

CHAPTER 4

PLANNING AND DEVELOPMENT OF DEFENSIVE TACTICS

Seabee battalions are primarily a defensive unit during combat and must consider the planning of defensive tactics as top priority. Poor planning of defensive tactics will not only endanger the battalion but will also endanger all other units involved with the operation. Other units assigned to the theater of operation depend on Seabee units to defend their area of responsibility. Defensive operations for Seabee battalions include those actions taken for destroying or trapping a hostile force, denying an enemy access to an area and reducing the capabilities of the enemy. The goal is to accomplish these actions with minimum or no losses to the battalion. This chapter covers in depth the concept of defense, the fundamentals of defense, the types of defense, and the platoon, squad, and fire team defensive positions. Also covered are the crew-served weapons employment, the platoon fire plan, and the company fire plan. Although this chapter speaks mainly of defensive tactics for a Seabee battalion, Seabee units can also implement the context of this chapter.

CONCEPT OF DEFENSE

In the defense, the defender takes every opportunity to seize the initiative and to destroy the enemy. The defender seizes the initiative by forcing the enemy to react in conformity with the defensive plan of the battalion and exploiting the enemy weaknesses. As a platoon commander or assistant company commander, it is important for you to know how the defensive plan relates to the overall defensive operation. Seabees are required to set up a defensive perimeter or, in extreme cases, defend the Forward Edge of the Battle Area (FEBA). The defensive tactics used in each case are similar.

NOTE: For simplicity purposes the defensive perimeter or the defensive lines will be referred to as the FEBA.

DEFENSIVE AREAS

defensive areas, established at the defensive perimeter or FEBA, include the security area, the

forward defense area, and the reserve area. Each of these areas is allocated forces and fires as a part of the complete defense plan (fig. 4-1).

Security Area

The battalion security area begins at the FEBA or the defensive perimeter and normally extends 500 meters to the front and to the flanks of the battalion. Depending on where battalion security elements are used, this area can be increased. Seabee forces in the security area include the listening post, the observation post, and the patrols that furnish information about the enemy; delay, deceive, and disrupt the enemy as much as possible. Division forces, operating deep in the security area (beyond 500 meters), will consist of general outposts (GOPs), combat outposts, flank security forces, division aerial surveillance elements, and patrols. As a platoon commander or patrol leader, you must be aware of all forces operating in the security area.

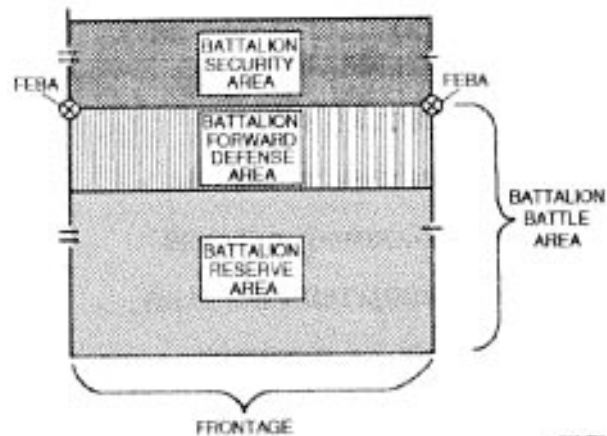


Figure 4-1.—Battalion defensive areas.

Forward Defense Area (FDA)

The forward defense area extends rearward from the defensive line or FEBA to the rear boundaries of the frontline companies that are used as the forward defense echelon of the battalion. The composition of the forward defense echelon depends upon the form of defense used.

Reserve Area

Extending from the rear boundary of the forward defense echelon (frontline companies) to the rear boundary of the defense of the battalion is the reserve area. The reserve forces and those uncommitted forces under battalion control occupy positions in the reserve area and add depth to the defensive position. The reserve is the principal means by which the battalion commander influences the defensive battle and regains the initiative.

FUNDAMENTALS OF DEFENSE

Effective defensive actions are achieved by a blend of the principles discussed below. The degree to which each principle applies will vary with the mission and the situation. This is decided only after consideration of all the principles (fig. 4-2).

PROPER USE OF TERRAIN

Maneuvers that are possible and dispositions that are essential are indelibly “written on the ground.”

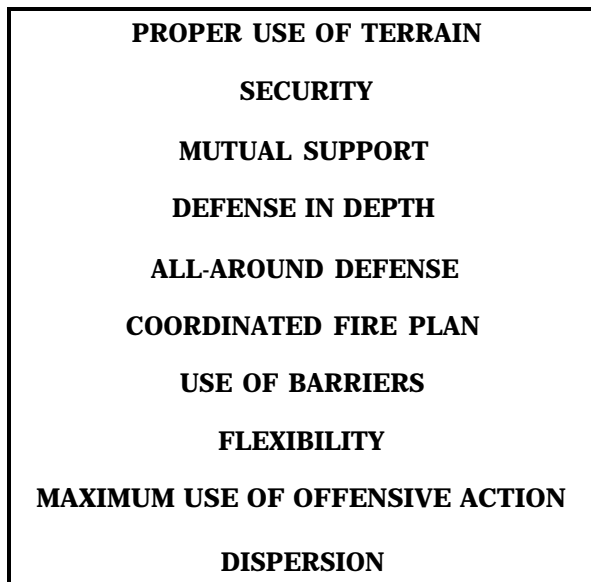


Figure 4-2.—Fundamentals of defense.

Unfortunate indeed is the platoon commander or assistant company commander who is unable to read this “writing.” The intelligent leader knows that terrain is a major ally and that it virtually decides the positioning of platoons and squads in the defense. The defender retains control of terrain features essential to observations, communications, and maneuver of reserves. Denying the enemy the use of terrain that might jeopardize the mission of the battalion is the major role of a defender.

To read the “writing on the ground,” you can organize the analysis of weather and terrain primarily around the following set of military considerations (KOCO A):

- Key terrain
- Observation and fields of fire
- Concealment and cover
- Obstacles to movement
- Avenues of approach

These considerations are discussed in the following paragraphs. While the discussions of these considerations focus on terrain, weather and terrain are inseparable. Terrain that offers good traffic conditions when dry may be impassable when wet. A hill that provides good observation on a clear day may not provide any visibility on a rainy day or at night.

Key Terrain

Key terrain features must be considered in formulating defensive tactics. Their selection is based on the mission of the command. Tactical use of terrain often is directed at increasing the ability to apply combat power. Also considered is channeling the enemy into the beaten zone of organic weapons maintained by the battalion. The selection of key terrain varies with the following:

- Level of command
- Type of unit
- Mission of the unit

Seabees are normally a service support unit for the Marine Air-Ground Task Force (MAGTF). Service support units need roads over which to move supplies and secure areas in which to construct facilities. Aviation units need high terrain on which to set up radars and communication facilities and large, flat areas for airfields.

Observation and Fields of Fire

Observation and fields of fire are so closely related that they are considered together. Fields of fire are based on observation because a target must be seen to bring effective fire upon it.

The observation considerations are as follows:

- Weather conditions
- Time of day
- Vegetation
- Surrounding terrain

The highest terrain features are generally ideal for observation. However, during times of poor visibility, positions in low areas that the enemy must pass through may provide better observation.

The field of fire is the area a weapon or group of weapons may cover effectively with fire from a given position. When you are selecting a field of fire for a weapon, it is critical to know the capabilities of the weapon. Positioning an M60E3 machine gun with a 400-meter field of fire is poorly using the weapons capability considering the weapon has a maximum effective range 1,100 meters. **The object is to engage the enemy as far out as possible.**

Cover and Concealment

Cover and concealment is used together to provide protection from the effects of fires and observation.

1. Cover is protection from the effects of fire. Examples of ideal cover are as follows:

- Rocks
- Shell craters
- Ditches or quarries
- Buildings
- Caves
- Sunken roads
- River banks
- Walls
- Folds in the ground
- Highway fills

Areas that provide cover from direct fire may or may not protect against the effects of indirect fire.

2. Concealment is the protection from observation or surveillance both air and ground. Some examples that provide ideal concealment are as follows

- Woods
- Underbrush
- Snowdrifts
- Tall grass
- Cultivated vegetation
- Other features that deny observation

Terrain that provides concealment may or may not provide cover.

Obstacles to Movement

Obstacles are anything, including a natural or artificial terrain feature, that stops, impedes, or diverts military movement. Entanglements are set up as obstacles along the FEBA or the defensive perimeter to channel the enemy into the beaten zone of various weapons held by the defending unit.

Avenues of Approach

Avenues of approach are routes the enemy is likely to travel to reach its objective. When setting up the defense positions, the platoon commander visualizes all possible enemy avenues of approach into the area.

An evaluation of the avenues of approach, together with key terrain features, serves as the basis for positioning platoons or squads for planning fire support. The area selected for defense should afford good observation, fields of fire, and adequate cover and concealment to the defending forces. The defender applies the principles of camouflage and continuously improves camouflage throughout the defensive operation.

SECURITY

Security consists of those measures that prevent surprise, avoid annoyance, preserve freedom of action, and deny to the enemy information about our forces. Security is not only keeping watch to detect the enemy but also deceiving the enemy as to the strength of the battalion, location of the weapons, and other valuable information. Using camouflage effectively is very important to security.

MUTUAL SUPPORT

A well-developed defense plan includes mutual support from adjacent units. Seabee units are normally attached to an MAGTF and have a variety of mutual support. However, conditions, created by wide unit separation, increase the problem of achieving mutual support. Support of adjacent units by fire can be hampered by distances that exceed the ranges of the supporting units organic weapons and must be considered when seeking mutual support. Mutual support becomes critical when conducting a convoy. Normally the convoy will travel out of range from a Seabee unit's organic weapons, so mutual support from adjacent units becomes critical.

ALL-AROUND DEFENSE

Although the platoon commander positions the squads toward the expected direction of an enemy attack the platoon must be prepared to defend against an attack from any direction. The possibility of multi-direction enemy attacks, including helicopterborne or airborne attack, increases the importance of this principle. All-around defense is best achieved by early warning and the rapid shifting of platoons into supplementary fighting positions to counter a developing attack. The topic of fighting positions is discussed further in this chapter. Early warning capability provided by air defense elements of the Marine Aircraft Wing (MAW) can provide defense against helicopterborne or airborne attacks.

IN-DEPTH DEFENSE

Maximum defense in depth is required to absorb an enemy attack within the battle area. Defense in depth applies to the squad level by engaging the enemy at maximum small-arms range as it advances and continuing this fire until the enemy has been stopped. The requirement for depth is increased when the enemy is superior in mobility or has the capability of destroying or rupturing defensive positions by using nuclear weapons. Organized in-depth positions must control key terrain, block avenues of approach, reduce the defender's vulnerability to nuclear weapons, and assist the maneuver of the reserve troops.

COORDINATED FIRE PLAN

Coordination of all fire from weapons organic and supporting the battalion is considered. Included in a coordinated fire plan is naval gunfire and tactical

aviation support usually provided by the Marine Air Group (MAG). Coordination between the companies is also critical. The fire of the squad forces the enemy to slowdown and deploy, thus creating a target for the mortar crew of the battalion, adjacent companies, or supporting weapons. This makes the squads a key element in a coordinated fire plan.

COORDINATED BARRIER PLAN

Using barriers, either natural or man-made, can channel, direct, restrict, or stop enemy movement. The effective use of barbed wire and concertina, claymore mines, antitank mines, and antipersonnel mines, and the effective use of the terrain add to the defense of the battalion. Natural obstacles must be exploited. The creation or exploitation of barriers must be coordinated at all echelons of the command.

FLEXIBILITY

A platoon commander must continually develop various courses of action to meet the enemy threat. Being flexible is to ask yourself, What should I do if the enemy does this?

DISPERSION

Normally in a defensive situation, squads are limited to how spread out they are over a wide area. Firing positions are assigned and should be close enough to provide interlocking fire. They should not be close enough so an enemy machine gun or mortar can wipe out an entire fire team or an entire squad. The degree of dispersion will be influenced primarily by the mission and by the following:

- Terrain
- Friendly and enemy air situation
- Mobility of opposing forces
- Enemy nuclear capability
- Responsiveness of friendly nuclear and conventional fire support

USE OF TIME AVAILABLE

Since the defender can examine the terrain in detail and plan its best use, every effort is made to prepare the defense in advance. The time available for planning and preparing for the defense will influence the following:

- Tactical employment of the companies
- Preparation of obstacles
- Coordination of fire from each company
- Coordination of supporting fire
- Priority for performance of tasks

The effectiveness of the defense depends not only on the time available for its planning and preparation but also on its advantageous use during the preparation phase. This fundamental also applies after the preparation phase because improvement continues during the defense.

