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# GAS TRAINING, 1942

## AMENDMENTS (No. 1)

1. Page 6. Sec. 2, para. 5.—Add new sub-para.:—  
vii. Given practice in dealing with gas problems during Amdt. 1  
outdoor exercises (see Secs. 29 to 41). July, 1943
2. Page 7. Sec. 3, para. 5, line 4.—For “40” substitute “41”.
3. Page 10. Sec. 5, para. 13, sub-para. i, line 3.—After “gas”  
insert “(i.e., a man who is a casualty from the gas)”.
4. Page 16. Sec. 7, para. 4, sub-para. i, line 3.—After “tube.”  
add:—  
The S-hook should remain permanently attached to the becket Amdt. 1  
on the connecting tube, and not to the slide on the haversack July, 1943  
sling.
5. Page 16. Sec. 7, para. 5.—Add new sub-para.:—  
iii. Note that, in the case of the long connecting tube, the Amdt. 1  
bight of the tube should be stowed in the large com- July, 1943  
partment of the Mark VI or Mark VII respirator  
haversack.
6. Page 18. Sec. 7.—Add new para.:—  
14. *Light respirator.*—See Appendix F.
7. Page 20. Sec. 8.—Add new para.:—  
7. *Light respirator.*—See Appendix F.
8. Page 22. Sec. 9.—Add new para.:—  
8. *Light respirator.*—See Appendix F.



9. Page 27. Sec. 11, para. 8. sub-para. ii, line 3.—*For* “oily” substitute “wet”.

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10. Page 30. Sec. 12, para. 6.—*Add* new sub-para.:—

v. Whenever petrol is used for swabbing contaminated vehicles, gloves should be worn.

Para. 8, line 9.—*For* “decontaminated” substitute “decontamination”.

11. Page 31. Sec. 13, para. 2, sub-para. ii, line 2.—*Delete* “oily”.

12. Pages 33 and 34. Sec. 14, para. 5, sub-para. ii.—*Delete* last line on page 33 and lines 1 to 6 on page 34 and *substitute*:—

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If the respirator is adjusted after receiving a drop of spray on the face, apart from the blister caused, the vapour may attack the lungs and eyes; the immediate protection against the effects of spray is, therefore, given by personal decontamination, and the respirator should not be adjusted until personal decontamination has been carried out, and then only if there is a vapour danger.

13. Page 39. Sec. 16, para. 2.—*Add* new sub-para.:—

v. For light respirator, *see* Appendix F.

14. Page 40. Sec. 16, para. 4.—*Add* new sub-para.:—

v. For light respirator, *see* Appendix F.

15. Page 44. Sec. 18, para. 6.—*Add* at the end:—

For light respirator, *see* Appendix F, para. 9.

16. Page 54. Sec. 22, para. 2, sub-para. iii, line 7.—*After* “wiping dry.” *add* “(Gloves should be worn when swabbing with petrol)”.

17. Page 56. Sec. 23, para. 1.—*Add* new sub-para.:—

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vi. Great care will be taken to ensure that no concentration that could even irritate is perceived by civilians. The downwind safety distance will be taken as 500 yards in open country. Phosgene will never be released for training purposes in woods, lanes, defiles, or built-up areas, or in any conditions under which the gas may tend to collect.

18. Page 59. Sec. 24, para. 2.—*Below* line 2 *insert* new sub-para.:—

i. D.M. generators will be used under the supervision of an officer or N.C.O. who has qualified at the Army Gas School. Amdt. 1  
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*Re-number* present sub-paras. i, ii, iii, iv, v as ii, iii, iv, v, vi, respectively.

19. Page 59. Sec. 24, para. 2, sub-para. v.—*Delete* the final sentence and *substitute*:—

D.M. generators will not be used in weather conditions likely to produce freak results—i.e., in light and variable winds of less than 5 m.p.h. Only one generator will be used at a time. If used in places where civilians may be affected, the civilian authorities should be given at least six hours notice of the place, time and total number of generators to be used. Amdt. 1  
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20. Page 60. Sec. 26, para. 1, sub-para. i, line 2.—*For* “officers and N.C.Os.” substitute “officers or N.C.Os”. *For* “Army Gas School” substitute “Canadian Small Arms Schools”.

