

1992-06-09

CHANGE 2 TO
B-GL-317-012/PT-001
Weapons Vol 12
The General Purpose
Machine-Gun 7.62 mm, C6

FOREWORD

1. The following changes are issued on authority of the Chief of the Defence Staff and shall be inserted on receipt.
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4-63 to 4-66
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6-31 to 6-34
7A1-1 to 7A1-4
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CHANGE 1 TO B-GL-317-012/PT-001

WEAPONS, VOLUME 12, THE GENERAL PURPOSE MACHINE-GUN 7.62 mm, C6

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**WEAPONS
VOLUME 12**

THE GENERAL PURPOSE MACHINE-GUN 7.62 MM, C6

(BILINGUAL)

Issued on Authority of the Chief of the Defence Staff

**OPI: SSO Inf
BPR: OSEM Inf**

**1987-05-31
Ch. 2- 1992-06-09**

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WARNING

WARNING

MISUSE OF WEAPONS, AMMUNITION, AND EXPLOSIVES

PURPOSE

1. This order outlines Canadian Forces policy governing the use or misuse of weapons, ammunition, and explosives.

WEAPONS

2. Firing or attempting to fire locally manufactured weapons, obsolete service or foreign weapons, or weapons used for display, ceremonial, or trophy purposes in museums, messes, parade grounds, armouries, or such like areas is prohibited except when specifically authorized by NDHQ.

3. Attention is also drawn to the following references which concern offences connected with the use or misuse of weapons:

- a. National Defence Act, Section 117;
- b. QR & O 103.59;
- c. Criminal Code of Canada, Sections 82 to 106; and
- d. A-SJ-100-001/AS-000, Security Orders for the Department of National Defence, Art 5113.

AMMUNITION AND EXPLOSIVES

4. Tampering with or use of service and commercial ammunition or explosives for other than their designed purpose is prohibited.

5. Except as prescribed in paragraph 6, the modification, breakdown, or sectioning of live ammunition for experimental, instructional, or any other purpose, or manufacture of explosives is forbidden. This prohibition includes:

- a. unauthorized interchange of fuzes or primers or both;
- b. experiments with blank ammunition to alter the powder charge or to introduce any other substance into the cartridge case or into the weapon with the approved cartridge;
- c. experiments involving the use of altered propelling charges or bursting charges with ammunition of any type;

- d. the use of any non-service or obsolete ammunition;
 - e. the use of foreign ammunition other than that received through normal supply channels or supplied in accordance with NATO Standardization Agreements;
 - f. the manufacture and use of locally fabricated explosive training devices, battle simulators, saluting charges, etc;
 - g. any alteration to the design of ammunition or explosive devices;
 - h. deviations from authorized drills for use of ammunition or explosive devices; and
 - j. rendering live ammunition inert for use as museum or instructional items.
6. The prohibition in paragraph 5 does not apply to:
- a. authorized experiments, modifications, etc, carried out by experimental, research, proof, or inspection establishments;
 - b. authorized breakdown, modification, repairs, proof-testing, etc, carried out as normal functions of a Canadian Forces ammunition depot or base ammunition facility;
 - c. personnel employed at Canadian Forces School of Aerospace and Ordnance Engineering as instructors or trainees under supervision, when breaking down is carried out as part of a course training standard and in accordance with an approved course training plan;
 - d. the use for its designed role of commercial pattern ammunition, which is obtained by local purchase as specified in CFP 137 or as authorized by NDHQ in accordance with CFAO 36-19;
 - e. the use of its designed role of commercial pattern ammunition which is taken into service and catalogued;
 - f. hand-loading small arms ammunition in accordance with CFAO 50-18; or
 - g. other cases, when specifically authorized by NDHQ.

FOREWORD

FOREWORD

1. B-GL-317-012/PT-001, The Machine-Gun 7.62 mm C6, is issued on authority of the Chief of the Defence Staff.
2. This publication is the primary reference for the employment of the C6 machine-gun in dismounted operations.
3. Any loss or suspected compromise of this publication, or portions thereof, shall be reported in accordance with A-SJ-100-001/AS-000, Security Orders for the Department of National Defence, Chapter 34.
4. Comments and suggestions for changes should be forwarded through the normal channels to SSO Infantry, Mobile Command Headquarters.

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Lesson 1 - Introduction

Aim - To teach the characteristics and capabilities of the C6 GPMG.

Lesson 2 - Safety Precautions, Stripping, and Assembling

Aim - To teach safety precautions and how to strip and assemble the C6 GPMG.

Lesson 3 - Care and Cleaning

Aim - To teach how to clean the gun under normal and adverse conditions.

Lesson 4 - Sight Setting, Load, Unload, Prepare to Fire, Make Safe, and Clear Gun

Aim - To teach how to:

- a. make up an ammunition belt,
- b. set the sights,
- c. load and unload,
- d. prepare to fire,
- e. make safe, and
- f. clear the gun.

Lesson 5 - Holding, Aiming, and Firing

Aim - To teach:

- a. holding, aiming, and firing at stationary and moving targets;
- b. action to be carried out on receiving the order STOP and GO ON; and
- c. rates of fire, burst length, and barrel change.

Lesson 6 - Immediate Action and Gas Stoppage Drill

Aim - To teach the action to be carried out if the GPMG stops firing or fails to fire.

Lesson 7 - Other Stoppages

Aim - To teach the soldier the causes of stoppages and how to remedy them.

Lesson 8 - Handling in the Light Role

Aim - To teach the individual responsibilities of members of the gun crew in handling the gun.

Lesson 9 - Preparation for Firing, Care and Cleaning after Firing

Aim - To teach how to prepare the gun to fire and how to clean and care for it after firing.

Lesson 10 - Close Quarter Battle and Anti-aircraft Handling

Aim - To teach the soldier how to fire the gun in close quarters and at aircraft.

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- a. safety, stripping, assembling and cleaning;
- b. loading and unloading; and
- c. holding, aiming, and firing.

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Aim - To teach:

- a. the contents of the Sustained Fire (SF) Kit;
- b. how to mount and dismount the gun and tripod, and the safety precautions involved;

- c. loading and laying the gun onto the target; and
- d. the use of cover.

Lesson 2 - Firing Drills When Using the Iron Sights

Aim - To teach the types of targets, rates of fire, and firing drills using the iron sights.

Lesson 3 - The C2 Sight Unit

Aim - To describe the C2 sight unit and teach its use.

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Aim - To teach the gunner how to apply fire and make adjustments when using the dial sight.

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Aim - To teach how to prepare a Final Protective Fire (FPF) task, the actions required on the signal to open fire, and the preparation for other Defensive Fire (DF) tasks.

Lesson 6 - Preparation of Gun Positions for Later Occupation

Aim - To teach the method of preparing gun positions for later occupation.

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Aim - To teach the soldier how the gun crew is organized and equipped, and crew handling of the weapon in the field.

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Aim - To teach how to give fire control orders.

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Aim - To teach how to observe strikes and apply fire to the target from that observation.

Lesson 10 - The Selection and Recording of Fire Tasks

Aim - To teach the selection and recording of GPMG fire tasks in defence, attack, and withdrawal.

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Aim - To teach the use and method of compiling target information sheets.

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Aim - To teach the procedures required to produce Indirect Fire.

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Aim - To practise the gun crew in:

- a. handling the tripod;
- b. applying fire control orders; and
- c. barrel changing.

Practice 2 - Lessons 3 and 4

Aim - To practise the gun crew in:

- a. applying readings with the C2 sight; and
- b. firing and making adjustments when using the C2 sight.

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- a. preparing night firing tasks; and
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WEAPON SECURITY

**THE SECURITY OF SMALL ARMS AND SMALL ARMS
AMMUNITION IS YOUR RESPONSIBILITY. ENSURE YOUR
WEAPONS AND AMMUNITION ARE SECURED / PROTECTED
IN ACCORDANCE WITH CURRENT ORDERS AND
INSTRUCTIONS.**

CHAPTER 1
AIM AND SCOPE

AIM AND SCOPE

INTRODUCTION

1. The machine-gun 7.62 mm C6 is a general purpose machine-gun (GPMG) carried in substantial numbers by major units of the combat arms, particularly armour and infantry. While the weapon characteristics remain the same, the weapon's tactical employment varies considerably in order to support the role of the unit. This publication deals specifically with tactical employment in the ground role. The C6 GPMG is shown in Figures 1-1, 1-2, and 1-3.
2. In the infantry, the heavy and general purpose machine-guns are dispersed throughout the battalion. The characteristics of both weapons are essentially parallel except that the heavy machine-gun has limited anti-light-armour capability and, as its classification indicates, is superior.
3. To ensure the most effective employment of all machine-guns available in units, a thorough understanding of their various characteristics is vital. This understanding can be gained by reading this publication and its companion volumes B-GL-317-004/PT-001, Machine-Gun 7.62 mm C5, B-GL-317-014/PT-001, Machine-Gun 50 Calibre M2, and B-GL-317-019/PT-001 Light Machine-Gun 5.56 mm C9.

AIM

4. This publication contains the information necessary to train soldiers in the handling, firing, employment, and maintenance of the 7.62 mm C6 GPMG.



Figure 1-1 The C6 General Purpose Machine-Gun



Figure 1-2 Parts of the Gun

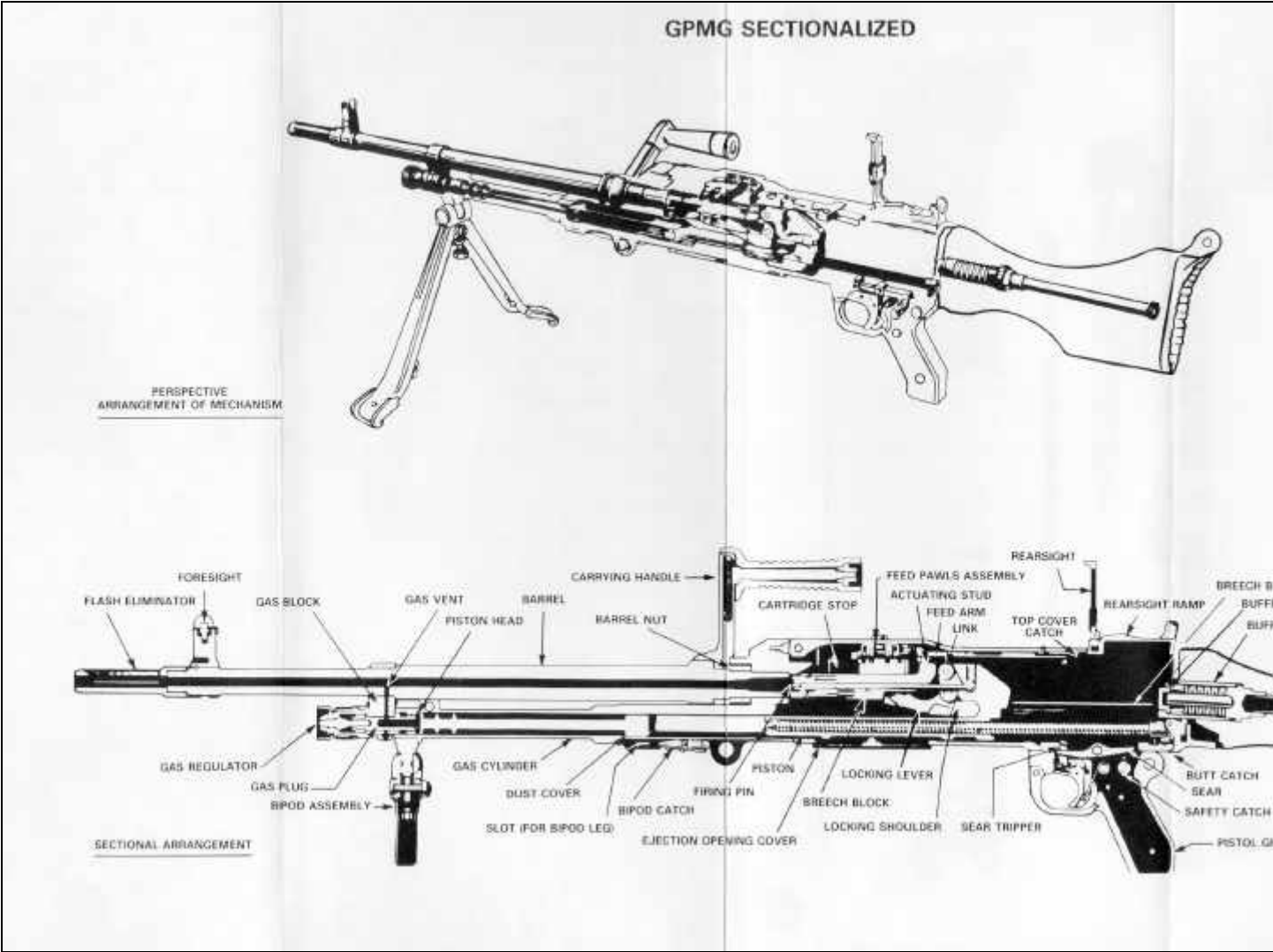


Figure 1-3 The GPMG Sectionalized

TECHNICAL DATA

5. Technical data are as follows:

- | | | | |
|----|---------------------|---|-----------|
| a. | Calibre | - 7.62 by 51 mm NATO | |
| b. | Weight | - GPMG | - 11.0 kg |
| | | - Barrel | - 3.0 kg |
| | | - 220-round belt | - 5.4 kg |
| c. | Length | - GPMG | - 1255 mm |
| | | - Barrel | - 679 mm |
| | | - Sight Base | - 848 mm |
| d. | Rifling | - 4 groove, right hand, 1 turn in 305 mm | |
| e. | Cycle rates of fire | - 650 to 1000 rpm, adjustable | |
| f. | Gas regulator | - 3 positions | |
| g. | Mode of fire | - Automatic only | |
| h. | Operation | - Gas-operated, air-cooled, belt-fed | |
| j. | Sight adjustment | - 200 to 1800 m in 100 m increments | |
| k. | Effective range | - Bipod | - 800 m |
| | | - Tripod | - 1800 m |

BACKGROUND

6. The C6 GPMG was developed by Fabrique Nationale Herstal S.A. The "M.A.G." (Mitrailleuse 5 gas) is a fully automatic, air-cooled, belt-fed, gas-operated weapon. This very versatile machine-gun is used as a platoon/company fire support weapon in either the sustained fire or light roles.

7. In the sustained fire role the C6 GPMG is mounted on a tripod. With the C2 sight and aiming lamp, the gun crew can aim at non-visible targets which, due to fog, smoke, or darkness can no longer be viewed through the iron sight. The stability provided by the tripod allows tight dispersion for good coverage of probable targets over all battle ranges. In this role the C6 GPMG can be employed in most offensive and defensive fire support tasks, but not as an indirect fire weapon.

8. In the light role the C6 GPMG is fired from its bipod or from its sling, which is looped over either shoulder. In this role it can be brought into action quickly and is particularly useful

as an assault, close quarter, or anti-aircraft weapon. The light role may be the role of choice for patrolling, the advance, hasty defence, delaying actions, and withdrawal.

FORMAT

9. The information in Chapters 2, 3, 4, and 5 is presented in lesson plan format. The manual is laid out as follows:

- a. Chapter 1 contains general information about the C6 GPMG and methods for teaching its use.
- b. Chapter 2 contains the basic skills and the specific information required by soldiers to operate the gun in the light role.
- c. Chapter 3 consists of practice periods designed to further develop the skills and techniques learned in Chapter 2.
- d. Chapter 4 contains the information required by soldiers to operate the gun in the sustained fire role.
- e. Chapter 5 consists of practice periods to further develop the skills and techniques learned in Chapter 4.
- f. Chapter 6 contains information for instructors such as coaching techniques and zeroing procedure.
- g. Chapter 7 contains the range practices for the light and sustained fire roles.
- h. Chapter 8 consists of the Handling Tests and Methods of Destruction.

PRACTICE PERIODS

10. **General.** All training must be progressive; unnecessary repetition is bad instructional practice. A soldier learns skills and facts in the basic lessons, which should be taught only once during his service. He then requires a lot of practice in order to speed up his actions and get the facts firmly fixed in his mind.

11. The sequence for each stage of a practice period is:

- a. **Remind** - by explanation.
- b. **Assess weaknesses** - by practice or test,
- c. **Improve on weaknesses** - by practice,
- d. **Progressive practise** - by competitions.

12. The practice periods described in this manual are intended only as a guide to exercising soldiers during their training. The instructor should organize the practice period according to assessments of soldiers' weak points.

13. Faults should be brought immediately to the notice of the soldier and corrected; otherwise he will go on making the same mistakes.

14. If it becomes obvious during a practice period that the soldiers have failed to grasp a particular skill or fact, the instructor will have to teach that part of the basic lesson again.

15. **Competitions.** The incentive of competition helps to make practice more interesting. The whole practice period can be based on competition if the instructor so wishes. Some points on framing competitions are:

- a. They may be on an individual or team basis.
- b. If run on a team basis the instructor must ensure that the teams are selected on the basis of performance. The more advanced members of the team will help the weaker members.
- c. A scoring system may be devised and used by the instructor.
- d. To sustain interest, one team or individual can be asked to watch another, criticise and award or deduct marks.
- e. Above all the instructor must make certain that competitions are simple and realistic, ie, that they exercise the soldiers in the facts and skills related to their training.

16. **Master and Pupil.** In the master and pupil method of practice, one man (the pupil) works under the supervision of another (the master). The instructor must supervise both. At all stages of training this method stimulates interest and attention to detail. It is particularly useful with large classes and in competitions. Used regularly, It also develops initiative and leadership. Potential leaders can often be spotted by watching the "masters" at work.

CLASSROOM DRILLS

17. Before beginning the lessons, divide the soldiers into groups of three and assign numbers 1, 2, and 3 to the three individuals in each group. Assign each group to a GPMG. Normally, only one person at a time works on the gun. That person will be designated by number, eg, NO. 1 OUT. When a change is desired the instructor will order NO. 2 OUT... CHANGE, etc. Classroom layout is shown at Figure 1-4.

SAFETY PRECAUTIONS

18. Before every lesson all guns, belts, ammunition boxes, dummy rounds, and soldiers' pouches must be inspected to ensure that no live ammunition is present.
19. Whenever the top cover is raised, it is important that on closing it the action is cocked and the trigger pressed. This ensures that the actuating stud on the bolt is positioned correctly in the channel of the feed arm and is therefore not left under compression.
20. Firing pins are never to be stripped and reassembled by the user.

WARNING

Safety regulations governing angles are contained in B-GL-304-003/TS-001, Operational Training, Volume 3, Range and Training Safety, and will be consulted prior to live fire training involving troops. That volume takes precedence over this volume in matters concerning safety regulations.

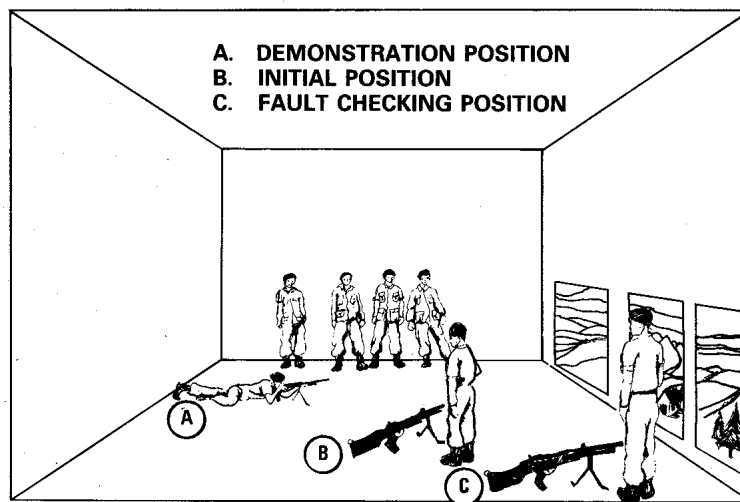


Figure 1-4 Classroom Layout

CHAPTER 2

GENERAL OPERATION AND LIGHT ROLE EMPLOYMENT

LESSON - INTRODUCTION

INSTRUCTOR'S NOTES

1. **Aim.** To teach the characteristics and capabilities of the C6 GPMG.
2. **Timing.** One 40-minute period.
3. **Method.** A basic instructional period.
4. **Stores**
 - a. GPMG 1
 - b. Sustained Fire (SF) Kit 1
 - c. Spare parts kit 1
 - d. Dummy rounds, belted 20
 - e. Table 1
 - f. Overhead projector and screen 1
 - g. OHPs (as listed in paragraph 5)
5. **Preparation.** The following OHPs should be available:
 - a. **Characteristics of Machine-guns -**
 - (1) Silhouette.
 - (2) Mobility.
 - (3) Flexibility.
 - (4) Weapon Signature.
 - b. **Characteristics of Machine-gun Fire -**
 - (1) Trajectory.
 - (2) Beaten Zone.
 - (3) Volume.

- (4) Range.
- (5) Accuracy.
- (6) Penetration.

c. **Capabilities of (SF) Gun -**

- (1) Observed Shoots.
- (2) Obscured Shoots.
- (3) Overhead Fire.
- (4) Indirect Fire.

d. **Types of Targets -**

- (1) Point Target.
- (2) Traversing Target.
- (3) Oblique Target.
- (4) Moving Target.

e. **Siting Considerations -**

- (1) Site in Defilade.
- (2) Fire in Enfilade.
- (3) Local Protection.
- (4) Group in Two's or Three's.
- (5) Command and Control.

6. **Miscellaneous**

- a. It is essential that the class is fully conversant with the theory of small arms fire prior to receiving this lecture.
- b. When using vuoils, expose only the heading that is relevant to the stage being taught.

CONDUCT OF THE LESSON

7. **Preliminaries.** Inspect the display gun and dummy rounds.
8. **Review.** Review the following terms from the theory of small arms fire:
 - a. trajectory;
 - b. culminating point;
 - c. cone of fire; and
 - d. beaten zone (short range, long range, forward slope, and reverse slope).
9. **Introduction.** Explain that the General Purpose Machine-Gun (GPMG) is a platoon fire support weapon operated by a crew of two or three in both the light and sustained fire roles. In order to use the C6 to its best advantage, it is essential that commanders, gun controllers, and gunners understand the principles of employing machine-gun fire as well as the capabilities and limitations of the GPMG.
10. **Characteristics of Machine-Guns. Explain the following:**
 - a. **Silhouette.** A machine-gun can be fired by one man when either vehicle- or ground-mounted. When ground-mounted, a machine-gun and crew can be easily camouflaged because of their low silhouette.
 - b. **Mobility.** A machine-gun, its equipment, and a limited amount of ammunition can be carried by two or three men.
 - c. **Flexibility -**
 - (1) When mounted on a tripod, a machine-gun can be traversed through 6400 mils. The operator can effectively bring fire to bear on targets at different ranges that are within its arc.
 - (2) The machine-guns that are mounted on the APC M113A1 and Lynx pintle mounts can be traversed through 6400 mils.
 - d. **Weapon Signature.** A machine-gun position can be detected by the following effects -
 - (1) smoke;
 - (2) flash; and
 - (3) muzzle blast.

11. **Confirm by Questions.**
12. **Characteristics of Machine-Gun Fire.** Explain:
 - a. **Trajectory.** Because of its flat trajectory, a machine-gun can produce grazing fire. This occurs when the slope of the ground closely approximates the trajectory of the cone of fire and results in the beaten zone attaining its maximum length for any given range.
 - b. **Beaten Zone.** A machine-gun produces a long narrow beaten zone which makes it particularly effective when firing in enfilade.
 - c. **Volume.** The sturdy mechanism of a machine-gun combined with belt feeding gives it the capability of firing a high volume of fire.
 - d. **Range.** A machine-gun is capable of producing effective fire at long range.
 - e. **Accuracy.** Fired from either a bipod or a tripod, a machine-gun is capable of producing accurate fire within its effective range.
 - f. **Penetration.** A machine-gun is capable of producing effective penetrating fire against soft-skinned vehicles and earthworks.
13. **Capabilities and Use of the GPMG (SF).** Explain the following:
 - a. **Observed Shoots.** Are used to engage targets on which fire effect can be observed, ie, by noting the strike or by observing tracer rounds up to the limit of burn-out (800 plus metres). Only under exceptional circumstances should the GPMG be fired at ranges between 1100 and 1800 metres (eg, when the ground surrounding the target affords good observation of strike).
 - b. **Obscured Shoots.** Are used to engage targets obscured by darkness, smoke, fog, or bad visibility. Such targets must be previously recorded in daylight or good visibility. Targets will normally be engaged on line and elevation; however, it is the gun controller's responsibility to engage targets in the most effective manner possible.
 - c. **Overhead Fire.** Due to the flatness of the trajectory and the length of the beaten zone, overhead fire should not be attempted during operations unless the configuration of the ground allows the gun to be sited on a high feature. Targets are not to be less than 500 m ahead of our own troops, and must be within tracer burn-out range so that safety can be controlled by observation of tracer.

WARNING

During training, overhead fire will be conducted only in accordance with B-GL-304-003/TS-001, Operational Training, Volume 3, Ranges and Training Safety.

- d. **Indirect Fire Tasks.** The GPMG (SF) is capable of producing indirect fire using the C2 Dial Sight and Range tables up to ranges of 1800 m and beyond. This enables targets to be engaged from a map during hours of darkness when no recording has been possible.
14. **Confirm by Questions.**
15. **Types of Targets.** Explain the following:
 - a. **Point Target.** A target which appears not to have width or depth, although it may have both.
 - b. **Traversing Target.** A target having greater width than depth.
 - c. **Oblique Target.** A target which appears to have width and depth and is not at right angles to the machine-gun position.
 - d. **Moving Target.** A vehicle or aircraft which moves at more than 10 kpm (6 mph). Slower targets are engaged as point targets.
16. **Siting Consideration.** Explain that the siting of machine-guns must be target oriented.
 - a. They should be sited in defilade from enemy fire.
 - b. They should be able to fire in enfilade against likely targets.
 - c. They should be sited within, or very close to, a section position for protection.
 - d. Maximum effect can be obtained if guns are sited in groups of two or three at company level.
 - e. Detailed tasking and siting of guns is carried out under the direction of the company commander. The gun controller is responsible for the safety and individual control of his gun, subject to the company commander's orders.
17. **Confirm by Questions.**
18. **Characteristics.** Explain and demonstrate:

- a. The 7.62 mm C6 is designed for use as a general purpose machine-gun. It can be used either as a light machine-gun fired from a bipod, or in a sustained fire role fired from a tripod.
- b. It is a fully automatic, belt-fed, gas-operated weapon capable of a sustained high volume of fire in bursts. It is simple and sturdy in construction and easy to learn how to use and fire. Stoppages are rare and can be easily and quickly remedied.
- c. The weapon is air cooled.
- d. The belts are of disintegrating links, factory filled, packed in 220 round belt boxes, and belted with one tracer round and four ball rounds.
- e. The C6 has a flat trajectory at ranges up to approximately 600 metres. It is capable of laying a belt of fire 600 metres long on flat ground, with the bullets never rising more than four feet above the ground.
- f. At ranges of up to 1100 m, the length of the beaten zone of the gun is approximately 70 m. It will be less than 70 m only when it is striking rising ground or obstructions, or when the gun is firing from an elevated position.
- g. The barrel is chromed internally to reduce wear.
- h. Flash is reduced to a minimum by means of a flash eliminator and the gas regulator.
- j. The bipod legs can be folded and locked.
- k. The trigger guard can be removed to allow the trigger to be operated under arctic conditions.
- m. The carrying handle is raised to carry the gun and lowered for firing.

19. **Confirm by Questions.**

20. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions.
- c. Pack kit (vufoils, etc).

- d. **Summary.** Include the following:
- (1) the importance of combining knowledge of the gun's capabilities with common sense to overcome the limitations of the gun; and
 - (2) a preview of the next lesson in this subject.

LESSON 2 - SAFETY PRECAUTIONS, STRIPPING, AND ASSEMBLING

INSTRUCTOR'S NOTES

21. **Aim.** To teach safety precautions and how to strip and assemble the C6 GPMG.
22. **Timing.** Two 40-minute periods.
23. **Method.** A basic instructional period.
24. **Stores**
 - a. GPMG 1 per three soldiers
 - b. Belt box 1 per gun
 - c. Spare parts kit 1 per gun
 - d. Dummy rounds, belted 20 per gun (minimum)
 - e. Dummy rounds, loose 1 per gun
 - f. Tables 1 per gun
25. **Preparation**
 - a. Position a gun and spare parts kit, with the extractor tool removed, on each table.
 - b. Carry out the following actions on the gun to be used for demonstrations:
 - (1) Check and loosen the gas regulator.
 - (2) Check that the bipod leg retaining catch is secure and correctly positioned.
 - (3) Check that the trigger group locking pins and bolt link pin are easy to remove.
26. **Miscellaneous**
 - a. Number the class in groups of three and allocate one group per gun before carrying out normal safety precautions. (See Chapter 1, paragraphs 18 to 20).
 - b. Use the initial order for the commencement of each practice stage, ie, NORMAL SAFETY PRECAUTIONS - NO. 1's OUT, and thereafter call out CHANGE. Explain this system of control before the first practice stage.

- c. Place one dummy round by each gun after normal safety precautions.
- d. Emphasize the drill for checking for an obstruction in the barrel during barrel assembly.
- e. Ensure that as parts are stripped they are put in a clean place.
- f. When handling the various parts, name them and their purpose. However, at this stage, the soldier is not expected to memorize all the names.
- g. Emphasize that stripping and assembling should be carried out with reasonable care and never practiced against time.

CONDUCT OF THE LESSON

- 27. **Safety Precautions.** Inspect all guns, belts, dummy rounds, and pouches.
- 28. **Review.** Review characteristics, capabilities, and limitations.
- 29. **Introduction.** There are two degrees to which a GPMG can be stripped - field strip and detailed strip. In order to clean and maintain the gun properly, the soldier must know how to strip and assemble it.
- 30. **Safety Precautions.** Explain and demonstrate:
 - a. On the order FOR INSPECTION, CLEAR WEAPON -
 - (1) open the feed cover by pushing in the cover catches,
 - (2) cock the action by grasping the cocking handle in an overhand grip, pulling it fully to the rear, and then pushing it fully forward,
 - (3) lift the feed tray, and
 - (4) inspect the chamber and receiver to ensure that they are clear.
 - b. On the order CLEAR -
 - (1) lower the feed tray and close the feed cover
 - (2) pull the cocking handle to the rear and hold it there, squeeze the trigger, and allow the working parts to go forward under control, and
 - (3) close the ejection opening cover.
 - c. These actions will be carried out

- (1) before and after instruction,
- (2) before stripping,
- (3) during issue and return to stores,
- (4) before and after range practices, and
- (5) when in doubt.

31. **Confirm by Practice.**

32. **Field Stripping.** Explain and demonstrate:

- a. **Butt.** Carry out safety precautions, do not close the ejection opening cover. Hold the pistol grip with the left hand, grip the butt with the right hand and, with the forefinger of the right hand press up on the butt catch; lift the butt upwards until clear of the receiver.
- b. **Recoil System.** With the thumb, push the rear of the main spring rod slightly forward and upward. This disengages the stud on the guide rod from the keyhole-shaped slot in the receiver and allows the main spring and guide rod to be withdrawn. To remove the piston and breech block, support the receiver and with the other hand pull the cocking handle sharply to the rear. The piston and breech block can be drawn clear. Push the cocking handle forward.
- c. **Barrel.** Keeping the receiver upright, press the locking stud, raise the carrying handle to a vertical position, and push the barrel forward and lift it off.
- d. **Gas Regulator** (see Figure 2-1). With the barrel removed from the GPMG, unscrew the gas regulator. Before removing it, put one hand under the regulator to prevent losing the split collars. Push the plug on the gas block seating to the rear and remove it. Under no circumstances will the gas regulator be stripped further except by a weapons technician.

33. **Field Assembling.** Explain and demonstrate:

- a. **Gas Regulator.** Insert the plug into the gas block, ensuring that the flat surfaces are aligned. Replace the split collars, insert the regulator from the front, and screw it fully home. Turn the regulator to the setting required for correct functioning. If this is not known then set to number 1.
- b. **Barrel**
 - (1) Check that there is no obstruction in the barrel.

- (2) Check that registration numbers on the body and barrel are the same.
 - (3) Ensure screw type lugs on the barrel are lined up properly with the handle to insert in the receiver.
 - (4) Put the barrel onto the barrel support located on the top of the bipod. Keeping the GPMG upright, draw the barrel to the rear and lower the carrying handle firmly.
- c. **Recoil Mechanism.** Check that the registration numbers on the breech block and body are the same. Holding the pistol grip with the left hand, guide the piston into the lower part of the receiver. At the same time ensure that the breech block is held fully forward and up. Position the breech block into its guides in the upper part of the receiver, squeeze the trigger, and push the piston group fully forward. Insert the main spring assembly and ensure that the stud on the rod is correctly engaged in the slot in the receiver of the GPMG.
 - d. **Butt.** Lift the GPMG slightly, position the forward end of the butt into its guides in the receiver, and press down until the catch is engaged.
34. **Function Test.** Explain and demonstrate:
- a. After assembly, always test the GPMG for correct assembly. Cock the GPMG and place the safety catch at SAFE.
 - b. Squeeze the trigger to confirm the action is held to the rear.
 - c. Place the safety catch at FIRE. Squeeze the trigger, allowing the action to go forward under control. Close the ejection opening cover.
35. **Confirm by Practice.** Leave the guns field stripped.
36. **Detailed Stripping.** Explain that this degree of stripping is conducted for regular cleaning and after firing. It is a step beyond field stripping. Explain and demonstrate:
- a. **Breech Block.** Push the breech block to its forward position on the piston. Using the nose of the dummy round, push out the link pin and slide the breech block forward clear of the firing pin.
 - b. **Extractor and Spring** (see Figure 2-2). The tool for removing the extractor is carried in the cleaning kit.
 - (1) Hold the breech block with the extractor upwards; lift the locking lever until it is upright.

- (2) Insert the thin end of the tool into the recess in the extractor plunger; position the other end into the slot in the locking lever.

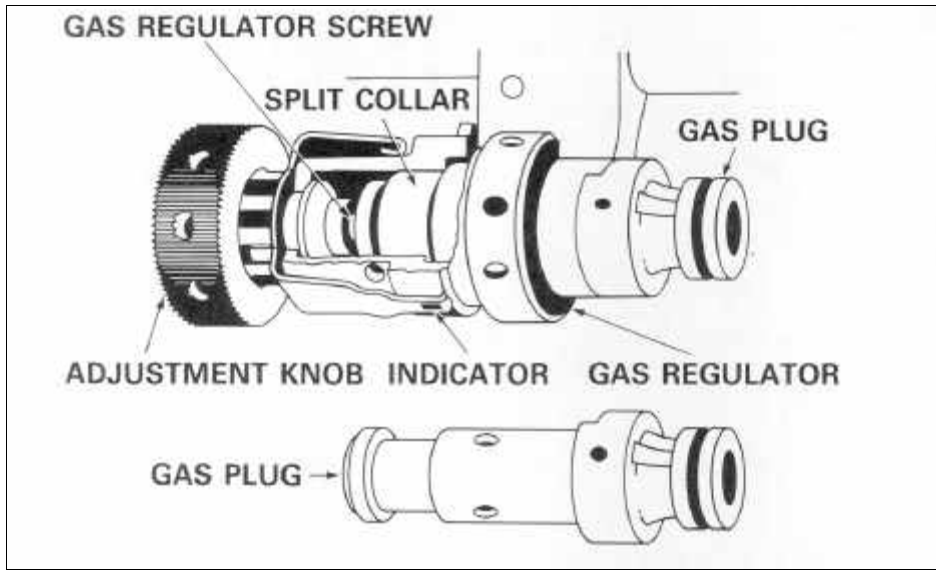


Figure 2-1 The Gas Regulator Assembly

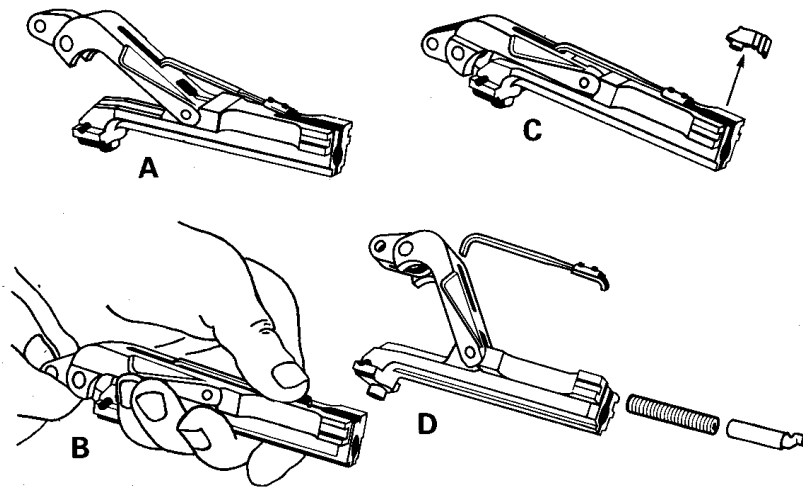


Figure 2-2 Stripping the Extractor, Stay, and Spring

- (3) With the thumb of the left hand immediately above the recess in the extractor plunger, hold the tool down firmly and rotate the locking lever downward, thus compressing the extractor spring.
 - (4) Lift out the extractor and slowly ease the locking lever upward until there is no tension on the extractor spring. Great care must be taken that the thumb does not slip from the tool because then the extractor stay and spring may be lost. The extractor is to be removed only for cleaning after firing.
- c. **Trigger Group** (see Figure 2-3)
- (1) Remove the rear mounting pin on the receiver, if fitted.
 - (2) Remove the retaining pin from the rear of the trigger group.
 - (3) Remove the trigger group by pivoting the group slightly downward.
- d. **Dust Cover Plate**
- (1) Push down on spring lip.
 - (2) Place a pointed object in the hole and slide towards the rear of the receiver until the dust cover plate is free.

CAUTION

No further stripping will be done by the gunner.

37. **Assembling.** Re-assemble in the reverse order. Check that the safety catch is at "F" before assembling the trigger group.

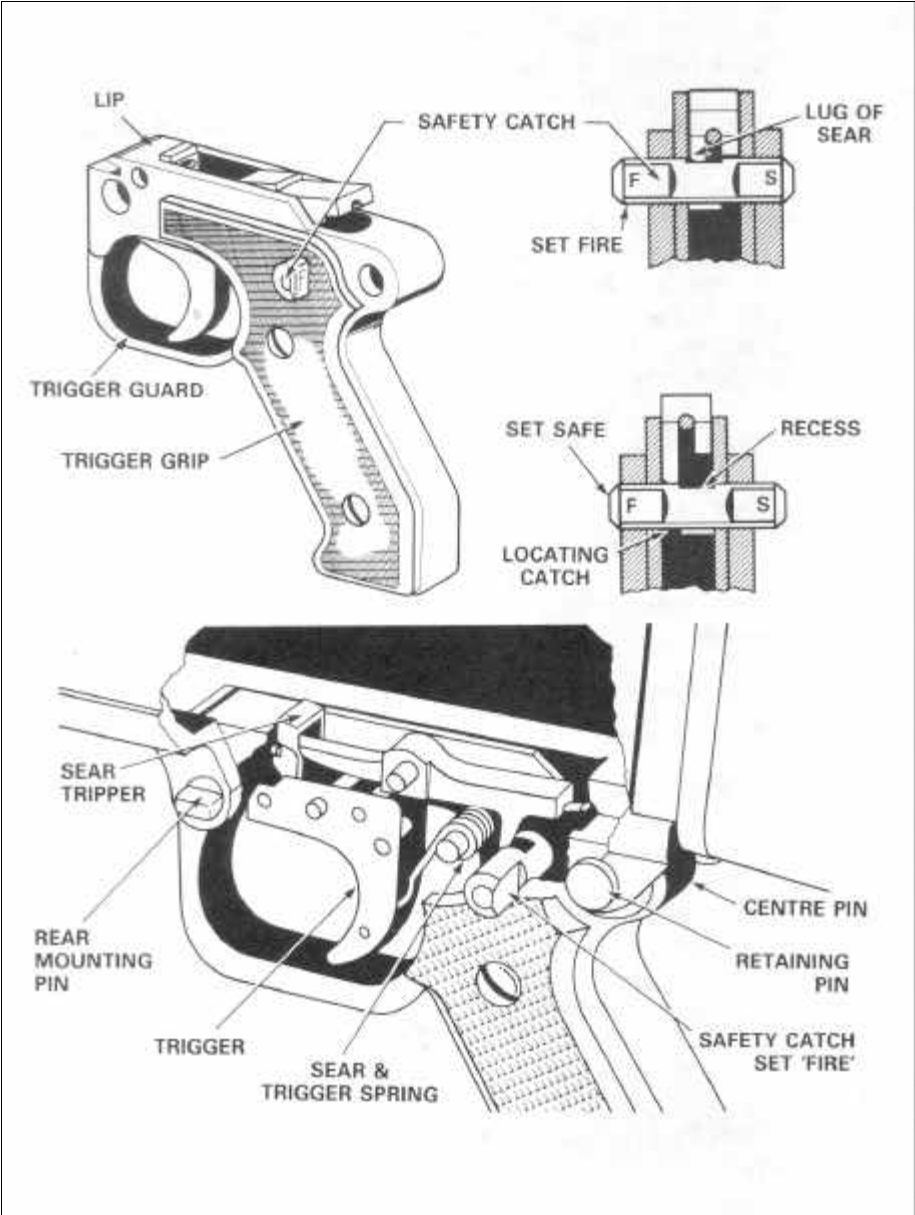


Figure 2-3 The Trigger Assembly

38. **Function Test.**

39. **Confirm by Practice.**

40. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by question and practice.
- c. Carry out safety precautions.
- d. Pack kit.
- e. **Summary.** Include the following:
 - (1) the importance of always carrying out safety precautions prior to stripping the gun; and
 - (2) a preview of the next lesson in this subject.

