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CIVIL DEFENCE

Handbook No. 3

WARDENS' HANDBOOK

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WARDENS' HANDBOOK.

FOREWORD.

THIS Handbook is intended to supply E.P.S. Wardens with up-to-date advice on Civil Defence. It does not pretend to deal exhaustively with all situations that might arise, nor can it encompass the detailed local information which must vary from place to place. It emphasizes the chief features which are of general application everywhere. Each E.P.S. can add for itself relevant particulars on the special problems of its own locality. There may be areas where local conditions or past practice will make it advisable to modify slightly the instructions and procedures set out here, but the standards recommended in this booklet should not be altered without very strong reasons.

In an emergency the Wardens wield important powers allotted to them by law, and people look to them for help. Wardens must therefore first know their job before they tell others what to do. Their organization spreads through the community more extensively, and their contact with the public is closer, than that of any other unit. To create confidence in the arrangements for Civil Defence, Wardens should avoid indiscriminate grumbling about real or imagined shortcomings, but should apply themselves to the best of their ability to the task they are allotted. The Wardens are the nerve system of the E.P.S. It is because

of the position they occupy that the Handbook has been written. Though concentrating on the duties of Wardens, it also refers to the functions of other units, whose services the Wardens call into play. The specialized training of personnel within each distinct unit must be supplemented by a general knowledge about the whole set-up, and the study of this booklet will materially assist in this direction.

The Handbook has been prepared in a form mainly applicable to the larger centres where the numbers and distribution of services are greatest. For smaller urban areas and rural districts some modifications will be required. The E.P.S. should use this material in conjunction with Handbook No. 1 on "Incendiary Bombs and Fire Precautions" and Handbook No. 2 on "War Gases" (which principally concerns the larger centres).

The information given here may be quoted by newspapers and other organizations that wish to acquaint the public with problems of Civil Defence.

Fire, flood, epidemic, and earthquake can all create the conditions under which the E.P.S. will operate. But nowadays the problems of war and the threat of enemy attack are our first consideration. In the hope that this booklet will assist you in your Civil Defence duties, I commend it for your earnest study and reference.

D. Wilson.

Minister of Civil Defence.

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SECTION No. 1.

FUNCTIONS AND ORGANIZATION OF THE WARDENS' UNIT.

1. Purpose of the Emergency Precautions Service (E.P.S.).—Constituted by the Emergency Reserve Corps Regulations, the E.P.S. is a civilian organization for the protection of the home front. Its aim is to mitigate human suffering and to repair material damage. The E.P.S. exists to ensure the public safety and to maintain in working order all essential supplies and services.

2. General Set-up.—All Wardens must know thoroughly the set-up of the Civil Defence Organization. This is illustrated by Fig. 1, which shows the channels of communication and also how Wardens fit into the general picture. Pages 48–49.

3. Functions of Units.—Subject to any changes authorized by the Central Committee, the functions of the various units, other than the Wardens' Unit, are—

(*a*) The Headquarters Unit consists of the administrative officers and others primarily concerned with the operation of the services as a whole:

(*b*) The Medical Unit attends to the collection and transport of casualties and to the provision of medical services at first-aid posts and dressing-stations:

(*c*) The Supply Unit acquires and distributes food, clothing, equipment, or supplies, and provides any technical or other requirements of other units:

(*d*) The Law and Order Unit, under the control of the senior officer of police in the locality, assists the Police Force in the maintenance of law and order and the control of traffic:

(*e*) The Communications Unit assists the Post and Telegraph Department to maintain communications, and provides despatch riders, runners, or radio operators:

(*f*) The Information Unit collects facts, distributes news to the public, and keeps a record of events:

(*g*) The Works Unit maintains public services, such as water-supply, drainage, sanitation, electricity, gas, roads, and streets. It controls the construction of shelters and supplies Demolition or Rescue Squads. Gas Decontamination Squads and Technical Committees for the Denial of Resources may also be attached to the Works Unit:

(*h*) The Transport Unit provides drivers, mechanics, and others to help transport facilities:

(*i*) The Evacuation Unit arranges to shift people from danger zones and to organize their billeting in safer areas:

(*j*) The Accommodation Unit supplies food and temporary shelter for those who are rendered homeless or are otherwise in need of assistance. This unit also supplies refreshments for workers in other units:

(*k*) The Fire Unit assists the ordinary Fire Brigade services:

(*l*) The Lighting Unit helps to enforce the lighting restrictions. This unit is often combined with the Wardens' Unit:

(*m*) The Harbour Unit protects wharves and other installations at our ports and assists in evacuation arrangements where necessary.

4. Co-operation between Units.—The Wardens' Unit must maintain close contact with many other units, particularly the Medical, Fire, Works, Law and Order, Communications, Information, and Transport Units. Wardens should be familiar with the personnel of such units in their districts. Closest co-operation should be maintained throughout. Wardens must learn how they can best help the members of other units in carrying out their functions. Likewise the other units must do all they can to help the Wardens and to assist in equipping the Wardens' Posts.

5. Government Emergency Precautions Services.—Wardens should also be familiar with the functions of the various Government

Emergency Precautions Services which have been set up on a national basis to act during an emergency. These are—

(*a*) The Hospitals E.P.S., which, under the various Hospital Boards, controls the hospitals throughout the country:

(*b*) The Public Health E.P.S., which attends to the purity of milk, water, and food supplies, to sanitation, to control of infectious disease, and so on:

(*c*) The Oil Industry E.P.S., which protects bulk oil installations from damage and ensures the most effective operation of the plant and equipment during emergency conditions:

(*d*) and (*e*) The Railways E.P.S. and the National Road Transport E.P.S., whose functions are to organize the essential rail and long-distance road transport services:

(*f*) The Broadcasting E.P.S., which will control all broadcasting, subject to any special directions which may be issued by the Government:

(*g*) The Communications E.P.S., which will control all forms of communications involving the use of technical equipment:

(*h*) The Electricity Supply E.P.S., which will co-ordinate and regulate electricity supplies throughout the Dominion:

(*i*) The Mental Hospitals E.P.S., which looks after the safety of mental-hospitals patients.

6. Organization of Services.—(*a*) The general duties of the E.P.S. are reporting and action. The reporting side notifies incidents (including casualties) and damage; the action side lessens the effects of such damage, prevents it spreading, and repairs public utilities.

(*b*) The services of the various units are either local or central. Local services from their nature must be distributed throughout the area so as to deal quickly on the spot with a local emergency—for example, first-aid posts, dressing-stations, canteens, &c. Central services are those controlled from established headquarters—for example, ambulances, fire-brigades, hospitals, gas detection and decontamination, rescue and demolition, and the repair of streets and public utilities, &c. These operate over a wider area than

the local services. Police protection shares the character of both types. The police on duty in each area perform the local function while the police at headquarters attend to the central function.

7. Districts.—For local reporting and action to be effective the whole area must be divided into districts, each having its operational centre known as the Wardens' Post. Similarly, in order to organize central reporting and action, a Control Centre must be established. Just as the Wardens' Post is the link between local reporting and local action, so the Control Centre connects up local reporting and central action. The Control Centre is the king-pin of the whole organization and does more than provide central services. Receiving reports from all districts, it alone can gauge the general situation. It can transfer local services to districts where more assistance is required. In short, it can swing the whole organization to the aid of any particular area.

8. Powers of Wardens.—To the Wardens' Unit the regulations assign the general function of preventing panic or confusion in any emergency and of assisting the several special units. The Central Committee may also allot to the Wardens' Unit additional special duties and can give very wide powers to specially authorized Wardens. A Warden who holds written evidence of his authority so to act may enter premises by day or night to ascertain whether any relevant regulations are being obeyed. In the case of private houses, however, the occupier is first to be given the opportunity of proving the adequacy of the precautions he has taken. Failure to supply information to an authorized Warden or to obey his requirements may involve a prosecution.

9. Control of Streets.—All Wardens have authority during E.P.S. trials or in an emergency to direct the movement of pedestrians and others. Refusal to obey such instructions constitutes an offence. Wardens should therefore know which persons are entitled to proceed uninterrupted. Apart from the authorized local vehicle stickers, &c., they should also respect the traffic permits illustrated below, and should know the special arm-bands and steel helmet markings of those persons attached to Civil Defence National Headquarters.

N. Z.

CIVIL DEFENCE.

NATIONAL TRAFFIC PERMIT.

FIGURE 2.
(Black lettering on salmon background.)

CIVIL DEFENCE.

INTER-DISTRICT TRAFFIC PERMIT.

(FIGURE 3.
(Black lettering on pink background.)

N.Z. GOVT.

E·P·S

(NAME OF GOVERNMENT E.P.S.)

Vehicle No._____

FIGURE 4.—Govt. E.P.S. vehicle sticker.
(Red Crown and blue lettering on white background.)

FIGURE 5.—Wording on armbands of Regional Commissioners, District Controllers, and other Civil Defence Headquarters staff.
(Gold lettering on blue background.)

FIGURE 6.—Steel helmet markings of Civil Defence Headquarters staff.
(Red and gold Crown with black lettering on cream background.)

10. Internal Organization of the Wardens' Unit.—The executive head of the Wardens' Unit is the Chief Warden, who has one or more deputies. Under him and his deputies come the District Wardens. The number of District Wardens will depend on local conditions. Smaller centres will not need subdivisions as elaborate as more thickly populated areas, but in the larger centres one District Warden could be appointed for each group of 5,000 to 8,000 persons. The area of each District Warden is divided into blocks, ten being a convenient number.* In charge of each block is a Block Warden responsible to the District Warden. Under each Block Warden are Street Wardens, whose principal duties will be confined to a subdivision of the block. Street Wardens should, however, know all parts of the block intimately. They will usually work in pairs. Two of the Block Wardens under each District Warden should be designated as his first and second deputies; so should two of the Street Wardens under each Block Warden. All schools, institutions, and other buildings where a large number of persons live or work require Building Wardens to care for the safety of the occupants. Each public shelter needs a Shelter Warden to guard the welfare of the public who may be taking refuge there.

11. Responsibilities of District Wardens.—Subject to the directions of the Chief Warden, each District Warden is responsible for—

(*a*) Training and advising the Wardens under him:
(*b*) Allotting them to posts:
(*c*) Arranging rotas of duty and keeping a complete and up-to-date roll:
(*d*) Replacing wardens in cases of sickness, &c.:
(*e*) Reporting incidents to the Control Centre:
(*f*) Applying for Central Services when required:
(*g*) Co-ordinating the work of all units in his district;

* Local conditions may occasionally require extra intermediate subdivisions.

