

---

**UNITED STATES MARINE CORPS**  
THE BASIC SCHOOL  
MARINE CORPS TRAINING COMMAND  
CAMP BARRETT, VIRGINIA 22134-5019

**MACHINE GUN EMPLOYMENT**  
**B3N4478**  
**STUDENT HANDOUT**

---

## Machine Gun Employment

---

### Introduction

This lesson will cover the basic principals and definitions surrounding Machine Gun Employment. Also discussed will be offensive and defensive considerations, to include the support relationships that will be used when dealing with supporting elements such as machine gun units. The class will be based around the three Machine Guns found in an infantry battalion, the M240G, M19 MOD3 and the M2 HB .50 cal heavy machine gun. We have already been introduced to the organization of the weapons platoon and weapons company and the individual machine-gun units within. Individual classes on the M240G, M2, and MK19 will also be given. You will be expected to be familiar with these organizations and the capabilities of these weapons prior to familiarization with this material. The focus of this class will be centered upon the introduction of the employment of machine guns.

### Importance

For some, this handout in conjunction with the practical application will be the last formal instruction received on the employment of these weapons. But the likelihood of these weapons being employed by all MOS's, from the Marine Wing Support Squadron to the Truck Platoon, is highly likely.

### In This Lesson

The basic principles, definitions and operating guidelines of machine guns will be outlined in this text. More specific details in relation to the individual weapons systems mentioned above will be covered in their respective classes.

This lesson covers the following topics:

<b>Topic</b>	<b>Page</b>
Definitions	5
Classifications of Machine Gun Fire	6
Eight Principles of Machine Gun Employment	9
Machine Gun Fighting Positions	11
Support Relationships	14
Classification of Offensive Fires	15
Displacement Considerations	16
Defensive Considerations	18
Employment Considerations	19
Fire Commands	20
Range Cards	21
MG Tasking Statements	23
Summary / References / Glossary	24
Notes	26

---

**Learning Objectives****Terminal Learning Objectives**

Given a machinegun unit, a mission, and commander's intent, employ machineguns in support of offensive operations to achieve desired effects of machinegun fires in support of the ground scheme of maneuver in accordance with the Principles of Machine Gun Employment PICMDEEP (Pairs, Interlocking, Coordinating, Mutual Support, Defilade, Enfilading Fire, Economy of Fire, and Protection). (0302-OFF-1202)

Given a machinegun unit, a mission, and commander's intent, employ machineguns in support of defensive operations to achieve desired effects of machinegun fires in support of the ground scheme of maneuver in accordance with the Principles of Machinegun Employment PICMDEEP (Pairs, Interlocking, Coordinating, Mutual Support, Defilade, Enfilading Fire, Economy of Fire, Protection). (0302-DEF-1302 )

Given the requirement, an assistant gunner, a tripod mounted M240B, M2, or MK19 machinegun, a sector of fire, selected firing position, and entrenching tools, construct a machinegun position in order to provide cover and concealment without restricting effective fire. (MCCS-CSW-2111)

Given a defensive fighting position, a tripod mounted machinegun with components, a designated sector of fire with recognizable targets, principle direction of fire (PDF) or final protective line (FPL), paper, pencil, and lensatic compass, prepare a range card in order to recall the data to fire on predetermined targets and as an aid in estimating ranges to other targets during regular visibility. (MCCS-CSW-2112)

Given machinegun team(s) or a squad with tripod mounted M240B, M2, or MK19 machinegun(s), entrenching tools, selected firing positions and sectors of fire, supervise construction of machinegun positions in order to provide cover and concealment without restricting effective fire. (MCCS-CSW-2113)

**Learning Objectives  
(continued)****Enabling Learning Objectives**

Given an attached crew served weapon unit, a mission and a commander's intent, determine support relationships to accomplish the mission and meet the commander's intent. (0302-OFF-1202a)

Given an attached crew served weapon unit, a mission, and a commander's intent, determine target precedence to accomplish the mission and meet the commander's intent. (0302-OFF-1202b)

Given an attached crew served weapon unit, a mission, and a commander's intent, determine target reference points (TRPs) to accomplish the mission and meet the commander's intent. (0302-OFF-1202c)

Given an attached machinegun unit, a mission, and a commander's intent, plan ammunition/rates of fire relative to the attack to accomplish the mission and meet the commander's intent. (0302-OFF-1202d)

Given an attached crew served weapon unit, a mission, and a commander's intent, determine displacement criteria/plan to accomplish the mission and meet the commander's intent. (0302-OFF-1202e)

Given a machinegun unit, a mission and a commander's intent, direct positioning of machinegun units to best observe and support scheme of maneuver. (0302-OFF-1202f)

Given a machinegun unit, a mission and a commander's intent, determine engagement criteria to best support the ground scheme of maneuver. (0302-DEF-1302d)

Without the aid of references, describe classifications of machine gun fire without omission. (0302-DEF-1302e)

Without the aid of references, describe principles of machine gun employment (PICMDEEP) without omission. (0302-DEF-1302f)