LESSON 3 - CARE AND CLEANING

INSTRUCTOR'S NOTES

41. **Aim.** To teach how to clean the gun under normal and adverse conditions.
42. **Timing.** Two 40-minute periods.
43. **Method.** A basic instructional period.
44. **Stores**
 - a. GPMG 1 per three soldiers
 - b. Dummy rounds, loose 1 per gun
 - c. Spare parts kit 1 per gun
 - d. Table 1 per gun
 - e. Flannelettes five 100 mm x 50 mm per gun
 - f. Cleaner, Lubricant, Preservative (CLP)
 - g. Cleaning rags
45. **Preparation**
 - a. Check contents of each spare parts kit.
 - b. Lay out one gun, spare parts kit, and dummy round on each table.
 - c. Lay out one piece of flannelette by each gun.
 - d. Carry out the following actions on the gun selected for demonstration:
 - (1) Check and loosen the gas regulator.
 - (2) Check that the bipod leg retaining catch is secure and correctly positioned.
 - (3) Check that the trigger group locking pins and breech block link pin are easy to remove.
46. **Miscellaneous.** During the review stage, do not strip the extractor or the trigger group. Guns should be left stripped down ready for the next stage of the lesson.

CONDUCT OF THE LESSON

47. **Safety Precautions.** Normal.
48. **Review.** Review stripping and assembling. Leave guns stripped.
49. **Introduction.** The GPMG is thoroughly reliable under extreme climatic and environmental conditions. However, it is important that the soldier know how to maintain the gun, even in the most extreme conditions, to ensure that it does not let him down in battle.
50. **Cleaning Equipment and Spare Parts** (see Figure 2-4). Explain that each gun has a spare parts and cleaning kit containing:
 - a. cleaner, lubricant, preservative (CLP),
 - b. four-piece cleaning rod,
 - c. bore cleaning brush,
 - d. swab holder,
 - e. cylinder cleaning brush,
 - f. gas ports cleaner,
 - g. foresight adjusting tool,
 - h. piston and cylinder cleaning/extractor removing tool,
 - j. gas regulator cleaning tool,
 - k. gas regulator sleeve cleaning tool,
 - m. clearing plug,
 - n. gas regulator wrench,
 - p. general purpose wrench, and
 - q. blank firing attachment.
51. **Cleaner, Lubricant, Preservative.** Explain that the maintenance concept is to use CLP for all temperatures and environmental conditions. No other oil, solvent, or lubricant is to be used.

52. The CLP must be shaken vigorously before use to ensure the Teflon particles are returned to suspension. It should be applied in very limited amounts as it will accumulate and remain active on the weapon. In most cases a small drop of CLP is sufficient.

53. **Cleaning.** This lesson deals with regular cleaning and cleaning under adverse conditions. A later lesson will deal with cleaning before and after firing.

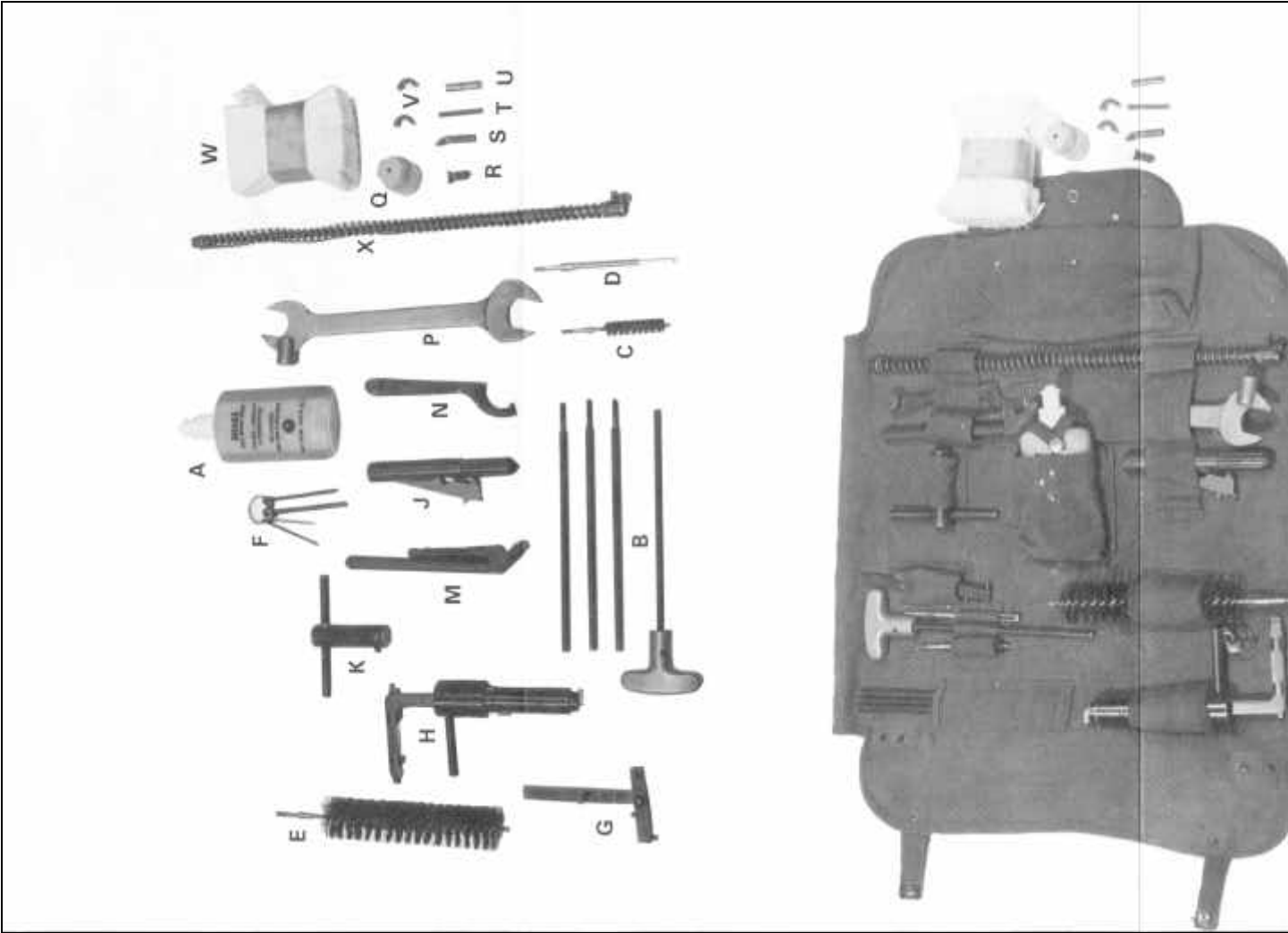


Figure 2-4 Spare parts and Cleaning Kit

LEGEND

| | |
|----------|---|
| A | CLEANER, LUBRICANT, PRESERVATIVE (CLP) |
| B | FOUR PIECE CLEANING ROD |
| C | BORE CLEANING BRUSH |
| D | SWAB HOLDER |
| E | CYLINDER CLEANING BRUSH |
| F | GAS PORTS CLEANER |
| G | FORESIGHT ADJUSTING TOOL |
| H | PISTON AND CYLINDER CLEANING/EXTRACTOR REMOVING TOOL |
| J | GAS REGULATOR CLEANING TOOL |
| K | GAS REGULATOR SLEEVE CLEANING TOOL |
| M | CLEARING PLUG |
| N | GAS REGULATOR WRENCH |
| P | GENERAL PURPOSE WRENCH |
| Q | BLANK FIRING ATTACHMENT |
| R | EXTRACTOR |
| S | EXTRACTOR PLUNGER |
| T | EXTRACTOR SPRING |
| U | LINK PIN |
| V | SPLIT COLLARS |
| W | SWABS |
| X | MAIN SPRING ROD |

54. **Regular Cleaning.** This type of cleaning is not associated with firing the weapon. It should be done as part of regular maintenance, eg, when the weapon has been used for dry training or when it has been in storage for a long time. explain and demonstrate:

- a. Attach the chamber cleaning brush to the rod and clean out the chamber.
- b. Clean the barrel using the rod fitted with a flannelette. The pullthrough should always be inserted from the chamber end of the barrel.
- c. Inspect both the chamber and the barrel to ensure they are clean.
- d. Using a flannelette apply a light film of CLP to the barrel.
- e. Clean the flash eliminator and apply a light film of CLP.
- f. Wrap a flannelette around the cylinder brush, join the brush to the rod and clean out the cylinder from the front end. Inspect and apply a light film of CLP using a flannelette inserted in the rod eyelet.
- g. Clean the rest of the gun with a rag and apply a light film of CLP.

55. Assemble the gun and test the recoil mechanism to ensure that the gas regulator is set to allow reliable operation without undue vibration. If the setting is not known, set the regulator at number 1. Check, clean, and repack all spare parts and cleaning tools.

56. **Confirm by Practice.**

57. **Adverse Conditions.** Explain:

- a. **Hot, Dusty, and Sandy Areas.** It is vital that in extremely dusty and sandy conditions the entire gun is kept dry. It should be dried by sweating the parts in the sun and constantly wiping off exuding lubricant. Cleaning brushes should be washed in soap and water, if possible, and dried before use. Frequent inspection for rust is essential and if lubricant is used to remove rust, the weapon must be completely dried afterwards.
- b. **Extremely Cold Climate.** Keep the GPMG dry. Apply CLP lightly. The CLP will provide the required lubrication at temperatures between -18°C and -37°C . However, it must be warmed to flow from the bottle below -18°C .
- c. **Hot Wet Climate.** Inspect frequently for rust. Apply CLP lightly.
- d. **After Exposure to Water.** Disassemble, dry thoroughly, clean, apply CLP, and assemble as soon as possible.

58. **Confirm by Questions.**

59. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions and practice.
- c. Carry out safety precautions.
- d. Pack kit.
- e. **Summary.** Include the following:
 - (1) The importance of maintaining the gun in a clean condition,
 - (2) The importance of correctly adjusting the gas regulator, and
 - (3) A preview of the next lesson in this subject.

**LESSON 4 - SIGHT SETTING, LOAD, UNLOAD, PREPARE TO FIRE, MAKE SAFE,
AND CLEAR GUN**

INSTRUCTOR'S NOTES

60. **Aim.** To teach how to:

- a. make up an ammunition belt,
- b. set the sights,
- c. load and unload,
- d. prepare to fire,
- e. make safe, and
- f. clear gun.

61. **Timing.** Two 40-minute periods.

62. **Method.** A basic instructional period.

63. **Stores**

- | | | |
|----|-----------------------|----------------------------------|
| a. | GPMG | 1 per three soldiers |
| b. | Spare parts kit | 1 per gun |
| c. | Dummy rounds, loose | 10 per soldier, 5 for instructor |
| d. | Links 10 per soldier, | 5 for instructor |
| e. | Landscape target | 1 per gun |

64. **Preparation**

- a. Check dummy rounds and links for damage.
- b. Lay out spare parts kits.
- c. Lay out a belt of 10 rounds for each soldier.
- d. Lay out instructor's belt of five rounds for demonstration.

65. **Miscellaneous**

- a. After teaching how to Join the belts, have the soldiers link their belts together and lay them by the guns ready for loading.
- b. At the end of the sight setting demonstration, point out the cartridge stop to the soldiers in preparation for the loading demonstration (see Figure 2-5).
- c. Give a range before each practice of MAKE SAFE.
- d. When demonstrating a two-man crew, use a soldier from the class to act as the No. 2.

CONDUCT OF THE LESSON

66. **Safety Precautions.** Normal.

67. **Review.** Nil.

68. **Introduction.** Explain that it is essential that the soldier be capable of maintaining the gun in a state of readiness under battle conditions. A thorough knowledge of the actions to be carried out on receiving orders is imperative to achieve this objective.

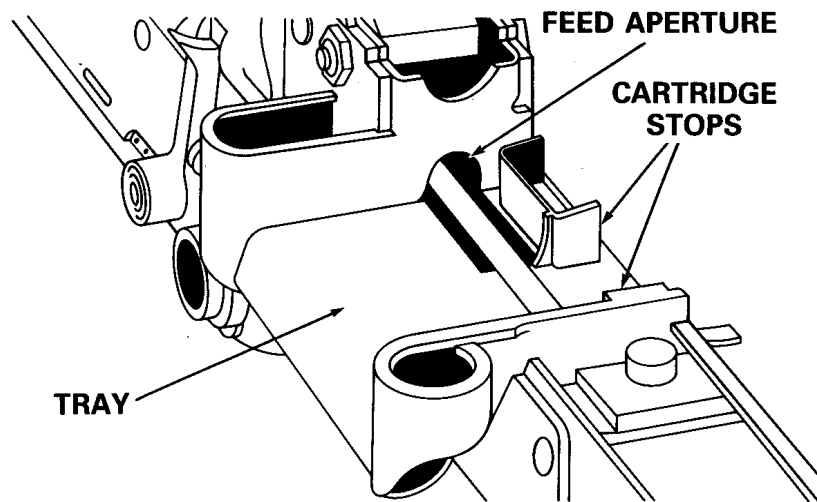


Figure 2-5 The Feed Tray

69. **Ammunition.** Explain, and demonstrate where applicable.
- a. Ammunition is supplied in belts of 220 rounds with a ratio of four ball to one tracer (1 in 5). The belts are of metal disintegrating links and can be readily broken or joined to give belts of any length (see Figure 2-6).
 - (1) **To Separate a Belt.** Holding the rounds on each side of the point at which it is desired to separate the belt, twist them in opposite directions. The links at that point will disengage.
 - (2) **To Join Two Belts.** Fit the projection of the end link to the other, making sure that the links are the same way up. If there is a round in position, press the projection so that it snaps into place over the cartridge case. If no round is in position, insert one as described in paragraph 4b(2).

CAUTION

Links are only to be re-used with dummy rounds. The **ONLY** exception to this rule is in battle and then only in an emergency.



Figure 2-6 Ammunition Belt

- b. Dummy belts are purely a training expedient.
 - (1) **To Break Down a Dummy Belt.** Remove any round from the belt by pushing the nose of the round firmly against a solid surface, thus releasing the round from the detent. Do the same with any adjoining round and so on.
 - (2) **To Make Up a Dummy Belt.** Take two links, both the same way up, and place them so that the projection of one fits into the gap of the other. Then interlock them by inserting the nose of a round through both links and press the round forward till the projecting detent of the clip clicks into place in the groove at the base of the round.

70. **Confirm by Practice.**

71. **Sight Setting.** Explain and demonstrate.

- a. The rearsight can be used either folded down for the light role or raised to a vertical position for sustained fire. Both faces are graduated at intervals of 100 metres. The 200 to 800 metre graduations on the upper face are used when the backsight is folded down. A slider with two spring catches to keep it fixed in any set position allows range settings to be adjusted. In this position the rearsight forms a battle sight with peephole (see Figure 2-7).
- b. The 800 to 1800 m graduations on the reverse face are used when the sight is raised. Sighting is through an aperture sight drilled in the adjustable slider (see Figure 2-7).
- c. The sight should be set at 200 when not in use.

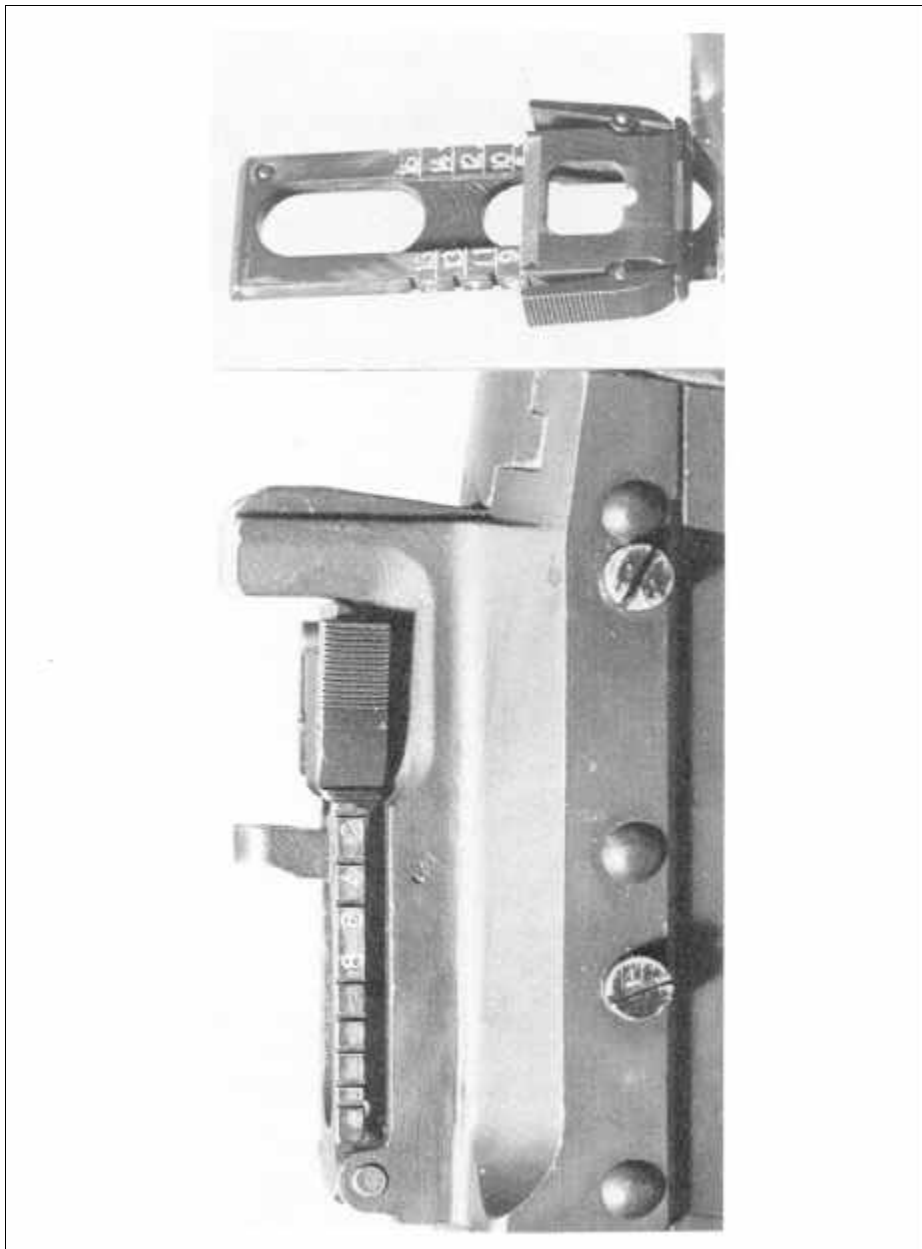


Figure 2-7 The Rearsight

- d. The foresight is a single blade set between two foresight protectors. The foresight blade is aligned with the target, as shown in Figure 2-8, to form the aim picture.
72. **Load.** On the order LOAD, explain and demonstrate:
- a. Lie behind the GPMG with the legs together.
 - b. Hold the small of the butt with the left hand in an overhand grip (see Figure 2-9).
 - c. Grasp the pistol grip, forefinger outside the trigger guard.
 - d. Tilt the gun to the right and open the feed cover.
 - e. Check that ammunition belt links are not loose or damaged.
 - f. Position the belt on the feed tray, links uppermost, first round against the cartridge stop (see Figure 2-10).
 - g. Hold the belt in position with the left hand and close the feed cover.
 - h. Return hands to the correct position on the butt and pistol grip and the GPMG to the upright position.
73. **Unload.** On the order UNLOAD, explain and demonstrate:
- a. Raise the butt into the shoulder and cock the GPMG.
 - b. Lower the butt raise the feed cover and remove the belt.
 - c. Clear the feed tray (see Figure 2-11).
 - d. Close the feed cover.
 - e. Raise the butt into the shoulder and set the safety catch at FIRE.
 - f. Align the sights on the target and squeeze the trigger.
 - g. Lower the butt, close the ejection port cover, and lower the sights.
74. **Confirm by Practice.**

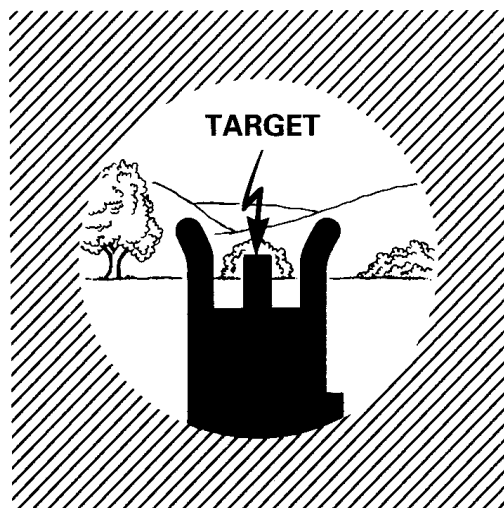


Figure 2-8 The Aim Picture

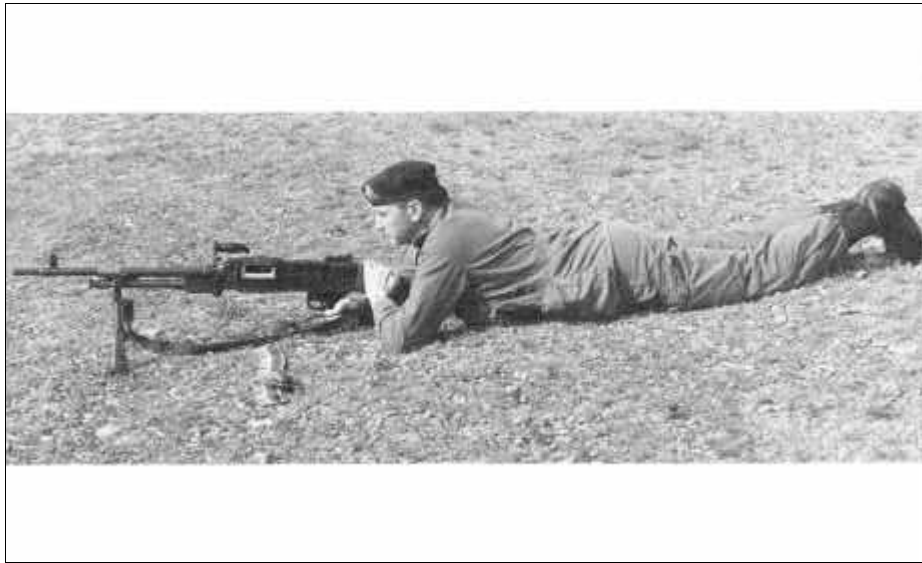


Figure 2-9 The Loading Position



Figure 2-10 Loading

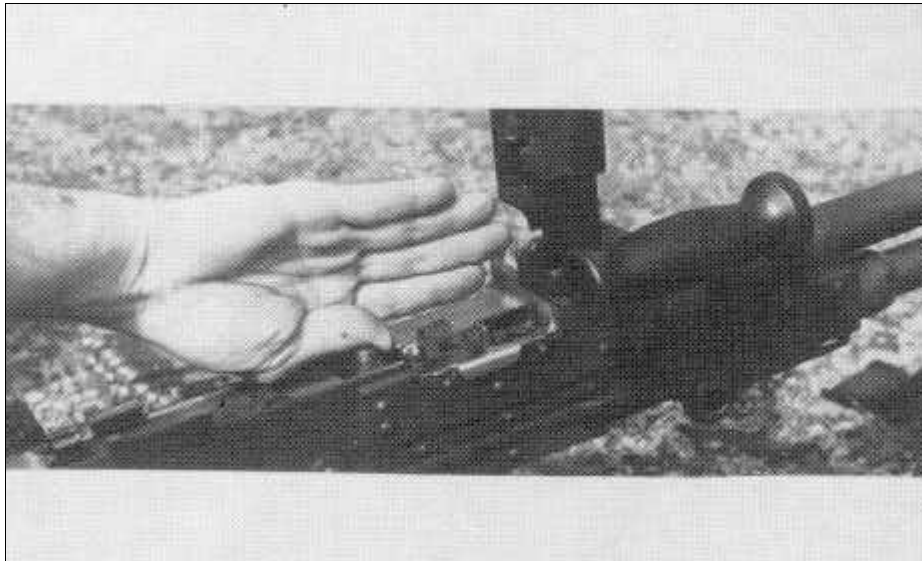


Figure 2-11 Clearing the Feed Tray

75. On the order **READY**, or a **RANGE BEING ORDERED**, explain and demonstrate:
 - a. Set the sights.
 - b. Lift the butt into the shoulder and cock the GPMG.
 - c. Grasp the pistol grip with the right hand and place the forefinger on the trigger.
 - d. If no further order is received apply the safety catch with the left hand.
 - e. Grasp the butt with the left hand.
76. **Make Safe.** On the order **MAKE SAFE**, explain and demonstrate:
 - a. Unload.
 - b. Reload, (with a new belt if necessary).
77. **Clear Gun.** On the order **UNLOAD - CLEAR GUN**, explain and demonstrate:
 - a. Unload.
 - b. Raise the feed cover.

c. Stand up and report GUN CLEAR in numerical order.

78. **Confirm by Practice.**

79. **Load and Unload - Two-Man Gun Crew.** Explain and demonstrate:

a. The gun can be operated by the gunner alone or with the assistance of a No. 2.

b. The No. 2 is to lie on the left of the gun close to the gunner.

c. When loading, the gunner raises the top cover and the No. 2 positions the belt on the feed tray, ensuring that his fingers are clear before the top cover is closed.

d. When unloading, the No. 2 removes the belt from the feed tray.

80. **Confirm by Practice.**

81. **Conclusion**

a. Take questions from the class on the entire lesson.

b. Confirm by questions and practice.

c. Carry out safety precautions.

d. Pack kit.

e. **Summary.** Include the following:

(1) the importance of checking the ammunition belt before loading; and

(2) a preview of the next lesson in this subject.

LESSON 5 - HOLDING, AIMING, AND FIRING

INSTRUCTOR'S NOTES

82. **Aim.** To teach:
- holding, aiming, and firing at stationary and moving targets;
 - action to be carried out on receiving the orders STOP and GO ON; and
 - rates of fire, burst length, and barrel change.
83. **Timing.** Two 40-minute periods.
84. **Method.** A basic instructional period.
85. **Stores**
- | | | |
|----|----------------------|-------------------------|
| a. | GPMG | 1 per three soldiers |
| b. | Spare parts kit | 1 per gun |
| c. | Dummy rounds, belted | 15 per gun |
| d. | Eye disc | 1 per gun |
| e. | Landscape target | 1 (minimum requirement) |
86. **Preparation**
- Prepare arcs of fire and select reference points.
 - Lay out guns and belts.
 - Where possible use one identical landscape target per gun, positioned centrally in front of that gun position.
 - Prepare fire control orders using different methods of indication. Check that all selected targets can be engaged from all gun positions.

WARNING

Dummy rounds are not to be used in conjunction with eye discs.

87. **Miscellaneous**

- a. If the soldier suffers discomfort from pressing his mouth against the knuckles of the left hand when gripping the small of the butt in an overhand grip, he should be encouraged to try an underhand grip.
- b. Soldiers may understand the firing sequence more readily if it is explained that the sequence learned to fire a single round with a rifle is applied, though the hold and follow through are extended to cater for the rounds in a burst.
- c. Practise as individuals and as a team.
- d. During practice firing, order STOP - MAKE SAFE prior to changing gun numbers.
- e. Use an eye disc to check sight alignment.

CONDUCT OF THE LESSON

88. **Safety Precautions.** Normal.

89. **Preliminaries.** Indicate arcs of fire and reference points.

90. **Review.** Load and unload.

91. **Introduction.** Explain that in order to bring effective fire on the enemy, the soldier must know how to hold, aim, and fire the gun using the best length of burst against both stationary and moving targets.

92. **Holding and Aiming.** Explain and demonstrate:

- a. When a range is ordered, carry out the actions already taught.
- b. Aiming procedure is the same as for the rifle.
- c. When a target is indicated, use the left hand under the gun to move it as required and line up the gun, body, and target, open the legs, and lay the heels flat on the ground.
- d. Adjustments for height can be made by moving the elbows inwards or outwards until the position is correct.
- e. Move the whole of the body up to the gun until the right shoulder is firmly in contact with the butt.

- f. Pull the butt backwards and downwards with an overhand or underhand grasp of the left hand, the left elbow being placed on the ground level with the right elbow so that the shoulders remain square to the front (see Figures 2-12 and 2-13).



Figure 2-12 Holding - Overhand Grasp of the Left Hand



Figure 2-13 Holding - Underhand Grasp of the Left Hand

- g. Hold the pistol grip firmly with the right hand, forefinger on the trigger, and pull the gun backwards and upwards into the shoulder.
 - h. Lock the hold by turning the wrists inward and rest the cheek on the left hand if using the overhand grip, or on the small of the butt if using the underhand grip.
 - j. Test the hold by rocking backward and forward slightly; the fore sight should move directly up and down on the point of aim.
93. **Confirm by Practice.** Order MAKE SAFE.
94. **Firing.** Explain and demonstrate:
- a. On the order FIRE, when the hold and aim are correct, the trigger should be squeezed long enough to fire a burst of three to five rounds and then should be fully released to allow it to go forward.
 - b. Observation of the burst is most important. The moment the trigger is released, the left eye should be opened and the area of the target observed to ascertain the impact of the rounds.
 - c. Make any necessary alterations to the sights or aim and then continue firing at the normal rate of about 50 rounds per minute. If RAPID FIRE is ordered, increase the rate to about 100 rounds per minute.
 - d. On the order STOP, cock the gun, put the safety catch at SAFE with the left hand, and lower the butt. If the belt has only a few rounds left, connect another belt to it.
 - d. On the order GO ON, realign onto the target, test the hold, put the safety catch at FIRE, and continue firing.
 - f. On the order STOP - MAKE SAFE, act as already taught.
 - g. If a No. 2 is present, it is his task to see that there is always a supply of ammunition for the gun. He does this by clipping on further belts as necessary. It is not necessary for No. 2 to hold the belt during firing, but he may be required to straighten the belt so that it will feed correctly.
95. **Confirm by Practice.**
96. **Rates of Fire.** Explain. There are two rates of fire:
- a. **Normal Rate.** Fifty rounds per minute fired in short bursts of three to five rounds.
 - b. **Rapid Rate.** One hundred rounds per minute fired in short bursts. Rapid fire is the fastest rate at which accuracy can be maintained. It is only to be used when

the target warrants it, eg, a large number of enemy in the open at short range, or for short periods when providing covering fire for friendly troops.

97. **Burst Length.** Two burst lengths may be used:
- a. **Short Burst.** A short burst of three to five rounds is necessary to observe the impact of rounds and to correct errors in range and wind allowance. Tracer is filled one to four in each belt to assist in observation of impact. However, the length of burst will be determined by the type of target, the range to the target, and the skill of the gunner.
 - b. **Long Burst.** A long burst of eight to ten rounds spreads more but gives a better chance of hitting a moving target. It may be used at very short range against a mass attack. It can also be effective when fired at the front of some armoured fighting vehicles, particularly if aimed at devices which assist crew vision such as periscopes, lights, image intensification, or Infrared equipment.

NOTE

The length of bursts and rates of fire are also to be adhered to when blank firing.

98. **Moving Targets.** Select a point of aim well in front of the line of advance of the moving target. Aim at it and when the target is two widths from the point of aim fire a long burst.

99. **Confirm by Questions.**

100. **Barrel Change.** Explain and demonstrate that normal rates of fire will not unduly overheat the barrel, but rapid rate and long bursts, for any length of time will. With the tactical situation in mind, the gunner must use common sense and regulate the rate of fire and length of bursts, remembering that overheating quickly wears out the barrel.

101. To avoid overheating, no gun is to fire more than 440 rounds (two belts) continuously through the same barrel. Barrels are to be changed after every 440 rounds and not used again until hand cool.

102. To change the barrel, unload as taught; however, do not lower the butt, put the sights down, or close the election opening cover. Cock the gun, lower the butt, remove the barrel, and replace with the new barrel, ensuring that the gas regulator is set correctly (if this is not known then set on number 1), the serial numbers on the barrel match the receiver, and there are no obstructions in the barrel. Allow the working parts to go forward, reload, raise the butt into the shoulder, cock the gun, and carry on firing.

103. After sustained rapid fire, if possible, the GPMG should be unloaded, the action cocked, and the top cover raised to allow the gun to cool.

104. **Confirm by Questions.**

105. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions and practice.
- c. Carry out safety precautions.
- d. Pack kit.
- e. **Summary.** Include the following:
 - (1) the importance of testing the hold before firing a burst; and
 - (2) a preview of the next lesson in this subject.

LESSON 6 - IMMEDIATE ACTION AND GAS STOPPAGE DRILL

INSTRUCTOR'S NOTES

106. **Aim.** To teach the action to be carried out if the GPMG stops firing or fails to fire.

107. **Timing.** Two 40-minute periods.

108. **Method.** A basic instructional period.

109. Stores

- | | | |
|----|----------------------|-----------------------------------|
| a. | GPMG | 1 per three soldiers |
| b. | Spare parts kit | 1 per gun |
| c. | Dummy rounds, belted | 15 per gun |
| d. | Landscape target | 1 per gun (see paragraph 110d) |

110. Preparation

- a. Lay out guns and dummy rounds.
- b. Prepare arcs of fire and select reference points.
- c. Prepare fire control orders for selected targets and check that targets can be engaged from each gun position.
- d. Where possible, use one identical landscape target per gun, positioned centrally in front of that gun position.

111. Miscellaneous

- a. Practise also in two-man gun crews.
- b. Emphasize, after any stoppage, that the gun must be held firmly and realigned onto the target before squeezing the trigger.
- c. Adjust gas regulators frequently to cater for gas stoppage drill.
- d. Before changing crews for practice on the guns, order STOP MAKE SAFE.

- e. During gas stoppage use the following words of command GUN FIRING ALRIGHT - GUN STOPS. GUN FIRING ALRIGHT. GUN FIRES 1 OR 2 MORE ROUNDS AND STOPS AGAIN.

CONDUCT OF THE LESSON

112. **Safety Precautions.** Normal.

113. **Review.** Firing drills. Leave guns loaded.

114. **Introduction.** Explain that if the gun is cleaned and prepared for firing correctly, stoppages will seldom occur. However, should the gun stop firing, it is imperative that the soldier know how to remedy it with a minimum loss of time. A knowledge of how the gun works will assist in understanding the reason behind the stoppage.

115. **How the Gun Works.** Explain that the gun is loaded and cocked by hand. When the round is fired, the gases drive the piston group to the rear, ejecting the empty case. The return spring and buffer drive the piston forward, loading a fresh round which is then fired. This action goes on as long as the trigger is squeezed and there are rounds in the belt.

116. **Confirm by Questions.**

117. **Immediate Action (IA).** Explain and demonstrate. If the GPMG stops or fails to fire:

- a. Cock the GPMG.
- b. Lower the butt.
- c. Open the feed cover, clear the feed tray, and close the feed cover again as quickly as possible.
- d. Raise the butt into the shoulder and align the sights with the target; squeeze the trigger. A round may be fired.
- e. Lower the butt, reload, raise the butt into the shoulder and cock the GPMG; realign with the target and continue firing.

118. **Confirm by Practice.**

119. **Stoppages Remedied by Applying IA.** Explain that the following stoppages will be remedied by applying IA:

- a. expended belt;
- b. damaged rounds;

- c. live round partly fed, due to a damaged link;
- d. misfired round;
- e. hard extraction; and
- f. damaged link.

120. **Confirm by Questions and Practice.**

121. **Gun Cannot Be Cocked.** Explain and demonstrate that while carrying out the IA, if the cocking handle cannot be pulled fully to the rear a damaged link is jamming the feed pawls.

- a. Hold the cocking handle as far to the rear as possible; to assist in holding, hook the thumb in the trigger guard.
- b. Open the feed cover, clear the feed tray, and close the feed cover.
- c. Raise the butt into the shoulder and complete the cocking action, align the sights with the target, squeeze the trigger, lower the butt, reload, raise the butt into the shoulder and cock the GPMG, align with the target, and continue firing.

122. **Confirm by Practice.** Assume that the gun will not fully cock. Instructor's Note: Brief the soldiers that during practice they are to assume that the gun will not fully cock.

123. **Gas Stoppage Drill.** Explain and demonstrate what to do if, after applying the IA, the GPMG fires a few rounds and again stops:

- a. Cock the GPMG.
- b. Put the safety catch at SAFE.
- c. Lower the butt.
- d. Adjust for more gas by screwing the regulator clockwise one click. Normally, this can be done with the hand; however, if the regulator is too hot to handle, use the nose of a round taken from the belt.
- e. Raise butt into shoulder.
- f. Put the safety catch at FIRE and continue firing.
- g. At the earliest opportunity, the GPMG is to be unloaded, the barrel removed, and the gas plug and block cleaned using the cleaning kit.

124. **Confirm by Practice.**

CAUTION

Any round, whether damaged or not, which is involved in a stoppage or used as a tool is to be removed from use. Such rounds are not to be replaced in a magazine or in a belt, nor is any attempt to be made to fire them.

125. **Further Action.** Explain that if after carrying out the gas stoppage drill the stoppage reoccurs, then carry out the change barrel drill as taught and carry on firing. Clean and lubricate the gas affected parts as soon as possible.

126. **Confirm by Questions and Practice.**

127. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions and practice.
- c. Carry out safety precautions.
- d. Pack kit.
- e. **Summary.** Include the following:
 - (1) the importance of correct firing drills after clearing a stoppage; and
 - (2) a preview of the next lesson in this subject.

LESSON 7 - OTHER STOPPAGES

INSTRUCTOR'S NOTES

128. **Aim.** To teach the soldier the causes of stoppages and how to remedy them.
129. **Timing.** Two 40-minute periods.
130. **Method.** A basic instructional period.
131. **Stores**
- | | | |
|----|----------------------|-----------------------------------|
| a. | GPMG | 1 per three soldiers |
| b. | Spare Barrel | 1 per GPMG |
| c. | Spare parts kit | 1 per gun |
| d. | Dummy rounds, belted | 15 per gun |
| e. | Landscape target | 1 per gun (see paragraph 132d) |
132. **Preparation**
- Lay out guns and dummy rounds.
 - Prepare arcs of fire and select reference points.
 - Prepare fire control orders for selected targets and check that targets can be engaged from each gun position.
 - Where possible, use one identical landscape target per gun, positioned centrally in front of that gun position.
 - Place a dummy round in the spare parts kit. To prevent damaging the clearing plug, the dummy round is to be used when practising the clearance of a separated case.
133. **Miscellaneous**
- Give practice also in two-man gun crews.
 - Use the following words of command to practice stoppage drill:

- (1) GUN FIRING ALL RIGHT - GUN STOPS, and after the IA has been carried out, GUN WON'T FIRE.
- (2) To signify the cause of the stoppage, as appropriate: OBSTRUCTION IN THE BODY, EMPTY CASE IN THE CHAMBER, OBSTRUCTION IN THE BARREL, or SEPARATED CASE.
- (3) After completion of appropriate remedial action, OBSTRUCTION CLEAR then GUN FIRING ALL RIGHT. Alternatively, OBSTRUCTION CLEAR, then GUN WON'T FIRE. Indicate the cause with PRIMER NOT STRUCK/NOT PROPERLY STRUCK, GUN WON'T EJECT, or GUN WON'T COCK.

134. **Conduct of the Lesson.**

- a. Safety precautions - normal.
- b. Preliminaries indicate arcs of fire and reference points.
- c. Review immediate action. Leave the guns loaded.

135. **Introduction.** Explain that, although stoppages caused by broken parts or obstructions are rare, the soldier must be able to recognize and remedy such causes quickly in order to get the gun firing again. In this lesson the stoppages will be taught in a set sequence but in reality they may occur in any order.

136. **Other Stoppages.** Explain and demonstrate what to do if, after applying the IA, the GPMG will not fire:

- a. Unload but do not close the ejection opening cover, put the sights down, or lower the butt.
- b. Cock the GPMG again, lower the butt, open the feed cover, raise the feed tray, and inspect the interior of the receiver.
- c. Subsequent action will depend on what you see in the receiver.

137. **Obstruction in the Body.** If you see an obstruction in the receiver, eg, a jammed live round or empty casing, remove it by hand or, if necessary, by using a tool from the cleaning kit.

138. When the obstruction is clear, inspect the chamber. If the chamber is clear or if there is a live round present:

- a. Close the feed cover.
- b. Raise the butt into the shoulder.

- c. Aim in a safe direction and squeeze the trigger (a round may be fired).
- d. Ensure the working parts are forward and lower the butt.
- e. Reload, raise the butt, cock the gun, aim, and carry on firing.
- f. If a tool is used to clear the obstruction, it must be returned to the cleaning kit at the earliest opportunity.

139. **Confirm by Practice.**

140. **Empty Case in the Chamber.** Explain and demonstrate what to do if, on initial inspection or after removing an obstruction from the receiver, you see an empty case in the chamber (caused by a broken extractor or spring):

- a. Close the feed cover.
- b. Raise the butt into the shoulder and squeeze the trigger.
- c. Strip the gun, replace the extractor, and re-assemble the gun.
- d. Raise the butt and cock the GPMG.
- e. Squeeze the trigger.
- f. Cock the GPMG again to ensure that the empty case is extracted from the chamber.
- g. Squeeze the trigger.
- h. Reload, raise the butt, cock the gun, aim, and carry on and firing.

141. **Confirm by Practice.**

142. **Obstruction in the Barrel or Separated Case.** Explain that if, on looking into the receiver and chamber there is no visible obstruction, the barrel should be removed and inspected for an obstruction or a separated case. If there is:

- a. **An Obstruction.** The barrel is not to be used until the obstruction is removed. Replace the barrel with the second barrel. Allow the working parts to go forward, reload, raise the butt, cock the gun, and carry on firing.
- b. **A Separated Case**
 - (1) Replace the barrel.

- (2) Lift the feed tray and insert the forward end of the clearing plug into the chamber.
- (3) Push it as far forward as possible. Using the handle, lever back on the plug until it is clear of the chamber.
- (4) Check that the separated case is on the clearing plug.
- (5) Allow the working parts to go forward.
- (6) Reload, raise the butt into the shoulder, aim, and carry on firing.
- (7) Remove the separated case from the clearing plug and return the plug to the spare parts kit at the first opportunity.

143. **Confirm by Practice.**

144. **Damaged or Broken Parts.** Explain that if after carrying out the IA and stoppage drill, the GPMG still will not fire, the following actions should be carried out:

- a. Unload and strip the GPMG.
- b. Examine the GPMG and ejected ammunition for the following signs which indicate damaged or broken parts:
 - (1) primer not struck (broken firing pin);
 - (2) primer not properly struck (weak main spring); or
 - (3) repeated failure to eject (broken ejector).

