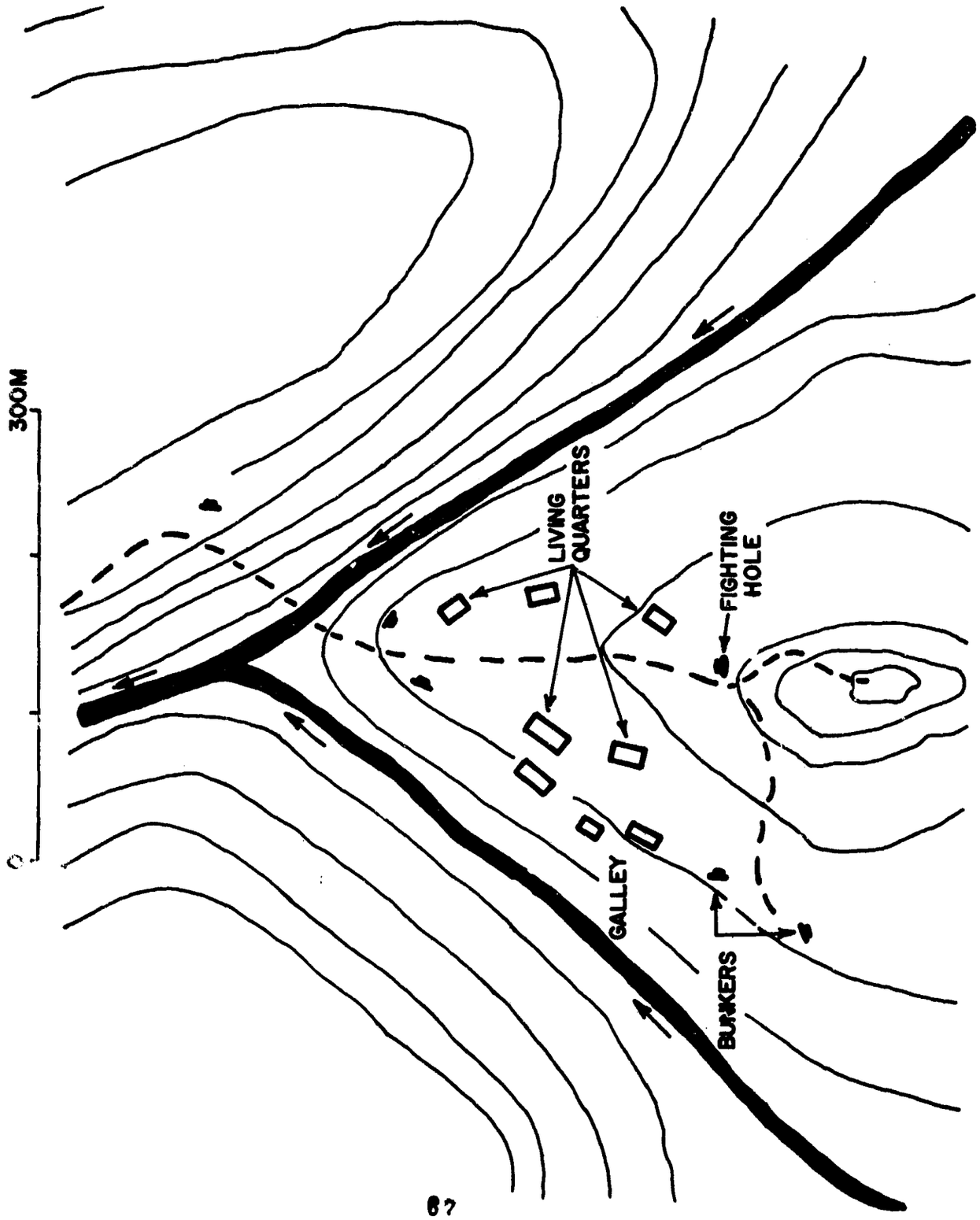

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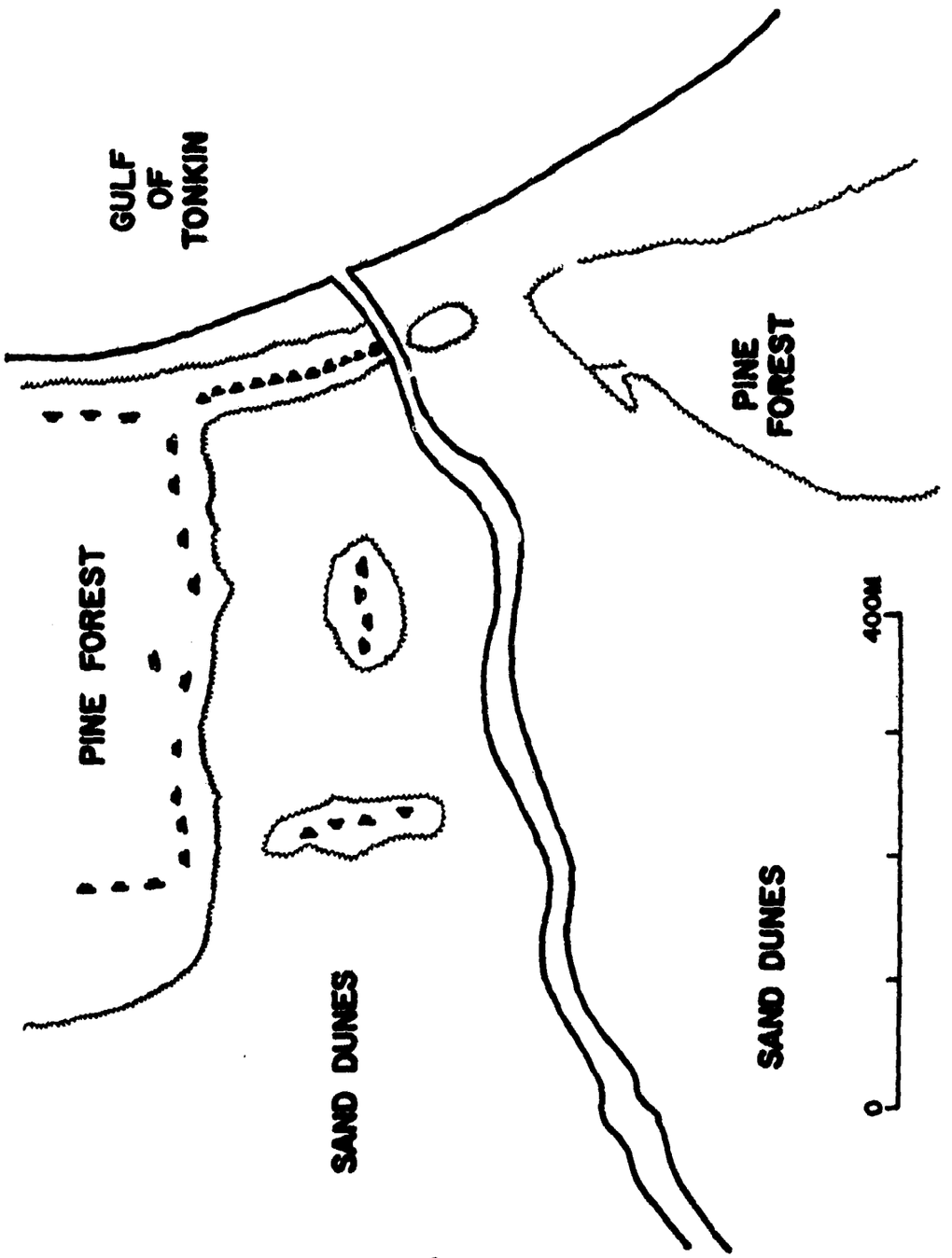
COMMAND BUNKER
LIVING BUNKER
FIGHTING BUNKER
FIGHTING TRENCH
FIGHTING HOLE
FIGHTING POSITION
CONNECTING TRENCH
DITCH 2 TO 10FT DEEP
N


GULF OF TONKIN
PINE FOREST
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SLIDE 9

196TH LIGHT INFANTRY BRIGADE PRESENTATION

This presentation deals with a three-day battle fought by elements of the 196th Light Infantry Brigade beginning on Thanksgiving Day 1967, against a fortified enemy position in Quang Tin Province. While not a large or historic fight, it contained all the elements of an attack against a fortified position, and its lessons are generally applicable to the topic of this seminar.

SLIDE 1

The area of operations is in the Que Son Valley about 25 kilometers northwest of Tam Ky and about the same distance southwest of Hoi An. It has been fought over recently by the 2d ARVN Division, the 5th US Marines, the 1st Brigade, 101st Airborne Division, and the 3d Brigade, 1st Air Cavalry Division. The enemy in the area has usually been part of the 2d NVA Division. The 2d NVA Division made the Que Son Valley area its home when it came south in February 1966. The Americal Division has been pounding the 2d NVA Division and its main force and local force VC allies since September 1967.

SLIDE 2

Terrain in the area ranges from coastal flats to jungle with hills 500 meters high. The area of immediate interest is fairly flat, mostly rice paddies with small hillock islands rising from the paddies to elevations of 40 to 60 meters.

SLIDE 3

The Ly Ly River on the north is about 40 feet wide, rather shallow and slow. Its tributary creeks on the south are about 12 to 15 feet wide, also shallow and slow, but they have steep eight foot banks. Hill 63, on the east, is the highest spot within five kilometers. It is thick with brush and jumbled boulders. The other islands between Hill 63 and the Ly Ly rise from 10 to 40 meters above intervening paddies. There are many small houses on the islands, all surrounded by hedge fences. The numerous vegetable plots on the islands are separated by dense hedgerows. There are some cane, corn, and manioc fields in the area, usually separated by hedgerows. The hedge is about ten feet tall, rises from grassed banks, and effectively limits both visibility and movement. Visibility on the ground extends only to the next hedgerow, usually about 40 to 50 feet. The only road in the area has little more than an eight foot roadbed and is used for foot and bicycle traffic only. The area is about 1,000 meters square.

