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

**INTRODUCTION TO  
CREW SERVED WEAPONS  
WM1585  
STUDENT HANDOUT**

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## Introduction to Crew Served Weapons

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### Introduction

The purpose of this class is to introduce you to the task organization and mission of the weapons platoon within a rifle company and the task organization of the weapons company within a battalion.

### Importance

This class will give you a basic understanding of the task organization of the weapons company and platoon prior to receiving instruction and evaluation of the crew served weapons within an infantry battalion.

### In This Lesson

This lesson covers the following topics:

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### Learning Objectives

#### Terminal Learning Objectives

0302-DEF-1302 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-1303 Without the aid of references, describe mortars unit employment in support of defensive operations to support mission accomplishment.

**Learning Objectives  
(continued)****Terminal Learning Objectives (Continued)**

0302-DEF-1304 Without the aid of references, describe assault unit employment in support of defensive operations to support mission accomplishment.

0302-DEF-1305 Without the aid of references, describe anti-armor unit employment in support of defensive operations to support mission accomplishment.

0302-FSPT-1302 Given a radio, call signs, frequencies, available supporting arms, equipment, a scheme of maneuver, and a commander's intent, employ supporting arms to achieve desired effect(s) on target that support(s) the ground scheme of maneuver.

0302-OFF-1202 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-1203 Without the aid of references, describe mortars unit employment in support of offensive operations to support mission accomplishment.

0302-OFF-1204 Without the aid of references, describe assault unit employment in support of offensive operations to support mission accomplishment.

0302-OFF-1205 Without the aid of references, describe anti-armor unit employment in support of offensive operations to support mission accomplishment.

**Enabling Learning Objectives**

0302-DEF-1302a Without the aid of reference, describe the capabilities of machineguns without omission.

0302-DEF-1302b Without the aid of reference, describe the structure of the medium machinegun section in the weapons platoon without omission.

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0302-DEF-1302c Without the aid of reference, describe the structure of the heavy machinegun platoon in the weapons company without omission.

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

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

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

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

0302-FSPT-1302a Given a radio, call signs, frequencies, available supporting arms, a target, a scheme of maneuver, and a commander's intent, determine fire support available to achieve desired effect(s) on target.

0302-FSPT-1302b Given a radio, call signs, frequencies, a target, a scheme of maneuver, planned supporting arms, and a commander's intent, position observer(s) to observe the target in support of the scheme of maneuver.

0302-FSPT-1302c Given a radio, call signs, frequencies, available supporting arms, equipment, a scheme of maneuver, and a commander's intent, integrate supporting arms to achieve a combined arms effect.

0302-FSPT-1302d Without the aid references, describe command relationships without omission.

0302-FSPT-1302e Without the aid of reference, describe the three types of terminal control used to employ close air support aircraft without omission.

0302-FSPT-1302f Without the aid of reference, describe conditions required to clear an aircraft to release ordnance without omission.

0302-FSPT-1302g Without the aid of reference, describe the capabilities of mortars without omission

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0302-FSPT-1302h Without the aid of reference, describe the structure of the 60mm mortar section in the weapons platoon without omission.

0302-FSPT-1302i Without the aid of reference, describe the structure of the 81mm mortar platoon in the weapons company without omission.

0302-FSPT-1302j Without the aid of reference, describe the capabilities of the Shoulder Mounted Anti-Armor Weapon (SMAW) without omission.

0302-FSPT-1302k Without the aid of reference, describe the structure of the assault section in the weapons platoon without omission.

0302-FSPT-1302l Without the aid of reference, describe the capabilities of anti-armor weapons without omission.

0302-FSPT-1302m Without the aid of reference, describe the structure of the anti-armor platoon in the weapons company without omission.

