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THE

7,62 mm FN RIFLE

and BAYONET

1972

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AMENDMENTS

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THE 7,62 mm FN RIFLE AND BAYONET

1972

INTRODUCTION

The aim of weapon training

1. The aim of all weapon training is to produce soldiers who can kill in battle with any platoon weapon.

Achievement of the aim

2. To achieve this aim men must reach a high standard of marksmanship, servicing and fieldcraft with all weapons and they must be able to work individually and together as teams under good junior leaders.

Scope and composition of this pamphlet

- 3. Scope. This pamphlet contains the material necessary to equip an instructor to teach others concerning the FN Rifle and Bayonet.
- 4. Composition. The pamphlet is in two chapters as follows:
 - a. Chapter 1 contains lessons which teach men all they need to know about the FN Rifle and Bayonet, practice periods which drive home the skills and techniques and, most important of all, instruction regarding live firing.
 - b. Chapter 2 contains further information to help instructors to understand better the subject and its presentation, notes on the 7,62 mm Heavy Barrelled FN Rifle and tests which show the standard men have reached.

Method of instruction

- 5. The subject should be taught in the sequence laid down in this pamphlet.
- 6. Practice periods should be repeated according to progress made.
- 7. Every effort should be made to introduce the firing practices in the sequence laid down. Constant basic lessons and practice without firing are boring for men.
- 8. Instructors are allowed latitude in the method they adopt to teach the various lessons and exercises in practice periods. Their aim must be to teach in the most interesting way possible without deviating from the facts and drills laid down.

Strengthening exercises

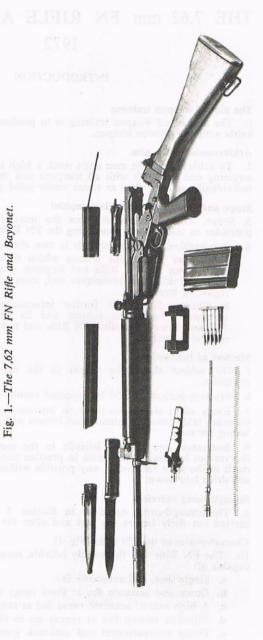
9. The strengthening exercises in Section 3 of Chapter 2 should be carried out daily before the first and after the last instructional periods.

Characteristics of the FN Rifle (Fig. 1)

- 10. The FN Rifle is a thoroughly reliable, magazine fed weapon which is capable of:
 - a. Single shots and automatic fire.
 - b. Quick and accurate fire at short range opportunity targets.
 - c. A high rate of accurate rapid fire at ranges up to 300 metres.
 - d. Effective section fire at ranges up to 600 metres.
 - e. Firing anti-personnel and anti-tank grenades.



Fig.



- 11. It weighs 4,250 kg (9 lb 6 oz) with an empty magazine. When fitted with:
 - a. A bayonet, it is suitable for close quarter fighting.
 - b. A telescopic sight, it is an accurate sniper rifle at ranges up to 600 metres and more, according to the sniper's skill.
 - c. An infra-red sight, it is capable of accurate, aimed fire up to 100 metres during darkness.
- 12. Owing to its self-loading action, ability to produce automatic fire and large magazine capacity, a very high standard of fire discipline is necessary to prevent waste of ammunition before the crucial stage of an enemy attack. In a daylight attack mortars and machine guns should normally be used to break up the attack at long range, so that intense and sustained small arms fire can be brought to bear on the enemy during the final phase of the attack.

Method of training

- 13. The recruit must first learn how to maintain, clean and handle his rifle with safety. He is then taught the basic skills of holding, aiming and firing from any position and how to clear stoppages. Interspersed between these basic lessons are practice periods and progressive lessons on the open or short range.
- 14. Once a man has achieved a satisfactory grouping standard, full use must be made of the ammunition allotted to practice him in battle shooting. Men do not learn to become quick and confident shots by repetitive handling in the training area. Skill and confidence can only be gained by practice shooting; first with blank ammunition at moving human targets and then with ball at realistic snapshooting and moving targets on the ranges.
- 15. The skills of fieldcraft must be taught in conjunction with weapon training. The subject includes: personal camouflage and the use of cover; stalking in conjunction with sniping; the study of ground and buildings to assist movement and how to make the best use of ground in siting trenches.

Security of arms

- 16. When, for any reason, rifles are left without the breech block for periods of 24 hours or more, the following action will be taken to prevent weakening the hammer spring:
 - a. Move the change lever to "Safe".
 - b. Remove the magazine.
 - c. Cock the rifle.
 - d. Remove the top cover, slide and breech block (see lesson 1).
 - e. Replace the slide and top cover.
 - f. Hold the rifle in the right hand at the pistol grip, cock the action until the slide contacts the hammer, put the change lever to "R" and press the trigger controlling the forward movement of the slide.
 - g. Put the change lever to "Safe".
 - h. Replace the magazine.

17. To re-assemble the rifle:

- a. CHECK THAT THE NUMBER ON THE BREECH BLOCK CORRESPONDS TO THAT ON THE RIFLE.
- b. Make sure that the change lever is at "S", remove the magazine and cock the action.
- c. Remove the top cover and slide, replace the breech block and re-assemble the rifle.
- d. Put the change lever to "R", point the muzzle up and press the trigger.
- e. Replace the magazine.

CHAPTER 1

INSTRUCTIONAL LESSONS

LESSON 1—SAFETY, STRIPPING, ASSEMBLING AND CLEANING

Aim

1. To introduce the rifle and to teach safety precautions, how to strip, assemble and clean it daily.

Stores

2. Rifles, magazines, bayonets, scabbards, slings, cleaning kits, drill rounds, extractor removing tools, flannelette.

Notes

- 3. As you handle parts of the rifle, name them and state briefly their purpose, but do not at this stage try to make the men memorize the part names.
- 4. Impress upon the men that when cocking the rifle, the cocking handle must be pulled to the rear and then released cleanly and completely, no attempt being made to follow the cocking handle.
- 5. This lesson requires two periods and should be taught in a lecture room.
- 6. Remove bayonets from rifles before beginning the lesson.
- 7. Strengthening exercises should be started at the end of this lesson.
- 8. Under no circumstances will rifles be broken prior to attaching the sling and then closed as a means of tightening the sling. This method of tightening the sling causes excessive strain on the body hinge pin, body locking catch and lug of the rifle, and may also cause damage to the lower sling swivel.

Preliminaries

9. Issues stores.

Approach

10. The rifle is your personal weapon and it is your duty to maintain it in perfect condition. If you keep your rifle, magazines and ammunition clean and handle them at all times with reasonable care, they will not let you down. It is an accurate weapon and thoroughly reliable under extreme conditions of heat, cold, rain and sand.

Safety precautions

- 11. Explain and demonstrate paras 12 to 14; make the men copy your actions.
- 12. On the command, "For inspection—port arms":
 - a. Bring the rifle to the loading position (see Fig. 2). Check that the change lever is at "Safe" with the left hand.



Fig. 2.—The loading position.

- b. Remove the magazine from the rifle, place it on the left of the pistol grip and grasp it with the fingers of the right hand.
- c. With the left hand cock the weapon and apply the holding-open device.
- d. Grasp the magazine with the left hand and hold it above the ejection opening for inspection.

Note: The instructor will show his own rifle to a member of the squad.

- 13. On completion of the inspection or when the order "Ease springs" is given:
 - a. Maintain the grip on the magazine with the left hand and allow the working parts to go forward.
 - b. Place the change lever to "R", operate the trigger and place the change lever back to "Safe".
 - c. Replace the empty magazine on to the rifle.
 - d. Lower the rifle and grip it between the knees.
 - e. Remove all remaining magazines and drill rounds from pouches for inspection.

Note: The instructor will show his own magazines and drill rounds to a member of the squad.

14. On completion of the inspection, replace magazines and drill rounds into pouches and adopt the stand-at-ease position.

Safe handling rules

- 15. Explain:
 - a. These motions MUST be carried out at the beginning and end of every lesson, practice and range period.
 - b. You MUST carry out the same procedure immediately on returning to barracks or dug-out and on completion of any duty or partol.
 - c. Whenever you pick up a rifle, whether your own or someone else's, carry out the same procedure.
 - d. When you hand a rifle to someone else, if it is unloaded carry out the same procedure. If it is loaded hand it over with the change lever at "Safe", the muzzle pointing up in the air and tell him that it is loaded.
 - e. Never point a rifle at anyone in jest.
- 16. Question the squad on the safe handling rules of the rifle.

Stripping

- 17. Demonstrate paras 18 to 20; make the men copy your actions.
- 18. To Strip the Rifle:
 - a. Make certain the rifle is UNLOADED. To do this:

(1) Check that the change lever is at "Safe", and remove the magazine.

(2) Cock the rifle, by pulling the cocking handle fully to the rear; hold it there, look into the chamber to see that it is empty; allow the breech block and slide to move forward under control.

Note: It is important that you NEVER open the rifle unless it is first cocked.

- **b.** Take off the bayonet if fitted by pulling out the bayonet catch and lifting it off the projector.
- c. Remove the sling.



Fig. 3.—Removing the gas plug.

19. Gas Plug, Piston and Piston Spring:

a. Press the long end of the plunger with the thumb of the left hand, raise the grenade sight and turn it clockwise as far as it will go. Remove the top part of the FN cleaning rod from the holdall, and insert the screwdriver end of the handle of the cleaning rod into the recess of the plunger. Holding the grenade sight, depress the plunger and continue to turn the sight clockwise, until the plunger rests over the axis of the barrel, and then slowly remove the gas plug. (See Fig 3).

b. Remove the piston and spring from the gas cylinder; take off the piston spring.



Fig. 4.—Breaking the rifle.

20. Breech Block and Slide:

a. Make sure that the backsight slide is right down.

b. Grip the handguard firmly with the left hand and point the muzzle down.

 ${f c.}$ Break the rifle by pulling the body locking lever to the rear and pressing down on the butt. (See Fig 4.)

d. Do not press the trigger with the rifle open unless you control the forward movement of the hammer, otherwise the trigger mechanism may be damaged.

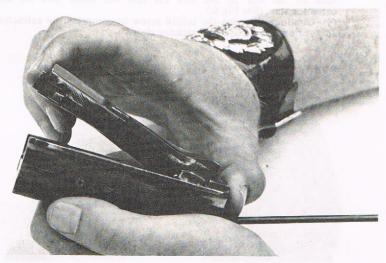


Fig. 5.—Removing the breech block from the slide.

e. Remove the top cover by pulling it to the rear.

f. Pull back the rod on the slide, taking care to place your fingers beneath the breech block as it is withdrawn from the body of the rifle to prevent it dropping out of the slide.

g. Turn the breech block, slide upside down and keep the rod towards you. Pull the breech block fully to the rear of the slide, put the fingers of your right hand in front of the breech block and the thumb behind the firing pin, press both together and lift the breech block out by its front end. (See Figs 5 and 6.)



Fig. 6.-The breech block.

h. Only strip the extractor when necessary, eg when the rifle is wet, very dirty or when operating under sandy conditions. To strip the extractor proceed as follows:

(1) Unscrew the milled screw of the extractor tool.

(2) Hold the breech block in the left hand with the extractor claw uppermost and the face of the breech block away from

(3) Place the rear end of the firing pin into the recess at the front of the milled screw. Screw up the milled screw until the stud on the end of the tool fits into the small hole on the extractor stay. (See Fig 8.)

(4) Continue screwing the milled screw to compress the extractor stay spring and release the extractor claw.

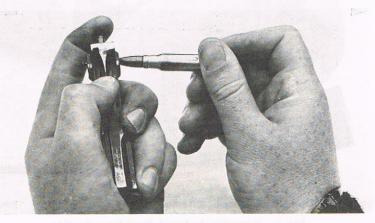


Fig. 7.—Taking out the firing pin.

(5) With the right hand lift the extractor claw out of its housing.

(6) Unscrew the milled screw to allow the extractor stay spring to re-assert itself. Remove the extractor tool.

(7) Slide out the extractor stay and spring, and separate them.
j. Press the rear end of the firing pin against its spring, push out the retaining pin, pull the pin and spring out to the rear and separate them. (See Fig 7.)

Note: You must NOT strip the rifle further than this. If you do the chances are that you will assemble it incorrectly and the rifle will be inoperative.

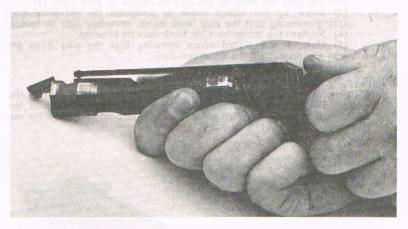
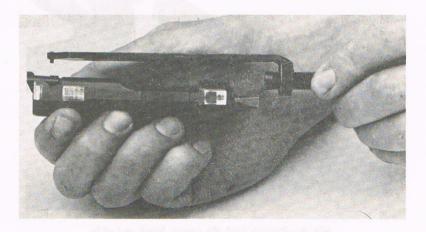


Fig. 8.—Stripping the extractor.



Assembling

- 21. Demonstrate paras 22 to 26; make the men copy your actions.
- 22. Extractor and Firing Pin:

a. Put the spring over the POINTED end of the firing pin, insert the pin into the hole at the rear of the breech block, press against the spring and press in the retaining pin.

b. To assemble the extractor hold the breech block as described in

para 20.h. and carry out the following actions:

(1) Replace the stay spring into the stay then slide them back into the breech block, ensuring that the hole on the stay is uppermost.

(2) Place the extractor tool onto the breech block so that the

stud fits into the hole on the stay as taught in para 20.h. (3). (3) Screw up the milled screw to compress the extractor stay spring ensuring that the stay head moves smoothly into its recess.

(4) Replace the extractor claw back into its housing.

(5) Unscrew the milled screw ensuring that the stay head fits into the groove on the extractor claw.

(6) Remove the extractor tool.

23. The Breech Block and Slide:

a. Turn the slide upside down, put the firing pin in the hole at the back. Keep pressing the firing pin, lower the breech block into the slide, push it as far forward as it will go and hold it there with the thumb to prevent it falling out.



Fig. 9.—Putting back the breech block and slide.

b. Check that the number on the breech block corresponds to that on the rifle.

c. Point the muzzle down, place the thumb behind the breech block to keep it forward, then put the breech block and slide into the body of the rifle from the rear (see Fig 9) and put back the

d. Make sure the return spring rod on At Close the rifle by raising at and damage at 11 will all



Fig. 10.—Putting the piston spring on the piston.

24. Piston and Gas Plug:

a. Put the piston spring back on the piston. Either end of the spring can go on first, but make sure the front end of the spring slides over the slight bulge on the stem near the piston head (see Fig 10).

b. Hold the rifle so that the gas cylinder is horizontal and guide the piston into the gas cylinder under control.

c. Place the gas plug on the piston head with the long end of the plunger towards the barrel and force down until the gas plug clicks into position. Turn the grenade sight anti-clockwise until the long end of the plunger is facing towards the left of the rifle. Lower the grenade sight onto the stock. The gas plug is now set for firing ball ammunition. To set it for firing grenades push in the long end of the plunger, raise the grenade sight and push it forward until it nearly touches the barrel. Turn the grenade sight anti-clockwise until the long end of the plunger is facing the right. Raise the grenade sight until it clicks into position on the foresight protectors. This action prevents gas going into the cylinder, thus using all the gas to propel the grenade. To prepare the rifle for firing ball the opposite procedure is carried out.

25. Attach the sling.

26. Fix the bayonet (if required) by fitting the handle over the projector with the catch facing forward. Push the bayonet down until the catch engages.

27. Magazine. Demonstrate and make the men copy your actions:

a. Stripping. To remove the bottom plate: During training use a 4-inch nail and on active service the nose of a round. Place the pointed end of either of these items into the small hole of the bottom plate. Lever against the rear wall of the magazine until the two small lugs of the bottom plate are disengaged. Push the plate out approximately half an inch and with the left hand over the spring, ease the plate off taking care to keep control of the magazine spring. Ease the platform spring out to its last spiral. Acting on the spring, turn the magazine platform approximately 45° inside the magazine, then extract the platform. Disengage the spring from the lugs on the platform.

b. Assembling. Replace the platform spring in front of the front retaining lug and behind the two rear retaining lugs. Replace the magazine platform in the magazine and exert pressure to push it well in. Acting on the spring, get the platform correctly positioned, compress the spring and replace the bottom plate of the magazine. Test the magazine by pressing down on the platform; it should work freely.

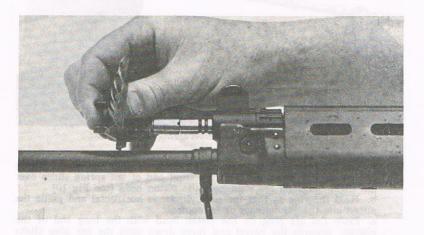


Fig. 11.—Inserting the gas plug.

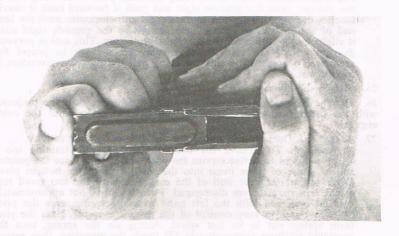


Fig. 12.—Assembling the magazine.

- 28. Cock the rifle allowing the working parts to go forward under control to make sure the rifle is working correctly.
- 29. Put the change lever to "Safe" and check that it works correctly. Never move the change lever from "S" while you are pressing the trigger, or you may damage the rifle.
- 30. Put the change lever to "R". Point the muzzle up and press the trigger.
- 31. Place an empty magazine on the rifle.
- 32. Practise the men in stripping and assembling.