Thankgiving morning was overcast with a 2,000 foot ceiling and misting light rain. The temperature was 65 degrees at sunrise and light winds blew from the northeast. The weather was typical for the northeast in the monsoon season.

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The friendly unit most involved was the 4th Battalion, 31st Infantry. B and D Companies had been working slowly westward on 21 and 22 November, and spent the night of 22 November about 1,000 meters east of Hill 63.

Their mission for Thanksgiving Day was to search Hill 63 and the area west of it, for a reported NVA unit. They were reinforced by two platoons of armored cavalry from F Troop, 17th Cavalry, and a platoon of tanks from A Troop, 1st Battalion, 1st Cavalry. One cavalry platoon was with the rifle companies, and the other about five kilometers east.

The companies moved out at first light, Company D on the north and Company B on the south, with the Cav platoon behind, ready for deployment. First contact occurred at 0710 hours as Company D moved across the west slope of Hill 63. The units received small arms and automatic weapons fire from across the paddies to the front. As Company B moved up on line with Company D, they too received fire. Both companies moved ahead slowly, and the cavalry deployed around Hill 63 and on line with both, adding .50 caliber and M60 fires to the infantry weapons.

The fight at this time was at a range of 20 to 50 meters. Initial casualties suffered were from AK47 bursts at close range. The enemy at this point were in camouflaged one and two man foxholes just about paddy level. The camouflage was live brush in most cases. They fired AK47's until killed by M16's or grenades.

The companies and the personnel carriers closed on the hill and the fighting spread into the hedgerows. Company B, 3d Battalion, 21st Infantry was committed by airmobile assault into the fight between the other two companies just before noon. The other cavalry platoon and tank platoon also joined in the fight. The battle was a series of sharp, close range fights against enemy bunkers in almost every hedgerow.

The bunkers were situated in the hedgerow banks and the small, well camouflaged apertures. Some were connected with two one man firing holes leading rearward to a single exit. One man would fire from his hole, then drop while the other fired. The enemy waited until our troops were ten or 15 feet away before firing. Friendly forces used grenades, M16's, M60's, and M79's against the bunkers. Grenades were most effective. Once the disposition of the bunkers was determined, the troops kept the enemy occupied in front and maneuvered around the hedgerow to throw grenades into the rear exit.

One position defied all grenades and small arms for an hour and was finally reduced by an improvised satchel charge. Eight pounds of TNT were tied on a 12 foot bamboo roof pole, inserted in the small rear entrance, and detonated electrically. The blast caved in the bunker on its occupants.

The tank-infantry team worked on line against bunkers. Usually the tankers saw the bunker first because of their height. If the infantry spotted a bunker first, they fired tracers into it. Enemy tracers sometimes gave their position away to the tank commanders. The tankers used two rounds per bunker; the first was HE with fuze delay, to kill the enemy inside the hole; the second was HE superquick, to open up the sides of the bunker. Against houses or enemy in the open, the tanks fired canister rounds. The canister rounds disassembled buildings, exposing tunnels and bunkers beneath the structures.

Fire from bunkers at a greater range was dealt with by air strikes. The strikes were made at distances of 30 to 150 meters from the friendly troops. The Air Force and Marine fighters delivered 15 tons of bombs and ten tons of napalm on targets the first day. The 750 pound bombs crushed bunkers and caved in holes and the napalm burned them in and around the holes. The infantry and cavalry followed up the air strikes, again using small arms, machine guns, and grenades. Company C, 4th Battalion, 31st Infantry, was lifted to an area southwest of the action to cut off enemy escape in that direction. Artillery concentrations were used to seal off escape and 175 rounds were placed on egress routes to the north and west. Air Force flareships and artillery illumination during the night assisted our soldiers in stopping the escape of the enemy. Two artillery TOT's, one of 286 rounds and another of 219 rounds, were also fired. Seven NVA soldiers tried to get away through Company C to the southwest; six were killed and the fate of the seventh is not known.

SLIDE 4

The 24th of November dawned cloudy and humid. The units on the ground were given the mission of searching the remaining islands in the area. At 0900 hours heavy automatic weapons fire announced the enemy's continued presence.

The infantry, cavalry, and tanks resumed their slow methodical clearance of the islands, working as small combined arms teams. The forward air controllers and artillery FO's provided fire support using 16 ton of bombs, six tons of napalm, and 671 artillery rounds on the enemy positions that day. In late morning, two more companies were combat assaulted west of the scene to restrict enemy escape that way. They killed 13 of 20 NVA soldiers who tried to cross an open field in mid-afternoon.