21. Page 62. Sec. 26.—*Add* new para.:—

3. *Bottles, steel, 1-litre.*—These are bombs, ground, 6-lb. (*see* para. 5 below) from which the explosive has been removed. They may be issued in lieu of pint pots.\* The instructions given above regarding pint pots apply. Amdt. 1  
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*Re-number* present para. 3 as para. 4, and *after* “mustard gas” in line 1 *add* “in pint pots, or bottles, steel, 1-litre”.

*Add* new paras. 5, 6, 7 and 8:—

5. *Bombs, ground, 6-lb.*—The bomb consists of a cylindrical steel container painted grey, weighing 6 lb., and marked with a yellow band. It holds about two pints of mustard gas. Bombs are issued, complete with ejection charges, in boxes of 10 weighing 75 lb. The bomb is fitted with a metal lid, 2 inches deep, which is a good push fit on the body. This lid is fastened to the body by adhesive tape. In the centre of the underside of the lid is a striker for use on the match composition head of the ejection charge. Amdt. 1  
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6. *Care and maintenance of bombs, ground, 6-lb.*—Careful handling, storage in a cool and dry place, and periodical inspection, will ensure that the bombs remain in good condition. Rough handling must be avoided. Weak points are the filling plug and the match composition head. Any loosening of the filling plug will result in a leakage of liquid. Damage to the match composition head will make it difficult or even impossible to ignite the bomb.

\* In Canada, Livens drums containing mustard gas are issued to Corps Training Centres. Units may obtain mustard gas in Bottles, Stoneware, 1-quart.



Storage conditions should comply with Magazine Regulations. Temperatures below the freezing point of the blister gas will not affect the functioning of the bomb, but contamination by the frozen gas is liable to be erratic, and will in any case be largely ineffective until a rise in temperature causes the solid to melt.

Bombs should be inspected for leakage on receipt, monthly, and after any move. In addition to the filling plug, other possible sources of leakage are the welded joints of the bomb body.

7. *Method of firing bombs, ground, 6-lb.*—Remove the lid and place the bomb on its side on the ground with its plugged end downwind. In the centre of the lid will be found a paper-wrapped striker. Remove the paper and, with the striker, rub the match composition head of the ejection charge smartly.

This match composition head will light the safety fuse which, after a delay of 80 to 90 seconds, will ignite the gunpowder. If the striker for any reason becomes unserviceable the match composition head can be lit either with an ordinary match or with a fuze.

When it is necessary to fire several bombs at a time, all bombs should be laid in position before firing begins.

One bomb will contaminate heavily an area of about 10 square yards, the greater part of the pattern being downwind. A larger area will be covered with lighter contamination, the size depending on the speed of the wind.

8. *Safety precautions when firing bombs, ground, 6-lb.*—In normal conditions, it may be taken that unprotected personnel will be safe from injury if they are 300 yards downwind of the bursting bomb, or 100 yards away in any other direction.

In training, personnel concerned may be stationed not less than 100 yards downwind, 50 yards to a flank, or 30 yards upwind, of the bursting bomb. Eyeshields will always be worn, and any liquid contamination on skin, clothing, or equipment must be dealt with in the normal manner.

Re-number present para. 4 as para. 9.

22. Page 63. Sec. 28, para. 1, lines 4 to 5.—*Delete* "and contains:—" and *substitute* :—

Amdt. 1  
July, 1943 Care will be taken that the fencing is kept in good repair. Gates will be shut and secured, and gases locked up, when the compound is not in use. The compound contains:—

23. Page 64. Sec. 28, para. 5, sub-para. i.—*Add* :—

Amdt. 1  
July, 1943 Care will be taken that the fencing is kept in good repair. Gates will be shut and secured, and gases locked up, when the compound is not in use.