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## Weapons Platoon

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<b>Mission</b>	To provide fire support coordination, light mortar, anti-mechanized assault, and medium machine gun support for the infantry company and its subordinate elements.
<b>Task Organization, Platoon Headquarters</b>	<hr/> Platoon Headquarters: <ul style="list-style-type: none"> <li>• Platoon Commander, First Lieutenant, 0302</li> <li>• Platoon Sergeant, Gunnery Sergeant, 0369</li> <li>• Platoon Messenger, Pvt-Cpl, 03XX</li> <li>• <b>Total:</b> 3 Marines.</li> </ul> <hr/>
<b>Task Organization, Light Weight Crew Served Mortar System (LWCMS) Section</b>	<hr/> LWCMS Section: <ul style="list-style-type: none"> <li>• Section Leader, Staff Sergeant, 0369</li> <li>• Three squads per section, one M224 Mortar per squad, squad leader/gunner, Sergeant 0341 <ul style="list-style-type: none"> <li>○ Assistant gunner, Lance Corporal, 0341</li> <li>○ Ammoman, Private, 0341</li> </ul> </li> <li>• <b>Table of Equipment (T/E):</b> There are three M224 LWCMS mortars within the section and one per squad.</li> <li>• <b>Total:</b> 10 Marines.</li> </ul> <hr/>
<b>Task Organization, Machine Gun Section</b>	<hr/> Machine Gun Section: <ul style="list-style-type: none"> <li>• Section Leader, Staff Sergeant, 0369</li> <li>• Three squads per section, squad leader, Sergeant, 0331</li> <li>• Two machine gun teams per squad <ul style="list-style-type: none"> <li>○ Team leader, Corporal, 0331</li> <li>○ Gunner, Lance Corporal, 0331</li> <li>○ Ammoman, Private, 0331</li> </ul> </li> <li>• <b>T/E:</b> There are six M240B medium machine guns per section, two per squad, and one per machine gun team.</li> <li>• <b>Total:</b> 22 Marines.</li> </ul> <hr/>
<b>Task Organization, Assault Section</b>	<hr/> Assault Section <ul style="list-style-type: none"> <li>• Section Leader, Sergeant, 0351</li> <li>• Three squads per section, Squad leader/Gunner, Corporal, 0351 (total 4 Marines)</li> <li>• Assault team two teams per squad</li> <li>• Team leader/gunner, Lance Corporal, 0351</li> <li>• Assistant Gunner, Lance Corporal, 0351</li> <li>• T/E: There are six MK153 SMAWs per section, two per squad, one per team.</li> <li>• <b>Total:</b> 13 Marines.</li> <li>• <b>Total for the Platoon:</b> 48 Marines.</li> </ul> <hr/>

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## Weapons Company

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**Mission** To provide fire support coordination, medium mortar, anti-mechanized assault, and heavy machine gun, support for the infantry battalion and its subordinate elements.

**Task Organization,  
Company Headquarters**

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Company Headquarters

- Company Commander, Major, 0302
- Executive Officer, Captain, 0302
- First Sergeant, First Sergeant, 8999
- Operations Chief, Master Sergeant, 0369
- Property NCO, Sgt, 0311
- Messenger/Driver, Corporal, 0311
- Messenger/Driver, Corporal, 0311
- **Total: 7.**

**Task Organization,  
81MM Mortar Platoon**

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81MM Mortar Platoon

- Platoon Headquarters
    - Platoon commander, First Lieutenant, 0302
    - Platoon sergeant, Gunnery Sergeant, 0848
    - Ammo tech, Lance Corporal, 2311
    - Ammo man/Driver, Lance Corporal, 0341
  - Sections (2)
    - Section headquarters
      - Section Leader
      - Two Ammomen, Lance Corporal, 0341
      - Plotter Sergeant, 0341
      - Recorder Corporal, 0341
      - Recorder/Driver, Lance Corporal, 0341
      - Forward Observer, Corporal, 0341
      - Forward Observer, Corporal, 0341
    - Mortar Squad (4)
      - Squad leader, Sergeant 0341
      - Gunner, Corporal, 0341
      - Assistant Gunner, Lance Corporal, 0341
      - Ammoman Private First Class, 0341
      - Ammoman Private First Class, 0341
      - Ammoman Private First Class, 0341
  - **T/E:** There are eight 81MM Mortars per platoon broken down into four mortars per section, and one per squad.
  - **Total for the Platoon: 68.**
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## Weapons Company (Continued)

