NOT TO BE TAKEN INTO FRONT LINE TRENCHES

The Tactical and Technical Employment of Chemical Weapons

Military Training Pamphlet No. 32

PART V.—THE CHEMICAL MINE

1940

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INTRODUCTION

The British Government has no intention of initiating the use of gas. The British Army must, however, be prepared to protect itself against the use of gas by an enemy. A study of the methods by which gas might be employed in the field is therefore necessary, but such methods would only be adopted by the British Army if it were decided that retaliatory measures were required.

Prefatory Note

Military Training Pamphlet No. 32—The Tactical and Technical Employment of Chemical Weapons, is the main title of a series which will consist of the following parts:—

Part I. Chemical Warfare units—Training and War
II. The projector
III. The cylinder
IV. The bulk contamination vehicle
*V. The chemical mine
VI. The bomb, ground

* This is the first part to be published.

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MILITARY TRAINING PAMPHLET No. 32—1940

THE TACTICAL AND TECHNICAL EMPLOYMENT OF CHEMICAL WEAPONS

PART V.—THE CHEMICAL MINE

1. General

1. The purpose of the chemical mine is to enable liquid contamination with persistent gas to be put down on such places as woods, roads, defiles, river crossing sites, and to form contaminated areas or belts either alone or in conjunction with demolitions.

2. Chemical mines will be used chiefly in defensive operations, particularly in the withdrawal, in order to prevent the traversing or occupation of ground except at the risk of casualties. The measures necessary by the enemy to prevent casualties will cause delay and have a harassing value.

3. The chief characteristics of the chemical mine are:—

i. It is easily transportable by two men, and over a short distance by one man.

ii. It is safe to handle.

iii. It can be operated by any troops trained to use explosives.

iv. It enables contamination to be put down exactly where required.

2. Description

1. The Mine, Chemical, No. 1, Mk. I. B.V., consists of a lead-coated steel drum of commercial pattern varnished internally, 11¼ inches in diameter, about 20 inches high and weighing about 65 lbs. (see Plate 1). It holds 50 lbs. of mustard gas, and is fitted with a handle on each side for carrying.

2. The neck of the drum holds the burster container, a steel tube 2 inches in diameter and 13 inches long. This is screwed and cemented into the drum before issue, the joint being painted with detector paint so that any leakage can be readily seen.

3. The top of the burster container has a head 3½ inches wide, into which is screwed a steel disc with a central hole. This disc is for holding down the burster. The match composition head of the burster and the leads from a fuse, electric, No. 14, come through the central hole. For screwing or unscrewing this disc a special tool is supplied. It is a metal key which fits into two shallow holes on the upper side of the disc.

4. Above the disc is a cast iron plug, also screwed into the top of the burster container. It tightens down on a leather washer, and this closes the neck of the drum. Held between the plug and the disc is a striker for use on the match composition head.

5. The burster is supplied separately from the mine. It consists of a tin-plate tube 1¼ inches in diameter, 12 inches long, containing 4 ozs. of gunpowder, a fuse, electric, No. 14, and a special slow-burning composition. At the top end are a match composition surface and the leads from the fuse.

3. Care and maintenance

1. The Mine, Chemical, No. 1, Mk. 1. B.V., is a substantial steel drum, and will withstand fair wear and tear. It must not, however, be handled roughly, and when transported care should be taken to see that there is no chance of the drum being punctured or dented by bolts or other projections in the floor or sides of the vehicle.

2. Mines should be stored in a cool dry place, preferably in a building in which the shelving and floor are made of materials which will not readily absorb mustard.

3. Mines should be inspected for leakage on arrival, after every journey, and monthly. The most likely source of leakage is the joint between the burster container and the drum.

4. The burster, since it contains gunpowder, must be stored in accordance with the provisions of Magazine Regulations.

4. Laying and firing

1. The first step in putting down liquid contamination is a tactical reconnaissance to decide where it is required. This will normally be followed by a technical reconnaissance to determine whether the chemical mine, or the bomb, ground, 6 lb., or the bulk contamination vehicle is the most suitable agent for the purpose. Should the chemical mine be selected, the next step is to decide on the actual lay-out.

