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Small Arms Training

Volume I, Pamphlet No. 13

Grenade

1942

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By Command of the Army Council,

Sgt. Lister
THE WAR OFFICE,
15th July, 1942

L. Dornoch

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SMALL ARMS TRAINING

Volume I, Pamphlet No. 13

GRENADÉ, 1942

GENERAL NOTES

1. *Object*

The sole object of weapon training is to teach all ranks the most efficient way of handling their weapons in order to kill the enemy. Instructors will always bear this fact in mind, and will continually impress it upon those whom they instruct.

2. *Safety precautions*

Before beginning any lesson, the instructor will ensure that drill or instructional material only is used. The first safety precaution will always be carried out to make this action instinctive.

3. *Grenade classifications*

Grenades—other than live grenades—which are used for training and instructional purposes—are classified as follows:

- i. *Drill grenades.* These are for throwing practice or for practice firing from a rifle, and are similar to actual live grenades, except that they are weighted, to correct weight, with inert filling. They are painted white (except the No. 75 which is dull red), and are packed in boxes stencilled in yellow or white with the following markings:—(No. in package) Grenades (Type) Drill No. () Mk. ()
- ii. *Instructional grenades.* These are for instruction in mechanism, and are similar to drill grenades, but empty components are used, and the grenades are unweighted. They are painted in the same manner as live grenades, except for the red filling ring, and are issued in packages of the service type stencilled with the following markings:—(No. in package) Grenades (Type) Instructional No. () Mk. ()

- iii. *Practice grenades.* Grenades of this nature contain a small charge and are designed to simulate the action of a live grenade. Their marking will be decided when this pattern of grenade has been introduced for use in the Service.

All live grenades, when filled, have a red band painted round them. This may be either a continuous band or a series of red crosses. The latter denotes that the filling is suitable for storage in tropical climates. Live grenades may also have a band of another colour. This band and any marking show, for the information of the expert, the type of filling.

4. *Recruit instruction*

Instructors must appreciate that extra time will be required in order to obtain proficiency in throwing and firing. Thus, while Lessons 2 and 4 may each be *taught* in one period respectively, additional periods must be allotted in order that men may receive sufficient practice in throwing and firing to become proficient.

Instructors may find that one period each is sufficient for teaching together Lessons 5 and 6, and Lessons 7 and 8.

5. *Trained soldier instruction*

Apart from occasional refresher periods on the mechanism, and constant practice in priming, the remainder of the trained soldier's time should be devoted to practice with drill and live grenades from Service positions during the course of simple tactical exercises. It is in this way only that the soldier will instinctively throw the various grenades in the most efficient manner from awkward positions.

When in the later stages of recruit training and when exercising trained soldiers, Examination, Stripping, Cleaning, Striker Test, Assembling and Priming should all be done under Service conditions, i.e. in a muddy or dusty trench, behind hedges or in ditches.

6. *Dress.* Whenever throwing or firing instruction is taking place, dress will be battle order.

LESSON 1.—THE No. 36 GRENADE

Instructor's Notes :—

Instructors will impress on men the necessity for common sense, care, and knowledge of the nature of grenades, but will not lay too much stress on the question of danger, which would cause lack of confidence and nervousness in handling.

Stores :—

1 drill grenade and igniter set for instructor and each man ;
1 base plug key.

1. Explain :—

The grenade is useful for a variety of purposes—clearing dug-outs or buildings, or killing crews of A.F.Vs. The grenade is fairly heavy, and can be thrown from 25 to 35 yards. It is also useful for any form of close quarter fighting, i.e. wood or street fighting, ambushes, and night fighting. For this kind of work one handicap is that the thrower must first ensure that other men in the section or platoon are under cover or lying flat on the ground. The grenade weighs 1½ lb.

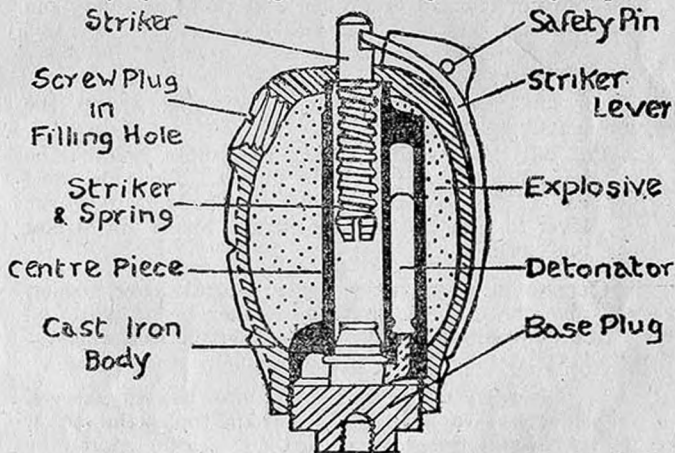


FIG. 1.

2. Description

Explain and demonstrate (see Fig. 1) :—

The grenade consists of a cast iron body filled with high explosive. Through the middle of the body is a centre piece containing a striker and spring. These are held in position by a lever inserted in a slot at the top of the striker. The

lever is secured by a safety pin passing over it and through holes in two shoulders which project on the outside of the body. The grenade is painted black, with a red band or red crosses.

3. Examination

Explain and demonstrate, squad imitating :—

- i. *First safety precaution.*—Remove base plug and see that grenade is not primed. This precaution must always be taken before any attempt is made to handle grenades.
- ii. Before the grenade is thrown it must be inspected to make sure that it is in working order. Faults may cause the grenade either to explode too soon or to fail to explode at all.
- iii. See that the lever is secure in the slot in the striker, and that it lies flush with the body of the grenade (if not, it can be bent to the correct shape when the grenade is stripped). Ensure that the shoulders are not cracked or broken and that the safety pin is sound.

4. Stripping, cleaning, and striker test

Explain and demonstrate, squad imitating. Strip the grenade as follows :—

- i. Pull out the pin after closing the points, holding the lever firmly down with the fingers. Place the open end of the grenade against the body. Allow the lever to come up under control. Shake out striker and spring.
- ii. Clean off all wax from the body, central sleeve, striker, and spring. See that the striker is straight and has two nipples with a vertical slot between them.
- iii. Apply the striker test as follows :—

Insert the striker and spring into the centre sleeve, in such a way that the slot at the top of the striker is towards the shoulders. Using a round, force the striker through the top of the grenade, insert the lever in the slot, and hold it down firmly. Place the base of the grenade against the body and release the lever. This action ensures that the striker moves freely, and that the spring is strong enough to force it down and set off the .22 cap. A weak spring, or one that is liable to jam in the sleeve, should be rejected.

5. Assembling

Explain and demonstrate, squad imitating :—

Insert the striker and spring in the sleeve as in paragraph 4, iii. With the lever inserted and secured with the fingers, hold the grenade in such a way that the filling screw is towards you. If the thrower is right-handed, replace pin from right to left, if left-handed from left to right. Replace the base plug.

6. Practise squad in stripping, testing and assembling grenade.

7. Igniter set (see Fig. 2)

Explain and demonstrate, squad imitating :—

- i. The igniter set is used to explode the grenade. It must be handled carefully. Hold it only by the cap chamber or the fuze. It should never be struck or crushed. Keep it away from heat and never attempt to dismantle it. It consists of a .22 cap in a chamber, a short length of safety fuze and a detonator.

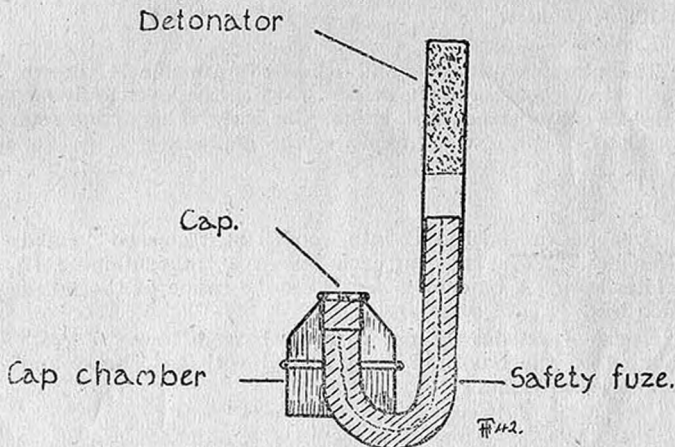


FIG. 2.

- ii. Before use examine it as follows :—

See that the hole in the centre of the .22 cap is covered and sealed. Ensure that the cap chamber is sound and that the cap chamber and detonator are firmly attached to the fuze.

- iii. As there are two kinds of igniter sets make sure that the right type is being used. When the grenade is

thrown a 4-second fuze is used. This is white and has a rubber band on it which should not be removed. When it is fired from a discharger a 7-second fuze is used. This is coloured yellow and has no rubber band on it.

8. *Priming*

Explain and demonstrate, squad imitating :—

Remove the base plug, examine the detonator sleeve to ensure it is free from obstruction and rough edges, insert the detonator and cap chamber into their respective sleeves—push in as far as possible. Replace the base plug and tighten, using the base plug key.

NOTE.—Before priming it will usually be necessary to bend the fuze slightly to make for easy insertion. This can be done by holding the fuze and cap chamber between the thumb and forefinger, and pressing them gently together.

9. Practise squad.

10. *Mechanism*

Explain :—

The pin is withdrawn and when the grenade is thrown the spring forces down the striker, causing the lever to fly off. The '22 cap is struck and ignites the fuze. This action sets off the detonator which explodes the grenade.

11. *Packing*

Explain :—

Grenades are packed 12 in a wooden box, marked "Hand Grenades" "4 secs." In each box is a tin containing 12 igniter sets. A base plug key is on the inside of the lid of each box.

NOTE.—Grenades for use with dischargers have "7 secs." marked on the box, and are provided with gas checks and ballistite cartridges.

LESSON 2.—THROWING THE No. 36 GRENADE

Instructor's Notes :—

Stores :—

Two drill grenades for instructor and each man. For throwing practice any suitable object of the correct size and weight can be used, such as stones.

Issue grenades and carry out the first safety precaution. If the thrower is left-handed for "right" read "left."

Number squad—extend to two paces and point out target.