In order to carry out these functions he should—

(*h*) Have a personal knowledge of every Warden under him:

(*i*) Be so familiar with every part of his district that he can find his way about and instruct others how to do so either by day or by night or during a blackout. The only way to obtain this knowledge is to walk every part of the district:

(*j*) Know what alternative routes can be used in case of street blockage:

(*k*) Ensure that his assistants and also the transport drivers, despatch riders, runners, and mobile first-aid parties operating in the district have an equally thorough knowledge.

12. Responsibilities of Block Wardens.—Subject to the control of his District Warden, each Block Warden is in charge of the Street, Building, School, and Shelter Wardens in his block and is responsible for their organization, discipline, and training. He is the channel through which incidents in his block are reported to the Warden's Post. Clauses (*h*) to (*k*) above apply especially to Block Wardens.

13. Responsibilities of Street Wardens.—A continuous duty of Street Wardens, both in and before an emergency, is to see that the lighting restrictions are observed. When an alarm sounds their immediate duty is to clear the streets, and then report any incidents in their area and assist the services which arrive to deal with them. In order to do these things they should know their area at least as thoroughly as the average person knows his own house. They should note particularly—

(*a*) The position of gas-mains, electricity cables, telephone cables, telephone wires, water-mains, sewerage-pipes, &c. A map showing these details will be an advantage:

(*b*) Any places of special danger, such as petrol-stores, timber-yards, or other premises containing readily combustible materials:

(*c*) The telephones in their area which they can use if necessary.

14. Wardens' Register.—Street Wardens overseas have saved many lives by keeping an accurate register of every building in their patrol areas and by getting to know the usual habits of the people who live there. By this means they have helped rescue parties to find in time persons trapped beneath heaps of rubble. Such a register should contain—

(1) Name of street and house number:

(2) Description of house, including position of bedrooms, living-room(s), kitchen, entrances, &c.: number of bedrooms not usually occupied; and number of spare beds:

(3) Name of each occupier and particulars of—

(*a*) Those having immediate E.P.S., Home Guard, or other emergency duties;

(*b*) Any aged, infirm, or invalid persons who may need assistance;

(*c*) The names and addresses of relatives or friends who should be informed of casualties:

(4) Particulars of the room or rooms prepared for a complete blackout:

(5) Position of emergency shelter or slit trench:

(6) Position of outside water taps, and especially the tap which shuts off the supply from the main:

(7) Particulars of equipment available and its condition, including—

(*a*) Garden hose (including length);

(*b*) Ladders (including length);

(*c*) Fire equipment (sand, scoop, shovel, and water-buckets);

(*d*) Other tools such as picks, shovels, crowbars, &c.:

(8) Particulars of any garage or other shed, mentioning the condition of the floor and its suitability for emergency sleeping-accommodation.

15. Responsibilities of Building Wardens.—Each Building Warden must—

(*a*) Know the persons who normally live and work in the building, and see that they are familiar with the precautions being taken for their safety:

(*b*) Know intimately every part of the building, and in particular the safest portions for people to be in during a raid:

(*c*) Know the position of the nearest available public shelter or other place of safety, if there is no shelter provided in the building:

(*d*) Ensure (in co-operation with the Building (Fire) Organizer, if any) that all incendiary bombs endangering the building are promptly dealt with:

(*e*) Be able to get in touch immediately with the nearest Street or Block Warden if the need arises:

(*f*) See that all lights are either switched off or properly blacked out if an emergency occurs after dark:

(*g*) Generally do everything possible for the safety of those under his charge.

16. Responsibilities of School Wardens.—School Wardens have all the responsibilities of Building Wardens, but they should also—

(*a*) Know where each child's home is, and, if it is some distance away, know of some other home to which the child can be sent in case of necessity:

(*b*) Work out the speediest and safest routes by which each child may reach his home:

(*c*) Give regular instructions and arrange regular practices so that there will be no confusion and so that the children will be quite sure what to do if an alarm goes while they are at school or unescorted in the streets:

(*d*) If there is no time to disperse, see that all the children are taken to shelter or some other place of safety:

(*e*) Once the safety of the children has been assured, make themselves available for other E.P.S. duties if not required as fire guards.

17. Responsibilities of Shelter Wardens.—A Shelter Warden's duties are to—

(*a*) Open up the shelter and take charge during a raid:

(*b*) Prevent overcrowding:

(*c*) Maintain order amongst the occupants:

(*d*) Maintain morale; encourage games, singing, &c.:

(*e*) Prevent smoking and the use of any lighting which consumes an excessive amount of oxygen, or unduly raises the temperature:

(*f*) Keep out firearms or other dangerous articles:

(*g*) See that litter is put in the proper receptacle:

(*h*) Prevent abuse of the sanitary arrangements:

(*i*) Ensure that all the shelter equipment is looked after:

(*j*) Keep ventilators and doors open during a raid, and any ventilating-plants in operation:

(*k*) Prevent interference with notice boards or the lighting, heating, ventilation, or other safety arrangements:

(*l*) Keep the emergency lighting system in good order. (The length of time it is used on each occasion should be noted and reported):

(*m*) Attend minor injuries. Those seriously injured should be treated by persons trained in first aid and, if necessary, sent to the nearest first-aid post:

(*n*) Use his discretion to evacuate the shelter in cases of extreme danger from fire, flooding, &c. (In England some shelters have had to be evacuated even in the middle of a raid):

(*o*) Prevent people from leaving the shelter until the "all clear" signal has been given, or, after a gas warning, until the gas has dispersed:

(*p*) See that the shelter is properly cleaned out after use and that earth closet cans, &c., are placed outside for attention by the sanitary authorities:

(*q*) Lock the shelter when he leaves.

18. Responsibilities of Farm Wardens.—Farm Wardens will be required in country districts to assist in carrying on essential farm work under emergency conditions. Local circumstances will have a considerable bearing upon the scope of their activities, but the following action will often be necessary :—

(*a*) Taking a census of the live-stock on each farm, including particulars of all registered brands. Owners of unbranded stock should be urged to brand them as soon as possible :

(*b*) Ascertaining the labour position on each farm and how it would be effected by mobilization of the Home Guard. The pooling of the labour resources of adjoining farms may be necessary in order to minimize interruption to essential farm work :

(*c*) Making emergency arrangements for any farms which would be cut off from water-supplies if roads or other means of access are blocked :

(*d*) Recording suitable mobile machinery or power units such as tractors and arranging for them to be adapted or harnessed to drive milking-plant should electric power be interrupted. Plans should also be considered for assembling several herds at central milking-points :

(*e*) Guarding against the damage which may be caused by the stampeding of horses or cattle. The local veterinary officer may be able to give helpful advice. If an emergency occurs, stock should, if possible, be moved out of paddocks fronting the more important roads :

(*f*) Helping to compile a register of accommodation available for evacuees.

SECTION No. 2.

WARDENS' POST AND WARDENS' EQUIPMENT.

19. The Wardens' Post is the place where the Wardens of a given area assemble as required. It should, if possible, be in a prominent but protected position giving a clear view to the Warden on look-out and easily accessible to members of the public. To this post Wardens report any damage or other incidents in the block. The post should be large enough to provide ample space for available equipment, and should afford protection against blast and splinters from high-explosive bombs.

20. Number of Posts.—About ten posts to the square mile should meet the requirements of densely populated areas. In other areas and in the outlying portions of towns fewer posts will be needed. There should be at least one post for each District Warden's area. In case the main Wardens' Post should be damaged, there should be an alternative post in each district with a minimum of essential equipment and suitable for occupation at short notice. The headquarters of some of the Block Wardens can also be organized as sub-posts for communications and storage.

21. Suitable Premises for a Wardens' Post would be a school, a hall, a garage, or the house or shop of one of the Wardens. Posts should have telephones installed wherever possible and full arrangements should be made for immediate occupation in an emergency. In centres of fewer than, say, 1,500 inhabitants one post would suffice as a rallying-point for all E.P.S. members, and Wardens could operate mainly from their own homes. Under these arrangements the Wardens will be spread over the area.

22. Manning the Post.—The Wardens' Post must always be kept manned during an emergency period and at any other times as directed so that reports can be received and messages despatched. One of the Wardens belonging to each post will be the senior Warden responsible for manning it and supervising the other Wardens. A Warden's first duty is to his area as a whole, even before his duty to help individuals. **When a first-aid or rescue party or the**

Police arrive, they expect to find a Warden on the spot to guide them and tell them what has happened. If all the Wardens are scattered about serious delay may result when the various services arrive.

23. Opening the Post.—When a senior Warden goes on duty at his post he should check over the equipment and test the telephone system. As his men assemble he should allocate them to their duties. He should see that every portion of his district is properly patrolled. It is his function to ascertain the working strength of the various units on duty in his area and to transmit this information to the Control Centre. Supplementary reports should be made from time to time. All information must be sent in quickly so that Headquarters will know what personnel are available in the various districts. When a Warden relieves another he should take over all equipment, signing in the Warden's log that he is satisfied everything is in order. He must receive from outgoing Wardens any instructions issued during their past tour of duty.

24. Closing the Post.—The Control Centre will decide when the post is to be closed. All Wardens must remain on duty until instructed to sign off. If there is bomb damage in the area the Wardens may have work to do for some time until all casualties have been removed and all fires put out. They must in any case wait while there is gas about unless they are relieved by instructions from Headquarters. Every Warden when released from duty must return to the Wardens' Post any equipment supplied to him there. If he thinks his clothing may be contaminated with blister gas he should first go to the nearest gas-cleansing station for attention.

25. Equipment for Post.—The ideal Wardens' Post in an important area should, if possible, have the following equipment:—

(*a*) First-aid box or kit:
(*b*) Warden's Log. (This is a diary for keeping a continuous record of all events):
(*c*) Report books, forms, stationery, pencils, telephone, and other office equipment:
(*d*) Fire-fighting equipment:
(*e*) Electric torches and spares, with discs, &c., to restrict beams:

(*f*) Rope, hurricane lamps, danger boards, &c., for roping off dangerous or contaminated areas:
(*g*) Whistles:
(*h*) Anti-gas equipment, including hand-rattles and hand-bells:
(*i*) A light car or truck should also be handy during an emergency. **The approaches to the Post must not be blocked with parked cars.**

26. Personal Equipment of Wardens.—Part of the Warden's job is not to be "caught on the hop." He must at all times have his arm-band and identification card with him and should always keep ready his patrolling clothes and gear, his torch, the boots or shoes he intends to wear on patrol, and such food as chocolate, biscuits, &c. These should be placed where he can reach them so that he can equip himself, if necessary in the dark, within three or four minutes.

27. Steel Helmets.—The New-Zealand-made steel helmets are of three sizes only. An adjustable lining is therefore provided, and paper, &c., may, if necessary, be stuffed inside the band to ensure a good fit. The helmet is in a comfortable position when the brim at the front is about level with the eyebrows. Do not let the steel touch your head. Always wear your helmet during an emergency and when on duty at other times.