24. Page 70. Sec. 36, para. 2, line 3.—*After* "Ground detectors." *insert* "Gloves".

Para. 4, sub-para. iii, line 3.—*After* "petrol" *insert* "(gloves to be worn)".

25. Page 73. *Insert* new Sec. 41 attached hereto.

26. Pages 77 and 78. *Delete* Appendix C and detail and *substitute* new appendix attached hereto.

27. Page 84. *Delete* existing Appendices "F" and "G" and detail (Canadian reprint) and *insert* new Appendix F attached hereto.

28. Page vi. Contents.—*Under* Appendices *delete* Appendix "F", Appendix "G", and all detail thereto, and *insert* :—

Appendix F.—Light respirator..... 84

*By Command of the Army Council,*

*L. Darnoch.*

THE WAR OFFICE,

17th July, 1943.



## 41. Exercises with mustard gas

### 1. Introductory

i. The object of these exercises is to allow personnel to encounter contamination with mustard gas in conditions as nearly as possible resembling those of the field, and so to train them to realize, by familiarity, that they can continue to work and fight in the presence of blister gas, without serious casualties, provided that reasonable precautions are observed.

ii. The degree of contamination proposed, the exposure suggested, and the method proposed in the subsequent exercises are appropriate only to weather conditions in Western European and other temperate climates. They should not, moreover, be carried out in unsuitable conditions (see sub-para. iii). In hot climates on very hot days, all periods of time should be reduced to about one-third of those given. Further allowance may also be necessary if the atmosphere is very hot and humid, when burns will be caused more quickly and will be more severe. When these exercises are to be carried out in climates other than those for which they were designed, the advice of the chemical warfare staff (see sub-para. vi) as to the exact conditions which are appropriate to the climate should first be obtained.

iii. The following days are unsuitable for the exercises:—

When the air temperature is below 40 degrees F.

When snow is lying on the ground.

When there is a ground frost, even if the air temperature is above 40 degrees F.

When the wind speed is greater than 30 m.p.h.

iv. So far as the troops taking part in the exercise are concerned, stringent safety precautions are not required. With reasonable care, casualties are no more likely to occur than in many other exercises, and the few that do occur should be slight. In all cases, however, men's eyesight must be safeguarded and eyeshields will be worn on all occasions when mustard gas is being used when the respirator is not adjusted.

v. So far as civilians are concerned, no risks must be taken. The safety precautions laid down in para. 11 below, coupled with the gas knowledge and common sense of the senior officer present, will ensure this. The local civilian authorities should be informed of ground regularly used for gas exercises, so that they will be aware of the location of the contaminated ground



and be able to take any steps they may think fit to inform civilian medical services.

vi. C.W. staff officers and technical officers (C.W.) are available to advise as to the extent of any risks run; subject to that advice, the direction of the exercises should be left to the unit commander concerned. An officer or N.C.O. qualified at the Army Gas School will be present at the exercises to supervise the bursting of the bombs and their safe disposal, and to advise on prevention of risk to civilians after the exercise.

## **2. Exercise No. 1.—Traversing contaminated ground**

i. Bare ground (or short grass) to be contaminated by 6-lb. ground bombs charged mustard gas. Troops to pick their way through the contamination, avoiding, as far as possible, treading in large splashes.

ii. Bombs to be placed 10 yards apart across wind. Not more than three ground bombs should normally be used at one time.

iii. Eyeshields worn. Respirators adjusted when vapour is smelled or when actually in the contaminated area. (Sec. 21, para. 8.)

iv. After passing through, any free liquid to be swabbed off boots without delay (Sec. 11, para. 9, iv). As a further precaution, boots should not be brought into a room or confined space for 24 hours.

## **3. Exercise No. 2.—Handling contaminated weapons**

i. Troops with small arms, in prone position. A few large drops of mustard gas liquid to be placed on the metal part of the fore-end of weapon. (Woodwork should not be deliberately contaminated.)

ii. Troops act on fire orders for about five minutes and then decontaminate their weapons. (Sec. 12, para. 2.)