The pattern for clearance continued. The infantry found holes, fired into them, threw grenades into them, then checked them. A NVA soldier would open up from a hole, the infantry would mark it with tracers, and a tank would blow it up with a 90mm round. The infantry would mark a hole for a FAC, who would direct the fighters onto it. The fighters worked precisely, making five and ten meter corrections to their bomb drops. A tank would

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fire canister into a position, then drive on top of it and crunch it.

From the air, the most striking sight was the constant presence of various colors of smoke, marking friendly units. Although the soldiers between the hedgerows could not see each other, the battalion commanders and brigade commander were able to note their position and coordinate the air and artillery support.

During the night of the 24th, artillery and illumination again restricted enemy outward movement. The night was fairly quiet, with just a few tentative enemy probes against the friendly perimeters. They were silenced with defensive claymores.

SLIDE 5

The 25th was devoted to police of the battlefield and clearance of the remaining paddy islands. The 3d Battalion, 21st Infantry moved southwest, and Company B, 2d Battalion, 1st Infantry returned to its parent unit. Twelve tons of bombs, one of napalm, and 683 artillery rounds pounded the remaining enemy. The island farthest north was cleared by Company D, 4th Battalion, 31st Inafntry. The unit swept across it once, then turned about to resweep. When they did, enemy fire came from concealed positions the troops had bypassed. After finishing the sweep, the company commander decided to sweep the island one more time. Two of three enemy soldiers were found, fired on the infantry, and were killed.

After that action, the battlefield remained quiet. The companies policed up weapons, documents, bodies, and equipment. They were able to evaluate the air strikes used during the battle. They found that 750 pound GP bombs caved in bunkers if they hit on or right next to the position. Smaller bombs required direct hits. Napalm was very effective when it got inside the positions; otherwise its effect was negligible.

Documents found on the bodies identified the enemy as the 5th and part of the 7th Companies, 3d NVA Regiment, of the 2d NVA Division. Their weapons and equipment were in good condition. Most of the packs contained clean uniforms, toilet articles, and official and personal documents.

SLIDE 6

Thirty six of the 128 enemy dead were killed by air strikes. Small arms, machine guns, grenades, tank guns, and artillery fragments killed the rest.

SLIDE 7

Automatic weapons fire killed five of our soldiers, one died of grenade fragment wounds, and the seventh was killed by fragments when an RPG-2 round hit the ammunition box on his APC. All seven fatalities occurred in the first two hours of the action.

None of the lessons are new, none are very complicated, all are fairly obvious, and they must be learned by every unit and every soldier.

Basic soldiering techniques worked successfully again. Units must learn to shoot low, throw grenades accurately, cover the rear and flanks, check every hole, report accurately and promptly.

In fortified positions, the enemy is tenacious. He does not flee after the first few rounds like local force guerrillas. It is best to press him with artillery, air strikes, small arms, and grenades.