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### Task Organization (Continued)

#### Anti-Armor Platoon

##### Anti-Armor Platoon

- Platoon Headquarters
    - Platoon commander, First Lieutenant, 0302
    - Platoon sergeant, Gunner Sergeant, 0369
    - Messenger/Driver, Private, 0331
  
  - Javelin Section
    - Section Leader, Staff Sergeant, 0369
    - Two Squads, Squad leader, Sergeant, 0352
      - Four Teams, Gunner, Corporal 0352, Assistant gunner Lance Corporal 0352
  
    - There are eight Javelins per section, one per team
  
  - Antitank Section
    - Section Leader Staff Sergeant, 0369
    - Four Squads Squad leader, Sergeant, 0352
      - TOW Gunner, Corporal, 0352
      - TOW Gunner, Corporal, 0352
      - Assistant TOW Gunner, Lance Corporal 0352
      - Assistant TOW Gunner, Lance Corporal 0352
  
    - There are eight M220E4 TOWs per section, two per squad
  
  - **T/E:** The platoon is equipped with eight Javelin Missile systems located in the Javelin section and eight M220E4 TOW missile systems located in the Antitank section.
  - **Total for the Platoon:** 41.
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## Weapons Company (Continued)

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### Task Organization (Continued),

### Heavy Machine Gun Platoon

#### Heavy Machine Gun Platoon

- Platoon Headquarters
    - Platoon commander First Lieutenant, 0302
    - Platoon sergeant Gunner Sergeant, 0369
    - Messenger, Private 0331
    - Messenger/Driver Private 0331
  
  - Sections (3)
    - Two squads per section, Section Leader/1<sup>st</sup> Squad Leader, Sergeant 0331
      - Squad leader, Sergeant 0331
      - Gunner, Lance Corporal 0331
      - Assistant Gunner, Private 0331
      - Ammo man/driver Private 0331
  
  - **T/E:** The platoon is equipped with six M2 .50 cal Browning Machine Guns and six MK19 mod 3 40MM Automatic Grenade Launchers. This is divided into two M2s and two MK19s per section, with each squad having one M2 and one MK 19.
  - **Total for the Platoon:** 28.
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## Scout Sniper Platoon

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### Task Organization

#### Scout Sniper Platoon

- Platoon Headquarters
    - Platoon commander First Lieutenant, 0203
    - Platoon sergeant Gunnery Sergeant, 0317
  
  - Section (2) 2 teams per section, senior team leader is section leader
  
  - Teams (4)
    - Six Marines per Team
  
  - **T/E:** The platoon is equipped with eight M40A3 7.62 Sniper Rifles and four M82A3 SASRs.
  - **Total for the Platoon:** 26.
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## **M224 60 MM LWCMS Mortar**

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The 60mm mortar, M224 Lightweight Crew Served Mortar (LWCMS), is a smoothbore, muzzle loaded, high angle of fire weapon. The components of the mortar consist of a canon, sight, mount, and baseplate. The 60mm mortar section is located in the weapons platoon of the rifle company, is armed with three 60mm mortars, and is immediately responsive to commander's need for fire. Effective use and employment of the 60mm mortar depends upon the training and knowledge of the company leaders since there is no forward observer or fire direction center in the 60mm Mortar Section. Computation of fire commands and fire adjustment must be understood by platoon commanders, squad leaders, and others in the company. Accordingly, the principle of indirect fire and the methods of employing the 60mm mortar must be mastered by all hands.