145. **Confirm by Practice.**

146. **Feed Pawl and Springs.** Explain and demonstrate that if after applying the IA, the GPMG will not fire and you cannot fully cock the GPMG, act as previously taught but before reloading, open the feed cover and examine the feed pawls and springs. If the feed pawls are not working freely:

- a. Clean and oil them.
- b. Load and carry on firing.

147. **Confirm by Practice.** Assume the gun will not cock. Leave gun made safe.

148. **Runaway Gun.** Explain and demonstrate: A mechanical fault may cause the GPMG to fire after the trigger has been released. If this happens:

- a. Hold the GPMG firmly into the shoulder.
- b. Twist the belt at the point of entry into the feedway, thus breaking the belt or jamming the feed.
- c. When the GPMG stops firing, unload, reload, adjust for more gas, raise the butt, cock the gun, and carry on firing.

149. **Confirm by Questions and Practice.** Leave gun made safe.

150. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions and practice.
- c. Carry out safety precautions.
- d. Pack kit.
- e. **Summary.** Include the following:
 - (1) the importance of correct firing drill is after clearing a stoppage; and
 - (2) a preview of the next lesson in this subject.

LESSON 8 - HANDLING IN THE LIGHT ROLE

INSTRUCTOR'S NOTES

151. **Aim.** To teach the individual responsibilities of members of the gun crew in handling the gun.
152. **Timing.** Two 40-minute periods.
153. **Method.** A basic instructional period.
154. **Stores**
- | | | |
|----|------------------------|----------------------------|
| a. | GPMG fitted with sling | 1 per three soldiers |
| b. | Spare parts kit | 1 per gun |
| c. | Dummy rounds, belted | 2 x 15-round belts per gun |
| d. | C7 fitted with sling | 2 per three soldiers |
| e. | Magazines | 2 per rifle |
155. **Preparation.** Select locations for demonstrations and for practice of:
- good fire positions; and
 - action to be taken on the order TAKE COVER.
156. **Miscellaneous**
- For practice of fire positions, give arcs of fire and let all gun crews occupy their positions. Leave one team in position and have the remainder of the class criticize. Do this with each crew in turn.
 - The gun should be carried with the sling over the right shoulder as this allows the gun to be brought more quickly into a ground firing position.
 - When demonstrating the battle drill or the three-man gun crew, show the actions of the gun controller first and then the gunner. Detail one of the soldiers to act as the No. 2.
 - A sling may be used in lieu of dummy rounds.
 - When demonstrating improvised support using the No. 2, show the position of the gunner and nominate a soldier to act as the No. 2.

CONDUCT OF THE LESSON

157. **Safety Precautions.** Normal.

158. **Preliminaries.** Have the class "cam-up".

159. **Review.** Nil.

160. **Introduction.** Explain that the success of any action carried out by the infantry is determined to a large degree by the effective fire support provided by the machine-guns. To give effective fire support, the gun crew should be in a good fire position and be capable of instinctively carrying out the orders given to them.

161. **The Gun Crew.** Explain that the normal gun crew consists of three men; the gun controller, the gunner, and the No. 2.

a. **Gun Controller**

- (1) Controls the fire of the gun.
- (2) Acts as the contact man with the platoon and watches for signals from the platoon commander.
- (3) Observes and corrects the gunner's fire.
- (4) Selects fire positions for the gun and its line of advance when on the move.
- (5) Fires his rifle in an emergency.

b. **Gunner.** Handles and fires the gun as ordered by the gun controller.

c. **No. 2**

- (1) Assists the gunner as and when required.
- (2) Ensures an adequate supply of ammunition to the gun.
- (3) Fires his rifle in an emergency.

162. **Ammunition Carriage.** Explain:

- a. When preparing belts for carriage, the 220-round belts should be broken into lengths of approximately 55 rounds.

- b. Belts are to be carried in pouches and small packs.
- c. In battle, the gunner and No. 2 each carry six lengths of 55 rounds; the Gun Controller carries 440 rounds in belt boxes.

163. **Confirm by Questions and Practice.**

164. **Rifle Fire Positions.** Explain that the characteristics of a good fire position are:

- a. free use of personal weapons and grenades;
- b. cover from indirect fire and small arms fire;
- c. cover from view;
- d. an unobstructed view of a wide arc of fire; and
- e. no dead ground close to the positions by day or at night.

165. **GPMG Fire Positions.** Explain and demonstrate that, in addition to the characteristics of a good position as taught for the rifle, there are special points to note about the GPMG fire position. These are:

- a. The No. 2 should always be on the left of the gun in order to change the belts quickly.
- b. It is sometimes necessary to fold the bipod legs to make the best use of cover. The gun is then rested as near as possible to where the legs are joined to the gun (see figures 2-14 and 2-15).
- c. Always ensure that the ejection port cover is clear to allow the empty cases to be ejected.
- d. If the ground is sloping, the sights can be kept upright by rotating the gun in the bipod sleeve (see Figure 2-16).



Figure 2-14 Firing From Low Cover Using the Bipod



Figure 2-15 Firing From Low Cover, Bipod Legs Folded



Figure 2-16 Firing From Sloping Ground

- e. Minimum exposure is required to fire around cover (see Figure 2-17).
- f. Always ensure that there is adequate crest clearance for firing. This can be done by looking through the hole in the left side of the feed tray.

166. **Confirm by Practice.**

167. **Battle Drill for the Three-Man Gun Crew.** Explain and demonstrate. The gunner in the advance carries the gun (either by using the carrying handle or in front of the body supported by the sling over the right shoulder), holding the gun muzzle down and forward, right hand on the pistol grip and left hand under the folded bipod legs.



Figure 2-17 Firing Around Cover

168. On being ordered to TAKE COVER:

- a. The gun controller is to take cover and move cautiously into a position from which he can observe without being seen. He is to select a gun position and indicate it to the gunner. When the gun is in position, the gun controller directs its fire.
- b. The gunner is to take cover, watch the gun controller and, when his fire position is indicated, crawl to it and get into a position of observation keeping the gun behind cover. If he cannot observe the enemy from this position, he is to inform the gun controller and move to a more suitable position close by.
 - (1) When a range is ordered, the gunner is to set the sights, mount the gun, and cock it. He is to fire as ordered.
 - (2) On the order STOP, he acts as previously taught but the butt should be kept into the shoulder.
 - (3) On the order GO ON, he acts as previously taught.
 - (4) On the order PREPARE TO MOVE, if a long bound is to be covered, the gunner is to MAKE SAFE, fold the loaded belt over the gun so that it balances easily, raise the carrying handle, and check that spare belts are

put into pouches. For a short move, it is sufficient to cock the gun and put the safety catch to SAFE in lieu of MAKE SAFE.

- (5) On the order MOVE, the gunner is to avoid breaking cover from the position from which he has been firing. On arrival at the new position, he is to remove the belt from the top of the gun, align it ready for firing, and lower the carrying handle.

c. The No. 2 is to conform to the actions of the gunner.

169. **Confirm by Practice.**

170. **Battle Drill for the Two-Man Gun Crew.** Explain that on any occasion when the gun crew is reduced to two men, the No. 2 is to perform the duties of the gun controller in addition to his own.

171. **Confirm by Practice.** Final practice is to include stoppages.

172. **Improvised Support Using a No. 2.** Explain and demonstrate. On occasion, due to the shape of the ground or the height of vegetation, it may not be possible to engage a target unless the gun is elevated: Extra height can be achieved by using the back of a No. 2. As some loss of control can be expected, limit the length of burst to 3 to 5 rounds. It is important that the gun is firmly anchored on the back of the No. 2. Three basic positions can be adopted: low, medium, and high (see Figures 2-18A, 2-18B, and 2-18C). In each case the gun is supported on the back of the No. 2 in the same way.

- a. The No. 2 adopts a position at right angles to the line of fire and as low as possible, taking full advantage of available cover.
- b. The gun is placed across the back of the No. 2 with the bipod unfolded. The feet should be anchored in the centre of the back with one foot in position over the rear pouch. The gunner must modify his position to conform to the height of the No. 2.
- c. Wherever possible, all drills should be carried out while the gun is on the back of the No. 2. If this is not practical the gun should be removed to a flank, taking care that the muzzle is pointing in a safe direction.
- d. Care should be taken that the ejection opening is free from obstruction and that the gas regulator is free from any camouflage or webbing.

173. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions and practice.

- c. Carry out safety precautions.
- d. Pack kit.



Figure 2-18A Improvised Support Position – Low

- e. **Summary.** Include the following:
 - (1) the importance of breaking cover from a position different from that used when firing; and
 - (2) a preview of the next lesson in this subject.



Figure 2-18B Improvised Support Position - Medium



Figure 2-18C Improvised Support Position - High

LESSON 9 - PREPARATION FOR FIRING, CARE, AND CLEANING AFTER FIRING

INSTRUCTOR'S NOTES

174. **Aim.** To teach how to prepare the gun to fire and how to clean and care for it after firing.

175. **Timing.** One 40-minute period.

176. **Method.** A basic instructional period conducted in conjunction with Range Practice 1.

177. Stores

- | | | |
|----|--------------------|----------------------|
| a. | GPMG | 1 per three soldiers |
| b. | Spare parts kit | 1 per gun |
| c. | Cleaning materials | as required |

178. **Preparation.** During the review strip the gun as for regular cleaning, clean it, and leave the parts dry.

179. **Miscellaneous.** This lesson should be conducted at the range as part of Range Practice 1. Cleaning after firing should be taught and practiced after the actual shoot.

CONDUCT OF THE LESSON

180. **Safety Precautions.** Normal.

181. **Review.** Care and cleaning.

182. **Introduction.** Explain that in order to produce effective, accurate fire the gunner must be able to prepare the gun to fire properly. To keep the gun firing requires constant care.

183. **Cleaning.** Explain that the gun should be cleaned regularly to assure its continued operation. Special attention should be given to the chamber and gas affected parts. If circumstances permit, the breech block and piston should be removed, all fouling wiped off, and CLP applied. During sustained firing, particularly when using blank ammunition, it is imperative that the extractor assembly is stripped and cleaned periodically. If this is not possible, open the feed cover and squirt a few drops of CLP on the locking levers, guide ribs, and primary extraction face.

184. **Preparing the Gun for Firing.** With the gun cleaned and the parts dry, explain and demonstrate:

- Open the dust cover, clean and lubricate the guide ribs, and then close the dust cover.

- b. As the gun is assembled, lubricate the bearing surfaces of the breech block and piston extension, locking lever and locking shoulder, feed arm and feed channel, the return spring and the trigger and mechanism. (Ensure that the safety catch is at "F" before assembly of the breech block and piston in the gun.)
- c. Set the gas regulator at its correct setting (if this is not known then set on number 1) and check that there is no obstruction in the barrel and that it locks firmly into position.
- d. Check the sights for tightness.
- e. When the gun is assembled, squeeze the trigger and move the working parts backwards and forwards a few times.
- f. Check and repack the spare parts kit.

185. **Confirm by Practice.**

186. **Cleaning After Firing.** Prior to teaching this part of the lesson, it is recommended that the class fire the Introductory Shoot - 25 m (Bipod) (Chapter 7, Annex A, Appendix 1). The gun is easier to clean if CLP is applied immediately after firing, while it is still warm, and the gun is allowed to stand for approximately 30 minutes. Cleaning is carried out as follows:

- a. **Barrel**
 - (1) Attach the bore cleaning brush to the cleaning rod, lubricate the brush, and clean out the barrel, working from both the chamber and the muzzle ends of the barrel in turn.
 - (2) Dry the bore using the pull through and a piece of flannelette (100 mm by 50 mm).
 - (3) Inspect the bore and repeat if necessary.
 - (4) Lightly lubricate the bore using the pull through and a piece of flannelette (100 mm by 38 mm).
- b. **Gas Regulator**
 - (1) If after sustained firing the gas regulator and gas plug cannot be removed, use the brass maul on the general purpose wrench as a hammer to knock the plug free. Should it prove impossible to release the gas plug from its sleeve, you can apply the stud on the gas regulator wrench on the plug and continue to knock it all the way through.

- (2) Remove all fouling using the correct size reamer.
 - (a) There are three sizes of gas ports and escape holes. These are cleaned by using the gas port reamers, which are numbered 1 to 3:
 - i. No. 1 is used to clean out the holes in the cylinder.
 - ii. No. 2 is used for the holes in the gas regulator and gas block.
 - iii. No. 3 is for the large hole in the gas block.
- (3) The gas plug will be particularly fouled and will require a thorough cleaning (see Figure 2-19).
- (4) The gas regulator cleaner is used to clean out the rear of the gas regulator sleeve, and is also used as a scraper to clean the cannellure of the regulator sleeve. Clean the inner surface (see Figure 2-20).
- (5) The gas regulator will not be stripped further than as taught for regular cleaning.

c. **Piston Group**

- (1) insert the head of the piston and cylinder cleaning tool into the head of the piston, apply pressure to the handles, and rotate the tool. Remove and inspect. Repeat as necessary until all fouling has been removed (see Figure 2-21).
- (2) Clean the rest of the piston thoroughly. Particular attention must be paid to the face of the breech block.

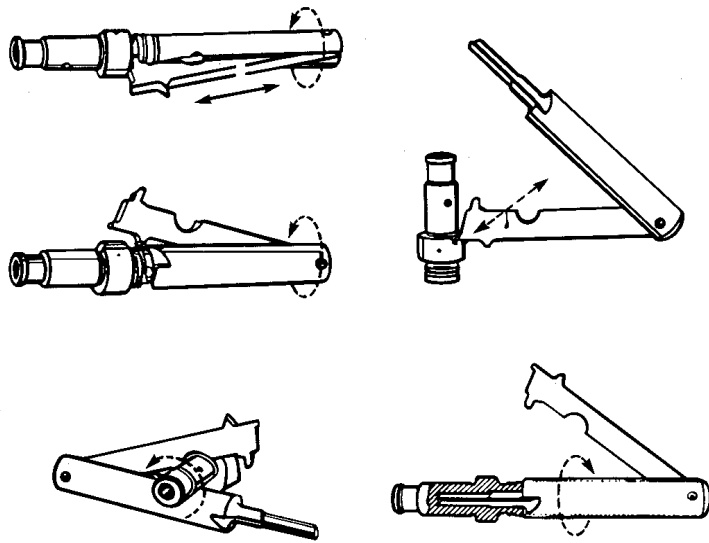


Figure 2-19 Cleaning the Gas Regulator Plug

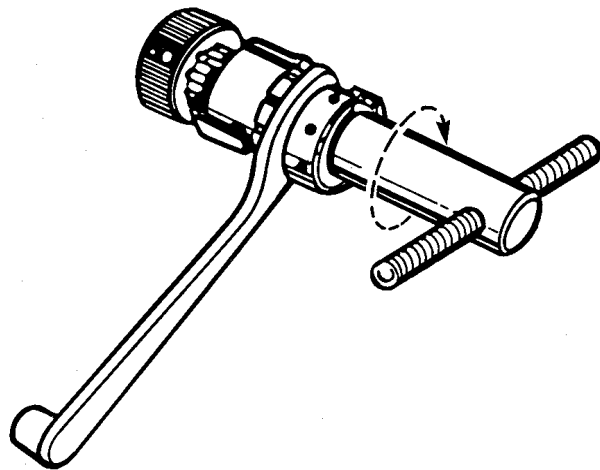


Figure 2-20 Cleaning Inside the Gas Regulator Sleeve

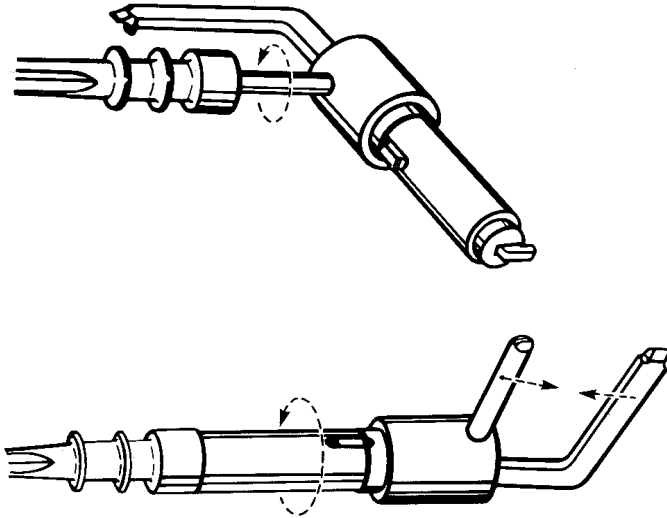


Figure 2-21 Cleaning the Piston Head

d. **Body Group**

- (1) Clean the cannellure and gas escape holes at the front of the cylinder with the cleaning tools provided.
- (2) To clean the front of the cylinder insert the piston and cylinder cleaning tool into the cylinder. Apply pressure to the handles and rotate the tool (see Figure 2-22). Repeat as necessary, until all fouling has been removed.
- (3) Clean the gas cylinder with the lubricated brush fitted to the cleaning rod. Dry out with a piece of flannelette wrapped around the brush.

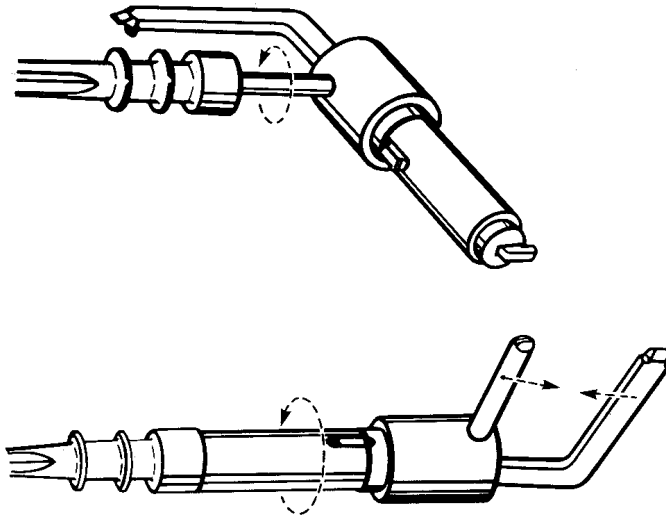


Figure 2-22 Cleaning the Cylinder

- (4) Clean the rest of the body, especially the guide grooves and feed mechanism. Strip the extractor assembly, apply CLP and clean the assembly thoroughly. Remove all carbon from the extractor assembly and assembly housing. Open the dust cover and clean the guide ribs. Close the dust cover. Lubricate the parts and assemble the gun. Clean and check the contents of the spare parts wallet.

187. **Confirm by Practice.**

188. **Care After Firing.** Under normal conditions the bore chamber, piston and other gas affected parts must be thoroughly cleaned, inspected, and lubricated daily for several days after the gun has been fired.

189. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Carry out safety precautions.
- c. Pack kit.
- d. **Summary.** Include the following:

- (1) the importance of proper care and cleaning; and
- (2) a preview of the next lesson in this subject.

LESSON 10 - CLOSE QUARTER BATTLE AND ANTI-AIRCRAFT HANDLING

INSTRUCTOR'S NOTES

190. **Aim.** To teach the soldier how to fire the gun in close quarters and at aircraft.

191. **Timing.** One 40-minute period.

192. **Method.** A basic instructional outdoor period.

193. Stores

- | | | |
|----|---------------------------|----------------------------|
| a. | GPMG (fitted with slings) | 1 per three soldiers |
| b. | Spare parts kit | 1 per gun |
| c. | Dummy rounds, belted | 2 x 15 round belts per gun |
| d. | Figure 12 targets | 3 |

194. Preparation

- a. Reconnoitre the dry training area and note locations for close quarter battle (COB) targets.
- b. Targets should be set out at ranges of up to 50 metres.

195. Miscellaneous

- a. During confirmation by practice of CQB, use soldiers as live targets, having them suddenly appear from different directions and then disappear.
- b. Practice anti-aircraft (AA) drill for a two man team.
- c. As soon as possible after instruction, soldiers should fire on field firing ranges suitable for CQB and AA drills.
- d. Extra barrels are necessary for AA live firing.

CONDUCT OF THE LESSON

196. **Safety Precautions.** Normal.

197. **Review.** Nil.

198. **Introduction.** There are many occasions (eg, in an assault, in built-up areas, in forests and in close country) where the GPMG can be used as a close quarter weapon. It can also be used effectively in an anti-aircraft role either by destroying the aircraft or by forcing it to climb higher, thus allowing other air defence systems to engage and destroy it.

199. **Close Quarter Battle (CQB).** Explain and demonstrate, and have the class imitate you:

a. **The Position**

- (1) Loosen the sling, load, cock the gun, and put the safety catch at SAFE. Lift the gun and loop the sling over either shoulder. Fold and lock the bipod legs underneath the gun. When moving keep the gun cocked and the safety catch at FIRE. To ensure safety, eg, when crossing obstacles, put the catch at SAFE, returning it to FIRE when clear (see Figure 2-23).
- (2) When deciding over which shoulder to place the sling, remember that with the sling over the left shoulder it takes longer to bring the gun into action in its bipod role.

b. **Firing in COB**

- (1) During the advance, hold the gun with the right hand on the pistol grip, forefinger clear of the trigger. The left hand should hold the folded bipod legs in such a manner that the fingers are clear of the barrel and gas cylinder.
- (2) When a target appears, advance the left leg in the direction of the target (body leaning forward in the ON GUARD position) press the gun into the right side, and hold it firmly (see Figure 2-24).
- (3) Fire in bursts by sense of direction and correct by observing the strike. The length of burst used depends upon the target and the range, but should never be less than three rounds.
- (4) Although it is possible with training to fire while advancing, far better results are obtained by pausing momentarily to fire each burst. Firing from the waist requires good holding and a grim determination to hit the targets rapidly and accurately.



Figure 2-23 The CQB Position



Figure 2-24 On Guard Position - Standing

- (5) Should the gun stop, go to cover quickly. Immediate action can be carried out kneeling on the right knee with the gun resting on the left thigh. The muzzle must be kept pointing in the direction of the enemy. Other stoppages may require the gun to be placed on the ground.
- (6) The gunner must remember that before the belt is fully expended he should get to cover and load a new one. It is the duty of the No. 2 to see that the gun does not run out of ammunition. The length of belt will vary according to the terrain and the build of the gunner, but it should not be less than 40 rounds.

200. **Confirm by Practice.**

201. **Anti-Aircraft Drill.** Explain and demonstrate, with the class imitating you:

a. **The Position**

- (1) Loosen the sling and place it over the right shoulder. Hold the gun with the bipod legs folded and kneel on the right knee, which should be pushed well out to the right. Rest the butt on the thigh (see Figure 2-25).
- (2) The standing position may be used; this is similar to the CQB position but with the head kept well back (see Figure 2-26).

b. **Firing at Aircraft**

- (1) On the alert, cock the gun and adopt the AA position making sure that the safety catch is at FIRE.
- (2) Point the gun ahead of the target so that the target flies into the bullets.



Figure 2-25 Anti-Aircraft position
- Kneeling



Figure 2-26 Anti-Aircraft Position
- Standing

- (3) When it is necessary to turn about, turn to the right when possible since the No. 2 will be on your left.
- (4) Whenever possible, a 50-round belt should be fired off in one continuous controlled burst. Make corrections by watching the tracer or from instructions given by the gun controller.
- (5) If the tracer passes behind a crossing aircraft, make a bold swing forward to correct it.
- (6) If a stoppage occurs, rest the gun across the left knee and carry out the Immediate Action.
- (7) When firing from a trench, lean against the back of it for support.

202. **Confirm by Practice.**

203. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions and practice.
- c. Carry out safety precautions.
- d. Pack kit.
- e. **Summary.** Include the following:
 - (1) the importance of speed and accuracy in firing; and
 - (2) a preview of the next lesson in this subject.

LESSON 11 - THE MECHANISM

INSTRUCTOR'S NOTES

204. **Aim.** To teach the mechanism of the GPMG.
205. **Timing.** Two 40-minute periods.
206. **Method.** A basic instructional period.
207. **Stores**
- | | | |
|----|----------------------|---------------------------------------|
| a. | GPMG | 1 per three soldiers |
| b. | Dummy rounds, belted | 1 six-round belt 1 four-round belt |
| c. | Table | 1 per gun |
208. **Preparation**
- Lay out a gun with the barrel, piston, breech block, butt, and trigger group separated (see Figure 2-27).
 - Load one gun after safety precautions have been completed.
 - Ensure that the safety catch of the stripped gun is set at SAFE.



Figure 2-27 Layout for Teaching Mechanism

209. **Miscellaneous**

- a. When applicable, show the action on the loaded gun, followed by detailed explanation on the stripped gun.
- b. Teaching questions are to be used where possible. Have the class use the stripped gun to demonstrate their answers.

CONDUCT OF THE LESSON

210. **Safety Precautions.** Normal.

211. **Review.** Basic mechanism using the loaded gun. Leave the gun made safe.

212. **Introduction.** Explain that a thorough knowledge of the mechanism of the GPMG is essential to those who are responsible for operating the gun.

213. **Parts of the Gun.** Explain, using the stripped gun, that the following parts are important in this lesson:

a. **Piston Extension**

- (1) Recess on the side.
- (2) The bent.
- (3) Projection on the underside.

b. **Breech Block and Locking Lever**

- (1) Feed horns.
- (2) Ejector.
- (3) Locking lever link.
- (4) Actuating Stud.

c. **Receiver**

- (1) The locking shoulder and locking cams.
- (2) The recess between the locking shoulder and the locking cams.
- (3) Stud on the inside of the cocking handle slide.

(4) Projection of the ejection opening cover.

(5) Bullet guide.

d. **Trigger**

(1) The sear.

(2) The tripping lever.

e. **Top Cover** (see Figure 2-28).

(1) The inner and outer feed pawls.

(2) Feed arm and feed channel.

(3) Cartridge guide.

214. **Confirm by Practice.**

215. **Forward Position of the Working Parts** (see Figure 2-29). Explain, using the stripped gun:

- a. When the working parts are fully forward, the locking lever is down in the recess between the locking shoulder and the locking cams. Therefore, the breech block cannot move directly to the rear and so the breech is locked.

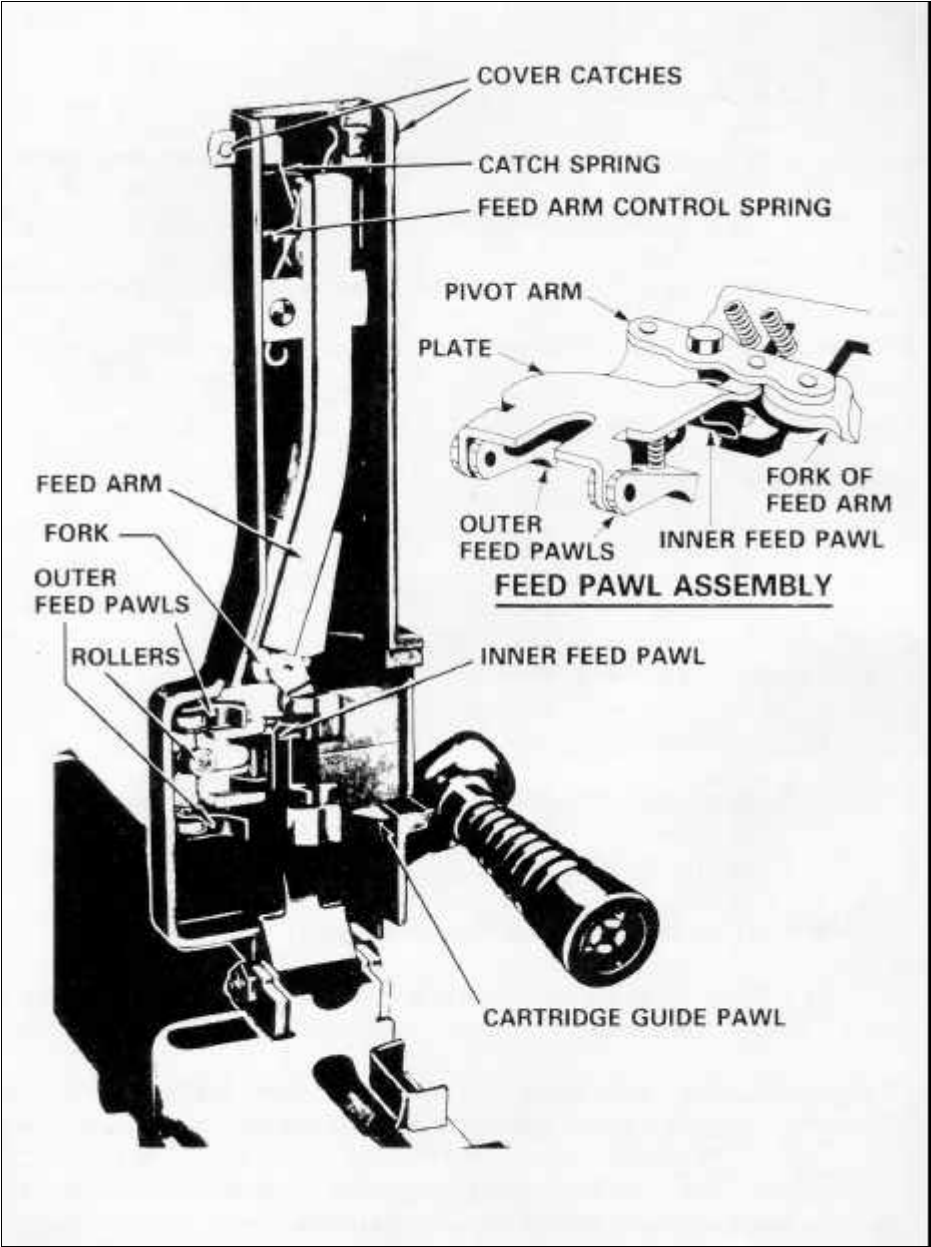


Figure 2-28 The Top Cover

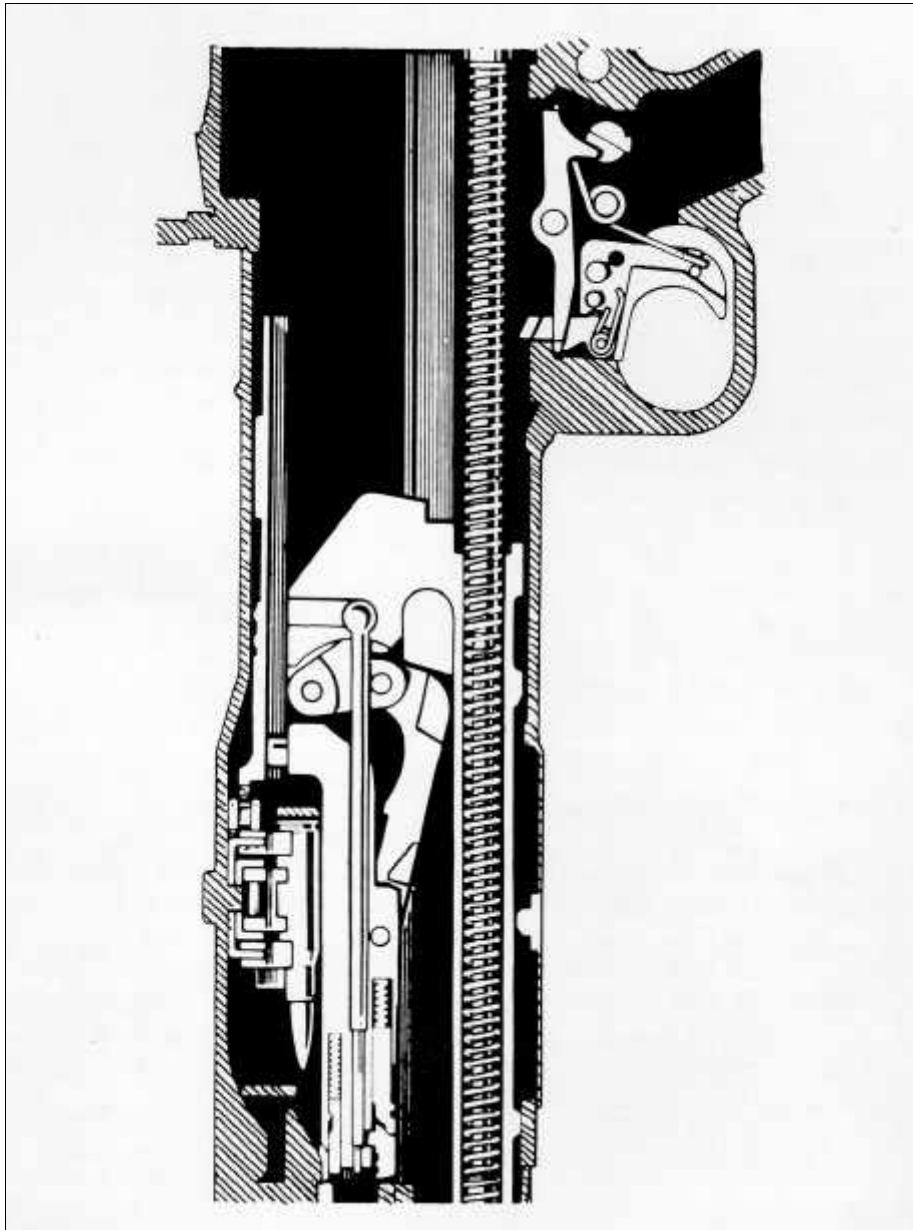


Figure 2-29 Forward Position of the Working Parts

- b. The firing pin protrudes from the face of the breech block.

216. **Confirm by Questions.**

217. **Rearward Action on Cocking** (see Figure 2-30). Demonstrate cocking using the loaded gun and explain the action in detail using the stripped gun:

- a. On cocking the gun, the piston and breech block are pulled to the rear by a stud on the inside of the cocking handle slide engaging in a recess on the piston extension. The projection on the ejection opening cover is depressed by the piston extension and the ejection opening cover is opened under pressure of its spring. When the working parts are fully to the rear, the sear rises and engages in the bent.
- b. The cocking handle must always be pushed fully forward after cocking the gun. If the gun is partially cocked, a dangerous situation may occur in which the breech block may be held back by the base of a round, and a sudden jolt may release it and fire a round.

218. **Confirm by Questions.**

219. **Effect on the Locking Lever on Cocking the Gun** (see Figure 2-30). Explain using the stripped gun. On cocking the gun, as soon as the piston begins to move, the firing pin is withdrawn into the breech block. The breech remains locked during the primary movement (about 17 mm 5/8 inch). Continued movement of the piston causes the locking lever link to rotate forward and up on its axis lifting the locking lever out of The breech block is jerked slightly engagement with the locking cams backwards. The breech is now fully unlocked.

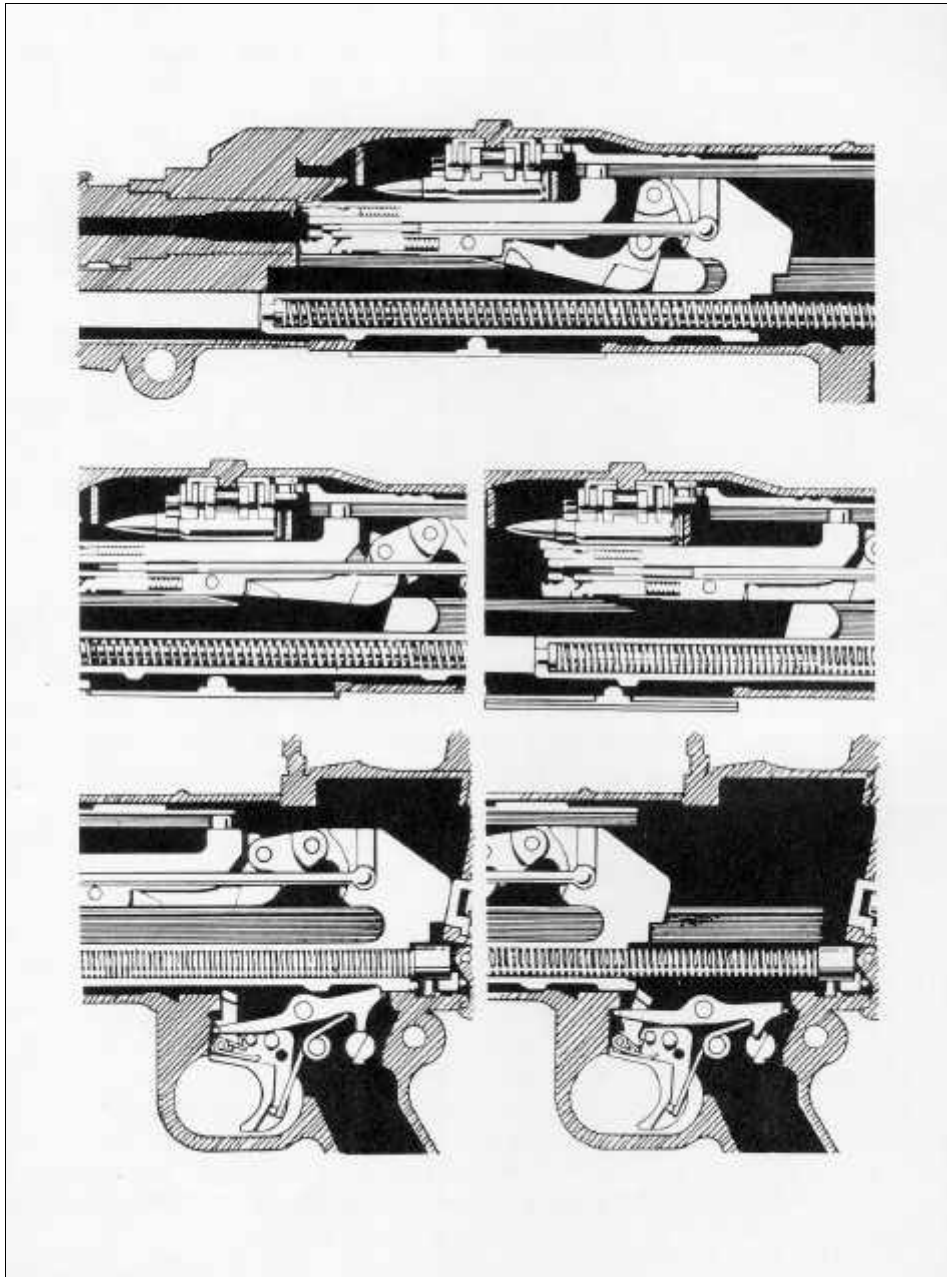


Figure 2-30 Rearward Action on Cocking and Effect on the Locking Lever

220. **Confirm by Questions.**

221. Forward Action on Operating the Trigger (see Figure 2-31). Explain and demonstrate by operating the trigger on the loaded gun and by using the stripped gun and a belt of four rounds on the feed tray.

- a. The first round is positioned in line with the chamber and is held in position by the bullet stop and cartridge guide.
- b. On squeezing the trigger, the nose of the sear is depressed thus freeing the extension. The main spring pushes the working parts forward. The feed horns strike the base of the round and assisted by the bullet guide, feed it into the chamber.

222. **Confirm by Questions.**

223. **Effect on the locking Lever on Operating the Trigger** (see Figure 2-32). Explain, using the stripped gun:

- a. As the working parts come forward and the round is fed into the chamber, the locking lever is forced down by the locking cams, thus slowing down the forward movement of the breech block. The piston extension, still moving forward, causes the locking lever link to rotate downward and back, thus forcing the arms down to their fullest extent in front of the locking shoulder. The extractor rises over the base of the round and the ejector is compressed. The round is now fully home with the breech locked.
- b. The final forward movement of the piston extension drives the firing pin through the breech block onto the cartridge cap and fires the round. The working parts are now fully forward.