1. Explain and demonstrate, squad imitating:—

- i. These grenades cannot be "thrown" in the strict sense of the word by the average man. They require to be delivered at a high angle, and the best way of achieving this delivery is by an overarm swing similar to bowling in cricket. Accuracy should be the first consideration. This is obtained by a free and natural swing, which should be vigorous.
- ii. "Ready"—Pick up a grenade. Hold it in the right hand, base downwards, the lever under the base of the fingers, the thumb just below the filling screw gripping it firmly. Place the first or second finger

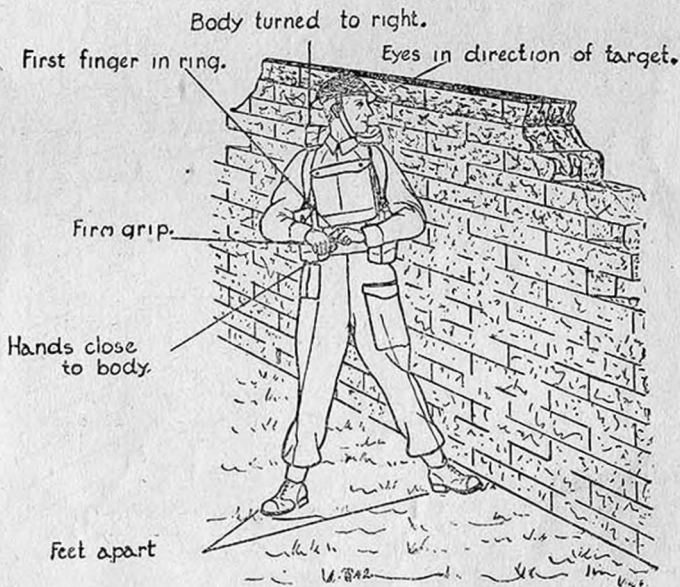


FIG. 3. Ready Position

of the left hand through the ring of the safety pin—the hands with the knuckles uppermost and close to the waist. Face the target, turn to the right, and balance the body by carrying off the left foot towards the target.

"Throw"—Keeping the left arm still and close to the body, withdraw the pin (during practice go through the action of withdrawing the pin) by thrusting the right hand downwards and backwards. Fix the eyes on, or in the direction of, the target, keeping the left shoulder pointing at the target. Swing back as far as possible, allowing the left arm (and foot if necessary) to come up naturally. Without a pause swing quickly forward, keeping the right arm upright, and deliver the grenade. Observe the fall of the grenade (see Figs. 3, 4, 5, 6).

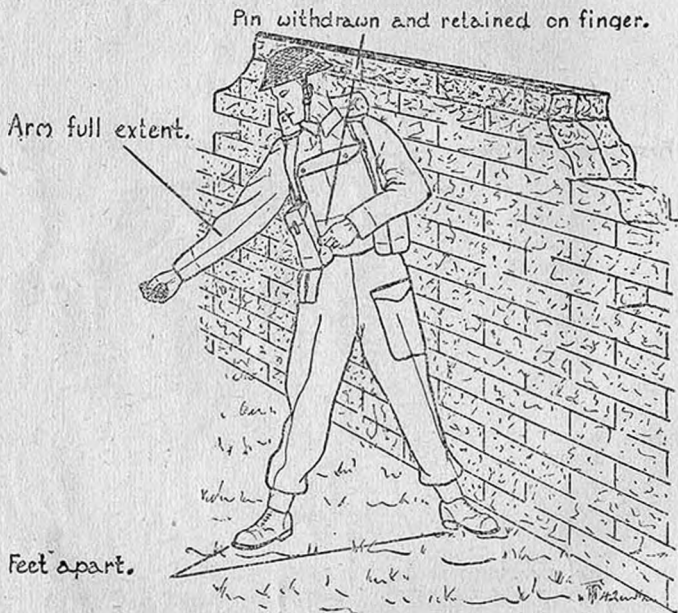


FIG. 4. Throwing (1)

2. Instructor supervises each man in turn throwing two grenades, the remainder of the squad practising the throwing action without using grenades.

NOTE.—Should a thrower make consistent faults in direction, this error may be remedied by altering the position of the feet.

3. Practise squad over high wire to encourage a high throw, as follows :—

Squad in single rank. Point out target and practise as in para. 2 above.

NOTE.—Should high wire not be available, a tree about 15 ft. high, or a wire stretched between two such trees, may be used.

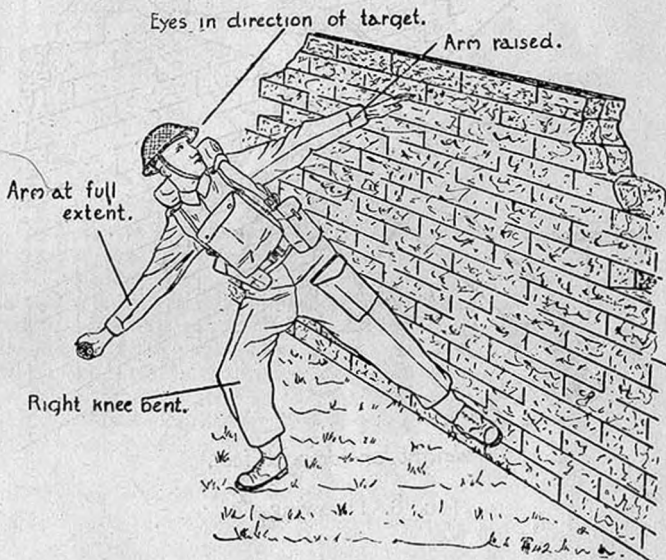


FIG. 5. Throwing (2)

4. Practise squad in throwing from different types of cover, e.g. a bank, trench, etc. The thrower's position must be modified to suit the height of the cover available, which may necessitate kneeling or lying as well as standing. The thrower must observe the direction of the target before throwing and also the fall of the grenade. In some instances, viz. putting inside an A.F.V. or through an opening in a wall, the grenade can be "planted" or "lobbed." As soon as a man is confident in throwing grenades from behind cover, he should be practised in throwing them in thick woods and in "lobbing" them into windows, openings in walls, etc.

All recruits should be taught the high angle throw, but as soon as the thrower has confidence, he should be encouraged to lob under-hand or throw in any way particularly suited to the circumstances in which the grenade is being thrown.

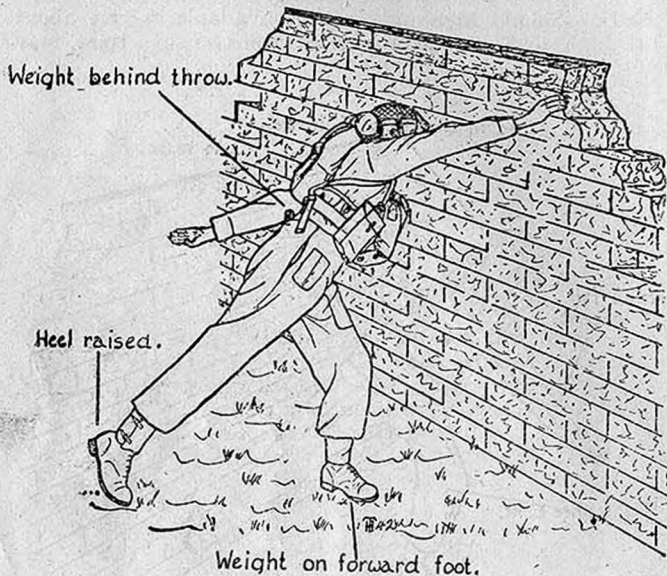


FIG. 6. Throwing (3)

LESSON 3.—THE DISCHARGERS

Instructor's notes :—

This lesson deals with the No. 1 and No. 2 dischargers in their uses for firing both the Nos. 68 and 36 grenades. Instructors will only teach the portions relevant in their particular case. After completion of the necessary parts of the lesson any available time should be devoted to revision of Lesson 1.

Stores.—Discharger fired ballistite cartridge ; No. 68 grenade sight ; drill No. 36 grenade with gas check for instructor and each man.

1. Explain that, in order to fire a grenade, the discharger will be attached to the rifle, which is then loaded with a ballistite cartridge, and the grenade placed in the discharger. On the ballistite cartridge being fired, the grenade is discharged. There are certain safety precautions to be observed in firing grenades. They are :—

- i. Ballistite cartridges only will be used. In the case of .303 half its length is blackened to distinguish it from other cartridges.
- ii. In no circumstances will ball ammunition be used. Only in great emergency at very close range may ball ammunition be fired through the empty discharger.

2. *The discharger No. 1 Mark I, for use with No. 1 rifle (SMLE).*

Description

Explain (see Fig. 7) :—

The barrel is cylindrical in shape and is threaded internally to receive the locking base. Near the lower end is a slot which forms the gas port. This is closed by a sliding shutter, which can be clamped in position by a clamping nut. When firing the No. 68 grenade the gas port is kept completely closed. The locking base is threaded on the outside to fit the barrel and has a central hole threaded to receive the adjusting screw, the top of which is slotted to take the point of the bayonet. Below are two claw levers; these engage in the slotted sides of the noscap of the rifle.

3. *Fixing and unfixing the discharger*

Explain and demonstrate, squad imitating (See Fig. 8) :—

- i. *Fixing the discharger.*—Unscrew the locking base about three turns and see that the adjusting screw is also screwed back about $\frac{1}{8}$ in. within the face of the locking base. Place the discharger on the noscap of rifle in such a way that the large recess in the locking base is towards the bayonet boss. If the fixing is done standing or sitting, the rifle may be held barrel outwards between the knees. With the right hand screw the barrel tightly down to the locking base. Insert the point of the bayonet into the mouth of the barrel, engage it in the slots of the adjusting screw, and screw it in a clockwise direction until it is tight.

Unfixing the discharger.—Unscrew the discharger two or three turns; slide the thumb and forefinger of the left hand to the upper ends of the claw levers, press inwards and raise the discharger off the noscap.