POSITIONING THE SQUAD IN THE DEFENSE

The effectiveness of a unit in combat is largely dependent on selecting firing positions that allow the weapons of the unit to be used effectively and to keep the enemy from using their weapons. A primary duty as a platoon commander or squad leader for a rifle platoon is positioning the squads in the defense. When you are employing a squad in the defense, it is good to review your previous experiences as a squad member. Reflect upon the reasons you were positioned as a rifleman, grenadier, or other member of a squad to better determine what type of defensive firing position is needed. There are many points to consider in selecting a firing position. Some of these are as follows:

1. **Mission:** If the mission of the unit is to defend an airfield, the firing positions of the unit must facilitate the accomplishment of the mission, despite how good other firing positions may be.

2. **Enemy:** The capabilities of an enemy usually determine how he will attack. Mechanized units usually attack through fields and other open terrain where they can use the speed of their vehicles to an advantage. Infantry units, however, seek to use the cover and concealment provided by woods and other close terrain. Firing positions that are ideal for defending against mechanized units maybe useless for defending against infantry units.

3. **Observation and Fields of Fire:** Seek to fire on the enemy when he cannot fire on you and do not let the enemy fire on you when you cannot fire on him.

4. **Plan of Defense/Scheme of Maneuver:** How the battalion commander plans to use the companies will influence the selection of firing positions. For example, if the battalion commander plans to surprise

the enemy, firing positions should be selected that allow the fire of all or most of the weapons can be brought to bear on the enemy simultaneously.

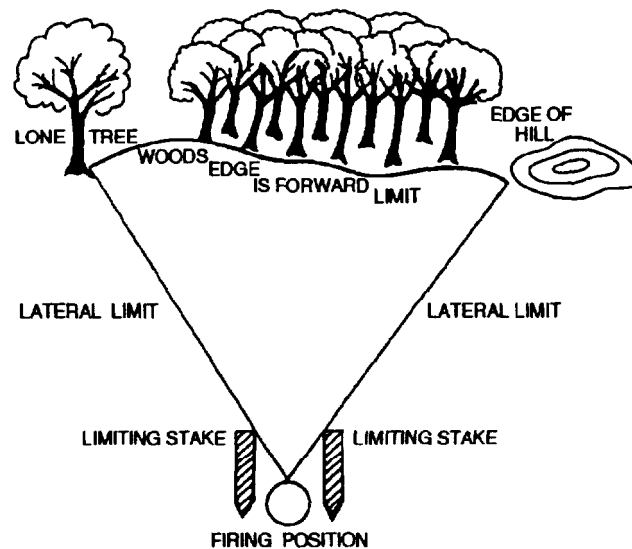
The following paragraphs will discuss what forms a basic defensive firing position.

SECTOR OF FIRE

A sector of fire (fig. 4-3) is an area of responsibility assigned to a squad, a platoon, or a crew-served weapon to be covered by fire. The squad sector of fire is divided into fire teams and individual sectors of fire to cover the entire squad sector by fire. Sectors of fire ensure mutual support by overlapping the individual and fire team sectors. Normally, the squad leader is not assigned an individual sector of fire since the primary duty in the defense is directing and controlling the squad. Located within each sector of fire are lateral and forward limits.

1. **Lateral Limits:** Readily identifiable terrain features are selected to show the line of sight along each side of the sector. Two stakes are firmly placed near the position of a weapon to show the lateral limits for periods of reduced visibility.

2. **Forward Limits:** The forward limit is established at the range at which the weapon will open fire. When possible, a terrain feature is selected to locate the forward limit. This allows the squad leader a method of control to open fire on the enemy at a precise time to maximize effectiveness.



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Figure 4-3.—Sector of fire.

FIGHTING POSITIONS

A fighting position is a location on the ground from which fire is delivered by an individual, a fire unit (squad or fire team), or a crew-served weapon. Before you select a fighting position, the assigned sector of fire is carefully examined from various locations. Examining is done in the prone position to ensure effective coverage of the sector of fire. The positions must provide the following:

- Desired support of the sector
- Good fields of fire
- Maximum use of available cover and concealment
- Facilitate effective fire control by the unit leader

Carefully examine assigned sectors of fire from the **prone** position, and then select a fighting position to ensure effective coverage of the sector. Primary, alternate, supplementary, and battle fighting positions must be established (fig. 4-4).

NOTE: Range cards must be completed for each fighting position. Range cards will be discussed further in this chapter.

Primary Fighting Position

The primary fighting position is the best available position from which the assigned sector of fire can cover. Individuals, fire teams,

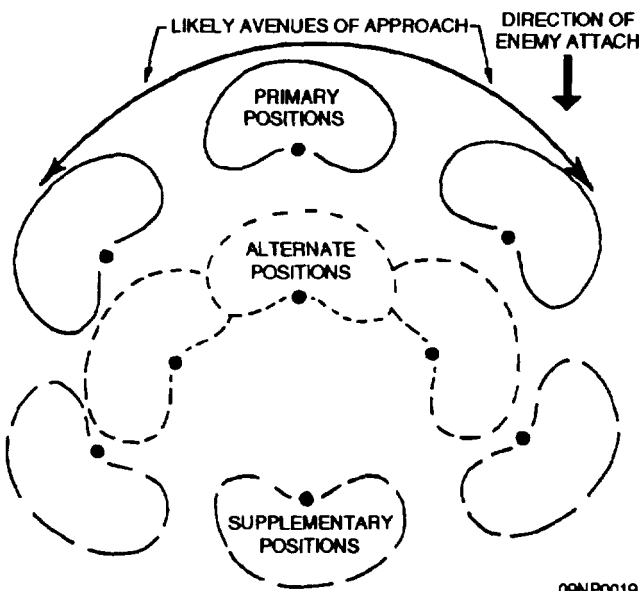


Figure 4-4.—Defensive firing positions.

squads, and crew-served weapons are assigned primary positions.

Alternate Fighting Position

Alternate positions are not normally assigned to individuals or squads within the platoon. They are used primarily by crew-served weapons. An alternate position is located so that a crew-served weapon can continue to cover the original assigned sector of fire when the primary position becomes unsuited for carrying out that mission.

Supplementary Fighting Position

Supplementary positions are prepared to guard against attack from directions other than those from which the main attack is expected. A supplementary position is a secondary position that does not cover the same sector of fire as the primary position. Supplementary positions are for security reasons and ensure protection, when occupied against surprise enemy attack from an unexpected direction. Movements to supplementary positions and concealed routes are covered to avoid enemy detection.

Battle Position

The battle position is where the main effort of defense is concentrated. Companies and platoons are assigned battle positions. The battle position is made up of a series of sectors of fire that support and interlock one another. Based on the battle position of the company, platoon battle positions are assigned a right and left limit of fire in which gunfire can be delivered.

PRINCIPAL DIRECTION OF FIRE (PDF)

A principal direction of fire (PDF) is a specific direction within a sector of fire of a flat trajectory weapon including crew-served weapons. The PDF is designated as the primary fire mission for that weapon. **Never assign more than one PDF per weapon.** Assign a PDF using a terrain feature. Using a stake to guide the PDF during reduced visibility is vital to the effective firing of a PDF (fig. 4-5).

The PDF is used as follows:

1. To cover a gap in a final protective line (FPL) of a crew-served weapon
2. To cover a specific terrain feature endangering the company or platoon battle position, such as draws,

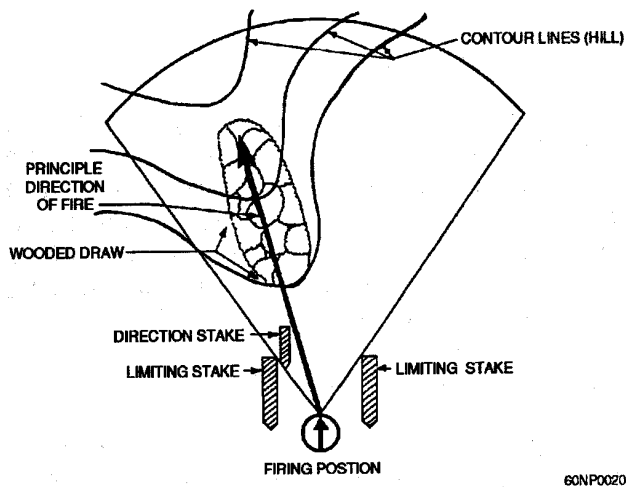


Figure 4-5.—Principal direction of fire.

that may seem as an avenue of approach or a hilltop that may serve as a possible enemy vantage point

3. To protect a crew-served weapon by firing across its front

4. To augment the band of flank fire placed immediately in front of the FEBA or the defensive line when there are no visible targets of opportunity to the front

FIRE TEAM IN THE DEFENSE

A primary duty of a squad leader is to organize the fire teams in the defense. This is accomplished by specifying a sector of fire for the squad and PDF for each automatic rifleman. The squad leader must inform the fire team leader of any crew-served weapons, augmented from the weapons platoon, which will help in covering the assigned sector of fire. The squad leader and the fire team leader will select terrain features to show lateral and forward limits of the assigned sector of fire. The mission of the fire team is to stop the enemy forward of the FEBA or to repel the enemy by close combat if the enemy reaches the FEBA.

FIRE PLAN

The fire team leader formulates a fire plan to cover the entire sector assigned by the squad leader with the heaviest possible volume of fire (fig. 4-6 and appendix II).

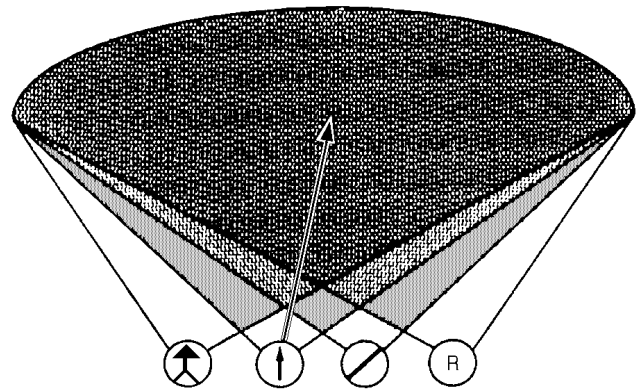


Figure 4.6.—Fire team fire plan.

The fire plan includes the following:

- Individual sectors of fire
- Individual fighting positions
- Automatic rifleman PDF assigned by the squad leader or platoon commander
- Crew-served weapon positions
- Key terrain features
- Position of the fire team leader

INDIVIDUAL SECTORS OF FIRE

If practical, each member in the fire team should cover the entire sector of fire of the fire team. The same terrain features are used to show the limits.

INDIVIDUAL FIGHTING POSITIONS

Each member of the fire team is located so as to occupy an assigned position that allows the team to cover, by fire, the assigned sector. Positions may be prepared as single- or double-fighting holes; however, double holes are preferred. If double-fighting holes are prepared, the automatic rifleman and assistant automatic rifleman will pair off. Crew-served weapons fighting positions are more detailed and will be discussed further in this chapter.

The interval between fighting positions within a fire team varies between 5 to 20 meters. In dense terrain, single-fighting positions are usually prepared and are 5 meters apart. In open terrain, single holes may be 10 meters apart; double-fighting positions, 20 meters apart.

AUTOMATIC RIFLEMAN

Since the automatic rifles are the backbone of the defense of the squad, the squad leader selects the exact fighting position. The remainder of the fire team is then positioned around the automatic rifles. The PDF of the automatic rifles are selected by the platoon commander or the squad leader.

RIFLEMAN

A rifleman is positioned so he can cover the entire fire team sector. The position must provide support and protection for the automatic rifleman.

GRENADIER

The squad leader positions the grenadier where the M203 grenade launcher is most effective. In combat, the grenadier is usually close to the squad leader. The squad leader may choose to use the grenadier to cover dead space in the defense.

FIRE TEAM LEADER

Usually the position of the fire team leader is at the center of the fire team from which he can perform the following:

- Observe the entire fire team and its sector of fire.
- Direct the fire of the automatic rifle.

- Observe the squad leader.

FIRE PLAN SKETCH

A sketch of the fire plan is submitted by the fire team leader to the squad leader. The magnetic North line provides a reference to show the direction the fire team is facing. Figure 4-7 shows the meaning of the various symbols.

SQUAD IN THE DEFENSE

The platoon commander assigns each squad a defensive mission specifying a sector of fire and a primary position. Terrain features are selected to show the lateral and forward limits of the sector of fire of the squad. The platoon commander designates the general firing positions and the PDF for specific automatic rifles or crew-served weapons, which are critical to the defense of the entire platoon. Designated on-call targets are established and coordinated with the Combat Operation Center (COC). Supplementary positions are assigned to the squads for all-around defense and to protect the flanks or the rear of the platoon (fig. 4-8 and appendix II).