## **4. Exercise No. 3.—Remaining in mustard gas vapour**

i. Troops to remain for 30 minutes about 20 yards downwind of the edge of contamination produced by ground bombs. Handling of weapons to be practised during this period.

ii. One bomb per 200 square yards is adequate (see Exercise No. 1 above and Notes 1, 2 and 3 below). The contamination to be put down 30 minutes before the exercise.

iii. For precautions see Sec. 21, para. 8.

## **5. Notes on Exercises Nos. 1, 2, 3**

i. For economy in time and material, the three exercises detailed above are best carried out in the following sequence:—

Put down contamination from three ground bombs. As soon as droplets have settled, carry out Exercise No. 1 (traversing).

Lead men to a position upwind of area, and do Exercise No. 2 (contaminated weapons).

Apply preventative measures against vapour (Sec. 21, para. 8, i). This, with Exercise No. 2, will take about 30 minutes. Then proceed to position about 20 yards downwind for Exercise No. 3 (vapour).

This sequence enables all three exercises to be completed in about one hour, with no waiting. One lot of three ground bombs supplies all the material necessary for both Exercises No. 1 and No. 3.

ii. An area contaminated by three ground bombs is suitable for traversing by any reasonable number. The same area suffices for the vapour exercise for about 50 men.

iii. Personnel not in possession of A/V battle dress will wear denim overalls over ordinary battle dress and will remain in the vapour concentration (Exercise No. 3) for not more than 15 minutes. On completion of the exercise overalls will be removed and not brought into a room or confined space until the smell of the vapour has disappeared; this may take about 24 hours.

**6. Exercises for particular arms.**—Exercises Nos. 1, 2 and 3 are appropriate to all arms, and will by themselves, if properly carried out, give the soldier the general acquaintance with the properties of mustard gas that will enable him to take practical action when he is first faced with it in the field. They do not deal with the special problems of the separate arms. Exercises Nos. 4-7 show how the same principle of introducing real mustard gas may be employed to give the separate arms familiarity with their own problems. They should not be carried out by troops who have not first performed Exercises 1-3.

**7. Exercise No. 4—R.A.C.**—Vehicle should be contaminated with crew inside. Crew to work for a quarter of an hour, then emerge and decontaminate the vehicle. Owing to the extreme difficulty of decontaminating the interior of a tank, the contamination of the outside should be put down with care. Contamination by bursting bomb is not recommended.



8. **Exercise No. 5—R.A.**—Before a mustard gas exercise, parts of gun which are difficult to decontaminate, *e.g.* rubber, seats, canvas, drag ropes, and leather should be removed, or covered as by a cape. A bomb, ground, 6-lb. should be burst sufficiently far upwind to avoid gross contamination. The gun should then be manned, such decontamination as is possible in action carried out, and complete decontamination carried out subsequently.

9. **Exercise No. 6—R.E.**—Working in contaminated areas, and handling and decontaminating contaminated equipment, should be practised.

10. **Exercise No. 7—R.A.M.C. Units and Regimental Stretcher Bearers.**—

i. Stretcher bearers should collect dummy casualties from a contaminated area.

ii. The reception and decontamination of dummy casualties at R.A.P.s. and dressing stations should be practised.

iii. Before a mustard gas exercise the vicinity of a R.A.P. or A.D.S. should be contaminated. Personnel should practise working in mustard gas vapour and should decontaminate a crater upwind of their post.

iv. Decontamination of equipment, especially stretchers, should be practised.

v. Re-clothing of contaminated casualties and personnel should be considered.

11. **Safety precautions.**—

i. The exercises will be carried out on a piece of ground fenced in to cover the contaminated area. Bombs will be fired within the area.

ii. In order to ensure that no civilian is injured or inconvenienced, the area will be so sited that no civilians, civilian dwellings, or public roads are within a radius of 500 yds. of the centre of the fenced area.

iii. When bombs are being fired the precautions detailed in Sec. 26, para. 8, will be observed.

iv. There will be a minimum interval of two minutes after the last bomb has exploded before personnel move to the contaminated area.

v. After the completion of exercises, bomb fragments and canisters and contaminated swabs will be placed in a pit 3 ft. deep, within the fenced area, and liberally covered with dry bleach; the pit will then be filled in. Heavy contamination in the vicinity of bombs will be decontaminated with bleach. Access to the fenced area will be denied and it will be marked with gas warning signs until contact danger has ceased.