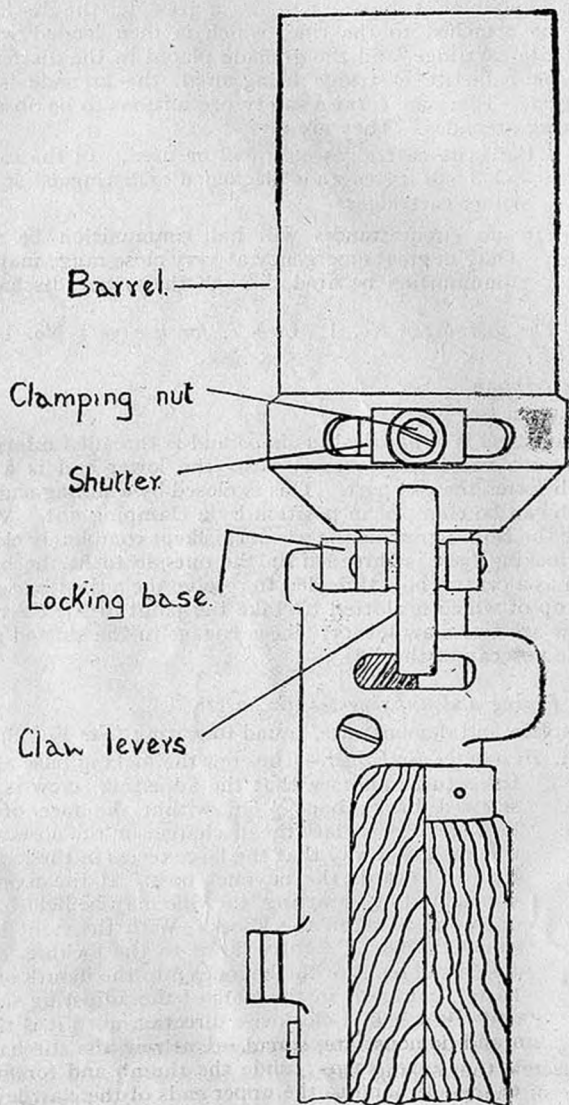


FIG. 7

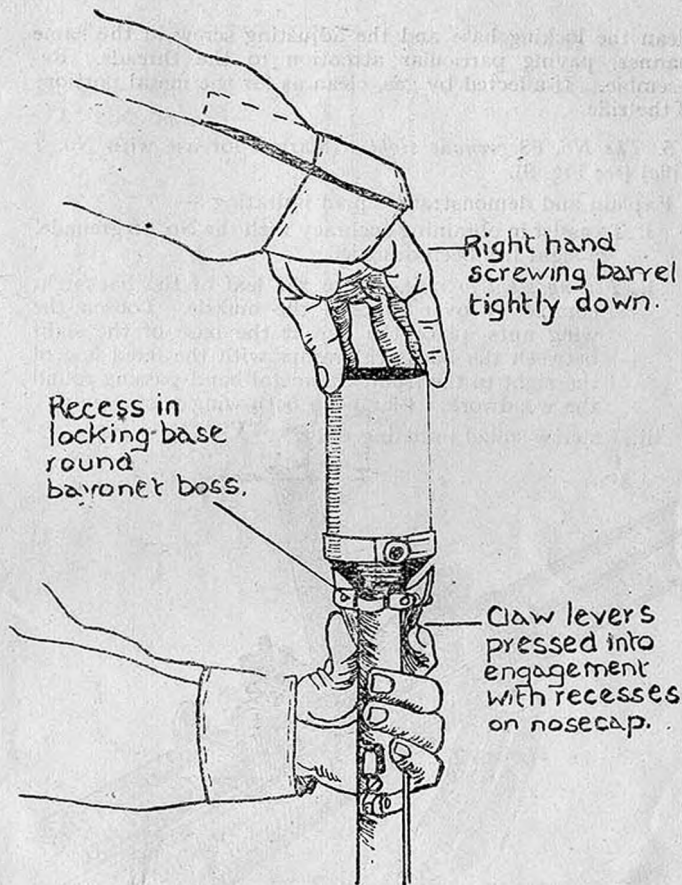


FIG. 8

ii. Practise squad.

iii. Explain attachment for P. '14 rifle.

4. Care and cleaning

Explain and demonstrate, squad imitating :—

Unscrew the locking base and adjusting screw; wipe the inside of the barrel and surfaces of shutter with a dry rag to remove fouling. Then clean with an oiled rag, dry and oil.

Clean the locking base and the adjusting screw in the same manner, paying particular attention to the threads. Re-assemble. If affected by gas, clean as for the metal portions of the rifle.

5. *The No. 68 grenade sight.* (Mark I for use with No. 1 Rifle) (see Fig. 9).

Explain and demonstrate, squad imitating :—

- i. To assist in obtaining accuracy with the No. 68 grenade, a sight has been designed.
- ii. *Fitting sight to rifle.*—Turn the leaf of the backsight completely over towards the muzzle. Loosen the wing nuts, place the bar at the base of the sight between the backsight ramps with the fixed leaf of the sight to the front, the metal band passing round the woodwork. Clamp up both wing nuts evenly.
- iii. Practise squad in fitting sight.

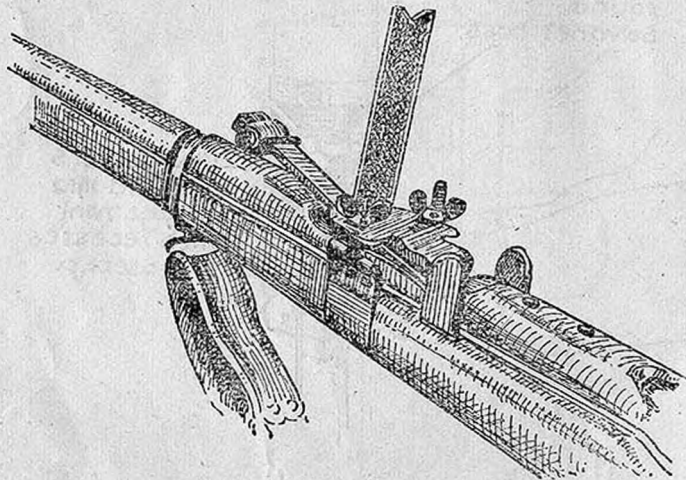
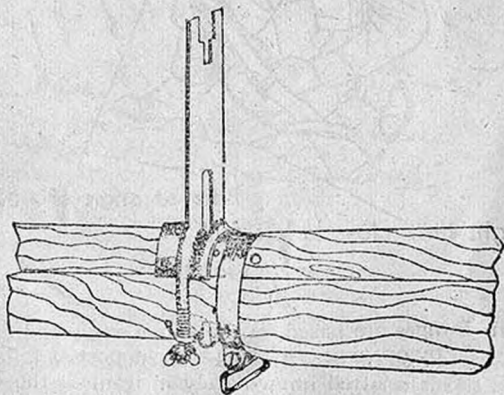
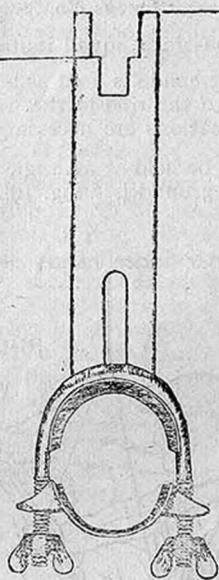


FIG. 9

NOTE.—For the No. 3 and P '17 rifles the Mark II sight is used. This is fitted immediately in front of the outer band. It may also be used with the No. 1 rifle, in which case it is fitted immediately behind the outer band. The top step is used for aiming with the No. 3 Rifle and the bottom one for the P '17 rifle. (See Fig. 9a.)

Use lower step with
P.17 300 Rifle.

Use top step
with Nos. 1 and 3
Rifles



Top of grenade should be level with step used;

Aim directed on centre of vehicle.

FIG. 9a

6. Use of the discharger for the No. 36 grenade

Explain and demonstrate, squad imitating :—

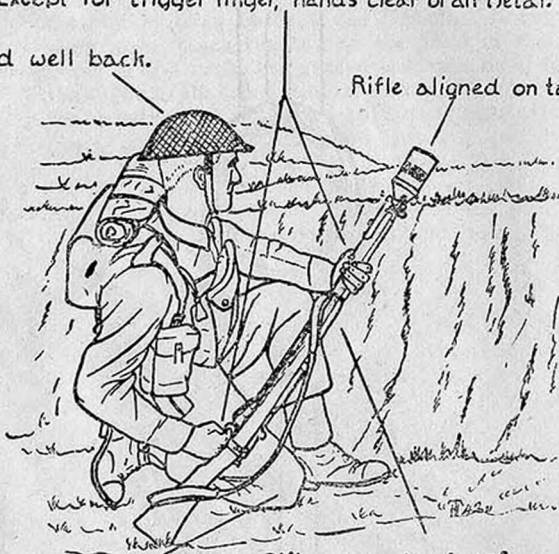
When the No. 36 grenade is used as a rifle grenade the discharger is attached to the rifle in the way shown above, but the following modifications are necessary :—

- i. The rifle must be held at an angle of 45 degrees, *heel* of butt on the ground (see Fig. 10).

Except for trigger finger, hands clear of all metal.

Head well back.

Rifle aligned on target.



Rifle at angle of 45°

Right knee close to left foot

FIG. 10

- ii. Ranges are based on the above angle and are obtained by opening or closing the gas port as follows :—

80 yds.	...	...	...	Gas port	fully open.
110 "	...	...	...	"	" $\frac{1}{4}$ closed.
140 "	...	...	...	"	" $\frac{1}{2}$ "
170 "	...	...	...	"	" $\frac{3}{4}$ "
200 "	...	...	...	"	" fully closed

These ranges are only approximate. They may have to be varied with rear or head winds. All measurements on the gas port must be taken from the inside edge of the shutter.

7. Question and practise squad.

8. *Loading the No. 36 grenade and firing position.*

i. Explain and demonstrate, squad imitating :—

When firing the No. 36 grenade the igniter set used has a 7 second fuse. Boxes are plainly marked "7 seconds" and the fuse itself is coloured yellow and has no rubber band on it. To fire the No. 36 grenade it is necessary to fit a gas check. This should always be screwed on tight. The grenade is then placed in the discharger, care being taken to ensure that the striker lever is inside the discharger before the pin is removed. The pin is then withdrawn and the grenade pushed fully home. Should the grenade not be fired the pin must be replaced before removing the grenade from the discharger. For normal position for firing—see Fig. 10.

ii. Practise squad.

9. *The discharger No. 2 Mark I*

This discharger may be used with either the No. 1 rifle (S.M.L.E.), the No. 3 rifle (patt. '14) or the .30 inch (patt. '17 U.S.A.).

i. *Description (see Fig. 11).*

Explain :—

The barrel of the discharger is fitted with a ring by means of which the gas may be so regulated to obtain different ranges. When firing the No. 68 grenade all holes must be covered.

The barrel screws into the base, on one end of which there are two sets of holes, one marked "P. 14" and the other marked "No. 1." The channel link is attached to the base by the channel link pin. When the discharger is used with the No. 1 rifle, the channel link must be attached to the base by putting the pin through "No. 1" hole and the lower of the two holes in the channel link. If used with either the Pattern 14 or the Pattern 17 rifle, the "P. 14" hole must be used in conjunction with the top hole in the channel link. On the other end of the base is attached the link.