PERIOD 2

Cleaning

- 33. Cleaning Materials. Explain and demonstrate the cleaning materials contained in the holdall (see Fig 13):
 - a. A transparent plastic holder containing the nylon and gas cylinder brushes.
 - b. A three-piece rod for cleaning the bore and gas cylinder. The handle may be used as a screwdriver.
 - c. An oil bottle.
 - d. A wire bore-cleaning brush.
 - e. Flannelette.
- 34. Basic Daily Cleaning. Explain and demonstrate:
 - a. Make sure that the rifle is unloaded and then strip it as taught. Do not strip the extractor or magazine unless they are wet or dirty.
 - b. The Chamber. Join the three sections of the rod ensuring that the section incorporating the jag screws on last. Attach the gas cylinder cleaning brush and clean the chamber. (See Fig 14.)
 - c. The Barrel. Clean as follows:
 - (1) Wrap a piece of flannelette, four by two inches, around the jag.

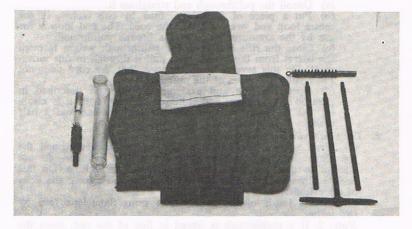


Fig. 13.—Cleaning materials.

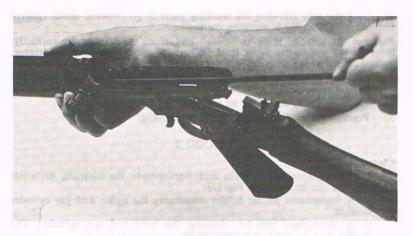


Fig. 14.—Cleaning the chamber.

(2) Close the rifle and push the rod through the barrel from the muzzle end, in one clean movement. Do this several times ensuring that the rod does not rub against the sides of the muzzle.

(3) Remove the rod, open the rifle and examine the bore to see if it is clean or not; hold the muzzle to your eye and look into the grooves for dirt. As you do so, gradually move your head back from the muzzle. Reverse the rifle and do the same from the breech end. If any dirt is present, continue cleaning the bore until it is clean.

(4) Oil the barrel using flannelette four by one and a half inches. Note: 1. If a pullthrough is issued in lieu of the rod, clean the

barrel as follows:

(a) Unroll the pullthrough and straighten it.

(b) Put a piece of flannelette, four by two inches, in the centre loop and wrap it round the cord. The end loop is for use by the armourer to remove a broken pullthrough.

(c) Close the rifle and drop the pullthrough weight through the barrel from the breech end; pull it through in one movement. Do this several times ensuring that the cord does not rub against the sides of the muzzle.

(d) Open the rifle and examine the bore as described in para 34.c. (3) above, and continue cleaning until it is clean. (e) Oil the barrel using flannelette four by one and a half inches.

d. The Gas Cylinder. Clean as follows:

(1) Wrap a piece of flannelette four by two inches around the jag. Push the rod into the front end of the cylinder—do not attempt to push the flannelette through the small hole. Do this several times ensuring that the rod does not rub against the sides of the cylinder.

(2) Oil the inside of the gas cylinder using flannelette four by

two inches.

Note: 2. If a pullthrough is issued in lieu of the rod, clean the gas cylinder as follows:

- (a) Using flannelette four by two inches, drop the weight of the pullthrough into the front end of the cylinder.
- (b) Pull the weight through the rear hole until the flannelette is at the rear inside end. Do not attempt to pull the flannelette through the small hole.
- (c) Draw the cord backwards and forwards several times ensuring that it does not rub against the sides of the cylinder.
- (d) Oil the inside of the gas cylinder using flannelette four inches by two.
- 35. Using the nylon rifle cleaning brush and a lightly oiled rag clean the following:
 - a. The Body. Clean the inside of the body, especially the various guide grooves, the rear wall of the chamber, the hammer and trigger mechanism, the ejector, locking shoulder, safety sear and the magazine catch.
 - b. The Breech Block, Slide and Top Cover. Clean the breech block, slide, top cover, firing pin and extractor if they have been stripped. Assemble them and close the rifle.
 - c. Gas Plug, Piston Rod and Spring. Clean the gas plug, piston rod and spring and assemble them.
 - d. Clean the outside of the rifle starting at the grenade projector and working down towards the butt:
 - (1) Grenade Projector.
 - (2) Foresight.
 - (3) Gas block and gas regulator. (If you turn the regulator always put it back to the original setting.)
 - (4) Sling swivel and hand guard.
 - (5) The outside of the body, the cocking handle and its guide grooves, change lever, trigger and trigger guard, butt frame joint pin, magazine catch, holding open device, backsight and carrying handle.
 - (6) Pistol grip, butt, lower sling swivel and butt plate.
 - e. Attach the sling if required.
 - f. Bayonet and Scabbard. Clean the bayonet and scabbard with a slightly oily rag. Put them back on the rifle if required.
 - g. The Magazine. Clean the magazine inside and out; move the change lever to "R", squeeze the trigger, move the change lever to "Safe" and place an empty magazine on the rifle.
 - h. The Magazine Filler. Clean the magazine filler inside and out.
- 36. Replace the cleaning materials in the holdall, ensuring that the tools are clean, the oil bottle is full and there is sufficient flannelette for the next time you clean your rifle.
- 37. Cleaning for Abnormal Conditions. Explain:
 - a. Damp or Humid Conditions. In damp or humid conditions clean as you have been taught but inspect more frequently. Clean off any rust and re-oil.
 - b. Dry, Sandy or Dusty Conditions:
 - (1) It is important in dusty and sandy conditions that all parts of your rifle and magazine are kept bone dry; in addition the firing pin and extractor must be stripped to clean the breech

block more thoroughly. All parts of the rifle must be dried out either by using a dry cleaning solvent or by sweating them in the sun, constantly wiping off the exuding oil. Cleaning brushes should be washed in soap and water and dried before use. Magazines can be placed in boiling water.

(2) With your rifle in this oil-free state you must obviously be on the look out for rust, but remember, if you use oil to remove

the rust, you must dry out your rifle again.

38. Practise the men in stripping, assembling and cleaning their rifles.

Conclusion

- 39. Conclude with:
 - a. Questions from and to the squad.
 - b. Sum up, stressing the importance of careful cleaning and maintenance and safe handling.

LESSON 2—MAGAZINE FILLING, SIGHT SETTING, LOADING AND UNLOADING

Aim

1. To teach how to fill magazines, set the sights, to load, unload and make safe.

Stores

2. Rifles, magazines, drill rounds in clips, magazine fillers and flannelette.

Notes

3. This lesson requires one period.

Preliminaries

- 4. Safety precautions.
- 5. Revise stripping, cleaning and assembling.

Approach

6. Explain the aim of the lesson.

Care of Ammunition and Clips

- 7. Explain and demonstrate:
 - a. The ammunition is rimless; its calibre is 7,62 mm (.30 inches).
 - b. It is packed five rounds to a clip or loose in boxes.
 - c. To prevent stoppages take the rounds out of the boxes or clips and clean them and the clips with a dry piece of flannelette. To put them back in the clip, press down the clip spring with the base of each round and slide it in.
 - d. Always look after your ammunition; keep it clean and do not let it lie in the direct rays of the sun.

Filling Magazines

- 8. Explain and demonstrate:
 - a. By Hand. (See Fig 15.) Take the rounds out of the clip or box and push them into the magazine, bullets towards the narrow end, one by one. Make sure that the base of each round is right up against the rear wall of the magazine. Fill with 20 rounds on active service.



Fig. 15.-Filling magazines by hand.



Fig. 16.—Filling magazines by filler.

- b. By Filler. (See Fig 16.) Place a filler on top of the magazine, put the clip in the filler, place your thumb on the top round keeping it clear of the cartridge and bullet guides. Press the rounds down until the top one is caught underneath the lip of the magazine. Fill with four clips on active service.
- c. During training put in the number of rounds ordered.
- d. When the magazine is very dirty, eg, in desert, wet and muddy conditions or when affected by sand and water fill with 15 rounds only. This will reduce the number of stoppages.
- e. Some magazines can be filled with 21 rounds; if this is done stoppages will occur. NEVER fill with more than 20 rounds. As a ready check the 20th and all even numbered rounds will be in the left hand column in the magazine when in the rifle.
- f. To empty magazines, take up a clip and hold the magazine so that the noses of the rounds are pointing downwards. With the end of the clip, press down on each second round, thus allowing each top round to drop out. Ensure that the rounds do not fall into the dirt; put the rounds back into the clip or box.
- 9. Practise the men in cleaning rounds and clips, filling and emptying magazines; leave magazines filled.

Sight setting

- 10. Explain and demonstrate. Make the men copy your actions:
 - a. The backsight consists of a ramp upon which are marked the ranges from 200 to 600 metres. The lowest setting, when the slide is right down is 200. The stem which also contains the aperture is part of the slide.
 - b. To set the sights, press the thumb catch on the backsight with the right thumb and move the slide forward or backwards until the figure you require just shows below the slide, eg, for 300 metres the figure 3 is just visible on the ramp. Pull the slide right back when not in use.
 - c. For battle shooting leave the sight set at 300 metres.
- 11. Practise the men in sightsetting.

Load, action on range being ordered and unloading

- 12. Explain and demonstrate paras 13 to 16. Make the men copy your actions.
- 13. Your rifle is loaded when it has a magazine containing rounds on it. It is ready to fire when the rifle is cocked and a live round is in the chamber. It is unloaded when it has an empty magazine on and no round in the chamber.
- 14. On the command "Load":
 - a. Adopt the loading position (see Fig 2). Hold the rifle by the pistol grip with the right hand, forefinger outside the trigger guard, muzzle pointing upwards. With the left hand place the change lever to "Safe", remove the empty magazine from the rifle, place it on the left of the pistol grip and grasp it with the fingers of the right hand. Unfasten the pouch with the left hand, remove a full magazine, check that it is correctly filled and place it on the weapon. Grasp the empty magazine with the left hand, and with both hands lower the rifle and grip it between the knees. Using both hands place the empty magazine in the pouch, adopt the loading position as before and fasten the pouch.



Fig. 17.—Sights set at 300 metres.

15. On the command "Ready", or a range being ordered:

a. Cock the rifle.

b. Set the sight at the range ordered or, if no range is ordered, set the sight at 300 metres for battle shooting.

16. On the command "Unload":

- a. With the left hand check that the change lever is at "Safe", remove the filled magazine from the rifle and place it on the left of the pistol grip and grasp it with the fingers of the right hand. Tilt the rifle to the right, cock the rifle with the left hand and look into the chamber. If the chamber is clear, allow the working parts to go forward under control; with the left hand place the change lever to "R", operate the trigger and move the change lever back to "Safe". Remove an empty magazine from the pouch, check that it is empty and place it on the rifle. Lower the sights, grasp the filled magazine with the left hand and with both hands lower the rifle and grip it between the knees. Using both hands place the filled magazine in the pouch. Fasten the pouch, pick up the ejected round, clean it and place it in a pocket. Grip the rifle with the right hand and stand at ease. Place the round back into the magazine at the earliest opportunity.
- 17. Practise the squad.

Make safe

- 18. On the command "Make Safe", whether your rifle is loaded or ready, carry out the same actions as for unloading but ensure that the magazine placed on the rifle is full. It may be necessary to move quickly and there may not be time to complete the actions of making safe. In this case put the change lever to "Safe" and complete the full action as soon as you have time.
- 19. On the command "Ready" or a range being ordered after making safe, carry out the actions as in para 15 above.

Loading positions

20. You will normally load your rifle in the standing position and subsequently adopt any firing position which may be ordered. Should you be required to load your rifle in any other position you will be given the order, "Kneeling, etc,—Load". You unload your rifle in the position you are in at the time you are given the order to unload.

Safe handling

21. Once you have been ordered to load your rifle you are responsible for keeping it loaded until you are ordered to unload. At all times you are responsible for the safe handling of your rifle. Make certain that:

a. The change lever is always at "Safe", unless you have been given

an order to get ready to fire.

b. The muzzle is always pointed to the sky, at the ground or in the

direction of the target.

- c. Your rifle is always unloaded when you are no longer able to assure its safe handling, ie, when you hand it over to another man or when you leave it under guard while performing some duty.
- 22. Question and practise the squad.

Conclusion

- 23. Questions from and to the squad.
- 24. Sum up, stressing the need for:

a. Clean ammunition.

b. Safe, quick and accurate handling of a loaded rifle.

PRACTICE 1-LESSONS 1 AND 2

Aim

1. To practise stripping, assembling, magazine filling, loading and unloading.

Stores

2. Rifles, magazines, drill rounds, magazine fillers, flannelette, cleaning kits.

Notes

3. See Chapter 2, Section 2.

Preliminaries

Safety precautions.

Approach

5. Remind the men of the need for clean rifles and ammunition, also that their life may depend upon quick and correct handling.

Suggested methods of practice

- 6. Stripping and Assembling. Practise the men in stripping and assembling different parts of their rifles, eg, gas plug, piston etc. When they can strip each part faultlessly let them practise complete stripping and assembling.
- 7. Ammunition, Clips and Magazine Filling. Make the men clean their drill rounds and fill clips and magazines. Make them fill the magazines by hand and using the filler. Tell the men the training test standard and try to get them up to it.
- 8. Loading, Ready, Make Safe, Unloading. Practise the men in loading, ready, make safe and unloading. Order: "Load", "Ready", "Make Safe", "Unload" and now and then give the order "Ready" after "Make Safe". Tell the men the training test standard and base your practice on it.

Competitions

9. Divide the squad into two groups, masters and pupils. Organize an individual competition in filling magazines by hand and by filler, loading, ready, make safe and unloading. Masters to act as scorers and then change over.

Summary

10. Summarize the progress made and impress on the men the standard required to pass the training tests.

LESSON 3-AIMING AND HOLDING

Aim

1. To teach recruits how to hold the rifle and to take a correct aim.

Stores

2. Rifles, magazines, drill rounds, coaches' note book, instructor's representative targets, diagrams of the sight pictures, eye discs, figure targets, half-filled sand-bags.

Notes

- 3. Rifles are available with long, medium and short butts. A rifle butt is too long if it catches a man in the armpit when he brings it up into the shoulder. A rifle butt is too short if a man's eye is too close to the backsight when he takes an aim in the lying position. It is most important that every man should be carefully fitted before he fires for the first time. Record each man's rifle number in the coaches' notebooks.
- 4. If the firer is left handed and his left eye is his master eye, then he should be encouraged to fire from the left shoulder.
- 5. The eye disc should be used to check steadiness and sight alignment. The instructor's eye should be a metre from the muzzle of the rifle. Hold the stem of the eye disc in both hands and rest both elbows firmly on the ground. The instructor then looks through the hole in the eye disc at the recruit's eye, not at his foresight. To make the man lay a fresh aim, move your position slightly after each shot. With this simple aid you can check and correct aiming, holding and, in later lessons, trigger pressing. You should have sufficient discs for half the squad to enable you to carry out practice using the master and pupil method. Improvised discs can be made out of cardboard or a representative snap target. DO NOT HAVE DRILL ROUNDS AND EYE DISCS IN USE TOGETHER.
- 6. If any sights are shiny, blacken them by holding them for a short time just above the flame of a lighted piece of old, oily flannelette or rag.
- 7. Do not use drill cartridges after you have revised loading and unloading.
- 8. This lesson requires one period.

Preliminaries

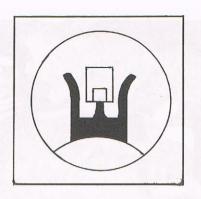
- 9. Put out targets at 100 metres.
- 10. Safety precautions.
- 11. Examine sights to make sure they are in good condition and black, especially the rear and tip of the foresight.
- 12. Revise loading and unloading.

Approach

13. You must learn how to aim accurately by understanding how to line up the sights and the aiming mark. You must also hold your rifle properly to be able to fire efficiently from any position.

Aiming

- 14. Using diagrams (see Fig 18), show where to aim, the aim picture and how to get correct sight alignment:
 - a. Where to Aim. Aim at the lowest central point of the aiming mark on a square range target because that is the centre of the target. Aim in the middle of a man, a figure target or any indistinct target. Sometimes your section commander may order exactly where to aim. b. How to Aim. The backsight stem is narrow and the aperture is small. The narrow stem is necessary to enable you to obtain a clear view of your target area. The small aperture allows you to aim more accurately. When you look through the aperture you may find that the edges tend to become blurred. The haziness of the aperture edges will not affect your accuracy provided you understand that correct



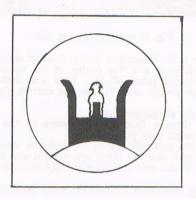




Fig. 18.—Correct sight pictures.



Fig. 19.—Using the eye disc.

sight alignment is the important factor. Correct sight alignment means the lining up of your eye, the centre of the aperture, the foresight tip and the selected point of aim. This will make a sight picture which you must always see. To get the correct sight alignment and sight pictures:

(1) Close the disengaged eye.

(2) Look through (not at), the centre of the aperture at your target and select your point of aim.

(3) Place the foresight tip on the point of aim.

(4) Make sure that the sights are upright and that you are seeing the point of aim and the foresight tip through the centre of the aperture.

(5) Always place your head in the same position on the butt each

time you aim.



Fig. 20.—The lying position.

15. Question the men on their understanding of correct sight pictures, and sight alignment. Let them use diagrams and the sights on their rifles to explain their answers.

The lying position

- 16. Explain and demonstrate para 17. Get the men to copy your actions.
- 17. On the command "Down" advance the left foot and hold the rifle in front of you with your left hand by the handguard and lie down, breaking your fall with your right hand:
 - a. Keep the grenade projector clear of the ground.
 - b. Lie very slightly oblique to your target.
 - c. Legs should be well apart. Your heels should be on the ground if possible.
 - d. If you have been carrying the rifle by the handle, fold it flush with the side of the rifle as soon as you get down to prevent it interfering with your view or the ejection of empty cases.
 - e. Grip the handguard with your left hand, hold the pistol grip with your right hand, finger outside the trigger guard. The rifle should be far enough forward to enable you to bring it quickly into the shoulder (see Fig 20).
 - f. To stand up put your right hand on the ground, draw the left hand and rifle back, stand up and order arms.
- 18. Practise the men in getting into the lying position and standing up.