APPENDIX C  
SYLLABUS FOR THE GAS TRAINING OF RECRUITS  
A.—INITIAL TRAINING

Amdt. 1  
July, 1943

Lesson No.	Subject
1	War gases (Sec. 5).
2	Gas film (Appendix B).
3	Personal gas equipment (Sec. 6).
4	Description and care of respirator (Sec. 7).
5	Carriage of respirator and respirator drill (Secs. 8 and 9).
6	Carriage of respirator and respirator drill (Secs. 8 and 9).
7	Gas chamber test (Sec. 17).
8	Gas cape and light gas suit (Sec. 10).
9	Personal decontamination (Sec. 11).
10	Personal decontamination (Sec. 11).

B.—FURTHER TRAINING

11	Carriage of respirator and respirator drill (Secs. 8 and 9). <i>See Note 7 below.</i>
12	Carriage of respirator and respirator drill (Secs. 8 and 9). <i>See Note 7 below.</i>
13	Personal decontamination (Sec. 11). <i>See Note 8 below.</i>
14	Gas compound (Sec. 23).
15	Decontamination of rifle and vehicle (Sec. 12).
16	Blister gas detectors and gas warning signs (Sec. 13).
17	Gas compound (Sec. 23).
18	Gas alarm system and gas duties of sentries (Sec. 14).
19	Gas alarm system and gas duties of sentries (Sec. 14).
20	Gas film (Appendix B).
21	Gas tests of elementary training (Sec. 15).
22	Gas tests of elementary training (Sec. 15).

NOTES ON SYLLABUS FOR THE GAS TRAINING OF RECRUITS

1. All lesson periods are of 45 minutes' duration.
2. Lessons will be given in the order shown.
3. The fitting of the respirator to the individual (Sec. 16) should be carried out at the time the respirator is issued. A special period for this is NOT included in the syllabus.
4. Lesson No. 2.—After the talk on war gases (Lesson No. 1) the showing of the gas film is important since its object at this stage is to stimulate interest in the subject and to give the recruit a picture of the lessons which are to follow.



5. Lessons Nos. 5 and 6.—Instruction should be confined to the type of respirator and type of haversack with which the recruit is equipped. The alert position only should be taught, and the recruit should be made proficient in obtaining protection from this position and in testing for gas.

6. Lessons Nos. 9 and 10.—The requirement is twofold. Firstly, part I of personal decontamination should become an instinctive action. Secondly, the recruit should be capable, under the direction of the instructor (acting as the man's junior leader), of carrying out part II of personal decontamination with the cape in the worn position. Personal decontamination part II when the cape is carried in a rolled position should merely be explained by the instructor.

7. Lessons Nos. 11 and 12.—The opportunity should be taken here of teaching such additional positions described in Sec. 8 as may be applicable to the particular arm of the service, and the methods of gaining protection from them.

8. Lesson No. 13.—This provides for additional practice in personal decontamination parts I and II.

9. Lesson No. 14.—During this first visit to the gas compound (normally the unit improvised compound) the recruit will be given an opportunity to recognize phosgene, B.B.C., and mustard gas. This is an essential sequel to the talk on war gases given in Lesson No. 1. In addition to recognizing the smell of mustard gas vapour, the recruit will be shown the appearance of mustard gas liquid on a concrete or metal surface, loose earth, short grass, a sleeve detector, a piece of oiled fabric, a piece of oiled fabric which has been treated with detector paint, a piece of serge clothing, a piece of web equipment, and on an unserviceable dubbed boot. Fresh dry bleach (stale bleach is of no value) will be used to destroy the mustard gas liquid which has been placed on the concrete or metal surface; the recruit will note this method of decontamination and observe that dry bleach in contact with mustard gas liquid causes it to burst into flame.