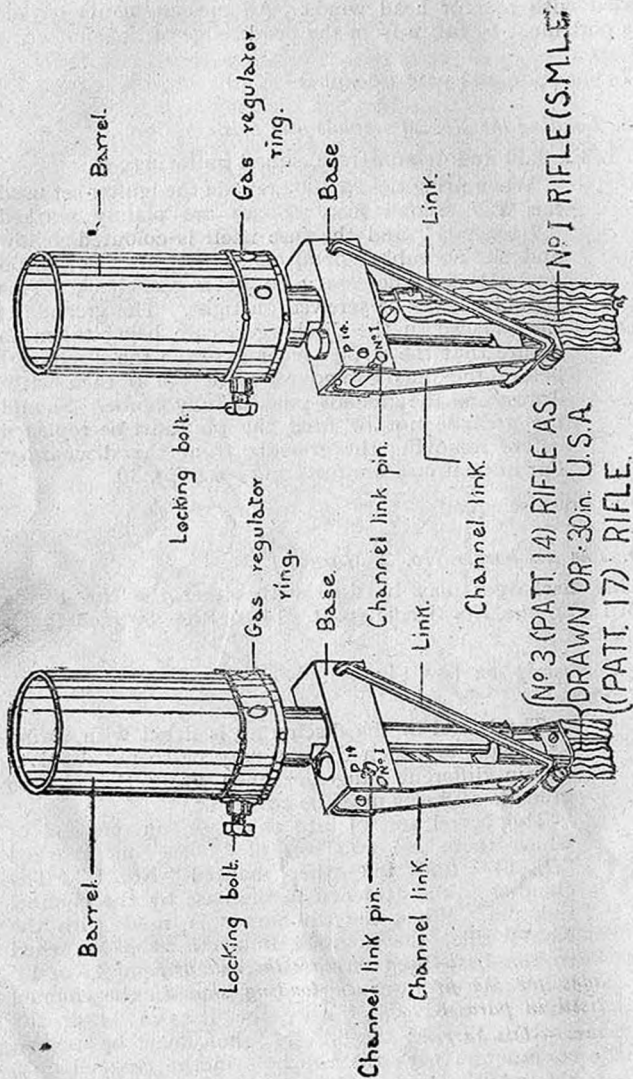


FIG. 11

ii. *Fixing and unfixing the discharger.*

Explain and demonstrate, squad imitating :—

Unscrew the discharger six turns from the base. Position the channel link through the link. Place the discharger on the rifle with the channel link over the bayonet standard. Drop the link under the channel link. Screw down the discharger until it is finger tight. Excessive force must not be used in screwing down the discharger, otherwise serious damage will result to the barrel of the rifle. To unfix, unscrew the discharger, lift the link and channel link, and remove.

iii. Practise squad.

iv. *Care and cleaning.*—As for the No. 1 discharger (see para. 4).

v. *Use of the No. 2 discharger for the No. 36 grenade.*—

Explain and demonstrate, squad imitating :—

When firing the No. 36 grenade, the rifle is kept at an angle of 45 degrees, and the range is varied by the gas regulator ring. In this ring there are four holes which can be made to coincide with four similar holes in the barrel, or with any less number required.

The approximate ranges obtained by opening one or more holes in the barrel are as follows :—

Four holes uncovered	...	...	...	80 yds.
Three "	"	...	...	110 "
Two "	"	...	...	140 "
One hole	"	...	...	170 "
All holes covered	...	...	...	200 "

To alter the ring, loosen the locking bolt, rotate the ring until the required number of holes are uncovered and retighten bolt.

vi. Question and practise squad.

LESSON 4.—THE No. 68 GRENADE

Instructor's Notes :—

This lesson will be taught behind cover. A second man can materially assist and increase the rate of fire by loading grenades for the firer. Such loading should, therefore, be practised in para. 8.

Stores.—Discharger ; drill grenade ; sight for instructor and each man ; filled sandbags if available ; any suitable target.

NOTES.—(1) If sights are NOT available, approximate elevation can be obtained using the backsight of the rifle with the leaf vertically raised.

(2) Drill cartridges should be used to represent ballistite ammunition.

(3) Drill grenades or substitutes will always be used in paras. 5, 6, and 8 in order that a correct aim may be taken. An improvised 68 drill grenade can be made out of a block of wood, but to the correct size.

Inspect arms, drill cartridges; pouch equipment; extend squad; point out target; fix dischargers. Fit sights. Order "Load."

1. Explain :—

The grenade has been introduced with the object of damaging hostile A.F.Vs. It is fired from the discharger, a ballistite cartridge being used. The effective range is from 50 to 75 yds., the sight being designed for use between these distances.

Excellent effect can often be obtained against A.F.Vs. by allowing them to pass through and engaging them in rear, where the armour is thinner.

The grenade can be fired from the hip, if necessary, against houses. Weight $1\frac{1}{2}$ lb.

2. Description

Explain (see Fig. 12) :—

- i. Live grenades are issued ready for use, and must on no account be stripped.
- ii. *Body*.—Filled with H.E. and closed at front end by a brass disc held in position by a screw-on ring. It is painted buff.
- iii. *Tail unit*.—Has vanes to keep it steady during flight. It contains a hollow central sleeve, in which is situated a striker and creep spring. The striker is held in position by a safety pin to which a label is attached, and by a shear wire. A gas check is fitted to the base, alternatively the gas check may be integral with the tail unit.
- iv. *Packing*.—Grenades are packed seventeen in a tin box with 20 rounds of ballistite.
- v. Question squad.

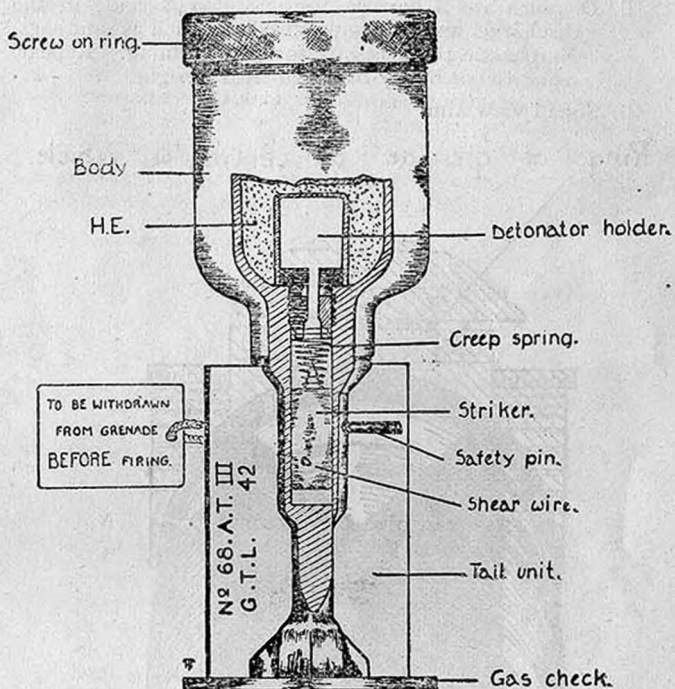


FIG. 12

3. Mechanism

i. Explain :—

Before firing, the safety pin is withdrawn, and then only the shear wire and creep spring hold the striker in position. On firing, the shear wire is broken by the shock of discharge, and on impact the momentum causes the striker to overcome the creep spring, which fires the detonator, and explodes the grenade.

ii. Question squad.

4. Aiming

i. Instructor explains, using a diagram (see Fig. 13).

The top of the grenade should close the V of the sight, this aim being directed at the centre of the A.F.V. Should the vehicle be moving across the front, then the aim must be directed at a point ahead, and the grenade must be fired when the vehicle has almost closed to the estimated lead.

- ii. Demonstrate a correct aim, using a grenade in the discharger and any improvised rest such as sandbags. Emphasize the necessity for quick aiming. Repeat, using the ordinary backsight leaf upright.
- iii. Squad view aim.

Ring of grenade on centre of vehicle.

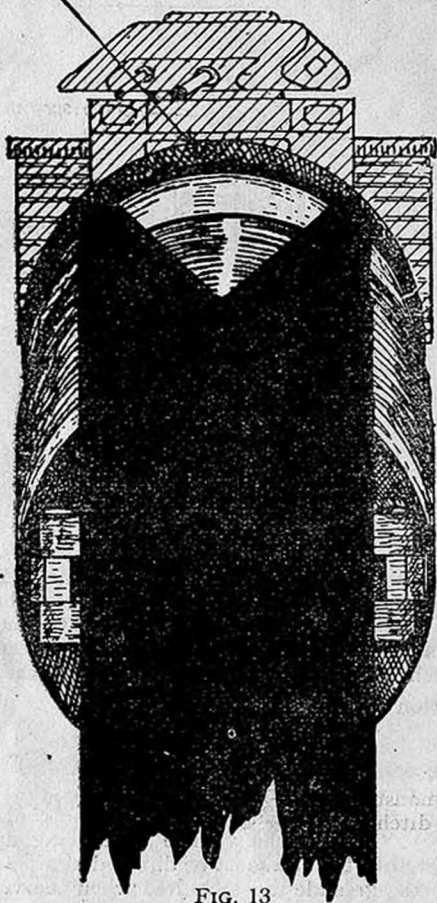


FIG. 13

5. Loading, aiming, firing, and unloading without firing

With squad on right of the cover, explain and demonstrate from position behind cover :—

- i. *Loading*.—Remove safety pin, keep it until the grenade has been fired in case it is necessary to unload without firing, and place the grenade into the discharger GAS CHECK first. Push fully home.
- ii. *Aiming and firing*.—Adopt a position where the rifle can be held at a low angle (see Fig. 14).

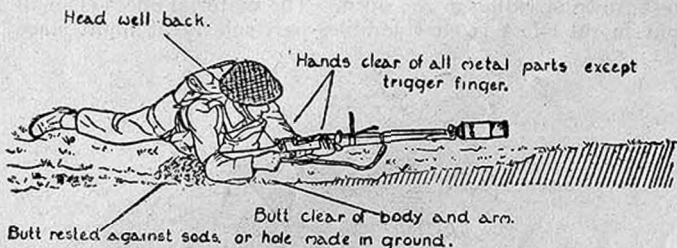


FIG. 14

The simplest position is lying on the stomach with the left hand holding the rifle in the most convenient position. The butt of the rifle must be supported in rear to take the shock of recoil, which is considerable. A sandbag is ideal, but sods of earth or a hole in the ground will serve. Push forward the safety catch, clench the right hand, and place the forefinger on the trigger. All other parts of the hands must be clear of the metal of the rifle. The head must be kept well back in order to use the sights. Aim quickly and fire. Observe the strike of the grenade. It will be necessary to allow for side winds. Reload another grenade and a further ballistite cartridge.

- iii. *Unloading without firing*.—If the grenade is not fired, withdraw it from the discharger, replace the safety pin and splay on the edge of the discharger.

6. Practise squad.

7. Other types of cover

Instructor demonstrates firing from other types of cover such as a slit trench, ditch, bank, etc. (see Fig. 14A).

8. Practise squad using various types of cover.

LESSON 5.—THE No. 69 GRENADE

Instructor's Notes :—

Stores.—Instructional No. 69 grenade and detonator for instructor and each man ; drill grenades for throwing. Any suitable object will serve as a drill grenade, e.g. stones, weighted wood, etc.

1. Explain :—

This grenade is a light hand percussion grenade for offensive action. The area of burst is very limited and it can, therefore, be thrown standing in the open. The material effect is small but moral effect is considerable, particularly at night since



FIG. 14A

each man, thinking an H.E. grenade has been thrown, believes himself (in the darkness) to be the only one left alive. It is of special value for patrols. Weight about $\frac{3}{4}$ lb.

NOTE.—The grenade can also be used for adding realism to exercises with troops. When thus used, 69 grenades should be thrown behind rather than in front of troops, and preferably behind banks and into ditches, as the lead ball is liable to fly out and cause injuries. These grenades will never be thrown at advancing troops, nor will they be used at night for training purposes. They must be regarded as having a danger area of 30 yards.