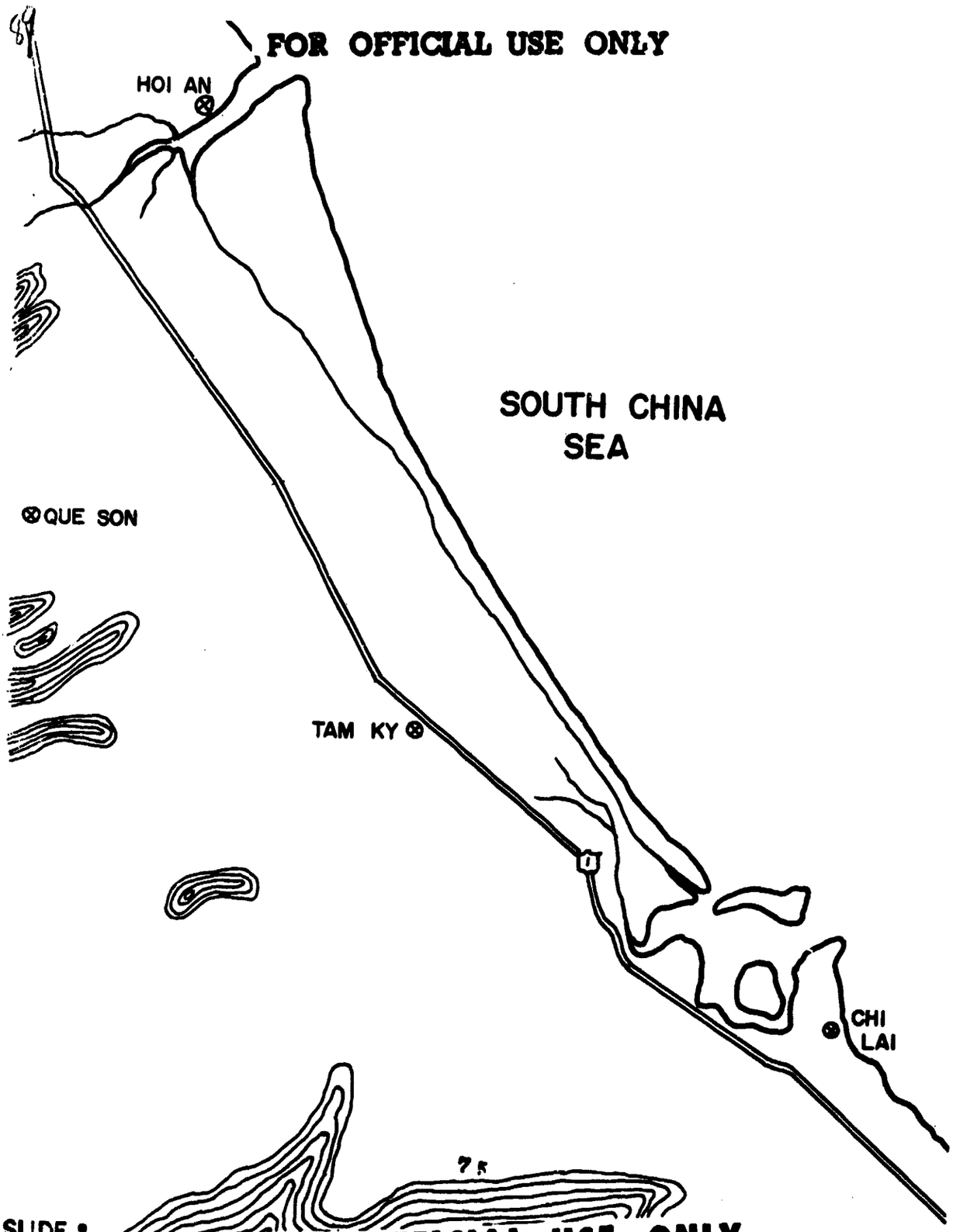
Colored smoke is the best daylight position marker. In the hedgerows and jungle, friendly units have difficulty keeping contact and smoke helps the battalion commanders, FAC's, and artillery observers sort friend from foe.

The tanks were outstanding "bunker-busters", both with their main armament and their tracked tonnage crunching the positions. The tanks experienced some difficulty in getting to the scene of action, since they are more prone to getting stuck than the APC's. Their value should be weighed against their limited mobility when deciding to commit them cross-country.

The artillery placed around the position on the first night was successful in containing many enemy who might otherwise have fled. It also contributed to the high ratio of enemy to friendly soldiers killed. The artillery commander, after the action, believes that he should have used more fuze delay to inflict more damage on positions.

The value of the armored vest and the steel helmet was demonstrated again. One medic received two AK47 rounds in his steel helmet while protecting a casualty; one was deflected between the helmet and liner, then disintegrated; and the other took a chunk out of the helmet next to his left temple. He had a terrific headache, but nothing worse. The armored vests absorbed or slowed grenade fragments in a number of cases.

The overall results of the battle: a severe blow to the 3d NVA Regiment, and proof again that US soldiers successfully applied their training as a team in combat. They have no equals.