Holding in the lying position (see Fig 21)

- 19. Explain and demonstrate. Order "Down", "Ready" or give the range: a. To Hold. Look at your target, push the change lever to "R" with your right thumb. Lift the rifle and press the butt against your shoulder, put your forefinger on the trigger, rest your cheek lightly against the butt and aim.
 - b. Points to Note:
 - (1) Keep both elbows on the ground, with your right shoulder and elbow well forward.
 - (2) Grip the pistol grip with a vice-like grip with your right hand and pull the rifle straight back against your shoulder.
 - (3) Grip the handguard with your left hand as far forward as you can with comfort.
 - (4) Your cheek should be against the butt so that you can aim without strain and without having your eye too near the back-sight. Do NOT rest your cheek-bone on the butt.
 - (5) If, when you raise the rifle, you find that it is not pointing at the target, retain your hold and adjust your position like this: To move the muzzle sideways, shift your body round without moving your left elbow; to move it up or down, keep both elbows still and ease your body forward or backwards.
 - (6) Do NOT rest the magazine on the ground; if you do, your shooting will be inaccurate: Invariably shots will strike about a foot below the point of aim at 100 metres. The degree of inaccuracy will depend upon how you rest the magazine and the type of ground you rest it on.
- 20. Order "Unload".



Fig. 21.—Holding in the lying position.

21. Practise as follows, checking and correcting each man individually: a. Tell the men that drill rounds must not be used when aiming at eye discs held to other men's eyes.

b. Practise men in getting down into the lying position, holding and aiming at the figure targets; check and correct each one individually using an eye disc. Let them rest their fore-arms on half filled sandbags (see Fig 22) if they cannot at this stage hold their rifles steady. c. Divide the squad into two ranks, one rank with eye discs. Show them how to use the eye disc, then let them practice and test each other. (See Fig 19.)

Conclusion

- 22. Ouestions from and to the squad.
- Sum up, stressing the importance of accurate aiming, alignment of sights and firm and correct holding, especially with the right hand.



Fig. 22.—Using the sandbag.

LESSON 4-FIRING

Aim

1. To teach how to fire the rifle in the lying position.

Stores

2. Rifles, magazines, drill rounds, eye discs, cocking ropes, figure targets up to 100 metres. Washers (see para 6 below).

Notes

- 3. You can only teach a man to shoot properly on the range, but in this lesson you can teach him the drill for firing and make certain that he holds the rifle firmly.
- 4. After the initial practice, to make remaining firing practice more realistic, divide the squad into groups of two or three—two when firing at figure or natural targets, three when firing at eye discs. When practising in groups of two, one will be firing while the other cocks the action. This simulates the rifle's recoil and permits the firer to press the trigger of a cocked rifle each time he fires. When practising at eye discs, one group will be firing, the members of another group operate the cocking ropes while the third group handle the eye discs. Drill rounds must NOT be used when practising against live targets or when using eye discs.
- 5. When demonstrating always use a member of the squad to re-cock your rifle.
- 6. When there is an empty magazine on the rifle the breech block and slide will stay to the rear each time the weapon is cocked. To overcome this problem during firing practice, place the side of a one-inch washer onto the magazine platform and push down until the opposite side of the washer engages under the lip of the magazine.
- This lesson requires two periods.

Preliminaries

- 8. Safety precautions.
- 9. Revise holding.

Approach

- 10. This lesson deals with firing in the lying position, but the basic principles of firing the rifle in any position are the same. They are:
 - a. Hold your rifle firmly, especially with the right hand, which is the controlling hand.
 - b. Fire without disturbing your aim.

Types of fire

- 11. The types of firing used in battle are:
 - a. Deliberate. Used when firing at ground features such as indistinct enemy positions indicated by flashes or observed by smoke. Used also when firing at longer ranges.
 - b. Snapshooting. Intermittent firing at enemy who expose themselves for short intervals only.
 - c. Rapid fire. Quick firing for varying periods at well defined targets at short ranges.



Fig. 23.—The alert position, prone.

Ready ammunition

- 12. Depending on circumstances you may be issued with either:
 - a. 150 Rounds and 4 empty magazines, or
 - b. 200 Rounds and 5 empty magazines.
- 13. Whatever the case may be, on operations these magazines will all be filled. One magazine will be on the rifle and the remainder carried in pouches. All remaining rounds are kept in bandoliers and are used as a reserve from which to re-fill magazines during a lull in battle.

Deliberate fire

- 14. Explain and demonstrate deliberate fire. Order "Load", "Down", "Ready", or give a range:
 - a. On the command "Fire", put the change lever to "R" and aim.
- b. Check your breathing and when the aim is correct press the trigger without jerking it, then release the trigger completely. During training memorize your aim picture as the rifle is fired and declare whether it was correct, high, right or left, etc.
 - c. Lower the rifle.
 - d. Go on firing at the deliberate rate which is about 5 rounds a minute. Keep a mental count of rounds left in the magazine.
 - e. On the command "Stop", lower your rifle, put the change lever to "Safe" and if necessary change magazines. Fasten the pouch each time.
 - f. On the command "Go on", push the change lever to "R" and go on firing.
- 15. Practise the squad firing at the deliberate rate, in pairs at figure targets.

Snapshooting

16. Explain: When you fire at targets which show themselves for short periods only, it is called snapshooting. Snapshooting is similar to deliberate shooting, except that you speed up your actions and shorten the intervals between shots.

17. Explain and demonstrate snapshooting. Order, "Load", "Down", "Ready", or give a range:

a. On the command, "Watch and shoot", adopt the alert position (see Fig 23). This is the best position to adopt when expecting an enemy to appear. It is an easy position to maintain whilst observing your arc. To adopt the alert position, push the change lever to "R", bring the butt into the shoulder with the muzzle pointing downwards and watch the target area.

b. When a target appears aim quickly and fire at least two quick

shots.

c. When your enemy falls or goes to cover, stop firing and get ready to fire again.

d. If an enemy moves across your front, aim just in front of him. keep your aim there by moving your rifle and continue to fire quickly until he drops.

e. Actions on the command "Stop", "Go on" and the drill for

counting rounds are the same as in deliberate fire.

Rapid firing

18. Explain: When you fire a number of quick shots it is called rapid fire. It is similar to snapshooting, except that you may fire more rounds. With practice you will be able to fire 20 or more accurate shots at different targets in a minute.

19. Explain and demonstrate rapid firing:

a. On the command, "Rapid", put the change lever to "R", aim and watch the target area.

b. On the command, "Fire", fire as quickly as you can with accuracy,

switching to fresh targets as your enemy falls.

c. Go on firing until there are no more enemy at which to fire.
d. Actions on the commands, "Stop", "Go on", and the drill for

counting rounds are the same as in deliberate fire.

- e. On occasions, depending on the circumstances it may be necessary to put the change lever at "A". However, if this is done it must be remembered that automatic fire is not accurate and a considerable amount of ammunition could be wasted.
- 20. To allow your rifle to cool off during lulls in rapid firing, pull back the cocking handle, hold it back and push up the holding open device catch. This will remove the round from the hot chamber and allow air to pass through the bore. To get ready to fire again, cock the rifle.
- 21. Practise the men in snapshooting and rapid fire in pairs (see para 4). Give commands "Up" and "Down". Start off with a time limit of eight seconds for two shots when snapshooting; reduce the time limit according to progress. For rapid fire start off at a rate of five rounds in 30 seconds. Increase the number of rounds and vary the time according to progress.
- 22. Give further practice as follows:

a. Unload and empty all magazines.

b. Do not use drill cartridges.

c. Divide the squad into groups of three and practise men in all types of firing (see para 4).

Conclusion

- 23. Questions from and to the squad.
- 24. Summarize the progress made.

PRACTICE 2—LESSONS 3 AND 4

Aim

1. To practise holding and all types of firing.

Stores

2. Rifles, magazines, eye discs, cocking ropes, one-inch washers.

Notes

3. See Chapter 2, Section 2.

Preliminaries

4. Safety precautions.

Approach

5. Remind the men of the importance of correct sight alignment and good holding especially with the right hand.

Suggested method of practice

- 6. Holding. Divide the men into masters and pupils and let them test and criticise each other's holding.
- 7. Firing. Divide the men into teams of three; one firer, one to cock the rifle, the other to check with the aiming disc. Practise them all in turn at deliberate, snapshooting and rapid fire.

Competition

8. Divide the squad into three groups and arrange a simple competition using some of the squad as live targets.

Summary

9. Summarize the progress made.

LIVE FIRING 1—INTRODUCTORY SHOOT, GROUPING, CLEANING BEFORE AND AFTER FIRING

Aim

- 1. To fix Lessons 1 to 4 in men's minds by letting them try out the teaching with live ammunition.
- To teach how to prepare rifles for firing and how to clean them afterwards.

Stores

3. Rifles, magazines, cleaning holdall, sandbags half full, targets and range stores, ammunition, binoculars, zeroing equipment, coaches' notebooks.

Notes

- 4. The important points to bear in mind are:
 - a. Recruits should fire at 100 metres at a four foot target coloured sand. It is divided down the centre by a 1-inch black strip. In the centre of each half of the target is a 9-inch square black aiming mark with a 3-inch by 4-inch white patch at its lowest central point. It will assist when zeroing if a 4-inch diameter circle is super-imposed with its centre two inches above the lowest central point of the aiming mark.

- b. When it is not possible to fire at 100 metres a 25-metre range may be used. In this case the target will be a white screen with two 1-inch black squares as aiming marks for each firer. For zeroing, a 1-inch diameter circle will be super-imposed with its centre 4-inch below the lowest central point of the aiming mark.
- c. A coach should be with each man to ensure that he holds his rifle correctly; bad holding can lead to "gun-shyness".
- d. Coaches' notebooks must be available in which the size, position and pattern of each group must be recorded.
- e. An armourer should inspect all rifles before men fire for the first time. An armourer, or qualified instructor, should be available on the range to zero the rifles of any men who consistently group in the same place. The principle and reasons for zeroing should be explained. (See Chapter 2 Section 6).
- f. Repeat the shoot until as many men as possible get an 8-inch group at 100 metres or a 2-inch group at 25 metres, before going on to Live Firing 2.
- g. Firing Point Officers will ensure that when firing on 25 metres ranges, all rifles are pointed at the targets when they are being loaded or are being inspected.
- h. Range Officers must make absolutely certain that each man's rifle and magazines are empty before he leaves both the firing point and the range.
- j. See also Chapter 2 Section 7, Coaching.
- k. During elementary firing, men on the firing point must be given these commands—"Load", "Down", "Ready" or Range, "Test your position". When all firers are set, order "Fire".

Preliminaries

Safety precautions.

Preparing rifles to fire

- 6. Explain and demonstrate paras 7 to 12, make the men copy your actions.
- 7. To prepare the rifle for firing:
 - a. Strip the rifle and magazine and clean them as you do every day for daily cleaning.
 - b. Dry clean: Grenade projector, bore, chamber, cylinder, gas plug, gas regulator, piston, face of breech block, upper surface of the slide, the magazines, magazine filler, the sights and the outside of the rifle.
 - c. Oil slightly: Piston spring, inside breech block slide, guide ribs, breech block (except the face), locking shoulder recess, guide grooves, magazine catch, trigger mechanism.
 - d. As you assemble the rifle examine all parts especially the firing pin to see that they work properly. Test that the change lever works properly by putting it to "Safe", press the trigger; the hammer should remain back; put the change lever to "R", press the trigger; the hammer should fly forward.
 - e. Using the cocking handle move the working parts backward and forward a few times to ensure they are working smoothly and to distribute the oil or grease.
 - f. Clean the ammunition and clips.

The gas regulator

- 8. The gas regulator controls the quantity of gas used in the reloading of the rifle. If there is too little gas, the rifle will not reload; if there is too much, the breech block and slide go back too fast and may cause unnecessary vibration; it is therefore important that the regulator is set to give enough gas to make the rifle work properly from all firing positions and under adverse conditions.
- 9. The regulator is fitted over the front end of the gas cylinder. It is marked with numbers from 1 to 7 and rotates two clicks to the next number. The lower the number opposite the gas hole the more gas is being allowed into the gas cylinder. The rifle is adjusted before issue with the regulator set at 4. Do not alter this setting unless it is necessary. The regulator is ribbed to make adjustment by hand possible but it can also be adjusted by using the base of a round.
- 10. The aim of your first shoot is to accustom you to firing the rifle and to the proper adjustment of the gas regulator.
- 11. The gas regulator is set properly when:
 - a. The rifle fires without stoppages.
 b. The ejected empty case flies about 3 to 4 metres clear of the rifle.
- 12. Once you have found the right setting you should never need to move it again, unless your rifle gets very dirty due to prolonged firing. Make a note of the number opposite the gas hole.

Sandy and dusty conditions

- 13. Your rifle and magazine must be dried. Use a liberal quantity of graphite grease from the holdall to grease the following parts:
 - a. All the breech block except the face.
 - b. Inside the slide and its guide ribs.
 - c. The guide grooves on the inside of the body.
- 14. Close the gas regulator until the rifle functions satisfactorily.

Freezing conditions

15. Leave all parts of the rifle completely dry, unless you are issued with low cold tested oil and then use only a little of it. Set the gas regulator to No. 1.

Introductory shoot

- 16. Describe the targets to the men. Explain and demonstrate range safety rules and butt duties (see Infantry Training, Volume III, Pamphlet No. 31, 1958, WO Code No. 9485).
- 17. Let each man fire five rounds from the lying position to get the feel of the rifle and to check that his gas regulator is set correctly. Carry out any necessary adjustments to a recruit's rifle.

Grouping

- 18. Explain: A man who can put all his shots into a small group can become a good shot. You will not group well unless:
 - a. You are determined that each shot will be a good one.
 - b. Your position, hold, aim and trigger pressure are correct and the same for each shot.
 - c. You always aim in the same place, in this case the bottom of the white patch.
 - d. You can tell your coach honestly what your aim picture was like at the moment of firing each shot.

19. Each man should fire at least two groups of five rounds, but not consecutively (see the Rifle Course Practice 1). After each two men have fired, explain to them the causes of the pattern of their groups. Record the results. Explain also that at this stage the position (MPI) of the group is immaterial. When consistency is obtained rifles will be zeroed, thus placing the MPI in its correct position.

Cleaning after firing

- 20. Explain and demonstrate paras 21 to 24. Make the men copy your actions.
- 21. Remove the magazine and make sure that your rifle is unloaded. Then:
 - a. Strip it and the magazine for cleaning.
 - b. Clean the barrel and chamber as laid down in Chapter 2, Section
 - 11. Technical Instruction Arm 1/71, para 4.f. Points to note:
 - (1) The boiling water must be poured through the barrel from the breech end using a funnel to avoid spilling water over the handguard.
 - (2) If boiling water is not available, eg on operations or during exercises, the barrel must first of all be thoroughly oiled. If it is likely that the rifle would have to be fired again, dry clean the bore and chamber as described earlier.
 - (3) The chamber must be cleaned with the cylinder cleaning brush attached to the rod.
 - c. Clean the front end of the gas cylinder using the cylinder cleaning brush then inspect and oil it.
 - d. Clean, inspect, oil and assemble the gas plug, piston and spring, gas block and regulator, the breech block, especially the face, the slide and grenade projector. It is sometimes difficult to remove the gas plug after firing blank ammunition. Any rifle so affected should be taken to the unit armourer for the gas plug to be removed.
 - e. Clean and slightly oil the rest of the rifle, bayonet, scabbard, magazines and magazine filler.
 - f. Test the rifle and put the change lever to "Safe".
 - g. Finally, check your cleaning materials and pack them away.
- 22. Clean, inspect and oil the barrel and cylinder and all other gas affected parts for several days after you have fired.
- 23. If your barrel and cylinder show signs of bad fouling, use the cleaning rod and wire brush to clean them thoroughly.

Freezing, dusty and sandy conditions

24. Use oil very sparingly in cleaning the gas affected parts, and make certain that the rifle is left bone dry. Inspect and clean frequently.

Conclusion

- Questions from and to the squad.
- 26. Summarize the progress made; stress the necessity for attending to detail in preparing rifles, magazines and ammunition for firing and for thorough cleaning after firing.

LESSON 5—MECHANISM OF THE RIFLE AND POSSIBLE STOPPAGES

Aim

1. To teach the working of the rifle, the reasons for stoppages, their prevention and cure.

Stores

2. Rifles, magazines, drill rounds, targets, clearing plugs and separated cases.

Notes

- 3. The rifle is a simple weapon and is easily understood, therefore, keep your teaching simple too.
- 4. This lesson requires two periods.

Preliminaries

- 5. Safety precautions.
- Remove the body covers and piston springs from all rifles. Fill magazines.
- 7. Order "Load", "Ready".

Approach

8. If you understand how your rifle works, you will find it easier to understand why stoppages occur and how to clear them.

Basic mechanism

- Explain and demonstrate, the men following you on their own rifles:
 When you press the trigger the hammer hits the rear of the firing pin and drives it forward on to the cap in the base of the round. The round goes off and forms gas which drives the bullet up the barrel (see Fig 24).
 - b. When the bullet has passed the gas vent some of the gas goes through the vent, through the hole in the gas plug and into the gas cylinder and drives the piston to the rear. Some gas escapes through the hole in the gas regulator. The setting of the gas regulator will determine how much gas escapes (see Fig 25).
 - c. The back of the piston hits the front of the slide and drives it and the breech block back. The piston spring then sends the piston forward again.
 - d. The breech block and slide go back together, cocking the hammer as they go. The extractor pulls the empty case with it until the case hits the ejector and is thrown out of the rifle to the right. The rod on the slide goes through a hole in the butt and compresses the return spring (see Figs 26 and 27).
 - e. The return spring pushes the breech block and slide forward. As it does so the front end of the breech block pushes a round from the magazine into the chamber and locks the action; the extractor grips the base of the round when the breech block is fully home (see Fig 28).
 - f. The rifle is now ready to fire again.
 - g. If the change lever is set at "A" (automatic) the rifle will continue to fire as long as the trigger is pressed and there are rounds in the magazine.