2. 1st safety precaution

Explain and demonstrate, squad imitating :—

Remove the base plug and ensure that the grenade is not primed.

3. Description

i. Explain and demonstrate where necessary (see Fig. 15) :

Live grenades are issued ready for use except for

priming, and in no circumstances will they be stripped. The body is made of bakelite and is filled with H.E. The safety cap is held securely by a piece of adhesive tape. To remove the safety cap, pull off adhesive tape and unscrew a half-turn. Further turning may unwind the safety tape underneath. Below the safety cap is a mechanism holder containing a ball, striker, and creep spring, and a cap holder with a cap. A safety bolt passes through a hole

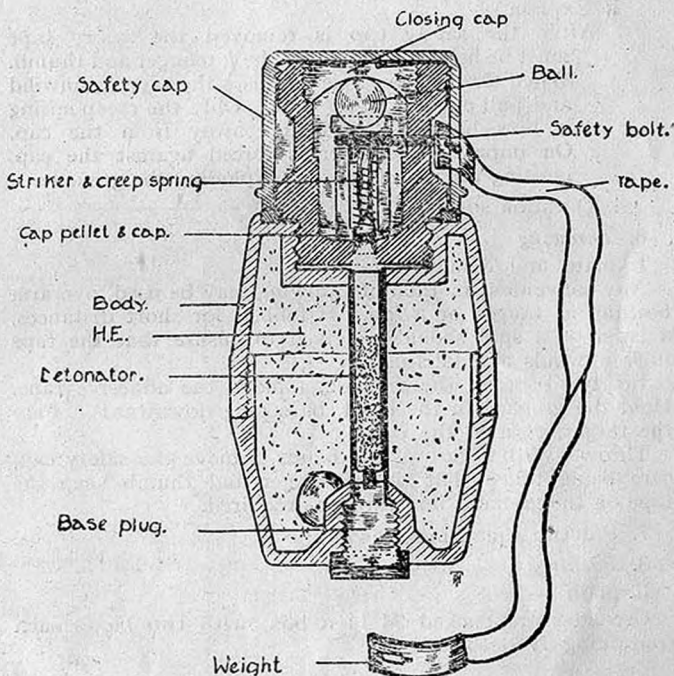


FIG. 15

in the striker and one in the mechanism holder, thus keeping the striker in position. To this bolt is attached a length of tape, on the other end of which is a lead weight. Through the centre of the grenade is a sleeve for the detonator.

ii. Question squad.

4. To prime the grenade

- i. Explain and demonstrate, squad imitating.
Remove the base plug. Examine the detonator sleeve to ensure that it is free from obstruction and rough edges.

Insert the detonator *open end first*. Replace the base plug, ensuring that it is screwed fully home.

- ii. Practise squad.

5. Mechanism

- i. Explain :—

After the safety cap is removed the safety tape must be held in position by the forefinger and thumb. When thrown, the weight causes the tape to unwind and pull out the safety bolt. Only the creep spring is now holding the striker away from the cap. On impact, the striker is forced against the cap, igniting the detonator and exploding the grenade.

- ii. Question squad.

6. Throwing

Explain and demonstrate :—

Any convenient method of throwing may be used, overarm bowling as taught or a lob. If lobbed for short distances, a twist or a spin should be given to ensure that the tape fully unwinds and falls clear.

Ready—Pick up the grenade, remove the adhesive tape. Hold the grenade in the hand, base plug downwards. Face the target, turn to the right.

Throw—With a turn of the hands, remove the safety cap, care being taken that the forefinger and thumb keep the tape on the grenade, and throw as required.

7. Practise squad in throwing.

8. Packing

Explain :—

Grenades are packed 34 in a box, with two boxes each containing 17 detonators.

LESSON 6.—THE No. 73 ANTI-TANK GRENADE

Instructor's Notes :—

Stores.—Instructional grenades and detonators for instructor and each man ; drill grenades for throwing. Where no drill grenades exist any suitable object of the same size and weight, e.g. a quart oil tin filled with sand will do.

Safety precaution.—Ensure that the grenade is not primed.

1. Explain :—

The object of the grenade is to damage armoured fighting vehicles, the best effect being obtained when used against the track or suspension of a tank. Owing to its weight and shape it can be thrown only quite short distances, 10-15 yards. The powerful nature of the grenade makes it absolutely essential that the thrower is behind cover. The use of it, therefore, is limited to ambushes or for road blocks. Weight, approximately 4 lb.

2. Description

Explain and demonstrate (see Fig. 16) :—

- i. The grenade consists of a tinned-plate casing, with a screw-on tinned plate lid at the top. In the centre of the lid is fixed a mechanism holder, containing

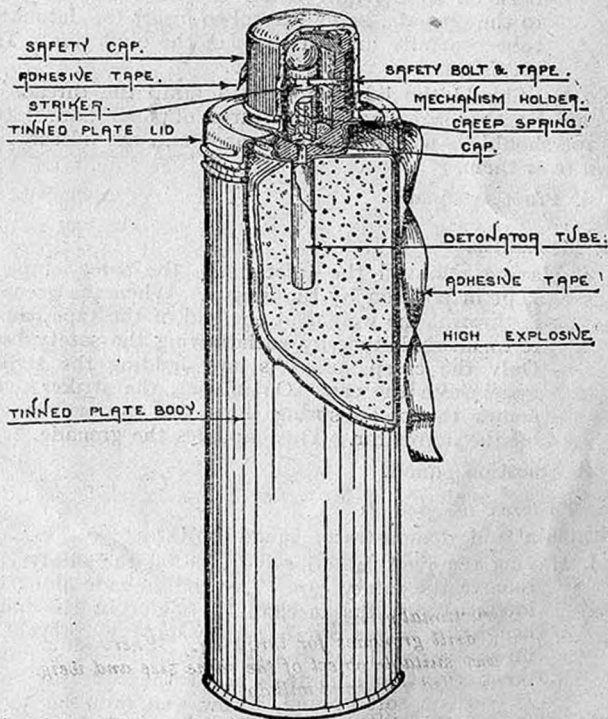


FIG. 16.

exactly the same mechanism as the No. 69 grenade and covered by a safety cap. The body of the grenade is filled with high explosive and painted buff.

ii. Question squad.

3. *To prime the grenade*

Explain and demonstrate, squad imitating :—

- i. Remove the adhesive tape from the rim of the tinned-plate lid. Unscrew the lid, keeping the safety cap on. On the under-side of the lid is a tube. Unscrew this from the lid and inspect it to ensure it is free from obstruction. Insert the detonator into this tube, closed end first, i.e. *open* end of the detonator to *open* end of tube. Screw tube with detonator back on to the lid. Screw the lid firmly back on to the grenade, being careful to insert the detonator tube centrally into the hole in the explosive. The grenade is now ready for use.

NOTE.—Should the lid be found to jump the threads of the canister when screwing it down, strips of paper, flannelette, or tape should be placed on the threads and the lid screwed down over them.

ii. Practise squad.

4. *Mechanism*

- i. Having removed the safety cap, the safety tape is kept in position by the fingers. When the grenade is thrown, the weight at the end of the tape causes it to unwind, thereby withdrawing the safety bolt. Only the creep spring is now holding the striker apart from the cap. On impact, the striker overcomes the creep spring, fires the cap which sets off the detonator. This explodes the grenade.

ii. Question squad.

5. *To throw the grenade*

Explain and demonstrate, squad imitating :—

- i. Having removed the adhesive tape on the safety cap, remove the safety cap. Lay the grenade along the forearm with the mechanism holder in the hand, keeping a finger on the safety tape to prevent it unwinding. Throw the grenade with an overarm bowling action and duck below the cover at once. If used on soft ground, throw well into the air to ensure functioning.
- ii. Practise squad from behind cover.

6. Care and packing

- i. The H.E. filling must not be exposed to moisture. It is also inflammable, therefore the grenade should not be stood near a naked flame. This grenade is very sensitive to small arms fire whether primed or not and should, therefore, be kept under cover if possible.
- ii. The grenades are packed in a tin box, ten in a box; also ten detonators in a cylindrical container in the same box.

LESSON 7.—THE S.T. GRENADE

Instructor's Notes :—

Stores.—1 instructional S.T. grenade complete for instructor and each man. Drill grenades can be improvised by sandbags on wooden handles.

1. Explain :—

This grenade has been introduced for use against A.F.Vs. It is designed to stick to the target. The grenade will NOT stick on a sloping surface should it be wet, muddy, or oily. The grenade is suitable for use at road blocks, positions of ambush, or for dropping from upstairs windows on to tanks. Although it can be thrown short distances, far better effect will be gained when the grenade is used as a portable demolition charge and planted by hand on vulnerable points of A.F.Vs., or loopholes or doors of pill-boxes. For night raids on tank harbours the grenade is a useful weapon. Weight 2½ lb.

Safety precaution—Ensure that the grenade is not primed.

2. Description

Explain and demonstrate, squad imitating (see Fig. 17) :—

- i. The body of the grenade consists of a flask filled with high explosive. To protect the grenade before use it is completely enclosed by a metal casing, hinged at the bottom and held in position round the neck of the flask by a pin or clip. The flask is covered with a sticky envelope to cause it to stick. Inside the neck of the flask is a tube to hold the detonator

assembly. Before insertion, the neck is closed by wooden and rubber discs held in position by a screw cap.

- ii. The throwing handle is attached to the neck of the flask by a screwed ring. The handle contains the striker and the striker spring, held in position by a lever fitting flush with the side of the handle and, in its turn, held securely in position by a safety pin. A label is attached to the safety pin.

NOTE.—Before use a striker test, similar to that for the No. 36 grenade, must be carried out.

- iii. The detonator assembly consists of a percussion cap, 5-seconds fuze, detonator, and a C.E. (composition exploding) pellet.

- iv. Question squad.

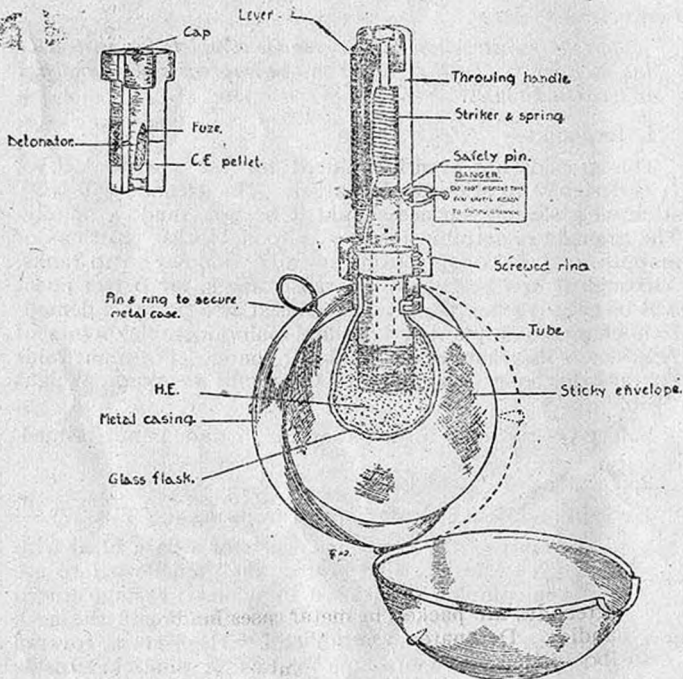


FIG. 17.