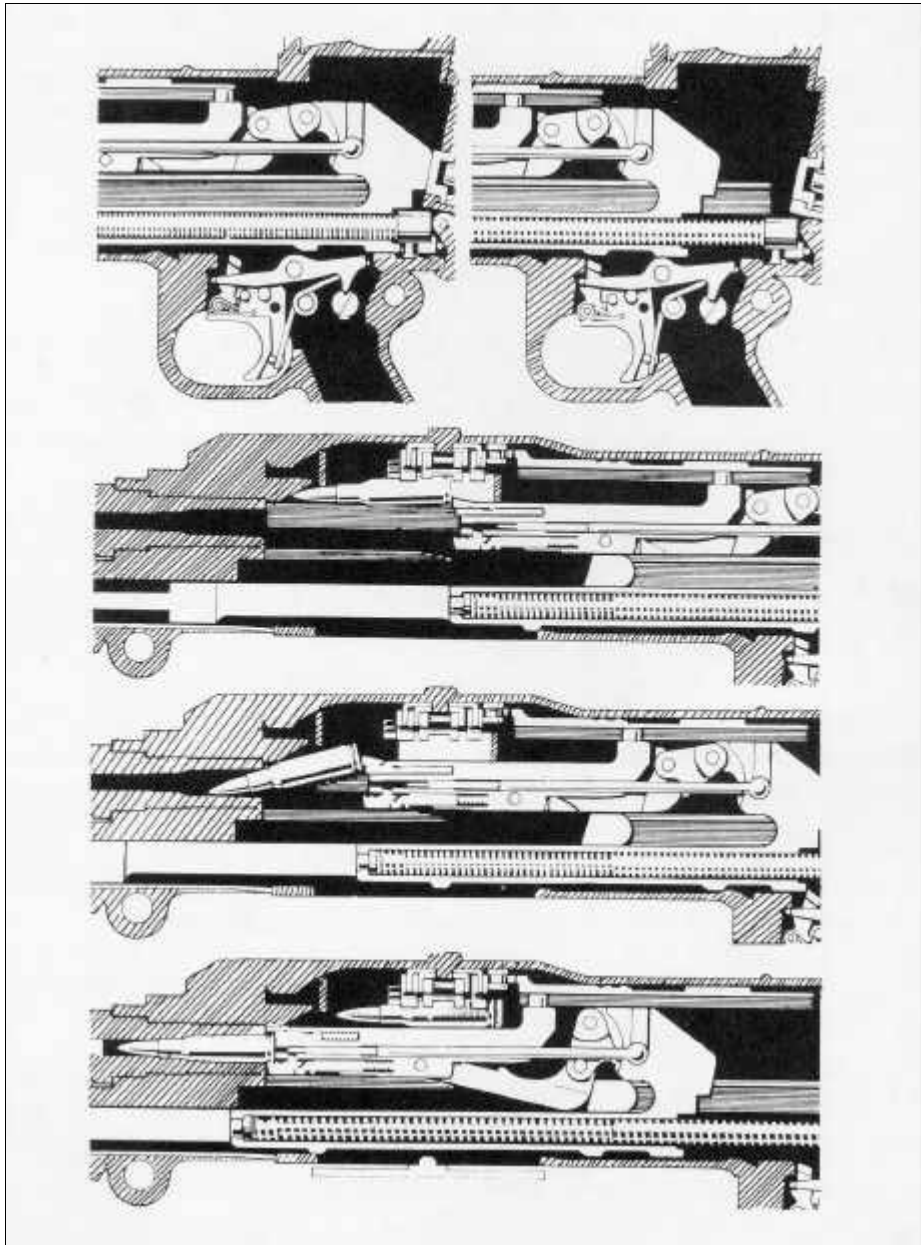


Figure 2-31 Forward Action on Operating the Trigger

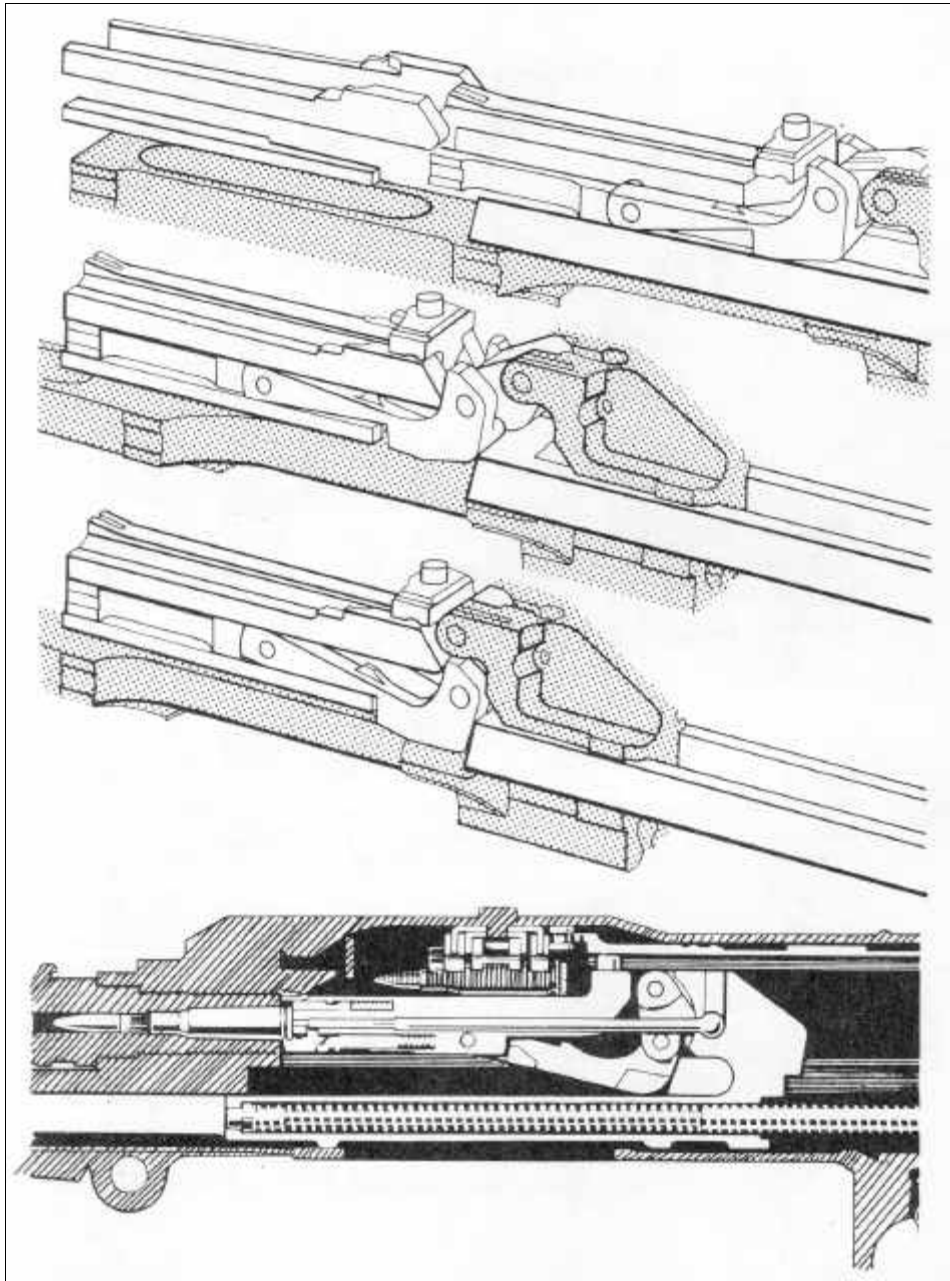


Figure 2-32 Effect on the Locking Lever on Operating the Trigger

224. **Confirm by Questions.**

225. **Rearward Action, Extraction/Ejection and Subsequent Shots** (see Figure 2-33). Cock the loaded gun. Explain, using the stripped gun:

- a. When the round is fired, some of the gases pass through the gas vent into the gas cylinder, strike the head of the piston and drive it to the rear, (see Figure 2-34).
- b. During the primary movement of the piston, when the breech is still locked, the bullet travels the distance from the gas vent to the muzzle.
- c. The breech block being jerked back slightly is enough to effect primary extraction of the empty case.
- d. When the breech is fully unlocked and the breech block starts its rearward movement, the extractor withdraws the empty case from the chamber. The ejector forces it from the face of the breech block out through the ejection slot.
- e. The working parts continue to the rear and the return spring is compressed.
- f. Provided that the trigger is kept squeezed, there are rounds in the belt and sufficient gas made available by the gas regulator adjustment to cause the working parts to rebound off the buffer, the action of feeding and firing will continue.
- g. On releasing the trigger, the sear remains down but the tripping lever rises. As the working parts come to the rear, the end of the piston hits the tripping lever which, in turn, allows the sear to rise and engage in the bent, thus holding the working parts to the rear.

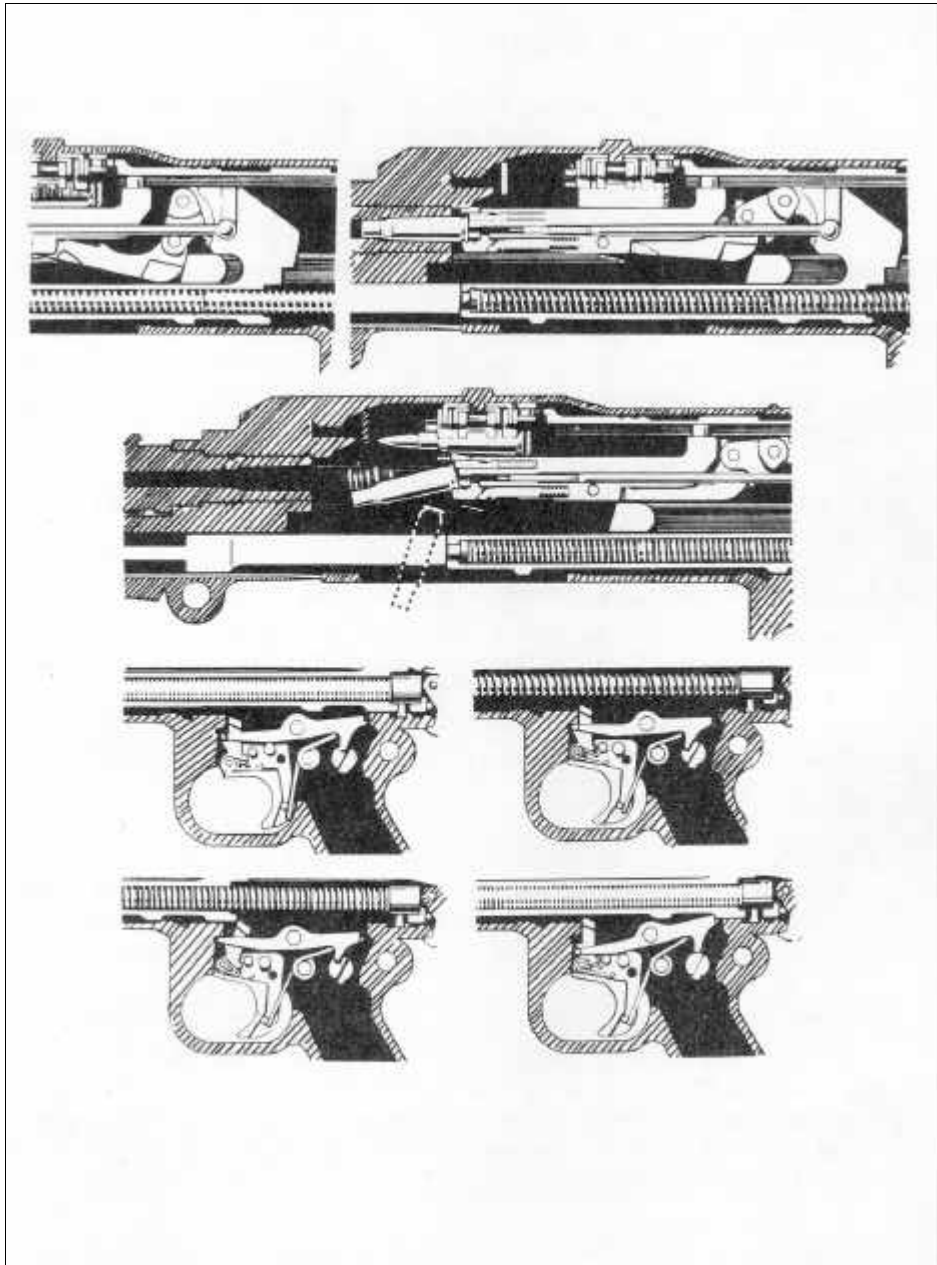


Figure 2-33 Rearward Action/Extraction Ejection and Subsequent Shots

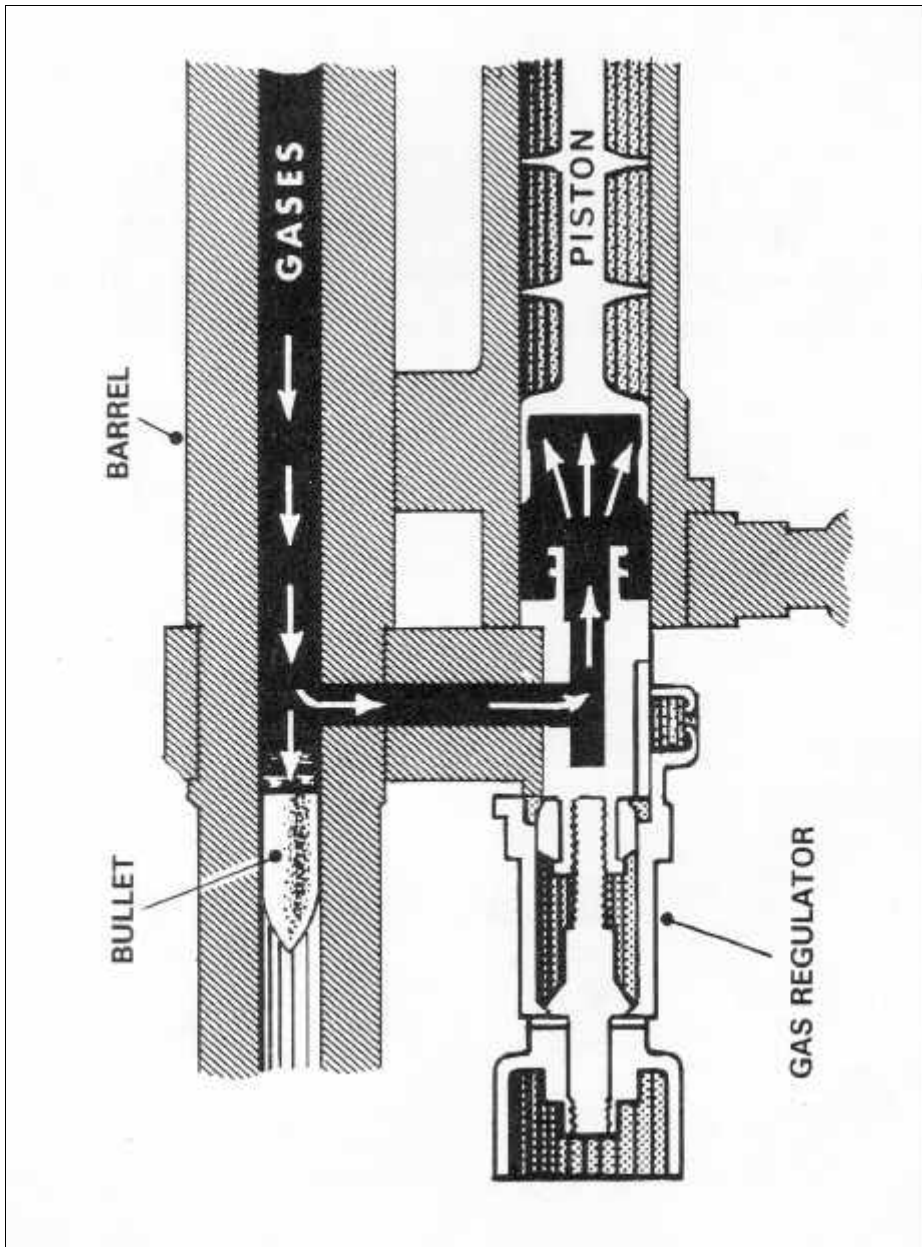


Figure 2-34 The Path of the Gas

226. **Confirm by Questions.**

227. **Feeding the Rounds** (see Figure 2-35). Using the stripped gun, with the top cover raised, and a four-round belt to show the position of the rounds in relation to the feed pawls, explain:

- a. The actuating stud moves up and down the feed channel which in turn moves the feed pawls.
- b. The forward movement forces the outer pawls to the right, half feeding the round. The inner pawl rides over the round and settles behind it.
- c. The rearward movement forces the inner pawl to the right, fully feeding the round. The outer pawls ride over the next round and settle behind it.
- d. The action of fully feeding a round pushes the link of a fired round out of the side of the gun. The last link in a belt cannot be pushed out and is cleaned during the unloading (see Figure 2-11).

228. **Confirm by Questions.**

229. **Safety Aspects.** Explain and demonstrate using the stripped gun:

- a. When the working parts are withdrawn far enough for the breech block to engage behind the round in the feed tray, but not far enough to cock fully on the rear nose of the sear, the front nose of the sear is in a position to engage the piston bent. This minimizes the likelihood of a round being accidentally fed and fired.

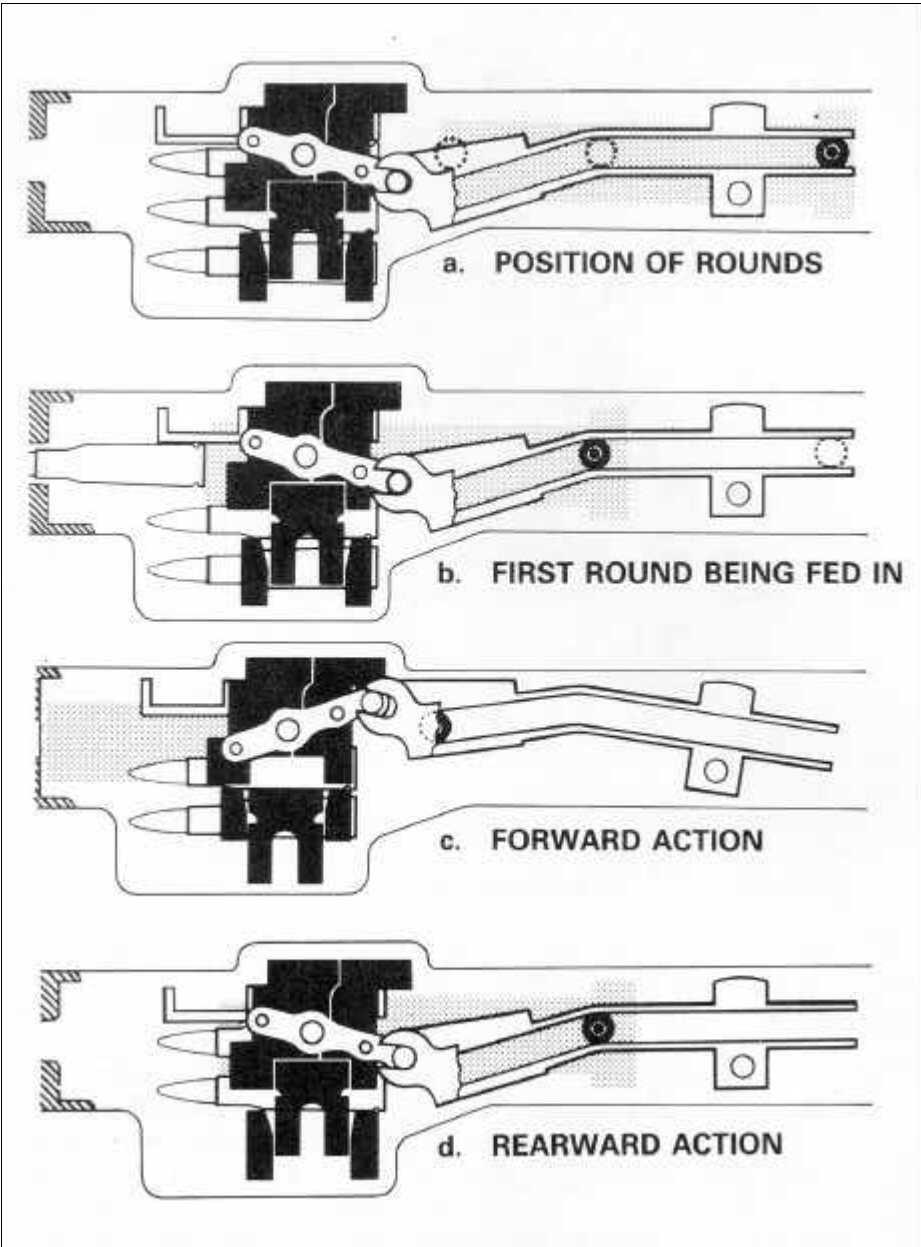


Figure 2-35 Feeding the Rounds

- b. The safety catch is recessed to take a lug positioned on the underside of the sear.
 - (1) When the safety catch is put at "F" (Fire) this recess is directly under the sear lug and allows the sear to be operated. When the safety catch is put at "S" (Safe) the recess is not in line with the lug, thus preventing operation of the sear.
 - (2) When the sear is in the lowered position the safety catch cannot be moved because the lug of the sear is in the recess of the safety catch.
 - (3) If the gun is assembled with the sear in the raised position and the safety catch is at "S", the gun cannot be cocked because the sear is locked in the up position.
 - (4) Under no circumstances is the safety catch to be removed while the cocking action is taking place. If the safety catch is moved a dangerous stoppage may occur.

230. **Confirm by Questions.**

231. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions and practice.
- c. Carry out safety precautions.
- d. Pack kit.
- e. **Summary.** Include the following:
 - (1) the importance of good maintenance;
 - (2) no unauthorized stripping of the mechanical parts; and
 - (3) a preview of the next lesson in this subject.

CHAPTER 3

PRACTICE PERIODS - LIGHT ROLE

PRACTICE 1 - LESSONS 2, 3, 4, 5 AND 9

INSTRUCTOR'S NOTES

1. **Aim.** To practise the soldier in:
 - a. safety, stripping, assembling, and cleaning;
 - b. loading and unloading; and
 - c. holding, aiming, and firing.
2. **Timing.** Two 40-minute periods.
3. **Method.** An indoor practice period.
4. **Stores**
 - a. GPMG 1 per three soldiers
 - b. Spare parts kit, complete 1 per gun
 - c. Dummy rounds 10 per soldier, plus 1 per gun
 - d. Links 10 per gun
 - e. Cleaning materials as required
 - f. Stop-watch or watch 1
 - g. Chalkboard 1
 - h. Scoresheet 1
 - j. Chalk (various colours) as required
 - k. Landscape target 1
5. **Preparation**
 - a. Prepare a scoresheet containing training tests as per Chapter 8, Annex A, for safety, stripping and assembling, and loading and unloading.
 - b. Check that the stop-watch is fully wound and works.
 - c. Prepare arcs of fire and select reference points.

- d. Lay out guns and spare parts kits.
- e. Where possible use one identical landscape target per gun, positioned centrally in front of the gun position.
- f. Prepare a chalkboard for the final practice competition (see Figure 3-1).

| Name | Safety | Stripping/ Assembling | Loading Timing | Unloading Timing | Total |
|-------------|---------------|----------------------------------|---------------------------|-----------------------------|--------------|
| | | | | | |

Figure 3-1 Scoresheet for Practice 1

6. **Miscellaneous**

- a. The following sequence is to be used to practise the soldier in each stage:
 - (1) Remind him of the more common errors related to the stage being practiced.
 - (2) Identify weaknesses during practice.
 - (3) Work on the weaknesses by further practice.
- b. The final practice is to combine all stages of the period and is to include:
 - (1) Training Test standards, where applicable.
 - (2) Practise to those standards.
 - (3) Scores and standards achieved.
- c. To score for teams, give one point to the soldier coming last in a test, two points to the second last, three points to the third last, and so on.
- d. Re-teach only when absolutely necessary.
- e. Prior to normal safety precautions, number the class in groups of three and allocate one group per gun. Indicate arcs of fire and select reference points.
- f. After normal safety precautions, lay out one dummy round by each gun and 10 dummy rounds and links by each soldier.

CONDUCT OF THE LESSON

7. **Safety Precautions.** Normal.
8. **Introduction.** In battle the soldier's own life and the lives of his comrades may depend a great deal on his instinctive ability to carry out basic skills, eg, safe handling, loading, unloading and making safe. This ability is acquired only after a great deal of practice.
9. **Description of the Gun.** Question the squad on the characteristics and description of the gun.
10. **Safety Precautions**
 - a. Explain that in the training tests, the soldier is tested on his ability to carry out safety precautions correctly.
 - b. Practise the squad in normal safety precautions.
11. **Stripping, Cleaning, and Assembling**
 - a. **Explain.** In the training tests, the soldier is to strip the gun as for regular cleaning and then assemble it. There is no time limit and the soldier fails if he makes more than three mistakes.
 - b. Practise the class in stripping and assembling different parts. When they can strip each part faultlessly, practise them in complete stripping and assembling.
12. **Cleaning**
 - a. Question the class on the contents of the spare parts kit and on cleaning under normal and adverse conditions and after firing.
 - b. For final practise, remove three objects from each spare part kit, return the kits to the groups, and ask them what is missing.
13. **Loading, Sight-setting, Making Safe, Unloading**
 - a. **Explain.** In the training test the soldier is tested on his ability to load the gun correctly. A soldier is skilled if he loads in 8 seconds or less.
 - b. Order the groups to make a belt from the dummy rounds and links previously laid out, and to lay them by the guns.
 - c. Practise the squad in LOAD-300-MAKE SAFE-UNLOAD, first as individuals then as a two-man teams. Finally, include CLEAR GUN.

14. **Holding and Aiming.** Practise the soldiers in adjusting to the target by giving a fire control order without the order to fire.

15. **Firing**

- a. **Explain.** In the training test, the soldier is tested on his ability to unload. During firing, he is given the order to STOP, UNLOAD. A soldier is skilled if he unloads in 8 seconds or less.
- b. Use complete fire control orders. Check the LIMBER UP before each burst.
- c. Introduce STOP - GO ON.
- d. Introduce STOP - UNLOAD.
- e. Practise first as individuals, then as gun crews.

16. **Length of Bursts, Rates of Fire, and Moving Targets.** Question the class on:

- a. length of burst related to types of targets;
- b. rates of fire related to order received; and
- c. rule of engagement for moving targets.

17. **Final Practice.** A suggested method of conducting the final practice is by competitions, for individuals and teams of three.

- a. Practise each soldier in turn in safety precautions, stripping and assembling and loading and unloading after firing. Soldiers are to fault-check opposing team members.
- b. Record individual soldier and team scores on the chalkboard.

18. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Carry out safety precautions.
- c. Pack kit.
- d. **Summary.** Include the following:
 - (1) the overall standard achieved and any weak points; and
 - (2) a preview of the next lesson in this subject.

PRACTICE 2 - LESSONS 6 AND 7

INSTRUCTOR'S NOTES

19. **Aim.** To practise immediate action, gas stoppage drill, and further actions required when the gun stops or fails to fire.

20. **Timing.** One 40-minute period.

21. **Method.** An indoor practice period.

22. **Stores**

| | | |
|----|-------------------------|-------------------------|
| a. | GPMG | 1 per three soldiers |
| b. | Spare parts kit | 1 per gun |
| c. | Dummy rounds | 15 rounds per gun |
| d. | Landscape targets | 1 (Minimum requirement) |
| e. | Stop-watch or watch | 1 |
| f. | Chalkboard | 1 |
| g. | Scoresheet | 1 |
| h. | Chalk (various colours) | As required |

23. **Preparation**

- a. Prepare a scoresheet containing Training Tests, as per Chapter 8, Annex A, for immediate action and gas stoppage drill.
- b. Prepare arcs of fire and select reference points.
- c. Lay out guns, spare parts kits, and drill belts.
- d. Where possible, use one Identical landscape target per gun, positioned centrally in front of the gun position.
- e. Prepare a chalkboard for the final practice competition (see Figure 3-2).

| Name | IA Timings | Gas Stoppage Timings | Total |
|------|------------|----------------------|-------|
| | | | |

Figure 3-2 Scoresheet for Practice 2

24. **Miscellaneous**

- a. The sequence of practice is as explained in Practice 1.
- b. To score in the final practice, give one point to the soldier coming last in a test, two points to the second last, three points to the third from last, etc.
- c. Re-teach only when absolutely essential.
- d. Number the class in groups of three and allocate one group per gun prior to normal safety precautions. Indicate arcs of fire and select reference points.
- e. Loosen gas regulators to cater for gas stoppage drills.

CONDUCT OF THE LESSON

25. **Safety Precautions.** Normal.

26. **Introduction.** The success of any action carried out by the dismounted infantry platoon is determined to a large degree by the continual fire support of its gun crew. To maintain this fire support it is essential that the gunner can cope with any stoppage of the gun with the minimum of delay. The ability to do this can only be achieved through a knowledge of the gun and a great deal of practice.

27. **How The Gun Works.** Question the class on the basic mechanism of the gun.

28. **Immediate Action**

- a. **Explain.** In the training tests, the soldier is tested on his ability to carry out Immediate Action correctly.
- b. Practise the class in Immediate Action by using commands and then by tapping with a drill round to simulate firing.
- c. Question the class as to the remedies effected by Immediate Action.

29. **Gun Cannot be Cocked on Attempting Immediate Action**

- a. **Explain.** During this practice the class is to assume that the gun will not cock.
 - b. Question the class as to the probable cause of the gun failing to cock.
 - c. Practise the class by using the commands and then by tapping with a drill round to simulate firing.
30. **Gas Stoppage**
- a. Practise the class in gas stoppage drill complete with Immediate Action.
 - b. Question the class concerning the action to be taken when a round is used as a tool to clear a stoppage.
 - c. Question the class concerning action to be taken if gas stoppage recurs and is not remedied by these drills.
31. **Obstruction in the Body; Empty Case in the Chamber**
- a. Practise the class in the action to remedy an obstruction in the body.
 - b. Question the class as to the cause of an empty case being in the chamber.
32. **Broken Parts, Obstruction in the Barrel and Separated Case**
- a. Take questions from the class on the action to be carried out when, on inspection, no obstruction is found.
 - b. Question the class on the action to be carried out on locating an obstruction in the barrel.
 - c. Practise the class on the action to be carried out to remove a separated case.
33. **Feed Pawl and Springs.** Practise the class in the actions to be carried out when the gun will not fire and cannot be fully cocked.
34. **Final Practice.** A suggested method of conducting the final practice is by competitions, both individual and in teams of three. Practise each soldier in Immediate Action and gas stoppage drill having soldiers check opposing teams for faults. Record individual and team scores on the chalkboard.
35. **Conclusion**
- a. Take questions from the class on the entire lesson.
 - b. Carry out safety precautions.
 - c. Pack kit.

d. **Summary.** Include the following:

- (1) the overall standard achieved and any weak points; and
- (2) a preview of the next lesson in this subject.

CHAPTER 4
SUSTAINED FIRE ROLE

LESSON 1 - INTRODUCTION AND EMPLOYMENT OF THE SUSTAINED FIRE KIT

INSTRUCTOR'S NOTES

1. **Aim.** To teach:
 - a. the contents of the Sustained Fire (SF) Kit;
 - b. how to mount and dismount the gun and tripod, and the safety precautions involved;
 - c. loading and laying the gun onto the target; and
 - d. the use of cover.
2. **Timing.** Three 40-minute periods.
3. **Method.** A basic instructional outdoor period.
4. **Stores**
 - a. GPMG 1 per two soldiers
 - b. Sustained Fire (SF) Kit 1 per gun
 - c. Ammunition boxes 1 per gun
 - d. Dummy rounds (belted) 20 per gun (minimum)
 - e. Target Information Sheet 1 per gun
 - f. Range table 1 per gun
 - g. Sandbags (half filled) 3 per gun
5. **Preparation**
 - a. Reconnoitre the training area to be used and select:
 - (1) a flat area for the initial instruction; and
 - (2) an area for mounting the gun and tripod behind cover.
 - b. Lay out the gun kits.
 - c. Carry out the following actions on the kits selected for demonstrations:
 - (1) check that the front mounting pin moves freely on the tripod;

- (2) check that the elevation lock lever functions; and
- (3) centralize the elevating gear on the traversing bar.

6. **Miscellaneous**

- a. The ideal class situation is to have two soldiers per gun. Instructors will have to adapt their method of practice if this number is increased.
- b. Divide the class into groups of two and allocate one group per gun before carrying out normal safety precautions.
- c. Do not introduce practice as a team before you do the practice described at paragraph 16.
- d. During practice, the commands to use are:

MOUNT TRIPODDISMOUNT TRIPOD

MOUNT GUNDISMOUNT GUN

MOUNT GUN AND TRIPODDISMOUNT GUN AND TRIPOD

- e. While practicing laying the gun, use only the direct method of target indication.
- f. Emphasize the importance of the ejection opening cover being closed (to prevent damage to the buffer tube) before attempting to MOUNT the gun.

CONDUCT OF THE LESSON

7. **Safety Precautions.** Normal. Indicate arcs of fire and reference points.

8. **Introduction.** Explain that the GPMG task in the sustained fire role is to provide protective fire in defence and supporting fire in attack, both day and night, under all weather and visibility conditions. To be effective, it is essential that the GPMG crew fully understands the use of the complete kit (see Figures 4-1 and 4-2).

9. **Sustained Fire Kit.** Explain that each gun crew has:

- a. one holdall containing:
 - (1) the tripod,
 - (2) tripod sight bracket,
 - (3) triangular tripod marker plate,

- (4) rear mounting pin, and
- (5) aiming lamp; and
- b. one holdall containing:
 - (1) C2 sight and case,
 - (2) two barrels,
 - (3) return spring,
 - (4) two aiming posts,
 - (5) three tripod marker pegs, and
 - (6) recoil buffer.

10. **Confirm by Questions.**

11. **Aiming Lamp.** Explain. The aiming lamp is made of bakelite with a glass lens at the front which concentrates the light from a Trilux element. Because it cannot be switched off and its light is visible for at least 200 m, care must be exercised in handling and siting it so that the security of the position is not prejudiced (see Figure 4-3).

12. The aiming lamp has a steel lens cover hinged to the front of the lamp. The slot cut in the lens cover must be in the vertical position when in use. The lamp is secured to the aiming post by an adjustable bracket.

13. **Confirm by Questions and Practice.**

14. **C2 Sight.** Explain that the C2 sight provides an auxiliary method of aiming at a target and will be taught in a later lesson. It fits into its box with the bracket uppermost (see Figure 4-4).



Figure 4-1 GPMG and Tripod

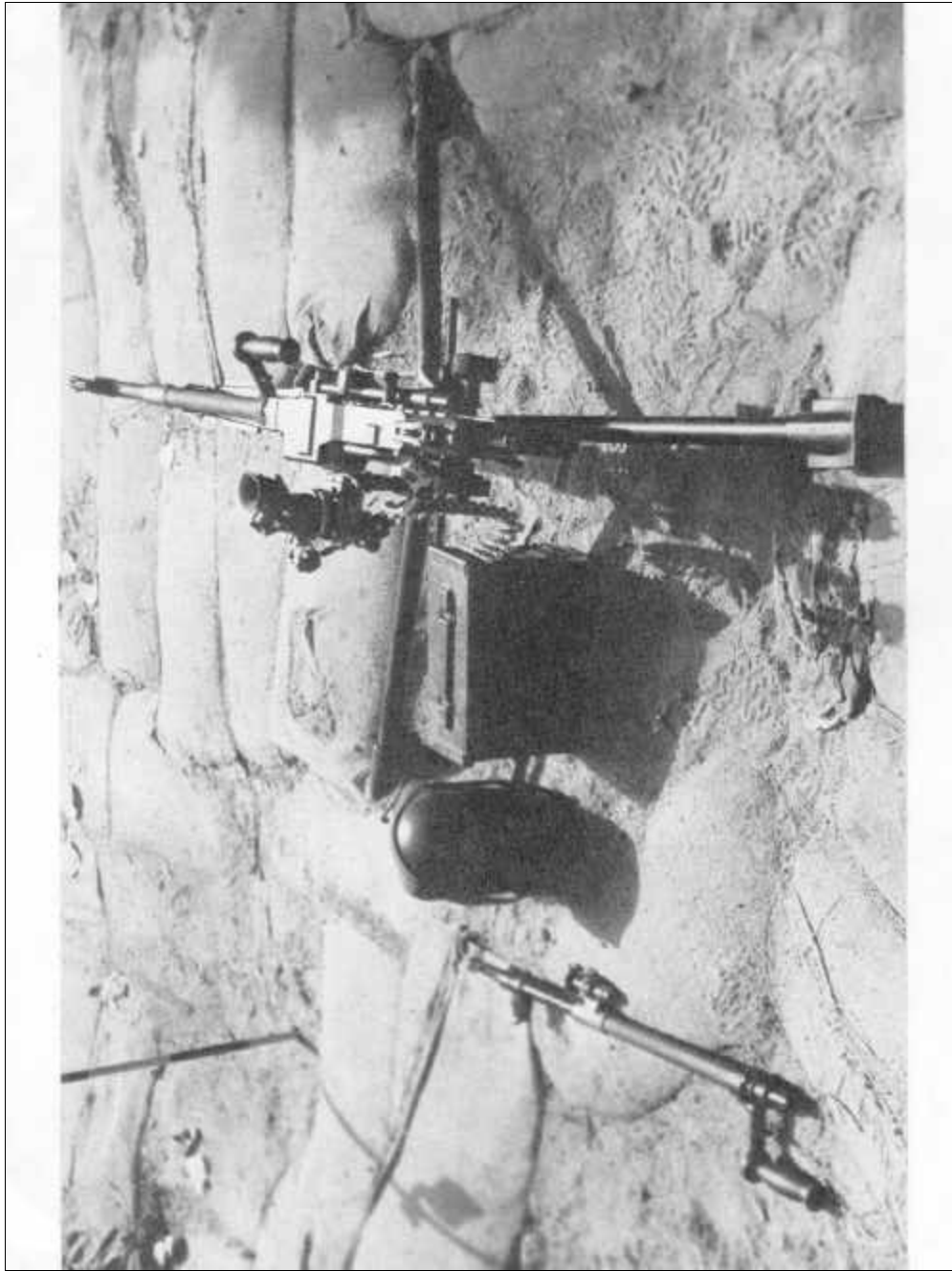


Figure 4-2 The Sustained Fire Role Kit

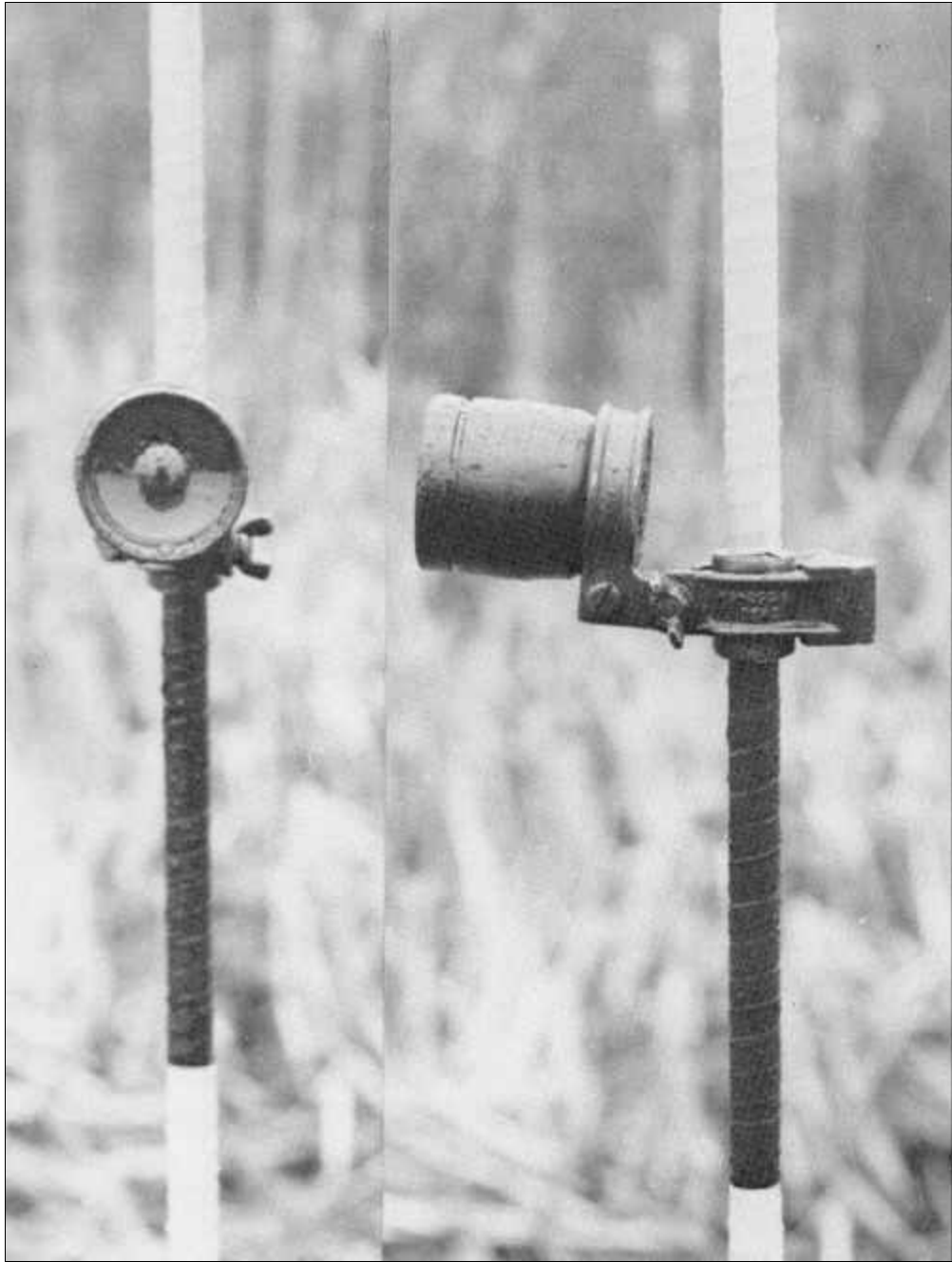


Figure 4-3 Aiming Lamp



Figure 4-4 C2 Sight Unit and Case

WARNING

RADIATION

The C2 Sight Unit and Aiming Lamp use Tritium as a light source to illuminate the scales, levels, compass, and reticle. The tritium is in a gaseous state, sealed in zinc coated glass containers. There is no hazard to the user unless the sealed containers are broken. Then there are two hazards.

- a. The hazard from the released gas is negligible unless it is inhaled. The gas disperses quickly. However, should a container break in a confined space such as a vehicle, the vehicle should be immediately evacuated by personnel and aired.
- b. The glass splinters pose a hazard and the following action should be taken when disposing of it:
 - (1) Gloves should be worn to prevent toxic chemicals from entering the blood system;
 - (2) The contaminated area should be wiped off with a damp cloth;
 - (3) The fragments and cloth should be placed in a suitable container like a plastic bag, empty metal can, or heavy waxed paper and disposed of as normal waste;
 - (4) Hands should be thoroughly washed with soap and water; and
 - (5) Any cuts or abrasions caused by the breakage, or received during the cleaning up, must be dealt with as follows:
 - (a) the injured area shall be exposed and washed with soap under running water to wash out any foreign matter, and
 - (b) the casualty must be sent as quickly as possible to the nearest medical officer, even if the injuries would normally be regarded as trivial.

15. **The Tripod** (see Figures 4-5 and 4-6). Explain and demonstrate:

- a. The tripod legs are held in position by clutch plates and secured by clamp levers. On the bracket at the pivot point of the legs is a direction dial, the markings of which are not used and should be ignored.
- b. A cradle is fitted to the bracket by a ball and socket joint. This is secured by the cradle locking lever which, when unlocked, allows for a 6400 mil traverse of the cradle. The cradle is buffered to absorb the recoil of the gun during firing. The gun is secured to the forward end of the cradle by a mounting pin. A rear mounting pin, when fitted into the gun, engages in a slot in the rear mounting

seating of the cradle. The cradle can elevate the gun to a maximum of 400 mils up and 200 mils down.

- c. A deflection drum, fitted to the right rear of the cradle, is used to obtain adjustment in direction. When the drum is pulled outwards, a clicking device is brought into operation; each click is equal to two mils. When the drum is pushed inwards, the clicking device is taken out of operation.
- d. Adjustments for elevation are obtained by rotating the elevation drum on the left rear of the cradle. The lock lever must be released before making adjustments and then locked again before use.
- e. On the left bar of the cradle is a dove-tailed slot to take the tripod sight bracket.
- f. Mounting lines on the tripod bracket and clutch plates enable the tripod to be set in either a high mount or a low mount position.