SQUAD FIRE PLAN

The squad leader formulates a basic squad fire plan to occupy physically the assigned primary position and to cover, by fire, the sector assigned by the platoon commander. The fire plan includes the

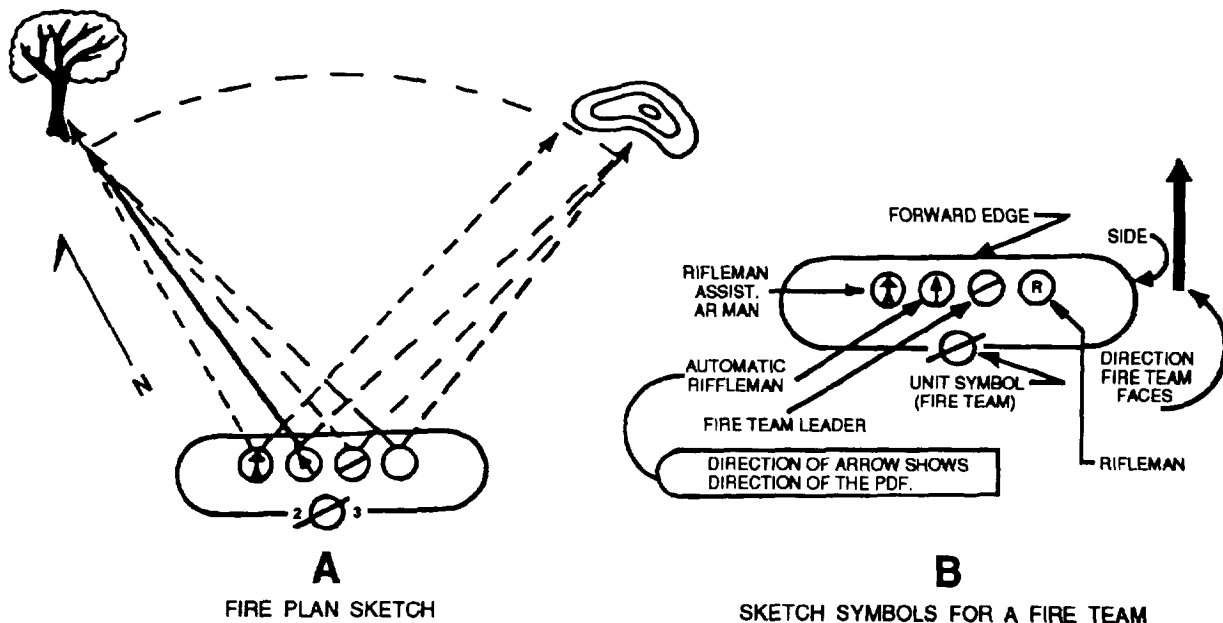


Figure 4-7.—Fire plan sketch and symbols.

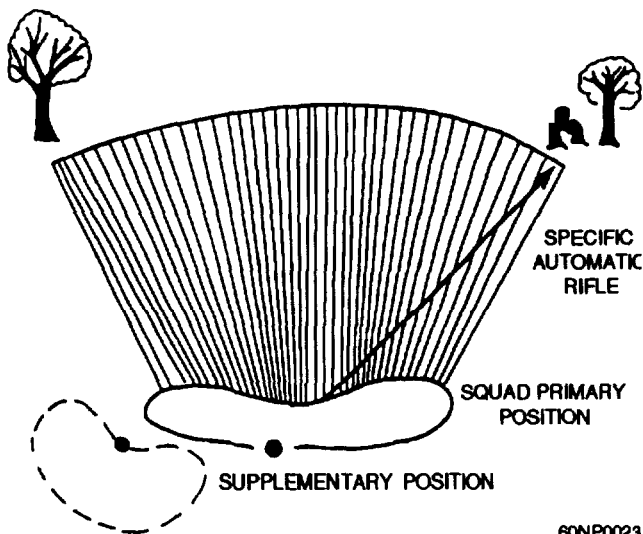


Figure 4-8.—Squad position.

assignment of the sectors of fire of the fire team and PDF for automatic rifles or crew-served weapons (fig. 4-9).

FIRE TEAM POSITIONS

Fire teams are distributed so they physically occupy the assigned position and can cover, by fire, the assigned sector. The fire teams are normally placed abreast, firing the FEBA. Terrain dictates the effective placement of the individual members of each fire team. Place crew-served weapons first, so the position of the squad can provide close-in protection for these weapons.

AUTOMATIC RIFLES

The platoon commander normally designates the general firing position of a specific automatic weapon

or crew-served weapon; however, this responsibility may be delegated to the squad leader. If so, the squad leader will designate the PDF for each automatic weapon or crew-served weapon.

SQUAD LEADER POSITION

The position of the squad leader is usually slightly to the rear of the fire teams and to the center of the squad. From this position the squad leader should be able to observe the following:

- Assigned sector of fire.
- Observe as much of the squad as possible.
- Maintain contact with the platoon commander.

SQUAD FIRE PLAN SKETCH

Based upon the fire plan sketch received from the fire team leaders, the squad leader prepares a squad fire plan sketch. Two copies are prepared—one for the squad leader and the other for the platoon commander (fig. 4-10 and appendix II).

The sketch should include the following:

- Fire team positions and sectors of fire
- Position and PDF of the automatic rifles
- Crew-served weapons position
- Primary fire missions (FPL or PDF)
- Approved on-call targets
- Squad leader position
- Terrain features and estimated ranges to them
- Direction of magnetic North

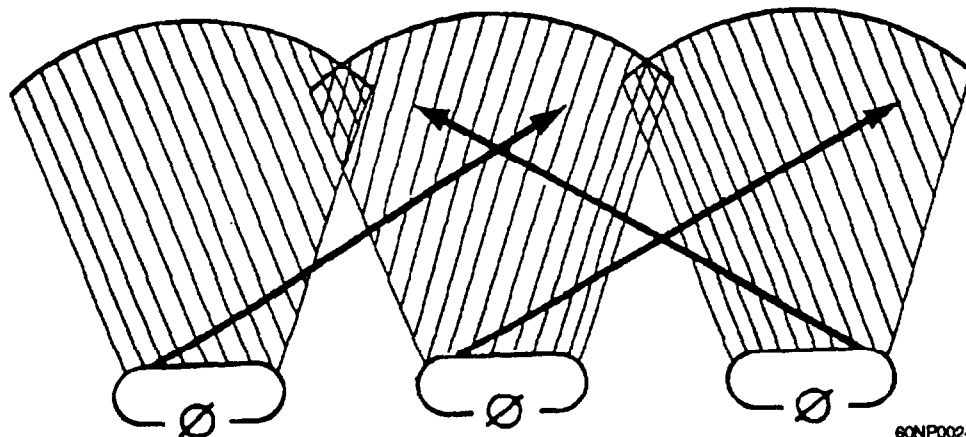


Figure 4-9.—Squad fire plan.

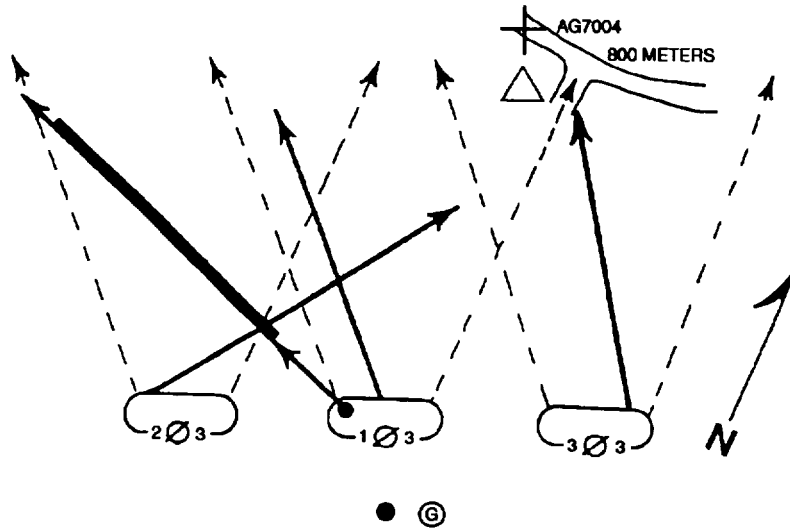


Figure 4-10.—Squad fire plan sketch.

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PLATOON IN THE DEFENSE

Located within the assigned company battle area is the platoon defense area. The company commander assigns the platoon a frontage. The frontage left and right limits are taken from a reference point on the

terrain or the flank of an adjacent platoon. A distance from the FEBA to the rear is also described (fig. 4-11).

FRONTAGE

The terrain and the size of the company battle area dictates the frontage assigned to a platoon. Physical

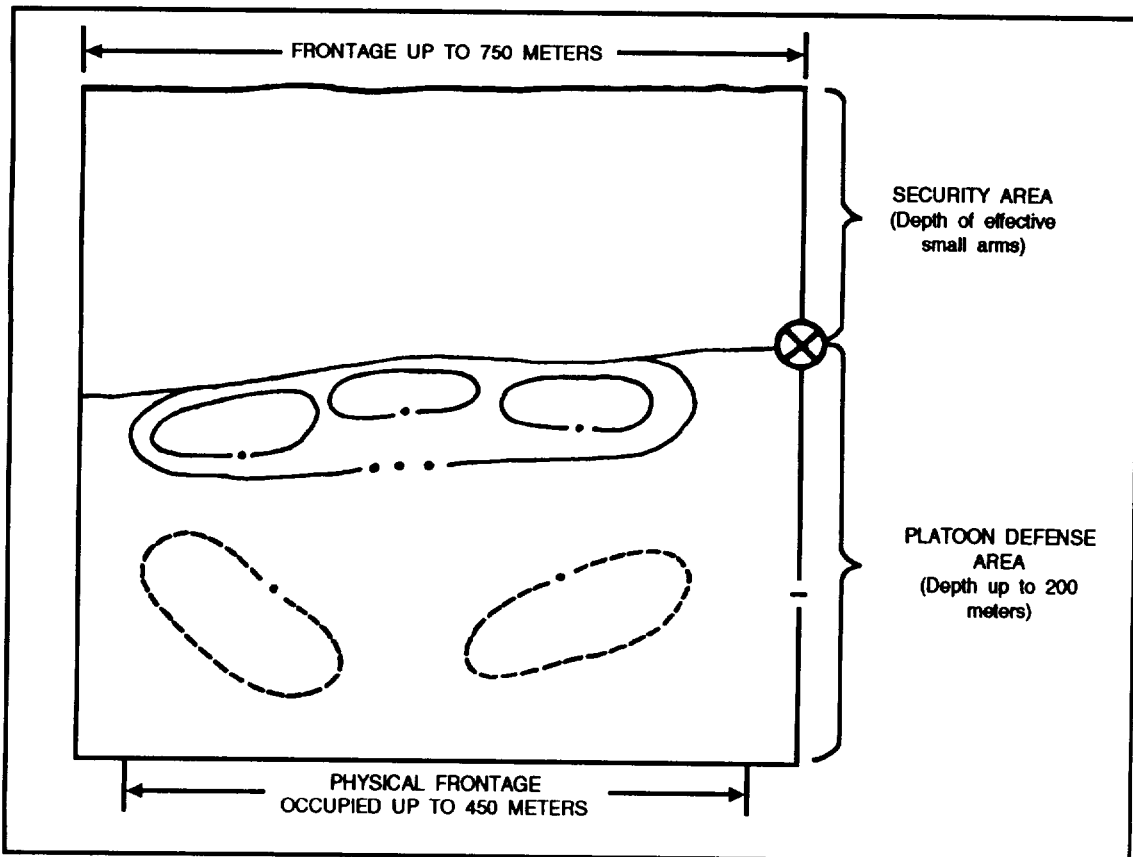


Figure 4-11—Frontline platoon defense area.

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frontage is the area that is physically occupied by the platoon. It can be up to 450 meters.

DEPTH

The depth of a platoon defense area is the distance between the squad primary positions and the rearward extension of their supplementary positions. It maybe up to 200 meters.

SECURITY AREA

The platoon is assigned part of the company security area forward of the FEBA. This is the area where the company sends out patrols. It is important as a platoon commander to know when and where a patrol will cross into his security area. Coordination between platoon commanders and the company commander on the positions of listening posts, observation posts, and early warning devices is essential.

PLAN OF DEFENSE

The plan of defense of the platoon commander consists of a well-developed fire support plan that is integrated with the fire support and barrier planning of the company. Close combination with the other platoon commanders assigned to the company is critical. Basically, the plan of defense of the platoon consists of assigning each squad a position on the

terrain and a sector of fire. The plan of defense results from the estimate of the situation and the fundamentals of defense of the platoon commander discussed previously in this chapter.