## **M224 60 MM LWCMS Mortar (continued)**

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### **Characteristics**

- M225 Cannon 14.15 lbs
- M170 Bipod 15.21 lbs
- M64 Sight 2.5 lbs
- M8 Baseplate 14.41 lbs
- M7 Baseplate 3.6 lbs
- SL-3 Complete 76.6 lbs

### **Rates of Fire/Range**

- Maximum rate of fire is 30 rounds per minute for four minutes.
- Sustained rate is 20 rds per minute.
- Maximum effective range: 3500m.

### **Types of Ammunition**

There are five types of ammunition:

- High explosive.
  - White phosphorus.
  - Illumination.
  - Practice.
  - Training.
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## **M240B Medium Machine Gun**

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## **M240B Medium Machine Gun (continued)**

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**Description.** The M240B machine gun is an belt-fed, air-cooled, gas-operated, fully automatic machine gun that fires from the open bolt position. The M240B machine gun is found in the machine gun section of the weapons platoon of every rifle company in the Marine Corps. Six of these machine guns are in each section, divided into three, two-gun squads.

### **Specifications.**

Machine gun	27.6 pounds
Spare barrel case, SL-3 complete	12.9 pounds
Tripod, flex mount, and T&E	20 pounds
Total system	47.6 pounds
Length of machine gun	49 inches
Rifling	4 grooves with a uniform right-hand twist. One turn in 12 inches.
Sustained rate of fire	100rpm
Rapid rate of fire	200 rpm
Cyclic rate of fire	650 rpm
Muzzle velocity	2,800 fps
Maximum Range	3,725 meters
Effective range (suppression)	1,800 meters
Grazing fire	600 meters

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## **MK153 Shoulder Launched Multipurpose Assault Weapon (SMAW)**

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**Description.** The MK153 SMAW is a one-man operable, 83 mm smooth bore, shoulder-fired, rocket launcher with a spotting rifle attached to the right side of the launcher tube. The encased rocket is fitted into the aft end of the launcher, and the fiberglass encasement is discarded after use. The spotting rifle, which improves first-round hit probability, is fed 9 mm tracers by a magazine, which holds six rounds. The 9 mm round is ballistically matched to the 83mm rocket.

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## MK153 Shoulder Launched Multipurpose Assault Weapon (SMAW) (continued)

The weapon is aimed by using the:

- Iron sights
- Telescopic sight
- The AN/PEQ-2A can also effectively be used on this weapon system in conjunction with night vision goggles.

### SMAW Ammunition

The SMAW fires a:

- Practice Rocket.
- HEDM (High Explosive Dual Mode) Rocket which is employed against bunkers and field fortifications.
- HEAA (High Explosive Anti Armor) rocket, which is employed against armor vehicles.
- NE (Novel Explosive) rocket, which is a thermobaric explosive and is employed against large field fortifications and structures.

### Specifications

<b>Rocket launcher</b>	
Length	29.9 inches
Weight	16.9 pounds
<b>Encased rocket (as carried)</b>	
Length	27.3 inches
Weight	12.7 pounds
Caliber	83 mm
<b>Spotting rifle</b>	
Length	27.3 inches
Weight	3.74 pounds
Caliber	9 mm
<b>Telescopic sight (MK 42 MOD 0)</b>	
Length	7.9 inches
Weight	1.99 pounds
Magnification	3.8 times
Field of view	6 degrees
<b>Weapon ready to fire</b>	
Length	53.1 inches
Weight	29.0 pounds
Range	
Minimum	17 m
Maximum	1800 m
Maximum effective (HEDM)	250 m
Maximum effective (HEAA)	500 m
Time of flight to 250 m	1.6 sec

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## MK153 Shoulder Launched Multipurpose Assault Weapon (SMAW) (continued)

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### Specifications (continued)

Penetration capabilities	
Bunker, sandbag, with wood reinforcements	7 feet
Brick	12 inches
Concrete	8 inches
Steel armor	1 inch
Anti-armor round	23 inch/steel

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## M252 81 MM Mortar

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The 81mm mortar, M252, is a smoothbore, muzzle loaded, and high angle of fire weapon. The components of the mortar consist of a cannon, sight, mount, and base-plate. The 81mm mortar platoon is located in the weapons company of the infantry battalion and is organized into a platoon headquarters and two 81mm mortar sections with four mortars per section for a total of 8 Mortars per platoon. The weapons company commander has administrative control (feeding, billeting, clothing, etc.), but tactical control is directly in the hands of the battalion commander working through the 81mm mortar platoon commander. The 81mm mortar is the infantry battalion commander's organic indirect fire weapon in the same manner as the 60mm mortar is the rifle company commander's organic indirect fire weapon.