16. **Confirm by Questions.**

17. **Mounting and Dismounting the Tripod on Even Ground.** Explain and demonstrate. The gun team consists of a gun controller, a gunner, and a number two (no. 2). Each has individual responsibilities. The No. 2 is responsible for mounting and dismounting the tripod.

- a. **To Mount the Tripod** (see Figure 4-7):
 - (1) Withdraw the tripod from the holdall. With the tripod legs to the rear, straddle the tripod. Grasp the front bar of the cradle and lift the tripod so that the legs are vertical. Grip the cradle between the thighs and unlock both clamp levers. Lower the tripod to the ground. At the same time, swing both legs forward until they are in a low mount position (as indicated by the mounting line) and lock the levers. Ensure that the rear or long leg is also in the low mount position.



Figure 4-5 The Tripod Mount

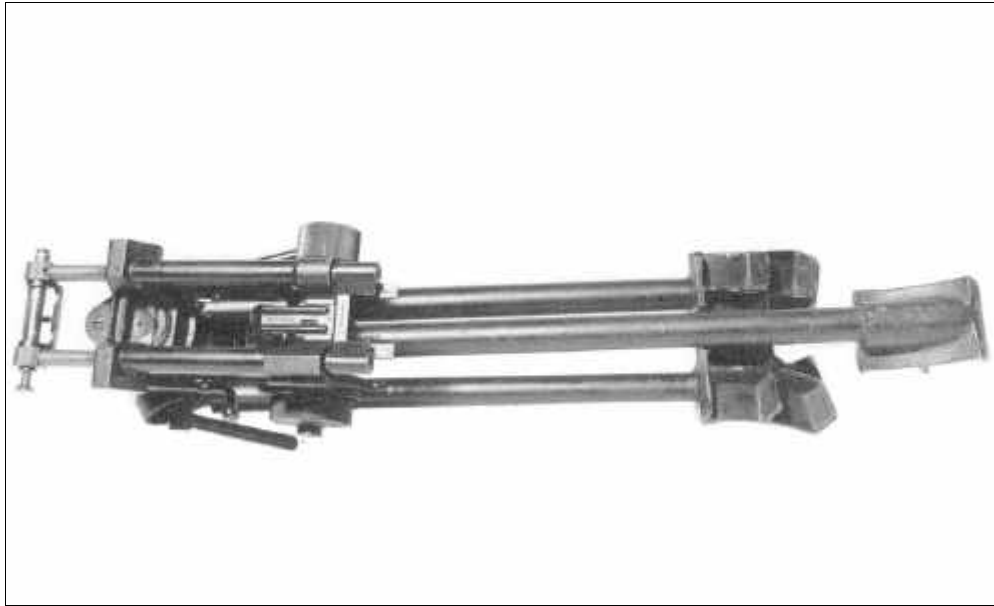


Figure 4-6 The Tripod (Folded)

- (2) Release the cradle locking lever and lift the rear of the cradle upwards until horizontal. Secure the locking lever and pull out the front mounting pin. If necessary, rotate the deflection drum until the elevating gear is central on the traversing bar and rotate the elevation drum until the small stud is in the centre of its slot. At all times keep the dial on the head of the tripod level. The long leg of the tripod is to be to the rear.
- (3) Fit the tripod sight bracket by unscrewing the wing nut and sliding the bracket on from the rear. Ensure that it is fully forward and then tighten the wing nut.
- (4) Position, on the left hand side of the tripod:
 - (a) the ammunition box, with the quick release catch of the lid towards the tripod; and



Figure 4-7 Mounting the Tripod

(b) the C2 sight box.

(5) Erect an aiming post and lamp not less than 10 m from the gun and near to the gun's left or right of arc. Ensure that it is vertical.

b. **To Dismount the Tripod:**

(1) Remove the tripod sight bracket by unscrewing the wing nut and slide. Push in the front mounting pin. Ensure that the long leg is in the low mount position and the elevating gear is central on the traversing bar. Release the cradle locking lever. Depress the rear of the cradle onto the long leg of the tripod and lock the cradle.

(2) Straddle the tripod and grasp the front mounting pin of the cradle. Unlock the front leg clamp levers. Raise the tripod to the vertical position, allowing the legs to drop. Grip the cradle between the knees. Ensure that both front legs are in line with the long leg and clamp firmly. If the tripod is not required for further use, return it to its holdall.

(3) Recover and replace the aiming post and lamp in the holdall.

(4) Place the ammunition box and C2 sight box beside the other kit.

18. **Confirm by Practice.** Leave the tripods mounted after the last practice.

19. **Mounting and Dismounting the Gun.** Explain and demonstrate. The gunner mounts and dismounts the gun.

a. **To Mount the Gun** (see Figures 4-8 and 4-9):

(1) Before anyone goes in front of the gun, check that the gun is not loaded that it is clear, and that the gas regulator is correctly set. Remove the butt and fit a recoil buffer, ensuring that the catch is properly engaged. Emphasize the importance of the ejection opening cover being closed before attempting to mount the gun to avoid damage to the buffer tube which would make the gun inoperable. Fit the rear mounting pin. Lift the gun and, ensuring that the flat surfaces on the rear mounting pin are correctly positioned on the cradle slot projection, push the gun fully forward and insert the front mounting pin. Fold and lock the bipod legs.

(2) Remove the C2 sight from its box and fit it to the tripod by inserting the sight bracket into the tripod bracket. Press down on the sight catch and push the sight fully home (see Figure 4-10).

(3) When the gun is mounted, check that the direction dial is level and then stamp in the tripod shoes and place sandbags or pieces of turf on the legs to ensure stability. Finally, check again that the direction dial is level.

(4) Position the holdall containing the two barrels to the left of the tripod.

b. **To Dismount the Gun.** Explain and demonstrate:

(1) Ensure that the gun is unloaded.

(2) Remove the C2 sight by pressing down on the sight catch and lifting up the sight. Replace it in its box.



Figure 4-8 Correct Position of the Rear Mounting Pin



Figure 4-9 Inserting the Front Mounting Pin

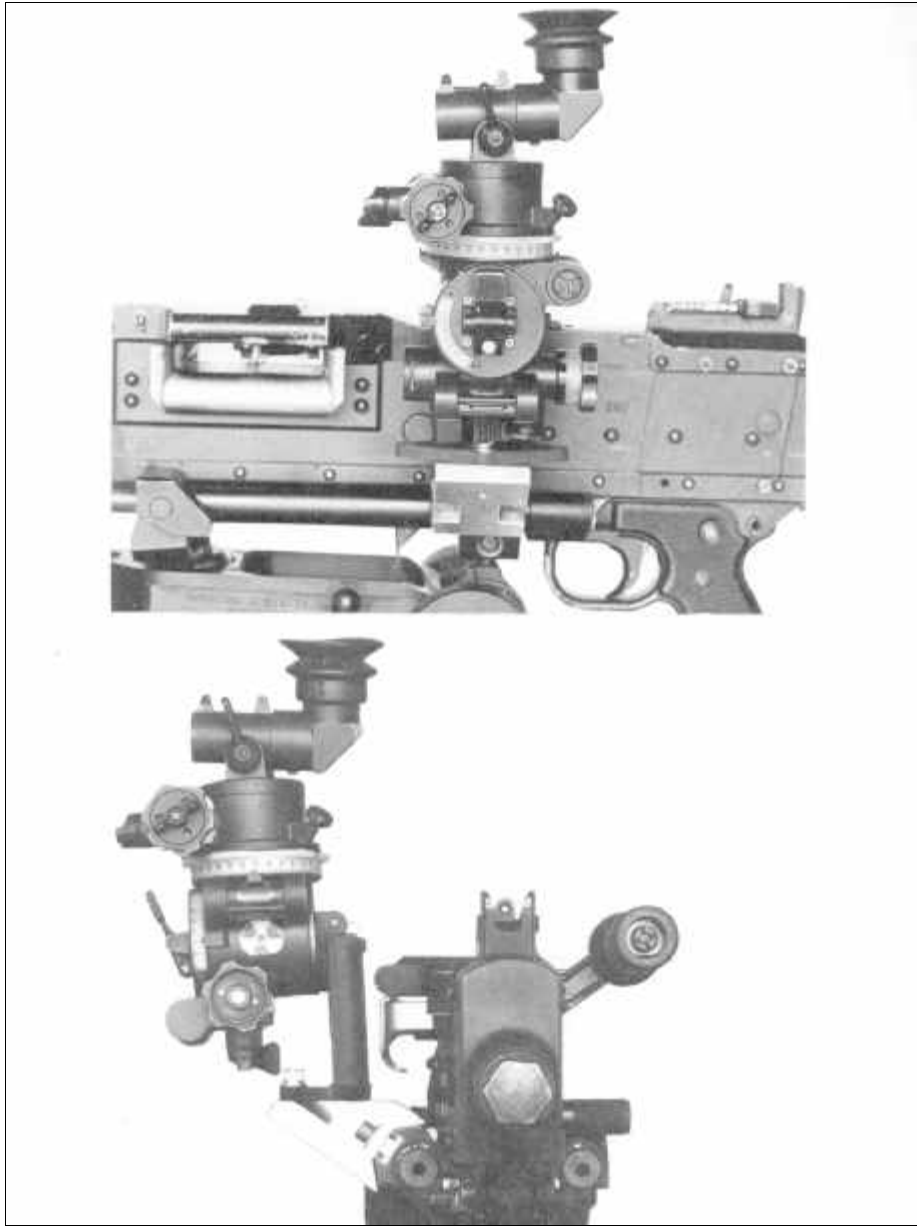


Figure 4-10 C2 Sight Mounted

- (3) Release the bipod legs, pull out the front mounting pin, and draw the gun off the tripod to the rear.
 - (4) Replace the butt and remove the rear mounting pin. Return the recoil buffer and the rear mounting pin to the holdall.
 - (5) Place the holdall beside the other kit.
 - c. **Safety During the Mounting and Dismounting of the Gun and Tripod.**
Explain. When dismounting the gun and tripod as a team, It Is important that the gun controller or No. 2 does not go forward of the gun position until the gun has been unloaded by the gunner. During training, the gun is always to be unloaded before it is removed from the tripod.
20. **Confirm by Practice.** Leave the guns mounted after the last practice.
21. **Loading, Sightsetting, and Unloading.** Explain and demonstrate where necessary:
- a. For ranges between 800 and 1800 m, the rearsight is raised to the vertical position. Graduations are of 100 m up to 1800 m; however, the sight can be set accurately to the nearest 50 m. Explain how a range is ordered.
 - b. The gunner is to adopt a position to the left rear of the gun, with his left hand on the pistol grip and his right hand on the deflection drum. The No. 2 should position himself on the left of the gunner where he can best perform duties such as loading. At all times the team Is to adopt positions which offer a minimum of exposure.
 - c. Loading and sightsetting for ranges up to 800 m is as taught for the GPMG in its light role.
 - d. On the range being ordered, the gunner Is to set the sight, cock the gun, and put the safety catch at "S".
 - e. When the rearsight is being used in the vertical position, It Is necessary to lower the leaf during any action which requires the top cover to be raised.
 - f. On the command UNLOAD - CLEAR GUN, lower the sight, if necessary move the safety catch to "F", and carry out the actions as taught in the light role. The No. 2 is to replace the belt in the box and secure the lid.
22. **Confirm by Practice.** Leave the guns mounted and loaded after the last practice.
23. **Laying the Gun.** Explain and demonstrate:
- a. On a range being ordered, act as previously taught.

- b. On a target being indicated and the order LAY given, the gunner calls UNLOCK. The No. 2 unlocks the cradle locking lever and the gunner roughly aligns the sights onto the target and then calls out LOCK. The No. 2 locks the locking lever.
 - c. The gunner releases the elevation drum lock lever, rotates the elevation drum until the sights are in line for elevation, and then tightens the lock lever. He then pushes in the deflection drum and turns it until the sights are in line for direction. A final adjustment for elevation is made if necessary. When he is satisfied that the aim is correct, the gunner pulls out the deflection drum and reports ON.
24. **Confirm by Practice.** After the last practice, order DISMOUNT GUN AND TRIPOD.
25. **Fire Position and Use of Cover.** Explain and demonstrate where necessary:
- a. When mounting the gun and tripod behind cover, the selected position should be reconnoitred by the gun crew and the following points taken into consideration;
 - (1) The tripod long leg should be to the rear except when the tripod is mounted on a forward slope or the side of a bank (when it should be pointed down the slope) or when using the fire trench (when it should be to the front).
 - (2) To keep exposure to a minimum, the gun should be mounted, when necessary, away from the cover selected and the complete assembled equipment should be moved forward to the cover by the crew (see Figure 4-11).
 - (3) The tripod should be mounted initially in the high or low mount position, depending on the height of the cover available, and the minor adjustments made when in the final position.
 - b. When in the final position (see Figure 4-12);
 - (1) Ensure that the tripod is level.
 - (2) Ensure that the gun is mounted as low as possible consistent with obtaining good observation of the target area.
 - (3) By lowering your head until your eye can follow the line of the feed tray, check that the fire will clear the crest of the cover.



Figure 4-11 Moving the Gun to Cover



Figure 4-12 Gunner and No. 2 in Position

- (4) Position the aiming lamp and post so that the lamp is clearly visible from the fire position and protected from enemy view.
- (5) Check that there is sufficient election clearance.

26. **Confirm by Practice.** Leave the guns mounted after the last practice.

27. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions and practice.
- c. Carry out safety precautions.
- d. Order DISMOUNT GUN AND TRIPOD. Pack kit.
- e. **Summary.** Include the following:
 - (1) the importance of safety rules during mounting and dismounting;
 - (2) the importance of frequent checks of the full equipment; and
 - (3) a preview of the next lesson in this subject.

LESSON 2 - FIRING DRILLS WHEN USING THE IRON SIGHTS

INSTRUCTOR'S NOTES

28. **Aim.** To teach the types of target, rates of fire, and firing drills to use when using the iron sights.
29. **Timing.** Two 40-minute periods.
30. **Method.** A basic instructional outdoor period.
31. **Stores**
- | | | |
|----|------------------------|---|
| a. | GPMG | 1 per two soldiers |
| b. | SF kits | 1 per gun |
| c. | Ammunition boxes | 1 per gun |
| d. | Dummy rounds (belted) | 20 per gun (minimum) |
| e. | Sandbags (half filled) | 3 per gun |
| f. | Landscape target | 1 per gun (if the lesson is taken indoors) |
32. **Preparation.** Reconnoitre the training area to be used and determine:
- gun positions;
 - arcs of fire and reference points; and
 - a minimum of three points and three traversing targets and the ranges to them.
33. **Miscellaneous**
- Ensure that the class is positioned to the right of the deflection drum during this lesson.
 - Divide the class into groups of two and allocate one group per gun before carrying out normal safety precautions.
 - Review the sequence of a fire control order and the methods of indication. Include hand angles and, if necessary, allow each individual to check his own measurements against a prepared scale board.

- d. If the lesson is taken indoors:
 - (1) secure aiming posts to wooden bases;
 - (2) position one similar landscape target as far forward from each gun as possible; and
 - (3) chalk-mark the position of the tripod legs prior to any laying drills.

CONDUCT OF THE LESSON

- 34. **Safety Precautions.** Normal. Indicate arcs of fire and reference points.
- 35. **Review.** Review the procedures for mounting the gun and tripod, loading, laying and unloading, and the fire control orders (GRIT).
- 36. **Introduction.** Explain that in order to engage targets effectively in the shortest possible time, it is important that the gunner knows the types of targets he is expected to engage, how they will be indicated to him, and the length of burst and rate of fire he is to employ against them.
- 37. **Types of Target.** Explain that there are four types of targets which are engaged by the GPMG in the sustained fire role.
 - a. **Point Target.** A target which appears not to have width or depth, although it may have both.
 - b. **Traversing Target.** A target having greater width than depth.
 - c. **Oblique Target.** A target which appears to have width and depth and is not at right angles to the machine-gun position.
 - d. **Moving Target.** A vehicle or aircraft which moves at more than 10 km (6 miles) per hour. Slower targets are engaged as point targets.
- 38. **Confirm by Questions.**
- 39. **Indication of the Target.** Explain. Normally, the gun controller will give a fire control order to the gunner. The No. 2 must be prepared to assist the gun controller in passing orders to the gunner. To locate the target in the shortest possible time, the gun controller may lay the gun himself and give a brief description of the target and point of aim to the gunner.
- 40. If at any time the gunner fails to understand a command, he is to call AGAIN.
- 41. **Confirm by Questions.**
- 42. **Types and Rates of Fire.** Explain:

- a. The normal length of burst is 20 rounds. This is necessary to ensure a close pattern of shots in the beaten zone. If shorter bursts are employed they should never be less than 10 rounds.
- b. The normal rate of fire is 110 rounds per minute. The rapid rate is 220 rounds per minute.
- c. The maximum length of burst and rate of fire are never to be exceeded.

43. **Confirm by Questions.**

44. **Firing Drill - Point Target.** Explain and demonstrate. On the order to fire, use only the left forefinger on the trigger and the thumb behind the pistol grip (see Figure 4-13). This method ensures that pressure from the firing hand does not move the gun. The sequence of firing is:

- a. put the safety catch at "F";
- b. check the aim through the sight;
- c. move the head to one side in order to observe the tracer and strike;
- d. fire the length of burst required;
- e. check the aim and correct if necessary;
- f. repeat the procedure;
- g. on the order STOP, cock the gun, put the safety catch at "S", ensure that the aim is correct, and report ON.



Figure 4-13 Firing From the Tripod

45. **Confirm by Practice.**

46. **Firing Drill - Traversing Target.** Explain and demonstrate. On the order TRAVERSING RIGHT/LEFT, FIRE:

- a. Put the safety catch at "F".
- b. Check the aim through the sight.
- c. Move the head to one side in order to observe the tracer and strike.
- d. Fire the length of burst required.
- e. Traverse one click of the deflection drum in the direction ordered.
- f. Repeat the procedure, checking the aim for elevation and correcting as necessary before firing the next burst.
- g. If the order STOP is not given, continue the drill until the second limit is reached. The No. 1 will then lay on the point of aim used for the first effective burst and report ON.

47. **Confirm by Practice.**

- b. DROP/ADD 100, etc - Alter the sight, align on to the target, and report ON. Then await further orders.
- c. NOTED POINT OF AIM - Check the aim and note the point of aim in relation to the point of impact.
- d. RELAY - Click back to the noted point of aim and when correct report ON.
- e. SAME AIM - GO ON -
- f. TRAVERSING RIGHT/
LEFT - GO ON - Adjust for the number of clicks and fire as previously taught.

56. With a well-trained crew it is possible to combine some of the commands, eg, STOP - ADD 100 - GO RIGHT FOUR CLICKS - GO ON.

57. **Confirm by Practice.**

58. **Stoppages.** Explain. Stoppage drills are the same as those taught for the GPMG in the light role. However, during training, if a stoppage occurs involving an obstruction in the body or chamber by a live round, the gun crew is to:

- a. Call out OBSTRUCTION.
- b. Close the top cover and move 2 m away from the gun position.
- c. Wait for 5 minutes.
- d. Clear the obstruction as previously taught.

59. **Confirm by Practice.**

60. **Barrel Changing.** Explain and demonstrate.

- a. If the fire has to be delivered for long periods, whether at the normal or rapid rate, the barrel is to be changed every 440 rounds. The gas plug and block are to be cleaned with the issued reamers before re-use.
- b. When the No. 2 has clipped on the second belt, he warns the gunner BARREL. He then prepares a barrel for use, checking that the gas regulator is correctly set as determined by balancing (see RANGE PRACTICE #1 NOTE 4), and that there is no obstruction in the barrel.
- c. When 440 rounds have been expended, or at a convenient opportunity, the gunner

unloads, cocks the gun, and orders BARREL. The No. 2 changes the barrel.

- d. The gunner allows the working parts to go forward, reloads, cocks the gun, and carries on firing as necessary.
- e. The three barrels used in the sustained fire role are to be used in rotation. The No. 2 must have a barrel ready for use after every 440 rounds fired.
- f. In training, if continuous fire of more than 1320 rounds is required, extra barrels are to be used in rotation with the three barrels in the gun kit. To avoid overheating and consequent dangerous stoppages, once any barrel has been used it is not to be replaced on the gun until it is cool enough to be held in the bare hand without discomfort.
- g. If the rules governing rates of fire and barrel changing are not adhered to, a cook-off can occur within seconds of a stoppage happening, which could damage the weapon extensively and injure the gun team.

61. **Confirm by Practice.**

62. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions and practice.
- c. Carry out safety precautions.
- d. Order DISMOUNT GUN AND TRIPOD. Pack kit.
- e. **Summary.** Include the following:
 - (1) the importance of the method of trigger operation when firing; and
 - (2) a preview of the next lesson in this subject.

LESSON 3 - THE C2 SIGHT UNIT

INSTRUCTOR'S NOTES

63. **Aim.** To describe the C2 sight unit and teach its use.
64. **Timing.** Two 40-minute periods.
65. **Method.** A basic instructional outdoor period.
66. **Stores**
- | | | |
|----|---------------------------|--|
| a. | GPMG | 1 per two soldiers |
| b. | SF kits | 1 per gun |
| c. | Ammunition boxes | 1 per gun |
| d. | Dummy rounds (belted) | 20 per gun (minimum) |
| e. | Sandbags (half filled) | 3 per gun |
| f. | Target information sheets | 1 per gun (see paragraph 5a) |
| g. | Landscape targets | 1 per gun (if the lesson is taken indoors) |
67. **Preparation**
- a. Ensure that each gun has a blank target information sheet.
 - b. Reconnoitre the training area to be used and determine:
 - (1) gun positions;
 - (2) arcs of fire and reference points; and
 - (3) a minimum of three point targets.
68. **Miscellaneous**
- a. Soldiers can be positioned on the left side of the elevation drum, directly behind their guns or each soldier may be given a sight unit.
 - b. Adjust all scale rings and set direction readings at 0000 mils and elevation readings at 0800 mils.

- c. It is important that the class is constantly reminded of the importance of setting the scale ring of the bearing coarse scale with the "O" in the line with the upper index.
- d. Change the gun crews frequently.
- e. Use the reading recorded during TAKING READINGS to teach APPLYING READINGS.
- f. Short cuts used in aligning the telescope onto the aiming lamp should be avoided as they are not possible during darkness, when the dial sight is usually used.
- g. If the lesson is taught indoors:
 - (1) secure aiming posts to wooden bases;
 - (2) position one similar landscape as far forward from each gun position as possible; and
 - (3) chalk-mark the position of the tripod legs after mounting.

CONDUCT OF THE LESSON

69. **Safety Precautions.** Normal. Indicate arcs of fire and reference points. Order HIGH MOUNT POSITION - MOUNT GUN AND TRIPOD.

70. **Review.** Review where necessary, firing at one point and at one traversing and one oblique target. Leave the guns mounted after last practice.

71. **Introduction.** Explain. When used together, the C2 sight and aiming lamp provide the gun crew with a method of aiming at targets which, due to fog, smoke, or darkness can no longer be viewed through the iron sight. The C2 sight takes over the role of the iron sight and the aiming post the role of the target. It is of vital importance for the gun crew to understand the mechanics of the C2 sight and how to use it to apply target readings for elevation and direction.

72. **C2 Sight** (see Figure 4-15). The sight consists of a telescope, bearing scales on the upper half of the sight, and elevation scales on the lower half.

73. **Telescope.** Explain and demonstrate. The telescope is mounted on the top of the C2 sight and can be moved up and down. When in the desired position, it can be locked by means of a clamp lever. The eyepiece can be rotated so that the open sight can be used for rough alignment. A corrector to reduce laying errors is fitted to the front of the telescope.

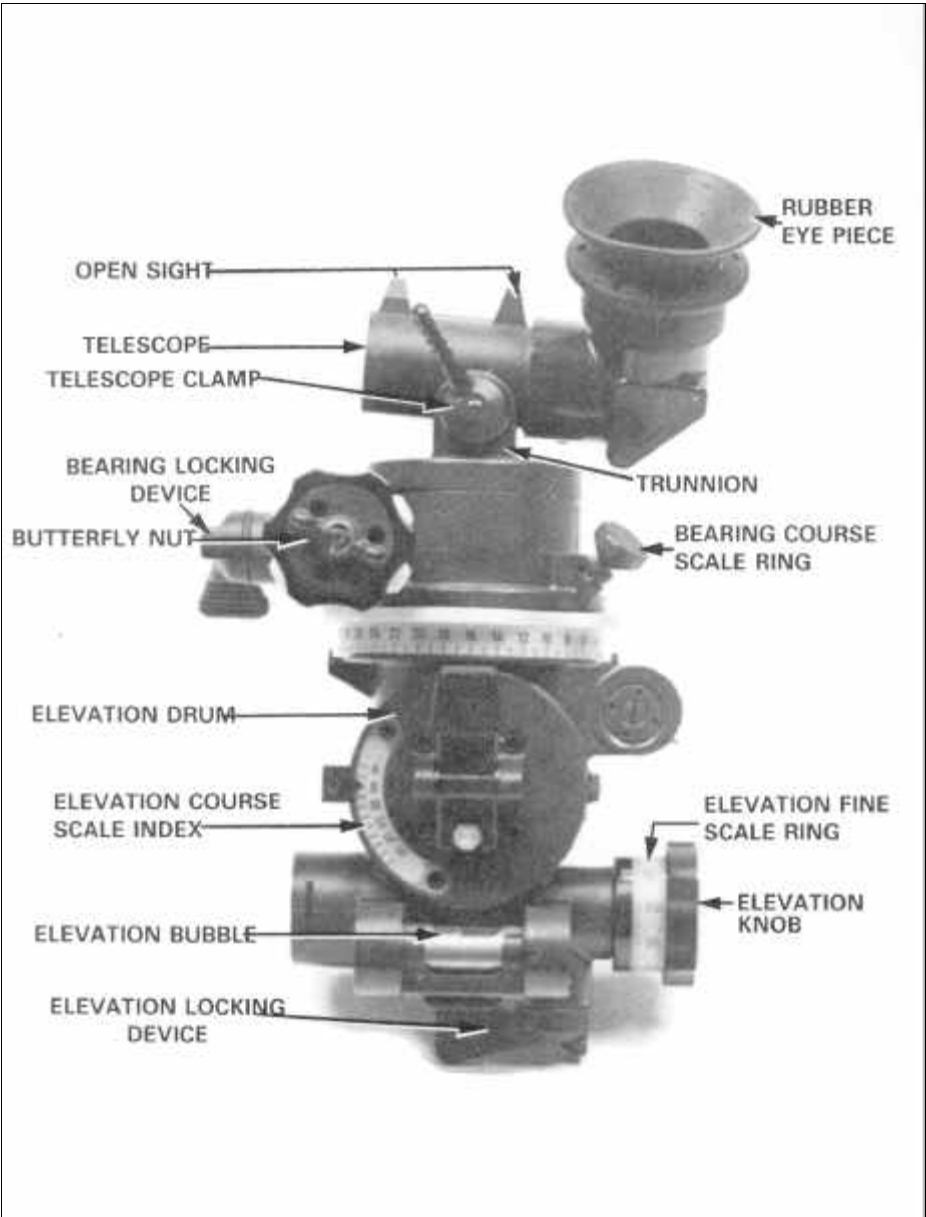


Figure 4-15 (Sheet 1 of 2) C2 Sight

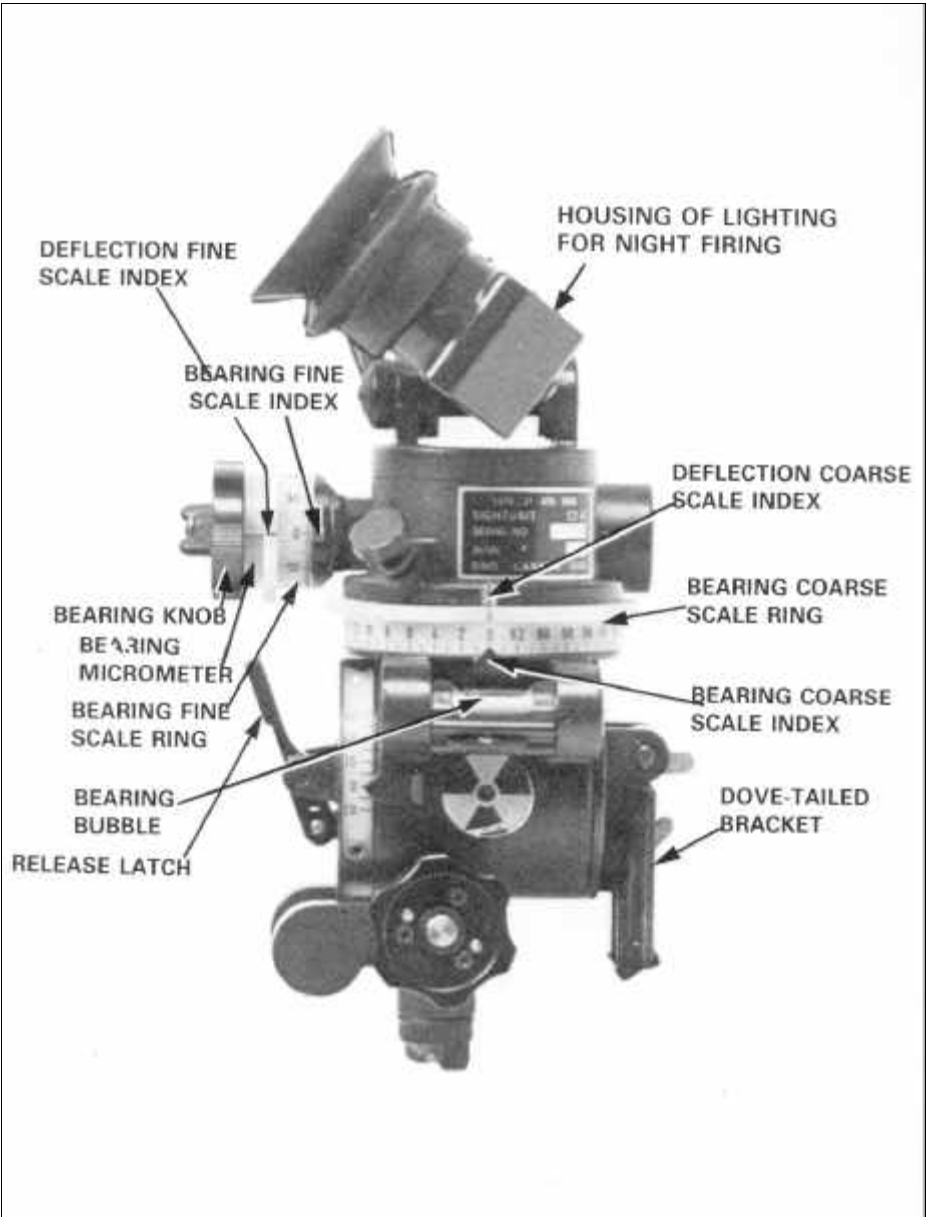


Figure 4-15 (Sheet 2 of 2) C2 Sight

74. **Confirm by Questions.**

75. **Bearing Scales and Setting a Reading.** Explain and demonstrate. The two bearing scales are used to record the readings for direction to the aiming post. The coarse scale records in units of hundreds of mils and the fine scale in units of ten mils. The scales are secured by a bearing clamp lever below the front of the telescope. This clamp, which is applied when in the raised position, prevents the scales moving during firing.

- a. On the coarse scale, always set the scale ring with "O" in line with the white upper index before use. To do this, loosen the screw-type clamp, if necessary, and rotate the scale ring. Then tighten the clamp. The lower index indicates the direction reading in hundreds of mils. The scale is indicated every 100 mils and numbered every 200 mils.
- b. On the fine scale, the scale ring is secured by a wing nut. This scale must always be set with "O" opposite the outer index before use. To do this, loosen the wing nut, rotate the scale, and then tighten the wing nut. The inner index indicates the direction reading in tens and units of mils. The scale is indicated every mils and numbered every 10 mils.
- c. The complete reading for direction is the combined total on the two scales.
- d. When setting a reading, a quick-release mechanism is used to set the hundreds of mils. For example, to set 0820 mils:
 - (1) disengage the bearing clamp lever;
 - (2) push forward the fine scale and, ensuring that it is held fully forward, rotate the mechanism until the required hundreds reading (8) on the coarse scale is reached. Release the fine scale and ensure that it engages correctly;
 - (3) rotate the fine scale until the tens and units (20) is opposite the inner index;
 - (4) check the reading on the coarse scale; and
 - (5) apply the clamp lever.

76. **Confirm by Practice.**

77. **Elevation Scales and Setting a Reading.** Explain and demonstrate. Elevation readings are also recorded on two scales.

- a. The coarse scale is on the side of the sight. It is graduated from 0600 to 1600 mils and is numbered every 200 mils. A pointer indicates the reading in hundreds of

nails.

- b. The fine scale has an index which indicates the readings in tens and units of mils. It is numbered every 10 mils. The elevation clamp lever is below the fine scale. It is applied by moving it to the left.
- c. The complete reading for elevation is the combined total on the two scales.
- d. When setting a reading, for example 1020 mils:
 - (1) disengage the elevation clamp lever;
 - (2) rotate the fine scale until the required hundreds reading (10) is reached on the coarse scale.,
 - (3) continue rotation until the tens and units reading (20) is opposite the index;
 - (4) check the reading; and
 - (5) apply the clamp.
- e. Readings can be set to half-mil accuracy, eg, 0825.5 mils.
- f. The elevation bubble is in front of the elevation fine scale. The other bubble is not used for the GPMG (SF).

78. **Confirm by Practice.**

79. **Taking Readings for a Target.** Explain and demonstrate where necessary. To engage targets effectively during darkness, fog, or smoke, the readings for elevation and direction must be determined at the earliest opportunity. On the command MARK the gunner should proceed as follows:

- a. **Elevation**
 - (1) check that the iron sight is on the target;
 - (2) disengage the elevation clamp and rotate the elevation fine scale until the cross levelling bubble in front of the scale is level; and
 - (3) apply the clamp.
- b. **Direction**
 - (1) check that the "O" and upper index are in line;

- (2) fold down the telescope sight eyepiece and disengage the bearing scale clamp;
 - (3) adjust the quick release mechanism as taught and roughly align the telescope open sight onto the aiming post;
 - (4) release the telescope clamp lever and adjust the telescope until the aiming lamp is in view. Apply the clamp lever;
 - (5) rotate the bearing fine scale until the perpendicular line of the reticle passes through the centre of the aiming lamp; and
 - (6) release the telescope clamp lever and adjust the telescope until the aim is correct. This is the noted point of aim. Apply the clamp lever.
- c. Recheck the elevation bubble.
 - d. When all actions are complete, report ON.
 - e. On the command RECORD, the gun controller is to record the reading at the earliest opportunity.
 - f. These orders may on occasions be combined, ie, MARK ... RECORD.

80. **Confirm by Practice.** Record the target readings (see Instructor's Notes - Miscellaneous).

81. **Apply Readings.** Explain and demonstrate. Using the C2 sight, an aim can be laid quickly onto targets during darkness, fog, or smoke procedures provided that their readings are known. Carry out the following on the elevation and direction readings being ordered, for example, GUNNER, ELEVATION 0810 DIRECTION 1430 ... LAY (see Instructor's Notes - Miscellaneous):

- a. Check that the "O" and upper index on the bearing coarse scale are in line.
- b. Disengage the bearing and elevation clamps.
- c. Set the readings for elevation and direction as previously taught. Engage the clamps.
- d. Fold down the telescope eyepiece, unlock the tripod, and align the open sight on the aiming lamp.
- e. Roughly align for elevation by ensuring that the elevation bubble is nearly central. Lock the tripod.

- f. Look through the telescope and, using the deflection drum of the tripod, adjust the aim onto the aiming lamp as previously taught. During wet weather it is important to fold the telescope eyepiece down after use.
- g. Using the elevation drum of the tripod, centralize the elevation bubble. (The gun should now be pointing at the target.)
- h. Report ON.
- j. The gun crew must ensure that it does not execute drills in a manner that would reveal their position.

82. **Confirm by Practice.**

83. **Adjustments to Readings.** If the gun is missing the target, adjustments should be ordered as follows:

- a. **Elevation.** By adding to or subtracting from the recorded reading for elevation on the dial sight, eg, ELEVATION ... DROP/ADD... MILS. The number of mils required to effect a 50-m adjustment is:

500 to 800 m: 1 mil

850 to 1100 m: 1.5 mils

1150 to 1450 m: 2.0 mils

1500 to 1750 m: 3.0 mils

- b. **Direction.** By mils on the tripod, eg, GO RIGHT SIX MILS. The gunner must remember that each click is two mils. After any adjustment has been made and the target successfully engaged, the new readings for elevation/direction are to be entered on the target information sheets and the previous readings deleted. The order to carry out this drill is RE-RECORD.

84. **Confirm by Questions and Practice.**

85. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by question and practice.
- c. Carry out safety precautions.
- d. Order DISMOUNT GUN AND TRIPOD. Pack kit.

- e. **Summary.** Include the following:
- (1) the importance of frequently checking the position of the "O" and upper index; and
 - (2) a preview of the next lesson in this subject.

LESSON 4 - FIRING DRILLS FOR THE C2 SIGHT

INSTRUCTOR'S NOTES

86. **Aim.** To teach the gunner how to apply fire and make adjustments when using the dial sight.
87. **Timing.** One 40-minute period.
88. **Method.** A basic instructional outdoor period.
89. **Stores**
- | | | |
|----|------------------------|--|
| a. | GPMG | 1 per two soldiers |
| b. | SF kit | 1 per gun |
| c. | Ammunition boxes | 1 per gun |
| d. | Dummy rounds (belted) | 20 per gun (minimum) |
| e. | Sandbags (half filled) | 3 per gun |
| f. | Landscape target | 1 per gun (if the lesson is taken indoors) |
90. **Preparation.** Reconnoitre the training area to be used and determine:
- gun positions,
 - arcs of fire and reference points, and
 - a minimum of two point targets, two traversing targets, and two oblique targets.
91. **Miscellaneous**
- The class should be positioned to the left of the lock lever.
 - Practice in barrel changing should be introduced at appropriate times.
 - Move the scale ring off the upper index on each C2 sight before the review.
 - It is important that instructors repeatedly give corrections during the firing practice.

CONDUCT OF THE LESSON

92. **Safety Precautions.** Normal. Indicate arcs of fire and reference points.
93. **Review.** Review the target information sheet and firing drills with the iron sight.
94. **Introduction.** Explain. It is the responsibility of the gun controller to determine when dial sight readings are to be taken and recorded. It is the responsibility of the gunner to apply fire onto the target using those readings.
95. **Firing Drill.** Explain. The gunner uses the C2 sight in the engagement of a target only when he cannot correctly aim with the iron sight. Use the firing drills taught, keeping in mind the following:
 - a. **Point Target.** On the command FIRE or GO ON, check that the aim onto the aiming lamp is correct and that the elevation bubble is central before firing each burst. Make any necessary adjustments using the drums on the tripod.
 - b. **Traversing Target/Oblique Target.** On the command TRAVERSING LEFT/RIGHT... FIRE/GO ON, check that the elevation bubble is central before firing each burst. Make any necessary adjustment using the elevation drum on the tripod.
 - c. On the command STOP or STOP... RELAY, act as previously taught and confirm the direction and elevation before reporting ON.
 - d. On the command DROP/ADD... MILS, adjust the C2 sight by the number of mils ordered, centralize the elevation bubble, and report ON.
 - e. On the command GO LEFT/RIGHT... MILS, adjust the direction by the number of clicks ordered, re-mark, and report ON.
 - f. On the command RE-RECORD, delete the existing entry and replace with new readings.
96. **Confirm by Practice.**
97. **Conclusion**
 - a. Take questions from the class on the entire lesson.
 - b. Confirm by questions and practice.
 - c. Carry out safety precautions.
 - d. Order DISMOUNT GUN AND TRIPOD. Pack kit.

- e. **Summary.** Include the following:
- (1) the importance of checking that the "O" and upper index are in line before using the C2 sight; and
 - (2) a preview of the next lesson in this subject.

LESSON 5 - PREPARATION FOR NIGHT FIRING

INSTRUCTOR'S NOTES

98. **Aim.** To teach how to prepare for a Final Protective Fire (FPF) task, the actions required on the signal to open fire, and the preparation for other Defensive Fire (DF) tasks.
99. **Timing.** One 40-minute period.
100. **Method.** A basic instructional outdoor period.
101. **Stores**
- | | | |
|----|---------------------------|----------------------|
| a. | GPMG | 1 per two soldiers |
| b. | SF kit | 1 per gun |
| c. | Ammunition boxes | 1 per gun |
| d. | Dummy rounds (belted) | 20 per gun (minimum) |
| e. | Target information sheets | 1 per gun |
| f. | Sandbags (half filled) | 3 per gun |
102. **Preparation.** Reconnoitre the training area to be used and select:
- gun positions,
 - arcs of fire and reference points, and
 - a minimum of two representative Forward Edge of the Battle Areas (FEBAs), two point targets, one traversing target, and one oblique target, recording their ranges (see Miscellaneous).
103. **Miscellaneous**
- FEBAs should be selected at a range of approximately 600 m so that, theoretically, full use is being made of the low trajectory of the rounds.
 - If firing practice is to be included in the demonstration or crew practice, the instructor is to order LOAD after the aim is laid on the area for the beaten zone selected by the platoon commander and the gun controller.
 - During crew practice in preparing the FPF, the instructor is to act as the defence section commander.

- d. During crew practice in preparing tasks other than FPF, order one task to be prepared and, after completion, allow the crew to lay the gun back onto the FPF before ordering the next task to be prepared.

CONDUCT OF THE LESSON

104. **Safety Precautions.** Normal. Indicate arcs of fire and reference points. Order MOUNT GUN AND TRIPOD.

105. **Review.** Review firing drills with the C2 sight. Order UNLOAD after the last practice.

106. **Introduction.** Explain that when it is planned to engage one or more targets during the night, the preparation is carried out during daylight hours. The target tasks are recorded on an information sheet and the gunner is to fire as ordered by the gun controller.