FIRE SUPPORT PLAN

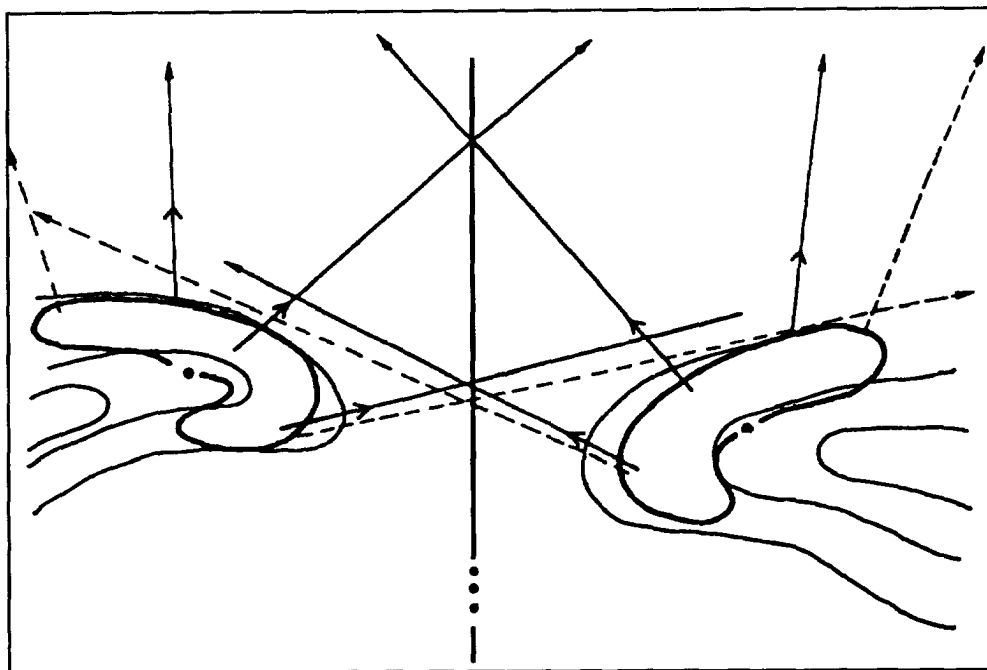
The platoon commander coordinates with the weapons platoon commander concerning crew-served weapons and final protective lines (FPLs). The defensive fire plan of the platoon is integrated with the fire plan of the company.

Once the primary positions of the squads are determined, the platoon commander selects the sector of fire of the squad. The sectors of the squads overlap and cover the portion of the company battle position assigned to the platoon. The sectors of fire of the flank squads overlap the adjacent platoon's flank squad's sectors of fire, and the interlocking fire provides mutual support (fig. 4-1 2).

When a gap exists between adjacent platoons, proper coverage is accomplished by use of indirect fire (fig. 4-13).

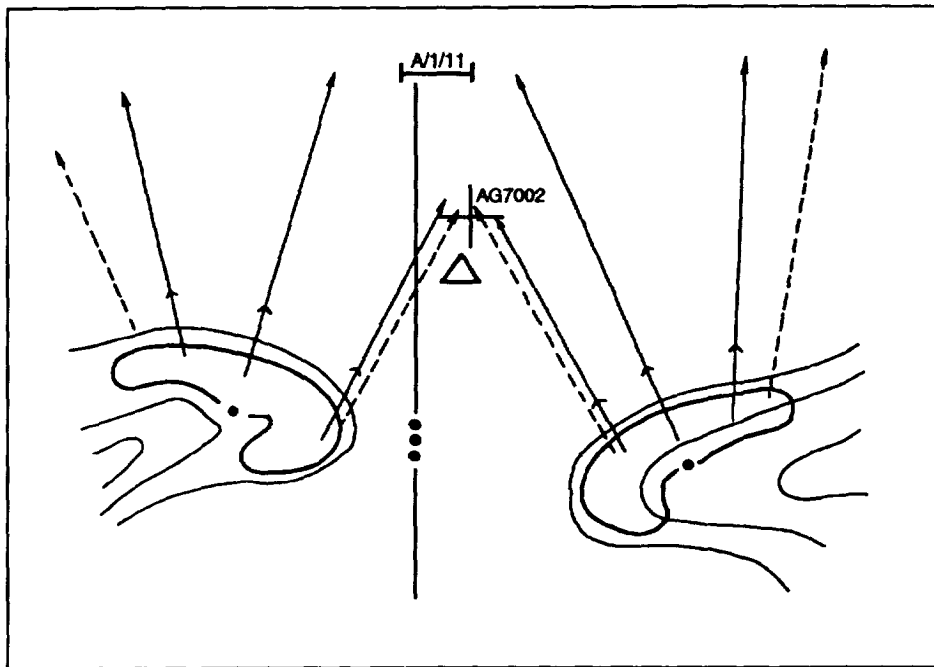
PLATOON FIRE PLAN SKETCH

The platoon commander prepares a fire plan sketch or overlay based from the fire plan sketches of the squad leader. A platoon fire plan sketch or overlay



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Figure 4-12.—Mutual support provided by flank fire.



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Figure 4-13.—Coverage for a gap.

is submitted to the company commander for approval (fig. 4-14 and appendix II).

The sketch or overlay includes the following:

- Squad primary position and sectors of fire
- Positions and PDFs for all automatic rifles including crew-served weapons
- Location of platoon or company observation post
- FPLs of all weapons located in platoon defense area
- On-call targets
- Barriers and early warning devices
- Claymore mines

ORGANIZING THE PLATOON IN THE DEFENSE

The task of organizing the platoon in the defense begins immediately upon arrival of the company. Work commences in the order of priority established by the company commander. Top priorities for the platoon normally include the following actions in order of importance:

- Establish security.
- Hastily set up a communication network.
- Position automatic and crew-served weapons.

- Clear fields of fire.
- Assign sectors of fire and PDFs.
- Prepare fighting positions.
- Plan, coordinate, and plot available fire support.
- Install tactical and supplementary wire.
- Lay and bury wire for the final communication network.
- Prepare other obstacles including claymores and protective wire.
- Prepare alternate positions.
- Prepare supplementary positions.

NOTE: The platoon commander must have constant communication with the squad leaders and the company CP.

CREW-SERVED WEAPONS

Crew-served weapons are the fire support elements of the rifle companies. The weapons platoons and the 60-mm mortar platoons are responsible for the crew-served weapons. Their purpose is to provide each company with organic machine gun support, mortar fire support, and antitank defense capability.

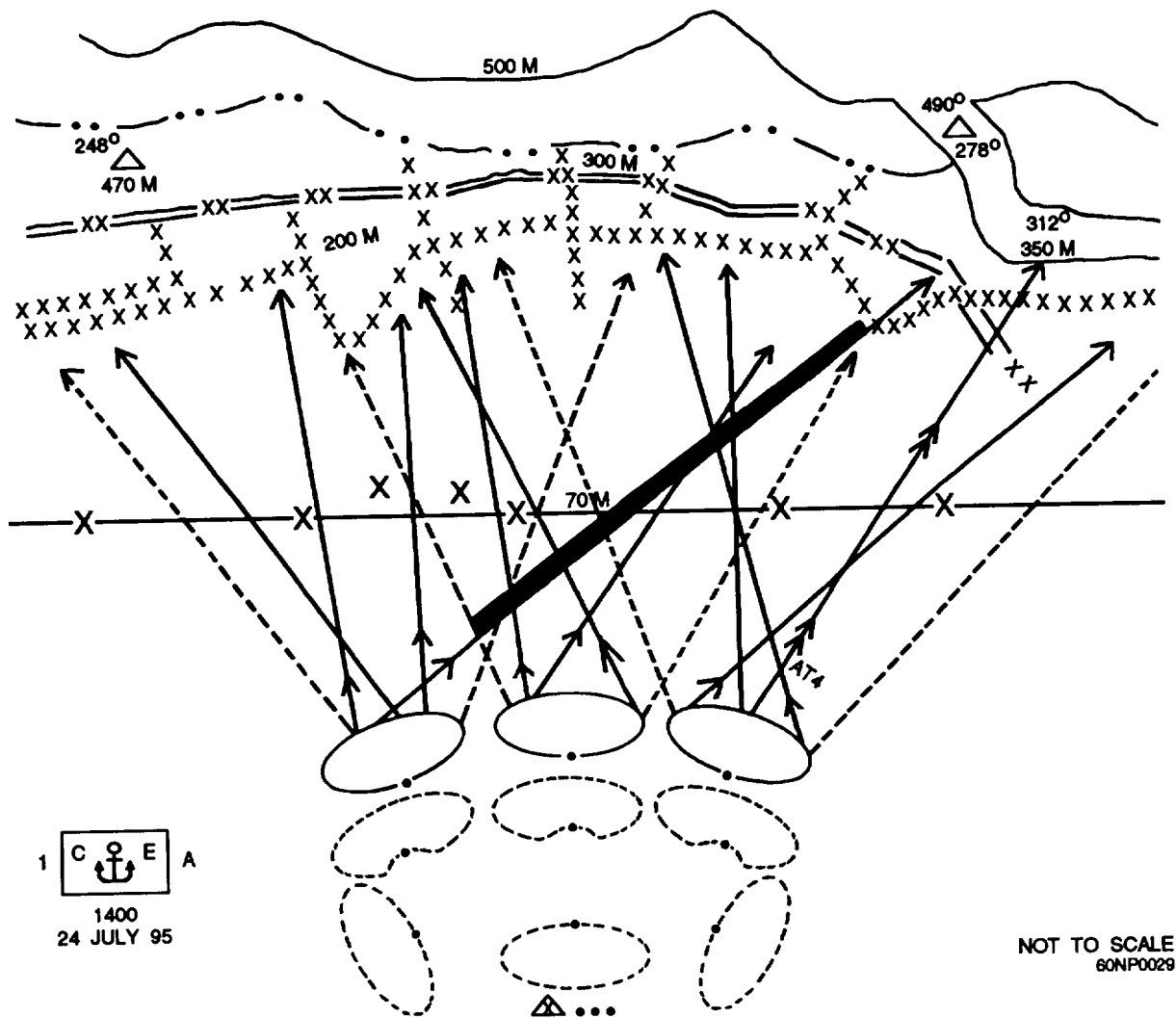


Figure 4-14.—Platoon fire plan sketch.

WEAPONS PLATOON

Alfa, Bravo, Charlie, and Delta companies each have a weapons platoon. Terrain will dictate the number of crew-served weapons assigned to each platoon. The weapons platoon is normally composed of the following crew-served weapons:

- M60E3 machine gun
- .50 caliber machine gun
- M19 grenade launcher
- M136, 84-mm launcher AT4 antitank weapon

NOTE: Refer to the *Seabee Combat Handbook*, Volume 1, for the characteristics of crew-served weapons and the weapons platoon organization.

Weapons Platoon Commander

Similar to the rifle platoons, the weapons platoon commander must have constant communication with the squad leaders responsible for the crew-served weapon teams. The weapons platoon commander conducts his reconnaissance with the company commander or is directed to conduct it separately. In either case, the weapons platoon commander plans the employment of the weapons platoon. During the planning, it is important that the weapons platoon commander works with the rifle platoon commanders. The planning includes the following:

- Fighting positions for crew-served weapons
- FPLs and PDFs for machine guns
- Primary and alternate positions for machine guns
- Sector of fire for each machine gun squad

- Sectors of fire for each assault team
- Covered waiting positions for the assault teams
- Primary and alternate positions for the assault teams

The selection of the weapons platoon commander is the substance of recommendations made to the company commander for the primary defensive employment of the weapons platoon. While on reconnaissance, the weapons platoon commander also selects supplementary positions, as necessary, from which the machine gun team may perform other defensive missions.

Fire Support Plan

The company commander exercises control of the weapons platoon through the weapons platoon commander. He exercises control for the most effective defensive employment of the company. The weapons platoon commander ensures its effectiveness by preparing a detailed plan consistent with the recommendation accepted by the company commander. A fire support plan is prepared by the weapons platoon commander. The plan is based upon an estimate of the situation, the fundamentals of defense previously discussed, and a sound knowledge of crew-served weapon employment.

M60E3 Machine Gun Section

The machine gun section is a major element of fire support for stopping the enemy assault immediately in front of the battle area. In a well-organized defense, most of the final protective fire (FPF) of the company is delivered by the machine gun section. The positions of the machine guns are planned primarily for this purpose. Roles of the M60E3 machine gun section are as follows:

- Support the rifleman in the offense and defense.
- Provide heavy volumes of controlled, accurate, and continuous fire.
- Engage predetermine targets under all visibility conditions.
- Provide long range, close defensive, and final protective fires (FPFs).
- Basis for FPFs in the overall defensive fire plan.
- Cover likely avenues of approach.
- Provide grazing fire.