### Characteristics

- Cannon M253                    35 lbs
  - Mount M177                    27 lbs
  - Base-plate M3A1            25.5 lbs
  - Sight M64A1                2.25 lbs
  - SL-3 Complete:            89.75 lbs
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## M252 81 MM Mortar (continued)

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### Rates of Fire/Range

- Maximum rate of fire is 30 rounds per minute for two minutes
- Sustained rate of fire is 20 round per minute
- Maximum Effective Range: 5700m

### Types of Ammunition

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- High explosive
  - White phosphorus
  - Red phosphorus
  - Illumination
  - Practice
  - Training
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## Javelin

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The Javelin is a fire-and-forget weapon system (increases gunner survivability), soft launch (very small backblast), dual mode (top attack or direct fire), man-portable, medium antitank weapon. The Javelin missile has an increased capability to engage and defeat tanks and other armored vehicles.

The command launch unit (CLU) consists of the:

- Day sight.
- Night sight.
- Controls.
- Indicators.

The round is sealed in a launch tube assembly that is composed of the:

- Propulsion section.
- Guidance and control section.
- Warhead and fuse section.
- Control surfaces and seeker section.

### Ranges:

Maximum	2000 meters +
Maximum effective	2000 meters
Minimum	65 meters

Penetration capabilities are classified. The Javelin penetrates all known armor, "well" in excess of 30 inches of rolled homogeneous steel.

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## M220E4 TOW Saber System

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The tube launched, optically tracked, wire command link (TOW 1) is a heavy antitank/assault weapon that can be fired from a tripod or an armored high mobility multipurpose wheeled vehicles (HMMWV) with a special mount. The TOW 2 is located in the infantry battalion, tank battalion, Light Armored Reconnaissance (LAR) and with the AH-1W helicopters. Unlike its predecessor, which was restricted during periods of limited visibility, the TOW 2 weapon system has all weather capability.

### Specifications:

<b>Weight</b> TOW weapon system complete	265 pounds
Missile	50 pounds
Ground mounted ready to fire	300 pounds
<b>Range</b> Minimum	65 meters
Maximum	3750 meters
<b>Ammunition:</b> TOW 2A	<ul style="list-style-type: none"> <li>• Round has a 10-inch probe in front of the warhead.</li> <li>• Purpose of the probe is to detonate any reactive armor found on enemy armored vehicles</li> </ul>
TOW 2B	<ul style="list-style-type: none"> <li>• Round is a fly-over shoot down missile</li> <li>• Once missile flies over the vehicle, the missile will shoot down two warheads on top of the vehicle</li> </ul>
Penetration	In excess of 36 inches of homogeneous steel
Operates	<ul style="list-style-type: none"> <li>• In all weather conditions in which the gunner can see the target through the day or night sight tracker</li> <li>• In temperature of -32 degrees to +60 Celsius (-25 degrees to +140 degrees Fahrenheit)</li> <li>• At altitudes up to 3050 meters (10,000 feet). Cold weather (&lt;0 degrees Fahrenheit) range decreases to 3000 meters</li> </ul>