10. Lesson No. 15.—This lesson will comprise practical decontamination by the recruit of his rifle, under the direction of the instructor, followed by a demonstration of how to decontaminate a vehicle (Sec. 12, para. 8). It is important that an actual vehicle should be used.

11. Lesson No. 17.—During this second visit to the gas compound, the recruit will be shown the appearance of mustard gas liquid on ground detectors (when applied to mustard gas

liquid on the ground), on spray detector paper, and on metal spray detectors which have been treated with detector paint. A drop of mustard gas liquid will be placed on the bare forearm of each recruit. The recruit will then swab it off and apply gas ointment, as in personal decontamination.

Finally, the recruit will be given experience of D.M. in the gas chamber. Careful preparation beforehand, including the setting up of the D.M. concentration in the chamber, is necessary to ensure that all the instruction can be given within the time available.

12. Lessons Nos. 18 and 19.—The instructor will need to take particular care with these lessons as every private soldier will frequently be entrusted with the vital responsibilities of a sentry—vital, since the lives of his comrades will depend on his knowledge and the efficient execution of his duties. For this reason two periods are allotted; this will ensure that ample time is allowed for practice.

13. Lesson No. 20.—The second showing of the gas film occurs just before the recruit is tested in his gas knowledge. Care will therefore be taken to point out the few minor changes in teaching which have taken place since the film was made.

14. Lessons Nos. 21 and 22.—It will be noted that Sec. 15, although written with the object of training instructors, gives the detail of gas T.O.E.T. Two periods are allotted in the syllabus for testing the gas knowledge of the recruit and his efficiency in using his personal gas equipment. The oral, inspection and standard tests should be carried out, but the standard tests should be limited to testing the recruit's ability to:—

- (a) Obtain protection with the respirator from the alert and slung positions.
- (b) Carry out personal decontamination part I.



## APPENDIX F

### LIGHT RESPIRATOR

Amdt. 1  
July, 1943

1. **Description.**—The light respirator has the container directly attached to the facepiece. It is carried in a haversack, so designed that it can be carried either slung on the body or attached to the equipment belt. Details are as follows:—

i. **Facepiece.**—Similar in design to the general service pattern, with strong elastic webbing headharness. The outlet valve is in a metal fitting, complete with guard and check plate. The valve is not changeable, a defective one necessitating replacement of the complete metal fitting. In the front of the outlet valve assembly there is a recess into which the rubber cup of hand microphones is intended to fit; when the microphone is in use care should be taken that the microphone cup is fitted closely into the recess so as to exclude outside noise. A screwed container mount, with inlet valve and pin on the inside, is fitted to the left side of the facepiece for the attachment of the container.

ii. **Container.**—A cylindrical metal drum, with a screwed neck for attachment to the container mount. The outer end is fitted with a metal cover in which is an inlet hole.

iii. **Plugs.**—In order to prevent damage to the container by the entry of water, two cork composition plugs, joined by a length of tape, are provided. One plug is to close the air inlet hole on the container, and the other to close the inlet of the container mount on the inside of the facepiece.

iv. **Haversack.**—Is of stiffened canvas, fitted with a detachable sling and two double hooks for attachment to the belt. Two inside pockets are provided, one for the carriage of eyeshields and the other for the anti-dimming outfit Mark VI. There is also a short length of canvas tape, with a press button, inside the haversack for the retention of the sling and plugs when these are not in use. Two outside pockets are provided, one for the carriage of gas ointment and the other for cotton waste. Sleeve detectors may be carried in the bottom of the haversack. The haversack flap is provided with a quick release tab and eyelet.



- v. Note.—On account of the position of the container on the left side of the facepiece, the standard light respirator should not be issued to left-handed shots.