SLIDE 1

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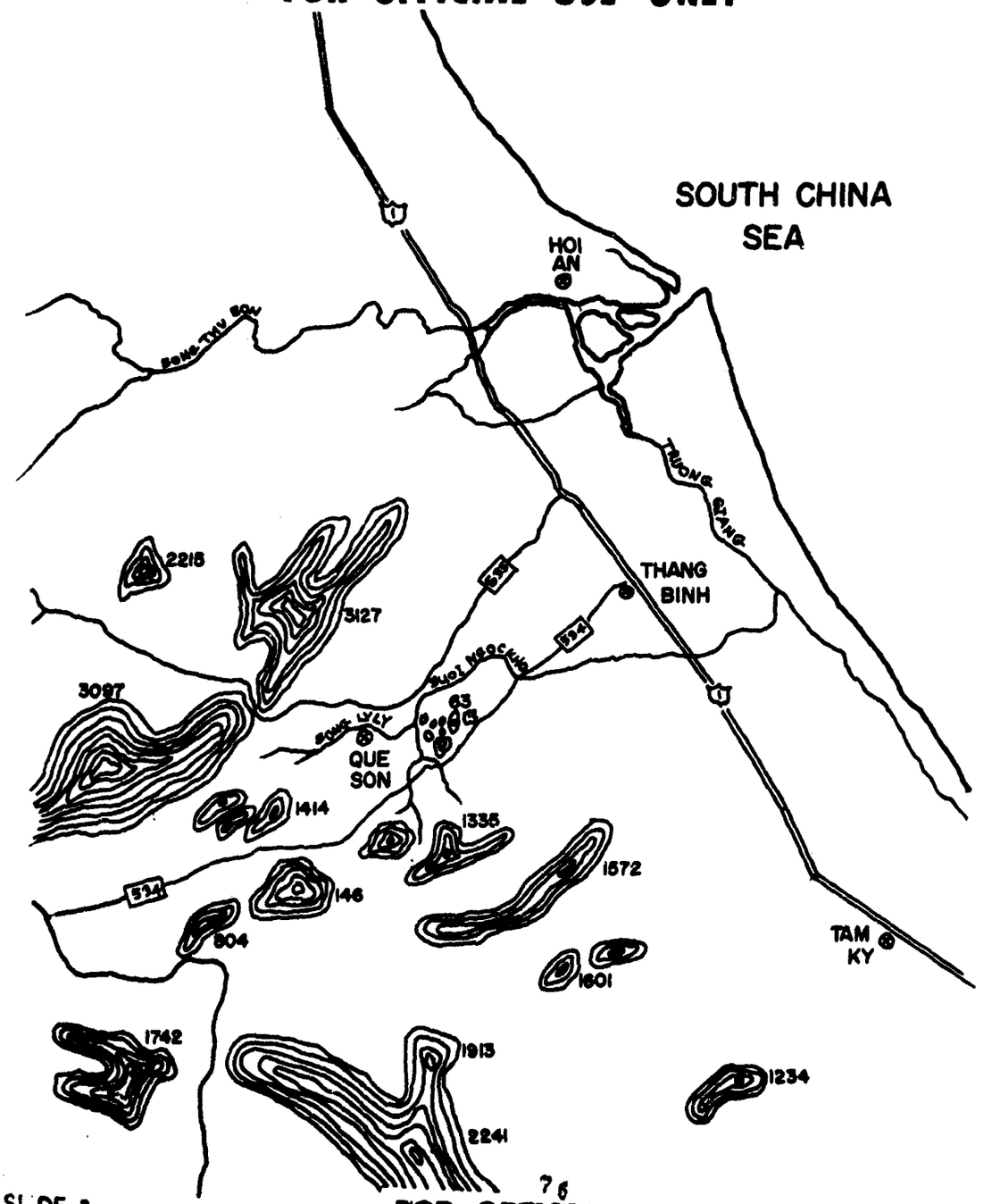

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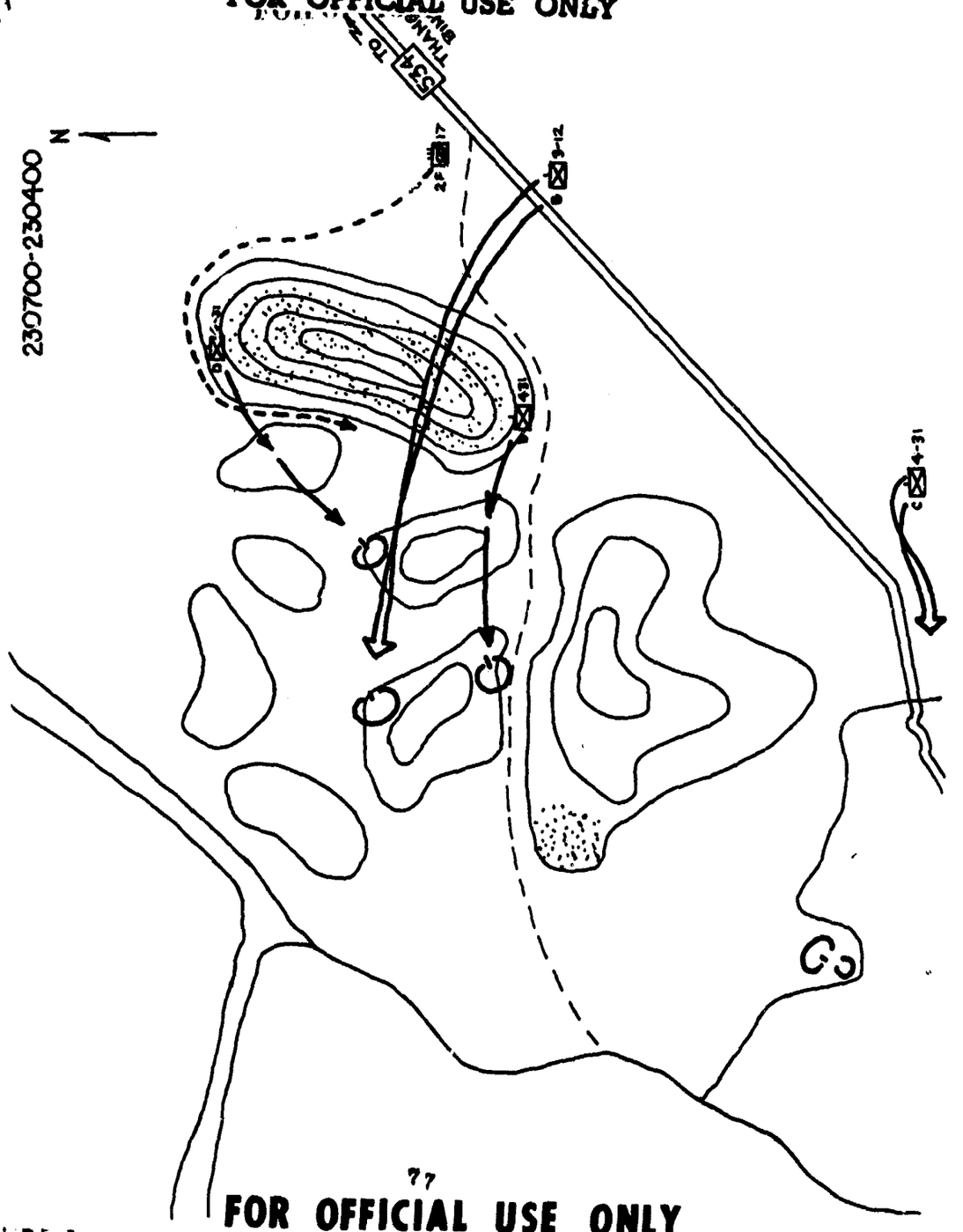