3. *To prime the grenade*

Explain and demonstrate, squad imitating :—

- i. Unscrew the neck screw cap, remove and discard the wooden and rubber discs. Take a detonator assembly and remove the cardboard sleeve protecting the C.E. pellet. Place the detonator assembly, pellet first, into the tube; the rubber rings on the assembly will hold it firmly in position. Attach the handle of the grenade to the neck of the flask by screwing the ring up tight. If this is found impossible, try another handle.
- ii. Practise squad.

4. *Mechanism*

- i. Explain when the safety pin is withdrawn, the striker is still held in position so long as the hand grips the lever. On throwing the grenade, the spring forces the striker down and fires the cap, the lever flying off. The cap ignites the fuze, which burns for five seconds, exploding the detonator which sets off the C.E. pellet, thus exploding the grenade.
- ii. Question squad.

5. *Use*

Explain and demonstrate :—

The outer casing must be removed by pulling the pin or clip (NOT the one with tag marked "DANGER") with the grenade hanging down, when the casing will fall off. To use, pull out the safety pin, gripping the lever firmly against the handle with the fingers. It is difficult to throw the grenade accurately any distance. Far better results will be obtained by planting it on the object when circumstances permit. This must be done with sufficient force to break the flask. The lever must be released sharply. By moving about ten yards away the user is safe from the effects of the explosion.

6. *Packing*

S.T. grenades are packed in metal cases holding 5 grenades and handles. Detonator assemblies are packed separately in cardboard tubes, 5 in a tube. A tube of 5 should be placed in the spring clips provided for the purpose on the inside of the lid of the box of grenades.

LESSON 8.—THE No. 75 and 75A GRENADE

Instructor's notes:—

Stores:—

One drill No. 75 grenade and 2 drill detonator assemblies for instructor and each man.

1. Explain.—The primary object of the No. 75 anti-tank grenade mine is to stop armoured fighting vehicles by breaking their tracks and damaging their suspension. The grenade is exploded by the weight of the vehicle passing over it, and may either be thrown from behind cover into the path of an approaching vehicle, or may be used as a mine and buried just beneath the surface of the ground.

A number of grenades may be strung together about 2 feet apart and pulled across a road in the path of an approaching vehicle to form an effective road block.

The grenade can also be used as a small portable demolition charge, particularly against railways, by using a No. 27 or No. 8, Mark VII detonator and a length of safety fuze. Weight $2\frac{1}{2}$ lb.

Safety precaution.—Ensure that the grenade is not primed.

2. Description

Explain and demonstrate (see Fig. 18) :—

- i. The No. 75A grenade can be distinguished from the No. 75 by the letter "A" stencilled on the side of it. It is only 80 per cent. as powerful as the No. 75.

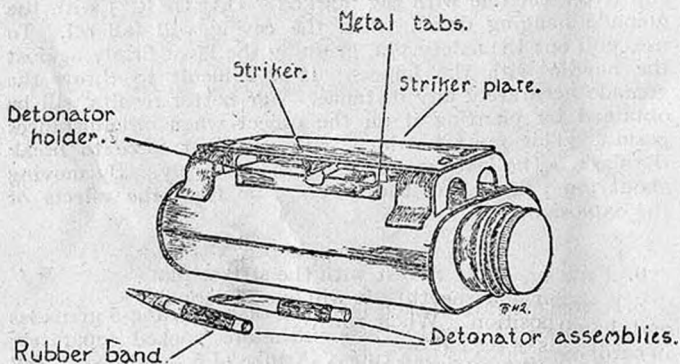


FIG. 18.

- ii. The body of the grenade is filled with high explosive. On one side of it are two pockets, with slots cut in them, which form the detonator holders. These pockets can be closed with easily bendable metal tabs. The striker plate is supported above the detonator holders by two brackets, the striker itself being above the slots in the pockets. The cap at the end of the body must NOT be unscrewed, as it is cemented on to ensure water-tightness.
- iii. The detonator unit consists of an igniter and detonator, and two of these units are used with each grenade. The igniter can be distinguished as a tin plate tube closed at one end by flattening, and is painted red. A rubber tube is rolled on to the igniter. The detonator is an aluminium tube open at one end and smaller in diameter than the igniter. It must be handled carefully.

iv. Question squad.

3. To prime

- i. Explain and demonstrate, squad imitating:—

Take an igniter and a detonator from their boxes. Insert the open end of the detonator into the open end of the igniter as far as it will go *without using force*, then unroll the rubber tube on the igniter to cover the joint of the detonator and igniter. This process will ensure a water-tight joint. Insert a detonator assembly, detonator end first, into each of the pockets of the detonator holder through the holes in the striker plate bracket. Bend over the metal tabs, thus securing the detonator assemblies in the pockets. The red painted portions of the assemblies should now be visible in the slots of the detonator holder.

- ii. Practise squad.

4. Mechanism

- i. Explain:—

The grenade is so shaped that when thrown it will come to rest with the striker plate either on top or underneath. It will operate equally well in either position. When run over by a vehicle the striker is forced down through the slots in the detonator holders, crushing the igniter tubes and breaking the glass capsules. The action of the acid on the chemical

mixture is to produce an immediate flash, setting off the detonators, which, in turn, explode the grenade.

ii. Question squad.

5. *Throwing*

Explain and demonstrate that the grenade can be thrown in any convenient manner. Several (5 or 6 for a 24-ft. road) should be thrown in the path of an oncoming vehicle to ensure that at least one is run over. If thrown from the open in the path of the oncoming vehicle the thrower must lie flat on the ground immediately after throwing. The grenades may be recovered and used again if they are not run over.

6. *Use as mines*

Explain :—

The grenades, when used as mines, may be buried in staggered rows to form a minefield. They must not be laid less than 3 feet apart because of the risk of sympathetic detonation. They should be buried with the striker plates upwards and flush with the surface of the ground. A thin layer of earth, etc., should be sprinkled on top as camouflage. In thick grass or heather, concealment of a minefield may be possible without the necessity for burying the grenades, in which event they will be slightly more effective. When the No. 75A is used two should be laid side by side.

These 75 grenade/mines can usefully be placed fore and aft under the tracks when enemy tanks are found in harbour, in order that when a tank moves it will explode a mine.

7. *To disarm if not used*

Explain :—

If, after priming, the grenade is not used, the tabs must be straightened individually and the detonator assemblies removed. Roll back the rubber tube into its original position on the igniter and carefully slip out the detonator from the igniter, and replace both in their boxes. Do not use force.

8. *Care and packing*

Explain :—

Grenades are packed 12 in a metal box. At one end of this box are two containers holding 24 detonators and 24 igniters respectively.

9. Further details regarding the 75 grenade mine are to be found in Military Training Pamphlet No. 40, 1942.

LESSON 9.—THE No. 77 SMOKE GRENADE

Stores.—One instructional grenade and detonator for instructor and each man.

1. Explain :—

The object of the No. 77 hand percussion smoke grenade is to produce an immediate local smoke screen. The grenade is exploded by a detonator in order to make the smoke screen instantaneous. As it is a hand grenade its tactical use is essentially local, but a very few thrown will produce a dense local smoke screen. Weight $\frac{3}{4}$ lb.

2. First safety precaution.

Explain and demonstrate squad imitating.

Remove the screw-on tin plate lid at the top of the body and ensure the grenade is not primed.

3. i. Explain and demonstrate (see Figs. 19A and 19B).

Live grenades are issued ready for use except for priming, and in no circumstances will they be stripped. The body

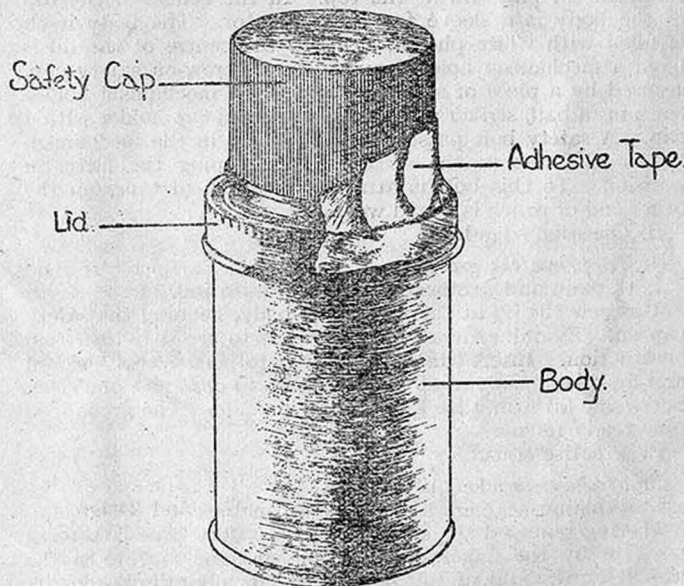


FIG. 19A

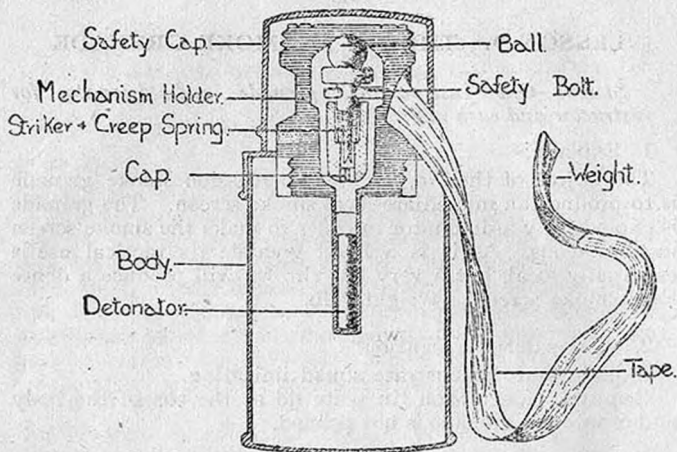


FIG. 19B

consists of a tinned plate casing, coloured green, with a screw-on tin plate lid at the top. In the centre of the top of the body is a sleeve for the detonator. The body itself is filled with white phosphorus. In the centre of the lid is fixed a mechanism holder covered by a screw-on safety cap, secured by a piece of adhesive tape. The mechanism holder contains a ball, striker and creep spring and cap holder with a cap. A safety bolt passes through a hole in the mechanism holder and one in the striker, thus keeping the latter in position. To this bolt is attached a length of tape, on the other end of which is a lead weight.

ii. Question squad.