28. Respirators (Gas Masks).—The civilian respirators issued to Wardens in the larger centres remain Government property and must be properly cared for. They will be difficult to replace, and therefore any loss or damage due to negligence must be paid for by the Warden responsible. When distributed, every respirator must be properly fitted and adjusted to the wearer by a qualified person. This is most important. The respirator must fit well enough to keep out gas, no matter what the wearer is doing. While it is on issue to you **no one else must use it.**

29. How to fit a Civilian-type Respirator.—(*a*) Select the most convenient size of the three that are available. Most men take a LARGE size, many women a MEDIUM, and a few persons a SMALL size. If in doubt between two sizes, try the smaller.

(*b*) Sit the wearer down, stand behind him, and remove his spectacles, if any. (If spectacles are not removed, it will be difficult to ensure gas-tightness and the spectacles are likely to be damaged.)

(*c*) Slacken the bands of the head harness and fold it back outside the facepiece. Grip the facepiece with hands on either side of the chin hollow, thumbs inward. Draw over the chin and slide the harness over the head.

(*d*) Adjust the harness to fit firmly, with the buckle at the back of the head, just below the crown, and the two side straps roughly horizontal. See that the facepiece fits smoothly on the skin with no bulges or folds.

(*e*) Fix the straps securely with three safety-pins and see that the fit remains secure when the wearer shakes his head. In a good fit the eyes will appear approximately in the middle of the eyepiece.

(*f*) Finally test for gas-tightness. Grasp the container firmly in one hand, and with the other hand hold the flat surface of the carton squarely over the inlet, asking the wearer to breathe in. If the sides of the respirator are sucked against the cheeks and no air enters, the fit is good. **Remember that gas-tightness is the most important consideration.** The wearer's safety depends on this.

30. How to look after Your Respirator :—

(1) Make a small waterproof haversack or carrier to fit round the carton in which it is issued. If water gets into the charcoal container, the respirator may not give full protection :
(2) Keep it handy in a cool, dry, clean place, away from strong light :
(3) Do not hang or carry it by the head-straps :
(4) Do not bend or crack the eyepiece :
(5) Always place the facepiece quite flat in the carton :
(6) Put nothing but the respirator in the carton or haversack :
(7) Do not dent or damage the charcoal container :
(8) Put your mask on once a week. Regular handling and wearing prolong the life of the rubber :
(9) After use, thoroughly dry off perspiration with a soft cloth :

(10) If used in the rain, thoroughly wipe the facepiece dry and leave in a cool draughty place before putting away. **Never** dry before a fire, radiator, &c. :
(11) If the eyepiece gets cloudy, smear the inside gently with a thin even film of good toilet soap (**not** carbolic) :
(12) Keep your respirator wholesome by sponging inside the facepiece once a month with luke-warm soapy water, taking care not to wet the container. Wipe out with fresh water, and dry as above. The E.P.S. Gas Unit will arrange for all respirators on issue to be disinfected twice **a year** :
(13) Examine your respirator at intervals. See that the eyepiece, rubber, stitching, &c., are sound ; that the valve is working ; that the container is not dented or perforated. If you can breathe in **gently** when a card is blocking the inlet of the container, there is probably a leak round the edge of the facepiece :
(14) Report at once any damage to your respirator. Your life may depend on its efficiency :
(15) Put your name and address on your carton or carrier :
(16) If you find a respirator, take it at once to the E.P.S. Headquarters.

SECTION No. 3.

SOME THINGS WARDENS MUST KNOW.

31. Enrolment.—All male British subjects between the ages of eighteen and sixty-six, living in New Zealand, must enrol in the Emergency Reserve Corps. The following, however, are exempt: Men **actively attached** to any of His Majesty's forces, Judges, Magistrates, policemen, merchant seamen, invalidity pensioners, and inmates of certain institutions.

32. Conditions of Service.—(*a*) **Term of Membership:** A member of the E.P.S. continues to be a member until six months after the present war unless he is duly discharged or transferred to another branch of the Emergency Reserve Corps.

(*b*) **Identification:** When a Warden is posted to his unit and assigned any duties he receives an identification card or certificate.

(*c*) **Duties:** When an alarm is sounded Wardens who are instructed to attend at their posts must go there immediately. If they cannot do this, they should try to report at some convenient post and carry out instructions.

(*d*) **Absence from District:** Whenever any Warden will be absent from his district for more than sixteen hours he must inform his District or other Senior Warden and, if required, give particulars of his intended movements.

(*e*) **Changes of Address:** Any Warden who changes his residence or place of employment must notify it within forty-eight hours so that transfers may be arranged, if necessary. If transferred, he must report to the Senior Warden of the area to which he is assigned. Upon his transfer or discharge he must return or account for all E.P.S. equipment on issue to him.

(*f*) **Arm-bands:** A Warden must carry his arm-band with him wherever he goes and always wear it while on duty. By it the public recognize him and his work. In one country the misuse of arm-bands during an invasion helped the enemy. Precautions against loss

should therefore be taken. The Warden's name and address must be printed indelibly upon the **outside** of his arm-band (so that no one else will wear it), and on the inside should be the words "Please return to address hereon." A charge of 5s. is made for replacing an arm-band unless the owner is not to blame for the loss.

33. Police Powers.—(*a*) No members of the E.P.S., except those who belong to the Law and Order Unit, possess any police powers. Wardens cannot arrest any one or use methods of physical coercion. They can, however, make a threat of prosecution to any one who obstructs them. If **immediate** compliance is essential, they should call for police assistance. Only if this cannot be done and if there is great urgency are Wardens entitled to act on their own responsibility. So long as they do this in good faith and with reasonable justification they will be protected from liability.

(*b*) **Prevention of Looting.**—Wardens, like every other citizen, have a legal right at common law to arrest a person (1) who commits a felony (such as looting, robbery, or house-breaking) in their presence, or (2) whom they reasonably believe to have committed a felony they **know** has been committed. In the latter case they must be very careful, for they may be sued for damages if their action was not justified. Only between 9 p.m. and 6 a.m. may they arrest a person **attempting** to loot or steal; but a policeman may do so at any time. Wherever possible, therefore, Wardens should get police help.

34. Offences.—Any person, whether a Warden or a member of the public, commits an offence against the regulations—

(*a*) By disobeying any proper order or instructions; or

(*b*) By obstructing any one else in the discharge of his duties.

For such offences a Magistrate may impose a fine of up to £50 or three months' imprisonment. **Alternatively,** the Chief Warden may fine a Warden up to £2 for—

(*a*) Not attending for duty when required:

(*b*) Disobeying lawful instructions:

(*c*) Obstructing others in their duties:

(*d*) Being under the influence of liquor while on duty:

(*e*) Unseemly behaviour or using improper language while on duty:

(*f*) Not wearing his arm-band on duty, or disposing of it to another person:

(*g*) Not fulfilling duties imposed upon him by the regulations.

35. Help from Bystanders.—In an emergency any E.P.S. member may summon help from **any** bystander, who must give assistance as required. Failure to do this is an offence.

36. Compensation Provisions.—If a member of the E.P.S. is injured while on duty, or while going to duty after the alarm has sounded, he is entitled to compensation not exceeding the following scale:—

(*a*) In the case of death of member—
- (1) Wife with no children, £78 per annum:
- (2) Wife with child or children, £104 per annum:
- (3) Each child if one parent is alive, £26 per annum:
- (4) Each child, if no parent is alive, £39 per annum.

(*b*) In the case of total disability of member—
- (1) Unmarried member under twenty-one, £52 per annum:
- (2) Any other member, £104 per annum:
- (3) To wife of member, £52 per annum:
- (4) To each child of member, £26 per annum.

(*c*) In the case of partial disability, the rates are less than in (*b*) above, and vary with the extent of the disability.*

Application for these benefits, supported by medical evidence, &c., and a report from a responsible E.P.S. member, should be made through the nearest office of the Social Security Department. The War Pensions Board may also in certain circumstances grant an economic pension up to £78 per annum.

* The Finance Act (No. 4), 1940, Part I.

37. Warning-signals.—All Wardens must know the warning-signals—

(*a*) **The State of Emergency Signal (or Alarm)** is sounded by means of sirens, steam whistles, &c. It lasts for two minutes in a succession of **intermittent** blasts of ten seconds' duration, separated by silent periods of five seconds. When this signal has sounded Wardens should make for their posts immediately, taking their equipment with them:

(*b*) **The Local Gas Warning Signal** is given by Wardens with a hand-rattle, which is only used to indicate the presence of gas in the locality. Any Warden who has detected gas in his area sounds the rattle in the streets. Neighbouring Wardens down-wind, but not up-wind, then go to the boundary of their areas toward the sound and, if they detect the travel of the gas, sound their warnings also. The warning thus accompanies the spread of the gas, but does not extend beyond the range of danger.

(*c*) **The Local Signal for the End of Gas Danger** is the ringing of hand-bells by the Wardens. This may occur before the "all clear" signal is sounded.

(*d*) **The Incendiary Bomb Signal,** consisting of SHORT sharp blasts of the Warden's whistle, is given whenever incendiary bombs fall in the area. Nearby persons who hear it should immediately be on the alert to deal with any incendiaries. (This signal should not be confused with the Warden's call for help which consists of LONG blasts.)

(*e*) **The "All Clear" Signal** is a continuous blast of two minutes' duration at a steady pitch from the sirens, whistles, &c., which sounded the state of emergency signal. Hand-bells may also be used to reinforce it unless gas is still about.

(NOTE.—The Wardens' Post must never be closed, nor may personnel be dismissed, until instructions are received from the Control Centre.)

SECTION No. 4.

MAINTAINING MORALE.

38. Initiative.—In dealing with unusual incidents or circumstances the Warden must rely on his own judgment and initiative. It is obviously impossible to forecast the thousand and one twists which an explosive bomb can give to an incident, but whatever happens the Warden should remember to do his own job first and then give what help he can to others. Wardens' duties go further than reporting damage. They guide the various services to the scene of the incident; they draw attention to any special features of the area; they advise the position of water stop-cocks; and they gather together auxiliary tools (picks, axes, shovels, &c.) from neighbouring premises. In a crisis Wardens can themselves save people from partially demolished houses; and it will be a matter of plain duty to help overworked rescue or demolition squads.

39. Panic.—The risk of panic has been given far too much publicity. Mass hysteria and panic do not easily occur in English-speaking communities. The behaviour of people in Great Britain has confirmed this. The Warden should not say to the people in his charge, "Keep cool," "Do not panic." That at once suggests the happening of something terrible against which they may not have the courage to stand. By his own quiet self-control and efficient behaviour the Warden will strengthen the mental calm and courage of the civiljans.