## 2. Folding of facepiece for insertion in haversack.—

The method is as follows:—

- i. Grasp the container in the right hand, valve guard towards the ground, forehead portion of the facepiece towards the body.
- ii. Place the headharness inside the facepiece.
- iii. Grasp the edge of the facepiece opposite the container in the left hand and bring it as tightly as possible over the container, holding it in position with the thumb of the right hand behind the base of the container and the finger on the edge of the facepiece.
- iv. Place the facepiece in the haversack, forehead portion first, the valve guard towards the quick release tab and eyelet.
- v. Fasten the haversack flap.

3. **Marking.**—The owner's number, rank, and name should be stamped on a fibre disc which should be attached to the container mount, using 15 inches of whipcord.

4. **Carriage of respirator.**—The respirator may be carried in one of three ways, i.e., slung over the shoulder, on the chest, or on the equipment belt. Details are as follows:—

- i. **Slung position.**—When slung over the right shoulder, the haversack is on the left side of the body, quick release tab and eyelet away from the body.
- ii. **Chest position.**—When worn on the chest the sling is shortened until it will just pass over the head, quick release tab and eyelet to the front. The haversack should be high up on the chest, and, if further shortening of the sling is necessary, one of the slides on the sling should be detached and fastened, at a suitable position, to the sling, on the far side of the other slide. The chest position may be found suitable for transport drivers.
- iii. **Belt position.**—When carried on the equipment belt the haversack is secured at the rear by means of the two double hooks. The sling is detached and held inside the haversack by means of the canvas tape and press button.

## 5. Respirator drill.—When protection is required:—

- i. Stop breathing.
- ii. Place helmet to back of head (types of helmet other than the present standard British steel helmet must be removed).
- iii. Open haversack flap.
- iv. Withdraw facepiece.
- v. Remove eyeshield.
- vi. Remove plugs, if fitted.
- vii. Hold facepiece with thumbs under the two middle and lower elastics.
- viii. Dig chin in and bring headharness over head so that centre elastics are approximately horizontal.
- ix. Remove any folds in facepiece or twists in headharness.
- x. Breathe out hard, to clear gas from inside facepiece.
- xi. Replace helmet and adjust chinstrap.
- xii. Place eyeshield in haversack.
- xiii. Close and fasten haversack flap.

## 6. Changing the container.—Proceed as follows:—

- i. Remove the old container by holding the mount in one hand and the container, near the inner end, with the other hand, and unscrew.
- ii. Screw in the new container fully home, using the hands as before, first engaging the threads by a slight anti-clockwise motion. Care must be taken not to cross the threads, and to screw the container well home into the rubber washer.
- iii. Note that once a week the container should be unscrewed and then firmly screwed back again. If this is not done, the container may eventually become difficult to unscrew owing to binding on the rubber washer.

7. **Care of respirator.**—See Sec. 7, para. 10. In addition, attention should be paid to the following:—

- i. The distortion of the facepiece when folded is liable to result in a bad fit, if the respirator is kept undisturbed for long periods in the haversack. The facepiece, therefore, should be frequently removed and worn.



ii. Plugs, when used to prevent water entering the container, should be correctly fitted.

iii. Anti-dimming is important. Since no air channels are provided, good vision depends entirely on the proper use of the anti-dimming cloth.

8. **Sizes available.**—The respirator is available in three sizes—small, normal, large.

9. **Fitting of respirator.**—See Sec. 16. When testing for gas tightness, the air is prevented from entering the container by placing the palm of the hand firmly over the inlet hole in the metal cover, taking care not to move the respirator on the face.

10. **Inspection of respirator.**—See Sec. 18. Particular attention should be given to the following:—

i. Headharness must be strong enough to support the weight of the container fitted to the side of the facepiece.

ii. The facepiece should be examined for punctures and tears.

iii. The outlet valve assembly should be examined carefully to see that the holder is properly attached to the facepiece and that the valve is functioning correctly.

iv. The container mount must be securely attached. If the inlet valve shows signs of curling up it should be removed from the pin and replaced the opposite way up. If the valve has become stiff it should be changed.

v. The container must be screwed well home in the mount.

vi. The respirator must be complete with a serviceable anti-dimming outfit Mark VI, eyeshields, ointment, and cotton waste.