4. To prime the grenade

i. Explain and demonstrate, squad imitating.

Unscrew the lid at the top of the body, keeping the safety cap on. Examine the detonator sleeve to see it is free from obstruction. Insert the detonator into this sleeve, closed end first, i.e. *open* end of the detonator to *open* end of sleeve. Screw the lid firmly back on to the grenade. The grenade is now ready for use.

ii. Practise squad.

5. Mechanism

i. Explain :—

Having removed the safety cap, the safety tape is kept in position by the fingers. When the grenade is thrown the weight at the end of the tape causes it to unwind, thereby

withdrawing the safety bolt. Only the creep spring is now holding the striker apart from the cap. On impact, the striker overcomes the creep spring, fires the cap which sets off the detonator. This explodes the grenade. Immediately on contact with air the white phosphorus ignites and gives off dense smoke for about half a minute.

ii. Question squad.

6. *To throw the grenade*

i. Explain and demonstrate, squad imitating.

Any convenient method of throwing may be used, overarm bowling or a lob. If lobbed for short distances, a twist or spin should be given to ensure the tape fully unwinds and falls clear. Before throwing remove the safety cap (the adhesive tape should have already been removed), care being taken that the finger and thumb keep the tape on the grenade. Then throw as required.

NOTE.—Small burning particles of white phosphorus will be thrown some distance on the grenade bursting. Serious burns will be caused should these particles fall on the person, as it cannot be extinguished.

ii. Practise squad.

7. *Packing*

(To be issued later).

8. *Storage*

Grenades should be inspected periodically, for should the body become corroded the air may come in contact with the white phosphorus, thereby causing ignition.

LESSON 10.—THE DEMOLITION SET

(For Instructors only)

Instructor's Notes :—

Appendix II must be read by instructors in conjunction with this lesson before teaching it.

Stores.—Demolition box containing :—*

Box of fuze, safety, No. 11.

Box of detonators, No. 8, Mark VII or No. 27.

Cylinder of 1 oz. gun-cotton primers.

Luling.

Rectifier.

Pair pliers.

A knife and matches will be required.

For training purposes the detonators and gun-cotton primers will consist of drill material.

*A suitable box made by unit tradesmen.

1. Explain :—

Should a grenade, when thrown or fired, fail to explode, it is called a "blind". During training blinds cannot be left, but must be destroyed. For this purpose a demolition set consisting of a length of fuze, a detonator, and a gun-cotton primer is assembled.

2. Fuzes

Explain and demonstrate :—

There are two types of fuze : "instantaneous" and "safety". The former must NEVER be used for the destruction of blinds. The latter is supplied for this purpose, and is known as No. 11 SAFETY FUZE. It is coloured black, and the outside is bound with waterproof tape. Through the centre is a trail of gunpowder. It is issued in boxes containing 48 feet of fuze, which burns at the rate of 1 inch in $2\frac{1}{2}$ seconds. These facts are marked on the box. The fuze must be unrolled and not forcibly straightened out, otherwise kinks occur, which break the powder trail, and the fuze then fails to burn.

3. Detonators

Explain :—

There are several kinds of detonators in use. The one used for the demolition set is the No. 8 Mark VII, or No. 27. This detonator is a small metal tube containing a small quantity of very sensitive high explosive. It may be coloured red, labelled and packed in tins, containing 25. All detonators must be handled carefully. They should not be struck violently, crushed, placed near heat, or tampered with in any way. Damp also quickly affects the explosive, and detonators should be kept in their box with the lid on.

The instructional detonator is unpainted tin.

4. Gun-cotton primers

Explain :—

These consist of 1 oz. of gun-cotton. They are issued 10 in a black metal tube and are threaded on tape for easy withdrawal.

5. Question squad on paras. 1, 2, 3 and 4.

6. To assemble the demolition set

Explain and demonstrate:—

- i. Cut off a piece of fuze about a foot long. Light this (as in para. ii. below), and time its rate of burning. If it takes less than 22 seconds to burn do not use that particular roll of fuze. It may be the wrong kind or may be unreliable. **FAILURE TO TAKE THIS PRECAUTION WILL LEAD TO ACCIDENTS.**
- ii. Next cut off the required amount of fuze for the set. 13 ins. (1 in. allowed for lighting) will give about 30 seconds in which to get to cover. See that the end to be inserted in the detonator is cut clean and square. About 1 in. from the other end bore a hole through the fuze with the point of a sharp knife. Into this hole draw a match until the head of the match is nearly flush with the fuze (see Fig. 20).

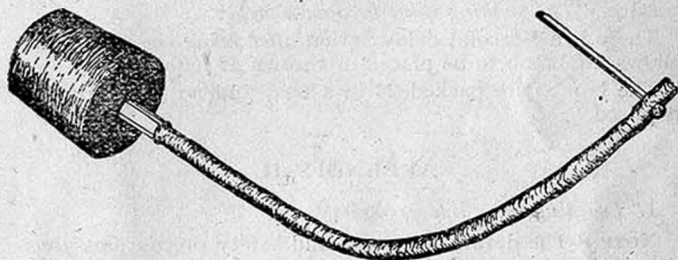


FIG. 20

- iii. Insert the clean cut end of the fuze into the open end of the detonator. Do this carefully, avoiding a twisting movement. Aim at leaving a gap of about $\frac{1}{4}$ in. between the end of the fuze and the high explosive. The detonator should be "crimped" to the fuze with a pair of pliers or blade of a knife. If not available, luting or mud may be used to secure it.
- iv. Take a gun-cotton primer. Insert the rectifier in the central hole, easing it if necessary. The hole should be just large enough to take the detonator without having to force it in. Insert the detonator until the closed end is about flush with the other end of the primer.
- v. Practise squad.

7. Use of the set

Explain :—

To destroy a blind the set is so placed that the primer is in contact with it. Hold the matchstick and rub the match box on the head of the match. After ensuring that the fuze is burning, get to cover. Complete instructions for procedure on the range are laid down in Appendix II.

APPENDIX I

THE 14-LB. HAND INCENDIARY BOMB

The bomb provides a simple, quick method of setting fire to stores, posts, buildings, crops, etc. To prepare it for use, remove the strip of adhesive tape and bakelite safety cap.

To fire the bomb, hold it in the hand, and either strike the .22 rim-fire cap with a stone, or strike the cap against a hard surface. *The striking must be done sharply.*

There is a 5-second delay action *after* firing the cap, which allows the bomb to be placed or thrown as required.

The bombs are packed 24 in a box, and no preparation is required.

APPENDIX II

1. Training with live grenades

NOTE.—The details of ranges and safety precautions given below must be regarded as a guide only, as they refer mainly to the training of recruits at well established training centres. *When exercising trained soldiers, elaborately constructed ranges will seldom be available, and realistic practices must be framed to suit local conditions, provided that commanders make reasonable safety precautions. These practices should include throwing from natural positions that might be expected to be found in the field, e.g. folds in the ground, from behind a felled tree trunk or from slit trenches.*

This Appendix deals with training in the use of live grenades, the necessary range areas, the safety precautions to be observed, the procedure for carrying out live practices, and the destruction of blinds.

Although the use of grenades can be taught by employing drill material only—the drill grenade behaves in exactly the same way as a live one, except that it does not explode—the training of the man cannot be considered complete until he has thrown and fired live grenades.

Live practices give confidence to the man in handling a weapon which is, wrongly, sometimes supposed to be dangerous. Accidents can generally be traced to one of four main causes:—

- Ignorance.
- Negligence.
- Deliberate mishandling.
- Fright.

The first three can be excluded by training and supervision, the last can be overcome quickly by live practice. All men should throw the minimum of two No. 36, one No. 69, and fire one No. 68 live grenades; more should be thrown if available. The more live grenades men can throw and fire the more confident will they become.

2. Live bombing ranges

- i. No. 36 grenade.—The plan of suitable live throwing trenches or breastworks is shown in Fig. 21A. This is

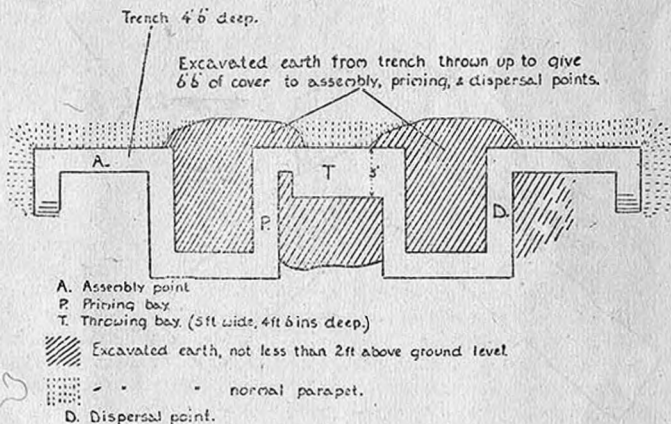
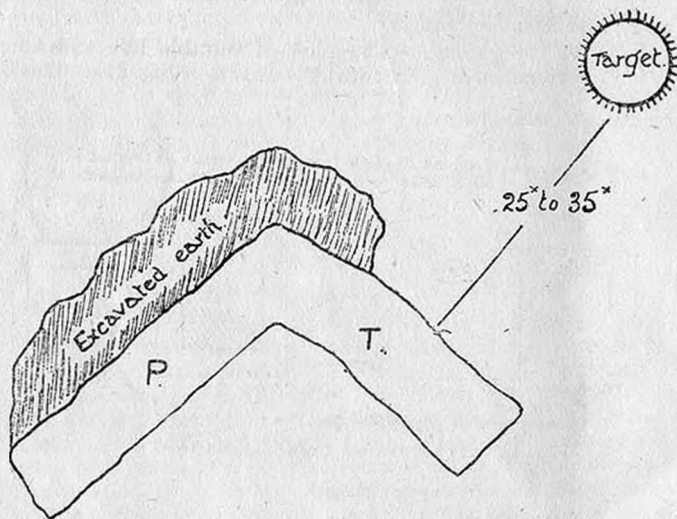


FIG. 21A

also suitable for firing the No. 36 from the discharger should such be required by any unit, but modifications in the form of a rest for the butt will be required. The danger area must be clearly marked out by red danger flags and look-out men posted whenever the range is in use. A minimum distance of 300 yds. must be allowed in all directions from the point where the grenades will burst. Small rings of earth or circles of sandbags representing shell holes

form suitable targets, and should be provided for each throwing bay. Shell holes should NOT be dug down, owing to the difficulties of destroying blinds therein. A simple form of trench is shown in Fig. 21B.