40. Winning Confidence.—Wardens can control the people in their area by winning their respect. During the preparatory stage people will have asked, more or less unconsciously, "Is our Warden reliable? Is he level-headed? Has his advice been good? Has he already won our confidence? Will we all at a pinch obey his instructions? Does he know his duty? Is he competent to instruct us?" A Warden will not win respect and confidence by being officious, but if he talks along the right lines he will get co-operation. His warrant-card should be used as an introduction

and not as a baton. One confidence-winning point is to be quite certain of his ground. If, for example, a householder disputes the meaning of some part of the lighting regulations, the Warden should not be dogmatic unless he is absolutely sure he is correct. It is better to say that he will get a ruling on the matter, so that next time there will be no doubt. If this is done, most people will comply in a friendly spirit.

41. Firmness also wins respect. Nobody can have confidence in a Warden who is indecisive, or who lacks the will to press a point home. Wardens must spread helpful information through their area. Their answers to the questions of the timid and the doubtful should be confident and truthful, but not foolishly optimistic. They should not offer reassurances which will be disproved by the facts. They should use the right approach, but back it up by efficient performance.

42. An excellent example of winning confidence and maintaining morale among a large audience was given by the management of a London theatre when announcing an air raid. When the alarm went they flashed on the screen: "OUR BOYS ARE GETTING SOME MORE JERRIES—THERE IS A RAID ON." It did not alter the fact that a raid was on, but the angle of approach—"Our boys are doing something"—was infinitely better than to announce baldly that the Nazis were doing something.

43. The air-raid siren does not tell you that a period of danger has begun. It tells you to prepare yourself in case you happen, for a short while, to be in danger. Nowhere in this war have air raids broken civilian courage. Much of the tension which the public feels prior to enemy action is cleared away by an actual bombing. In order to keep up their morale, civilians should be encouraged to take part in more family, group, and community activities; to get a definite emergency job to do and practise it; to avoid overfatigue, and particularly undernourishment; to avoid synthetic morale-builders—like fatalism, "forgetting the war," or "getting away from it all."

44. Finally, if some go panicky in spite of all the Warden can do, they must be isolated from the others and given medical care.

SECTION No. 5.

REPORTING INCIDENTS.

45. The Wardens' Unit is the chief source of information for the E.P.S. Much of the Wardens' training-time, therefore, must be devoted to practice in reporting incidents. Human life may depend largely on the preliminary reports that Wardens submit. Reports must be accurate, brief, simple. Incidents may be reported also by fire guards, by personnel in other services, or by any private citizen. However, extra care is needed in accepting and transmitting messages from all and sundry. Ten individual untrained witnesses will almost invariably give ten different versions of the same event.

46. Report Forms.—A good report form will—

(*a*) Be bound into a pad of a convenient pocket size:

(*b*) Have headings which suggest in proper sequence all the information needed:

(*c*) Call for as little writing as possible. It is easier and quicker to put an X in a square alongside a word which is applicable than to write it out in full, and it is more accurate to use an X than to cross out words:

(*d*) Be in quadruplicate; one copy for the Wardens' Post, one for the Fire Service, one for the First-aid Post, and one to remain in the pad:

(*e*) Be suitably carbon-backed, to avoid the awkward system of inserting carbons.

47. A suggested report form is set out below:—

WARDEN'S REPORT.

No. .....

STREET: ..... BLOCK: ..... DISTRICT: .....

WARDEN'S NAME: .....

DATE: ...../..../.... TIME OF INCIDENT: .....

PLACE OF DAMAGE (street and house number): .....

NEAREST CROSS-STREET: .....

TYPES OF MISSILE, ETC.*:—

High Explosive ☐ Incendiary ☐
Unexploded Bomb ☐ Wrecked Aeroplane ☐
Persistent Gas ☐ Non-persistent Gas ☐

STREETS*—Wholly blocked ☐ Partially blocked ☐ Unsafe ☐

SERVICES DAMAGED*—Water ☐ Gas ☐ Sewer ☐
Electric Wire ☐ Electric Cable ☐
Telephone Wire ☐ Telephone Cable ☐

OTHER DAMAGE (including buildings): .....
.....

GENERAL REMARKS: .....
.....
.....

FIRE*—Major ☐ Minor ☐ Top Floor ☐ Whole Building ☐

PATROL CAR*—**Dealing with fire** ☐ **Cannot control** ☐
Not present ☐

SEND*—Patrol ☐ Truck ☐ Brigade ☐

REMARKS (Fire): .....
.....
.....

---

* Place an X in the square opposite words which *apply*.

CASUALTIES*—Number ☐ Light ☐ Heavy ☐ Uncertain ☐

Approximate number **trapped** by wreckage : .....

SEND*—Stretcher Party ☐ Ambulance ☐ Rescue Squad ☐

REMARKS (First Aid) : .....

.....

.....

REPORT RECEIVED—Block Warden : ..... Time. .....

Incident No.....	District Warden :	.....
	Fire Warden :	.....
	First-aid Post :	.....

* Place an X in the square opposite words which *apply*.

48. Writing Reports.—Write in soft pencil—and write **legibly.** Always write the word NOT in capitals. For writing in the dark carry a torch covered with the regulation disc and piece of tissue paper. When times are inserted in report forms, the 24-hour clock system is recommended. Under this system 3.37 p.m. becomes "1537 hours," midnight on the 12th of the month "Midnight 12/13"; a minute before would be "2359 hours on the 12th"; and a minute past the hour "0001 hours on the 13th." If a complete report cannot be sent immediately, furnish supplementary reports. These should bear the same number or letter as the original report, with a sub-number, such as 12, 12A, 12B or F, F/1, F/2.

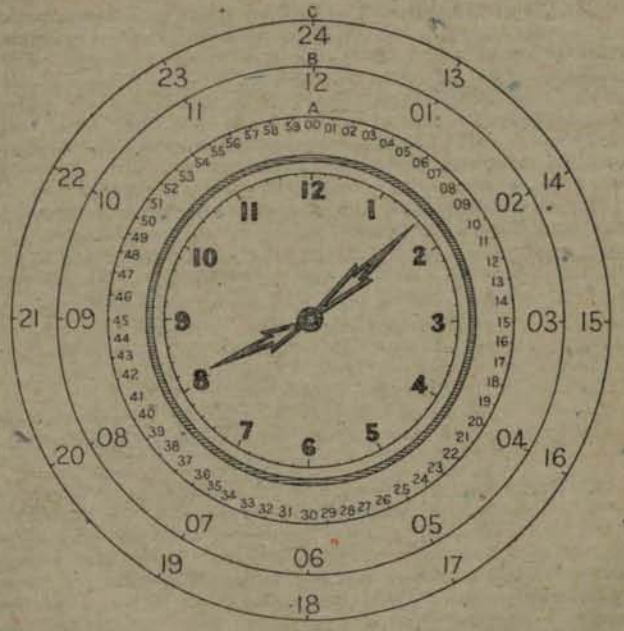

FIGURE 7.—The 24-hour clock system. (The hands show 0808 hours (if morning) or 2008 hours (if evening).)

49. Fire Reports.—Duplication of reports about fires during a heavy air attack has at times caused serious confusion in England, especially when the second report has come in after the fire had received attention. If fires have already been reported direct to the fire authorities, the Warden's report should say so.

50. Use of Telephone.—The primary means of communication must be the telephone. Although bombs may damage telephone cables, this does not mean that a widespread breakdown of the telephone service need always be feared. The breaking of a cable carrying lines between subscribers and an exchange would seldom affect an extensive part of the town, and emergency repairs can usually be effected. **The public must be told not to use the telephone during an emergency.** Essential public services will be hampered if the lines are clogged with messages between private individuals.

51. All messages must be written out on the report form before being read over the telephone. Be brief and speak clearly. The receiver must also write the message down and read it back to the sender. If it is necessary to spell out words, use the following code :—

A Ack.	G George.	N Nuts.	U Uncle.
B Beer.	H Harry.	O Orange.	V Vic.
C Charlie.	I Ink.	P Pip.	W William.
D Don.	J Johnnie.	Q Queen.	X X-ray.
E Edward.	K King.	R Robert.	Y Yorker.
F Freddy.	L London	S Sugar.	Z Zebra.
	M Monkey.	T Toc.	

52. Messengers.—To provide for a breakdown in telephone services, a system of messengers will be arranged by the Communications Unit. The disposition of messengers should be planned to the best advantage in accordance with the layout of the area concerned. Messengers on motor-cycles are best while the roads are reasonably clear. Pedal cycles are better if the roads are obstructed with craters or debris. In the last resort use runners.

53. Gas Reports.—If the enemy uses gas, report it urgently. Should your clothing be contaminated, find some means of communicating with the Warden at the post without going inside.

54. Some Errors to be avoided.—The following are some weaknesses which have been observed during trials—

(*a*) A Warden did not count the casualties before going to his Post to report. The other Warden remaining at the

incident did not attempt to render first aid. The Warden's supplementary report about electricity mains did not specify the location :

(*b*) A Warden raced to the Post and made his report to the senior Warden, who rang the Control Centre. A second Warden arrived with a full report, but the senior Warden left the Post unattended :

(*c*) One incident was reported at 1445 hours, but the Warden did not try to stop the bleeding of an injured person until 1510 hours :

(*d*) A Warden rushed to the Post, handed in his report, and then resumed his patrol, leaving the incident unattended. At this incident there were casualties who received no treatment :

(*e*) Nothing was done to warn stretcher parties, fire-brigades, and private cars of a bomb crater in the roadway :

(*f*) In one area two Wardens refused to attend an incident across the street as it was not in their section. No other Wardens could be found in the whole block. No local services arrived :

(*g*) Severe hæmorrhage cases were not pointed out to the stretcher party by the Wardens.

55. Wardens must return to the incident after reporting it and give all aid to casualties and to services that arrive. They must wait for the services to arrive and see the incident in the right hands. Though responsible in the first case for their own area, Wardens must give aid to any near incident which is unattended.

56. Action in Control Centre.—The Control Centre depends upon the Wardens for reports of any incidents. When these reports are received they must be rapidly sent on to the various sections whose action is required. The E.P.S. Control Centre must be just as efficient in this respect as the Fire Brigade. In the Fire Brigade every movement has been thought out with care in order that no second is wasted in getting the services to the scene of the fire.