Use of .50 Caliber Machine Gun

In general, the roles of the .50 caliber machine gun are similar to the M60E3. The major difference is that the .50 caliber machine gun ammunition can penetrate light armor. The additional roles of the .50 caliber machine gun are as follows:

- Provide protection for motorized movements.
- Destroy lightly armored vehicles.
- Defend against low-flying hostile aircraft.

M19 Grenade Launcher

The role of the M19 grenade launcher is similar to the M60E3 and .50 caliber machine guns. The weapon can be used to provide indirect or direct firing. Like most machine guns, the M19 grenade launcher can be mounted on a vehicle.

AT4 Antitank Weapon

Primarily, the M136, 84-mm AT4 antitank weapon is used against armored personnel carriers; however, it can be used to disable a battle tank by striking the side or rear of the tank. The AT4 can be fired from the right shoulder only.

MACHINE GUN TACTICAL EMPLOYMENT

The basic unit of machine gun employment in defense is the squad. Machine gun squads consist of a squad leader and two four-man machine gun teams. Machine guns used on the **FEBA** are normally used by squads.

Employment of Machine Guns

Machine gun squads used on the FEBA are normally assigned a final protective line (FPL) and a sector of fire or a principal direction of fire (PDF). Both machine guns of the squad fire the same general FPL and sector of fire from positions a minimum of 35 meters apart.

Based on terrain, it may be necessary to split some squads to provide effective machine gun coverage. A machine gun squad is split when each of its guns has been assigned a different firing mission; that is, a different final protective line or principal direction of fire and sector of fire. A machine gun squad is split only when necessary. If the squad is split, the two

guns should be used as close to each other as the machine gun fire plan will allow. This action ensures interlocking fire, ease of control, and supplies (fig. 4-15).

Machine Gun Final Protective Lines

Effective final protective fire is characterized by the following:

1. **Flanking:** Maximum flanking fire is desirable. The more frontal the fire, the less effective the coverage of the company front.
2. **Interlocking:** Interlocking fire adds to the effectiveness of the fire plan. Such fire reduces the number of gaps in the final protective lines and provides mutual support between adjacent units.
3. **Grazing:** Final protective lines are located to obtain maximum grazing fire. Grazing fire is fire in which the trajectory of the bullets does not rise above the height of a man, standing. On flat or uniformly sloping terrain, machine gun fire grazes to a maximum range of 700 meters from the gun. Figure 4-16 shows a proper technique for graphically displaying final protective fire and gaps in its grazing fire on an overlay or sketch.

Machine Gun Sector of Fire

A sector of fire is assigned to each machine gun squad. A machine gun sector of fire does not normally exceed 800 roils (45 degrees). Adjacent machine gun squad sectors should overlap. Preferably, the final protective line comprises the near boundary of the sector. It may be located within the sector when the grazing fire is slightly more frontal than desirable and machine gun fire coverage closer to the FEBA is required.

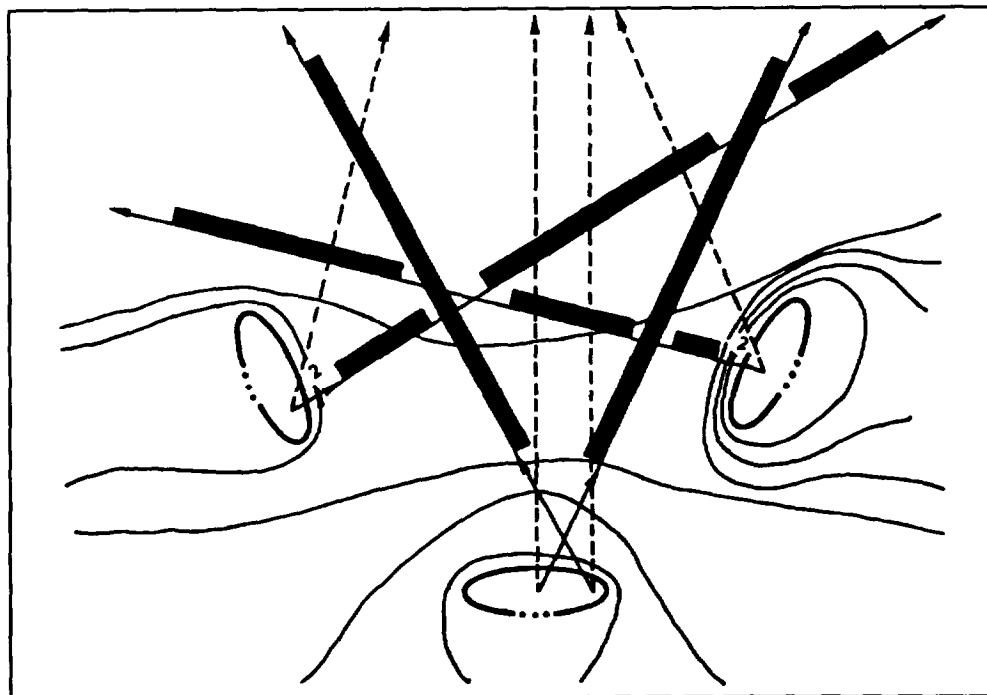
Machine Gun Principal Direction of Fire

When the terrain does not allow for an effective final protective line, machine guns on the FEBA may be assigned principal directions of fire for covering dangerous avenues of approach. In such situations, the principal direction of fire may fall within the sector of fire or comprise either of its boundaries.

NOTE: A machine gun cannot be assigned a final protective line (FPL) and a principal direction of fire (PDF).

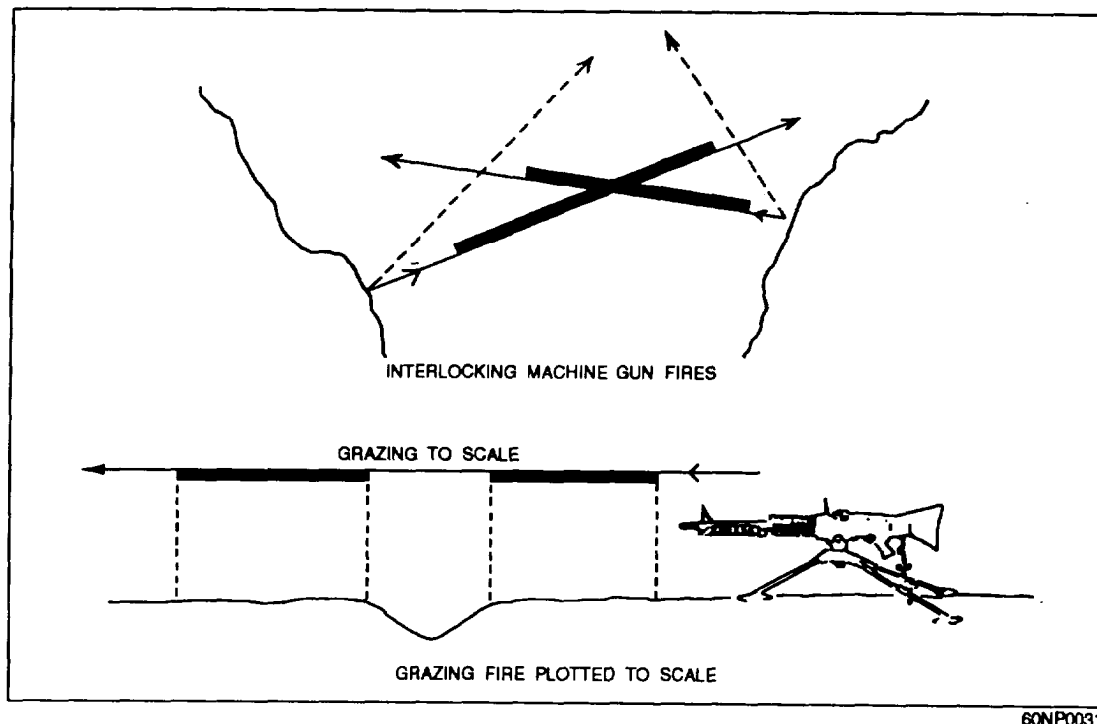
Machine Gun Communications

Whenever possible, the primary positions of the machine gun squad are provided with sound-powered telephone communications on the company wire net



60NP0030

Figure 4-15.—Machine guns split.



60NP0031

Figure 4-16.—Machine guns FPL and grazing fire.

to the weapons platoon commander. If time permits, wire is laid to alternate and supplementary positions. Messengers are used when wire communications are inoperative or have not been installed.

AT4 TACTICAL EMPLOYMENT

The assault squad is the basic unit for the tactical employment of the AT4 antitank weapon. Because of the short range of the AT4, they are normally positioned with the frontline platoons to provide close-in antitank defense. The weapons platoon commander normally uses a messenger to communicate with the assault squads.

Positions of Assault Squads

The location of the best observation and fields of fire covering the avenues of approach for armor vehicles dictates the positioning of assault squads. A primary and several alternate firing positions are prepared from which each avenue of approach can be covered. When the armor threat develops, the squad moves by covered routes to the previously prepared positions.

AT4 Sectors of Fire

Each assault squad is assigned sectors of fire to ensure that all avenues of approach for armor vehicles are covered and to provide overlapping areas of antimechanized responsibility. The size of the sector is limited only by the available observation and fields of fire. The assignment of a sector of fire does not preclude firing at targets outside the sector. When the squad is used as a unit, both assault teams are assigned the same sector. When the squad is split, the two teams may be physically located in proximity but are responsible for separate sectors. Fire planning should avoid splitting assault squads unless absolutely necessary.

60-MM MORTAR TACTICAL EMPLOYMENT

In the defense, final protective fire of a single mortar covers an area of approximately 50 by 50 meters. A FPF may be located within 60 meters of the FEBA. Thus the 60-mm mortar can cover small gaps or dead space in the machine gun FPF close to the FEBA. Firing positions for mortars should be located between 150 and 300 meters to the rear of the FEBA.

Communications

Communication to the mortar platoon starts at the Fire Direction Center (FDC). Companies requesting a fire mission do so by contacting (FDC). The FDC will plot the fire mission and issue fire commands to the mortar section leader responsible for the mortar gun crew. Forward observers (FOs) assigned to the mortar platoon communicate with the FDC directly. FDC must seek approval for all fire missions from the Fire Support Coordinator (FSC) located in the COC.

Sectors of Observation

Sectors of observations are critical for mortar fire to be effective. The mortar platoon is not assigned a sector of fire but must be able to provide coverage throughout the battalion security area. Rifle platoon commanders must ensure that their assigned battle area is covered by overlapping sectors of observation. Forward observers (FOs) from the mortar platoon are usually assigned this task, but it may be necessary for the rifle companies to assist the FOs. Personnel from the rifle companies assigned as FOs must be able to call in a fire mission and do so via the platoon commander and the company CP.

Rate and Duration of Fire

In the absence of any instructions, the normal rate of fire is nine rounds per minute for the first 2 minutes and six rounds per minute after that for the duration of final protective fire (FPF). The FDC chief will normally specify the number of rounds to be expended on each target to the section leader. The COC, upon approval from the battalion commander, sets the number of rounds to be fired for FPF. Consideration is given to the ammunition on hand, nonorganic support available, anticipated resupply schedule, area to be covered, and enemy activity.

SUPPLEMENTARY MISSIONS

Both the machine gun squad and the assault squad may be positioned and employed in performing supplementary missions in defense.

Machine Guns

Machine gun squads, employed on the FEBA or in the reserve area, prepare supplementary positions from which to cover sectors of fire **different from their primary sectors**. Missions are usually based

upon an enemy penetration of an adjacent company or platoon and to provide all-around defense.

AT4

Assault squads, whose primary missions are to cover avenues of approach to the FEBA, may be required to prepare supplementary positions. The supplementary positions are to cover avenues into the flanks and rear of the company. Assault squads support the defense by fire from planned supplementary positions when an armor threat fails to develop.

60-mm Mortars

Supplementary positions are infrequently established for a 60-mm mortar squad section. However, fire within the battle area is planned to provide for supporting frontline rifle units when they are forced to move to supplementary positions.