Fig. 24.—The hammer hitting the firing pin.

Question the men about the working of the rifle. Let them use their own rifles to illustrate their answers in their own words.

Immediate action and stoppages

- 11. Explain: If the rifle is kept clean and the gas regulator is correctly set, stoppages will seldom occur.
- 12. Explain and demonstrate: If the rifle fails to fire or stops firing, the following Immediate Action must be carried out: COCK THE ACTION — PUSH UP THE HOLDING OPEN DEVICE AND LOOK INTO THE BODY AND CHAMBER.

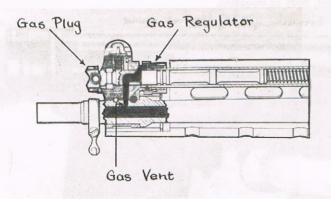


Fig. 25.—The path of the gas.



Fig. 26.—The hammer being cocked.

- 13. On some occasions when you cock the action you may find that it is already cocked. This will indicate that the magazine is empty. Immediately change the magazine, pull back the cocking handle, release and carry on firing.
- 14. If however, the action can be cocked, look into the body and chamber. If on looking in you see:

a. The chamber is empty and there are rounds in the magazine, pull

back the cocking handle, release and carry on firing.

b. A live round or empty case in the body or chamber, remove the magazine, clear the obstruction, replace the magazine, pull back the cocking handle, release and carry on firing.

Note: When cocking the action check whether a live round or empty case is ejected. An empty case will indicate a lack of gas (see para 16). If a live round is ejected this will indicate either a

misfire or a mechanical stoppage (see para 18).

 Practise the men in IA. The instructor will explain the condition of the chamber, body or magazine.

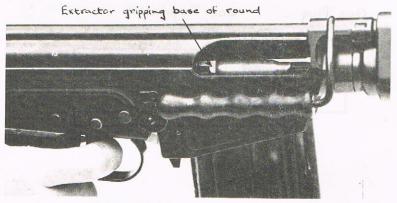


Fig. 27.—The empty case being thrown out.



Fig. 28.—A fresh round being fed into the chamber.

Gas stoppage

16. If after applying IA when the chamber was empty and there were rounds in the magazine, the rifle fires one or two rounds and stops again and after repeating the IA you find the same condition, ie, empty chamber and rounds in the magazine, pull back the cocking handle, release, put the change lever to "Safe", raise the grenade sight and turn the gas regulator two numbers lower. Put the change lever to "R" or "A" and carry on firing.

ote: When carrying out the IA on occasions an empty case will be ejected. This is a sure indication of insufficient gas and the

drills detailed above will be carried out.

17. Practise the men in IA and gas stoppage drill in pairs. In the latter stages of practice, do not use words of command but show masters how to simulate the stoppages by not pulling the cocking handle back when the pupil has carried out IA.

Further action

18. Explain and demonstrate: If after carrying out the IA and remedies

enumerated above, the rifle will not fire:

a. Apply the change lever, take off the magazine, cock the action, remove the top cover and breech block and inspect, in the following order, the ejector, extractor and firing pin. Should any of these parts be damaged or broken they must be replaced or repaired. When this has been done, reload and carry on firing.

b. Should none of these parts be damaged or broken, inspect the chamber for a separated case. (At this stage the instructor should



Fig. 29.—The clearing plug.

place a separated case into the chamber of his rifle.) Explain that if there is a separated case in the chamber, re-assemble the rifle, cock the action and engage the holding-open device. Screw up the head of the clearing plug, insert it in the chamber and allow the working parts to go forward. Tilt the rifle to the right, cock the action and examine the clearing plug after ejection to ensure that the separated case has been withdrawn. Re-load and carry on firing.

Note: If a separated case occurs when there are still rounds in the magazine, the next round will only be fed half-way into

the chamber.

c. If a. and b. are not the cause of the stoppage then the rifle may be badly fouled. Strip and clean the rifle.

19. Practise the squad.

20. Whatever you find wrong and whatever you have to do to put it right, you must load and fire again as soon as possible.

21. The clearing plug is carried in the section spare parts wallet together with a spare firing pin, extractor spring and plunger, and a gas plug. After using the plug, recover it and at the first opportunity unscrew the centre pin, take off the separated case, assemble the plug and replace it in the wallet.

Dusty and sandy conditions

22. Explain and demonstrate:

a. The rifle has been designed to fire in extreme conditions of dust and sand. Graphited grease will collect the sand and prevent it from

jamming the rifle.

b. When firing in sand or dust storms, sand will be blown into the rifle and will get into the body and chamber. It will collect in the rear of the body. After prolonged firing you should as soon as possible, open the rifle and tip this sand out.

c. After a while the sand in the chamber may cause stoppages because the round cannot be forced in. The only satisfactory cure is to remove the breech block and slide and clean the chamber with the gas

cylinder cleaning brush.

d. If there is a lot of sand or dust flying about or when on beach landings, always have your rifle ready to fire, and rely on the change lever for safety. The round in the chamber will prevent sand and dust getting in. Fill your magazine with 15 rounds only.

e. You should take every opportunity of stripping, cleaning and

re-greasing your rifle.

23. Question the men. Set them problems and get them to show you what they would do if stoppage drill failed. Do not practise by word of command.

Conclusion

24. Questions from and to the squad.

25. Sum up, stressing that with a well cared for rifle stoppages are rare.

LESSON 6—ALTERING SIGHTS AND AIMING OFF FOR WIND

Aim

1. To teach how to correct errors by altering sights, by aiming up or down and how to aim off for wind.

Stores

2. Rifles, magazines, aiming rests, one 4ft zeroing target, two fig 11 targets, diagrams showing points of aim, representative targets.

Notes

- 3. Presented as a lecture followed by practice.
- 4. Men receive further practice in this subject when they fire on the open range. Coaches must discuss with the men any alteration made to correct errors, so that they understand the practical application of this lesson.
- 5. This lesson requires one period.

Preliminaries

6. Carry out safety precautions.

Approach

7. Explain that conditions are not always ideal for accurate shooting. Atmospheric conditions, wind and changes of light will effect the accuracy of a shot. It is essential that the firer understands this and is able to compensate for possible errors by altering his sights or aiming off for wind.

Alteration of sights

- 8. Explain that when firing deliberate practices the position of hits are signalled. If the MPI is high or low the error can be corrected by altering the backsight setting. When this has been done, a correct aim can still be taken.
- 9. By raising or lowering the backsight by 100 metres it will raise or lower the MPI of shots as follows:
 - a. At 200 metres by six inches.
 - b. At 300 metres by twelve inches.
 - c. At 400 metres by eighteen inches.
 - d. At 500 metres by twenty-four inches.
 - e. At 600 metres by thirty inches.
- 10. Question the men and practise them by placing shot markers on the 4 ft target. They can either write down the answers or alter the backsight settings on their rifles.

Aiming up or down and aiming off

- 11. Explain that errors in direction and elevation can also be corrected by altering the point of aim. A fresh aiming point can be above or below, right or left of the correct aiming point, according to the error. It may be necessary to alter aim for both direction and elevation. When aiming off to the right or left care must be taken not to alter the elevation.
- 12. Question the men and practise them on figure targets using aiming rests to show where they would aim to counter-act the error. Always show the correct solution to any problem and discuss results.

Aiming off for wind

13. Explain that wind blows a bullet off its course. The amount a bullet is deflected depends on the strength and direction of the wind, as well as the firer's distance from the target. It is necessary to allow for this deflection by aiming off into the wind without making an error for elevation.

14. For shooting purposes wind strengths are called:

a. A Mild Wind. One which just moves the grass, leaves on trees and range flags.

b. A Fresh Wind. One which has an appreciable effect on bushes and thin branches of trees and can be distinctly felt on the side of the face. It would cause range flags to stand about half-way out from their poles.

c. A Strong Wind. One which has a noticeable effect on tree tops and lifts dust off dry ground. Range flags would tend to strain away from their poles.

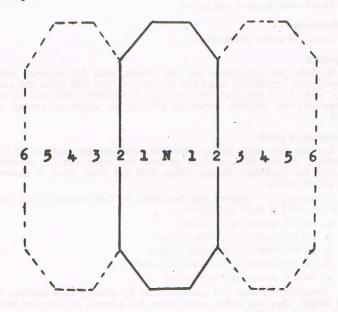


Fig. 30.—Aiming points on figure targets.

15. Winds which blow straight across the front are called cross winds; those which blow from any other direction except into or from behind you are called oblique winds. The wind's direction can be told by its effect on trees, grass, dust, smoke from weapons or by feeling its effect on the face. Ignore head and tail winds.

Aiming points on figure targets

16. The use of aiming points are incorporated when aiming off for wind. Suitable aiming points for enemy and figure targets are:

- a. Normal. The centre of the target.
- b. First Point. Halfway between the normal point of aim and the outside edge of the figure target.
- c. Second Point. The outside edge of the figure.
- d. Third to Sixth Points. On the imaginary target as per the illustration shown at Fig 30.

How much to aim off

- 17. Explain that the following table is a guide. As the firer becomes more experienced he will learn to aim off on his own calculations:
 - a. At 100 metres do not aim off.
 - b. At 200 metres aim off at the first point for a strong wind.
 - c. At 300 metres aim at the first point for a fresh wind and at the second point for a strong wind.
 - d. At 400 metres aim off at the first point for a mild wind, at the second point for a fresh wind and at the third point for a strong wind.
 - e. At 500 metres aim off at the second point for a mild wind, at the third point for a fresh wind and at the fourth point for a strong wind.
 - f. At 600 metres aim off at the third point for a mild wind, at the fourth point for a fresh wind and at the fifth or sixth point for a strong wind.
 - Notes: 1. Go in one point of aim if the wind is oblique.
 - 2. For recruit training it is only necessary to teach aiming off up to 300 metres.
- 18. Question and practise the squad by setting problems on fig 11/59 or representative figure targets. Let the men illustrate their answers by aiming off using aiming rests.

Conclusion

- 19. Questions from and to the class.
- 20. Summary of main teaching points.

PRACTICE 3—LESSONS 5 AND 6

Aim

1. To revise mechanism, practise stoppage drill and to revise elevation and wind tables.

Stores

2. Rifles, magazines, drill rounds, targets, cocking ropes.

Notes

3. See Chapter 2, Section 2.

Preliminaries

Safety precautions.

Approach

5. Remind the men that if rifles, ammunition and magazines are clean and the gas regulator is set right, stoppages will seldom occur.

Suggested method of practice

6. Mechanism. Ask questions on mechanism. Make the men use their rifles to illustrate their answers.

7. Stoppage Drill. Divide the men into three groups: first group to act as live targets; second group to cock the rifles; the third group to fire. Get the targets group to expose themselves while he men fire at them and practise in stoppage drill. Do not practise by word of command or practise as a drill the changing and obtaining of spare parts.

8. Practise stoppage drill under sand conditions. Explain the conditions

met in desert warfare; watch and then discuss the men's reactions.

9. Elevation and Wind Tables. Revise the men on the elevation and wind tables by giving them problems to work out; get them to point out on targets where they would have aimed.

Competitions

10. Organize simple competitions on the same lines as you have practised or base them on the training tests.

Summary

11. Summarize progress made and tell men the standard required to pass the training tests.

LIVE FIRING 2—DELIBERATE, SNAPSHOOTING AND RAPID FIRE

Aim

1. To teach recruits to apply their groups to a target and to give them practise at snapshooting and rapid firing.

Stores

2. Rifles, magazines, ammunition, Figure 11 and 12 targets, zeroing tools, binoculars, coaches' notebooks, cleaning kit.

Notes

3. You should not normally allow recruits to progress to this type of shooting until they can group to eight inches or less at 100 metres. Their rifles must have been zeroed. (See Chapter 2, Section 6.)

Preliminaries

4. Safety precautions and cleaning before firing.

Deliberate firing

- 5. Explain: Once you know how small a group you can get at 100 metres, you also know what size it should be at other ranges; double the range and you double the size of the groups. For instance, if your normal group at 100 metres is eight inches, at 200 metres it should be 16, and at 300, 24 inches. In deliberate, snapshooting and rapid practices you try to put the middle of your group (the mean point of impact MPI) in the middle of the target. You do this by altering your sights or point of aim as necessary.
- 6. Fire deliberate practices as often as time and ammunition will allow.

Snapshooting

7. Fire practices based on the snapshooting practices of the classification course. Start off with a time limit of six seconds for two shots then reduce to four seconds for two shots.

Rapid fire

8. Fire groups of five rounds only, beginning with a time limit of 20 seconds reducing to 15 seconds. Have the targets "up" and order "Rapid—

fire". Speed comes with practice. If a man is scattering his shots he must slow down the rhythm of his firing, but you should try to get men firing in a steady rhythm of a good shot every three seconds by the end of the period.

Conclusion

- 9. Cleaning after firing.
- 10. Sum up. Ensure that results are recorded.

LESSON 7—FIRING FROM OTHER POSITIONS AND AT CLOSE OUARTERS

Aim

1. To teach how to fire from other positions in the open and how to fire quickly and accurately at close quarters.

Stores

2. Rifles, bayonets, magazines, drill rounds, targets, cocking ropes.

Notes

- 3. When men practise firing more than one shot they should work in pairs, one man knocking back the cocking handle.
- 4. Do not use drill rounds after you have revised firing.
- 5. Fix bayonets for close quarter shooting.
- 6. This lesson requires one period.

Preliminaries

- 7. Safety precautions.
- 8. Revise firing.

Approach

9. Under service conditions or on the field firing range you will seldom be able to engage your target from the lying position, because of the height of crops or undergrowth. You must therefore learn to adopt either the kneeling, sitting or standing position, according to the nature of the ground and the target. With practice you will be able to make an immediate decision as to which is the most suitable in each instance. Having made your decision you must adopt this position quickly. Whatever the position you adopt your actions on the commands, "Ready", "Make Safe", "Fire", "Stop", "Go On", "Unload", "Watch and Shoot", or on a range being given are the same as for the lying position.

The kneeling position (see Figs 31 and 33)

- 10. Explain and demonstrate. Make the men copy your actions:
 - a. Kneel on your right knee, keeping it well out to the right and, if possible, sit on your right heel, rest your left forearm behind your left knee and the butt on your right thigh.
 - b. Order, "Ready", or give a range.
 - c. To fire, slide your left elbow forward to rest in front of your left knee cap or behind it, bring the butt up to your shoulder, aim and fire.
 - d. On the command "Watch and Shoot" adopt the alert position.
- 11. Practise the squad.





Fig. 31.—The kneeling position.

The Sitting Position (see Figs 32 and 34)

- 12. Explain that the sitting position is useful for firing downhill or at moving targets at short ranges.
- 13. Explain and demonstrate. Make the men copy your actions:
 - a. Sit down with your legs crossed or apart and put your feet wherever they are comfortable. Hold the rifle as you did in the kneeling position.
 - b. Order, "Ready", or give a range.
 - c. To fire, rest your elbows in front or behind your knees, bring the butt up to your shoulder, aim and fire.
 - d. On the command "Watch and Shoot" adopt the alert position.
- 14. Practise the squad.

The standing position (see Fig 35)

- 15. Explain that the standing position is used mainly to fire quick shots when moving forward in the attack or on patrol.
- 16. Explain and demonstrate. Make the men copy your actions:
 - a. Adopt the loading position.
 - b. Order, "Ready", or give a range.
 - c. When firing, lean forward a little, bring the butt into the shoulder sliding the left hand forward along the hand-guard as you do so.
 - d. Aim and fire as quickly as possible.
- 17. Practise the squad.

Close quarter shooting

- 18. Explain: When you are moving in close country on patrol or in a built-up area, you may meet your enemy at close quarters and without warning. In conditions such as these it is the quickness and accuracy of the first shots which gain success. The left hand and left foot must move together towards the target as the rifle is raised to the shoulder. A really tight grip with your right hand will overcome any tendency to jerk the trigger.
- 19. There are two positions of readiness in which you can carry your rifle when you may have to use it instantly. Explain and demonstrate; make the men copy your actions:
 - a. The High Port (see Fig. 37). This is the best position when going through scrub or when crossing obstacles. Should you stumble, you will not fill the muzzle of the rifle with mud, get it entangled or be a danger to your comrades. Your rifle should be ready with the change lever at "R" or "A". You must use common sense in deciding when to put it to "Safe", eg, when crossing an obstacle.
 - b. The Alert (see Fig 36). This is the best position from which to fire a quick shot. Your body and rifle are in perfect balance and the butt can be brought straight into the shoulder. Your rifle should be ready with the change lever at "R" and you must use your common sense in deciding when to put it to "Safe".



Fig. 32.—The sitting position.



Fig. 33.—Alert position, kneeling.

Fig. 34.—Alert position, sitting.



Fig. 36.-Alert position, standing.



Fig. 35.—The standing position.

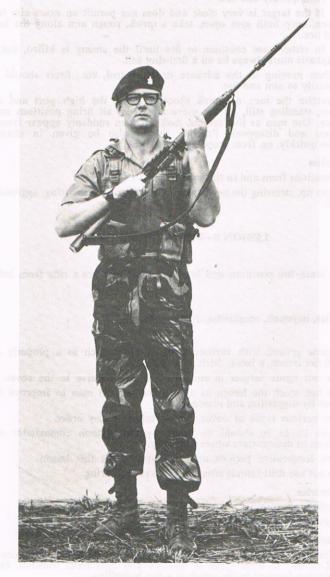


Fig. 37.—The high port.

- 20. To fire, bring the butt smartly into the shoulder:
 - a. Aim quickly and fire.
 - b. If the target is very close and does not permit an exact aim to be taken, keep both eyes open, take a quick, rough aim along the barrel and fire.
 - c. In either case continue to fire until the enemy is killed, but the emphasis must always be on a first-shot kill.
- 21. When moving in the advance or on patrol, etc., firers should halt momentarily to aim and fire.
- 22. Practise the men at quick shooting from the high port and alert positions, standing still, on the move and from all firing positions except the lying. Use men as live targets, making them suddenly appear from all directions and disappear. Practice should also be given in changing positions quickly, eg, from standing to kneeling.