Without the aid of references, describe the differences between a principle direction of fire (PDF) and a final protective line (FPL) without omission. (0302-DEF-1302g)

---

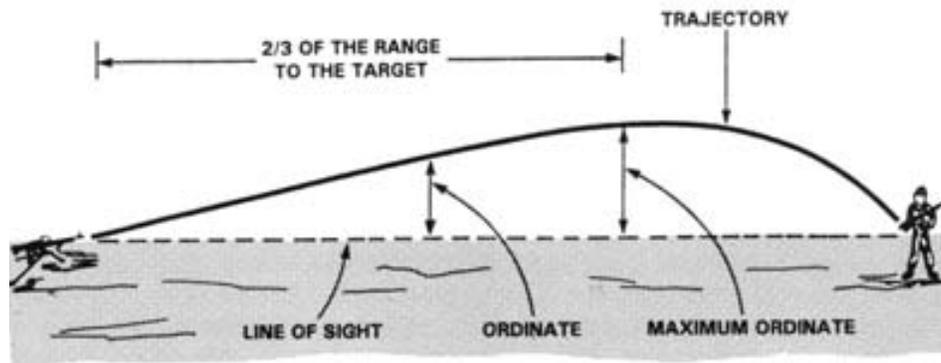


---

## Definitions

---

<b>Trajectory</b>	The arching flight path of the round from the muzzle of the weapon to the target.
<b>Ordinate</b>	Elevation of the flight path of the round above the line of sight
<b>Maximum Ordinate</b>	The maximum elevation of that round above the line of sight along its flight path. This distance is reached at $\frac{2}{3}$ the distance to the target.




---

<b>Cone of Fire</b>	Each round fired from a machine gun travels a different path. Vibration, tolerances of the ammunition and weapon, and shooter positions all play a role in these differences. The pattern of these rounds is called the cone of fire. For an M240G the cone of fire is always 2 mils wide. Now, the actual measurement may differ at 600m and 1800m due to the factor of what 2 mils is at that distance, but it will always be 2 mils wide.
<b>Beaten Zone</b>	The beaten zone is defined as the elliptical pattern formed by the impact of the rounds. Again, because the cone of fire is always 2 mils wide, the beaten zone as well is two mils wide out to the maximum effective range of the gun. There are, however, differences in the length based on the following:

**Uniform terrain:** At short ranges the beaten zone will be longer because of the initial trajectory and narrow because of the relatively short distance the bullet travels before it strikes the ground. As range increases, the beaten zone decreases in length because the bullets will be falling at a steeper angle and increases in width as the rotation of the bullet further affects dispersion.

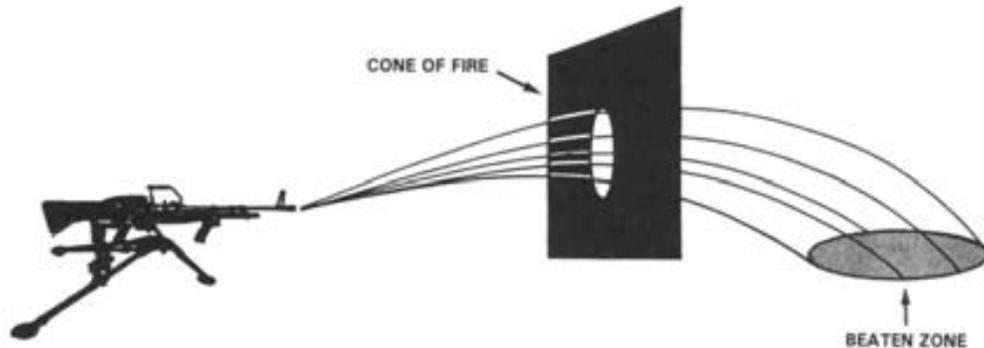
**Rising terrain:** Terrain rising in the path of the cone of fire has the effect of abruptly stopping the rounds and creates a small beaten zone which nearly duplicates the pattern of the cone of fire on steeply rising terrain.

---

## Definitions (Cont'd)

---

**Falling terrain:** When the terrain falls away before the gun, the beaten zone becomes longer and depending on the range, either long and narrow or long and wide.




---

## Classifications of Machinegun Fires

---

We will next discuss the classifications of machinegun fires. We will describe the fires of a machinegun in relation to the ground, the target and the gun.

### In Relation to the Ground

**Dead Space-** Dead space occurs anytime the target (or enemy) drops below the line of aim or line of sight. This is largely a product of terrain. Streams, ravines, draws and other features may cause dead space.

**Danger Space-** When firing over terrain, any space up to 1.8 m above the deck (the height of an average man) is considered danger space; that is, within the effects of the rounds.

**Plunging Fire-** Plunging fire is defined where the danger space is confined to the beaten zone. Plunging fire is obtained when firing from high ground to low ground or low ground to high ground and when using long range fires; an example of this when a gunner engages a target on a street from the third deck. The effects of the rounds are limited to the beaten zone where those rounds are hitting the deck.