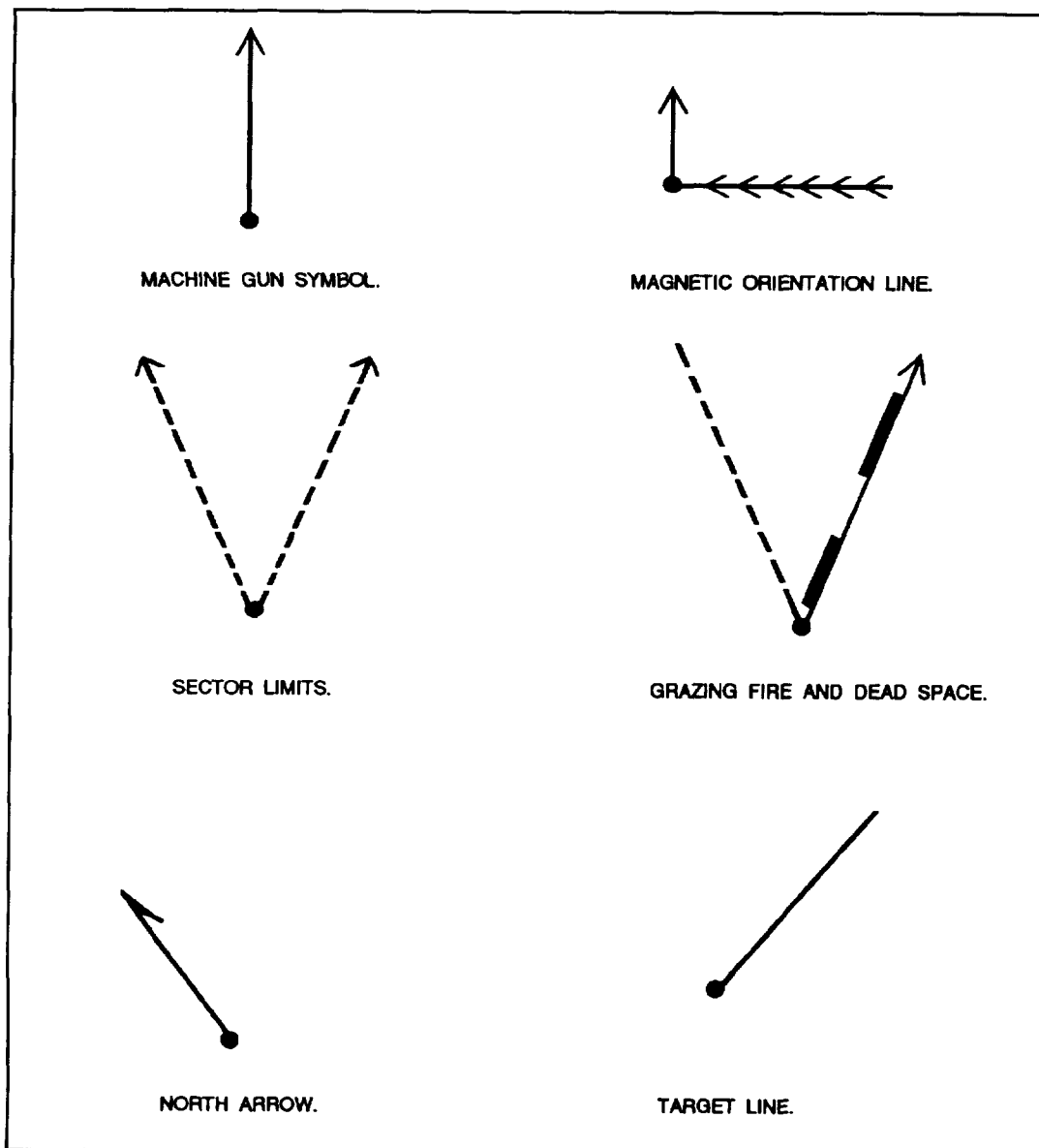
RANGE CARDS

Once a machine gun team is deployed in a defensive position and the gun laid, the squad leader must ensure that range cards have been completed. Two sets of range cards must be made for every fighting position. Range cards are very important and are used for several purposes. The squad leader forwards one copy as soon as possible to the platoon commander. The platoon commander ensures the card is accurate and then forwards it on to the company CP. Range cards are the basis for the fire plan of the company. All supporting fire, security sectors, and defensive coordination are planned using machine gun fire as the base from which to build.

The second copy of the range card will be kept by the gun team. The card is used by members of the gun team to fire at predetermined targets or to help in range estimations to other targets. Range cards may be passed on to a relieving battalion. Patrols from companies or other units may want to look at the range cards to identify final protective lines. Patrols need to know of any dead space to ensure that they are clear of infiltrators and where to take cover during an FPF.

COMPLETING A RANGE CARD

Range cards must be neat, clear, and prepared using a universal format. Observe the range card symbols and sample range card shown in figures 4-17 and 4-18 as each component is explained below. (see appendix II)



60NPO032

Figure 4-17.—Range card symbols.

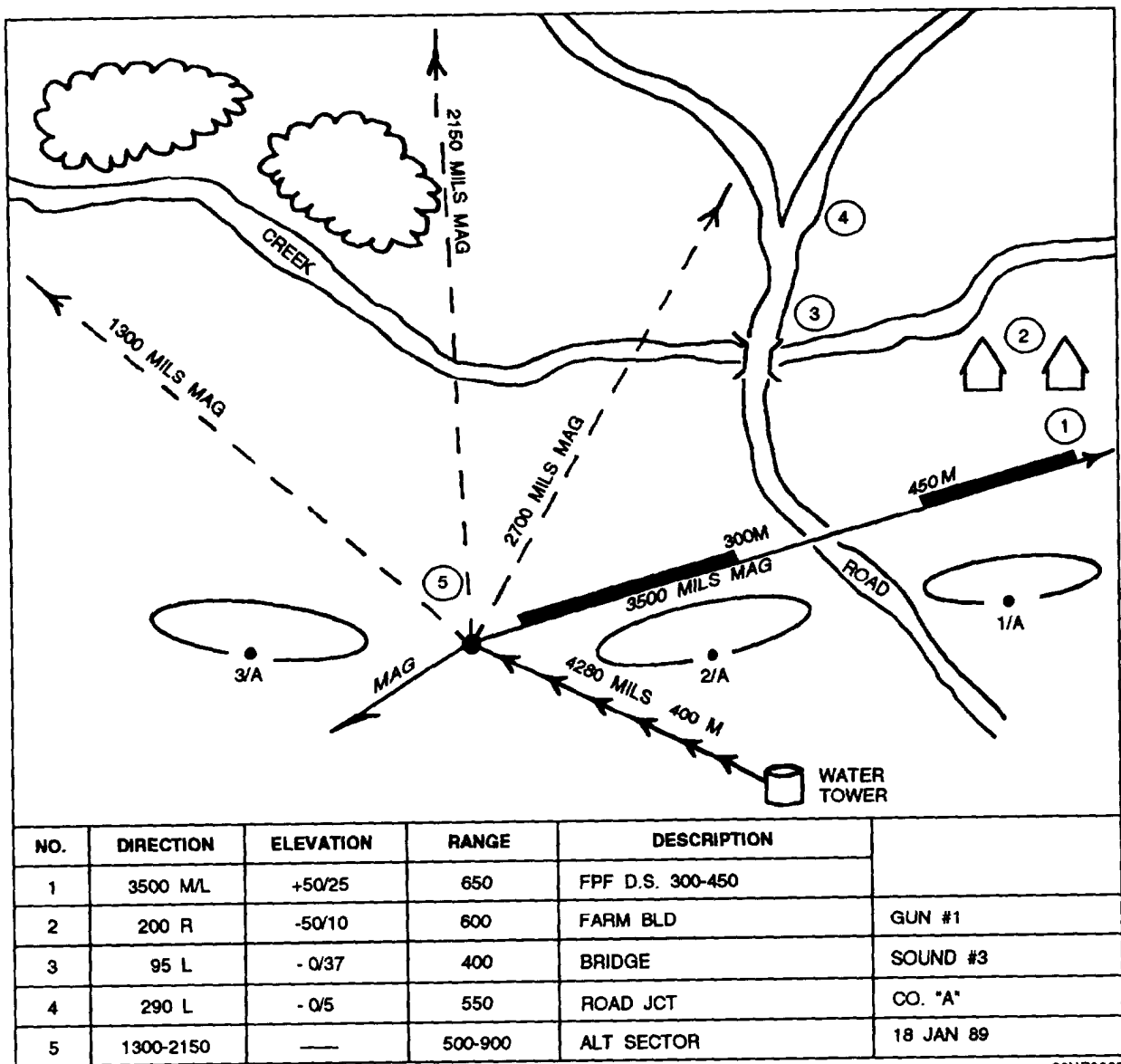
1. **Identification Block:** This block identifies what gun the card was drawn for and on what date it was drawn. For security reasons, the unit should only be identified to company level.

2. **Weapon Symbol:** The correct symbol for a machine gun is a single dot with a solid arrow extending out in the direction of the FPL or PDF. The dot represents the location of the gun. Record the magnetic azimuth of the FPL or PDF along this line.

3. **Magnetic North Arrow:** This arrow is drawn from the dot that represents the gun position in the direction that represents North from the gun position if you were looking out toward your sector of fire. The correct symbol for North is an arrow with a single barb.

4. **Magnetic Orientation Line and Location Grid Coordinates:** These are the two methods used so that the CP, the battalion, or other units can positively locate a gun position. The magnetic orientation line method is a line drawn from a prominent terrain feature that is located preferably behind friendly lines. **It is a single-solid line drawn from a prominent terrain feature to the gun position with several arrow heads pointing in the direction of the gun position; the magnetic azimuth in roils from the prominent terrain feature to the gun position is recorded on the line.**

NOTE: One degree is equal to 17.7778 mils. Example: To convert an azimuth of 140 degrees,



80NP0033

Figure 4-18.—Range card with an FPL.

simply multiply 140 by 17.7778 which equals 2488.892. Round up to 2,489 mils.

The grid coordinates method is where the grid of the gun position is recorded next to the dot in the machine gun symbol. Only one of these two methods to locate the position of the gun is needed.

5. Sector Limits: Sector limits are drawn as broken lines ending in arrow heads. When you are using an FPL, only one sector limit will be drawn because one is located in the same location as the FPL.

6. Grazing Fire: If an FPL is used, a heavy-shaded area is drawn along the inside of the FPL, which will show the limits of the grazing fire. Show any dead space by breaks in the grazing fire by shaded

areas. Record the near and far limits of the dead space in meters or record the range next to the ends of the shaded areas.

7. Terrain Features: Draw only those terrain features that significantly add to the clarity of the range card. If a terrain feature is drawn, draw it to the correct perspective.

8. Location of Friendly Troops/Equipment: Draw in any friendly positions or equipment that is either in or near the sector limits of the machine gun. Clearly label them with both a description, range, and direction.

9. Targets: Draw targets to perspective and label them with a number. The number one target will be

either the FPL or the left sector limit. If the FPL is on the right sector limit, number all other targets sequentially from right to left; at all other times, number targets from left to right. There are two approved methods for recording target data. One method is to record data directly on the sketch along the line leading to the target. Another method is to use a data block at the bottom or reverse side of the range card.

Range Card for an FPL

The following scenario is to illustrate how a range card is prepared for an FPL. Figure 4-19 provides an illustration of a tactical field setting to help you.

Scenario

A machine gun fire team from the weapons platoon is attached to the second platoon of Charlie Company deployed along a low ridge overlooking a narrow valley. The weapons platoon squad leader, along with the other gun team, is supporting another company. The creek bottom across the valley is suspected of being a major infiltration route for the enemy. On the second platoon's right limit is the first platoon. Bravo Company joins the second platoon on the left limit. The second platoon commander has informed the machine gun team leader that the gun is to be positioned on the left flank of the platoon. The team leader informs the machine gun team to lay the gun to be able to fire an FPF across the front of the ridge. The line formed by the base of the ridge is to

be the right sector limit. The trees at the bend in the creek in front of the gun position is the left limit. Interlocking fire for the FPF will be obtained from the third squad gun team attached to the first platoon. Using a compass or GPS, the gun team has located the gun at grid coordinate 94576259. The grid is also 750 meters from the water tower that is located on a magnetic back azimuth of 5,980 mils. The FPL lies on a magnetic azimuth of 4,250 mils.

Figure 4-20 shows the beginning stages of the range card. It shows the weapon symbol, the magnetic North arrow, the magnetic orientation line and location grid coordinates, the sector limits, and the grazing fire.

Figure 4-21 shows the completed range card. Details have been added, such as the unit identification block, the terrain features, the location of friendly troops or equipment, and the targets with their individual data.