57. Rapidity of action in the Control Centre depends on :—

(*a*) **Allocation of Duties.**—The guiding principle is to distribute duties among personnel so that no one is congested with work or messages at any stage, even under conditions of heavy raiding :

(*b*) **Silence.**—Talk as little and as quietly as possible :

(*c*) **Layout and Circulation.**—The same care should be devoted to planning the layout of the Control Centre as is given to designing the modern factory workshop. By intelligent planning, reduce movements of personnel and material to a minimum. Every one must remain seated except the plotting officer, the tally board officer, and the messenger staff. Arrange the seating so that each incoming and outgoing message moves continuously in proper sequence. Outward file trays on each desk should be marked to show where the message goes next :

(*d*) **The Tally Board.**—On the Tally Board are shown separately the various service parties available in depots. When a service has been called out to any incident a cardboard or metal disc should be removed from the depot panel and placed on the panel for the district or block to which it has been sent. Similarly, when a service returns to its depot the disc should be replaced on the depot panel. The Tally Board portrays the development of every current incident. Without a properly planned board the various officers in control must keep their files of each incident in front of them, which makes for chaos in a heavy raid. **No control can be exercised from great bundles of written reports.** With a Tally Board, however, every message can be filed away as it is dealt with and a pictorial narrative remains :

(*e*) **Damage Map.**—A damage map should be on such a scale and so marked that the plotting officer can draw immediate attention to road blocks, damaged shelters, &c.

58. This description of the organization of the Control Centre applies equally to the organization of the Wardens' Post, but on a smaller scale.

SECTION No. 6.

BOMBS AND THEIR EFFECTS.

59. The weapons of air attack are—

(*a*) Incendiary bombs :

(*b*) High explosive bombs (known as H.E.), which cause casualties or damage by blast, splinters, and ground shock :

(*c*) Gas bombs :

(*d*) Machine guns :

(*e*) Noise, which tends to produce fear, especially in the old, the young, and the more nervous types. A man who has been through more than one hundred air raids says that a raid is 90 per cent. noise and 10 per cent. damage.

A. Incendiary Bombs.

60. There are several types of incendiary bombs. Wardens should know about the thermite-magnesium and the Japanese phosphorus types.

61. Thermite-Magnesium Type.—These bombs are usually 9 in. long and 2 in. in diameter and weigh just over 2 lb. One aeroplane can carry about two thousand, which are usually dropped in containers holding from 36 to 700. As the container descends the sides open and let the bombs fall out. If a container, dropped from 5,000 ft., opens shortly after release, the bombs may spread over about 100 yards square (or 2 acres). Each bomb ignites on impact and burns at intense heat for ten to fifteen minutes. Anything inflammable within several feet will be set alight. Some of the bombs have an explosive charge in the tail. One or two minutes after the bomb ignites, this charge is fired by the heat, scattering

small particles of burning magnesium and steel in all directions. The steel fragments can penetrate a $\frac{1}{16}$ in. steel plate and cause serious wounds up to 10 yards away.

62. How to Tackle the Bomb.—Bombs on buildings must be dealt with before bombs in the streets. Those found before they are properly alight may be thrown outside to an open space. Otherwise apply a jet of water from a stirrup pump, bucket pump, or hose, keeping well back and getting as much cover as possible in case the bomb explodes. If a fire has already started, deal with it first. A spray can be used instead of a jet where the bomb is surrounded by inflammable material, as it is less likely to scatter burning pieces of magnesium. **Do not be afraid of any momentary flare up; it cannot hurt you.** But a spray will take longer to put the bomb out and it is too slow if there are several bombs. A spray or a light jet will make the bomb burn out more rapidly, but will not cool it sufficiently to put it out before all the magnesium is consumed. A heavy jet, however, may cool the magnesium below burning temperature and thus prevent the explosive charge, if any, from being fired. Sand or sand mats may be used to cover bombs in the open or on a concrete, stone, or tile surface.

63. Some Points to Remember :—

(*a*) If you see a fire in a building, warn the occupants at once:
(*b*) If you have to break into a house, smash a lower window:
(*c*) If you have to force a door, smash a panel near the lock. You may then be able to unlock it from inside:
(*d*) Keep doors closed. An open door acts as a flue:
(*e*) If you have to go into a smoke-filled room, crawl in. The air is purer and cooler near the floor:
(*f*) If the stairway or floor is weakened by the fire, keep close to the wall and crawl downstairs backwards.

64. For further details see the National Service Department's Handbook No. 1 on Incendiary Bombs. Note, however, that people in England have been severely injured by dropping into water the latest types of magnesium bombs or by pouring water on them.

65. New Incendiary Bombs.—A few months ago the Germans started using a new 5 lb. incendiary bomb containing a powerful explosive charge. The British instructions for dealing with these bombs are :—

(*a*) Leave them to burn out if they have fallen where they can do no harm.
(*b*) If they have fallen where they can start a fire, attack them resolutely at once, making the best use of any available cover. Three inches of brickwork gives full protection, but lath and plaster walls, wooden doors, or pieces of furniture do not. Use a jet from a stirrup pump or throw water from behind cover. A bomb in a room can often best be attacked through a doorway from behind a wall or from outside through a window. As soon as the bomb explodes, or seven minutes after it has fallen, attack it at close range in the normal way.

66. Japanese Phosphorus Bombs.—These bombs weigh up to 110 lb., contain several hundred pellets, and enough explosive to scatter them up to 50 yards. The pellets, measuring 1 in. by $\frac{3}{4}$ in., are made of rubber dipped in phosphorus. Each can start a fire. The phosphorus ignites on contact with the air, but this action may be delayed. Burning pellets give off a dense white smoke, which, though not poisonous, may cause a choking sensation. Some of the bombs do not explode immediately they land. Each pellet burns for from five to seven minutes with a flame 4 in. to 6 in. high.

67. Tackle the pellets at once with sand or water. Water will put out burning phosphorus, but the pellets should be gathered up and removed speedily. Phosphorus will reignite if the water evaporates.

68. As you may be confronted with up to one hundred flaming pellets and others may lie around unignited, act thus—

(*a*) First extinguish burning pellets with sand or water:
(*b*) Next make a search and collect all extinguished or unignited pellets with metal shovels or dust-pans. Phosphorus

pellets do not have the extreme heat and metal-piercing qualities of the thermite-magnesium bomb, and can be safely scooped up with ordinary shovels:

(c) **Never touch any pellets with your hand.** Phosphorus makes a deep burn which takes long to heal. For the treatment of phosphorus burns refer to the First Aid Section (paragraph 134).

69. If pellets are seen in daylight on bare ground, roadways, or concrete floors away from inflammable property, leave them to burn out, if they are **under observation.** At night do not leave them to burn in the open, as this will defeat the blackout. Any pellets that are covered up at night must be disposed of when daylight comes. If no sand or water is available use dry, dusty, earth. Do not use clay or cloddy earth which will admit the air.

70. If a phosphorus bomb falls in the roadway it may spray pellets into houses on each side. Thus one bomb may start fires in half a dozen places. Since the pellets can break through unprotected glass windows **every** nearby house must be thoroughly searched.

B. High Explosive Bombs.

71. A high explosive bomb consists of a charge of high explosive mixture contained in a steel case fitted with a fuse and detonator. The destructive effects are twofold—those of blast (air-pressure waves created by the explosion) and those of fragmentation (breaking-up of the steel case of the bomb into jagged pieces or splinters). These splinters, whose average size is about 1 in. across, are projected in large numbers in every direction at about twice the speed of a rifle bullet. On striking a hard surface, they may be resisted or, if deflected in their path, may cause damage from an unexpected direction. The effective range of splinters can be considerable in open areas, where cases of fatal injury have been known as far as half a mile away.

72. Blast.—Blast appears freakish in the havoc it brings, but its nature is thoroughly understood. However, without full technical description here, it is sufficient to say that when a bomb bursts there is a violent outward movement of air from the place of the explosion, followed instantly by a great inrush, causing a momentary suction. Outside this explosive zone, a shock wave is created, which travels at first more quickly than sound, but soon becomes weaker. If the explosion takes place after penetration of the ground surface, corresponding waves are also set up through the earth.

73. In the area closest to the bomb, shock waves may completely destroy buildings or may partially destroy them by causing the collapse of wall panels, roofs, doors, &c. These are "near" effects. Further away only violent shaking will occur, which will affect such light structures as balconies, roof tiles and slates, ceiling plaster, and window glass. These are the "distant" effects.

74. Types of High Explosive Bombs.—There are several kinds of H.E. bombs. The anti-personnel and armour-piercing types are designed for attack on specific objectives. The more commonly used general-purpose bombs are used to wreak indiscriminate havoc—for example, against factories and buildings of ordinary construction. The fuse usually causes detonation a fraction of a second after penetration. Bombs vary greatly in weight and they may be fitted with delayed-action fuses. The Japanese appear mainly to be using bombs weighing up to 500 lb. which are between 4 ft. and 6 ft. in overall length and from 7 in. to 13 in. in diameter.

75. Small Anti-personnel Bomb.—The Japanese have used a very small explosive bomb, which injures persons rather than property. It is from 9 in. to 12 in. long—white, pear-shaped, with a tail fin. The nose is round and covered with rubber. From the end view the bomb resembles a tennis ball. It does not necessarily explode immediately it hits the ground. Wardens who see an unexploded bomb of this type must keep the public at least 50 yards away and report it at once.

76. Bomb Craters and Carbon Monoxide.—Carbon monoxide, a most dangerous gas without colour or odour and slightly lighter

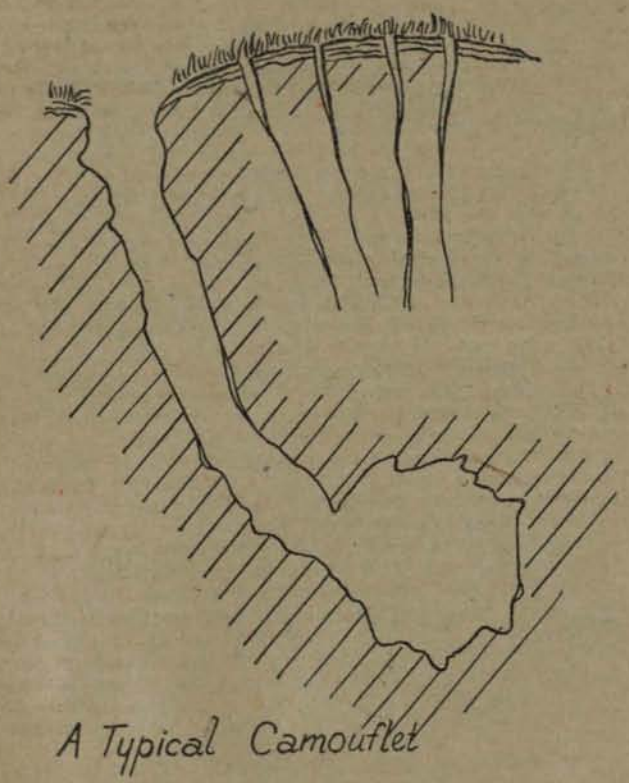

FIGURE 8.

than air, may remain in the bottom of the crater formed by a bomb exploding in the ground. It can form an explosive mixture with the air. Naked lights, therefore, must not be used, even some distance away from the source of the gas. Any person overcome by this gas must be taken immediately into the fresh air, where oxygen or artificial respiration may be needed. **Neither the Service nor the civilian respirator protects against carbon monoxide, coal gas, or ammonia.**

77. Camouflets.—A camouflet is an underground hole. It is made when a bomb explodes well below the surface and does not leave a wide open crater. The hole is filled with carbon monoxide gas, which does not disperse. The surface of a camouflet may stand for weeks and even bear a man's weight, or it may give way at the first touch. Wardens should rope them off or otherwise prevent access and report them. They must warn, but they need not evacuate, nearby householders.