Conclusion

- 23. Questions from and to the squad.
- 24. Sum up, stressing the need for quick and straight shooting, aggressively applied.

LESSON 8-FIRING FROM COVER

Aim

1. To teach fire positions and how to handle and fire a rifle from behind cover.

Stores

2. Rifles, bayonets, magazines, drill rounds, targets.

Notes

- 3. Choose ground with various types of cover such as a properly constructed fire trench, a bank, ditch, bushes or trees.
- 4. Put out figure targets in suitable positions relative to the cover.
- 5. Do not teach the lesson as a drill but get the men to improve their positions by suggestion and reasoning.
- 6. The various types of cover can be taken in any order.
- 7. Paras 12 to 30 should be taken by the platoon commander using instructors to demonstrate where necessary.
- 8. Two consecutive periods may be required for this lesson.
- 9. Do not use drill rounds after you have revised firing.

Preliminaries

- 10. Safety precautions.
- 11. Revise firing in all positions.

Approach

- 12. You must be able to handle and fire your rifle accurately from any type of cover. In most types of warfare you fight from trenches, except when moving forward in the attack or when patrolling.
- 13. Trenches must be narrow if they are to give protection, which means that you must be able to use your rifle efficiently in a restricted space.



Fig. 38.—Firing from a trench.



Fig. 39.— Firing round cover.

- 14. In the attack or when patrolling, you must be able to dominate the battlefield around you by quick shooting at close quarters, making the best use of available cover.
- 15. You may have opportunities to use your rifle in daylight on first contact with the enemy, but the greater part of your shooting in war will be in the half light of dawn or dusk and at night.

Firing positions

- 16. Explain that a good fire position is one which:
 - a. Allows free use of your personal weapons, rifle and grenades.
 - b. Provides cover from HE and small arms fire and also gives cover from view.
 - c. Enables you to have an unobstructed view of a wide arc of fire.
- 17. Cover from view can be obtained by the skilful use of bushes and crops, but the concealment of permanent defensive works will usually depend on the skilful use of ground or buildings or the use of camouflage.
- 18. When choosing a position from which you expect to fight by night, remember the importance of dead ground near your trench and places where the enemy will be seen in silhouette.

Trenches (see Fig 38)

19. You may have to fight from a weapon pit. If the cover is shallow

you will have to fire from the kneeling position.

20. If the trench is only slightly under depth to fire from the standing position, you can adjust your firing position by moving your feet further apart.

- 21. If the trench is too deep, you must use an ammunition box or sand bags as a fire step. (In any case you require a fire step to throw hand grenades from a trench.)
- 22. A well constructed four-man fire trench has an elbow rest. To get the best firing position, stand square to the cover, rest both elbows and support the forearm only on the cover.

Bushes, trees and buildings (see Fig 39)

23. Fire round the right side of cover when you can, but remember that the concealment given by shadow may indicate the use of the left side on occasions. If the cover is narrow, get directly behind it and keep the legs together.

Scrub

- 24. When fighting in woods or jungle, particularly when in ambush, you can sometimes get a better view of your arc by firing from the lower branches of large trees.
- 25. You will often have to use the sitting position when firing from low scrub or when springing an ambush at night. The sitting position is not tiring and allows accurate results.

Low banks and folds in the ground

26. Your position will be practically the same as when firing in the open, but make sure that you get as much protection from the ground as you can by getting the muzzle of your rifle just clear of the top of the bank or the crest of the fold.



Fig. 40.—Firing from the kneeling position.

Walls and houses

27. In street fighting you will use garden walls and outbuildings instead of bushes and ditches to obtain cover from fire and view. Whenever possible remove a few bricks near ground level and fire through a wall rather than over the top or through a gateway. A wall, one brick thick, does not give much protection from fire but it is useful for concealment.

Use of cover

- 28. Always try to rest your forearm for accurate shooting, as this is the position used when zeroing your rifle. Do not rest the barrel of the rifle or the magazine on cover, as this will throw your shots high or low, according to which part of the rifle is resting.
- 29. If you cannot rest your forearm, then rest the back of your hand on the cover. If this is not possible because the cover is too hard or has a sharp edge, rest the rifle on the cover as near to your hand as possible.
- 30. However you make use of cover, never relax your grip on the rifle, especially with your right hand.

Taking cover and firing

- 31. In an attack you must continue to advance until ordered to take cover. When your section commander gives the order, "Take Cover", you will carry out the following actions. Explain and demonstrate:
 - a. Run to the nearest cover, keep your rifle out of sight and observe. This is the position of observation. If no other order follows shoot at any enemy you can see or any likely enemy positions.
 - b. On the command, "Ready", or a range being given, get into a firing position, cock your rifle if necessary and push the change lever to "R" or "A". That is the position of readiness.

- c. "Fire", "Rapid Fire", "Watch and Shoot", "Stop", "Go On", "Make Safe", are orders you may receive. You act as when firing in the open. When the magazine is empty change it, put the empty magazine back in your pouch and fasten it. During a lull in firing take the opportunity of refilling empty or partially filled magazines from your bandolier.
- d. On the command, "Prepare to Advance (or Move)", whether the command "Make Safe", has been given or not, check that the change lever is at "Safe", get behind cover if you are not already there, make sure that you have all your magazines and that your pouches are fastened; remain ready to jump up and move.
- e. On the command "Advance (or Move)", jump up quickly and advance in the direction indicated and in the formation ordered.
- 32. Practise the squad.
- 33. Practise the squad in firing from various types of cover and from fire trenches.

Conclusion

- 34. Questions from and to the squad.
- 35. Sum up.

PRACTICE 4-LESSONS 7 AND 8

Aim

1. To practise firing in the open, from cover and in close quarter battle.

Stores

2. Rifles, magazines, drill cartridges, targets.

Note

3. See Chapter 2, Section 2.

Preliminaries

4. Safety precautions.

Approach

5. Remind men of the necessity for quick and accurate shooting from any position, both in the open and behind cover.

Suggested methods of practice

- 6. Firing in the Open. Send one-third of the squad to conceal themselves in bushes or behind a bank some 100 metres in front. Use these men to give practice in firing at various types of fleeting targets and for rapid fire practice when they charge the position or move towards a neighbouring position. The firers may also be exercised in rapid fire from the kneeling and standing positions by getting the targets to run away as the assaulting section advances.
- 7. Firing from Cover. Practise as in 6 above using all types of cover.
- 8. Close Quarter Battle. Use one-third of the squad as live enemy. Position them behind and in buildings or behind trees and bushes. Tell them to expose themselves and to run in various directions from cover

to cover. Order the other half to advance into the target area. Do not give words of command; the men must fire on the appearance of the target.

Competition

9. Divide the men into three teams and let them oppose each other in close quarter battle shooting. Let the third team be umpires to decide who gets in the first shot, and award points accordingly.

Summary

10. Summarize the progress made.

LESSON 9—BAYONET FIGHTING

Aim

1. To teach how to attack and kill the enemy with the bayonet and methods of self defence.

Stores

2. Rifles, bayonets, magazines, standing and ground dummy enemy and training sticks. (See Figs 41 to 44.)

Notes

- 3. The aim of bayonet training is to make men confident that they can kill with the bayonet.
- 4. Encourage the men to develop a style to suit their size and build.
- 5. Try to instil a spirit of vigour and determination into your squad. Make them do everything at the double, except where it is otherwise stated. The keynote is speed and vigour; if a man is quick and vigorous, do not penalize him for small technical faults.
- 6. During butt stroke practice do NOT allow the butt to strike the dummy enemy or its supports otherwise the rifle will be damaged.
- 7. This lesson requires one period.

Preliminaires

- 8. Safety precautions.
- 9. Fix bayonets, loosen slings, load.
- 10. Place the men on the right of the dummy enemy.

Approach

11. Sometimes, during an assault when fighting in woods, villages, other confined spaces or at night, either the threat or use of the bayonet has a decisive effect.

To kill a standing enemy

- 12. Explain and demonstrate:
 - a. You adopt the on guard position as you get near the enemy in an assault, or when you are about to attack the enemy with the bayonet.
 - **b.** To come on guard from any position, grip your rifle firmly by the pistol grip and hand guard; point the bayonet at your enemy. Adopt a natural fighting attitude (see Fig 41).



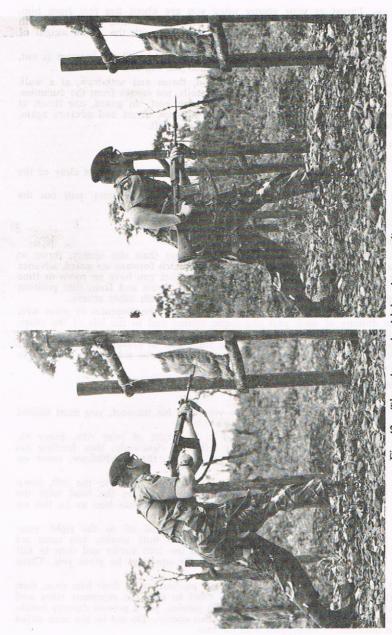


Fig. 42.-Thrusting and withdrawing, standing enemy

- c. Thrust at your enemy when you are about five feet from him. Grip the rifle firmly, bring your rear foot forward, or jump in with both feet and stick the bayonet into him with the whole weight of your body behind it (see Fig 42).
- d. To withdraw, pull the rifle straight back until the bayonet is out, punch forward on guard and advance (see Fig 42).
- 13. Practise the men in the on guard, thrust and withdraw, at a walk and at the double. Organize them in details, ten metres from the dummies. Words of command are, "Front rank, high port, on guard, one thrust at the walk (double)—Thrust". The men advance, thrust and advance again. Always make the men pass the dummy on its left.

To kill the enemy on the ground

- 14. Explain and demonstrate:
 - a. Thrust as before. To avoid accidents, keep your feet clear of the dummy enemy.
 - b. Stamp one foot on the enemy, near the bayonet, pull out the bayonet, come on guard and advance (see Fig 43).
- 15. Practise the men as in para 13.

To kill a number of enemy

- 16. Explain and demonstrate: To kill more than one enemy, thrust at the nearest. If the second is out of range punch forward on guard, advance on him and thrust again. If he is so close that you have no room or time to come on guard, withdraw from the first thrust and from that position thrust, withdraw and advance. Deal similarly with other enemy.
- 17. Practise the men as in para 13. Arrange the dummies in pairs with one dummy of each pair one metre behind and to the left of the other. Increase the distance to five metres for further practice, changing the position of the rear dummy to the right side to prevent accidents. Make certain that all the rear dummies are on the same side as the dummy in front.

Defensive action

- 18. Explain and demonstrate:
 - a. When an enemy goes for you with his bayonet, you must defend yourself, make an opening and kill him.
 - b. If his bayonet is directed to the right of your rifle, parry his thrust by straightening your left arm vigorously, thus fending his bayonet off, point your bayonet at him, thrust, withdraw, come on guard and advance.
 - c. If he attacks on your left, beat off his thrust to the left, jump round, swing your rifle round, hitting him on the head with the butt or pistol grip, then stick your bayonet into him as he lies on the ground, withdraw and advance.
 - **d.** Explain: If you attack and are parried off to the right, your enemy will instantly follow up with a butt stroke; you must act quickly and violently, first to avoid the butt stroke and then to kill him. How you do it depends on the openings he gives you. These actions cannot be practised.
- 19. Practise the men in right and left parries first in their own time, then against dummies with light sticks fixed to them to represent rifles and bayonets (see Fig 44). To practise left parries, put a ground dummy beside each standing one to represent the fallen enemy. Do not let the men strike the dummies or its support with the butt.





Fig. 43.-Killing an enemy on the ground.



Fig. 44.—Left parry practice against dummies.

Note: The training stick must be attached so that it falls when hit.

Conclusion

- 20. Questions from and to the squad.
- 21. Sum up; emphasize the need for speed and vigour when bayonet fighting.

PRACTICE 5—LESSON 9

Aim

1. To practise bayonet fighting in attack and defence.

Stores

2. Rifles, magazines, bayonets, standing and ground dummy enemy, training stricks.

Notes

3. See Lesson 9 for the method of arranging the dummies for self defence practice.

Preliminaries

- 4. Safety precautions.
- 5. Fix bayonets, loosen slings, load.

Approach

6. Remind the men that with practice they will develop their own style. Any style adopted must be based on good foot work to obtain speed, power and direction. Self defence is a means of creating an opening for a kill.

Suggested methods of practice

- 7. Attack. Practise the men in fighting one, two or more enemy. Use both standing and ground enemy.
- 8. Defence. Practise the men in the right parry and kill and then in the left parry, butt stroke and kill. Do NOT let the men strike the dummy or its supports with the butt otherwise rifles will be damaged.

Competition

- 9. Lay out a circular course of standing and ground dummy enemy in groups of one, two or more; fix some of them up with training sticks for parries.
- 10. Divide the men into two groups, masters and pupils. The master must follow his pupil round the course and take off marks for faults.

Summary

11. Summarize progress made, and emphasize that when necessity for killing with the bayonet arrives, it must be used with speed and determination.

LIVE FIRING 3—THE ASSAULT COURSE

Aim

To practise an assault with live ammunition.

Stores

Rifles, bayonets, magazines, ammunition, targets, bayonet dummies, cleaning materials.

Notes

- 3. Run the practice on a bayonet assault course, ending on a firing point from which the men can fire live ammunition. (See Infantry Training Volume III, Pamphlet No 32, 1958, WO Code No 9486).
- 4. Act as commander and control the assault yourself.
- 5. At first take the men over the course by easy stages, and correct their faults at each stage. When you decide to do an assault and to fire at the end, order "Load" at the beginning, but do not give "Ready" or a range until they are on the firing point.

Preliminaries

- 6. Safety precautions.
- 7. Prepare rifles for firing.

Approach

8. A controlled advance shakes the enemy's morale and gets you to the objective together and not too exhausted; if you arrive there one at a time, it is easier for the enemy to kill you.

The controlled charge

- 9. Explain that the controlled advance ends with a controlled charge. The rules to follow are:
 - a. Everyone breaks cover at the same moment.
 - b. Advance at a steady double, each man keeping touch with the man on his left, and level with him.
 - c. Carry your rifle at the high port over obstacles, so that you can use your right hand to help you over.
 - d. As you advance, each of you must decide on one enemy to kill, and then go flat out to kill him.
 - e. The moment the assault is over, find a good fire position and be prepared to open fire.
- 10. Practise the squad first without, then with, live ammunition.

Conclusion

- 11. Questions from and to the squad.
- 12. Sum up.
- 13. Cleaning after firing.

PRACTICE 6—HANDLING

Aim

1. To train men to handle their rifles quickly and with safety in all circumstances.

Stores

2. Rifles and bayonets, magazines and bandoliers, drill and blank cart-ridges, fatiguemen.

Notes

- 3. Dress: Battle order.
- Choose rough ground which has several different types of cover, including trenches.

- 5. Obtain the use of standard types of military vehicles.
- 6. Adopt the firing positions which are indicated by a realistic tactical situation and the type of ground and cover available.
- 7. Use fatiguemen or another squad as a live enemy after the elementary stages of the lesson. The enemy must be armed with blank so that they can indicate by the volume of their fire when you should take cover. Once this action has been taken there is no need for constant firing of blank by the enemy.
- 8. Never order rapid fire unless the target justifies its use.
- 9. Fix bayonets when you are likely to be in close contact with the enemy.

Preliminaries

- 10. Safety precautions.
- 11. Order, "With drill rounds-Load".

Approach

- 12. In battle, or during periods of civil unrest or rebellion, you must be ready to use your weapons at short notice. For this feason it may be necessary to move in transport with loaded weapons.
- 13. When on duty as a sentry or when on patrol it is often necessary to have a round in the chamber at "Ready" so that you can open fire instantly.
- 14. When you are on patrol and moving in file or single file, you may have other men directly in front and behind you with loaded rifles. Both you and they must be confident that all members of the section will handle their rifles with absolute safety.
- 15. When jumping out of a vehicle, crossing an obstacle or moving through bushes, you must handle your rifle correctly or you will be more dangerous to your comrades than the enemy.
- 16. You are responsible for the safe handling of your weapon at all times, when cleaning it or carrying it, and you must never leave it loaded when it is unattended or when you hand it in for safe custody.

Exercise 1—Troop carrying transport

- 17. Form up the section and order, "Load". Practise the men in climbing in and out of transport. Check faults of rough usage and unsafe pointing of weapons. Show men how they can assist each other by holding a man's rifle while he jumps up into the vehicle and then pass him his weapon in a safe manner.
- 18. Show men how to sit in the vehicle with rifle butts between the feet, or with rifles pointing outwards when instant readiness is required.
- 19. Practise the procedure for getting out of transport and making ready on arrival at the scene of a disturbance, or getting out and unloading on completion of a mission.

Exercise 2-Use of cover in defence

20. Take the squad to an area which has a variety of trenches and get each man to adopt suitable firing positions with relation to various targets in the section arc. Exercise the squad in flexible shooting by giving several brief fire orders.

21. Impress upon the men that they must count the number of rounds left in the magazine so that they know when to change them. Practise them in refilling magazines during a lull in the firing.

Exercise 3—Use of cover in attack

- 22. Move across country with the squad in section formation. As you move forward, explain to them that they must continue to advance in battle until they are ordered to "Take cover". When they receive this order they can either get down and crawl to the nearest cover or dash for the cover. The orders will depend on the weight and accuracy of fire and the nature of the ground.
- 23. Having reached cover, every man must then find a position from which he can see the enemy and return fire.

Conclusion

- 24. Questions from and to the squad.
- 25. Summarize the progress made.