**Grazing Fire-** Defines fire where the center of the cone of fire does not rise more than one meter off the deck. This is the most effective type of fire we can employ, and we will always seek a position where we can bring the greatest amount of grazing fire upon the enemy.

---

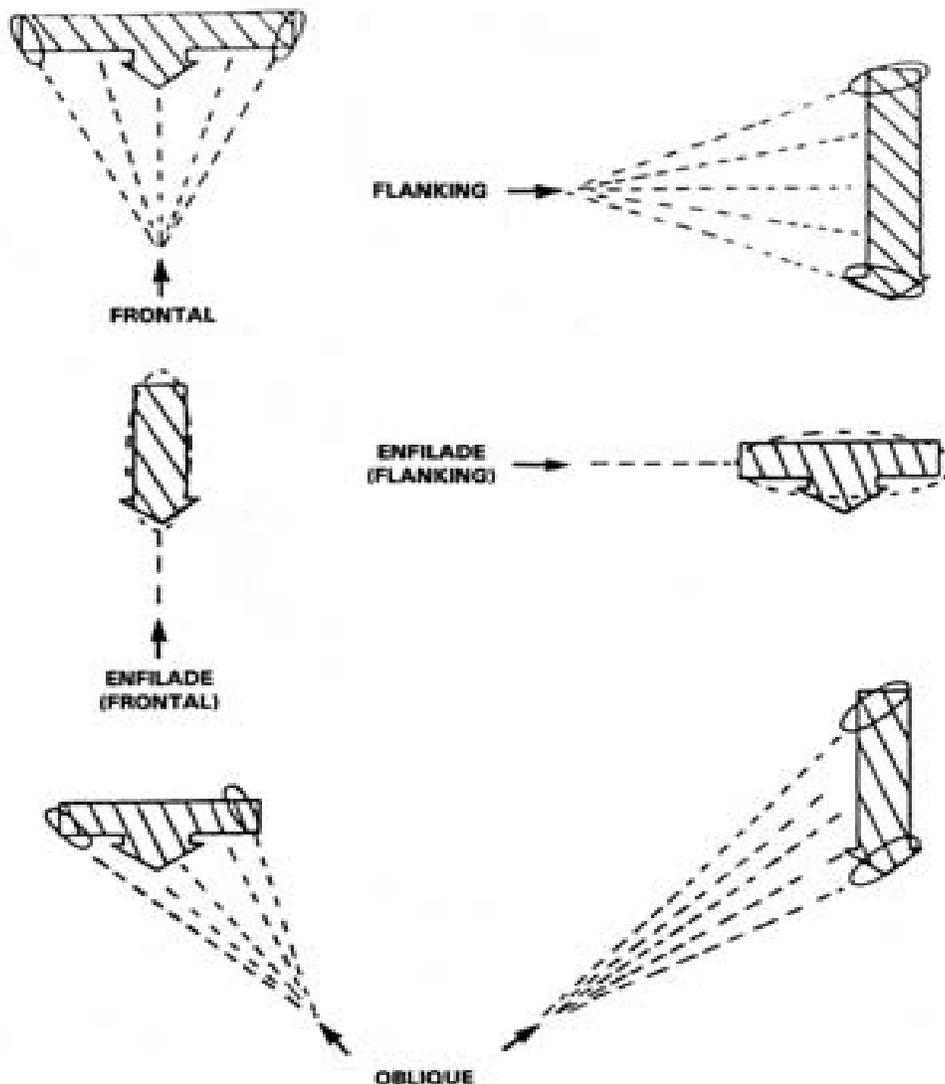
## Classification of Fires (Cont'd)

**In Relation to the Target** **Flanking Fire** - Fires delivered on the flank of a target, when the target is oriented 90 or more degrees away from the firing unit.

**Fontal Fire** - Fire delivered on the front of a target, when the target is oriented on the firing unit.

**Oblique Fire**- Fire delivered on the oblique of a target, when the target is oriented between 0 and 90 degrees to the firing unit.

**Enfilade Fire**- The long axis of the beaten zone coincides with or nearly coincides with the long axis of the target. This class of fire is either Frontal or Flanking and is the most desirable class of fire with respect to the target, because it maximizes the use of the beaten zone.



---

## Classification of Fires (Cont'd)

---

### In Respect to the Gun

**Fixed** – Fire delivered on a point target. Little or no manipulation of the gun is required to obtain and maintain effect on target.

**Traversing** - fire delivered against a wide target requiring changes in direction. The beaten zones of each successive burst should be adjacent to each other if not overlapping (may be produced from either a tripod or bipod).

**Searching** - Fire delivered against a target in depth requiring changes in elevation. The beaten zones of each successive burst should be adjacent to each other if not overlapping (may be produced from either a tripod or bipod).

**Traversing and Searching** - fire delivered against an oblique target requiring changes in both elevation and direction. The beaten zones of each successive burst should be adjacent to each other if not overlapping (may be produced from either a tripod or bipod).