78. You can tell a camouflet by these signs :—

(*a*) The soil around the entrance of the hole is raised and the sides are blackened :
(*b*) Cracks may radiate around the hole :
(*c*) Sometimes loose earth may cover up the entrance of the hole :
(*d*) Damage to nearby walls or buildings, &c., with no signs of bomb splinters or fragments :
(*e*) Those in the neighbourhood may have heard a dull report and felt an earth tremor. Do not confuse this with the less violent thud of an unexploded bomb.

79. Unexploded Bombs (known as UXB's).—Enemy bombs or our own anti-aircraft shells may fall without exploding. All these are removed or destroyed by the Bomb Disposal Unit of the Army, members of which wear on the right cuff a badge with a flaming bomb on a blue background. Red flags are displayed on this Unit's vehicles. Personnel and the vehicles must be given unhindered passage.

FIGURE 9.—Badge of Bomb Disposal Unit.
(Officers and W.O.s, crimson flame; other ranks, khaki flame.)

80. The signs of an unexploded bomb are—
(*a*) A hole in the ground instead of the usual crater:
(*b*) No blackness, smell, smoke, or damage:
(*c*) A dull thud without violent explosion.

81. If the bomb has exploded there will be—
(*a*) A crater:
(*b*) Broken windows:
(*c*) Splinter marks on buildings:
(*d*) Blackened earth around the crater:
(*e*) Smoke by day and a flash by night.

82. Before reporting a UXB, be very careful to identify it correctly. Do not call out the Bomb Disposal Unit needlessly.

83. The following report form should be used:—

..... E.P.S. UXB. No. .....

UNEXPLODED BOMB REPORT.

MESSAGE TO THE CONTROL CENTRE.

Part 1.

1. Exact location: .....
2. Time of falling: ..... hours on .....(*Date*).
3. Phase affected (cross out where not applicable)—
   (*a*) Industrial war effort (power-houses, bulk petrol stores, water-works, &c.).
   (*b*) Communications, public utility services (bulk food supplies, roads, &c.).
   (*c*) General industry (city buildings, factories, &c.).
   (*d*) Civil population (private houses, &c.).
   (*e*) Uninhabited open space.
4. Data *re* UXB—
   (*a*) Diameter of hole: .....ft.....in.
   (*b*) Type of ground (state whether open, heavy, hard surface, building, &c.):.....
   (*c*) Reasons for suspecting UXB (from personal observation or reliable reports, &c.).....
5. Proximity to buildings or services (including railways) likely to be affected: .....

6. Remarks *re* parts found, &c.: .....

7. Other remarks (restrictions, &c.): .....

8. Police advised at ..... hours on.....(*Date*).

Signature:.....

Designation:.....

Suggested Bomb Category:.....(*Enter A, B, C, or D*).

Signature:.....

DISTRICT WARDEN.

Part 2.

Bomb Category allocated: .....

Signature:.....

PRIORITY OFFICER.

Passed to Military Liaison Officer for action at .... hours on ..... (*Date*).

84. Classification.—The relative urgency of unexploded bombs can be classed as follows:

Category A: Immediate disposal of the bomb essential for the war effort.

Category B: Disposal important to war effort or public morale, but not so urgent as to justify immediate action.

Category C: Disposal necessary, but not so urgent.

Category D: Disposal not essential provided simple precautions are taken—for example bombs in paddocks or open spaces where there is little risk to habitation or communication.

85. Avoid classing an unduly high proportion of unexploded bombs into category A; otherwise the Bomb Disposal Unit may not deal with the most important cases first.

86. Safety Precautions.—Wardens must keep the public away from the place of a UXB and, if necessary, empty nearby buildings and divert traffic. *Never assume that a UXB is a "dud."* For built-up areas, take these precautions:—

(*a*) Clear all houses for 100 yards on each side of the bomb. Beyond this distance the occupants who remain indoors must stay on the farthest side of the house:

(*b*) Open all windows widely:

(*c*) Any one going out of a house in the danger area must move away from the bomb and use intervening houses for cover:

(*d*) Keep all traffic away.

87. Anti-aircraft Shells.—Occasionally anti-aircraft or aircraft shells may be found on the ground unexploded. The former weigh up to 20 lb. and the latter about ½ lb. Wardens must rope these off and report them. If the Bomb Disposal Unit cannot attend immediately, they may advise covering the shell with sand-bags.

88. Crashed Aircraft.—Report and treat these in the same manner as unexploded bombs.

SECTION No. 7.

SAFETY PRECAUTIONS.

A. For General Public.

89. It is dangerous to watch what is going on in an air-raid. The only safe thing to do is to take cover. Anti-aircraft shells are designed to explode in the air, and the fragments of metal, including the heavy nose-cap, will descend on the country below. Machine-gun bullets fired from aeroplanes will also fall to the ground. Even if the raid is a considerable distance away, shell fragments may fall many miles from the scene of action. Since aeroplanes travel four to five miles in a minute, a person watching a far-off raid may soon find himself in the middle of falling bombs released several miles away. **Curiosity to see the enemy may cost the gazer's life.**

90. Shelter in the Home.—It is therefore essential that some form of shelter should be available to the civilian population. All Wardens must study the booklet to householders entitled "How to Provide Raid Shelter and Protection from Flying Glass" and should make sure that people in their areas are familiar with its contents. In houses that cannot provide an air-raid shelter, the safest room should be prepared for an emergency. Use a large table which you can strengthen by covering with books or a mattress.

91. Treatment of Glass.—It is safer to have no glass in the window of your refuge room, but if some daylight is required a flexible glass substitute can be used instead. A temporary glass substitute can be made at home by using a double thickness of cheese-cloth or muslin fastened over the window frame, and coated with ordinary size or varnish.

92. If the glass is not taken out it should be so treated that it cannot fly into the room. The easiest method is to paste on the inside of the glass a suitable covering such as a light-coloured cloth or cheese-cloth. This can be stuck on with a paste made thus: Mix 2 tablespoons of flour and a small teaspoon of washing-soda into a paste with 3 tablespoons of water. Add half a pint of boiling water, stir briskly, and heat like porridge for ten to fifteen minutes.

Add ½ oz. of borax to prevent mildew. Stick the paste to the window frames and glazing-bars as well as to the glass. A good covering properly stuck on will prevent the glass from flying into the refuge room in small dangerous pieces.

93. Taking Cover in the Open.—When taking cover **avoid bodily contact** with a solid wall, because you may be injured by violent percussion or earth shock. To protect the lungs against blast keep your mouth slightly open. As splinters from an exploding bomb fly upwards, the zone of greatest safety is nearest the ground. It is therefore safer to sit than to stand, and safer to lie down than to sit. Lie flat on your face and support your head in your arms.

94. Aerial Machine Gunning.—In this war low-flying aircraft have machine-gunned many persons, but to do so effectively the aeroplanes must be not more than about 50 ft. above the ground-level. Hence this form of attack is unlikely near city buildings, trees, &c. A machine gun can fire ten or twelve bullets per second. Thus a plane flying at 200 miles per hour will fire a bullet every 10 yards or so. Remember these points:—

(*a*) Since most bullets will not penetrate an ordinary brick wall, those in brick houses are safe if they keep away from windows:

(*b*) Keep out of sight of attacking planes and do not congregate:

(*c*) If caught in the open, lie face downwards and keep still. Faces and shadows are very conspicuous from the air:

(*d*) If possible, take cover indoors.

95. Effectiveness of Bombs against Civilians.—Bombs are very dangerous, but their effectiveness is limited. After Britain, with a population of 45,000,000, had been bombed for nearly two years, the death-rate was less than one in a thousand. ***Not all direct hits result in casualties and not all bombs register direct hits.*** A large proportion of any city is open ground: other areas consist of buildings evacuated in an alarm, and here a direct hit would not cause loss of life. The Warden who may be out in a raid, or the civilian who is hoping bombs will not be labelled with his name, should realize that there are heavy odds against his being hit. The chart shows how much the risk of injury can be reduced by acting on the simple precautions described above. (See page 50.)