LIVE FIRING 4—CLOSE QUARTER SHOOTING

Aim

1. To practise close quarter shooting.

Stores

2. Rifles, magazines, ammunition, Fig 11 and 11c targets, swivel target apparatus, cleaning kit.

Notes

- 3. Each recruit towards the end of his basic training must be practised in close range shooting.
- 4. Firing practice can take place on a classification, field firing or 25 metres range. Good practice can be obtained on 25 metre ranges using the scaled down Fig 11 target in conjunction with the swivel target apparatus (see Infantry Training, Volume III, Pamphlet No 32, 1958, WO Code No 9486).
- 5. The main essential is that no order to fire should be given; order, "Ready, Watch and shoot", and arrange for the targets to be exposed.
- 6. Repeat the practices, or similar ones, as often as time and ammunition will allow.

Preliminaries

- Preliminaries
 7. Safety precautions.
- Prepare rifles for firing.

Firing practice

- 9. 25 Metres Range Introductory Shoot. Let each man fire six rounds at a Fig 11c target; two rounds to be fired in each of the positions, standing, kneeling and sitting; no time limit to be given.
- Advanced Practice 25 Metres. Fit a Fig 11c target in the swivel target frame for each firer. Tell the firers that they will fire two rounds at each exposure in the following positions:
 - a. First exposure, standing.
- b. Second exposure, kneeling.c. Third exposure, sitting.
- 11. There will be three exposures of three seconds each.

Further practice

- 12. According to time, ammunition supply and range facilities available, the following practices can be fired on classification or field firing ranges:
 - a. Introductory Practice. Let each man fire six rounds at a Fig 11 target at 50 metres, time limit two seconds a shot.
 - b. Advanced Practice. The firers start at 100 metres, rifles loaded with 10 rounds and at the ready. Order, "Advance". Arrange for Fig 11 targets to be exposed for three seconds when the men are at 80, 70, 50, 30 and 20 metres from the targets. Tell the firers that at the first and second exposures of the targets they must adopt the kneeling position before firing. They will fire from the standing position for the remaining exposures. Two rounds will be fired at each exposure of the target.
 - c. Moving Target. Fire at a moving Fig 11 target at 100 metres from the sitting position. Move the target at a walking pace over two target's width. The men fire two shots at each exposure.
 - d. Automatic Fire. Let each man fire 15 rounds in short bursts of two and three rounds at a stationary Fig 11 target at 30 metres, from the kneeling position. (No time limit).

Conclusion

- 13. Clean weapons after firing.
- 14. Summarize the progress made. Stress the need for quick accurate shooting at close range, and that automatic fire should only be used at close range at large groups of enemy.
- 15. Make sure results are known and recorded.

LIVE FIRING 5—SHOOTING AT NIGHT

Aim

1. To teach how to shoot at night.

Stores

2. Rifles, ball ammunition, Fig 11 and Fig 12 targets. Red lamps in place of red flags. Torches equipped with a red filter for inspecting targets. Chalk for scoring targets.

Notes

- 3. Before being trained to shoot at night, the soldier must have achieved a satisfactory standard in daylight practices, and have been taught about night vision. (See Infantry Training, Volume 1, Pamphlet No 2, Fieldcraft, 1954, Lesson 13).
- 4. Night range organization must be explained:
 - Red lamps are used in place of red flags.
 - b. Weapons and targets are inspected by torchlight. A torch with a red filter is used to protect the night adaptation of the firer.
 - c. Targets are scored with chalk in order to save the time that would otherwise be taken in pasting out.
 - d. All parties marching into or out of the butts must be counted and reported correct to either the butts supervisor or the firing point officer.

- 5. Night firing training consists of three phases:
 - a. Phase 1—Daylight practice in which the technique of night firing is taught and practised.
 - b. Phase 2-Practice in firing with all types of illuminant.
- c. Phase 3—Advanced training where the practice is brought close to battle conditions. All advanced training should be a mixture of firing both with and without illumination. The soldier is practised in firing at night, in protecting his night adaptation, and in acting as a member of a section at night.
- 6. Care must be taken to ensure that all targets to be engaged without the aid of artificial illumination are always within the limit of vision of the firer.
- 7. Whenever night firing is conducted without illumination, 30 minutes must be allowed for night adaptation before firing starts. White lights should not be used by the supervising staff. If there is a building close to the range area, it may be convenient to brief the firers under red light before starting the practice. The firers will become night adapted after 30 minutes under red light, and thereafter must not be exposed to white light.
- 8. Men must wear and use their pouches, unless all equipment has been discarded for a patrol exercise. In night fighting, much ammunition is lost when men put down a magazine on the parapet and then have to move to another part of the trench. Ammunition will also be lost when men take cover after throwing a grenade, if they have neglected to fasten their pouches.
- 9. Training in night shooting must not be rushed. Good coaching is as important by night as it is by day and in the initial stages of training, a coach should not try to supervise more than one firer. In later stages it may be possible for one coach to supervise two firers. The soldier must not progress to advanced practices until he has developed confidence in himself and his ability to hit any target at night.

Preliminaries

Normal safety precautions.

PHASE 1—FIRING WITHOUT ILLUMINATION

Approach

11. Much of your shooting will be at night or in the half-light of dusk or dawn when it is not possible to use the sights. You must develop the technique of firing by instinctive pointing, which will train you to hit any target you can see at night without using the sights.

The technique

- 12. Explain and demonstrate how to shoot at night from the prone position:
 - a. Point the rifle at the target.
 - b. The rifle is held exactly as for daylight shooting. The firer's position is, however, directly comparable to that used when firing a MG in the light role, ie, legs together and barrel, body and legs in a straight line. The butt must be brought in towards the centre of the body to such a position that, when the firer's chin is rested on the ridge of the butt, his master eye is directly above the line of the barrel.

- c. Ensure that the barrel of the rifle is parallel to the ground, then forget the rifle.
- d. Keep both eyes open. Raise the head, keeping the chin in contact with the butt, until the target is clearly visible above the sights. In this position the axis of the barrel will lie under the firer's master eye, and the firer's field of vision will have moved slightly to the right of the target. Thus the firer can scan his target area using off-centre vision.
- e. Concentrate on the target. Fire.
- 13. As an aid to pointing, the left elbow may be brought in closer to the rifle than is normal. The firer may check his alignment by lowering his head until the sights obscure the target, and then returning to the correct position.
- 14. Explain and demonstrate that the method of firing from a trench is similar, although the firer will adjust the position of his legs to suit himself.
- 15. The MPI of any shots fired should be in the lower half of the target. Any tendency to shoot high must be corrected. Misses high are usually caused by the firer attempting to aim with the muzzle of his rifle. Misses to the right or left are caused by incorrect alignment on the target.

Daylight practices

- 16. Each man should fire five shots at a Fig 11 target at 25 metres from the prone position and the fire trench.
- 17. Order "Load", "Ready", "Fire".
- 18. Go up to the target after firing each group of five rounds, assess the group and correct any mistakes made.
- 19. Allow sufficient time for coaching.
- 20. Repeat the practice until each man can hit the target with all his shots from both positions.

Night practices

- 21. Each man should fire the daylight practice by night. The Fig 11 target remains at 25 metres.
- 22. The standard to be achieved should be 80% hits.
- 23. Further practices should be fired from both positions.
- 24. The Fig 11 target should be placed at the limit of the firer's vision less five metres.
- 25. Pull-up targets and pairs of targets should be used if available.
- 26. These practices should be repeated as often as time and ammunition will allow.

PHASE 2—FIRING WITH ILLUMINATION

Approach

- 27. Artificial illumination may be used at night. You should be able to shoot almost as well at night with illumination as you can by day.
- 28. Explain that it is possible to use the sights, and the daylight method of firing is used. The only problem is that artificial light produces strong shadows which sometimes make the target difficult to see. The firer cannot expect a perfect sight picture and must learn to fire while the light is available. It is wrong to delay and hope that light will improve.

Method

29. Demonstrate the ease with which a firer can change from firing by night techniques to using his sights as in daylight. Warn that as an immediate reaction to light, the firer should close one eye in order to protect part of his night adaptation.

Night practices

- 30. To be fired either from the prone position or a fire trench.
- 31. The target to be a fixed Fig 11 at 100 metres.
- 32. Fire three 1-inch Verey illuminating cartridges. Each man fires two rounds during the light of each flare.
- 33. Fire two 2-inch parachute illuminating bombs. During the light of the flare each man fires four rounds.
- 34. Repeat and vary the practices if ammunition and other types of illuminant are available.

PHASE 3—ADVANCED PRACTICES

- 35. The aim of any further practices should be:
 - a. To give men practice at firing under battle conditions when they will be grouped together in sections.
 - b. To exercise sub-unit commanders in fire direction and control.
 c. To give practice in firing both with and without illumination at targets at varying and unknown ranges.
- 36. Advanced practices should normally take place on a field firing range.
- 37. Practices in this phase should be based on both defensive and patrol exercises.

Discipline

38. Strict discipline is of the greatest importance in night firing (see Infantry Training, Volume III, Pamphlet No. 31, Ranges, Annual Range Courses and Range Work, 1958, WO Code No. 9485).

ADDITIONAL INFORMATION FOR INSTRUCTORS

SECTION 1—GENERAL

- 1. This chapter contains further information and is intended to help instructors to understand better the subject and its presentation, therefore to teach it more efficiently. It is useful matter to teach to a NCO's cadre.
- 2. It also contains notes on the 7,62 mm Heavy Barrelled FN Rifle, a specialist weapon.

SECTION 2—PRACTICE PERIODS

- 1. All training must be progressive; unnecessary repetition is bad instructional practice. A recruit learns skills and facts in the basic lessons and he should be taught them once only during his service. He then needs a lot of time and practice to speed up his actions and get the facts firmly fixed in his mind.
- 2. During practice periods it may be obvious that the men have failed to grasp a particular skill or fact, therefore you may have to teach them part of a lesson again.
- 3. The practice periods in this pamphlet are a guide to the best way of exercising recruits during their basic training but you must watch their weak points and plan periods accordingly.
- Spot and check faults immediately or recruits will go on making the same mistakes.
- 5. The incentive of competition will always help to make practice more interesting. You can base the whole of the practice periods on competitions or leave them to the end of the period. Some points on framing simple competitions are:
 - a. Competitions may be on an individual or team basis.
 - b. If you decide to have teams make sure they are fairly equal in performance. The more advanced members of the team will help along the weaker members.
 - c. Award marks up to a given total or start with a total and take marks off for mistakes.
 - d. Always have a small board or a piece of paper on which you can mark the results.
 - e. Obtain further interest by making one team or individual watch another and award or take off marks.
 - f. Above all make certain that your competitions are simple and realistic, ie, that they exercise the men in the facts and skills concerning their training.

SECTION 3-STRENGTHENING EXERCISES

General

1. Good shooting depends upon the soldier's ability to handle his rifle confidently under all conditions. These exercises are designed to strengthen the muscles directly concerned in handling and shooting, in particular the right hand grip.

Arrangement of exercises

- 2. There are four groups. In each group the exercises follow the same sequence: grip, dexterity, shoulder and wrist.
- 3. Each group is progressively more severe and all are suitable for use by recruits—one group to each lesson.
- 4. Trained soldiers can do all groups as one exercise.
- 5. Take care to select the group of exercises that are within the ability of your squad.
- 6. Each group should take from two and a half to three minutes.
- 7. Progression will depend upon the squad's ability. As a guide, use group 1 during the first two weeks of training, with fortnightly changes.

Application

- 8. Include the exercises in a weapon training or a physical training period. To obtain the greatest value make your squad do them every day.
- 9. Before you start the exercises, carry out safety precautions. Order "Loading position". Do not fix bayonets.
- 10. Start all exercises from the loading position.
- 11. To prevent injury by swinging rifles, spread the squad well out.
- 12. To start each exercise give the number of the group and the name of the series. For example, "First group; Grip—alternative grip release—Begin". You must do the exercise yourself, setting the pace and getting the men to follow you.
- 13. Do four movements of each exercise, called a series, before going on to the next. Do one group in each lesson. As the men get more used to the exercise increase the number of series but give a pause between each. With trained men do two or more groups with pauses in between.
- 14. Keep the men alert by the frequent use of quickeners or brain stimulating activities, such as adopting fire positions or doing fieldcraft movements, according to the stage of instruction reached.

15. Grip (alternate grip/release):
a. Take right hand off, stretch arm fully outwards (see Plate 1).
b. Repeat with left hand.



Plate 1.

16. Dexterity (changing grip in rhythm):

a. Change left hand from under grip to over grip and back to under grip (see Plate 2).

b. Move right hand from pistol grip to small of butt, and back to pistol grip (see Plate 3).





Plate 2.

Plate 3.

Group 1—Exercise 3

17. Shoulder (pointing): Release left hand, at the same time push rifle forward to full extent of right arm, swinging the left arm sideways level with shoulder (see Plate 4).



Plate 4.

18. Wrist (muzzle circling): Release left hand, lower muzzle (see Plate 5) and swing it back, up (see Plate 6) and forward to start position.



Plate 5.

Plate 6.

Group 2—Exercise 5

- 19. Grip (alternate muzzle and butt lowering):
 - a. Release left hand, let muzzle drop slowly (see Plate 7), return to start position.
 - b. Release right hand, let butt swing slowly down and forward (see Plate 8), return to start position.





Plate 7.

Plate 8.

Group 2—Exercise 6

- 20. Dexterity (forward circle):
 - a. Release right hand (see Plate 9), swing butt down, forward, up and over (see Plate 10).
 - b. Reposition both hands as for start position.

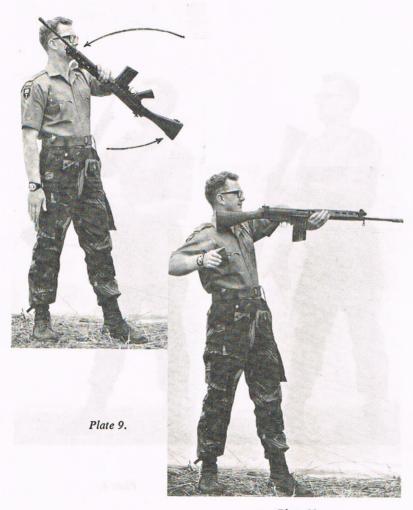


Plate 10.

21. Shoulder (pointing and swinging):

a. Release left hand, swing it sideways, at the same time stretch right arm fully forward (see Plate 11), then sideways (see Plate 12), then upwards (see Plate 13).

b. Returning to start position, make a distinct check between each movement.



Plate 11.

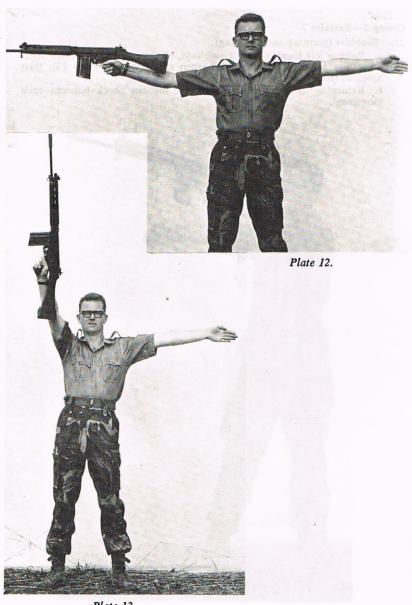


Plate 13.

- 22. Wrist (one handed circle):
 - a. Release left hand, lower muzzle (see Plate 14) and swing it backwards in complete circle (see Plate 15) to aim position—replace left hand.
 - b. Return to start position after fourth circle.



Plate 15.

23. Grip (sideways swing):

a. Release left hand, swing it sideways, at the same time keeping right elbow close to the side, swing the rifle sideways (see Plate 16).

b. Return to start position.



24. Dexterity (forward swinging):

a. Release right hand, swing butt down, forward and over (see Plate 17). Grasp small of butt with right hand (see Plate 18). Reposition left hand (see Plate 19). Right hand to pistol grip.

b. Return to start position.

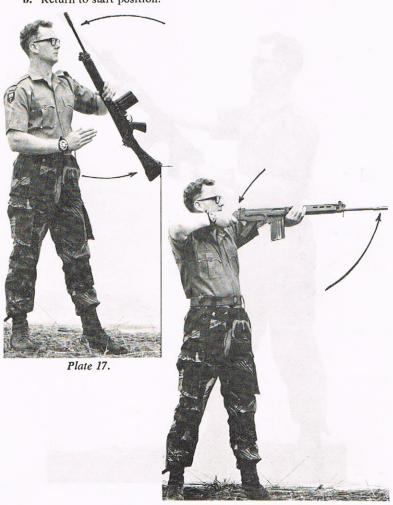


Plate 18.



Plate 19.

25. Shoulder (grand circle):

a. Release left hand, stretch right arm to fullest extent (see Plate 20). Keeping the arm as straight as possible, circle rifle around head (see Plate 21).



Plate 20.

- 26. Wrist (under swing and check):
 - a. Keep elbows close to side, push rifle outwards (see Plate 22). Release right hand, swing butt down and over; check muzzle with right hand (see Plate 23). Swing back (see Plate 22).
 - b. Release left hand, swing muzzle down and over; check butt with left hand (see Plate 24). Swing back (see Plate 22).
 - c. Do four swings with muzzle and four with butt.
 - d. Return to start position.



Plate 22.

Plate 23.



Plate 24.

- 27. Grip (alternate grip/release):
 - a. Release right hand, swing it sideways level with shoulder (see Plate 25). Replace right hand.
 - b. Release left hand, swing it sideways level with shoulder (see Plate 26). Replace left hand.
 - c. Repeat four times with each hand.



Plate 25.

Plate 26.

Group 4—Exercise 14

- 28. Dexterity (circle forward to over shoulder):
 - a. Aim. Release right hand, lower butt down and forward (see Plate 27). Grip handguard with right hand behind foresight (see Plate 28).
 b. Swing butt over right shoulder, check muzzle with left hand (see

Plate 29). Swing butt over right shoulder, check muzzle with left hand (see Plate 29). Swing butt forward, move left hand to normal grip on handguard (see Plate 30).

c. Swing butt forward and round to aiming position, gripping pistol grip with right hand.