**Swinging Traverse** - Fire delivered against targets which require major changes in direction with little or no change in elevation. Fired at the cyclic rate of fire using the tripod. (The beaten zones of each successive burst need not be adjacent to each other.)

**Free Gun** - Fire delivered against moving targets that require major changes in both direction and elevation. The beaten zones of each successive burst need not be adjacent to each other (can only be produced from a tripod or vehicle mount). The T&E is not used as the manipulation is done by the Gunner.

---

---

## **Employment Principles**

---

The following table represents the Eight Principles of Machine Gun Employment, abbreviated by **PICMDEEP**. Will we be able to execute all of these principles each and every time we employ machine guns? No, we will not. Each situation will be different, terrain may not allow us each of these considerations, or our assets may make it impossible to support. We will, however, take the time to analyze our assets, our mission and our enemy to best employ these weapons in accordance with the principles outlined below.

### **Pairs**

We attempt to employ machine guns in pairs at all times. Guns employed in pairs should not be separated by intervening terrain. 35 meters is the optimal separation between the two weapons systems, terrain dictating. This allows us to duplicate fires to ensure continuous fire support even if one gun goes down. This also gives us “talking guns”, giving us constant fires on the target and uninterrupted fires during immediate action drills or if a gun goes down. A SAW can be integrated to the pairs if needed.

### **Interlocking Fires**

Reinforce and double the firepower employed across the units frontage. This also ensures no area goes uncovered, especially when grazing fires intersect

### **Coordination of Fires**

Dictates use of appropriate weapons to fire on appropriate targets. This allows maximum effectiveness of all weapons systems employed, to conserve ammunition, and also to mask the machine gun position until their fires are required.

### **Mutual Support**

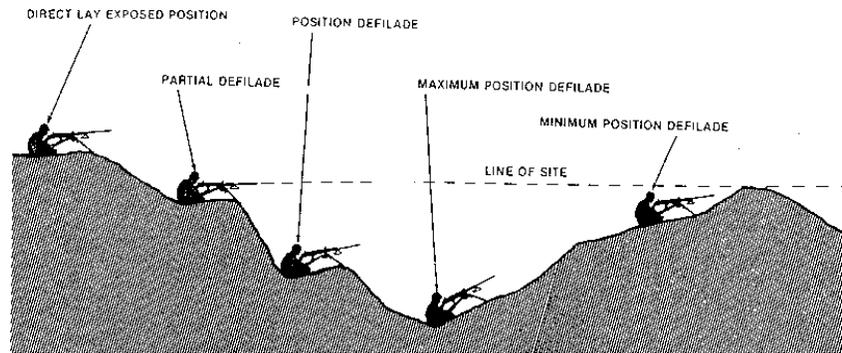
The weapons systems need to be able to support each other. If one weapon is overrun or fails, the other weapon needs to be able to fire the mission.

### **Defilade**

Defilade allows us to fire the gun behind the mask of terrain outside the effects and observation of the enemy. This allows us to increase survivability of the position, the gun and the crew. The following diagram illustrates the types of defilade that we can attain:

---

## Defilade (Cont'd)



The diagram above outlines the five positions of defilade we can employ in a machine gun position.

## Enfilade

Whenever we utilize machine guns, we attempt to achieve enfilading fires upon our enemy. By enfilade fires we mean that the long axis of the beaten zone coincides with the long axis of the target.

## Economy

By economy, we mean economy of our fires. We utilize the appropriate weapons systems in accordance with the threat. We will not open up with the M240 if we get attacked by a single enemy soldier. We establish engagement criteria for our crew served weapons to conserve ammunition, make sure the weapon system is appropriate to the threat and to ensure weapon system and crew survivability.

## Protection

Obvious considerations need to be taken in the construction of machine gun positions in order to ensure maximum survivability of the crew. Once the guns are ordered to engage, they will obviously become a focal point of the enemy. Cover and concealment are critical. The construction must be robust as well as moved frequently in order to ensure the continued support of their fires.

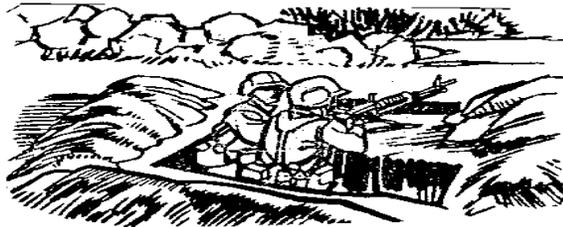
---

## Machine Gun Fighting Positions

---

Fighting positions for machineguns are an integral part of their employment. They ensure survivability for the weapon system and the crew. When properly placed, allow that supported unit leader to best accomplish the mission by having the devastating fires to defend his position. Before we discuss the physical types of fighting positions we will label the three classifications of fighting positions:

<b>Primary Position</b>	The position from which the gun will fire it's primary sector of fire
<b>Alternate Position</b>	A secondary position from which the gun will fire it's primary sector of fire
<b>Supplemental Position</b>	Another separate prepared position from which the gun fires a secondary or alternate sector of fire.
<b>L-Shape Fighting Position</b>	When only one sector of fire is assigned, only one half of the position is dug (L-shape) (see diagram below). The FPM must parallel either arm of the "L." The L-shaped position should always be improved upon to make a "T" or horseshoe-shaped position.