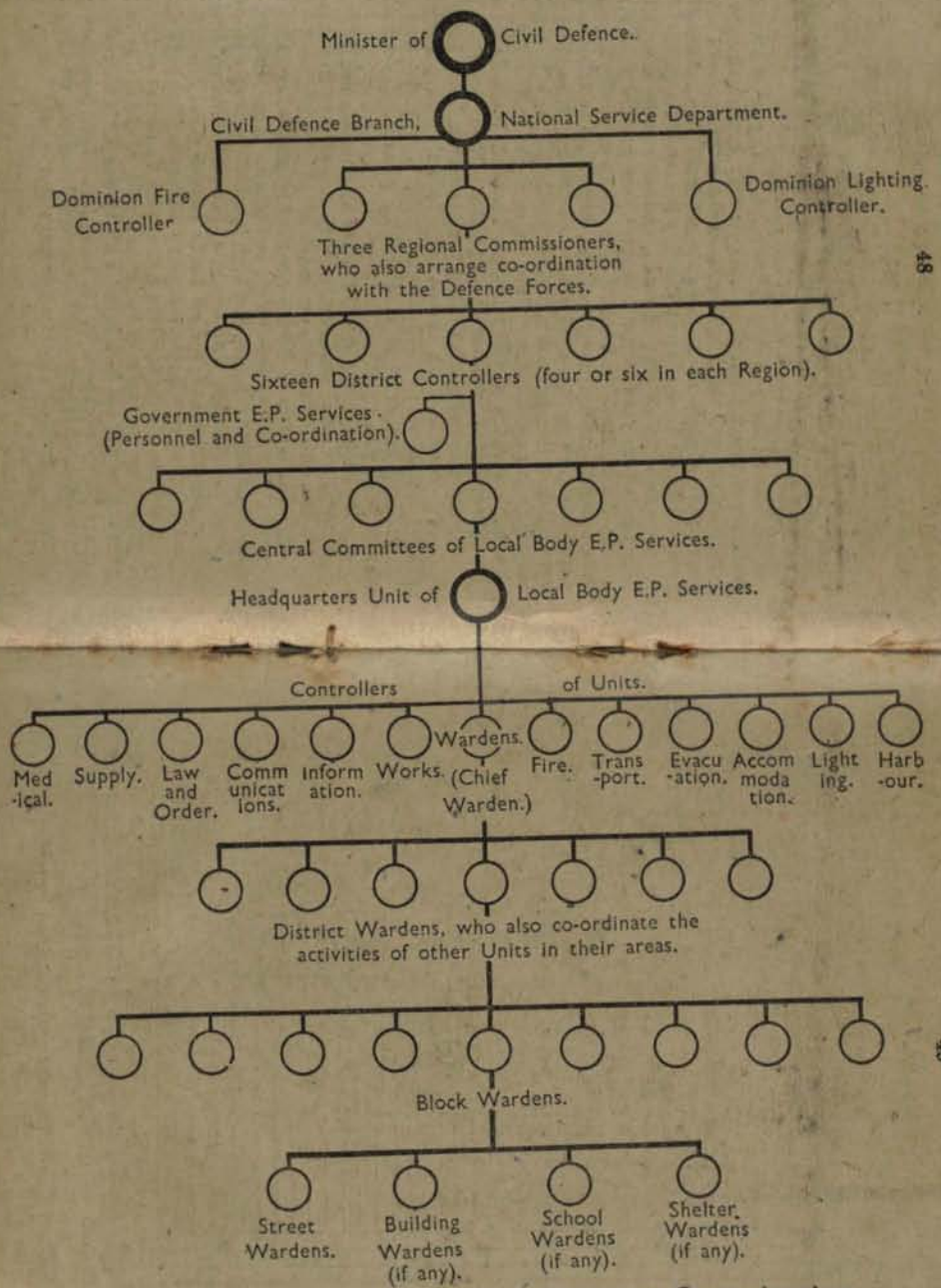

Figure 1 —Set up of Civil Defence Organization.

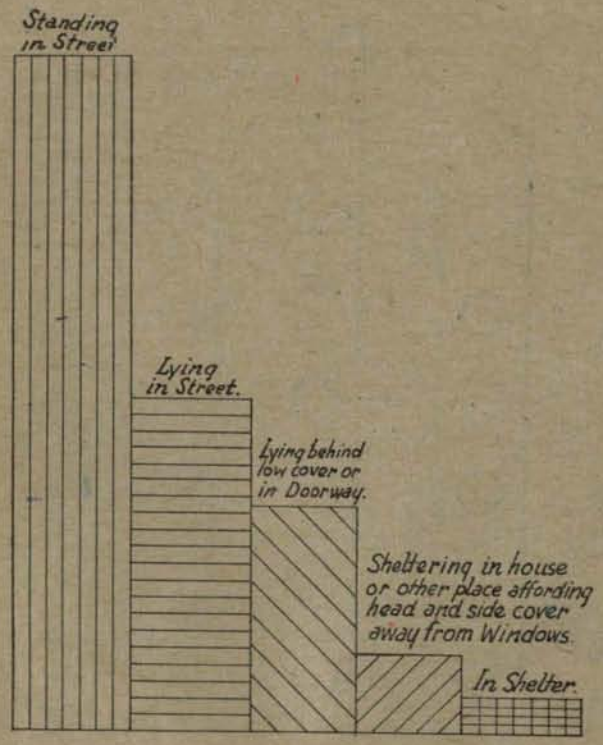

FIGURE 10.—Chart illustrating protection obtained by taking cover.

96. Clearing the Streets.—After a warning is sounded the period before the raid begins may often be short. Wardens must clear the streets quickly and those who hold the keys of public shelters must unlock them immediately. The general public will go either to shelters or to their own homes if they can get there within a few minutes. Those working in offices, shops, or factories should take cover in any shelter provided. Wardens must particularly see that any children not accompanied by adults are properly cared for. If a person in the street has not been able to find a public shelter before the raid begins he should make the best use of any modern buildings nearby or other local features which can provide cover. Partial protection from flying splinters and debris may be obtainable in archways, doorways, basements, under balconies, and alongside but not against walls.

97. Vehicle Traffic.—It is the Law and Order Unit, not the Wardens, that controls vehicle traffic in an emergency. But during a blackout Wardens may stop traffic that is violating the lighting restrictions. Where vehicles stop and their occupants go to shelter, the Wardens must see that the vehicles are drawn into the kerb. If the main streets are narrow, direct cars into the side streets wherever possible. Horses should be taken out of the shafts and tied to a lamp post, &c., in a side street or elsewhere where they can get some protection from walls or buildings.

B. For Wardens.

98. Because of their duties, Wardens cannot always take all the precautions for personal safety which are recommended for civilians, **but they should take all safety measures consistent with the proper performance of their duties.**

99. When a Warden is on patrol he will learn to recognize the peculiar sound of a falling bomb. At first it is rather like silk or calico being torn; but if the bomb is coming straight towards you, the noise resembles a swishing whistle. When you hear a sound like that, look out.

100. While the splinters from demolition bombs burst upwards, the small anti-personnel bombs used by the Japanese are "daisy-cutters," their splinters sweeping the surface of the ground. Take cover or lie down in the lowest possible position. Wardens must know well the places that offer cover. After a bomb has exploded, besides the splinters there will be glass fragments and pieces of debris flying in all directions. When lying, protect the back of your head with your steel helmet and rest you face on your arms as a shield from dust and debris. Look out for broken glass when you lie down.

101. Dangers you must avoid.—Almost certainly exploding bombs will damage municipal services, overhead and underground, in the streets. Hints that will help you are grouped below under individual references.

102. Electricity.—Damage may occur to—

Overhead—
Electric-power wires:
Telephone wires:
Neon electric signs.

Underground—
Electric-power cables:
Telephone cables.

103. Treat all loose wires or cables as DANGEROUS. Do not touch with bare hands or with any metal. You must not use crowbars, &c. If it is absolutely necessary to act before the arrival of the Electricity Squad, use a long, dry, wooden pole to separate wires which may be tangled.

104. Overhead electricity cables and wires commonly carry current at a high voltage, sufficient to cause death instantaneously on contact with the human body.

105. Telephone wires commonly run near high-voltage power-wires, and, therefore, if any are damaged, there is always the danger that they will come in contact. So, harmless-looking telephone wires may, in reality, be carrying high-voltage death-dealing electricity.

106. Sometimes overhead electric-power wires, when broken, will jump around the ground, emitting bright showers of sparks and flame. This is commonly known as arcing. Even if the arcing ceases, you must not assume that the cable has become "dead" and is therefore safe to touch.

107. Underground Circuits.—A bomb exploding may uncover electricity or telephone lead-sheathed cables passing along the street. Superficially, telephone cables appear rather similar to power cables as both are enclosed in lead-sheathing. **Beware of touching them.** Your duty is to get a message as quickly as possible to your Wardens' Post, which will then inform the Electricity Squad that urgent action is required in your street.

108. How to rescue a Person from Contact with Electric Wires.—Use extreme care not to touch the wires or cables with anything except WOOD—and it must be dry (chair, broom, clothes-prop, fence-palings, &c.). In some cases it may be possible to cut the electric wire with an axe. The wooden handle serves as an insulator.

109. Do not throw water at a person, if his clothes have caught alight. Wrap him in bedding, overcoats, &c.

110. If the victim is on a roof—and within reach—keep from contact with the roofing-iron or other metal in the gutter when you ascend on a wooden ladder. The members of the Electricity Squad of the Works Unit are equipped with insulated boots, gloves &c., and they are the only men who can safely undertake to rescue persons from roofs or other places charged with electricity.

111. When reporting a person rendered unconscious from contact with live electric wires, say that he has electric shock, not that he has been electrocuted (killed by electricity).

112. Coal-gas.—Gas-mains that become cracked or broken may cause injury or death from the fumes of escaping gas, or the gas may ignite. Only when the Emergency Gas Squad is not quickly available, or the Fire Brigade cannot attend promptly, should a Warden endeavour to stop the flow of gas or put out the fire. If there is little risk to life or property, the gas should be allowed

to escape or burn until the expert squad arrives. However, if assistance is not available, then act thus :—

113. With hose or water from hydrants try to fill up the bomb crater and thus cover the gas-main with water. If no water is available, wet sacking, blankets, or other materials should be rammed into the open end of the gas-main. Use a long pole and breathe as little gas as possible. Follow up the sacking, &c., with wet clay or earth, which will stop the main gas-flow.

114. Gas-mains have stop-valves only at long intervals. It is little use, therefore, trying to find a stop-valve during the emergency.

115. If a person is overcome by escaping gas, lift him up, and assist him to walk. This helps him to eject the gas.

116. When a building is damaged, gas will often escape from broken pipes. Apart from being highly inflammable, coal-gas mixed with air will explode violently if lit. **Hence no lighted cigarettes or naked lights should be taken near a damaged building until it is definitely known that no gas has escaped.** Even if an explosion has occurred all the escaping gas may not be burnt up.

117. Coal-gas can usually be detected by smell. If it cannot be smelt there will rarely be enough to cause suffocation unless the smell is obscured by some other powerful odour. Victims first become giddy and lose power in the limbs; inhalation may cause unconsciousness and death.

118. Ordinary respirators are NOT effective against coal-gas. Rescue parties will require remote-breathing apparatus. As coal-gas is lighter than air it will disperse quickly in non-enclosed spaces when the escape is stopped. If the supply cannot be turned off at the tap, victims who are trapped may be saved from suffocation by blowing air in large quantities into the lowest accessible part of the debris under which they are trapped. A mobile air-compressor of the type used for road-breaking will serve the purpose. To avoid stirring up dust and to give a steadier flow of air, the end of the hose is put in a tin can and tied up inside an empty sand-bag.

119. **Sewerage.**—Sewerage mains cannot usually be repaired while a raid continues. This means that sewerage may escape and

in certain cases may penetrate and contaminate water-mains. Your duty, therefore, is to report broken sewers quickly, in order that the Works Unit may decide upon the necessary remedial action.

120. **Water.**—E.P.S. districts have plans of the water-mains in each area and each street. These plans show the position of the sluice-valves for isolating various sections or districts. By promptly reporting the exact location of the damage you will enable the Water Squad to determine which valves to close, in order to stop the flow. **Remember that adequate water-pressure is essential to the fire-brigade and that every broken main lessens the pressure available for fire-fighting.**

121. In many cases water and gas mains run side by side; so a bomb may damage both services simultaneously.

122. When dealing with electricity, gas, or water services always keep mentally alert and act cautiously. Leave the specialists in the various squads to deal with everything except the simple immediate things which you can do safely.