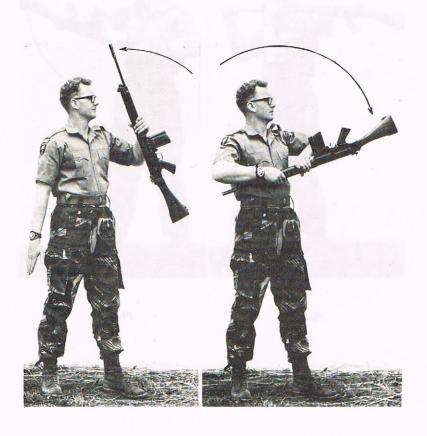


Plate 27.

Plate 28.

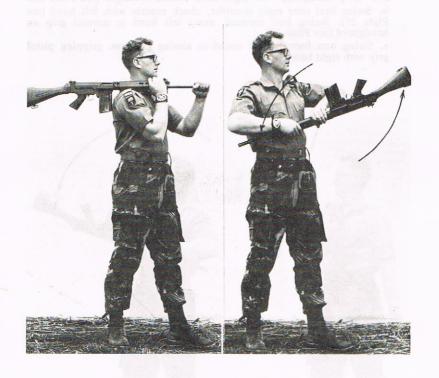


Plate 29.

Plate 30.

Group 4—Exercise 15

29. Shoulder (stretching and swinging): Aim. Release left hand, swing it sideways level with shoulder, at the same time stretch right arm fully forward and swing rifle sideways and upward and down to aiming position in one movement (see Plate 31).



Plate 31.

30. Wrist (front circles): Push rifle full extent of arms; hold with undergrips (see Plate 32). Release right hand, swing butt down and over in complete circle (see Plate 33). Reposition left hand. Release left hand, swing muzzle down and over in complete circle (see Plate 34). Reposition right hand.



Plate 32.

Plate 33.



Plate 34.

SECTION 4-MASTER AND PUPIL

- 1. The master and pupil method of practice in its simplest form is for one man (the pupil) to work under the supervision of another (the master); the instructor keeps an eye on both.
- 2. At all stages of training it stimulates interest, keenness and attention to detail. It is particularly useful with large squads and in competitions. Used regularly, it also develops initiative and leadership and you can spot potential leaders by watching the masters at work.

SECTION 5-HOW TO EXAMINE A RIFLE

- 1. Officers and NCOs must know how to examine a rifle in order to check efficiently that it is being kept fit for battle.
- The rifle must first be stripped.

The barrel

- 3. Examine the barrel for rust, cuts, bulging or fouling:
 - a. Pull the barrel through: rust shows on the flannelette or as dark patches in the barrel.
 - b. A cut looks like a short hair.
 - c. A bulge shows as a dark circle.
- d. Metallic fouling shows as streaks or patches on the lands or in the grooves near the muzzle.

The gas assembly

- 4. Remove the piston spring and check that the gas cylinder is clean and straight; look for dents. Reverse the piston and see that it moves smoothly in the cylinder.
- 5. Check that the gas regulator can be turned but is not loose.
- 6. Look for fouling and burrs on the gas plug; check that it fits in the gas block.

The body

- 7. Look for fractures: look for burrs in the guide grooves.
- 8. Check that the carrying handle moves freely.
- 9. Look for burrs in the recoil locking shoulder recess.
- 10. Check that the point of the ejector is not chipped.
- 11. Check that the holding open plunger and spring, the magazine catch and the cocking slide work as they should.
- 12. Test the safety sear and spring by pushing it downward and forward against its spring.

The breech block and slide

- 13. Look for fractures, particularly round the locking shoulder at the back, the cams on each side and the feed projection of the breech block.
- 14. Strip and examine the firing pin to make sure that it is serviceable.
- 15. Inspect the extractor and push it outwards with the nose of a round to check that the spring works.
- 16. Look for burrs and check that the breech block moves freely to and fro in the slide.
- 17. Check that the return spring rod is securely attached to the back of the slide, that it is not bent and that it centralizes itself in the body.
- 18. Check that the slide moves smoothly in the body.

The trigger mechanism

- 19. With the rifle assembled except for the top cover; close and cock the rifle. Put the change lever to "Safe" and press the trigger; the hammer should not move.
- 20. Put the change lever at "R", press the trigger and hold it there; the hammer should go forward. Cock the rifle; the hammer should stay down. Release the trigger; the hammer should stay down.
- 21. Put the change lever at "A", press the trigger and maintain the pressure; the hammer should go forward. Release the trigger and cock the rifle; the hammer should stay down. If the right thing does not happen at any stage, you need an armourer's help.
- 22. Check that the pistol grip is firm.

The butt

23. Check that the butt is firm and look for splits and any other damage.

The hand guard

24. Check that it is tight and look for splits and any other damage.

The sights

25. Check that the sights are firm and not distorted including the grenade sight, if fitted.

SECTION 6—ZEROING

General

- 1. Rifles are tested for zero before leaving the factory. This means that they are sighted without bayonet so that the MPI of a group and the point of aim coincide at 200 metres when the sights are set at 200 metres.
- 2. Owing to variations in build and methods of holding and aiming it is rare that a rifle zeroed by one person will suit another. There will be a difference in the position of the MPI of the group vertically and/or laterally.
- 3. To cater for this variation between individuals the sights are adjustable—the foresight for elevation and the backsight for direction. Vertical adjustments are made by raising or lowering the foresight and lateral adjustments are made by moving the backsight to the right or left.
- 4. It is important that before anyone zeroes a rifle, he should have received sufficient training in elementary lessons and grouping so that he:
 - a. Consistently scores eight inch groups or less.
 - b. Consistently places his groups in the same area.
- 5. If a man cannot achieve a. and b., any alteration made is a waste of time and ammunition. A good shot should test the zero of such a man's rifle, but as soon as the man has reached the required standard he should test the rifle for zero himself.
- 6. A rifle can be zeroed in one position only; for instance, a rifle zeroed and adjusted correctly in the lying position with the forearm rested will put the MPI in a different place if the rifle is fired:
 - a. Over cover with the barrel resting on the cover.
 - b. With the rifle resting on the cover.
 - c. With the magazine resting on the ground.
 - d. With the bayonet on.
 - e. In the open with no cover at all.

- 7. This variation is due to the alteration of the man's firing position and the influence of "jump".
- 8. It is impossible to give an exact figure as to what variation to expect, as the variation differs between individuals and rifles. The greatest variation occurs when the magazine is resting on the ground; invariably the shots go about a foot low at 100 metres. Whenever possible each man should be given the opportunity of sighting his rifle in various positions, so that he will know what alterations he must make to his backsight and/or point of aim when firing other than in the position in which he zeroed his rifle.
- 9. It is important that the position laid down for zeroing is used correctly, ie, the forearm only being rested on the sandbag. The firing position and the hold must be as in the open, without cover, the sandbag being used as a steadying device. The reason why this position is used is that it most closely resembles the zeroes obtained when firing in the open and over cover. It also reduces the errors brought about by resting the rifle in varying positions, which will inevitably happen on service, so that in battle shooting such errors need not be considered.
- 10. Men testing their rifles for zero must be closely supervised. It takes time but time spent on zeroing is never wasted.
- 11. Apparent changes in the zero of a rifle are brought about by conditions of light, visibility of the target, the firing position adopted and the standard of training of the firer, especially in holding and aiming.
- 12. A much more reliable zero will be obtained at a range of 100 metres than at 25 metres. THEREFORE TEST FOR ZERO AT 100 METRES—ONLY USE 25 METRES IF YOU HAVE TO.

Method of zeroing in the unit

- 13. Unit zeroing consists of:
 - a. The testing by the soldier of the sighting of his rifle to ensure that when he fires accurately under normal conditions, the MPI of the shots will strike in the correct place.
 - b. The alteration of the sighting by an armourer or qualified instructor when an error is found.
 - c. The re-testing of the rifle by the soldier.
- 14. Rifles should be tested for zero when they are first issued (but see paras 4 and 5) and at any other time when it is considered necessary or an error is suspected.
- 15. Only armourers or trained officers and NCOs should carry out adjustments but all ranks must be shown how to do it.

Procedure

- 16. Choose a day when there is good light and little wind.
- 17. Examine rifles for cleanliness and condition: in particular the sights.
- 18. Bayonets must NOT be fixed.
- 19. Targets required:
 - a. At 100 metres, the 4 ft grouping target (see Live Firing 1, para 4.a).
 - b. At 25 metres, a white screen with 1-inch black aiming marks. Draw a 1-inch circle with its centre \(\frac{1}{4}\)-inch below the lowest central point of the aiming mark. Do NOT zero at 25 metres unless you have to.

20. The men fire lying down with the forearm resting on a sandbag, sights set at 200 metres. Each man fires two warmers into the stop butt and then a five-round group. If he has to fire more groups, warmers are not necessary.

Result of test

21. If the MPI of the group or groups is within the 4-inch circle at 100 metres or within the 1-inch circle at 25 metres the rifle is satisfactorily zeroed.

To make adjustments

- 22. Elevation. To move the MPI up, screw the foresight down; to move the MPI down, screw the foresight up:
 - a. One turn (16 clicks) of the foresight will raise or lower the MPI about two inches at 25 metres or about eight inches at 100 metres.
 b. Two clicks will move the MPI approximately one inch at 100 metres.
 - c. The total amount of adjustment vertically is about 60 clicks (30 inches) at 100 metres.
- 23. Direction. To move the MPI to the right, move the backsight to the right. To do this slacken the right-hand screw by the amount required and tighten the left. To move the MPI to the left, move the backsight to the left. Slacken the left-hand screw by the amount required and tighten the right:
 - a. One turn (12 clicks) of either adjusting screw moves the MPI about one and a half inches at 25 metres or about six inches at 100 metres.
 - **b.** Two clicks will move the MPI approximately one inch at 100 metres.
 - c. The total amount of adjustment laterally is about 60 clicks (30 inches) at 100 metres.
- 24. It is important that after any adjustment the rifle be re-tested under the same conditions as it was initially tested, and further adjustments made if necessary.

SECTION 7—COACHING

General

- 1. A soldier is entitled to expert coaching during his recruit training, and thereafter whenever the conditions of the practice he is firing allow it.
- 2. The aim of elementary range practices is to train men to shoot under comparatively easy conditions, so that they have a chance to get good results, which they can see on the target. Good results give them confidence, make them feel masters of their weapons and prepare them for more advanced shooting, classification and field firing practices and finally battle.
- 3. All officers, warrant officers and NCOs must know how to coach on the range, and should be instructed in the art.
- 4. Good coaches make the most of their time on the range by intelligent coaching and by doing their job systematically, quickly and efficiently. Bad coaches waste time and do considerable harm to the men. Supervising officers must be able to put a stop to bad coaching at once.

What a successful coach must know

- 5. To be a successful coach, you must know everything in this pamphlet, particularly about zeroing (see Chapter 2, Section 6).
- 6. You must be able to spot why a man is shooting badly and put him right; these are some of the common causes:
 - a. The Firer's Fault:
 - (1) Bad aiming: he may not see the correct aim picture every time; he may stay in the aim too long; he may aim too high or too low when aiming off for wind. More important, he may vary the position of his head on the butt each time he aims, which will lead to bad sight alignment.

(2) Bad trigger work; for instance, he may snatch the trigger.

(3) He may move his body as he fires.

(4) Bad position and hold; for instance, he may not be com-

fortable or he may hold loosely with either hand.

(5) He may breathe wrongly; he may be gun-shy; too anxious to do well or not determined enough; he may not declare his aim honestly.

(6) He may not have cleaned his rifle properly; he may have set his gas regulator incorrectly or have tampered with and

damaged it in some way.

b. Outside the Firer's Control:

(1) Bad light or bad weather.

(2) His rifle may be badly zeroed, be in bad condition or the butt may be the wrong length for him.

(3) Bad eyes, bad health or other ailment.(4) Bad coaching or bad range organization.

- 7. You must know what the rifle and ammunition are designed to do; these are the facts:
 - a. Before the army gets them, all rifles are fired from a mechanical rest and tested for accuracy.
 - b. Even from a mechanical rest a rifle cannot put all its shots through the same hole; they form a pattern, which is called a group. The capacity of the rifle and ammunition determine the size of the group.
 - c. When a man fires from the shoulder, his group is bound to be larger; how big it is depends on how well he aims, holds and fires. Therefore, the size of the group is the capacity of a combination of rifle, ammunition and firer.
- 8. Grouping. You must understand grouping, which is the foundation of good shooting:
 - a. A group is a series of shots (not less than three) fired at the same aiming mark, with the same aim and hold. The middle of the group is called the mean point of impact (MPI). The smaller the group, the better the shot. The main aim of all shooting training is to get men to aim, hold, fire and control their nerves to achieve as small a group as possible but not more than 8 inches at 100 metres.
 - **b.** Standard grouping rings have diameters 4, 8 and 12 inches for groups fired at 100 metres or 1, 2 and 3 inches at 25 metres; you can use them to classify men as:
 - (1) Above average, if they achieve a 4-inch group at 100 metres

or a 1-inch group at 25 metres.

(2) Average, if they achieve an 8-inch (2-inch) group.

(3) Below average, if they achieve a 12-inch (3-inch) group.

- c. Anyone who cannot achieve an 8-inch (2-inch) group, needs more training before firing his course or he will fail and thereby lose confidence.
- d. For coaching (but not scoring) purposes you can also use rings with diameters of 5, 6, 7, 9, 10 and 11 inches.
- e. A man's grouping capacity at any stage of his training is the average size of group that he can achieve at that time. The foundation of coaching is to know exactly what a man's grouping capacity is, therefore the more groups he fires the better, every one of which must be recorded.
- 9. The Theory of the Group. You must understand the theory of the group:
 - a. Once you know a man's grouping capacity at 100 metres, you also know the smallest area that, in theory, should contain all his well-fired shots at any other range; for the size of his group varies in direct proportion to the range at which he is firing. At 200 metres it is twice the size, at 300 metres three times and at 25 metres one quarter the size. In a deliberate practice the man applies his group to the centre of the target and his grouping capacity determines his expected scoring area (ESA): For example; if his grouping capacity is 8 inches (at 100 metres), his ESA at 200 metres is a 16-inch circle with its centre in the middle of the target. If all his shots are as good as he can make them, they should all be contained on a Fig 12 target.
 - b. This theory is the basis of coaching but you must apply it sensibly. For instance, a 4-inch grouper may not contain all his shots within a 12-inch group at 300 metres, although that is his ESA. Wind, light and the sighting of his rifle can effect his shooting and the point of aim may be harder to see than at 100 metres; nor will he shoot as accurately when he is firing rapid or at a moving target.
 - c. A good coach can tell whether a shot is a good one or not, except for one thing—the aim. Coaching is a waste of time unless the firer tells you what aim picture he was seeing at the moment of firing each shot, whether it was correct, high, left, right, low, etc. Check that your men know how to declare their aims and realize how important it is to do it honestly.
 - d. Remember his declarations when you look at a man's group. For instance, if he declared one shot to be high left, and you find that it was in fact high left of the others, you can ignore it when you judge his grouping capacity; but you would be unwise to ignore more than one such shot in a group.
 - e. A man's rifle may be wrongly sighted, for direction and/or elevation; unless you know this (his MPI at 100 metres should be recorded), you are liable to advise him badly.
 - f. You must know how to get the best out of a firer. Nothing is more detrimental to good coaching than a coach for whom nothing is ever right. To get the best results, you must understand your man. The range organization must be good, so that there is no air of hustle and the man arrives on the firing point ready to shoot. Check that the rifle fits him, is clean and in good condition, that it has been inspected and had its sights blackened. The ammunition must be clean. The man must understand the practice, and know which is his target.

Coaching procedure—grouping practices

- 10. Before Firing. Coaches are to:
 - a. Take a notebook, pencil and binoculars on to any range and a representative target on to a 25 metre or miniature range.
 - b. Study the soldier's old grouping records and decide how well he ought to shoot. He should understand the practice already and know which target to shoot at, but make sure.
 - c. Check that he tests his position properly and sets his sights correctly.
 - d. Lie down on his right side (or left, if he shoots left-handed), near enough to see everything he does, but not so close as to get in his way or be hit by ejected cases.
- 11. During the Practice. When these preliminaries have been completed, coaches are to:
 - a. Watch the man, not the target, so that everything he does wrong is noticed.
 - b. Write down the firer's declaration and anything noticed for each shot.
 - c. Avoid coaching too much; if talking is necessary, do it between shots or tell the firer to rest and place the change lever to "Safe".
 - d. Spot any of the following faults:
 - A butt of the wrong length.
 Staying in the aim too long.

 - (3) Moving the left elbow between shots.
 (4) Holding too loosely, especially with the right hand.
 (5) Failing to have the head in the same position for each shot. (6) Snatching the trigger, flinching, breathing wrongly or coming down from the aim too quickly after firing.
- 12. After Firing. After every second detail has fired, go up to the targets with the men, examine each man's group and explain it to him in this sequence:
 - a. Compare his declarations with the shots in the order in which they arrived.
 - b. Check the standard size of the group (4, 8 and 12 inches) and, where applicable, the size for coaching purposes; note the position of the MPI, and enter them all in the coaches' notebooks.
 - c. Check whether the pattern of the group suggests anything wrong with the rifle. If there is doubt, fire a group yourself to test it.
 - d. Sum up. Tell the man what he did well or badly and give him advice for the future.

Method of coaching-practices other than grouping

- 13. to obtain the best results, the aim of the coach in practices other than grouping is to ensure that the firer applies the centre of his ESA to the centre of the target.
- 14. Explain when coaching that with the exception of grouping practices, all shooting will be at figure targets. These targets will not always be large enough to contain the ESA of the 8-inch and 12-inch groupers, depending of course on the range at which shooting is taking place. For example the Fig 12 target is 22 inches high and 18 inches wide. It can be seen therefore that a 12-inch grouper whose ESA at 200 metres is 24 inches may not hit the target every time, even though he is shooting to the best of his ability. The standards required for each class of shot

allow for this. For example, a 2nd class shot is expected to hit the target with only 56 per cent. of his shots. Therefore a coach has to be very careful during a shoot about the advice he gives regarding altering the sights or point of aim. Although the firer has missed the target, he may still be within his ESA owing to the target being smaller than his ESA. Whether an alteration is necessary or not will depend upon how much the shot has missed the target.