## Machine Gun Fighting Positions (Cont'd)

### T-Shaped Fighting Position

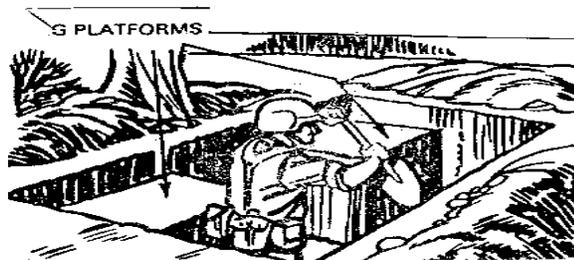
The most preferred position to employ. This position will provide both primary and secondary sectors of fire. When employing the M240G, the tripod is used on the side covering the primary sector of fire. The bipod legs are used when covering the secondary mission. When switching from primary mission to secondary mission, the tripod stays in place and the weapon itself is moved to engage the targets.



Primary Mission



Secondary Mission

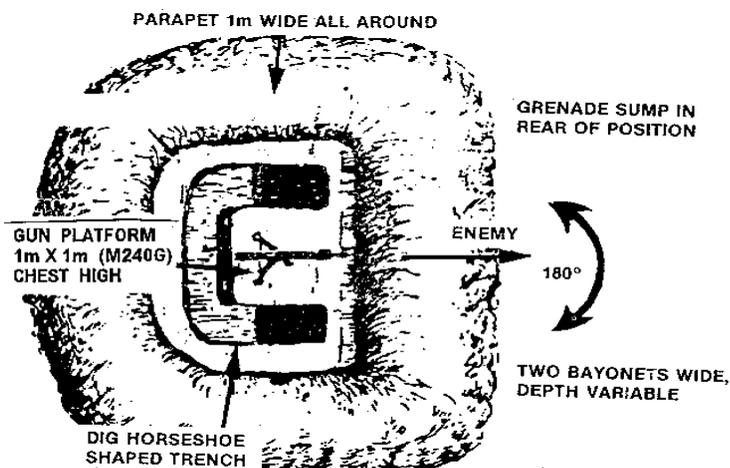


When digging a T-Shaped Position, the hole is dug armpit deep. When cover to the front is high enough, spoil is used to build up the flanks and the rear. Grenade sumps should be located at the end of each leg of the position.

## Machine Gun Fighting Positions (Cont'd)

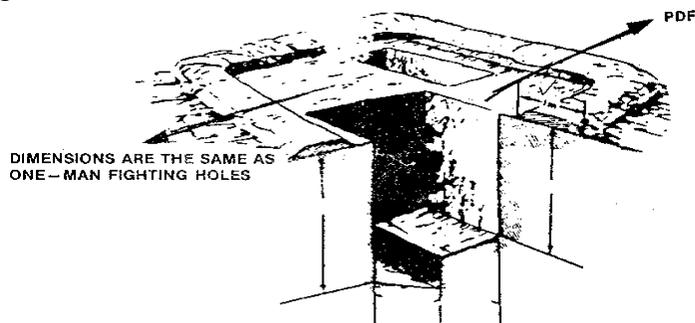
### Horse-Shoe Fighting Position

The open end of the horseshoe is toward the enemy (see diagram below). This allows for easy 180-degree traverse across the frontage, but provides less frontal cover than the T-shaped position. Protection from indirect fire greater than the "T"-shaped position. The firing platform is located within the horseshoe. Spoilage is used to provide cover all around the position



### Two Hole Fighting Position

Uses two one-man fighting holes at 90-degree angles (see diagram below). Provides excellent protection for the gunner and assistant gunner but allows only limited traverse of the gun. Each hole is dug as a standard one-man fighting hole. When switching from the primary to the alternate sectors of fire, the gunner and the assistant gunner switch roles.



---

## Support Relationships

---

When utilizing assets that are not organic to a rifle platoon, such as machine guns, we will use support relationships that define the command and control of those assets. Examples of such relationships are outlined below:

**General Support:** A unit commander may task a subordinate unit to a general support mission. This is defined as “that support which is given to the supported force as a whole and not to any particular subdivision thereof” according to MCRP 5-2A. If a unit is designated to be in General Support, of another unit, it will provide fires to assist the supported units’ scheme of maneuver. For example, a Machine Gun Section may be placed in General Support of an Infantry Company. The Section is then responsible to provide fires in support of that Company’s scheme of maneuver. Within that Company, any or all of the subordinate units may be supported; in this case priority of fires is established to indicate the order in which the support is provided such as Flanking Fires by section in support of the company’s attack.

**Direct Support:** A unit in direct support of another unit is assigned the mission of providing the support requested directly to the supported unit. The unit being supported directly (a rifle platoon, for example) is assigned fires directly supporting the platoon (Main Effort). The supported unit commander assigns the guns a mission and targets; however, tactical control still remains with the Machine Gun Section Leader.