2. When a chemical mine is fired, the contents are scattered over an area of approximately 200 square yards. The heaviest contamination is near the point of burst, and the extreme distance to which the liquid is thrown is greatest in a down-wind direction. With a wind of 10 m.p.h., the area of heavy contamination is about 12 yards by 8 yards, and the total area contaminated 20 yards by 10 yards.

3. The actual spacing of the mines on any task will depend on the area covered by one burst, the direction of the wind, and the nature of the task. If heavy contamination over the whole of an area is desired, overlapping must be provided for. As a general rule, mines should not be spaced at intervals of more than 10 yards.

4. For contaminating a road when the wind is blowing across the road, a line of mines 10 yards apart on the upwind edge should be sufficient for all roads except those of exceptional width. Alternatively, if time, labour and materials permit, it might be advisable to fire a second line of mines down the centre of the road. With a wind blowing down the road, mines spaced 10 yards apart should be placed across the road. If more than one line of mines is used, lines should be at 20-yard intervals, and mines in alternate lines should be staggered.

5. Obstacles formed by contamination should be at least 100 yards wide to ensure that the construction of a safe path across the obstacle will involve considerable time and labour. Such obstacles consist of rows of mines, the distance between rows and the distance between mines depending on the direction of the wind. With a cross wind 10 yards between mines and 20 yards between rows will be adequate. With a wind blowing along the barrier, 20 yards between mines and 10 yards between rows will be required. The mines in adjacent rows should be staggered. Advantage should be taken of any natural features such as vegetation, undergrowth, narrow valleys and woods, which would tend to increase persistence.

6. Mines can be prepared for firing either at the site or beforehand. For reasons of safety the former will usually be preferable. The procedure is as follows. Remove the cast-iron plug and striker. With the special tool unscrew the steel disc, insert the burster gently into the burster container, pass the leads from the electric fuse through the hole in the centre of the steel disc, and replace the disc. Coil the leads round, replace the striker, and screw on the plug.

There is an older type of mine in existence which is not provided with an internal burster. In this case the method of firing is the same as that followed with the training mine in similar circumstances (*see* Sec. 5, para. 3).

7. On arrival at the site place the mines in position, remove the plugs, and if electric firing is to be used connect up in the normal way. (When fired electrically there is, of course, no delay action.) If the mines are to be fired by hand, the strikers should be placed by the side of the mine ready for rapid use. The match composition head is ignited when rubbed briskly with the striker. This in turn fires the slow-burning composition which, after a delay of six minutes, explodes the gunpowder charge. The match composition head may also be ignited with a safety match box, or by touching with a lighted match or fusee.

8. When the gunpowder charge bursts the mine, fragments of metal may fly to a distance of 50 yards. Drops of liquid will also be thrown out by the burst, mostly in a downwind direction. Normally, personnel should be 300 yards clear of an exploding mine if downwind of it, and 100 yards if upwind of it or to a flank. If protective clothing is worn, or if suitable cover is available, these distances can be reduced.

9. After the explosion has taken place, vapour will be given off for a considerable time and carried away by the wind. The extent to which this vapour will be a danger to our own troops will depend on the wind, the temperature, and the nature of the filling. To avoid any risk, gas mines should not be exploded within 250 yards of any position which is to be occupied for a prolonged period by our own troops.

5. Mine, Chemical, Training, Mk. I

1. For the purposes of training, chemical mines will be issued differing slightly from the Mine, Chemical, No. 1, Mk. I. B.V. These differences are as under:—

(*a*) The training mine will be issued empty so that it can be charged by units with the necessary training substitute (Mixture G2D).

(*b*) The training mine will not be varnished internally, but will be painted white externally, with the word "Training" stencilled on the white ground.

(*c*) The training mine may require to be burst by means of an external burster, in which case the burster container may or may not be fitted.

2. The method of filling the training mine will depend on whether it is fitted with a burster container or not. If there is no container, removal of the plug and leather washer will disclose the hole through which the training mixture should be poured. After filling, the mine is sealed by replacing the plug and leather washer.