Range Card for a PDF

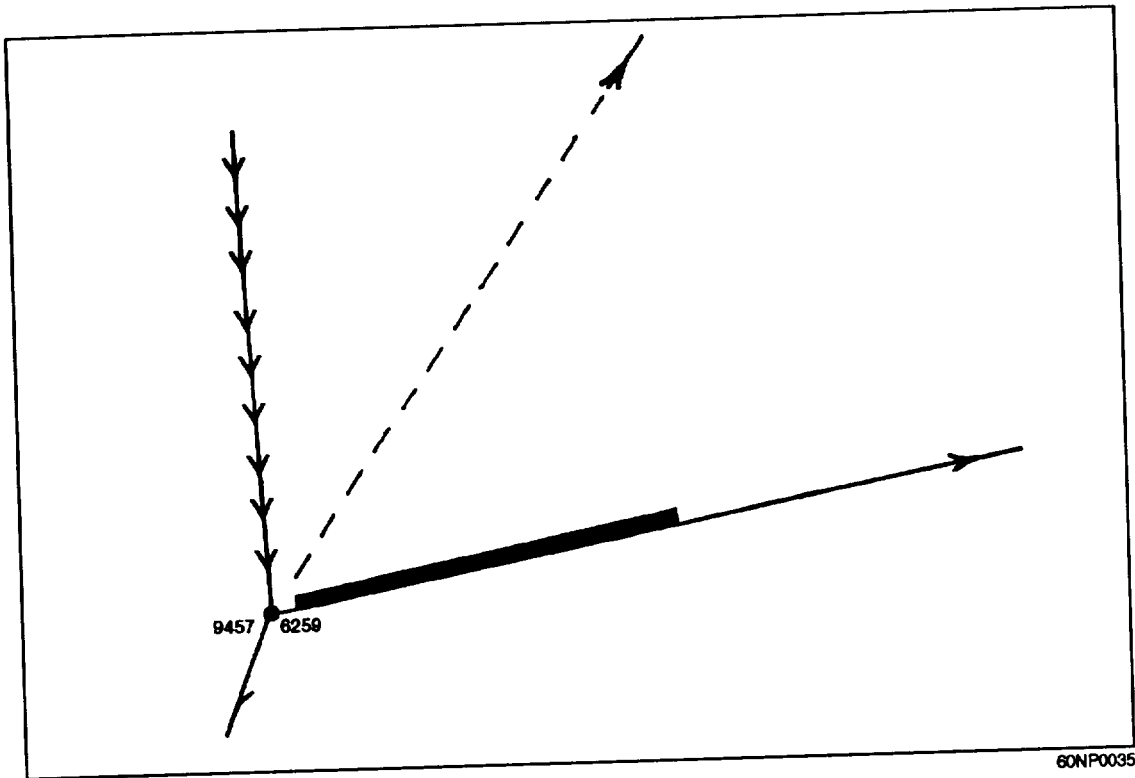
The range card for a PDF is very similar to an FPL range card. The only real difference is the machine gun symbol. A PDF does not align with a sector limit.

The following scenario is to illustrate how to prepare a range card for a PDF. Figure 4-22 provides an illustration of a tactical field setting.



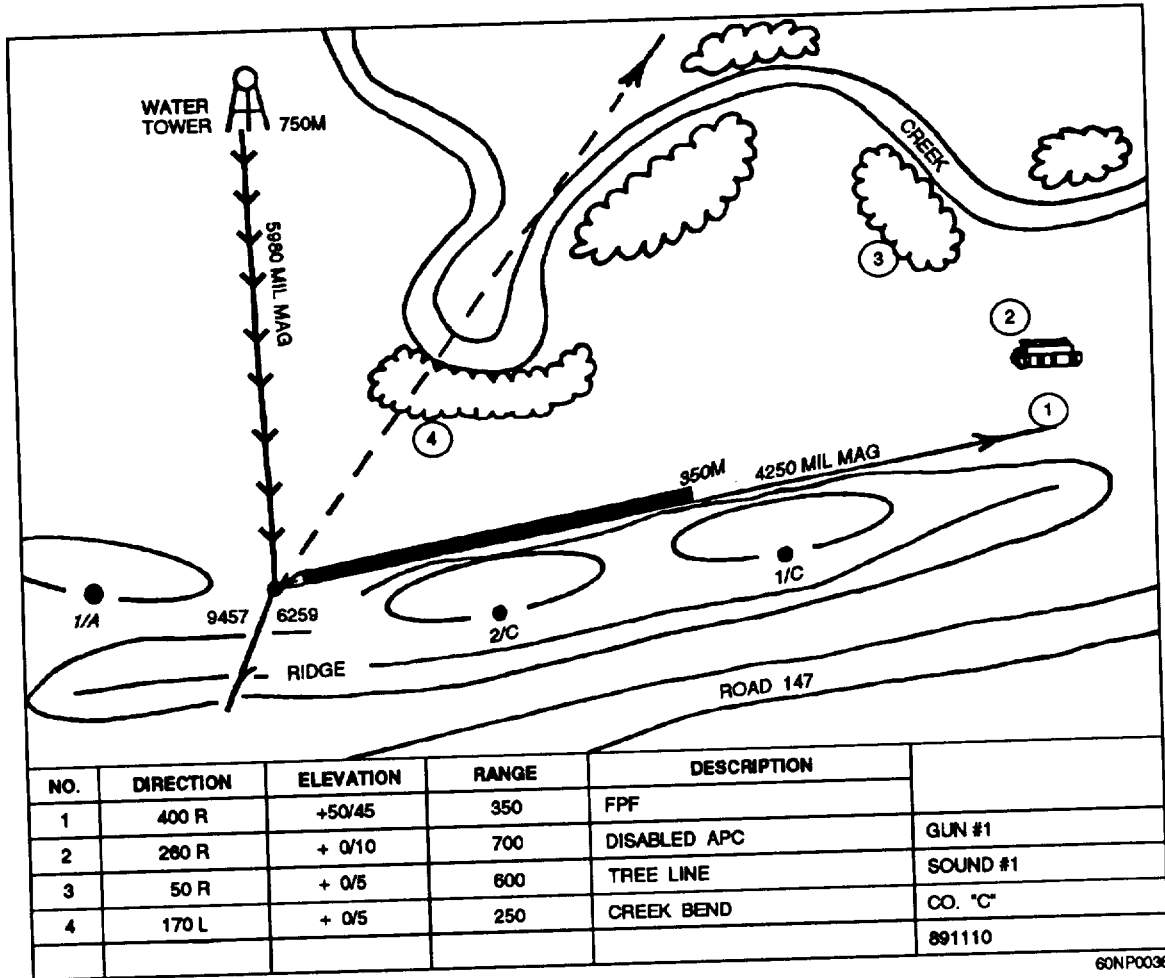
60NP0034

Figure 4-19.—Panoramic view of tactical area.



60NP0035

Figure 4-20.—Beginning of a range card.



60NP0036

Figure 4-21.—Completed range card.



6ONP0037

Figure 4-22.—Panoramic view of tactical area.

Scenario

A machine gun fire team has been attached to the third platoon of Alfa Company. The squad leader and another gun team have become casualties. The platoon is deployed in a tree line overlooking a bridge. The enemy is suspected to have infiltrated the village on the other side of the river. The mission of the platoon is to stop any attempt from the enemy to cross the river via the bridge. The first platoon is to the right of the third platoon, and Bravo Company has joined the third platoon on the left. The commander of the third platoon has informed the machine gun team leader that the machine gun fire team is to be deployed on the left flank of the platoon. The team leader is to get the best angle to fire across the bridge. The team leader informs the machine gun fire team to lay the gun on a PDF centered on the bridge. The lone tree on the immediate right is the right sector limit, and the leftmost edge of the grove of trees across the river is the left sector limit. Using a compass or GPS, the machine gun fire team has located the gun at grid coordinate 468262. The grid is also 350 meters from a road junction that is located on a magnetic back azimuth of 5,420 mils. The PDF lies on a magnetic azimuth of 4,120 mils.

Figure 4-23 shows the beginning stages of the range card. It shows the weapon symbol, the magnetic North arrow, the magnetic orientation line and location grid coordinates, the sector limits, and the PDF.

Figure 4-24 shows the completed range card. Details have been added, such as the unit identification block, the terrain features, the location of friendly

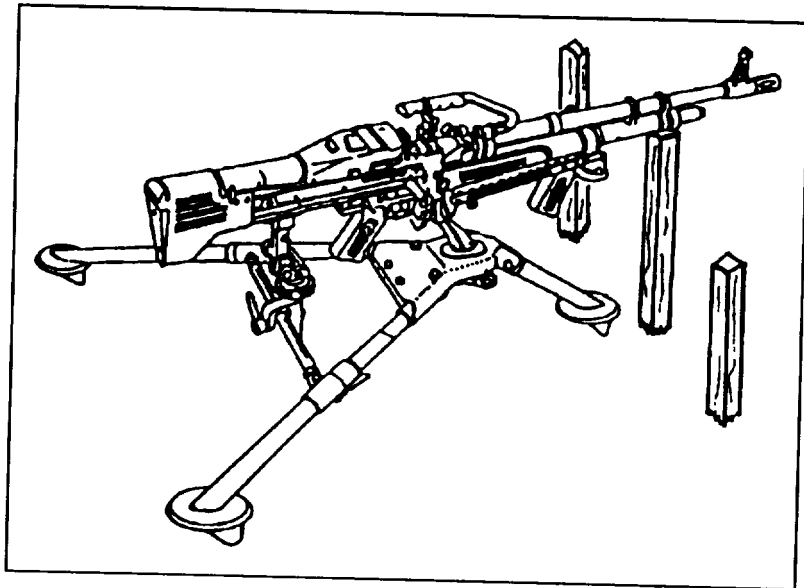
troops or equipment, and the targets with their individual data.

EXPEDIENT METHODS OF LAYING FOR PREDETERMINED FIRE

During different tactical situations, a T and E mechanism (refer to *Seabee Combat Handbook*, Volume 1, for predetermined fire) may not be available. This may be due to the lack of either a T and E mechanism or a tripod or a system is needed that is more applicable to firing at night. Whatever the reason, the following methods can be just as effective:

1. Muzzle Stakes: This method is good for night firing. It requires no illumination to lay on a target and can be used with or without a T and E mechanism. It is most effective when used with your gun mounted on a tripod. It can be used from a bipod mount if a notched stake is used to stabilize the rear of the weapon. Each target is designated by driving a stake into the ground under the muzzle. Drive the stake into a position and to a depth that will result in the gun being correctly aimed when the muzzle is lowered directly over the stake (fig. 4-25). The gun is tripod-mounted and will use swinging traverse fire.

2. Notched Log under Muzzle: Instead of using individual stakes, this method uses a log or board under the muzzle. This method is also used for night fire. Notches are cut into the log or board to the depth and position required to fire on each target. This method is very limited in depth, but if the ground that is fired over is level or uniformly sloping, this may not be a problem (fig. 4-26).



60NP0040

Figure 4-25.—Muzzle stakes.