107. **Final Protective Fire (FPF) Task.** Explain. Normally the FPF task for the GPMG (SF) is one where the gun is fired across the front of a manned forward position, laying down a belt of fire through which an attacking enemy would have to pass. This task is the gun's most important task and the gun is sited primarily to undertake it. Preparation and registration by firing must be carried out in daylight. The platoon commander and the gun controller need to know the area to be protected and the position where the gun and tripod are to be mounted. When firing across the front of a manned position, a safety angle in front of the troops will be ordered. The size of the safety angle will depend on the ground and cover available but **IT IS NEVER TO BE LESS THAN 50 MILS IN WAR AND 300/619 MILS IN PEACE** (see paragraph 179.b.). The gun is to be aligned on the FPF task when not engaged in any other task.

108. **Confirm by Questions.**

109. **Preparation of FPF Task.** Explain and demonstrate. When the selected fire position and FEBA are indicated, the following actions are carried out:

- a. Mount the gun and tripod.
- b. Ensure that the gun is not loaded, set the sights as ordered, aim at the point on the FEBA from which the safety angle is measured, and report ON.
- c. On the command MARK, act as previously taught.
- d. The gun controller checks and records the reading for direction.
- e. The platoon commander checks the direction reading, adds or subtracts the angle ordered for safety, and orders DIRECTION ... MILS - LAY.
- f. Relay the reading to the aiming lamp as previously taught and keep the elevation bubble as near to central as possible. Report ON.

- g. The platoon commander and the gun controller check the line through the iron sight and select a suitable area of ground where the beaten zone is to fall. The aim is laid on that area. (it may be necessary to lay off more than the prescribed safety angle to ensure that the maximum advantage is taken of the available ground.)
- h. If the order to fire is given, carry out the actions previously taught.
- j. On the command RECORD, act as previously taught.
- k. The gun controller checks the aim through the iron sights and the telescope and then checks and records the readings for elevation, direction, and sight setting on the target information sheet.

110. **Confirm by Practice.**

111. **Firing the FPF Task.** Explain.

- a. The gun is fired only on a prearranged FPF signal.
- b. When the signal is given, fire will normally be at the rapid rate.
- c. The gun must be fired only at the recorded line and elevation.
- d. The gunner must maintain a constant check on the elevation bubble and on the aim through the telescopic sight.
- e. Barrels should be changed as taught.

112. **Confirm by Questions.**

113. **Preparation of Defensive Fire (DF) Tasks.** Explain. In addition to the FPF task, other tasks may be recorded as necessary.

- a. Actions on the commands such as LOAD, LAY, and FIRE are as previously taught.
- b. On the command MARK ... RECORD, act as previously taught. The gun controller checks and records the sight setting and the readings for elevation and direction on the target information sheet.
- c. The procedure is followed for each target indicated.
- d. Once the preparation is completed, the gun is never left unattended and is always laid on the FPF when not involved in a DF task.

- e. The additional preparations necessary if the selected position cannot be occupied until later will be taught in a future lesson.

114. **Confirm by Practice.**

115. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions and practice.
- c. Carry out safety precautions.
- d. Order DISMOUNT GUN AND TRIPOD. Pack kit.
- e. **Summary.** Include the following:
 - (1) the importance of aligning the gun onto the FPF when not engaging any other task; and
 - (2) a preview of the next lesson in this subject.

LESSON 6 - PREPARATION OF GUN POSITIONS FOR LATER OCCUPATION

INSTRUCTOR'S NOTES

116. **Aim.** To teach the method of preparing gun positions for later occupation.
117. **Timing.** One 40-minute period.
118. **Method.** A basic instructional outdoor period.
119. **Stores**
- | | | |
|----|---------------------------|----------------------|
| a. | GPMG | 1 per two soldiers |
| b. | Sustained Fire Kit | 1 per gun |
| c. | Ammunition boxes | 1 per gun |
| d. | Dummy rounds (belted) | 20 per gun (minimum) |
| e. | Target information sheets | 1 per gun |
120. **Preparation.** Reconnoitre the training area to be used and select:
- gun positions, and
 - an FPF and three DF tasks with ranges common to all guns.
121. **Miscellaneous.** Short cuts used in re-positioning the tripod should be avoided as they are not possible during darkness when this drill is used.

CONDUCT OF THE LESSON

122. **Safety Precautions.** Normal. Indicate the gun tasks to the gun controllers. Order MOUNT GUN AND TRIPOD.
123. **Review.** Nil.
124. **Introduction.** Explain. There are occasions when the gun crew cannot occupy a gun position during the period of dusk with sufficient time to record their tasks. It is then necessary to prepare the position in daylight for night occupation.
125. **Preparation and Later Occupation of a Position.** Using one of the selected tasks, explain and demonstrate, as necessary:
- Preparation**

- (1) Record the gun task as previously taught.
- (2) Position the three small pegs from the holdall to mark the site of each tripod shoe. The pegs are placed on the outside forward corner of the front legs and the centre rear of the rear leg.
- (3) Remove the gun, taking care not to disturb the tripod, and place the triangular tripod marker plate centrally beneath the tripod. Check the central positioning of the plate by looking vertically downwards through the hole in the centre of the tripod head and aligning the mark on the centre of the plate through the hole. Ensure that the corners of the marker plate point to the sites of the tripod shoes.
- (4) Dismount the tripod, taking care not to disturb the pegs and the marker plate. Leave the aiming post and lamp in position.
- (5) Should the tripod not be mounted on even ground, it will be necessary to mark the clutch plate position with a china-graph or similar marker.

b. **Occupation**

- (1) Collect and check the gun and its equipment.
- (2) On arrival at the position, the No. 2 mounts the tripod on its former site, ensuring that the hole in the tripod head is vertically above the mark on the marker plate and that the tripod shoes are in the former sites marked by the pegs.
- (3) The gunner mounts the gun on the tripod.
- (4) The platoon commander and the gun controller check that the task readings from the target information sheet are set on the dial sight.
- (5) The gunner lays the gun and the order LOAD is then given.
- (6) The No. 2 ensures that all necessary ammunition and stores are positioned by the gun.

126. **Confirm by Practice.**

127. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions and practice.

- c. Carry out safety precautions.
- d. Order DISMOUNT GUN AND TRIPOD. Pack kit.
- e. **Summary.** Include the following:
 - (1) the importance of correct positioning of the hole in the tripod head and the mark on the marker plate during occupation of the position; and
 - (2) a preview of the next lesson in this subject.

LESSON 7 - HANDLING THE GPMG IN THE SUSTAINED FIRE ROLE

INSTRUCTOR'S NOTES

128. **Aim.** To teach the soldier how the gun crew is organized and equipped, and crew handling of the weapon in the field.
129. **Timing.** Two 40-minute periods.
130. **Method.** A basic instructional outdoor period.
131. **Stores**
- | | | |
|----|---------------------------|----------------------|
| a. | GPMG | 1 per three soldiers |
| b. | Sustained Fire Kit | 1 per gun |
| c. | Ammunition boxes | 2 per gun |
| d. | Bandoliers | As available |
| e. | Rifles | 1 per gun team |
| f. | Target Information Sheets | 2 per gun |
132. **Preparation.** Reconnoitre the training area to be used and:
- select a company attack objective, route, and reorganization location;
 - select gun positions and three fire-supporting tasks related to the company route to the objective; and
 - select gun positions for the reorganization, a FPF, and three DF tasks related to the company reorganization location.
133. **Miscellaneous**
- Ideally, the gun crew should occupy a properly constructed gun position during the reorganization. If this is not practical, arrangements should be made for them to see one before or during the lesson.
 - During the lesson, the instructor will act as the defence platoon commander and give five control orders and adjustments. He should be fully conversant with Lesson 10 - Fire Tasks in Defence and Attack.
 - During practice particular attention should be paid to:

- (1) exposure during mounting, and
- (2) crest clearance.

CONDUCT OF THE LESSON

134. **Safety Precautions.** Normal.

135. **Review.** Nil.

136. **Introduction.** Individual skills must now be applied to handling the weapon as a crew. The GPMG is used to support the platoon or company in both defence and offence. This lesson is concerned with the drills and duties of the crew in the attack, on reorganization, and in defence.

137. **Crew Organization.** When sustained fire equipment is carried, the suggested load distribution is as shown in Figure 4-16.

| Duty in Crew | Equipment | Ammunition |
|----------------|--|--------------------------|
| Gunner | GPMG (over the shoulder). Spare parts kit. C2 sight. | 330 rounds in bandoliers |
| No. 2 | Tripod (carried over the shoulder with front legs hanging in front of the body). | 330 rounds in bandoliers |
| Gun Controller | Spare barrels. Aiming posts and lamp. Spare recoil spring in small holdall. | 440 rounds in belt boxes |

Figure 4-16 Crew Organization

138. If a No. 2 is not available, the load will have to be distributed differently. Whatever arrangements are made, when carrying sustained fire equipment and ammunition, the gunner is always responsible for the gun and the others the personal weapons.

139. **Suggested Teaching Method**

- a. Lead the gun crews (complete with their equipment) to a position behind cover near the place where the guns are to be mounted.
- b. Indicate three targets and their ranges for providing supporting fire in a company attack and include timings (H hour).
- c. Order MOUNT GUN AND TRIPOD.
- d. During the engagement of the targets, include adjustments and the reaction to a target becoming obscured.
- e. Move to selected reorganization gun locations.
- f. Indicate FPF and three DF tasks and order the preparation for night firing using target information sheets.
- g. Give the signal for DF and FPF tasks.

140. **Confirm by Practice.**

141. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions and practice.
- c. Carry out safety precautions.
- d. Order DISMOUNT GUN AND TRIPOD. Pack kit.
- e. **Summary.** Include the following:
 - (1) the importance of keeping exposure to a minimum during the occupation of a fire position; and
 - (2) a preview of the next lesson in this subject.

LESSON 8 - FIRE CONTROL ORDERS

INSTRUCTOR'S NOTES

142. **Aim.** To teach how to give fire control orders.
143. **Timing.** Two 40-minute periods.
144. **Method.** A basic instructional period.
145. **Stores**
- | | | |
|----|---|-----------|
| a. | Landscape target (mounted on softboard) | 1 minimum |
| b. | Chalkboard | 1 |
| c. | Overhead projector and screen | 1 |
| d. | Vufoils | |
| e. | Map pins (Large) | |
| f. | Chalk (various colours) | |
146. **Preparation**
- a. Prepare vufoils to cover:
- (1) sequence of a fire control order;
 - (2) ranges over 800 m; and
 - (3) orders during firing.
147. **Miscellaneous.** During demonstration use map pins to indicate the position of burst/bursts in relation to the target.

CONDUCT OF THE LESSON

148. **Safety precautions.** Not applicable. Indicate arcs of fire and reference points.
149. **Review.** Review methods of indication and the characteristics of machine gun fire.

150. **Introduction.** To apply fire onto the target in the shortest possible time, it is important that personnel controlling the fire power of the gun have a thorough knowledge of:

- a. correct commands to use; and
- b. the type of target the gun is capable of engaging.

151. **Issuing Fire Control Orders**

- a. Whenever possible, the gun controller aims the gun at the target. However, if this is not possible, he gives a fire control order indicating the range and a point of aim on the target. The gunner then aims the gun.
- b. Fire control orders are given in a definite sequence. This ensures that errors and omissions are detected immediately and that the gunner, knowing what to expect, will act quickly. The orders are given in a clear, loud voice so that the gunner can hear. The gun controller decides the correct order to give before orally issuing it. Long and unnecessary pauses, caused by indecisiveness, result in inaccuracies. The best fire control order is one which gets effective fire onto the target in the shortest possible time and with the minimum of ammunition.

152. **Sequence of a fire Control Order**

- a. The sequence of a fire control order is:

GROUP

RANGE

INDICATION
(of fire and order to LAY)

TYPE
(of fire and order to fire)

- b. When giving the order, pause at the end of each phase. In particular pause as follows:
 - (1) after giving the range, to allow time to set the sights;
 - (2) at various stages during indication, to allow time for points to be recognized, hand angles to be measured, etc; and
 - (3) after ordering LAY, to allow for the gun to be laid.

153. **Fire Control Orders.** Explain, and demonstrate where necessary.

- a. **Group.** Indicate the addressee, eg, GUNNER; NO 1 GUN.
- b. **Range**
 - (1) The range is normally obtained by estimation. It can also be determined from a large-scale map when the gun position and target are accurately plotted. Once a target is engaged, it may be used as a key range in determining ranges to other targets.
 - (2) The range, if over 800 metres, is ordered to the nearest 50 m in the following way:
 - 900 - nine hundred
 - 1000 - one thousand
 - 1050 - one zero fifty
 - 1100 - one one hundred
- c. **Indication.** The target and the point of aim on it are indicated as previously taught, followed by the order LAY.
- d. **Type of, and Order to, Fire**
 - (1) Firing is normally ordered by the command FIRE. When giving the order FIRE, if no particular type of fire is specified, normal fire is implied. For rapid fire, the order RAPID is given before the order to FIRE. For traversing fire, the order TRAVERSING RIGHT or TRAVERSING LEFT is given before the order to FIRE.
 - (2) If during an engagement firing is temporarily stopped, the order GO ON may be given to recommence firing.

154. **Confirm by Practice.**

155. **Orders During Firing.** Explain and demonstrate:

- a. the orders used during a shoot to adjust fire onto the target and the gunner's actions on receiving them (as shown in Figure 4-17);

| Gun Controller's Orders | Gunner's Actions |
|--|--|
| 1. STOP | Stops firing, cocks the gun, applies the safety catch, checks that the aim is correct for the last burst fired, adjusts it if necessary, and reports ON. |
| 2. STOP... NOTED POINT OF AIM (used when effective strike is observed) | Notes the aim for future use as ordered. |
| 3. SAME AIM... GO ON | Commences firing as for a point target. |
| 4. GO RIGHT/LEFT SIX MILS... GO ON | Adjusts for the number of mils ordered and fires as for a point target. |
| 5. TRAVERSING LEFT/RIGHT... GO ON | Recommences firing as for a traversing target. |
| 6. STOP... RELAY | Stops firing, cocks the gun, applies the safety catch, lays the gun on to the noted point of aim, and reports ON. |
| 7. ADD/DROP 100 | Alters the sights, aligns on to the target, and reports ON. |

Figure 4-17 Orders During Firing

- b. that with a well trained crew it is possible to combine some of the commands: for example, STOP - ADD 100 - GO LEFT FOUR MILS - GO ON;
- c. that if adjustments for evaluation are ordered during the engagement of a traversing target, it is necessary to re-adjust for evaluation if the target is to be fully re-engaged: for example, STOP - DROP ONE HUNDRED - RELAY; and
- d. that if the gunner fails to understand any part of a fire control order or adjustment, he must call AGAIN.

156. **Confirm by Questions and Practice.**

157. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions.
- c. Pack kit.
- d. **Summary.** Include the following:
 - (1) the importance of clear orders at all times;
 - (2) the importance of ordering STOP before ordering adjustments; and
 - (3) a preview of the next lesson in this subject.

LESSON 9 - OBSERVATION OF FIRE AND ADJUSTMENT

INSTRUCTOR'S NOTES

158. **Aim.** To teach how to observe strikes and apply fire to the target from that observation.
159. **Timing.** One 40-minute period.
160. **Method.** A basic instructional period. This is best taught immediately prior to Live Firing 3 - Observation of Fire and Adjustment (Field Firing).

161. Stores

- | | | |
|----|---|-------------|
| a. | Landscape target (mounted on softboard) | 1 minimum |
| b. | Chalkboard | 1 |
| c. | Overhead projector and screen | |
| d. | OHPs | |
| e. | Map pins (Large) | As required |
| f. | Chalk (various colours) | As required |

162. Preparation

- a. Prepare OHPs displaying the following information:
- (1) POINTS TO CONSIDER
- Tracer
 - Ground
 - Climate
 - Enemy Reaction
 - Traversing Target
 - Beaten Zone
- (2) METHOD OF ADJUSTMENT
- Direction - Small Error - Traverse
 - Large Error - Adjust in mils

 - Elevation - Order Bold Adjustments

(3) DISPLACED OP

Adjust on GUN-TARGET LINE.

b. Determine:

(1) arcs of fire and reference points; and

(2) a minimum of four point targets and three traversing targets and their ranges for use during practice.

163. **Miscellaneous.**

a. By asking questions, have the class identify as many of the factors affecting observation of fire as possible.

b. During demonstration and practice stages, use map pins to indicate the positions of bursts in relation to targets.

CONDUCT OF THE LESSON

164. **Safety precautions.** Not applicable.

165. **Review.** Nil.

166. **Introduction.** The gun controller must be in a position to estimate, by observing the strike of the bullets, the position of the beaten zone in relation to the target and, when necessary, to issue commands to adjust the beaten zone onto the target.

167. **Observation of fire.** Good observation of strike is determined largely by conditions of light and the range to the target; however, when observing, it is better to search an area around the target systematically than to look at the target. Some factors to be considered are as follows:

a. **Tracer**

(1) It is possible to observe tracer up to 800 m and beyond in normal circumstances. The four tracer rounds in each 20-round burst should be carefully observed at their point of strike. If the ground around the target area affords good observation of a strike, check to observe any difference between tracer strike and ball strike.

(2) Beyond 800 m, tracer strike cannot be observed and the gun controller must watch the strike of the burst around the target area. To do this, it may be necessary to order a burst of more than 20 rounds. The possibility of confusing tracer burn-out in flight with tracer striker on the ground should be remembered.

- b. **Ground**
 - (1) Sand, dry ploughed earth, water, chalk sub-soil, and any powdery surface generally give a good indication of strike, whereas long grass, wet ground, rocky ground, and undergrowth do not.
 - (2) If any area of ground close to the target is especially suitable for observation, it is sometimes quicker and more economical to direct fire onto this area in the first instance and then adjust when strike is observed.
- c. **Climatic Conditions**
 - (1) Visibility may be affected by light, mist, and mirage.
 - (2) At long ranges, a strong wind tends to blow away dust caused by strike before it can be observed.
- d. **Enemy Reaction.** The cessation of enemy fire may indicate that the fire is effective.
- e. **Traversing Targets.** It will not always be possible to observe the strike of every burst.
- f. **Beaten Zone (BZ)**
 - (1) In battle, other guns may be engaging the same target, which makes it difficult for a gun controller to identify the strike of his own gun.
 - (2) When the strike is observed it must be determined whether it is the whole of or only a portion of the beaten zone and if the latter, what portion of it. For example, if the strike is observed in front of the target, it may be the near end of the beaten zone failing on the target or it may be the far end of the beaten zone failing short of the target.

168. **Confirm by Questions.**

169. **Adjustment.** Explain that the centre of the beaten zone must be centred on the target as soon as possible. The general principles observed are:

- a. **Direction**
 - (1) Only adjust when it is certain that full effect is not being obtained.
 - (2) If the error is small, traversing right or left will ensure that the target is fully covered.

- (3) If the error is large, measure the adjustment necessary by using binoculars or hand angles and order the adjustment as a number of mils on the tripod, eg, GO RIGHT EIGHT MILS.

b. **Elevation**

- (1) When there is no guide to the amount of adjustment required, one bold adjustment is better than a series of small ones.
- (2) When the target is on rising ground, the tendency is to underestimate the adjustment necessary.

170. **Confirm by Practice.**

171. Displaced Observation Post. Explain and demonstrate that when the gun controller is well to the flank of the gun or when controlling more than one gun, bullets which are failing over or short may appear to be failing right or left of the target. The gun controller must visualize the line from the gun to the target (gun-target line) and judge accordingly.

172. **Confirm by Practice.**

173. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions.
- c. Pack Kit.
- d. **Summary.** Include the following:
 - (1) the importance of the gun-target line, when ordering adjustments from a displaced OP; and
 - (2) a preview of the next lesson in this subject.

LESSON 10 - THE SELECTION AND RECORDING OF FIRE TASKS

INSTRUCTOR'S NOTES

174. **Aim.** To teach the selection and recording of GPMG fire tasks in defence, attack, and withdrawal.

175. **Timing.** One 40-minute period.

176. **Method.** A basic instructional outdoor period.

177. **Stores**

- a. Overhead projector and screen 1
- b. Chalkboard 1
- c. OHPs
- d. Chalk (various colours)

178. **Preparation.** The following vuofoils should be available:

- a. CHARACTERISTICS OF MACHINE-GUN FIRE
 - Trajectory
 - Beaten Zone
 - Volume
 - Range
 - Accuracy
 - Penetration
- b. IDEAL SITING
 - Line of fire across level ground or gradual forward slope.
 - Area to be protected to be within 600 m of gun position.
- c. FINAL PROTECTIVE FIRE TASK Peacetime safety 300/619 mils.
 - Wartime safety never less than 50 mils.
- d. 50 Mils SAFETY ANGLE
 - Minor inaccuracies in aiming. Movement of tripod setting.

Half the width of BZ.

Strong wind blowing towards FEBA.

e. NIGHT INFORMATION

Signal for FPF.

Rates of fire to be employed.

System of communication during other DF tasks.

Pre-planned programme.

f. MG TARGET NUMBERS

A Coy MG 1000 to 1049

B Coy MG 1050 to 1099

C Coy MG 1100 to 1149

D Coy MG 1150 to 1199

Allocated as required MG 1200 +

g. ATTACK PLAN

Targets and timings.

Alternative tasks.

Commander.

Communications.

179. **Miscellaneous.**

a. It is essential that the class be fully conversant with the theory of small arms fire prior to receiving this lecture.

b. Peace time safety angles are:

(1) 300 mils for battle inoculation; and

(2) 619 mils for all other training involving troops.

WARNING

Safety regulations governing safety angles are contained in B-GL-304-003/TS-001, Operational Training, Volume 3, Ranges and Training Safety, and will be consulted prior to live fire training involving troops. That volume takes precedence over this volume in matters concerning safety regulations.

CONDUCT OF THE LESSON

180. **Safety precautions.** Not applicable.

181. **Review.** Review the characteristics of machine-gun fire.

182. **Introduction.** Fire tasks must be carefully tailored to the battle characteristics of the machine-gun to obtain the optimum fire effect on enemy targets. The fire tasks assigned to machine-guns will form an integral part of the overall fire plan which includes all supporting weapons at a commander's disposal.

183. **Siting Guidelines.** The following guidelines are to be considered when siting GPMGS. Whenever possible:

- a. guns are sited in defilade and frontal shoots are avoided; and
- b. guns are sited in pairs or groups of three.

184. **Dangerous Zone/Flat Trajectory.** When selecting fire tasks for the GPMG, advantage should always be taken of the flat trajectory and the long dangerous space. An ideal task would require:

- a. the line of fire to be across level ground or ground sloping gradually away from the gun; and
- b. the area covered to be within 600 m of the gun position. Beyond 600 m, the dangerous zone is only made up of the beaten zone plus the dangerous space. For example, a single gun at 1000 m:

$$75 \text{ m beaten zone} + 25 \text{ m dangerous space} = 100 \text{ m dangerous zone.}$$

185. **Defence.** Likely tasks for the GPMG in defence are:

- a. DF Tasks;
- b. FPF Task;

- c. protecting with fire the flanks, front, and gaps between neighbouring platoons and companies, including those of neighbouring battalions;
- d. harassing tasks; and
- e. supporting fire for patrols or operations forward of the FEBA.

186. In defence, the procedures for the selecting and recording GPMG fire tasks are as follows:

- a. Detailed siting of guns is done at company level.
- b. Guns are sited in defilade, and grouped whenever possible, in order to lay a long and therefore effective beaten zone.
- c. The company commands and controls the guns; for this purpose they should be sited within or near a platoon position for protection and communication.
- d. Tasks are registered in daylight by firing if possible.

187. **Confirm by Questions.**

188. **Defensive Fire Tasks (DF).** These include such targets as crossroads, minefield lanes, bridges, obstacles, wire, ie, locations where the enemy is likely to concentrate. Each gun can manage up to six such fire tasks.

189. **Final Protective Task (FPF).** This is the primary DF task and is selected by the company commander. Unless engaging another target, the guns remain laid on their FPF tasks. This decreases the delay between receipt of the call for FPF and the guns opening fire. When laying a FPF, no deviation in elevation or line is permissible.

190. **FPF Safety.** The FPF task should be laid as close to the defended locality as is safely possible. The safety angle varies, depending on:

- a. the ground;
- b. whether friendly forces are well dug in and safe from ricochets; and
- c. the general battle situation.

191. The angle to be used is decided by the officer commanding the guns. The minimum angles are:

- a. peacetime - 300 or 619 mils; and
- b. wartime - never less than 50 mils, which allows for;

- (1) minor inaccuracies in aiming,
- (2) movement of tripod setting,
- (3) half the width of the BZ, and
- (4) the possibility of strong winds blowing towards the FEBA.

192. **Night Target Information**

- a. During darkness, guns must remain manned and crews must know the following data, which is on a target information sheet:
 - (1) the signal for the FPF task;
 - (2) the rates of fire to be employed;
 - (3) the system of communication when other DF tasks are to be engaged;and
 - (4) the targets and times of firing in a pre-planned fire programme.
- b. Traversing fire can be employed during obscuration or darkness, provided the ground and the target afford a reasonable chance of producing effective fire, or if illumination makes it possible to observe and correct strike.
- c. If, when the area is illuminated, fire is seen to be off the target it can be corrected by using the tripod deflection drum for direction. The dial sight elevation fine scale in conjunction with the range tables can be used for lifts and drops.

193. **Numbering of Tasks.** MG targets are prefixed with the letters MG. Care must be taken that they do not conflict with, or are confused with, mortar, artillery, demolition, or obstacle numbers. The first number in each block is always the FPF target. DF targets are numbered as follows:

| | |
|-----------------------|-----------------|
| A Coy | MG 1000 to 1049 |
| B Coy | MG 1050 to 1099 |
| C Coy | MG 1100 to 1149 |
| D Coy | MG 1150 to 1199 |
| Allocated as required | MG 1200 + |

194. **Confirm by Questions.**

195. **Attack.** The GPMG can:
- a. **Before the Attack**
 - (1) Provide supporting fire to neutralize enemy positions.
 - (2) Give flank protection.
 - b. **During the Attack.** Provide close observed supporting fire on enemy positions in front of leading assault troops. The progress of our own troops must be observed to permit fire to be switched to fall the correct safety distance ahead of the assault. An NCO or guide should accompany the assaulting troops to ensure rapid deployment of the GPMG.
 - c. **After the Attack**
 - (1) Provide Final Protective Fire (FPF) and Defensive Fire (DF) during reorganization.
 - (2) Provide supporting fire for patrols.
 - (3) Fire harassing fire tasks.
196. The company commander will order:
- a. targets and timings;
 - b. alternative tasks; and
 - c. command and control.
197. If guns are used in the light role to increase the fire power of the assaulting troops, the sustained fire kits must be delivered immediately upon reorganization. Upon reorganization the tasks already discussed in defence apply. Areas in which guns are to be sited are provisionally selected from the map before the attack, and the exact sites are confirmed as soon as the position is secure.
198. **Supporting Fire Safety**
- a. Supporting fire is generally flanking fire because overhead fire has severe safety restrictions.
 - b. When employing flanking fire the safety angle must not be less than 619 mils. Troops moving in the open are exposed, so the safety angle is normally greater. The officer commanding the guns decides the angle.

- c. The angle is measured from the enemy position to the guns. A prominent feature on that line is selected and when attacking troops reach that line the guns cease firing or switch targets.
- d. The ground over which assaulting troops advance must be visible from the gun position so that switching can be safely controlled. If this is not possible, a prearranged signal or timed programme is used.

199. **Withdrawal.** GPMGs should carry out the tasks as previously discussed for defence until denial time. They may be last out, guns and sustained fire kits being carried out with the assistance of other troops.

200. **Confirm by Questions.**

201. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions.
- c. Pack Kit.
- d. **Summary.** Include the following:
 - (1) the flexibility of the gun with a trained gun team; and
 - (2) a preview of the next lesson in this subject.

LESSON 11 - TARGET INFORMATION SHEET

INSTRUCTOR'S NOTES

202. **Aim.** To teach the use and method of compiling target information sheets.

203. **Timing.** One 40-minute period.

204. **Method.** A basic instructional outdoor period for gun crews. (This is best taught prior to Lesson 5 - Preparation for Night Firing.)

205. Stores

- | | | |
|----|---------------------------|---------------|
| a. | Target Information Sheets | 2 per soldier |
| b. | Pencils | 1 per soldier |
| c. | Chalkboard | 1 |
| d. | Chalk (various colours) | As required |

206. Preparation

- a. Prepare a Target Information Sheet on a chalkboard including:
 - (1) one FPF;
 - (2) three point targets; and
 - (3) one traversing target.
- b. Use H-hour timings and include in the remarks column:
 - (1) rapid (R) and signal to open fire (codeword, whistle blasts) for FPF;
 - (2) ammunition required per task;
 - (3) number of mils for the traverse; and
 - (4) elevation adjustments in mils.
- c. Prepare a target information sheet for class practice.

207. Miscellaneous.

- a. During the practice, act as the officer appointed to co-ordinate the company fire plan and give out the following information:
 - (1) the company represented;
 - (2) elevation and bearing scale readings for an FPF and three DF tasks and their ranges;
 - (3) the signal for FPF; and
 - (4) timings for each DF task (select two timings for one of the tasks).
- b. Confirm adjustment necessary to ADD 1 00 for at least one task.
- c. Confirm ammunition requirement for all tasks less FPF.

CONDUCT OF THE LESSON

208. **Safety precautions.** Not applicable.

209. **Review.** Nil.

210. **Introduction.** For night firing tasks when fire is required on more than one target, record all details of each task on a target information sheet kept beside the gun. The readings of each task are obtained during the daylight preparation for night firing. Target numbers, timing, and special instructions are obtained from the officer co-ordinating the company machine-gun tasks.

211. **Target Information Sheet (see Figure 4-18).** Explain the headings on the sheet:

- a. **Tgt No.** Enter the number assigned from the company block allocation.
- b. **Range.** Enter range in metres to the target.
- c. **Elevation.** Enter the elevation scale reading as a four figure number.
- d. **Bearing.** Enter the bearing scale reading as a four figure number.
- e. **Rate of Fire.** Enter Rapid as "R" or Normal as "N".
- f. **Time.** Time is entered either using 24 hour clock time or H hour related time throughout. No time is given for FPF.
- g. **Grid.** Enter the grid reference of the target.

- h. **Remarks.** This is used for all special instructions relating to the target, eg, ON CALL, FPF SIGNAL TO FIRE, RAPID, TWO BELTS OVER PERIOD, ADJUSTMENT 1.5 MILS, TRAVERSING RIGHT FOR FOUR MILS, AMMUNITION REQUIRED.

212. **Confirm by Questions.**

213. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions and practice.
- c. Pack kit.
- d. **Summary.** Include the following:
 - (1) the importance of clear entries on the Target Information Sheet; and
 - (2) a preview of the next lesson in this subject.

LESSON 12 - INDIRECT FIRE

INSTRUCTOR'S NOTES

214. **Aim.** To teach the procedures required to produce Indirect Fire.

215. **Timing.** Two 40-minute periods.

216. **Method.** A basic instructional period.

217. **Stores**

| | | |
|----|---------------------------|-------------------|
| a. | GPMGs | 1 per two soldier |
| b. | SF Kits (Complete to EIS) | 1 per gun |
| c. | Ammunition boxes | 1 per gun |
| d. | Sandbags (half filled) | 3 per gun |
| e. | Landscape target | 1 per gun |
| f. | OHP | 1 |
| g. | Compass/Protractor | 1 per student |
| h. | Range tables/Chinagraphs | 1 per student |
| i. | Phillips screwdrivers | 1 per gun |
| k. | Notebooks | 1 per student |
| l. | Maps | 1 per student |
| m. | Target Information Sheet | 1 per soldier |

218. **Preparation**

- a. Prepare the following vufoils:
- (1) Benefits of Indirect Fire.
 - (2) Disadvantages of Indirect Fire.
 - (3) Range table headings.

- b. Determine:
 - (1) Arcs of fire and reference points.
 - (2) Determine three targets on the map up to and including 1800 m, including grid references and bearings. Ensure when possible that they relate to targets on the landscape targets.
- c. Lay out the gun kits; position one Phillips screwdriver by each kit.

219. **Miscellaneous.**

- a. Position the class behind their guns and tripods after mounting.
- b. Use the targets selected on the map and landscape to teach the procedure.
- c. Check all sight screws before starting to ensure that they are not too tight.

CONDUCT OF THE LESSON

220. **Safety Precautions.** Normal. Indicate arcs of fire and reference points. Order LOW MOUNT POSITION - MOUNT GUN AND TRIPOD.

221. **Review.** Nil.

222. **Introduction.** Explain that the C6 is capable of firing at targets predicted from a map, from behind cover, and under certain circumstances into dead ground. The value of using this fire must be carefully considered against the disadvantages.

223. **Benefits of Indirect Fire.** Explain that benefits can be obtained by plotting targets from the map in the following circumstances:

- a. at night or conditions of obscurity when no recording by fire has been possible;
- b. targets up to 1800 m can be engaged (provided appropriate range tables are available);
- c. patrols/own troops can call for fire on a grid reference; and
- d. targets can still be engaged when observation of strike is not possible.

224. **Disadvantages of Indirect Fire.** Explain that there are some disadvantages to this system.

- a. It requires accurate survey.

- b. It is time consuming.
- c. It will not produce pinpoint accuracy.

225. **Confirm by Questions.**

226. **Range Table (see Figure 4-19).** Explain that the range table must be used for targets up to 1800 m. The range table takes into consideration eight factors:

- a. **Range.** The range to the target in metres.
- b. **Target Elevation.** The elevation necessary to obtain that range in mils.
- c. **Lifts for 50 m.** The number of mils to be added or subtracted to the dial sight to raise or lower the beaten zone.
- d. **Line Correction for 16 kph Wind.** The number of mils to lay off on the bearing scale for winds at various angles to the line of fire.
- e. **Number of Elevations Required.** The amount of bracketing required for the range to a target. The headings "Map", "Range Finder", and "Estimation" show the methods used to obtain the range. The numbers in the appropriate column show the amount of bracketing required either side of the determined range to ensure that the target is successfully engaged. The size of the adjustment is taken from the "Lifts for 50 m" column.
 - (1) **Example A.** A target estimated at 800 m should be fired with the first burst at the estimated range, the second burst deducting 1 mil, the third burst adding 2 mils, the fourth burst deducting 3 mils, and so on.
 - (2) **Example B.** A target obtained by Range Finder at 1750 m should be fired with the first burst at the determined range, the second burst deducting 2.5 mils, the third burst adding 5 mils, the fourth burst deducting 7.5 mils and so on.

As many as seven adjustments on each side of the original target may be made to ensure full coverage of the target area.

| Range | Tangent Elevation | Lifts for 50 m | Line correction for 16 kph wind, when wind direction in relation to target line using the clock dial method is: | | | No. of Elevations Req'd | | | Dimensions of Horizontal Beaten Zone | | Time of Flt | Mils of differ |
|-------|-------------------|----------------|---|----------------|----------------|-------------------------|--------------|------|--------------------------------------|--------|-------------|----------------|
| | | | 3 or 9 | 2, 4, 8, or 10 | 1, 5, 7, or 11 | Map | Range Finder | Estd | Width | Length | | |
| m | Mils | Mils | Mils | Mils | Mils | | | | m | m | Secs | |
| 500 | 4.0 | 1.0 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 110 | 0.8 | |
| 550 | 5.0 | 1.0 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 105 | 0.9 | |
| 600 | 5.5 | 1.0 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 100 | 1.0 | |
| 650 | 6.5 | 1.0 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 95 | 1.1 | |
| 700 | 7.5 | 1.0 | 3 | 2 | 1 | 1 | 1 | 3 | 1 | 90 | 1.2 | |
| 750 | 8.5 | 1.0 | 3 | 3 | 1 | 1 | 1 | 3 | 2 | 85 | 1.4 | |
| 800 | 9.5 | 1.0 | 3 | 3 | 2 | 1 | 1 | 3 | 2 | 85 | 1.5 | |
| 850 | 11.0 | 1.5 | 3 | 3 | 2 | 1 | 1 | 3 | 2 | 80 | 1.6 | |
| 900 | 12.0 | 1.5 | 4 | 3 | 2 | 1 | 1 | 3 | 2 | 80 | 1.8 | |
| 950 | 13.5 | 1.5 | 4 | 4 | 2 | 1 | 1 | 3 | 2 | 75 | 1.9 | |
| 1000 | 15.0 | 1.5 | 4 | 4 | 2 | 1 | 1 | 3 | 2 | 75 | 2.1 | |
| 1050 | 16.5 | 1.5 | 5 | 4 | 2 | 1 | 1 | 3 | 2 | 70 | 2.3 | |
| 1100 | 18.5 | 1.5 | 5 | 4 | 2 | 1 | 1 | 5 | 2 | 70 | 2.4 | |
| 1150 | 20.0 | 2.0 | 5 | 4 | 3 | 1 | 1 | 5 | 2 | 65 | 2.6 | |
| 1200 | 22.0 | 2.0 | 5 | 5 | 3 | 3 | 3 | 5 | 3 | 65 | 2.8 | |
| 1250 | 23.5 | 2.0 | 5 | 5 | 3 | 3 | 3 | 5 | 3 | 60 | 3.0 | |
| 1300 | 25.5 | 2.0 | 6 | 5 | 3 | 3 | 3 | 5 | 3 | 60 | 3.1 | |
| 1350 | 27.5 | 2.0 | 6 | 5 | 3 | 3 | 3 | 5 | 3 | 60 | 3.3 | |
| 1400 | 30.0 | 2.0 | 6 | 5 | 3 | 3 | 3 | 7 | 3 | 55 | 3.5 | |
| 1450 | 32.0 | 2.0 | 6 | 5 | 3 | 3 | 3 | 7 | 3 | 55 | 3.7 | |
| 1500 | 34.0 | 2.5 | 6 | 6 | 3 | 3 | 3 | 7 | 3 | 55 | 3.9 | |
| 1550 | 36.5 | 2.5 | 7 | 6 | 3 | 3 | 3 | 7 | 3 | 55 | 4.1 | |
| 1600 | 39.0 | 2.5 | 7 | 6 | 3 | 3 | 5 | 7 | 4 | 50 | 4.3 | |
| 1650 | 41.5 | 2.5 | 7 | 6 | 4 | 3 | 5 | 7 | 4 | 50 | 4.5 | |
| 1700 | 44.0 | 2.5 | 7 | 6 | 4 | 5 | 5 | 7 | 4 | 50 | 4.7 | |
| 1750 | 46.5 | 2.5 | 7 | 6 | 4 | 5 | 5 | 7 | 4 | 50 | 4.9 | |
| 1800 | 49.5 | 3.0 | 8 | 7 | 4 | 5 | 5 | 7 | 4 | 50 | 5.1 | |

Figure 4-19 C6 Indirect Fire Range Table

- f. **Dimensions of Horizontal Beaten Zone.** The width and depth of the beaten zone at those ranges.
- g. **Time of Flight.** The time of flight of the rounds (in seconds) to the target at that range.
- h. **Mils Correction for a Height Differential of 10 m Area.** The amount of mils to be added or subtracted according to the height difference between gun and target. If the target is higher, add; if it is lower, subtract.

227. **Confirm by Questions.**

228. **Sight/Gun/Tripod Adjustment.** Explain and demonstrate. Before accurate fire can be produced, the C2 sight must be adjusted to the gun and tripod on which it is mounted.

- a. Select a target at 500 m, establish the range using either a laser range finder or estimation, and centralize the cross-level bubble. The target should be at the same height as the gun and there should be no crosswind.
- b. Adjust on to the target by fire as accurately as possible.
- c. Centralize the elevation bubble using the elevation fine-scale knob.
- d. Locate and undo the three screws in the face of the elevation fine scale. Set the indice to the tangent elevation for the range you are at. For a target at 500 m the setting is 0804 mils. Tighten the screws. (An example of another setting is a target at 1450 m which would have a tangent elevation setting of 0832 mils.)
- e. Undo the bearing scale clamp lever. Turn the telescope until the hairline in the centre of the telescope bisects the centre of the target.
- f. Loosen the three screws in the face of the bearing fine-scale knob and adjust all indices to 0.
- g. The sight should now be in adjustment with the gun and tripod.

229. This procedure should only need to be carried out once.

230. **Confirm by Questions and practice.** Leave the guns made safe.

231. **Orientation of the C2 Sight.** Explain and demonstrate.

- a. It is necessary to set the bearing scales on the C2 sight to correspond with the grid bearing along which the barrel is pointing. To do this, use the aiming lamp and post.

- (1) Take a bearing through the barrel of the gun with a compass. Lift the rearsight and use it and the foresight as aiming marks.
- (2) If using a prismatic compass, convert this bearing to a grid bearing and make adjustment for Individual Compass Error, if necessary.
- (3) Turn the telescope on the sight until the vertical line bisects the centre of the aiming lamp.
- (4) Undo the coarse and fine-scale damp levers and slip the scale rings around to read the bearing to the target.
- (5) Do up the bearing clamp levers.
- (6) Record the reading from the coarse upper bearing scale and the fine outer bearing scale. Mark as a recorded Bearing.

- b. When taking the bearing with a compass, move 10 m away from the gun to counter the magnetic attraction. The cross-level bubble and the elevation bubble of the C2 sight should be central in their housing throughout this procedure.

232. **Confirm by Practice.**

233. **Laying onto Map Information.** Explain and demonstrate.

- a. Using a protractor, find the grid bearing from the gun to the target. Apply this bearing to the C2 sight.
- b. Obtain gun - target range from the map, find the elevation appropriate to that range from the range tables, and apply it to the C2 Sight, plus any corrections necessary for the difference in height.
- c. Lay the gun onto the aiming post as taught and level both the elevation and cross-level bubbles.

234. **Confirm by Practice.** Leave the guns made safe.

235. **Firing Drills.** Explain that firing drills are the same as taught for using the C2 Sight. You must ensure that the cross-level bubble remains central.

236. **Confirm by Practice.** Leave the guns made safe.

237. **Scale Slippage.** Explain that if the bearing scales on the C2 Sight slip, the procedure to rectify this is as follows:

- a. Apply the recorded bearing to the coarse upper bearing scale and the fine outer bearing scale.
- b. Apply the current bearing.
- c. Relay onto the aiming post.