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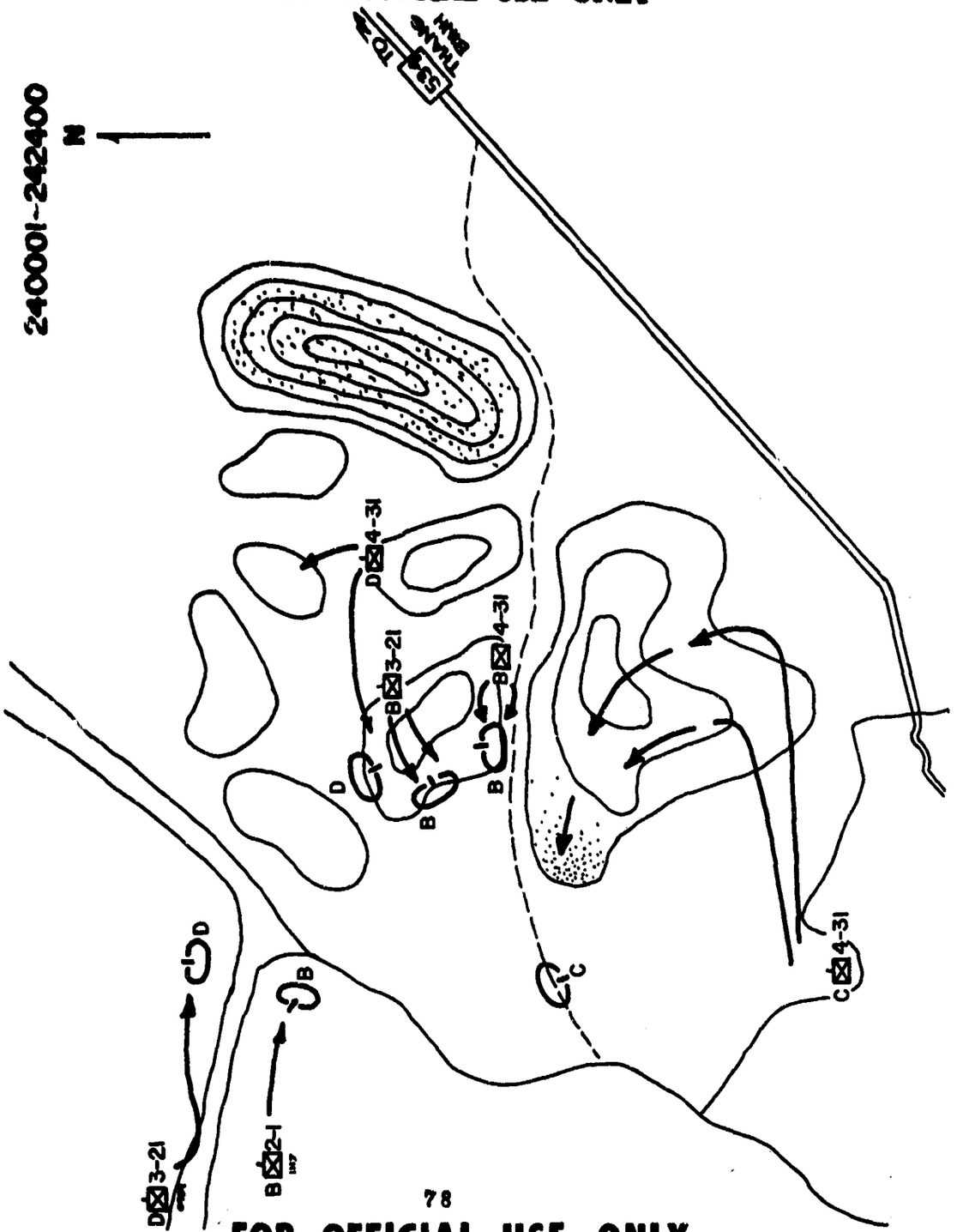
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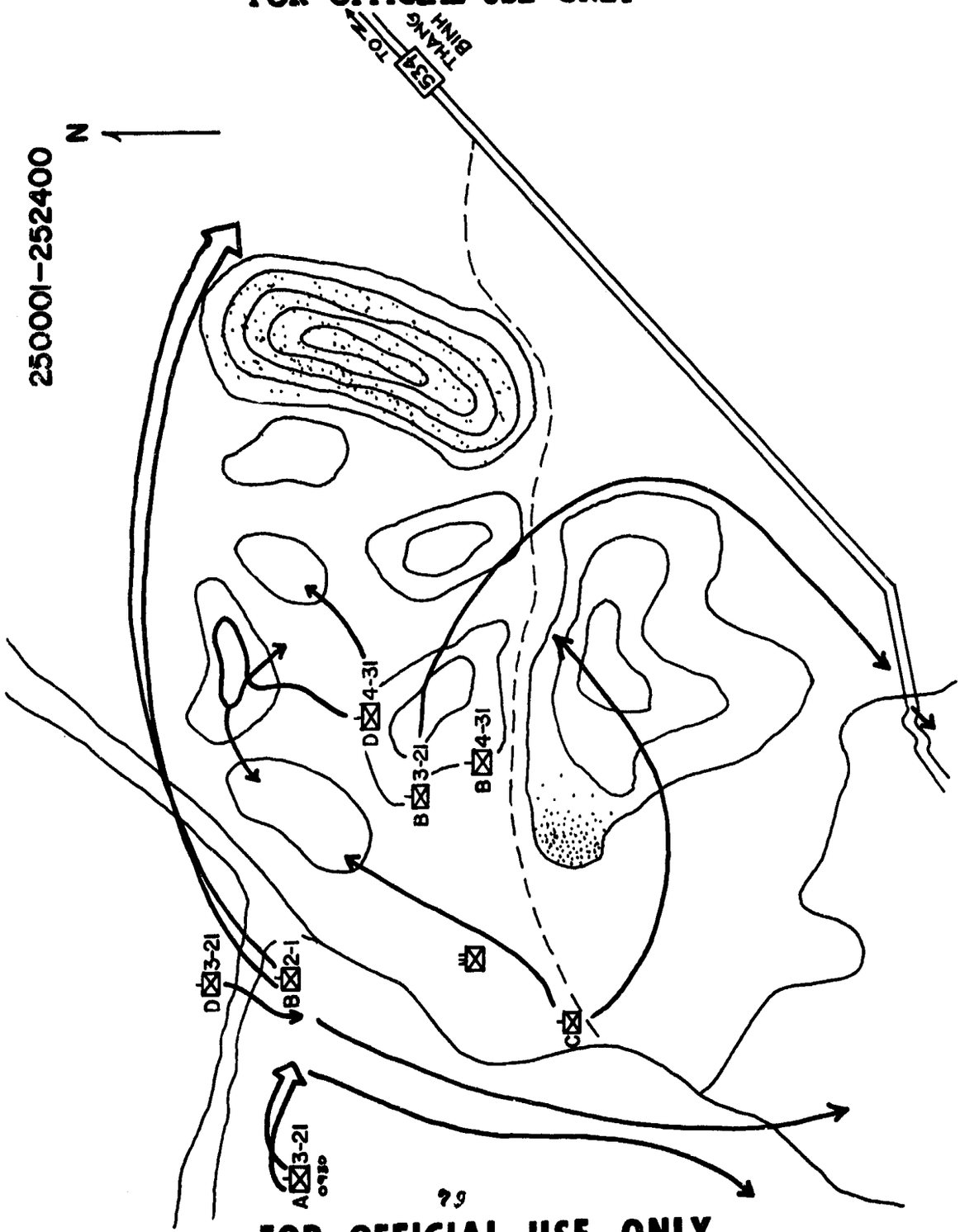
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SLIDE 8

CAUSES OF WOUNDS

	KHA	WHA-EVAC	WHA-BDE CLR STA	WHA-TRTD IN FIELD	TOTAL
GSW	5	20	6	2	33
GRENADE	1	11	19	15	46
M-79		1			1
FALLS		2			2
OTHER	1	1	—	—	2
	7	35	25	17	84

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SLIDE 4

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RESULTS OF CONTACT WITH 5TH AND 7TH COMPANIES 3D NVA REGIMENT, 23-25 NOV 67

NVA KIA (BC)	128
WEAPONS	
INDIVIDUAL (AK-47, SKS)	47
MACHINE GUNS (RPD)	6
ROCKET LAUNCHERS	3
	56

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