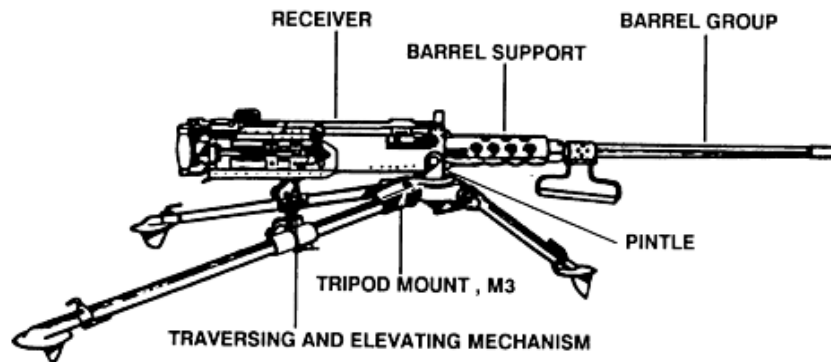
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## M2 .50 Caliber Machine Gun

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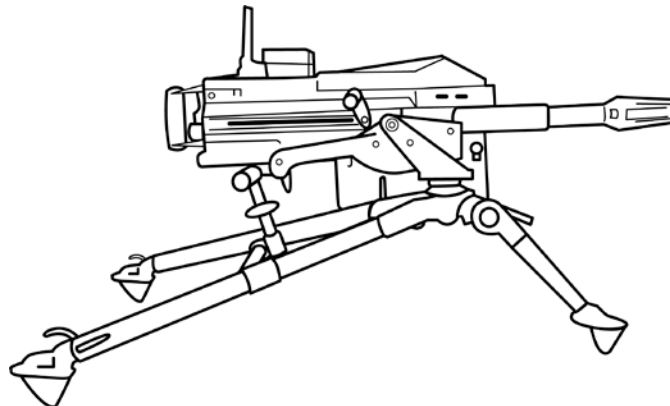


The Browning machine gun caliber .50 HB, M2 (see picture below) is a belt-fed, recoil-operated, air-cooled, crew-served machine gun. The gun is capable of single shot, as well as automatic fire, and operates on the short recoil principle. More information on the M2 will be presented in B3M4238 Heavy Machine Guns.

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## MK19 MOD 3 Automatic Grenade Launcher

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The MK19 is a belt-fed, air-cooled, blowback-operated, crew-served, fully automatic 40 mm grenade launcher. More information on the MK 19 will be presented in B3M4238 Heavy Machine Guns.

## **M40A3 – Anti-personnel**

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The M40A3 is a 7.62mm sniper rifle with a maximum effective range of 1000 meters. It has a 10x scope and a five round magazine.

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## **M82A3 Special Application Scoped Rifle (SASR)- Anti-Material**

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The SASR is an semi-automatic, 50 cal rifle that weighs about 32 pounds. It has a max effective range of 1800 meters and a 10 round box magazine.

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## **Summary**

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In this class you received a basic instruction of the task organization of the weapons company and platoon and a brief introduction to the weapons found in each. Further instruction and evaluation of the crew served weapons within an infantry battalion is in upcoming classes, practical application events, and live fire exercises.

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## References

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<b>Reference Number or Author</b>	<b>Reference Title</b>
FM 7-90	Tactical Employment of Mortars Ch1
FM 23-90	Infantry Mortars Ch1-5
FM23-91	Mortar Gunnery Ch 1
MCWP 3-11.1	Rifle Platoon and Company
TM 9-1425	Technical Manual for the Javelin, Army
TM 09397B	Technical Manual for the Javelin, Marine Corps
MCI 0351	SMAW and LAW gunner
MCWP 3-15.1	Machine Guns and Machine Gunnery
FMFM 2-11	Anti-Armor Operations
FM 23-34	TOW Missile System

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## Glossary of Terms and Acronyms

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<b>Term or Acronym</b>	<b>Definition or Identification</b>
LWCMS	Light weight crew served mortar system
MK 153 SMAW	Shoulder Launched Multi Purpose Assault Weapon located in the assault section
M220E4 TOW	Tube Launched Optically Tracked Weapon System located in the anti Armor platoon
T/E	Table of Equipment

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## Notes

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