238. **Confirm by Questions and Practice.**

239. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Confirm by questions and practice.
- c. Carry out safety precautions.
- d. Pack kit.
- e. **Summary.** Include the following:
 - (1) it should be a calm day for initial sight adjustment;
 - (2) differences in gun-target height must be accounted for; and
 - (3) the cross-level bubble must be kept central.

CHAPTER 5

PRACTICE PERIODS - SUSTAINED FIRE ROLE

PRACTICE 1 - LESSONS 1 AND 2

INSTRUCTOR'S NOTES

1. **Aim.** To practise the gun crew in:
 - a. handling the tripod;
 - b. applying fire control orders; and
 - c. barrel changing.
2. **Timing.** Three 40-minute periods.
3. **Method.** An outdoor practice period.
4. **Stores**
 - a. GPMG 1 per two soldiers
 - b. Sustained Fire Kit 1 per gun
 - c. Ammunition box 1 per gun
 - d. Dummy rounds (belted) 20 per gun (minimum)
 - e. Sandbags (half filled) 3 per gun
 - f. Stopwatch 1
 - g. Chalkboard/Scoresheet 1

| Gun Crew | Mount Gun and Tripod | | Actions on FCO | | Barrel Change | | Total Points |
|----------|----------------------|--------|----------------|--------|-----------------|--------|--------------|
| | Time/ Faults | Points | Faults | Points | Time/ Faults | Points | |
| | | | | | | | |

Figure 5-1 Practice 1 - Scoresheet Using the Tripod

5. **Preparation**

- a. Reconnoitre the training area to be used and select:
 - (1) an area for mounting the guns and tripods behind cover;
 - (2) arcs of fire and reference points; and
 - (3) a minimum of four point targets and six traversing/oblique targets and note their ranges.
- b. Prepare a chalkboard/scoresheet for the final practice (see Figure 5-1).

6. **Miscellaneous**

- a. A high standard of fire control orders is necessary to ensure maximum benefit from this practice period.
- b. Ideally, practise each soldier as a gunner and a gun controller.
- c. Reteach only when absolutely necessary.
- d. To practice mounting and dismounting drills use the following words of command:
 - (1) MOUNT TRIPOD..... DISMOUNT TRIPOD.
 - (2) MOUNT GUN..... DISMOUNT GUN.
 - (3) MOUNT GUN AND TRIPOD DISMOUNT GUN AND TRIPOD.
- e. To practice firing drills and orders during firing:
 - (1) **Point targets.** Use STOP GO RIGHT SIX MILS GO ON.
DROP/ADD 100 GO ON in the fire control order.
 - (2) **Traversing/oblique targets.** Use STOP NOTED POINT OF AIM
STOP RELAY in the fire control order.
- f. To practice fire positions and use of cover, indicate the area of cover to be used for the fire positions and the arc of fire to be covered. Have half of the class set up their guns and use the other half as critics, and then change round.
- g. To score the final practice:

- (1) add two seconds for each fault to the overall time taken; and
- (2) allot one point to the soldier or team coming last in a test, two points to the second last, three points to the third last, and so on.

CONDUCT OF THE LESSON

7. **Safety precautions.** Normal. Indicate arcs of fire and reference points.
8. **Introduction.** To be fully effective in battle, the gun crew must be able to handle the tripod correctly and apply fire control orders quickly. This can be achieved only after a great deal of practice.
9. **The Sustained Fire Kit.** With the kit still packed, question the class on the contents of the holdalls.
10. **Mounting/Dismounting the Gun and Tripod on Even Ground**
 - a. Explain. In the training test, a team is graded "Skilled" if it carries out the complete drill in 70 seconds or less.
 - b. Practise the class in mounting and dismounting the tripod. Leave the tripod mounted after the last practice.
 - c. Question the class on the names of tripod parts.
 - d. Question the class on safety during mounting and dismounting the gun.
 - e. Practise the class in mounting and dismounting the gun. After the last practice order DISMOUNT TRIPOD.
 - f. Practise the class in mounting and dismounting the gun and tripod.
11. **Loading/Laying/Unloading the Gun**
 - a. Explain. In the training tests a gunner is graded "Skilled" if he can load, set the sights, and lay the gun on to an indicated target without making any mistakes.
 - b. Question the class on the types of target engaged by the SF gun.
 - c. Practise the class in loading, laying the gun, and unloading. Leave the guns made safe after the last practice.
12. **Firing Drills and Orders During Firing**
 - a. Question the class on the types and rates of fire employed in the SF role.

- b. Practise the class in the firing drills for point targets.
- c. Practise the class in the firing drills for traversing/oblique targets.
- d. Question the class on the technique used to engage moving targets.

13. **Barrel Changing**

- a. Explain. In the training tests, "Skilled" standard is 17 seconds or less.
- b. Practise the class.

14. **Fire Position and Use of Cover**

- a. Question the class on points for consideration when mounting the gun and tripod behind cover.
- b. Practise the class.

15. **Final Practice**

- a. Conduct the practice as a competition.
- b. Explain the conditions before each practice.
- c. Practise each team in turn in mounting gun and tripod on even ground, laying the gun, and engaging a traversing target. Include re-laying and barrel changing. Use the other teams as critics.
- d. Where applicable, call out the training test set timings as they are reached.
- e. Record gun team scores on the chalkboard.

16. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Carry out safety precautions.
- c. Pack kit.
- d. **Summary.** Include the following:
 - (1) the overall standard achieved and any weak points noted; and
 - (2) a preview of the next lesson in this subject.

PRACTICE 2 - LESSONS 3 AND 4

INSTRUCTOR'S NOTES

17. **Aim.** To practise the gun crew in:
- a. applying readings with the C2 sight; and
 - b. firing and making adjustments when using the C2 sight.
18. **Timing.** Two 40-minute periods.
19. **Method.** An outdoor practice period.
20. **Stores**
- | | | |
|----|------------------------------------|--------------------|
| a. | GPMG | 1 per two soldiers |
| b. | Sustained Fire Kit | 1 per gun |
| c. | Ammunition box | 1 per gun |
| d. | Dummy rounds (belted) (minimum) | 20 per gun |
| e. | Sandbags (half filled) | 3 per gun |
| f. | Target Information Sheets | 1 per gun |
| g. | Stopwatch | 1 |
| h. | Chalkboard/Scoresheet | 1 |
| j. | Range Cards | 1 |
21. **Preparation**
- a. Reconnoitre the training area to be used and select:
 - (1) fire positions for the gun crews,
 - (2) arcs of fire and reference points, and
 - (3) a minimum of six point targets and four traversing targets and their ranges.
 - b. Prepare a range card.

- c. Prepare a chalkboard/scoresheet for the final practice (see Figure 5-2).

| Gun Crew | Taking Readings | | Applying Readings | | Total Points |
|----------|-----------------|--------|-------------------|--------|--------------|
| | Time | Points | Time | Points | |
| | | | | | |

Figure 5-2 Scoresheet for Practice 2

22. **Miscellaneous**

- a. Move the scale ring off the upper index on each C2 sight before beginning the period and at times during the period, provided that the class cannot observe it being done.
- b. Introduce barrel changing at least once during the period.
- c. Change gun crew duties frequently.
- d. Taking and Applying Readings
 - (1) Use the commands MARK ... RECORD for taking readings and GUNNER ... ELEVATION... DIRECTION ... LAY for applying readings.
 - (2) Use the readings recorded during TAKING READINGS to practice APPLYING READINGS.
- e. Firing Drill and Orders During Firing. Use DROP/ADD... MILS and RE-RECORD during the practice.
- f. Final Practice. To score:
 - (1) Record the time taken by each team to take and apply readings for each target.
 - (2) Allot one point to the team coming last in a test, two points to the second last, three points to the third last, and so on. Do not award any points if there are any errors in the readings or if the elevation bubble is not central.

CONDUCT OF THE LESSON

23. **Safety Precautions.** Normal. Issue target information sheets. Indicate arcs of fire and reference points. Order MOUNT GUN AND TRIPOD.

24. **Introduction.** Explain. The ability to provide effective fire during obscured shoots is determined to a great extent by the gun crew's ability to use the dial sight correctly.

25. **Taking and Applying Readings**

- a. Explain. In the training tests the gun team is graded "Skilled" if it records and applies a C2 sight reading without making any errors.
- b. Practise the class in taking readings.
- c. Practise the class in applying readings.

26. **Firing Drill and Orders During Firing**

- a. Practise the class in the firing drills for point targets.
- b. Practise the class in the firing drills for traversing and oblique targets.

27. **Final Practice**

- a. Conduct the practice as a competition.
- b. Explain the conditions before each practice.
- c. Practise each team, in turn, in taking and applying at least three readings.
- d. Record gun team scores on the chalkboard/scoresheet.

28. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Carry out safety precautions.
- c. Pack Kit.
- d. **Summary.** Include the following:
 - (1) the overall standard achieved and any weak points noted; and
 - (2) a preview of the next lesson in this subject.

PRACTICE 3 - LESSONS 5 AND 6

INSTRUCTOR'S NOTES

- 29. **Aim.** To practise the gun crew in:
 - a. preparing night firing tasks; and
 - b. preparing a gun position for later occupation.
- 30. **Timing.** One 40-minute period.
- 31. **Method.** An outdoor practice period.
- 32. **Stores**
 - a. GPMG 1 per two soldiers
 - b. Sustained Fire Kit 1 per gun
 - c. Ammunition boxes 1 per gun
 - d. Dummy rounds (belted) 20 per gun (minimum)
 - e. Target Information Sheets 1 per gun
 - f. Sandbags (half filled) 3 per gun
 - g. Stopwatch 1
 - h. Chalkboard 1

| Gun Crew | FPF | | DF | | Total Points |
|----------|------|--------|------|--------|--------------|
| | Time | Points | Time | Points | |
| | | | | | |

Figure 5-3 Scoresheet for Practice 3

33. **Preparation**

- a. Reconnoitre the training area to be used and select:
 - (1) fire positions for gun-crew night tasks;
 - (2) arcs of fire and reference points;
 - (3) a minimum of two FEBAs, two point targets, one traversing target, and one oblique target and their ranges; and
 - (4) fire positions for the gun crews' daylight task.
- b. Prepare a chalkboard/scoresheet for the final practice (see Figure 5-3).

34. **Miscellaneous**

- a. Move the scale ring off the upper index on each C2 sight before beginning the period and at times during the period, (provided that the class cannot observe it being done).
- b. No attempt should be made in the time available to occupy fire positions in the second location.
- c. To score the final practice:
 - (1) add two seconds for each fault to the overall time taken; and
 - (2) do not award points if any error in the FPF brings the line of fire inside the minimum safety angle from the FEBA.

CONDUCT OF THE LESSON

35. **Safety precautions.** Normal. Issue target information sheets. Indicate arcs of fire and reference points. Order MOUNT GUN AND TRIPOD.

36. **Introduction.** Explain. The preparation of the DF and FPF tasks for engagement at night is a gun-crew skill which requires a great deal of practice.

37. **Suggested Practice**

- a. Question the class on the meaning of the FPF task.
- b. Practise the class in recording the FPF task.
- c. Practise the class in recording other DF tasks.

- d. Order the class to prepare for later occupation and carry out a token move to the new location.
- e. At the new location question the class on the rules for firing an FPF.
- f. Order the class to reoccupy the prepared position. Leave the guns in position for the final practice.

38. **Final Practice**

- a. Conduct the practice as a competition.
- b. Explain the conditions before each practice.
- c. Practise each team in preparing four DF tasks, one of which is to be the FPF.
- d. Record gun-crew scores on the chalkboard/scoresheet.

39. **Conclusion**

- a. Take questions from the class on the entire lesson.
- b. Carry on normal safety precautions.
- c. Pack kit.
- d. **Summary.** Include the following:
 - (1) the overall standard achieved and any weak points noted; and
 - (2) a preview of the next lesson in this subject.

CHAPTER 6
INFORMATION FOR INSTRUCTORS

SECTION 1

COACHING TECHNIQUES

GENERAL

1. **Introduction.** This chapter explains the procedures used by the firer, the function of the coach, and the techniques used by the coach to assist the firer in improving the individual's standard of shooting.
2. **The Coach.** The function of a coach is to give advice when required and to endeavour to spot and correct faults as soon as possible. This is done to improve the soldier's shooting techniques and knowledge to the point where he has the ability and confidence to use his weapon effectively in battle. To do this, the coach must be alert and supremely patient, must know the characteristics of the weapon and ammunition, and must allow for the effect which the ability of the firer will have on these characteristics.
3. **The Firer.** The coach learns about the firer from:
 - a. The size of the group which he achieves with the accumulated first shots of each burst. If this is large, it indicates that the firer is weak in his application of the marksmanship principles.
 - b. The average group size of the bursts fired. If this is greater than acceptable standards, it indicates that there is a fault in the firer's position and hold.
4. **The Gun.** The problems of holding the GPMG are quite different from those of holding the rifle. The rifleman must hold his rifle steady while perfecting his aim and then operate the trigger. With the bipod and the extra weight of the gun, the gunner tends to hold the GPMG less firmly. The coach must insist that the GPMG be held firmly.
5. Each gun requires balancing to find the best gas regulator setting. A balanced gun ensures reliability and minimum vibration (see Range Practice 1, Note 4). To maintain this balance the gas plug and block should be cleaned after every 400 rounds fired.
6. Each soldier should know the most suitable height of the bipod legs for his firing position. This is most easily remembered by counting back the number of clicks from the fully upright position.

FIRING TECHNIQUES

7. **Zeroing and Sighting.** The variation between POA and MPI at long range is important information for the coach. The variation is an indication of the accuracy of the weapon and the shooting ability of the firer. The average variation, determined from several groups fired at short range, is an indication of the amount of error in direction or elevation, or both, that can be expected at longer ranges.

8. **Position and Hold.** The soldier's ability to produce a small burst group depends on his position and the way in which he holds the gun. Soldiers are taught a basic firing position which suits the majority of them. However, the left hand can be reversed to an underhand grip:

- a. if the soldier suffers discomfort from pressing his mouth against the knuckles of his left hand; or
- b. if he persists in pulling the gun to the left when firing.

9. **Limbering Up.** It is important for a firer to aim at the target and test his hold by rocking backwards and forwards slightly before firing a burst. If the foresight does not move directly up and down on the point of aim, the hold is not balanced which means that one hand is exerting a greater influence. The firer should adjust the hold slightly and be retested until he corrects it.

10. **Declaration.** The firing drills learned for firing a single shot with a rifle are similar to those applied in firing a burst except that the hold and follow-through are extended to cater for the rounds in the burst. The firer is taught full trigger release during grouping and elementary application shoots only. Therefore he should be briefed to declare after each burst:

- a. where the aim picture was at the start of the burst; and
- b. any movement of the foresight which occurred during the burst.

Example: CORRECT - MOVED HIGH RIGHT.

11. **Length of Burst and Grouping Standards.** The best length of burst to fire is determined by the type of target being engaged, the range to it, and the skill of the firer. During basic training, the soldier is trained to fire in bursts of three to five rounds. Practice in firing longer bursts should be given during advanced training. The required grouping standard from four groups of three to five rounds, fired in bursts at 100 metres, is an average group size of 300 mm. To achieve consistency in lengths of burst, the soldier should be allowed to get the feel of a burst by firing several belts assembled for three round bursts.

12. **Expected Scoring Area (ESA).** To successfully coach any type of application of fire, the coach must be able to determine the firer's ESA.

13. When a number of bursts are fired at the same point of aim, the size of the pattern increases until it eventually levels off and subsequent burst fall within it. This pattern is called a cone of fire.

14. A soldier's ESA is determined by his average burst group size and his ability to keep together. In Practice 2 at 100 m, each man fires 20 rounds in bursts of 3 to 5 rounds at one aiming mark. The size of the group achieved in the practice is the soldier's ESA at 100 metres.

15. To calculate his ESA at other ranges, multiply his 100-m group size by the first figure of the range. For example, a soldier who obtains a 200 mm group with his 20 rounds at 100 m will have an ESA of 800 mm at 400 m.

16. For application of fire shoots, a single Figure 11 is used at 100 m, a double Figure 11 at 200 m and a triple Figure 11 at ranges of 300 m and beyond. Each Figure 11 target measures 450 mm by 1120 mm.

17. The coach must compare the soldier's ESA against the overall dimensions of the target being engaged to determine whether some misses are acceptable. For example, it is not reasonable for the coach to expect all shots to hit the target if the ESA is greater than the target area.

18. **Common Faults.** By observing, the coach can detect and remedy the following common faults:

a. **Firer's Position Before Firing**

- (1) Pulling the gun into the shoulder instead of moving the body up to the gun.
- (2) Having his body oblique to the gun.
- (3) Positioning the bipod legs neither square to the target nor at a suitable height for the firer's build.

b. **Firer During Firing**

- (1) Closing the eye in use during the burst.
- (2) Not following through the trigger release.
- (3) Moving the body, particularly the right shoulder.
- (4) Tightening or relaxing the hold.

c. **Pattern of Shots After Firing**

- (1) If the group runs to the left of the first shot, this indicates that the right shoulder has not been brought up to the butt or that the body is too far to the right. It could also be caused by the left hand exerting too much pressure.
- (2) If the first shot hits the target near the point of aim (POA) but subsequent shots form a group at some other points, this indicates that the hold was tightened during the firing of the burst.

(3) A scattered group indicates loose holding.

19. **Introductory Shoot at 25 Metres.** Once the soldier has been taught and practised dry in firing techniques and stoppage drills, he is ready to fire the introductory shoot at 25 m (see Range Practice 1). The aim of this shoot is to confirm that he can aim, hold, and fire the gun in controlled bursts. The soldier is coached so that his basic firing faults are corrected before he progresses to firing at longer ranges. The shoot includes a familiarization practice to assist the soldier in getting the feel of a burst of three rounds, followed by a confirmation practice in which the soldier fires a twelve-round belt in four bursts, each burst at a different aiming mark on a grouping screen. So that the coach can concentrate on the firer, a soldier from a waiting detail is nominated to note, using binoculars:

- a. the first shot of the burst to arrive; and
- b. the order of arrival of subsequent shots in the burst.

20. **Procedure Before Firing.** The aim is to establish the firer's ESA and to ensure that both he and the gun are fully prepared to achieve their best possible results:

- a. Establish the firer's ESA, as previously discussed.
- b. Check that the gas regulator is at the setting for the correct balance of the gun.
- c. Confirm the practice/target number/lane number with the firer.
- d. Confirm wind effect/point of aim.
- e. Explain how and when corrections will be ordered, ie:
 - (1) by brief discussion between bursts during grouping or elementary application; and/or
 - (2) by brief orders during advanced application.
- f. If tracer is allowed, check that a tracer round is in the first three rounds of the belt being loaded.
- g. Remind the firer to declare each burst in grouping and elementary application (see paragraph 10).
- h. Check the sight setting when the range is ordered.
- j. As the firer adjusts his position, check for faults detailed in paragraph 18a.
- k. Check that the firer limbers up correctly (see paragraph 9).

| Task | Grouping/ Elementary Shoots | Advanced Shoots |
|-----------------|---|---|
| Position | One firer's OPEN side. | Low behind the firer on line with the gun. |
| Observe | The firer for faults (assistant observes the arrival of shots). | Strike/tracer — using binoculars. |
| Record | The firer's declaration and own observations in a coach's notebook. | |
| Correct | By brief discussion between bursts. | By issuing orders, eg, GO LEFT — STEADY, etc. |

Figure 6-1 Notes for the Coach During Firing

21. **Procedure During Firing.** During grouping and elementary application, the aim is to observe the firer and correct errors in his techniques.

22. During advanced application, the aim is to act as a spotter and en-sure that the bursts fall within the firer's ESA.

23. **Procedure After Firing.** For grouping practices the aim is to relate any visible errors to specific faults in technique and advise the firer on how these may be corrected. For other practices, the aim is to relate the result of the shoot to the firer's ESA and inform the firer of any progress made.

| Grouping | Elementary | Advanced |
|--|---|--|
| <p>Declaration. Check the position of the first shot and subsequent shots of each burst against the recorded declaration.</p> <p>Size of group — (1) Formed by the first shot in each burst. (2) Taken from average size of bursts fired.</p> <p>MPI. Record in personal record card.</p> <p>Pattern — (1) Formed by the first shot in each burst. (2) Formed by each burst.</p> <p>Encourage. Give constructive advice for the next shoot.</p> | <p>1. Obtain total score and inform the firer of progress made. Relate the result to the firer's grouping capacity and standard laid down.</p> <p>2. Encourage by giving constructive advice.</p> | <p>1. Summarize the shoot and bring to the attention of the firer any points noted, eg, reaction to wind change, stoppage, corrections given, length of burst, etc.</p> <p>2. Encourage by discussion on points learned.</p> |

Figure 6-2 Notes for the Coach After Firing

SECTION 2

ZEROING

GENERAL

24. **Zeroing.** The gun is zeroed by the gunner to whom it is issued. The gunner zeroes the gun while lying in the open, using the bipod. Before the gunner is allowed to zero his gun, he should be capable of consistently achieving an average 300 mm (12 in.) burst group size at 100 m. When zeroing is completed, each member of the gun crew is to fire the gun and take careful note of any alteration required for his sight setting or point of aim.

25. **Zeroing Procedure.** Ideally, the gun is zeroed at 100 m, but it can be done at 25 m if there is no alternative. The procedure to be adopted when zeroing is:

- a. Prepare the gun for firing in the normal way and ensure that the hinge clip and Allen screws are not loose on the foresight.
- b. Fire 10 rounds in bursts into the backstop to limber up and dry the barrel. Balance the gun as described in RANGE PRACTICE #1, NOTE 4.
- c. Fire 20 rounds, in bursts of three to five rounds, at the same aiming mark. Stand up after every second burst.
- d. Identify the MPI and, if it does not coincide with the correct zero position, adjust the foresight of the gun accordingly.
- e. After adjustments have been made to the foresight, fire five rounds in bursts at the aiming mark. The gun is correctly zeroed if the distance from the CZP to the MPI is within 25 per cent of the size of the check group fired.
- f. At 25 m, to avoid obliteration of the aiming marks, four separate aiming marks should be used. The shot holes can then be superimposed on a piece of talc with chinagraph, using the aiming mark as a datum point.
- g. All soldiers must be coached.
- h. Tracer is not to be used.
- j. During the shoot, coaches are to watch the soldier firing. An assistant should note the arrival of the first and subsequent rounds of each group.

26. **Correct Zero Position.** The correct position of the MPI in relation to the POA with the sight set at 200 is:

- a. At 100 m, 75 mm (3 in.) above the POA.

- b. At 25 m, 20 mm (about 3/4 in.) above the POA.

SIGHT ADJUSTMENT

27. **Procedure.** Errors in elevation and direction are corrected by adjusting the foresight into the error:

- a. **Elevation**

- (1) Calculate the error up or down from the CZP. If the error is up, turn the foresight up; if down, vice versa.
- (2) One half turn of the foresight moves the MPI vertically about 50 mm (2 in.) at 100 m and about 12 mm (1/2 in.) at 25 m.
- (3) To turn the foresight, lift up the hinged clip from the rear of the foresight block and use the adjusting tool to screw the foresight up or down. To lock the foresight, push the hinged clip firmly down.
- (4) There are two sizes of foresight, small and large. There are five complete turns on each foresight.

- b. **Direction**

- (1) Calculate the error left or right from the CZP. If the error is left, move the foresight left; if right, vice versa.
- (2) One half turn of the adjusting screw moves the MPI horizontally about 75 mm (3 in.) at 100 m and about 20 mm (3/4 in.) at 25 m.
- (3) To move the foresight to the left, unscrew the left-hand Allen screw the required amount with the Allen key of the adjusting tool. To lock the foresight, place the Allen key in the right-hand Allen screw and, holding the adjusting tool on the bend with the thumb and forefinger, gently turn the screw in a clockwise direction until resistance is met and clicks can no longer be felt. This moves the foresight along its dovetail. No attempt should be made to gain extra leverage by holding the end of the adjusting tool.
- (4) If clicks cannot be felt when turning the adjusting screw, the foresight is to be checked by a weapons technician.
- (5) A locking pin bears against serrations on the inside face of the lateral adjusting screw head, thereby holding the screw in position. This produces a clicking that can be felt when turning the screw. Over-tightening of the

screw will cause damage to the extent that the head of the screw will eventually pass under the foresight, jamming it completely and rendering further adjustment impossible.

SECTION 3

ADDITIONAL STRIPPING AND ASSEMBLING

GENERAL

28. To deal with broken parts or to clean the gun more thoroughly, other parts not covered in lessons may have to be stripped. Stripping of these parts is to be carried out only by officers and NCOs who have received instruction on the subject while on a recognized course.

THE TRIGGER GROUP

29. **Stripping** (see Figure 6-3).
- a. Remove the pistol grip as taught.
 - b. Take out the screws holding the side plates and ease the plates off.
 - c. Set the safety catch to FIRE.
 - d. Pivot the safety catch clockwise until its lug is in line with the notch cut in the left side of the trigger guard. In this position the flat surfaces are downwards. Remove the safety catch.
 - e. Hold down the sear, push out the sear pin, and lift the sear. Push out the sear spring pin and remove the sear spring.
 - f. Push out the trigger pin and remove the sear and trigger. Unlock the sear hook from the trigger.

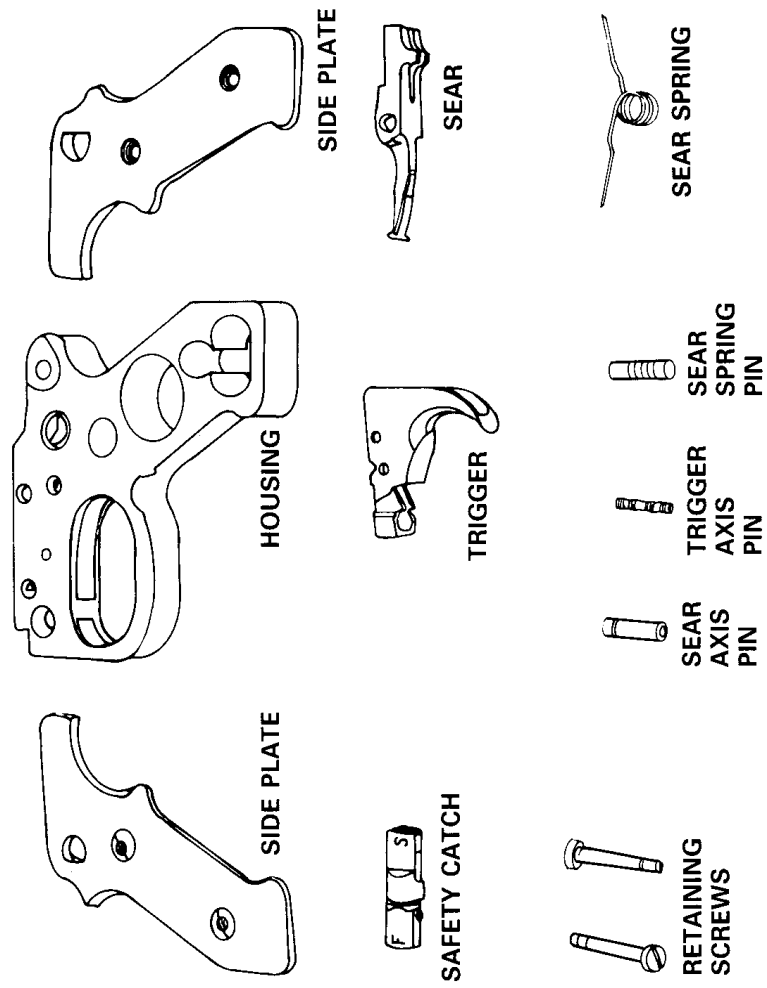


Figure 6-3 The Trigger Group

30. **Assembling**

- a. Put the sear hook into the trigger with the nose of the sear uppermost. Insert it into the frame, line up the trigger hole, and insert the trigger pin. Lift the sear.
- b. Replace the sear and trigger spring, with the coil to the rear, and secure with the pin. Ensure that the lower arm of the spring is outside the pin in the bottom of the trigger and not between the pin and the trigger.
- c. Pull the sear down; insert the pin.
- d. Replace the safety catch from the left, ensuring that the end marked S goes in first. Turn it anti-clockwise until the flats are to the rear.
- e. Press the trigger and release it, and then push back the sear trip to release the sear.
- f. Replace the sideplates.
- g. Whenever the trigger group is removed, always ensure that the safety catch is at FIRE before assembling the trigger group into the gun.

THE FEED MECHANISM

31. **Stripping**

- a. Lift the top cover. Place the thumb of the left hand on the centre of the two pieces of the cartridge guide and exert slight pressure against the springs underneath. With the right hand, disengage the hook of the cartridge guide retaining pin and remove the pin in a downward direction.
- b. The two pieces of the cartridge guide are now free and care must be taken not to lose the two springs situated beneath the guide.
- c. Hook the long arm of the feed control spring over the projection on the short arm; remove the retaining clip by pulling downwards and lift out the feed arm.
- d. Remove the circlip holding the feed pawls in place and take out the feed pawls. Do not strip further than this.

32. **Assembling**

- a. Replace the feed pawls over the pivot pin and replace the circlip correctly.
- b. Engage the lower end of the feed arm onto the feed pawls and place the feed arm onto its pivot pin.

- c. Replace the feed arm retaining clip in an upward direction, ensuring that an arm of the clip is on each side of the pivot pin with the straighter arm of the clip to the outside.
- d. Release the long arm of the feed control spring and make sure that it is engaged in its recess on the left side of the feed arm.
- e. Position the cartridge guide springs on their posts and put the two pieces of the guide together. (They fit together correctly only one way.)
- f. Place the pieces of the cartridge guide over their springs with the small piece uppermost. Line up the holes for the retaining pin and insert it in an upward direction.
- g. When the pin is fully home, re-engage the hook in its recess and close the top cover.

SECTION 4

BLANK FIRING ATTACHMENTS

GENERAL

33. **Description.** A blank firing attachment consists of a screw housing and a spacer plate (see Figures 6-4 and 6-5).
34. The screw housing may be fitted by a Weapons Technician to a selected worn barrel. The spacer plate can be fitted by either the armourer or an NCO.
35. **Stoppages.** The gas pressure build-up is greater when firing blank ammunition than when firing ball; this increases the recoil action at all gas regulator settings. This must be remembered when carrying out the stoppage drills. The balancing procedure laid down in RANGE PRACTICE #1, NOTE 4 is to be strictly followed using blank ammunition. Lengths of bursts and rates of fire are the same as for live firing, as described in Chapter 2, Lesson 5, Paragraphs 96 and 97.
36. **Cleaning.** Special attention should be paid to the screw housing and barrel during cleaning to ensure that they are thoroughly cleaned. The gas regulator can be cleaned in the normal way.

SAFETY

37. Blank firing attachments are used only in conjunction with blank ammunition. Since the blank round is the same shape as ball ammunition, it is important that the soldier can recognize the difference. A blank round has a crimped nose which is painted green. Whenever blank ammunition is used, this must be constantly emphasized by the instructor or commander.

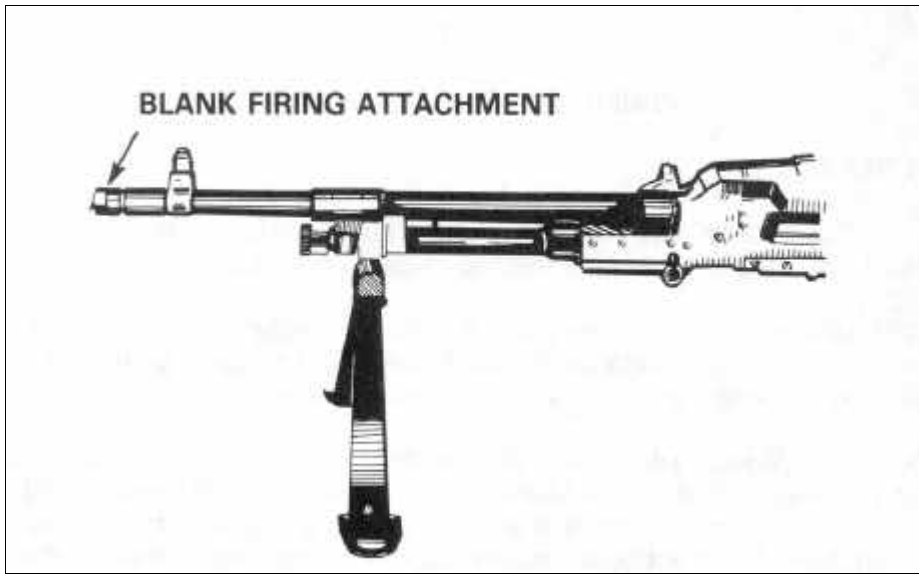


Figure 6-4 The Blank Firing Attachment Fitted

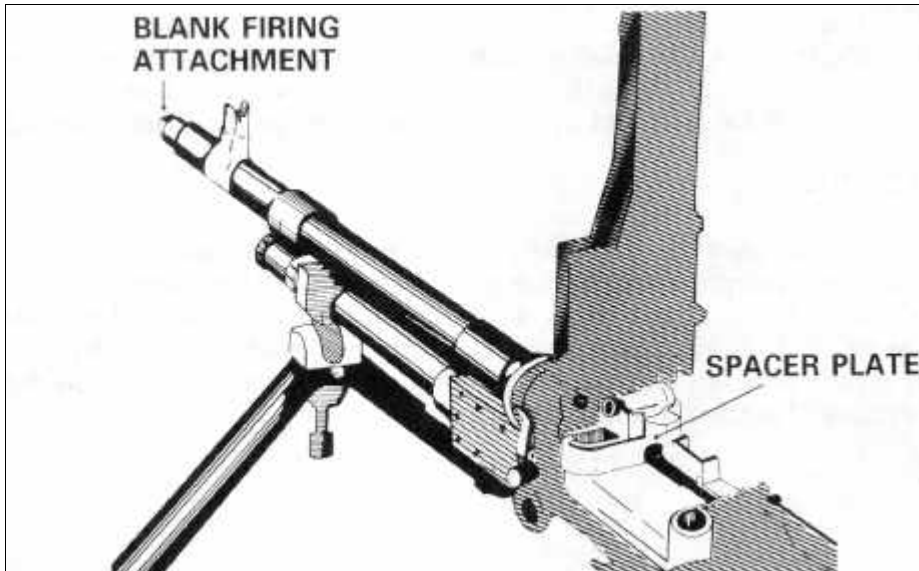


Figure 6-5 Correct Position of the Spacer Plate

WARNING

A danger area of 30 metres exists immediately to the front of the GPMG when firing 7.62 mm blank ammunition with or without the attachments fitted.

38. The gun must never be pointed directly at a person within 30 m. Great care must be taken when the weapon is used during house clearing or close quarter exercises. Before use, the attachments are to be inspected by an NCO to ensure that they are securely fitted to the weapon.

SECTION 5

PROTECTION FROM WATER IMMERSION

PROCEDURE

39. **Precautions.** Although the GPMG will probably function after being immersed in water, the following precautions should be taken before an amphibious operation:

- a. The muzzle and gas assembly are to be plugged and covered by plastic or some other suitable material to prevent sand from entering.
- b. If time and circumstances permit, the body should be covered by binding the feed tray and belt with cloth.
- c. At the earliest opportunity the trigger group, which is a natural sump, should be removed and turned upside down to drain out the water.
- d. After immersion give the gun additional gas to ensure that it fires at the correct rate.

SECTION 6

THE 50-ROUND BELT BOX

INTRODUCTION

40. At the discretion of the unit commander, 50-round belt boxes may be used in the close quarter battle role. These will prevent belts from becoming entangled in bushes and undergrowth. The gun can be fired from the bipod with the belt box fitted, but the box must be removed before a belt is loaded; otherwise stoppages may occur.

GENERAL

41. **Filling the Box.** Open the box cover and place a 50-round belt in layers in the box. Open the feed cover and thread the final five rounds through the feed opening.

42. **Loading.** Ensure that the ejection opening cover is closed and raise the top cover and feed tray (see Figure 6-6). Place the lip on the right side of the belt box onto the lower rib on the left side of the gun, and engage the box locking recesses over the retaining button on the gun. Continue the action of loading in the usual way (see Figure 6-7).

43. **Unloading.** Carry out the procedure for unloading as taught and remove the box by pressing down the box retaining catch.

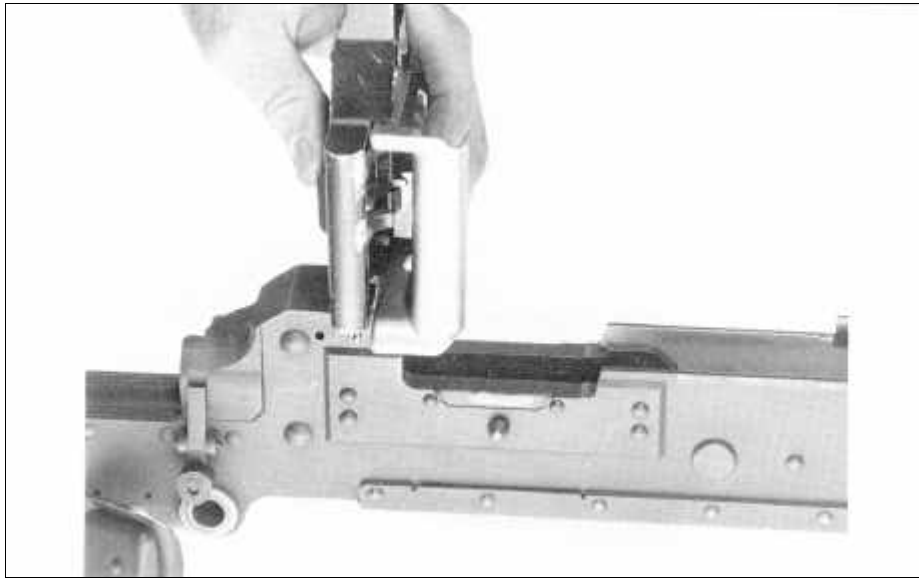


Figure 6-6 Loading the 50-Round Belt Box

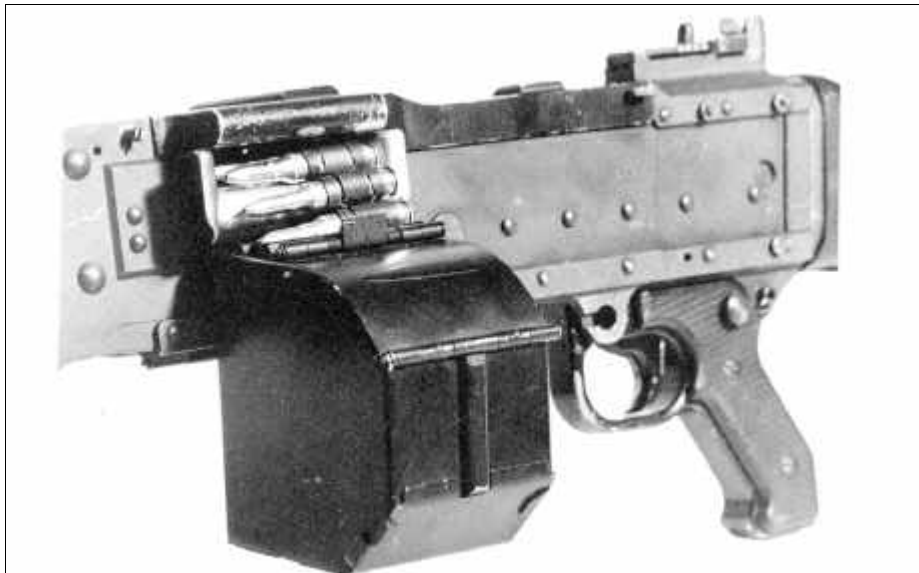


Figure 6-7 The 50-Round Belt Box Loaded

CHAPTER 7
RANGE PRACTICES

SECTION 1

GENERAL

INTRODUCTION

1. The range practices cover the use of the GPMG in both the light and the sustained fire role, practices 1 to 5 with the GPMG in the light role configuration and the remainder in the sustained fire configuration (see Annex A).
2. All range practices should be conducted as an extension of previous teachings. Commanders must explain the aim of the range practices and review the appropriate lessons before live firing commences.

AIM

3. Live fire range practices are designed to confirm and assess:
 - a. the basic skills of the gun crew in target engagement by day and by night; and
 - b. the ability of gun controllers in fire control.

GENERAL

4. **Stores.** A standard set of stores required for every range practice includes:
 - a. GPMG 1 per gun team
 - b. Spare parts Kit 1 per gun
 - c. Ear defenders 1 per soldier
 - d. First aid kit 1 per range
 - e. Binoculars 1 per gun
 - f. Cleaning materials as required
 - g. Targets as required
 - h. Ammunition as required
 - j. Empty sandbags as required
(for links and casings)

- k. Sustained Fire Kits as required
- m. Filled sandbags 3 per tripod

5. Additional stores, targets, and ammunition required for each practice are listed on the practice sheets.

6. **Preparation**

- a. Prior to the day of firing:
 - (1) Book the range and confirm the booking and the targets required.
 - (2) Read the Range Standing Orders.
 - (3) Indent for ammunition.
 - (4) Identify review lessons.
 - (5) Reconnoitre the range allotted for the range practice.
- b. On the day of firing:
 - (1) Check that each soldier has ear defenders.
 - (2) Prepare guns for firing and check that the gas regulator for each gun is set correctly for the predetermined balance.
 - (3) Check that the hinge clip and Allen screws are not loose on the foresight.

7. **Miscellaneous**

- a. All range staff must be fully conversant with the details in Chapter 6, Coaching Techniques.
- b. It is important that the trigger is operated correctly so that it doesn't influence the movement of the gun during firing.
- c. It is important that barrels are changed after every 220 rounds fired. Before re-use, the gas plug and block are to be cleaned using the issued reamers.

8. **Safety Precautions**

- a. Use the safety precautions applicable to the range being used.

- b. All range staff are to be fully conversant with the information contained in B-GL-304-003/TS-001, Operational Training, Volume 3, Ranges and Training Safety and applicable Range Standing Orders.