**Attachment:** Attachment is the placement of a unit in an organization where such placement is relatively temporary. The organization to which a unit is attached assumes complete tactical and administrative control over the unit, subject to any limitations (usually time) stipulated in the attachment order.

Machine guns may be attached to a rifle platoon that cannot be supported from general or direct support positions because of the terrain or other conditions. The “attached” command relationship gives the supported unit leader complete tactical and administrative control over the attached unit.

Below, we will look at these differing command relationships in regards to a situation you may see here at The Basic School, the relationship of a machine gun section within a rifle company and the differing relationships between the Company Commander and his rifle platoons.

Relationship	Use of Fires	Tactical Control	Admin & Logistical Control
<b>General Support</b>	Company commander	Weapons platoon commander	Weapons platoon commander
<b>Direct Support</b>	Supported unit leader	Machine gun section/squad leader	Weapons platoon commander
<b>Attached</b>	Supported unit leader		

---

## Classification of Offensive Fires

---

**Close Supporting Fire** Fires delivered against enemy objectives directly opposing the advance of the attacking rifle units. Some considerations to take into account when employing these types of fires include

- Rates of fire
- Location of lead trace of maneuver element
- Signal plan for commencing, shifting, and ceasing fires

---

**Long Range Fires** Fires that are delivered against targets to the rear of enemy forward position that may directly influence the main effort attack on the primary objective. Terrain and weapon permitting, long range fires are often assigned to machineguns when they can no longer provide close supporting fires to the attack.

---

**F flank Protection Fires** When the advance or location of a unit exposes their flank, the machine guns may be tasked with protecting it.

---

**Fires in Support of Consolidation** Enemy counterattack should be expected following seizure of an objective. Machine guns are used to protect the unit's consolidation and reorganization. Employment of the guns on the objective should be planned and rapidly executed. Many of the machine guns will have to be displaced from SBF positions.

---

The M249 SAW will provide immediate automatic firepower forward in support of consolidation until the medium and heavy machine guns displace. After the seizure of an enemy position or when the machine guns can no longer provide fire support from their positions, you must move them to a new location; this movement is a "displacement." Displacement must be as rapid as possible to continue the mission of fire support or protection.

An acronym used to describe this displacement process is MORT. This acronym allows us to remember some of the considerations associated with a machinegun crew's displacement.

---

## Displacement Considerations

---

Once the mission of the machine guns is complete, or the position is no longer able to be occupied, that unit will need to displace to either a new firing position or to link up with the parent unit. As a unit leader, we must plan for this movement when given the asset of machine guns. The acronym we use to outline the required planning considerations is **MORT, (Method, Objective, Route and Time)**.

### Method

**Echelon:** By echelon, we essentially mean “leap frogging” those elements to the new position. An example of this would be one element displacing while the adjacent two elements provide security. Once the bounding element reached its next security position, they would then provide over-watch while the other two units move. This action is repeated until the unit as a whole reaches its final destination.

**By Unit:** In an instance where security en-route to the objective is not as much of a factor, the machine gun element may be ordered to displace directly to the parent units position in order to provide the immediate additional firepower of the machine guns in support of consolidation.

### Objective

---

The unit will be forced or directed to move to one of two types of locations. Once the maneuver element has completed the assault upon the tactical objective, the unit leader may task the machine gun element to move to their location in order to provide addition fires in support of consolidation. An additional consideration may be a secondary support by fire position in order to continue support of an attack after the initial position has become untenable.

### Route

---

A route is a crucial consideration for the unit leader when planning the displacement of the machine gun element. Higher can assign these routes based on operational knowledge of the area, or it can be left to the discretion of the subordinate unit leader in charge of those Marines who may have better situation awareness of the battlefield as it now stands.

## **Displacement Considerations (Cont'd)**

---

### **Time**

Careful consideration must be given to when that unit will displace. We must plan for when we will need their fires again if displacing to a secondary SBF, or how long we will be able to support consolidation while the machine gun assets displace to the rest of the unit. Another important aspect is the signal plan surrounding that displacement. We must make sure that the signal is clearly communicated in the order and is able to be executed on the battlefield. If a unit fails to receive proper communication we may not have fires when we need them or expose those Marines to unnecessary risks by unmasking and moving too early.

---

---

## Defensive Considerations

---

### Principal Direction of Fire

Before we discuss individual weapon systems, we will discuss the two tactical tasks a machine gun can be assigned in the defense. The first is a **PDF**, or a principle direction of fire. The weapons primary focus is covering a likely avenue of approach, key piece of terrain, or whatever object of interest that unit leader assigns it. Now, the weapon will also have a left and right lateral limit that will allow the gunner to engage targets of opportunity within that sector of fire, but unless that situation arises, that weapon is laid on that **PDF**, ready to engage on at that point.