- ii. No. 69 grenade.—The live bombing range for the No. 36 grenade is NOT suitable for live throwing with the No. 69 grenade, if the width of the throwing bays is restricted, owing to the possibility of the thrower striking his hand against one of the side walls when in the act of throwing, and thereby dropping the grenade. As the area of burst is so very limited these grenades can be thrown almost anywhere.



P. Priming Bay. 6ft. deep

T. Throwing Bay. 4ft 6ins. deep.

Excavated earth thrown up to 1ft 6ins.
Throwing bay left clear.

FIG. 21B

Some form of cover, such as low breastworks, should, however, be provided for the throwers and instructors, in order that protection is afforded, in the event of a very short throw, by ducking below the cover. Two or three breastworks should be provided, each about 10 yds. apart, in order that, in the event of a grenade being dropped, the personnel behind one breastwork only will be affected. The walls of the breastworks should be "winged." Priming should be carried out under natural cover under supervision, some 50 yds. behind the throwing breastworks. Men waiting to throw will be kept 50 yds. behind the priming posts. Targets should be representative of a small body of enemy, such as a patrol, and sticks or posts are suitable. Shell holes are not suitable targets.

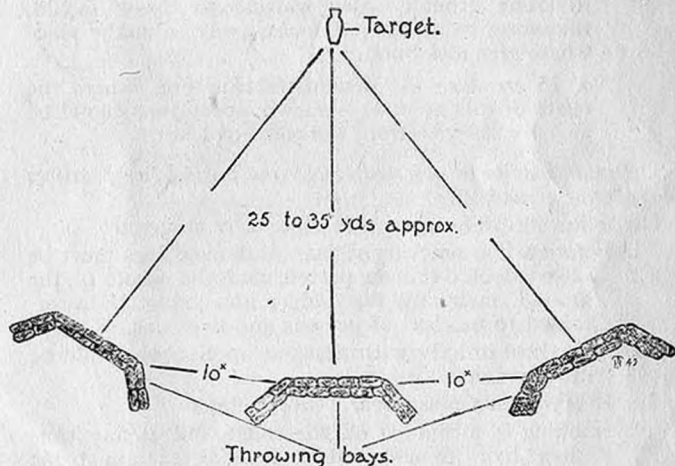


FIG. 2

- iii. *No. 68 grenade.*—No special range area is necessary for firing live No. 68 grenades. The main consideration is the availability of a suitable target. This must be such as will ensure the grenade bursting on impact. Any form of steep bank which is nearly vertical is excellent, and targets, approximately the size of a head-on tank, may be readily marked out on it. As the whole force of explosion of the grenade is in a forward direction, no special danger area is

required; it is necessary only to ensure that a reasonable distance—about 200 yds.—beyond the targets is clear to allow for “overs.” Firing should take place from a slit trench if possible, or if necessary from the open. Large portions of grenade do, however, occasionally fly back some hundred yards, and firers and instructors must, therefore, wear steel helmets and be alert to get out of the way of fragments if necessary. All men waiting to fire should be at least 200 yds. back from the point of burst.

- iv. *S.T. grenade*.—These grenades may be thrown on any clear area of ground. The thrower is safe if he lies down flat, with head away and some 10 yds. from the burst. Portions of the target used, however, iron plate, etc., may fly long distances. This also applies to stony ground. Men waiting to throw should, therefore, be at least 100 yds. away from the place where grenades burst.
- v. *No. 75 grenade*.—At demonstrations, etc., where the effect of this grenade is shown, spectators should be at least 200 yds. from the point of burst.

3. *Precautions to be observed before and during live practices (all types of grenades).*

The following precautions will always be observed :—

- i. Before a live practice begins, all danger flags must be raised, look-out men posted, and the whole of the ground, including the danger area, must be ascertained to be clear of persons and livestock.
- ii. A medical orderly with first aid appliances should be in attendance.
- iii. Every person must wear a steel helmet.
- iv. Smoking is forbidden on the range and at any time when live grenades, detonators, etc., are being handled or carried.
- v. A red danger flag will be kept at the control post during practice. This will be lowered as a signal that practice is about to begin, the officer having first satisfied himself that danger flags and look-out men are in position, and that the range is clear.
- vi. A qualified officer, i.e. an officer who has qualified on a course, in which the grenades used were included in the syllabus, at Small Arms School (Hythe Wing), Command, or District Weapon Training Schools, will always be in charge and will control the practice.

- vii. No grenade will be loaded, and no man will fire or throw without the direct order of the officer in charge.
- viii. Any order to take cover must be instantly obeyed.
- ix. To eliminate any possibility of prematures all the points laid down for the inspection and preparation of grenades, igniter sets, etc., will be strictly carried out. Grenades and igniter sets will never be inspected together; the inspection of the grenades will first be carried out, and they will then be replaced in their boxes. The inspection of igniter sets will then follow.
- x. Every blind will be accounted for and destroyed before the party leave the range.
- xi. The demolition box must always be on the range.
- xii. Should a primed grenade not be expended, the igniter set will be at once removed and returned to its box. Particular care must be taken that no grenade is returned to store primed.
- xiii. A trained N.C.O., i.e. one who has qualified on a course, in which the grenades used were included in the syllabus, at Small Arms School (Hythe Wing), Command or District Weapon Training Schools, will be on duty in each priming and throwing bay or post.
- xiv. No more than one person, in addition to the N.C.O. on duty, will be in any priming, throwing, or firing bay or post at any time. (With the No. 68 a loader is permitted additionally.)
- xv. Everyone, except the officer in charge, the N.C.Os. on duty in the priming, throwing, or firing bays or posts and the men actually priming, throwing, or firing, will be under cover or out of the danger area.
- xvi. No grenade will be primed until the man enters the priming bay or post preparatory to throwing or firing. To ensure that this rule is obeyed, the box containing the igniter sets will be in possession of the N.C.O. on duty in the priming bay or post. He will issue the number required to each man as he arrives, and will personally superintend the operation of priming.

4. *Method of conducting live practices*

- i. Sections will be told off into details, the requisite number of unprimed grenades will be issued to each man, and they will then be marched into their respective shelters or position out of the danger area.

- ii. The N.C.Os. for duty will then take their places in the priming and throwing bays or posts. Those detailed for the priming bays or posts will have with them the necessary number of igniter sets in their boxes.
- iii. The officer in charge will take his place at the control point or post. He will have with him the demolition box and any spare grenades there may be. Having ascertained that all safety regulations have been complied with, he will lower the control post flag and order the first detail into the priming bays or posts.
- iv. The first detail will then prime their grenades and pass on to the throwing or firing bays or posts; the second detail will at once take the place of the first in the priming bays or posts.
- v. Only those grenades will be primed which are to be used before the men return to the shelter; no man will return to the shelter with a primed grenade.
- vi. Should the practice be cancelled for any reason before the number of primed grenades has been used, the N.C.Os. in the throwing or priming posts will see that the unused grenades are unprimed. This rule does not relate to temporary stopping of a practice due to a blind.
- vii. When throwing practice is being carried out the procedure will be as follows:—

<i>Command</i>	<i>Action</i>
"No. 1—Ready "	No. 1 adopts the "Ready" position. The N.C.O. will hold up his hand as a signal to the officer when this has been done.
"No. 1—Throw "	No. 1 prepares the grenade for throwing, throws, observes the flight of the grenade and takes cover.
"No. 2—Ready "	
"No. 2—Throw "	

(If there are more than two bays, the procedure will be the same until all have thrown one grenade. No. 1 will then be ordered to throw his second grenade, the same sequence being followed until all grenades have been thrown by the first detail.)

"Detail—Change " First detail moves to the shelters. Second detail replaces the first in the throwing bays, and the third detail moves into the priming bays.

The officer in charge will observe the actions of the thrower, the flight of the grenade, and order "Take cover." He will then take cover himself.

When firing live grenades the same procedure will be followed, but words of command will be as follows :—

"No. 1—Load " No. 1 loads ballistite and then loads grenade.

"No. 1—Prepare to fire " No. 1 aims.

"No. 1—Fire " No. 1 fires grenade.

NOTE.—It is the duty of the officer conducting live practices to foresee the possible incidents that may occur, through nervousness or through failure in the material being used, which are likely to endanger those taking part. He must instruct N.C.Os. and men in the immediate action to be taken. For example, should a No. 36 grenade be dropped in the act of throwing in the bay itself, the N.C.O. must immediately force the man behind cover round the traverse, before taking cover himself. When firing the No. 36, should it drop back into the discharger owing to very defective ballistite, the whole rifle and grenade must be thrown out of the bay. If the grenade drops into the bay, action as with the hand grenade above must be taken.

5. Method of dealing with blinds

Should a blind occur, everyone will remain under cover until further orders. The officer in charge will proceed *alone* to destroy the grenade where it lies. With the No. 36 grenade an interval of five minutes must ensue before the officer goes out for this purpose; with other grenades no interval is necessary.

The officer will so place the demolition set (*see Lesson 10*) that the primer touches the grenade. A stone or brick should, if possible, be placed on the other side of the primer to keep it in place. In placing the stone or brick care must be taken not to disturb the grenade; the steel helmet, etc., should, therefore, be securely fastened on. Having ascertained that all persons are under cover, he will light the fuze and take

cover himself. After the explosion he will examine the place to ensure that the blind has been destroyed. It is absolutely essential that all blinds are dealt with as they occur and not left to the end of the practice.

NOTE.—In most instances it is possible for the officer in charge to deduce the cause of a blind from the moment a grenade is thrown or fired. With the No. 36, for example, if the cap is fired, the crack is generally audible and indicates that the striker and cap have functioned correctly. If smoke comes from the grenade while it is in the air or after it has reached the ground it shows that the fuze is burning properly,

6. Reporting failures and defects

All instances of failures and defects in material will be recorded, and, if it is considered that they are due to faults in design or manufacture, a report will be made by O.C. unit to D.A.D.O.S.

Such instances would be :—

- i. Defects noted during the inspection of grenades and igniter sets.
- ii. Failure of any portion of the igniter sets, e.g. cap, fuze, detonator.
- iii. Failure of the grenade to detonate although the burster set has functioned perfectly. When this failure occurs, the grenade is burst into two or three large pieces by the detonator, and, if examined, some of the explosive will usually be found ; very little noise is made by a grenade bursting in this way.
- iv. Defects in ballistite grenade cartridge, i.e. misfires, weak explosion resulting in grenades going short or even remaining in discharger, blowbacks, split cases, etc.
- v. Any defects found in rifles or dischargers after use.

In making such records or reports, the following information will be obtained, if possible :—

- Designation of article, number, mark, etc.
- Dates of manufacture and packing.
- Name of manufacturer, packer's notes, etc.

Any markings on the article in question, such as base markings in the case of cartridges. A brief history of the grenade since arrival in the unit, i.e. how stored, when box was opened and if taken to the range on a previous occasion and not fired.

Whenever the defective article itself can be produced, it should be forwarded with the report.