C6 GPMG

SUMMARY OF RANGE PRACTICES

**C6 GPMG
SUMMARY OF RANGE PRACTICES**

| Serial | Practice | Range (m) | Rounds | Aim |
|---------------|---|--------------------|---------------|---|
| 1 | Introductory Shoot - bipod. | 25 | 30 | To confirm that the soldier can aim, hold, and fire the gun in controlled bursts. |
| 2 | Grouping - bipod. | 100 | 60 | To determine the soldier's grouping ability with the GPMG. |
| 3 | Zeroing - bipod. | 100 | 35 | To superimpose the soldier's Mean Point of Impact onto the Correct Zero Position. |
| 4 | Application of fire - bipod. | 200 300 400 | 140 | To practise the soldier in engaging targets by deliberate fire at ranges of 200, 300, and 400 metres. |
| 5 | Application of fire - bipod. | 500 600 | 80 | To practise the soldier in engaging targets at longer ranges. |
| 6 | Night firing - bipod. | LNV 100 200 | 70 | To practise the soldier in engaging targets at night both with and without illumination. |
| 7 | Zeroing - tripod. | 100 | 90 | To superimpose the Mean Point of Impact of each barrel onto the Correct Zero Position. |
| 8 | Introductory shoot and the engagement of point and traversing targets (harmonization shoot) - tripod. | 25 | 100 | To confirm that the gunner can engage point and traversing targets. To practise fire control. |
| 9 | Observation of fire and adjustment (field firing) - tripod. | 800 900 1000 | 300 | To confirm the gun controller's ability to observe and adjust fire onto target. |

| Serial | Practice | Range (m) | Rounds | Aim |
|--------|---|--------------------|--------|---|
| 10 | C2 sight firing drills and preparation for night firing (harmonization shoot) - tripod. | 25 | 140 | To confirm that the gun team can use the C2 sight correctly during target engagement and can prepare and engage tasks at night. |
| 11 | Fire control (field firing) - tripod. | 800 900 1000 | 300 | To confirm the gun controllers' ability to give fire control orders and to practise the gun team in their gun drills. |

APPENDIX 1, ANNEX A,
CHAPTER 7

**RANGE PRACTICE 1
INTRODUCTORY SHOOT – 25 METRES (BIPOD)**

RANGE PRACTICE 1
INTRODUCTORY SHOOT – 25 METRES (BIPOD)

| AIM: To confirm that the soldier can aim, hold and fire the gun in controlled bursts. | | | | | |
|--|------------------|--------------|---------------------|---|--|
| Ser | Practice | Range | Rounds | Target | Instructions |
| 1 | Familiarization, | 25 m | Two 3 round belts. | Stop butt. | Fire each belt in one burst. |
| 2 | Length of burst. | 25 m | Four 3 round belts. | Ochre screen as described in stores list. | 1. Fire one burst of three rounds at each aiming mark. 2. Discuss groups. 3. Record group sizes. |
| 3 | Confirmation. | 25 m | 12 round | As for Serial 2. | As for Serial 2. |

NOTES

1. **Safety.** Normal as applicable to the 25 metre range being used.
2. **Additional Stores**
 - a. Coach's notebooks - 1 per coach.
 - b. Piece of talc with 125 mm and 75 mm circles inscribed thereon - 1 per butt.
3. **Ammunition.** 30 rounds per soldier plus 20 rounds per gun for balancing.
4. **Balancing.** Ensure the gas regulator is set on number 1 and fire a burst, apply the safety catch and move the cocking handle rearwards until it contacts the mechanism. If the cocking handle stops 12 mm short of the last rivet of the cocking handle guide, then adjust the regulator clockwise by 1 click and repeat the above procedure. Once the cocking handle is in line with the rivet, the gun is balanced. Record the gas setting for future range work.
5. **Targets.** Ochre screen with four 25-mm aiming marks 200 mm apart.
6. **Miscellaneous**
 - a. All soldiers are to be coached.
 - b. One soldier is to be nominated to watch and note the arrival of the first and subsequent shots of each group.
 - c. To measure the first round group size, the first round of each burst should be plotted on a piece of talc.
7. **Standards**
 - a. Acceptable - 125 mm average.
 - b. Desirable - 75 mm average.

APPENDIX 2, ANNEX A,
CHAPTER 7

RANGE PRACTICE 2
GROUPING – 100 METRES (BIPOD)

RANGE PRACTICE 2
GROUPING – 100 METRES (BIPOD)

| AIM: To determine the soldier's grouping ability with the GPMG. | | | | | |
|--|------------------------------|--------------|---------------|--|--|
| Ser | Practice | Range | Rounds | Target | Instructions |
| 1 | Grouping, fire trench. | 100 m | 20 | One Fig 11 on the 1.220 m screen (as described in Note 4) on the front and rear of the target frame. | <ol style="list-style-type: none"> 1. The soldier is to fire one burst of 3 to 5 rounds at each target. 2. Examine the targets and record group sizes. 3. Repeat 1 and 2 above. 4. Calculate the average group size from the total of four groups fired, and record. 5. Rounds remaining are to be handed in. |
| 2 | Grouping, fire trench. | 100 m | 20 | As for Serial 1. | <ol style="list-style-type: none"> 1. The soldier is to fire 20 rounds in bursts of 3 to 5 rounds at the front target. 2. Examine the target and record the group size. |
| 3 | Grouping, lying in the Open. | 100 m | 20 | As for Serial 1. | As for Serial 2. |

NOTES

1. **Safety.** Normal.
2. **Additional Stores.** Normal range stores.
3. **Ammunition.** Mixed linked ball - 60 rounds per soldier.
4. **Targets.** Figure 11 with a 100 mm by 75 mm white aiming mark mounted on a 1.220 m square screen. Two per firer.
5. **Miscellaneous**
 - a. All firers are to be coached.
 - b. Coaches are to record all group sizes.
6. **Standard**
 - a. Acceptable - 750 mm group.
 - b. Desirable - 450 mm group.

APPENDIX 3, ANNEX A,
CHAPTER 7

RANGE PRACTICE 3
ZEROING – 100 METRES (BIPOD)

RANGE PRACTICE 3
ZEROING – 100 METRES (BIPOD)

| AIM: To superimpose the soldier's Mean Point of Impact onto the Correct Zero Position. | | | | | |
|---|-------------------|--------------|---------------|------------------------------------|---|
| Ser | Practice | Range | Rounds | Target | Instructions |
| 1 | Limbering up. | 100 m | 10 | Stop Butt. | Fire 5 rds in bursts. |
| 2 | Grouping/zeroing. | 100 m | 20 | One Fig 11 as described in Note 4. | <ol style="list-style-type: none"> 1. 20 rds in bursts of 3 to 5 at the same aiming mark. Stand up after every second burst. 2. Identify the MPI. 3. Adjust sights as necessary. |
| 3 | Check zero. | 100 m | 5 | One Fig 11 as for Serial 2. | <ol style="list-style-type: none"> 1. Fire 5 rds in bursts. 2. Check the MPI for correct zero. |
| NOTES | | | | | |
| <ol style="list-style-type: none"> 1. Safety. Normal. 2. Additional Stores. Normal range stores. 3. Ammunition. Linked ball – 35 rounds per gun. 4. Targets. Figure 11 with a 100 mm by 75 mm white aiming mark mounted on a 1.220 m square screen. One per firer. 5. Miscellaneous <ol style="list-style-type: none"> a. Soldiers are to have achieved an average burst group size of 300 mm before being allowed to zero. b. The correct zero position (CZP) is 75 mm above the point of aim. 6. Standard. The gun is correctly zeroed if the distance from the CZP to the MPI is within 25 per cent of the size of the check group fired. | | | | | |

APPENDIX 4, ANNEX A,
CHAPTER 7

RANGE PRACTICE 4
APPLICATION OF FIRE – 200, 300 AND 400 METRES (BIPOD)

RANGE PRACTICE 4
APPLICATION OF FIRE – 200, 300 AND 400 METRES (BIPOD)

| AIM: To practice the soldier in engaging targets by deliberate fire at ranges of 200, 300, and 400 metres. | | | | | |
|---|--------------------------------|--------------|---------------|--|---|
| Ser | Practice | Range | Rounds | Target | Instructions |
| 1 | Deliberate, lying in the open. | 200 m | 10 | Double Fig 11. | 1. Firer fires 10 rounds in bursts. 2. MPI of each burst to be signalled. |
| 2 | Timed, lying in open. | 200 m | 20 | Double Fig 11. One exposure of 60 seconds. | 1. Order LOAD 200 – WATCH AND SHOOT. 2. Firer fires 20 rounds in bursts during the exposure of the target. 3. MPI to be signalled at the end of the exposure. |
| 3 | Deliberate, fire trench. | 200 m | 10 | As for Serial 1. | As for Serial 1. |
| 4 | Timed, fire trench. | 200 m | 20 | As for Serial 2. | As for Serial 2. |
| 5 | Deliberate, lying in the open. | 300 m | 10 | Triple Fig 11. | 1. Firer fires 10 rounds in bursts. 2. MPI signalled for each burst. |
| 6 | Timed, lying in the open. | 300 m | 15 | Triple Fig 11. One exposure of 45 seconds. | 1. Order LOAD – 300 WATCH AND SHOOT. 2. Firer fires 15 rounds in bursts during the exposure of the target. 3. MPI to be signalled at the end of the exposure. |
| 7 | Timed, fire trench. | 300 m | 15 | As for Serial 6. | As for Serial 6. |
| 8 | Deliberate, lying in the open. | 400 m | 10 | As for Serial 5. | As for Serial 5. |
| 9 | Timed, lying in the open. | 400 m | 15 | As for Serial 6. | As for Serial 6. |
| 10 | Timed, lying in the open. | 400 m | 15 | Triple Fig 11. One exposure of 30 seconds. | As for Serial 6. |

NOTES

1. **Safety.** Normal
2. **Additional Stores.** Normal range stores.
3. **Ammunition.** Mixed linked ball – 140 per soldier.
4. **Targets**
 - a. Double Figure 11 – 1 per firer.
 - b. Triple Figure 11 – 1 per firer.
5. **Miscellaneous**
 - a. All firers are to be coached.
 - b. Determine the firer's expected scoring area (ESA).
 - c. Confirm point of aim/wind allowance with the firer.
6. **Standards**
 - a. Score one point per hit in serials 2, 3, and 5 to 10, HPS 120.
 - b. Acceptable – 60 (50 per cent of HPS).
 - c. Desirable – 84 (70 per cent of HPS).

APPENDIX 5, ANNEX A,
CHAPTER 7

RANGE PRACTICE 5
APPLICATION OF FIRE – 500 AND 600 METRES (BIPOD)

RANGE PRACTICE 5
APPLICATION OF FIRE – 500 AND 600 METRES (BIPOD)

| AIM: To practice the soldier in engaging targets at longer ranges | | | | | |
|--|-----------------------|--------------|---------------|---|---|
| Ser | Practice | Range | Rounds | Target | Instructions |
| 1 | Sighting. | 500 m | 10 | Triple Fig 11. | 1. Firer fires two bursts at the target. 2. MPI signalled after each burst. |
| 2 | Timed. | 500 m | 20 | Triple Fig 11. Four exposures of 5 seconds over a period of one minute. | 1. Order WATCH AND SHOOT 2. Firer fires one burst at each exposure. 3. The target is to be lowered when hit. |
| 3 | Sighting. | 600 m | 10 | As for Serial 1. | As for Serial 1. |
| 4 | Timed. | 600 m | 20 | As for Serial 2. | As for Serial 2. |
| 5 | 600 to 500 m advance. | 500 m | 20 | Triple Fig 11. One exposure of 3 seconds, and interval of 35 seconds, then four exposures of 5 seconds over a period of one minute. | 1. Firer lying in the open of 600 m. The gun is loaded. 2. The exposure of the target for 3 seconds is the signal to advance to 500 m and fire one burst at each exposure. |

NOTES

1. **Safety.** Normal.
2. **Additional Stores.** Normal range stores.
3. **Ammunition.** Mixed linked ball – 80 per soldier.
4. **Targets.** Triple Figure 11 – 1 per soldier.
5. **Miscellaneous**
 - a. Determine the firer's expected scoring area (ESA).
 - b. All firers are to be coached.
 - c. Confirm point of aim/wind allowance with the firer and his No. 2.
 - d. No. 2s are to be coached in the observation of strike and tracer.
6. **Standards**
 - a. Score one point for one or more hits during any one exposure in Practices 2, 4 and 5, HPS 12.
 - b. The acceptable standard is 8 points (70 per cent of HPS).

APPENDIX 1, ANNEX A,
CHAPTER 7

**RANGE PRACTICE 6
NIGHT FIRING (BIPOD)**

**RANGE PRACTICE 6
NIGHT FIRING (BIPOD)**

| AIM: To practise the soldier in engaging targets at night both with and without illumination. | | | | | |
|--|--------------------------------|--------------|---------------|--|--|
| Ser | Practice | Range | Rounds | Target | Instructions |
| 1 | Deliberate, lying in the open. | LNV | 10 | One Fig 11. No time limit. | 1. Soldier fires in bursts of 3 to 5 rounds. 2. Assess the group |
| 2 | Timed, lying in the open. | LNV | 20 | One Fig 11. One exposure of 60 seconds. | 1. Order WATCH AND SHOOT. 2. Soldier fires in bursts of 3 to 5 rounds. |
| 3 | Rapid, fire trench | 100 m | 20 | One Fig 11. One exposure of 30 seconds | 1. Order WATCH AND SHOOT. 2. Soldier is to fire 20 rounds in bursts during the illumination of the target. |
| 4 | Timed, fire trench | 200 m | 20 | One double Fig 11. One exposure 60 seconds | 1. Order WATCH AND SHOOT. 2. Soldier is to fire 20 rounds in bursts during the illumination of the targets. |

NOTES

1. **Safety.** Remind firers of the importance of range discipline.
2. **Additional Stores.** Parachute illumination flares sufficient to fire the practice.
3. **Ammunition.** Mixed linked ball – 70 per soldier.
4. **Targets.**
 - a. Single Figure 11 – 1 per firer.
 - b. Double Figure 11 – 1 per firer.
5.
 - a. All firers are to be coached.
 - b. Illumination should be provided from the best source available. Mortar illumination can be used if feasible.
 - c. The soldier can be expected to fire at least four bursts per parachute illuminating flare.
 - b. All range staff should be familiar with the details of night firing.
 - e. Targets are to be draped.
 - f. Care must be taken to ensure that all targets to be engaged without the aid of artificial illumination are within the limit of night visibility.
6. **Standards**
 - a. Score one point per hit in serials 2, 3, and 4, HPS 60..
 - b. The acceptable standard is 30 points (50 per cent of HPS).

APPENDIX 7, ANNEX A,
CHAPTER 7

**RANGE PRACTICE 7
ZEROING – 100 METRES (TRIPOD)**

RANGE PRACTICE 7
ZEROING – 100 METRES (TRIPOD)

| AIM: To superimpose the Mean Point of Impact of each barrel onto the Correct Zero Position | | | | | |
|---|--------------------|--------------|--------------------|---------------------------------------|--|
| Ser | Practice | Range | Rounds | Target | Instructions |
| 1 | Drying the barrel | 100 m | 5 | Stop Butt. | 1. Firer one burst. |
| 2 | Grouping, zeroing. | 100 m | Four 5 round belts | Two screens as described in the notes | 1. Fire one 5-round burst at each target. 2. Calculate the average MPI of the four groups. 3. Adjust the foresight as necessary. |
| 3 | Check Zero. | 100 m | 5 | As for Serial 2. | 1. Fire one 5-round burst at one target only. 2. Check the MPI for correct zero. |

NOTES

1. **Safety.** Normal.
2. **Additional Stores**
 - a. Sustained fire kit – 1 per gun.
 - b. Filled sandbags – 3 per gun.
3. **Ammunition.** Linked ball - 90 rounds per gun.
4. **Targets.** Two figure 11 placed side by side on a 1.220 m square screen, each target having a 100 mm by 75 mm white patch.
5. **Miscellaneous**
 - a. The practice is to be fired in full for each of the three barrels used in the sustained fire role.
 - b. The correct zero position (CZP) is 75 mm above the point of aim.
 - c. The gun is to be mounted on the tripod for this practice.
 - d. If the gas regulator balance is not known, the procedure laid down in Range Practice 1, Note 4 is to be carried out.
6. **Standards.** The barrel is correctly zeroed if the distance from the MPI to the CZP is written 25 per cent of the size of the check group fired.

APPENDIX 8, ANNEX A,
CHAPTER 7

RANGE PRACTICE 8
INTRODUCTORY SHOOT AND THE ENGAGEMENT OF POINT
AND TRAVERSING TARGETS (HARMONIZATION SHOOT)
25 METRES (TRIPOD)

RANGE PRACTICE 8
INTRODUCTORY SHOOT AND THE ENGAGEMENT OF POINT
AND TRAVERSING TARGETS (HARMONIZATION SHOOT)
25 METRES (TRIPOD)

| AIM: a. To confirm that the gunner can engage point and traversing targets. b. To practice gun controllers in fire control. | | | | | |
|---|--|--------------|---------------|----------------------|--|
| Ser | Practice | Range | Rounds | Target | Instructions |
| 1 | Introductory shoot and harmonization of sights | 25 m | 20 | Harmonization screen | <ol style="list-style-type: none"> 1. Give each gun a FCO (range 1400) onto one of the aiming marks just above the landscape. 2. Order STOP after the first burst. 3. Order elevation adjustments to position the MPI between the harmonization lines. Record each gun's sight setting. 4. Discuss gun drills. |
| 2 | Point target. | 25 m | 30 | As for Serial 1. | <ol style="list-style-type: none"> 1. Gun loaded with 15 rounds. 2. Give a FCO onto a point target (see Note 5c). 3. Order STOP after the third burst. 4. Order UNLOAD – CLEAR GUN. Discuss gun drills and take scores. 5. Repeat the practice. |
| 3 | Traversing target. | 25 m | 50 | As for Serial 1. | <ol style="list-style-type: none"> 1. Gun loaded with 25 rounds. 2. Give a FCO onto a traversing target of approximately 8 to 10 mils in width (see Note 5c). 3. Order UNLOAD – CLEAR GUN. 4. Repeat the practice. |

NOTES

1. **Safety.** Read Range Standing Orders with particular reference of the positioning of harmonization screens. Incorrect positioning can create a safety hazard (see Figure 7-1).
2. **Additional Stores.**
 - a. Sustained fire kit - 1 per gun
 - b. Filled sandbags - 3 per gun
 - c. Ruler - 1 per tripod
 - d. 680 mm measuring rod - 1 per tripod
3. **Ammunition.** Linked ball – 100 rounds per firer.
4. **Targets.**
 - a. Harmonization screen (see Figure 7-1) – 1 per tripod
 - b. Landscape target (miniature replica) – 1 per tripod if applicable (see Note 5e).
5. **Miscellaneous**
 - a. Select a minimum of two points and two traversing targets on the landscape.

- b. It is important that guns have been correctly zeroed before firing this practice.
 - c. The harmonization range setting for each gun is to be ordered as the range for all Fire Control Orders (FCO's).
 - d. Bursts of five rounds are to be used in order to conserve ammunition.
 - e. NCO's can be exercised in fire control during this period. The instructor points out the target on the replica to the NOC. The NCO gives the FCO to the gun team. Any criticism of the NCO's FCO should be done out of hearing distance of the gun team.
6. **Scoring.** A measuring rod 680 mm (27 inches) long is required and is used as follows:
- a. **Point Target**
 - (1) Hold the rod vertically with the bottom centre placed on the point of aim.
 - (2) Mark the screen at the top centre of the rod; this indicates where the MPI should be.
 - (3) Draw a rectangle 50 mm (2 inches) wide and 100 mm (4 inches) deep, with the mark just made as its centre.
 - (4) Count one point for each shot within or cutting the rectangle.
 - b. **Traversing Target**
 - (1) Mark the limits of the target as for a point target.
 - (2) Join the two marks with a pencil line, extending it by 25 mm (1 inch) at each end.
 - (3) Draw lines 50 mm (2 inches) above and 50 mm (2 inches) below the first line. Join the ends by vertical lines.
 - (4) Count one point for each shot within or cutting the rectangle.
7. **Standards.** Acceptable Standard: 28 points in the repeat shoot of Serials 2 and 3.

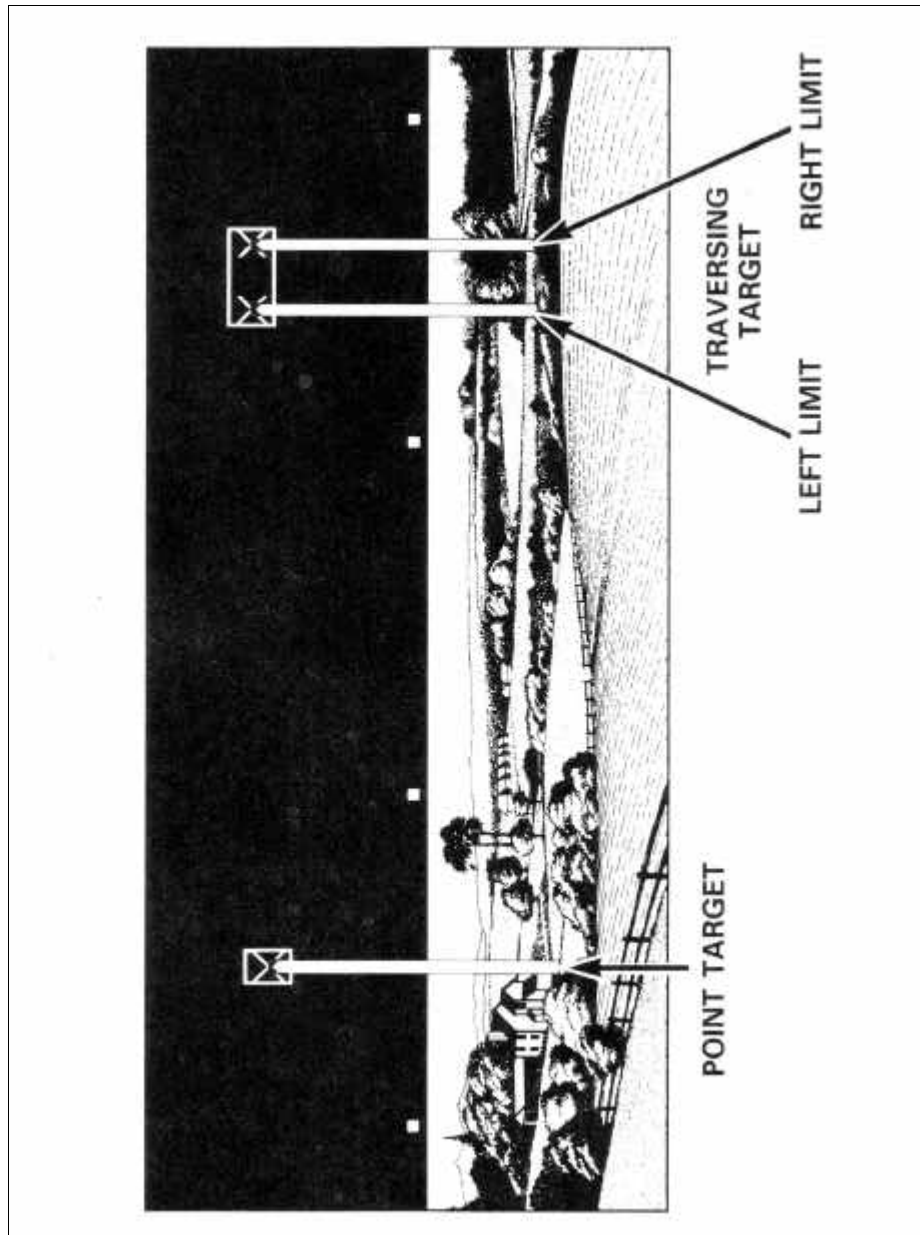


Figure 7-1 Harmonization Screen

APPENDIX 9, ANNEX A,
CHAPTER 7

**RANGE PRACTICE 9
OBSERVATION OF FIRE AND ADJUSTMENT
FIELD FIRING (TRIPOD)**

**RANGE PRACTICE 9
OBSERVATION OF FIRE AND ADJUSTMENT
FIELD FIRING (TRIPOD)**

| AIM: To confirm the gun controller's ability to observe and adjust fire onto the target. | | | | |
|---|--------------------|---------------------|---------------|---|
| Ser | Practice | Range | Rounds | Instructions |
| 1 | Point target. | 900 m and 1000 m | 80 | <ol style="list-style-type: none"> 1. Indicate a point target to the gun controller; tell him to engage it and to stop firing when the first effective burst falls on it. 2. Discuss the FCOs and adjustments (see Note 4f). 3. Repeat the practice against a different target at a different range. |
| 2 | Traversing target. | 800 m | 140 | <ol style="list-style-type: none"> 1. Indicate a traversing target approximately 10 mils wide to the gun controller. 2. Tell him to engage the target and to stop firing and relay when the target is successfully engaged. 3. Discuss the FCO and adjustments. |
| 3 | Displaced OP. | 900 m and 1000 m | 80 | As for Serial 1. |

NOTES

1. **Safety.** Normal. Issue blank range cards. Read Range Orders with particular reference to any limitations on the use of tracer.
2. **Additional Stores**
 - a. Sustained fire kit - 1 per gun
 - b. Filled sandbags - 3 per tripod
 - c. Range card - 1 per team
3. **Ammunition.** Mixed linked – 300 rounds per gun controller.
4. **Miscellaneous**
 - a. Reconnoitre the training area to be used and determine -
 - (1) Gun positions, arcs of fire, and two reference points (600 m). If there are no prepared gun pits, ensure that hasty defence positions selected are tactically realistic.
 - (2) Displaced OP's, 15 to 20 metres to the flank of each position.
 - b. Prepare a range card with pre-determined ranges to a minimum of four point targets (900 to 1000 m) and two traversing targets (800 m).
 - c. Indicate targets to the gun controller. Allow sufficient time for the gun controller to make out the range card.
 - d. Two targets should be selected for the displaced OP, one 900 m directly in front of the gun position, and the other 1000 m directly in front of the OP.
 - e. Two targets should be in the gun position for Serials 1 and 2 and in the displaced OP for Serial 3.
 - f. Although this period is primarily to practice gun controllers, errors in gun drills should be noted and criticized.
 - g. The length of burst may be reduced to conserve ammunition.

APPENDIX 10, ANNEX A,
CHAPTER 7

RANGE PRACTICE 10
C2 SIGHT FIRING DRILLS AND PREPARATION FOR NIGHT FIRING
(HARMONIZATION SHOOT) – 25 METRES (TRIPOD)

RANGE PRACTICE 10
C2 SIGHT FIRING DRILLS AND PREPARATION FOR NIGHT FIRING
(HARMONIZATION SHOOT) – 25 METRES (TRIPOD)

| AIM: To confirm that the gun team can use the C2 sight correctly during target engagement and can prepare and engage tasks at night. | | | | | |
|---|--|--------------|---------------|-----------------------|---|
| Ser | Practice | Range | Rounds | Target | Instructions |
| 1 | Harmonization of sights | 25 m | 10 | Harmonization screen. | <ol style="list-style-type: none"> 1. Give each gun a FCO (range 1400) onto one of the aiming marks just above the landscape. 2. Order STOP after the first burst. 3. Order elevation adjustments to position the MPI between the harmonization lines. 4. Record each gun's sight setting. |
| 2 | C2 sight, obscuration of target. | 25 m | 30 | As for Serial 1. | <ol style="list-style-type: none"> 1. Gun loaded with 15 rounds. 2. Give a FCO onto a point target (see Note 5b). 3. Order STOP...MARK after the first burst. 4. As the gunner aligns the dial sight, lower the iron backsight. 5. When the gunner reports ON order GO ON. 6. Order STOP after two bursts. 7. Order UNLOAD – CLEAR GUN. Discuss gun drills and take scores. 8. Repeat the practice. |
| 3 | Preparation and engagement of night tasks. | 25 m | 100 | As for Serial 1. | <ol style="list-style-type: none"> 1. Gun loaded with 50 rounds. 2. Register by firing and record the readings of four DF tasks, one of which is to be the FPF, on a target information sheet. 3. When all night preparations are complete and the gun is aligned on the FPF order UNLOAD... CLEAN GUN. 4. Discuss gun drills, take scores, and patch out without destroying the lines of the scoring areas (see Note 5c). 5. Reload with 50 rounds. 6. Using the recorded readings, engage each target with one burst (see Note 5d). 7. One completion, order UNLOAD – CLEAR GUN. Discuss gun drills and take scores. |

NOTES

1. **Safety.** Read Range Standing Orders with particular reference to the positioning of harmonization screens. Incorrect positioning can create a safety hazard.
2. **Additional Stores.**
 - a. Target Information Sheets - 1 per gun
 - b. Sustained fire kits - 1 per gun

- c. Filled sandbags - 3 per gun
 - d. 680 mm measuring rod - 1 per tripod
 - e. Flashlights (red filter) - 1 per tripod
 - f. Chalk (various colours) - as required
3. **Ammunition.** Linked ball – 140 rounds pre gun.
4. **Targets**
- a. Harmonization screen - 1 per tripod
 - b. Landscape target (miniature replica) - 1 per tripod if applicable (see Note 5e)
5. **Miscellaneous**
- a. It is important that guns have been correctly zeroed before firing this practice.
 - b. The harmonization range setting for each gun is to be ordered as the range in all FCOs.
 - c. Outline the scoring area with chalk if the repeat shoot is being done at night.
 - d. During the engagement of night tasks, allow the gun team sufficient time to relay on to the FPF between tasks.
 - e. NCOs can be exercised in fire control during this period. The instructor points out the target on the replica to the NCO. The NCO gives the FCO to the gun team. Any criticism of the NCO's FCO should be done out of hearing distance of the gun team.
 - f. Select a minimum of three points and three traversing targets on the landscape (one of the point targets to be the FPF).
 - g. Bursts of five rounds are to be used to conserve ammunition.
 - h. Scores in the repeat shoot only of Serials 2 and 3 are to count.
 - j. The repeat shoot of Serial 3 may be done during the hours of darkness.
6. **Scoring.** A measuring rod 630 mm (27 inches) long is required and is used as follows:
- a. **Point Target**
 - (1) Mark the limits of the target as for a point target.
 - (2) Join the two marks with a pencil line, extending it by 25 mm (1 inc.) at each end.
 - (3) Draw lines 50 mm (2 inc.) above and 50 mm (2 in.) below the first line. Join the ends by vertical lines.
 - (4) Count one point for each shot within or cutting the rectangle.
 - b. **Traversing Target**
 - (1) Mark the limits of the target as for a point target.
 - (2) Join the two marks with a pencil line, extending it by 25 mm (1 in.) at each end.
 - (3) Draw lines 50 mm (2 in.) above and 50 mm (2 in.) below the first line. Join the ends by vertical lines.
 - (4) Count one point for each shot within or cutting the rectangle.
7. **Standards.** Acceptable Standard – 45 points in the repeat shoot of Serials 2 and 3.

APPENDIX 11, ANNEX A,
CHAPTER 7

RANGE PRACTICE 11
FIRE CONTROL – FIELD FIRING (TRIPOD)

RANGE PRACTICE 11
FIRE CONTROL – FIELD FIRING (TRIPOD)

| AIM: To confirm the gun controller's ability to give fire control orders and to practice the gun team in their gun drills. | | | | |
|---|-----------------------------|-----------------|---------------|--|
| Ser | Practice | Range | Rounds | Instructions |
| 1 | Point target. | 900 m | 40 | 1. Indicate the target to the gun controller. Inform him that the target is to be recorded as Target 2 on successful engagement. 2. Discuss the FCO and gun drills. |
| 2 | Traversing target | 1000 m | 80 | 1. Indicate a target approx 8 m wide to the gun controller. Tell him to engage the target and relay and record it as Target 3 on successful engagement. 2. Discuss the FCO and gun drills. |
| 3 | Obscuration (point target). | 1000 m | 40 | 1. Indicate the target to the gun controller. 2. When the target is being successfully engaged order TARGET BECOMING OBSCURED BY SMOKE. 3. Discuss the FCO and gun drills. |
| 4 | Rapid engagement. | 1000m and 800 m | 80 | 1. Indicate two targets to the gun controller. Inform him that on successful engagement of the first target he is to immediately engage the second target. 2. Discuss the FCO and gun drills. |
| 5 | FPF night firing. | | 60 | 1. Indicate the FEBA to the gun controller and inform him that the FPF is to be a line of fire in front of it. Order him to register and record the FPF as Target 1. 2. Discuss the preparation drill and gun drills. 3. Order the gun controller to engage each of the targets on the target information sheet in turn. |

NOTES

1. **Safety.**
 - a. Read Range Standing Orders with particular reference to any limitations on the use of tracer.
 - b. Issue blank range cards and target information sheets.
2. **Additional Stores.**
 - a. Sustained fire kit - 1 per gun
 - b. Target Information Sheets - 1 per gun
 - c. Filled sandbags - 3 per tripod
 - d. Range Card - 1 per gun team
 - e. Flashlight (red filter) - 1 per gun team
3. **Ammunition.** Mixed linked – 300 rounds per firer.
4. **Miscellaneous**
 - a. Reconnoitre the training area and determine:

- (1) gun positions and arcs of fire. If there are no prepared gun pits ensure that hasty defence positions selected are tactically realistic; and
 - (2) the location of the FEBA (500 to 600 m).
- b. Prepare a range card with pre-determined ranges to a minimum of four point targets (800 to 1000 m) and one traversing target.
 - c. Indicate each target to the gun controller with a target indicator. Allow sufficient time for the gun controller to make out the range card.
 - d. Move the scale ring slightly off the upper index on each C2 sight before beginning the period, provided that the gun team cannot observe it being done.
 - e. The length of burst may be reduced to conserve ammunition.
 - f. Instruction 3 of Serial 5 may be conducted at night.

CHAPTER 8

HANDLING TESTS AND METHODS OF DESTRUCTION

PURPOSE

1. The purpose of handling tests is to determine the firer's safety and handling of the GPMG so that instructors can monitor progress during training and commanders can assess standards within their unit.
2. Standards should be measured:
 - a. at appropriate stages during training; and
 - b. annually in all units.

CONDUCT

3. The tests are to be done consecutively. They may be conducted:
 - a. in barracks using dummy or blank ammunition; or
 - b. in a range using live or blank ammunition.

DRESS

4. Fighting order, less steel helmet, will be worn for all tests.

STANDARDS

5. The following standards will apply:
 - a. Skilled - skilled standard in all tests.
 - b. Average - minimum of average in one or more tests.
 - c. Fail-fail in one or more tests.
6. **Details of Tests.** Details are attached as follows:
 - a. Annex A - Light Role.
 - b. Annex B -Sustained Fire Role.

PRIORITY OF DESTRUCTION

7. When destroying the GPMG, destroy the parts in the following order:
 - a. breech,

- b. barrels,
 - c. sighting equipment, and
 - d. mount.
8. The following guidelines should be observed when destroying the GPMG:
- a. The destruction must be as complete as circumstances permit.
 - b. If there is insufficient time for complete destruction, the parts essential to the operation of the weapon will be destroyed, in the order listed in paragraph 1.
 - c. The same essential parts of each weapon must be destroyed to prevent the reconstruction of a complete weapon from several damaged ones.

METHOD OF DESTRUCTION

9. Plug the barrel near the chamber or bury the muzzle in the ground, load, and fire the gun from behind cover by using a string tied to the trigger.
10. Strip the weapon as far as possible and bury the parts or scatter them over as wide an area as possible.
11. All spare parts should be disposed of.
12. Should the foregoing destruction drills not be possible, destroy in other ways, eg, by explosive charges or fire, by running over them with vehicles, or by scattering components in rivers, mud, snow, sumps, latrines, or undergrowth.
13. Unused ammunition can be destroyed with improvised demolition charges made up of grenades, bombs, etc.

**HANDLING TESTS
GPMG (LIGHT ROLE)**

**HANDLING TESTS
GPMG (LIGHT ROLE)**

| Test No. | Subject | Stores | Conditions | Marking |
|-----------------|-----------------------------------|---|--|--|
| 1 | Safety. | Gun unloaded. Gun either in the corner of a room or on the firing point. | <ul style="list-style-type: none"> a. Order the soldier to bring the gun to the centre of the room or to another position on the firing point. b. The soldier, without further direction, is to carry out the normal safety precautions on the gun. | The soldier is awarded FAIL if the safety actions are not carried out correctly. |
| 2 | Stripping, cleaning, assembling. | GPMB. Spare parts kit complete. One 7.62 mm dummy round. | <ul style="list-style-type: none"> a. Order the soldier to strip the gun for regular cleaning. b. Ask the soldier what spare parts for the gun are contained in the spare parts kit. Order the soldier to assemble the gun. | <p>The main purpose of this test is to assess the soldier's ability to strip and assemble the gun. He should therefore be assessed with his in mind.</p> <p>SKILLED – No mistakes. AVERAGE – 1 to 3 mistakes. FAIL – More than 3 mistakes. Aware no qualification if any mistake affects safety.</p> |
| 3 | Loading. | GPMG. Belt of 15 dummy rounds. Stop watch. | <ul style="list-style-type: none"> a. Gunner lying behind the gun. b. Safety catch at FIRE. Belt on the ground on left of gun. Order LOAD. c. Time is taken from the order LOAD until the gunner has both hands in their proper position on the gun and the gun is upright. | <p>SKILLED – 8 seconds or less. AVERAGE – 9 to 12 seconds. FAIL – Over 12 seconds. Add 3 seconds to the overall time for each mistake. Award no qualification if any mistake affects safety.</p> |
| 4 | Immediate action and gas stoppage | As for Test No. 3. | <ul style="list-style-type: none"> a. Gunner behind the gun; gun loaded and firing. Order GUN STOPS. When IA has been done, other GUN FIRES rounds and stops again. b. Time taken from AGAIN until the gunner has aimed and fired the gun. c. Mistakes made in the IA count for the test. | <p>SKILLED – 8 seconds or less. AVERAGE – 9 to 10 seconds. FAIL – Over 10 seconds. Add 2 seconds to the overall time for each mistake. Award no qualification if any mistake affects safety.</p> |

**HANDLING TESTS
GPMG (LIGHT ROLE) (Cont'd)**

| Test No. | Subject | Stores | Conditions | Marking |
|----------|------------------------|---|---|---|
| 5 | Unloading. | As for Test No. 3. | a. Gunner behind the gun; gun loaded and firing. Order STOP and when actions have been carried out correctly give the command UNLOAD. b. Time taken from UNLOAD until the gunner is standing up behind the gun. | SKILLED – 8 seconds or less. AVERAGE – 9 to 12 seconds. FAIL – Over 12 seconds. Add 2 seconds to the overall time for each mistake. Award no qualification if any mistake affects safety. |
| 6 | Preparation for firing | GPMG. Spare parts kit, complete. One 7.62 mm dummy round. Flannelette. Oil. | a. Order the gunner to prepare the gun for firing. b. Without further direction the gunner should: <ol style="list-style-type: none"> (1) Strip the gun as for daily cleaning, clean, and leave dry. (2) Open the dust cover, clean and oil the guide ribs, and then close the dust cover. (3) Oil the bearing surfaces of the bolt and piston extension, locking lever and locking shoulder, feed arm and feed channel, the return spring, and the trigger mechanism. (4) Set the gas regulator at its correct setting and check that there is no obstruction in the barrel and that it locks firmly into position. (5) Check the sights for tightness. c. When the gun is assembled, press the trigger and move the working parts backwards and forwards a few times. | The sequence used need not be as laid down in the conditions column but all aspects are to be completed. SKILLED – up to 2 mistakes. AVERAGE – 3 to 5 mistakes. FAIL – over 5 mistakes. Award no qualification if any mistake affects safety. |

HANDLING TESTS
GPMG (SUSTAINED FIRE ROLE)

HANDLING TESTS
GPMG (SUSTAINED FIRE ROLE)

| Test No. | Subject | Stores | Conditions | Marking |
|-----------------|--|---|--|--|
| 1 | Mounting the gun and tripod | GPMG. SF kit. Ammunition box containing a belt of 20 dummy rounds. Stopwatch | a. Gun controller and gunner to be standing beside stores which are laid out not more than five metres from where the gun is to be mounted b. The gun to be mounted in the low mount position on level ground. Gunner and gun controller may assist each other in their respective tasks | SKILLED – 80 seconds or less. AVERAGE – 81 to 90 seconds. FAIL over 90 seconds. Two seconds is to be added to the overall time for each drill error. |
| 2 | Loading sight-setting and aiming. | As for Test no. 1 plus: Landscape targets (if outdoors, selected natural targets). | a. Gun mounted, gunner and gun controller in position behind gun. b. Order LOAD then indicate a target. c. No time limit. Aim to be checked for accuracy. | SKILLED – All drills correct. AVERAGE – up to two errors. FAIL – Over two errors. |
| 3 | Preparation for night firing a. MARK RECORD b. LAY | As for Test no. 1 plus: Landscape targets (if outdoors, selected natural targets). | a. Gun mounted. Gunner and gun controller in position behind gun. b. Order LOAD then indicate a target. c. No time limit, check that aims on both iron and C2 sights are correct, and that the C2 sight readings are correctly recorded and the elevation bubble is central. Alter the dial sight readings, unlock the gun and move it off aim. Using the recorded readings, order GUNNER, ELEVATION... DIRECTION... LAY. | SKILLED – All drills correct. AVERAGE – Up to two errors. FAIL – Over two errors. SKILLED – All drills correct in 60 seconds or less. AVERAGE – 61 to 90 seconds. FAIL – over 90 seconds. |
| 4 | Changing barrels. | As for test no. 3 plus: One single belted dummy round. | a. Gun mounted, loaded with one round only. Target indicated and rapid fire ordered. b. Order BELT EXPENDED. c. Time taken from that order until the barrel is changed and the gun is firing again. | SKILLED – 17 seconds or less. AVERAGE – 18 to 20 seconds. FAIL – over 20 seconds. Two seconds is to be added to the overall time for each drill error. |
| 5 | Dismount gun and tripod | As for Test no 1. | a. Gun mounted and loaded b. Order DISMOUNT GUN AND TRIPOD c. Time taken from that order until all the kit is packed and the gun team is standing beside it. | SKILLED – 75 seconds or less. AVERAGE – 76 – 95 seconds. FAIL – over 95 seconds. Two seconds is to be added to the overall time for each drill error. |