### Final Protective Line

Secondly, we can assign the mission of a **FPL**, or final protective line. This mission dictates that the weapon is primarily in a position to employ grazing fires across a units' frontage as a last effort to defend the lines. The FPL is only fired in accordance with the unit commander giving the order to fire his Final Protective Fires. Again, a sector of fire is given, with the instruction that in accordance with engagement criteria that gun can engage a target of opportunity. But again, the primary mission of that gun is to be laid on that designated **FPL**.

### Individual Weapon Considerations

**M240G:** Terrain is one of the biggest factors when deciding the role these weapons will play. If terrain greatly constitutes grazing fire, push the weapons out to the flank where the greatest amount of grazing fire can be achieved while interlocking the fires with adjacent guns and assign the mission of a FPL. If terrain is canalizing, allowing limited access to your position, consider assigning the guns a PDF, greatly improving the coverage on those areas most likely to be advanced upon. Again, we will strive to employ 8 principles of machine gun employment at every chance, regardless of mission.

**M2 .50 Caliber HMG:** Its direct fire characteristics dictate employment very similar to considerations used with the M240, with the greatest considerations being its anti-armor capabilities and penetration.

**MK19 MOD 3:** The MK19 differs most greatly in the fact that we cannot achieve grazing fires based on the nature of the ammunition. That being said, the weapon is an excellent choice to assign a PDF, such as choke points, obstacles and avenues of approach, as well as dead space.

---

## Employment Considerations

---

### Offensive Considerations for Machineguns

**M240G:** Best and most often used in a support by fire position to provide a heavy volume of accurate suppressive fire. If terrain is viable, consider the use of an observer in order to allow the guns to be employed from defilade. The weapon can also be taken into the assault, utilizing either the bipod or the tripod. Asset is organic to the rifle company and also found in weapons company.

**M2 .50 Caliber Heavy MG:** This weapon can also be employed as a support by fire asset, especially when the enemy is utilizing fortified positions. Also used against mechanized or lightly armored assets, taking account the increased penetration of the rounds available. Can also be employed in indirect fire mode, utilizing terrain to mask its location and at the same time engage targets attempting to mask themselves. Commonly vehicle mounted and paired with the MK19 within the heavy machine gun platoon of the infantry battalion, providing a highly mobile, versatile combination.

### **MK 19 MOD 3 40mm Automatic Grenade Launcher:**

Extremely effective against personnel due to its 15m ECR from the 40mm round. Very effective combined with an observer to deliver indirect fires. Anti-armor capability of 2 inches of homogenous steel out to 2200 m. Like the other two weapon systems, also able to be utilized in SBF position. Some constraints to aware of include the minimum arming distance of 18 to 40 meters and the ability of vegetation or other debris to cause premature detonation. Like stated above, commonly paired with the M2, providing an excellent example of combined arms, allowing the unit leader to mix the weapons systems for desired result.

---

---

## Fire Commands

---

We have already been familiarized with the term **ADDRAC** in previous exercises. The same considerations apply with machine guns with a few minor considerations.

<b>Alert</b>	Mandatory part of the order. <ul style="list-style-type: none"><li>• Fire Mission = Both guns fire</li><li>• Number One, Fire Mission- Only one gun fires</li><li>• Fire Mission, Number Two- Gun number two fires the mission, but gun number one tracks it and is prepared to fire on command.</li></ul>
<b>Direction</b>	<ul style="list-style-type: none"><li>• Only when not obvious or in an instance when firing from defilade under the direction of an observer.</li></ul>
<b>Description</b>	<ul style="list-style-type: none"><li>• Given to allow the gunner and A-gunner to more accurately orient on the target.</li></ul>
<b>Range</b>	<ul style="list-style-type: none"><li>• Cannot be over emphasized. Several field expedient methods that have already been discussed elsewhere in your instruction. Sooner correct range is acquired, the quicker the effects of those rounds are felt by the enemy.</li></ul>
<b>Assignment</b>	<ul style="list-style-type: none"><li>• Assignment is only used if specific requirements are needed to divide the target, assign a class of fire, or designate a rate of fire.</li></ul>
<b>Control</b>	<ul style="list-style-type: none"><li>• Mandatory in order to coordinate proper initiation and control of fires. Subsequent commands will be made by the unit leader in order make corrections on the impacts of the rounds, rates of fire, or even to shift or cease fires</li></ul>

---

---

## Range Cards

---

A range card is a diagram drawn to record the firing data and mission of that machine gun position and also serves as a document to assist in defensive fire planning. A range card is constructed of a sketch of the position and also of the terrain that lies to the front of the weapon system. Here we outline target reference points, key terrain features, dead space, and any other feature or detail to assist that gunner and further the unit leader in gaining as much situational awareness on the position as possible. One key element of creating a range card is walking the terrain we are about to document. This allows to properly annotate our dead space. This is especially important when recording our FPL.