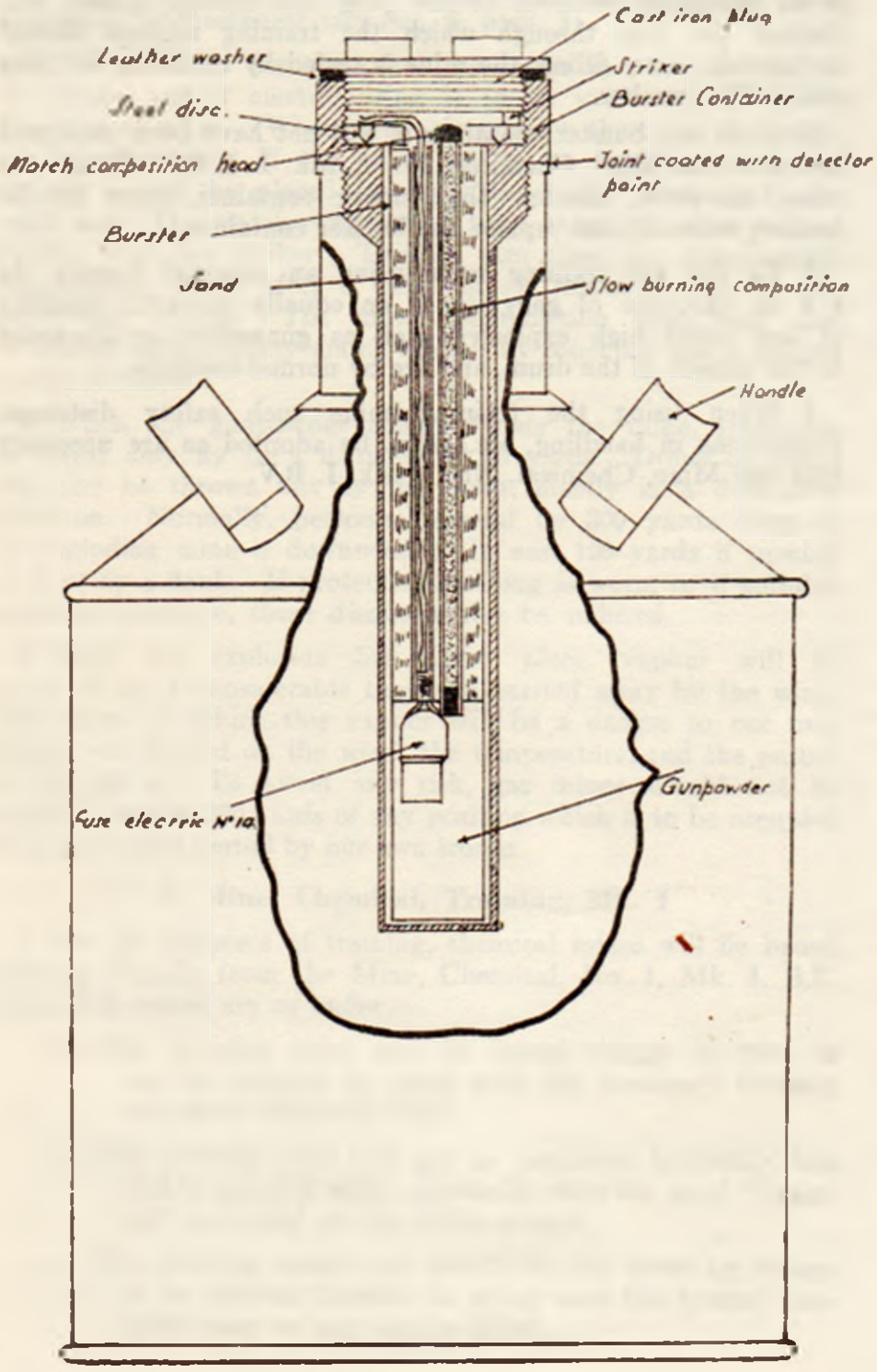
If there is a burster container it will not have been cemented in (as in the Mine, Chemical, No. 1, Mk. I. B.V.). To fill the mine, therefore, unscrew the burster container, pour in the training mixture, and replace the burster container.

3. To fire the training mine using an external burster, fix a 4 oz. cartridge of gelignite or an equally powerful quantity of any other high explosive such as guncotton or dynamite to the outside of the drum, and fire by normal methods.

4. When using the training mine such safety distances, precautions in handling, etc., must be adopted as are necessary with the Mine, Chemical, No. 1, Mk. I. B.V.

MINE, CHEMICAL, No. 1, Mk. I. B.V

Plate I



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