15. It must be assumed that when a man has reached the stage of classification shooting, he has been coached as a recruit on the Instructional Course and has also received coaching on the Instructional Course which precedes the Classification Course. The need to watch the firer constantly and not the target is therefore not so great, since the major mistakes made by the man have been corrected. When a figure target is missed, the only way to assess by how much it is missed is by the coach watching the target with binoculars. The skill of spotting by coaches has, therefore, an increased importance. Although no hard and fast rule can be laid down, it would appear that with figure target shooting, the coach must, if he is to obtain the information he requires, watch the target and not the firer. What the coach does in practice must be left to his common sense and the way the shoot is going. For example, it would be useless to watch the firer for each shot if the coach does not know where and by how much the shots are missing.

Coaching procedure—deliberate practices

- 16. Before he fires his first shot decide what range he should set his sights at and what his point of aim should be; consider where the MPI of his group was at 100 metres, how he did in any previous deliberate practices and what the wind and light are like.
- 17. Check that he fires carefully, without altering his sights or point of aim or you cannot judge where the MPI is forming. Provided that the shots are good ones, take the MPI as half way between or in the middle of them and decide whether to advise the man to alter his sights or point of aim in order to get the MPI into the middle of the target. The real position of the MPI becomes clearer as he fires each shot; watch its movement carefully and advise him accordingly. Do not advise any alteration:
 - a. From a shot that the firer declared to be a bad one or with which you noticed anything wrong.
 - b. From the MPI of his sighters or from a scoring shot, if they are inside his ESA.
 - c. From one shot only; with the exception that, if one sighter is a miss, it is usually sound to halve the distance between the other sighting shot and the middle of the target (if it is outside his ESA) and advise the man to alter his sights, or point of aim, to correct for that amount.
- 18. Otherwise coaching is the same as for a grouping practice, except that you record the position of each shot as the marker signals it and you do not go forward to look at the target. At the end of the shoot, discuss the man's shooting with him and prepare him for the time when he has to shoot without a coach.

Coaching procedure—rapid practices

19. Snap and rapid practices usually follow a deliberate practice, so that you know how a man should set his sights and where he should aim. If a snap or rapid practice is the first of the day, 2 sighting shots should be allowed.

- 20. Most men fire low when firing quickly, and it is as well to advise them to put their sights up an extra 100 metres.
- 21. Kneel behind the man's right shoulder; watch the strike and give quick advice such as "Go right one foot". It is in the discussion afterwards that you can help the man most.

Shortage of coaches

- 22. If there are not enough coaches, divide the men into pairs, as masters and pupils; one experienced coach can supervise several pairs. Check that the masters know the firer's ESA and tell them their duties which are:
 - a. To take a note of the firer's declarations and to plot the shots on their score cards.
 - b. To watch the strike and give corrections in snap and rapid practices.
 - c. To let the coach know whenever a shot falls outside the ESA.
 - d. To watch for possible causes of bad shooting and tell the coach anything they notice.
- 23. Under this system, men take more interest in shooting and gradually learn the finer points of marksmanship.

Conclusion

- 24. Coaching is an art. There are no fixed rules but there are certain guiding principles. To be a good coach, you must first master the weapon yourself and then get plenty of practice in range coaching.
- 25. No book can give you the answers to all the problems you will meet; you master the art by knowing the principles and by actual coaching experience. You must be persevering, patient and enthusiastic and it is a help to be a good shot.

SECTION 8—RANGE TABLES

Compiled on a muzzle velocity of 2 700 feet per second (This table is provisional but is near enough to accuracy for practical purposes)

Time of flight (seconds) (f)	0.000000000000000000000000000000000000	2.48
descent (minutes)	10.5 10.5 115.5 122 13.2 14.4 14.4 14.4 14.4 14.4 14.4 14.4 14	77
Angle of descent (degrees) (minut		
Range to culminating point (yards) (d)	2215 215 215 215 225 233 333 246 558 558 568 720 1 023 1 023 1 023 1 023 1 023 1 023 1 023	1 200
nt of ng point (inches)	1.4 80.0 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	1
Height of culminating point (feet) (inch	-2887 = 1928	135
levation (minutes)	2.5 8.8.5 11.1 12.2 13.3 13.3 14.5 15.5 15.5 15.5 15.5 15.5 15.5 15.5	=
Tangent elevation (degrees) (minute		2
Range (yards)	200 200 200 200 200 200 200 200 200 200	7 000

Note.—The data for odd-numbered ranges has been assessed by interpolation.

SECTION 9—TRAINING TESTS

Aim

1. To determine the standard of a man's training.

Dress

2. Normal training dress.

Notes

3. Grade men as follows:

Grade	Marks
Skilled	90-100
Above average	80- 89
Average	60- 79
Below average	50- 59
Failed	Less than 50

- 4. Recruits should achieve at least average at the end of their basic training; trained men who cannot do better than average need more instruction. When a man is posted, always tell his new unit his grading.
- 5. Before testing a man explain the test to him and let him ask questions. Once the test begins, do not help him any more. Always tell him the result of the test and where he went wrong.
- 6. At Appendix A will be found full details of the training tests.
- 7. On completion of testing, results are to be entered in the man's $RA/PAY/64,\ Pt\ 1.$

DETAILS OF TRAINING TESTS

Teet			97179 304	SEE LOSS LAKES TOO III
S.S.G	Subject (b)	Stores (c)	Conditions (d)	Marking (e)
-	Magazine filling by hand.	20 drill rounds in clips. Magazine. Watch.	On the command "Go", the man fills 20 rounds into the magazine by hand. Award no marks for an incorrectly filled magazine.	Seconds Marks 30 or less 10 31–34 8 35–38 6 Over 38 Nil
7	Magazine filling by filler.	20 drill rounds in clips. Magazine with filler fit- ted. Watch.	On the command "Go", the man fills 20 rounds into the magazine by filler. Award no marks for an incorrectly filled magazine.	14 or less 15-18 19-22 Over 22
m	Loading- standing position.	Rifle with empty magazine on it. One full magazine in fastened pouch. Watch.	The time is taken from the command "Load" until the rifle is loaded and has been returned to the loading position. The fastening of the pouch is NOT to be included in the time, but should be fastened on completion of the test. One mark is to be deducted if the soldier does not fasten the pouch.	12 and less 10 13-16 8 17-20 6 21 and more 4 Deduct ½ mark for each mistake. Award NO marks if the mistake affects affert.
4	Unloading- standing position.	To follow on from Test No. 3.	The time is taken from the command "Unload" until the filled magazine has been returned to the pouch and the soldier is standing "at ease." The fastening of the pouch is NOT to be included in the time, but should be fastened on completion of the test. One mark is to be deducted if the soldier does not fasten the pouch. Note.—Do NOT order "Ready" before this test begins.	15 and less 10 16-19 8 20-23 6 24 and more 4 Deduct ½ mark for each mistake. Award NO marks if the mistake affects safety.
S	Stripping and assembling.	Rifle.	Order the man to strip the rifle for cleaning and put it together again.	Deduct ½ mark for each mistake. Deduct 5 marks if the mistake affects safety. HPS 15 marks.

For entire eight tests HPS 100 marks	For entire e			
4-inch/1-inch group, 25 marks. 8-inch/2-inch group, 20 marks. 12-inch/3-inch group, 15 marks. 12-inch and 1 wide/-3-inch and 1 wide/-3-inch and 1 wide.	To be fired at 100 metres if possible, or failing that 25 metres. Recruits only may rest their forearms. Let each man fire two rounds first to make sure his gas regulator is set right.	Range stores and SAA.	Grouping.	∞ = 83
Each correct answer, 2½ marks. HPS 10 marks.	Set the man four problems on the practical use of the tables. One problem must be on aiming off and up or down combined. Make the man point out on the target where he would have aimed. Give full marks if the man points to within 3 inches of where he should have aimed.	Figure targets. Representative targets can be used.	Wind and elevation table.	7
All actions correct = 10 marks. Deduct one mark for each mistake. If a mistake affects safety, deduct 5 marks. Note.—The man will be warned that no time limit is imposed, but all actions must be carried out quickly and correctly.	 a. Order — "Load; Down; Ready; Rapid Fire". b. As soon as the trigger is pressed, order "Rifle stops". c. The firer carries out IA and, on looking into the body, order "Rounds in the magazine, chamber clear". d. Wait for the firer to fire two or three rounds and then order "Stops again". a. Wate for the change lever and adjust the gas regulator. The test is not complete until the change lever and adjust the gas regulator. The test is not complete until the change lever is at "Fire", the rifle re-aimed and the trigger pressed. 	Rifle, target. Drill rounds must be used.	Gas stoppage.	9
Marking (e)	Conditions (d)	Stores (c)	Subject (b)	No.

SECTION 10—THE 7.62 mm

HEAVY BARRELLED FN RIFLE

- 1. Provided with a heavier barrel and a bipod the 7,62 mm Heavy Barrelled FN Rifle can compete favourably with light machine guns which are considerably heavier. It has the added advantage of having the majority of its components interchangeable with those of the 7.62 mm FN Rifle, including magazines.
- 2. Instruction is simplified due to the fact that this weapon is identical to the 7,62 mm FN Rifle in many respects:
 - a. The functioning of the mechanism and gas regulator adjustment.
 - b. Its operation. The load, unload, immediate action and stoppage drills are the same.
 - c. Cleaning and maintenance.
 - d. Zeroing.
- Stripping and assembling is the same as for the 7,62 mm FN Rifle except that the bipod of the Heavy Barrelled FN Rifle may be removed as follows:
 - a. With the legs fully extended remove the circlip with the nose of a round. Then push the ring which limits movement of the rifle flush against the circlip flange. Rotate the bipod 180° until the legs are pointing upwards.
 - b. Slide the bipod off the flash hider, and remove the ring.
- To assemble, proceed as follows:
 - a. Replace the ring which restricts rifle movement with the two lugs on top of the barrel. Hold the bipod with the legs upwards and slide it onto the rifle. Rotate the legs downwards. Push the ring forward and away from the circlip flange.
 - b. Replace the circlip.
- 5. The main technical differences from the 7.62 mm FN Rifle are:
 - a. Weight of weapon with bipod and empty magazine: 6,250 kg (13 lb 12 oz).
 - b. Weight of barrel: 1,600 kg (3 lb 8 oz) which is twice the weight of the 7,62 mm FN Rifle barrel.
 - c. A shoulder piece on the butt plate for steadier holding.
 - d. A flash hider in lieu of a grenade projector. (There is no provision for the fitting of a bayonet).
 - e. A bipod, which may be in one of three positions:

 - Folded underneath the barrel. (See Fig 48).
 Lowered and open, for normal firing. (See Fig 46).
 - (3) Intermediate, which is mid-way between these two positions. (See Fig 47).
- 6. The techniques of holding and firing are as for the 7,62 mm MG (MAG).

mm Heavy Barrelled FN



Fig. 46.—The lying position with the Heavy Barrelled Rifle.



Fig. 47.—The sitting position.

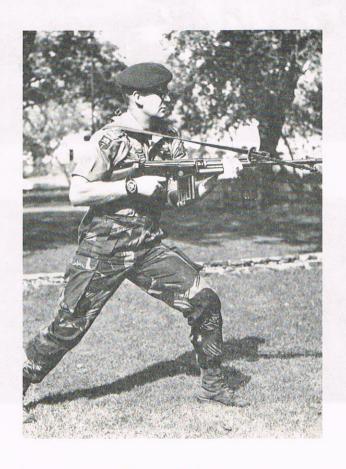


Fig. 48.—CQB firing.

SECTION 11—EXTRACT FROM TECHNICAL INSTRUCTION ARM 1/71 CARE AND MAINTENANCE OF SMALL ARMS AND AUTOMATIC WEAPONS

- 1. Summary. This instruction deals with the care and maintenance of small arms and automatic weapons currently in use, and replaces Technical Instruction Arm 1/67
- 2. Action Required by Units. All units maintaining or operating small arms or automatic weapons are to comply with this instruction. Unit Commanders are to ensure that the contents of this instruction are read and understood by all personnel.
- 3. Priority. Immediate.
- 4. Detail.
 - a. Factors Affecting Care and Maintenance. To assist in the appreciation of the need for a high standard of weapon maintenance within the Army, it is necessary for all concerned to fully understand the basic factors which contribute to this need. These factors are related to the cleaning and maintenance of a weapon, together with its handling and storage.
 - b. Metals Require Protection Against the Following:
 - i. Atmospheric Corrosion, which is produced under the ordinary conditions of exposure to the atmosphere in which we live and breathe. At atmospheric temperatures, metals are, from a practical aspect, generally highly resistant to direct oxidation and only suffer rapid attack when electro-chemical action takes place. In practice, conditions which may permit the commencement of this action are invariably present when metal surfaces are in contact with an electrolyte. This electrolyte may be due to exposure to rain, but more commonly, it is provided by a film or pocket of condensed moisture. It may also be provided by absorption of moisture from the atmosphere by hygroscopic substances such as dust on the metal surfaces and perspiration from the hands during handling. Products of corrosion such as rust are themselves hygroscopic, that is to say, they have an ability to absorb moisture. Since the electro-chemical attack cannot occur in the absence of an electrolyte, it must always be confined to areas where the metal surface is wet or damp. If large areas of the metal surface are wet or damp however, corrosion is not necessarily distributed uniformly and may, on the contrary, proceed only at certain points of the areas in contact with the electolyte. If the entire surface of the metal susceptible to this attack is insulated from its environment by an impervious film so that the metal is kept out of contact with an electrolyte conductor, corrosion cannot take place. This insulation can be provided by a thin film of a suitable oil.
 - ii. Chemical Corrosion. When a weapon is fired, whether it be a rifle or a large calibre gun, the propellant charge is exploded in the chamber and the bullet or projectile is forced through the confines of the barrel at considerable velocity and pressure. The explosion generates a tremendous amount of corrosive gases, which are harmful to both the chamber and the barrel.

- c. From the above it will be appreciated that when a cartridge is fired from a barrel, the barrel and the chamber are fouled by the following:
- i. Products of combustion from the cap.
 - ii. Products of combustion of the propellant charge.
 - iii. Metallic fouling from the bullet.
 - iv. The action of the constituents of the atmosphere accelerated by the fouling of the cartridge.
- d. The sources of fouling at c. above are now dealt with in more detail.
 - i. Products of Combustion of the Cap. Cap compositions include a percentage of potassium chlorate, which produces potassium chloride on explosion. The latter when present even in very small quantities promotes rusting, if damp air can get to the surface of the bore. This chemical is, in this respect, very much the same as common salt and it is well known that salt water is very prone to causing rust on metal components.
 - ii. Products of Combustion of the Propellant Charge. Gaseous acids produced by the explosion of the propellant charge are a cause of corrosion in the chamber and barrel of the weapon. These inorganic residues will cause rusting if they are permitted to accumulate in the barrel.
 - iii. Metallic Fouling of the Bullet. Caused by a portion of the gilding metal of the envelope of the bullet being left on the surface of the bore and appearing as a whitish streak on the lands, and as a roughness on the edge of the grooves. If damp air can get between this fouling and the bore, rusting will occur.
 - iv. The Action of the Constituents of the Atmosphere Accelerated by the Fouling from the Cartridge. It is well known that steel components exposed to the atmosphere will become rusted unless covered in some way by a protective coating. The causes of such rusting have been detailed in paragraph 4.b. above.
- e. Woodwork requires protection against:
 - i. Dampness, which causes the wood to warp and rot.
 - ii. Dryness, which causes the wood to crack and split.

This protection is best provided by linseed oil, which replaces the natural oils in the wood.

f. Care and Maintenance.

- i. General. It must be appreciated that modern small arms and automatic weapons are highly sophisticated pieces of equipment, subject to very high stresses, both mechanical and thermal, which are built up during firing. In order to maintain perfect operating efficiency, it is necessary to keep the metal surfaces in as near the original state of smoothness and finish as possible. To this end, great care is needed in their cleaning, lubrication and preservation.
- ii. Cleaning. Cleaning kits are issued with each weapon and should be used in accordance with the instructions contained in the Training Pamphlet for the weapon concerned. Barrels must be regularly cleaned as described below, and it should never be necessary to use harsh abrasives such as emery, or sand or brick powder, all of which have damaging effects. When circumstances

permit, weapon cleaning should be done unhurriedly and should follow the procedure outlined below.

- (a) Wash the bore with boiling soapy water using a solution of approximately 1 oz SOAP BLACK to one gallon of water. This is the most effective means of removing the fouling described in paragraph 4.c. above.
- (b) After cleaning, DRY THOROUGHLY, using flannelette: after drying, the last piece of flannelette should be completely clean.
- (c) Apply a thin film of BARDAHL oil to the bore and all moving parts. It is essential that only BARDAHL oil is used, due to its special rust prevention properties. This oil forms a very thin molecular film on the bore thus insulating the entire metal surface from corrosive attack.
- (d) Where troops are operating in dusty or sandy areas, special attention should be paid to the cleaning of chambers. If the latter are left in a dusty condition, scoring of the chamber will occur when the cartridges enters the chamber and excessively hard extraction will result.
- g. Lubrication. It will be appreciated that considerable heat and friction are generated in small arms and automatic weapons firing at high RPM, and the importance of correct and adequate lubrication of all moving parts is absolutely essential if the weapon is to function properly. Under normal conditions all moving parts should remain lightly oiled. Under dusty or sandy conditions Graphite Grease is to be applied to the gas regulator, the contact area of the slide and breech block, the guide ribs of the slide and body grooves.