- |               |                                                                                                                                                         |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Step 1</b> | Gunner lays himself behind the gun, sets his sights on the limit of grazing fire, and then lays the gun on an aiming point along the FPL.               |
| <b>Step 2</b> | The A-Gunner walks along the FPL using a standard and measured pace count                                                                               |
| <b>Step 3</b> | When the gunner loses sight of the A-Gunner in defilade, he yells "Mark!". The A-Gunner records the distance to properly annotate it on the range card. |
| <b>Step 4</b> | This process is completed until terrain denies you grazing fire, or you reach the maximum range of grazing fire for that weapon system.                 |
-

## Range Cards (cont'd)

The FPL is annotated by a heavy black solid line along the azimuth of the FPL. Dead space is signified by a break in the heavy to a thin line, turning back to a heavy line after the limit of the dead space has been reached. . The range is recorded to the near and far ends of the dead space and to the maximum extent of graze along the FPL. The firing data needed to fire this target as well as the magnetic azimuth is recorded on the range card.

**STANDARD RANGE CARD**  
Form of this form use FM 7-6. The government is UNCLAS.

REG 1 : MAY BE USED FOR ALL TYPES OF DIRECT FIRE WEAPONS. MAGNETIC NORTH

PLT 1

CO B

**DATA SECTION**

POSITION IDENTIFICATION \_\_\_\_\_ DATE 10 JULY

WEAPON MG EACH CIRCLE EQUALS 150 METERS

NO.	DIRECTION/DEFLECTION	ELEVATION	RANGE	AMMO	DESCRIPTION
1	/	+50/3	600		FPL
2	R275	+50/45	900		LONE TREE
3	L150	0/28	525		TRAIL JUNCTION

REMARKS: ① -4  
③ TW15/L7

DA FORM 8217-6, JAN 66 REVISION OF FEB 66 USE FOR LOCAL USE ONLY UNCLASSIFIED

---

## Machine Gun Tasking Statements

---

### Defense:

Machinegun Squad (Supporting Effort # 1), you are in General Support of the platoon. O/O destroy targets of opportunity IOT prevent the enemy from escaping the platoon engagement area. Target Precedence: Squad size elements or larger, light-skinned vehicles, command and control nodes, and CSWs. Engagement Criteria: Engage units IVO TRP1 (old barn) or south of Phase Line Blue (Aquia Creek). BPT displace to supplemental positions. O/S fire the FPL. Save 600 rounds for the FPF.

- Support Relationship: GS of the platoon
- WHO: Machinegun Squad
- WHEN: O/O or O/S
- WHAT: Destroy
- WHERE: Engagement Area, TRP 1, Phase Line Blue, FPL
- WHY: IOT prevent the enemy from escaping the platoon engagement area.
- Fire Control Measures: Target Reference Point, Target Precedence, Engagement Criteria

### Offense:

MG section (Supporting Effort #1), you are in General Support of the platoon. O/S suppress the enemy on Co Obj A IOT deny the enemy the ability to interfere with the main effort's attack. O/S commence fire at the rapid rate at TRP1 for one minute, then switch to the sustained rate for 3 minutes. O/S shift to TRP2 and fire at the sustained rate. O/S cease fire. O/S displace by unit by the most direct route to Co Obj A to support our consolidation. Save 400 rounds for consolidation.

- Support Relationship: GS of the platoon
- WHO: Machinegun Squad
- WHEN: O/S
- WHAT: Suppress
- WHERE: Company Objective Alpha
- WHY: IOT deny the enemy the ability to interfere with the platoon main effort attack
- Fire Control Measures: Commence fire: O/S rapid rate 1 minute then sustained rate for 3 minutes, Shift Fire: O/S, Cease Fire: O/S, Displacement: O/S displace ISO consolidation.

---

## Summary

---

This lesson covered the basic employment principles for the various machine gun systems found throughout the Marine Corps. Both offensive and defensive considerations were introduced, as well as planning guidelines for planning displacement of a machine-gun unit. Proper construction and descriptions of the differing machine gun positions have been outlined also. Range Cards and proper terminology surrounding machine guns were also discussed.

## References

---

Reference Number or Author	Reference Title
MCWP 3-15.1	Machine Guns and Machine Gun Gunnery (under revision)
FM 3-22.68	Light and Medium Machineguns
FM 3-22.27	Mk19 40mm Grenade Machinegun Mod 3
FM 3-22.65	Browning Machinegun, Caliber .50, HB M2
FMFM 6-3	Marine Infantry Battalion
FMFM 6-4	Marine Rifle Company/Platoon

---

## Glossary of Terms and Acronyms

---

Term or Acronym	Definition or Identification
ADDRAC	Alert, direction, description, range, assignment, control
Beaten Zone	The beaten zone is defined as the elliptical pattern formed by the impact of the rounds.
ECR	Effective casualty radius
FPL	Final protective line
Grazing Fires	Defines fire where the center of the cone of fire does not rise more than one meter off the deck. This is the most effective types of fire we can employ, and we will always seek a position where we can bring the greatest amount of grazing fire upon the enemy.
MORT	Method, objective, route, time – displacement
MOS	Military occupational specialty
PDF	Principle direction of fire
SAW	Squad automatic weapon
SBF	Support by fire

---