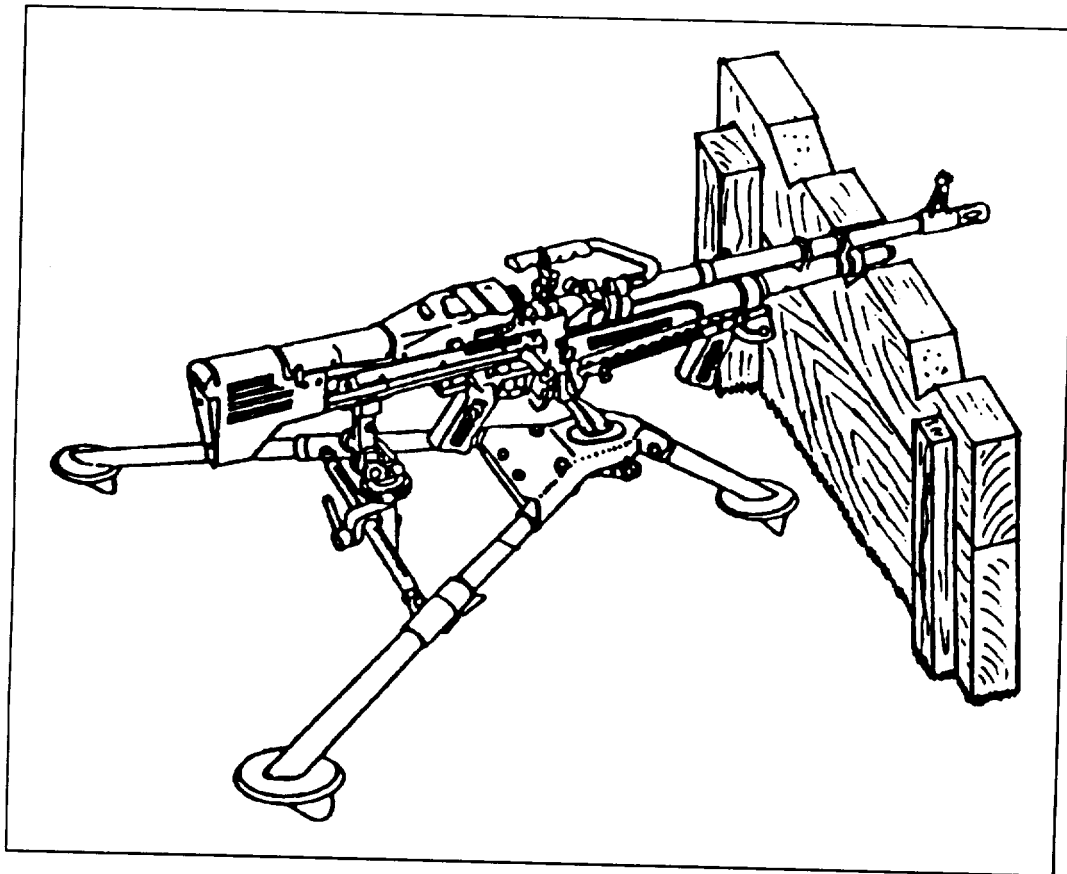
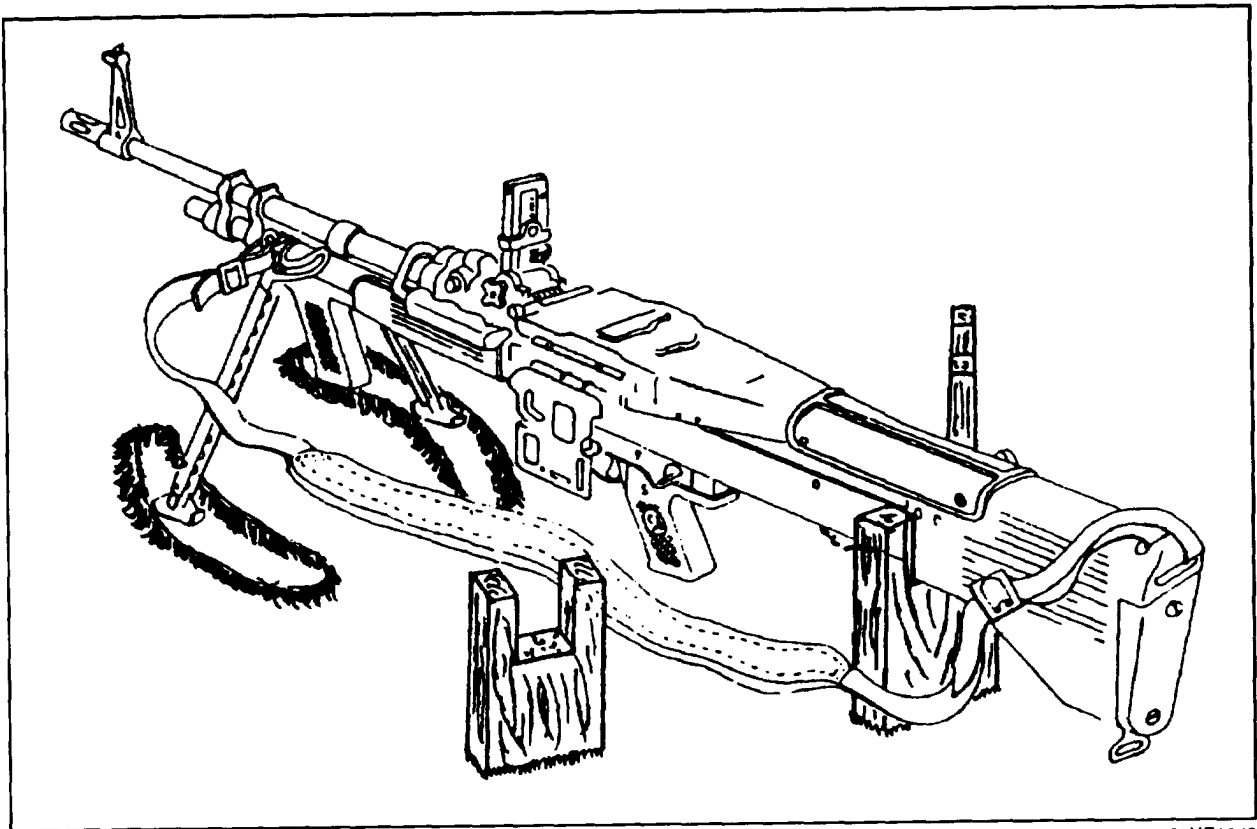


Figure 4-26.—Notched log method.

3. **Forked Stakes:** This is a method that works well with your gun supported by a biped only. To use this method, make a set of stakes with notches in the top

or find naturally forked stakes. The front of the gun is supported by the biped, and the rear is supported by the forked stakes. It is essential that a set of U-shaped pits



60NP0042

Figure 4-27.—Forked stake method.

are dug under the feet of the bipod to rotate in. If the feet of the bipod move about freely without being contained in these pits, the accuracy of the fire will be reduced (fig. 4-27).

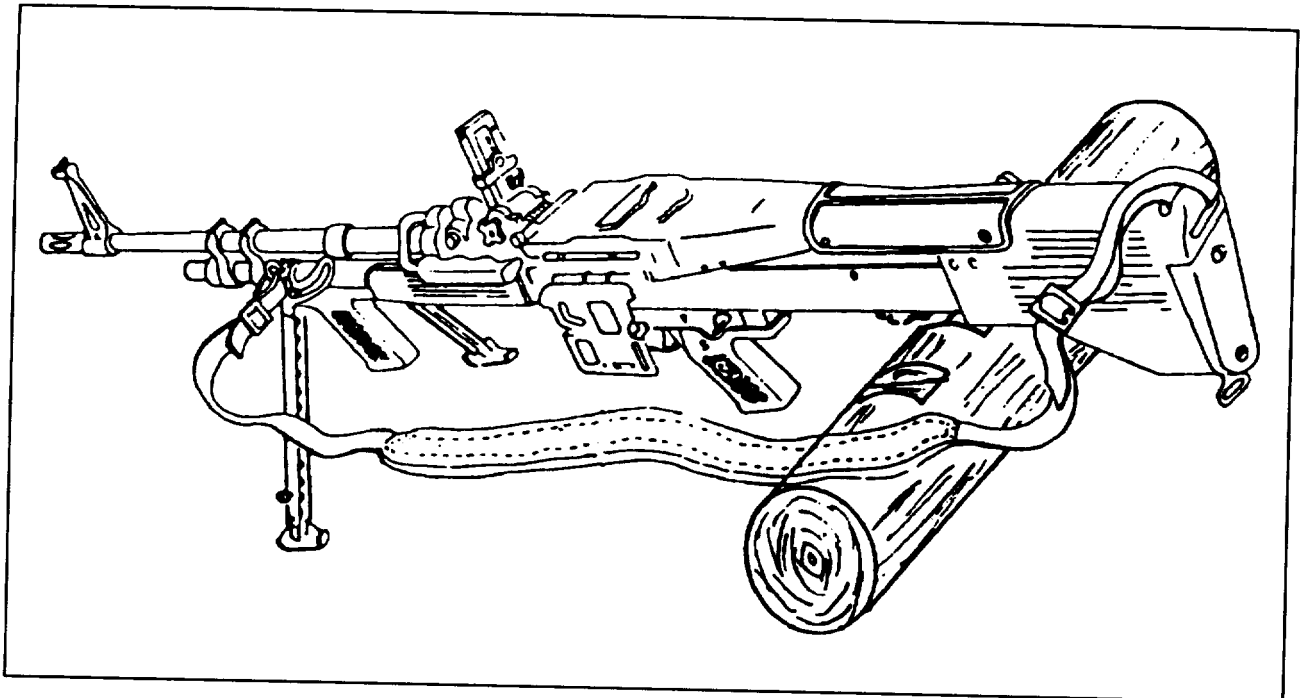
4. Notched Log under Receiver: This method works similar in principle to the fork method. Instead of having notched stakes for each target, a log is substituted under the receiver with notches cut to the correct depth and in the correct spot for direction. The biggest drawback here is the limited depth of target you can engage; however, if the ground is level and uniformly sloped, this may not be a factor (fig. 4-28).

5. Aiming Stakes and Tape: This method is unique because it is the only method that does not restrict the free movement of the gun. Although it is more accurate than most others, it also consumes the most time and requires the use of some material that will not always be available. To use this method, you must mount the gun on a tripod and have the T and E mechanism in place. To implement this method, you will need luminous tape and one stake for each target and each sector. Figures 4-29 and 4-30 show this method with an M19.

COMPANY FIRE PLAN

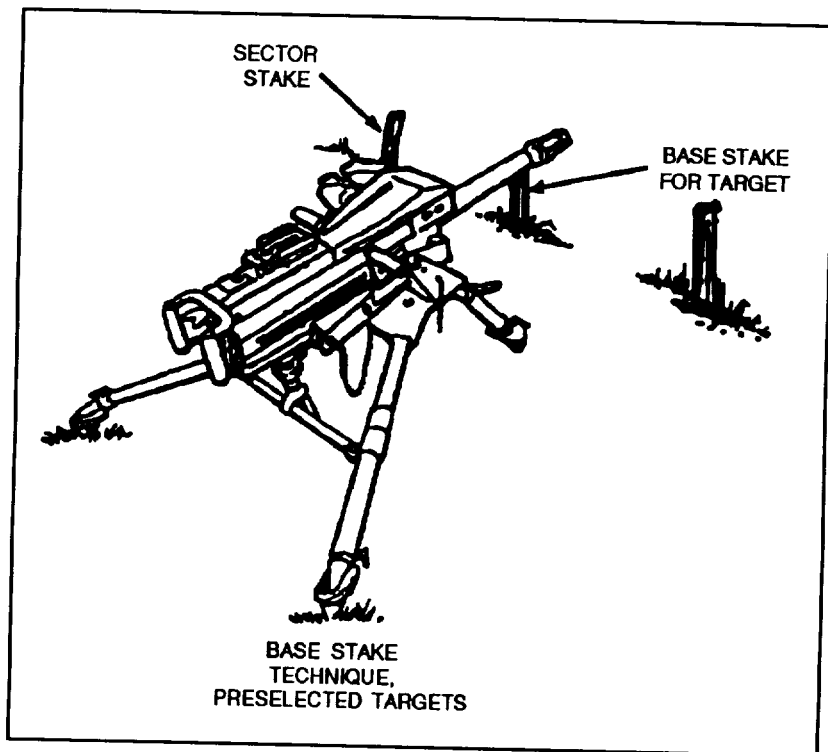
All the platoon commanders submitted their fire plans to the company CP. The company CP compiles the information and prepares a company fire plan. Items that must be included on the company fire plan include the following:

- Each primary and secondary position of the platoon
- Each sector of fire of the platoon
- Position and PDF for each automatic rifle
- Location of the platoon or the company observation post
- Location of the platoon or the company listening post
- Location of the forward observer (FO)
- FPLs of all weapons located in each defense area of the platoon
- On-call targets
- Barriers and early warning devices
- Claymore mines



60NP0043

Figure 4-28.—Notched log under receiver.

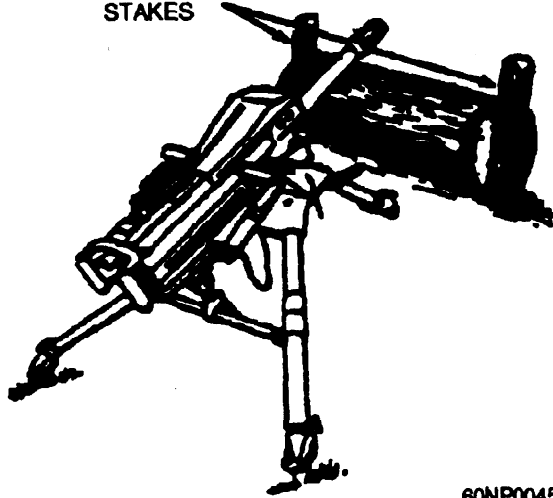


60NP0044

Figure 4-29.—Base stake technique.

**HORIZONTAL LOG OR BOARD
USED WITH THE TRIPOD-
MOUNTED MK19 MACHINE GUN**

**SECTOR LIMIT
STAKES**



60NP0045

Figure 4-30.—Aiming stakes used with a log.

- Layout of barbed-wire entanglements
- Patrol routes
- Evacuation routes

The company CP will submit the fire plan to the COC. The COC compiles the information and prepares a battalion fire plan similar to the items required in a company fire plan.

SUMMARY

Planning and development of defensive tactics take a lot of time and coordination. All company commanders, platoon commanders, and squad leaders must be involved. Communication between them is essential for developing defensive tactics. A well-thought-out defensive plan will surely be an asset.

“Know the enemy, know yourself; your victory will never be endangered. Know the ground, know the weather; your victory will then be total.” Sun Tzu (500 B.C.)