123. **Ammonia Fumes.**—Damage to freezing-works and refrigeration plants may liberate large quantities of ammonia, which is easily recognized by its strong smell. Fairly good temporary protection is obtained by covering the nose, mouth, and eyes with a damp cloth, preferably wetted with vinegar. Remote-breathing apparatus can be used if the fumes do not spread too widely. Heavy concentrations may necessitate oxygen-breathing apparatus. These methods are **no protection** for refrigerating gases other than ammonia.

SECTION No. 8.

EMERGENCY FIRST AID.

124. During heavy raiding skilled medical or first-aid assistance may not always be immediately available. Simple measures taken quickly on the spot will often prevent serious injury or even save life, particularly if the injured person is suffering from severe bleeding or suffocation.

125. Emergency Kit for Householders.—Householders should have ready an emergency kit containing:—

(*a*) Six pads of old towels or cloth, well boiled for twenty minutes and then dried by baking, ironed and folded. Two of each should be placed in a paper bag and the top tied with string:
(*b*) Six bandages:
(*c*) Six safety-pins (large):
(*d*) Two slings made from old shirts or skirts (36 in. to 40 in. cut diagonally):
(*e*) Tourniquet. A piece of old inner tube 30 in. by 1½ in. wide with a length of string firmly fixed to each end is ideal for the purpose, but because of the rubber shortage a piece of strong cloth of similar size can be used, if a pad is also applied under it:
(*f*) Stick or pencil for tightening the tourniquet upon the artery:
(*g*) Piece of indelible pencil or lipstick to mark the time the tourniquet is applied:
(*h*) Torch:
(*i*) Sharp knife or pair of scissors:
(*j*) Two ounce packet of cotton wool:
(*k*) Bottle of iodine:
(*l*) Jar of vaseline:
(*m*) Jar of baking-soda.

126. Shock.—All persons involved in accidents suffer from shock, whether or not they receive physical injury. Shock disturbs the

nervous system and varies in intensity from faintness to collapse and death. It is aggravated by loss of blood, severe pain, anxiety, or exposure. Signs of shock are pallor of the face and lips, a cold clammy skin, cold sweat on the forehead, feeble pulse beating rapidly, weak breathing, faintness, and vomiting.

127. Treatment of Shock.—

(*a*) First arrest all bleeding:
(*b*) Place the patient flat on his back on a bed, rug, or cushions. If you think a bone may be broken, move him as little as possible:
(*c*) Loosen any tight clothing at the neck, chest, or waist to make the breathing freer:
(*d*) Cover warmly with rugs and blankets, as shock causes the body to lose heat. Apply hot-water bottles. Heated bricks are a possible substitute:
(*e*) Give hot drinks sweetened with sugar, but only if the patient is conscious and able to swallow, and not if he is wounded in the abdomen. If you cannot make hot drinks, give cold water in sips:
(*f*) Reassure the patient by speaking calmly and confidently.

128. Treatment of Wounds.—The first thing to do is to stop the bleeding. If a patient loses a pint or so of blood rapidly he may die, but if he loses the same quantity slowly he will often survive even a serious injury. Always uncover the wound and find the source of bleeding. Do not hesitate to slit up clothing to find the bleeding-point. The bleeding can usually be stopped by binding a clean dressing tightly round the wound. Because of the risk of infection from dirt, try to avoid touching the wound with your fingers. Treat the patient for shock also, as the pain and loss of blood in themselves tend to cause shock.

129. Wounds in the Head and Body:—

(*a*) Cover the wound with a clean folded handkerchief, or a double layer of dry lint:
(*b*) Apply another handkerchief, a pad from the emergency kit, or a layer of cotton wool to distribute pressure over the wound:

(*c*) Tie the dressing in position with a bandage, a strip of linen, or a necktie. This can be done quite firmly except where there is glass or other material in the wound or where a bone is broken. If glass or splinters, &c., cannot be removed easily, leave them in the wound. If they are not removed gently you may cause more bleeding:

(*d*) Treat the patient for shock, but do not give anything to drink if the wound is in the belly.

130. Wounded Limbs :—

(*a*) If no bones are broken try to raise the limb to lessen the flow of blood:

(*b*) If the flow is steady (as when a vein is injured) cover the wound with a dressing and bandage firmly:

(*c*) If the bleeding is severe, and particularly if brilliant red blood is spurting out (as when an artery is injured), stop the bleeding by pressing firmly with the fingers on the bleeding-point and apply a pad as soon as possible:

(*d*) In a few particularly severe cases even this will not stop the bleeding. Therefore a tourniquet may be necessary. It should NOT be used if the bleeding can be controlled by other means, as it increases the shock and there is risk of losing the limb. A tourniquet should be tied round the limb where it joins the body and tightened by inserting a pencil or stick under one fold and screwing it round. Note on the patient's forehead the time the tourniquet is applied, as **it is dangerous to leave it for more than fifteen minutes.** Apply a pad and dressing as described above. When the tourniquet is released any further bleeding can usually be controlled by pressing with the fingers on the bleeding-point:

(*e*) Treat the patient for shock.

131. Treatment for Broken Bones.—Move the patient as little as possible. By instinct the patient often assumes the position most comfortable for the broken bone. If you are doubtful whether a bone is broken, act as though it were :—

(*a*) Support the patient with cushions or folded blankets tucked closely round the body, so that he can relax comfortably:

(*b*) A temporary arm-sling may relieve the pain of a broken arm:

(*c*) If no splints are available, treat a broken leg by tying to the other leg at the thighs, calves, and ankles with strips of linen or neckties:

(*d*) If a bone sticks out through the skin, leave it alone. Stop the bleeding if you can, and cover the wound lightly with a clean dressing:

(*e*) Treat the patient for shock:

(*f*) Fractures must be splinted before the patient is transported.

132. Internal Bleeding :—

(*a*) **Symptoms :** Signs of fainting, thirst, giddiness, ringing in the ears, blurred vision, cold clammy skin, failing pulse, rapid sighing breathing, or restlessness with extreme pallor:

(*b*) **Treatment :** Wrap patient up warmly; be very gentle if handling or lifting and get skilled assistance as soon as possible. **Do not give anything to eat or drink.**

133. Treatment of Burns and Scalds :—

(*a*) Cover the burned or scalded part with a dry dressing, a clean folded handkerchief, a pad of clean cotton wool, or a piece of linen folded double; or with a dressing soaked in a pint of boiled warm water to which one teaspoonful of baking-soda or ordinary salt has been added. Do not apply oil or butter to the burn.

(*b*) Except in very minor cases, treat the patient for shock.

134. Phosphorus Burns.—If the enemy has used phosphorus pellets, **remember that phosphorus is a poison.** A particle which touches your hand may not only burn it, but may later poison you if your hand touches food. Treat a hand injured by phosphorus by placing immediately in water and remove any phosphorus with a stick and a rag or cotton wool. Then place the hand in warm water to which bluestone (copper sulphate) has been added

(1 level dessertspoonful to a pint of water). This neutralizes the phosphorus. Finally, apply a dry dressing and bandage. Do not use any oil or greasy dressing, as this dissolves and may spread the phosphorus. Medical or first-aid treatment should be sought at once.

135. Treatment of Suffocation (Asphyxia).—If a person has difficulty in breathing or has stopped breathing, look for the cause (for example, half-swallowed false teeth, poisonous atmosphere, &c.). If his jaw is broken, turn him on his face so that the tongue will not fall back and block the air-way. If the patient does not begin to breathe again immediately, give artificial respiration at once, thus :—

(*a*) Lay the patient face downwards with head turned to one side and arms stretched upwards :

(*b*) Kneel beside the patient's thighs, facing his head and sitting on your heels. Place the palms of your hands on the small of the patient's back between the ribs and the hip bones :

(*c*) Keeping your arms straight, swing your body forward into a kneeling position until your shoulders are directly above your hands :

(*d*) Slowly sit back again on your heels without moving your hands :

(*e*) Repeat this forward and backward movement twelve to fifteen times a minute :

(*f*) When the patient begins to breathe naturally, regulate the movement to correspond with his breathing :

(*d*) Keep up artificial respiration for a long time. Cases have been known to recover after two hours.

136. Artificial respiration should **not** be attempted if the patient is suffering from bomb blast. Treat such cases as for internal bleeding.

137. General :—

Keep calm ; act quickly ; use tact.
If a patient vomits turn his head to one side.
Try not to appear over-anxious about a patient.
Never discuss a casualty in his own hearing.

SECTION No. 9.

WAR GASES.

138. Gas has not so far been used in this war (apart from a reported use by the Japanese in China). However Wardens in the larger centres must know how to protect themselves and carry out their duties if gas is used. The information given here can, if necessary, be supplemented by consulting the local E.P.S. Gas Officers. Refer also to the National Service Department's Handbook No. 2 on War Gases.

139. War gas may be distributed by bombs or shells containing a small and not very violent explosive charge ; or by spraying from aircraft. A gas which will remain about for a long time is called " persistent." One which is readily dispersed by air currents, &c., is called " non-persistent." Most of the persistent gases are distributed in liquid form.

140. Your respirator is designed to protect your eyes, nose, throat, and lungs.

Types of War Gas.

A. Tear Gases.

141. These are comparatively harmless as they will not produce any effects which are likely to last for long.

(*a*) **C.A.P.** is non-presistent, smells like floor-polish, and is released as an invisible cloud of tiny particles.

(*b*) **K.S.K.** is a persistent, dark-brown liquid which gives off invisible gas smelling like pear-drops.

(*c*) **B.B.C.** is a very persistent brown liquid giving off invisible gas with a penetrating bitter-sweet smell.

142. All of these gases make the eyes sting and water and make the eyelids twitch. C.A.P. may also irritate exposed skin. Such symptoms usually subside when the respirator is put on. If not, move out of the contaminated area and bathe the eyes with warm water or salt solution (1 teaspoonful to a pint of water). Wash any irritated skin with soapy water.

B. Choking Gases (Extremely Dangerous).

143. (*d*) **Phosgene** is a non-persistent, metal-corroding, almost invisible gas smelling like musty hay. It may be seen as a white cloud near the point of burst. A trace of it makes smoking unpalatable. It produces watering of the eyes, coughing, and a suffocating sensation, with pain in the chest. These symptoms may temporarily lessen or disappear, to be followed later by severe damage to the lungs.

144. (*e*) **Chlorine** is a non-persistent, metal-corroding, greenish gas with a penetrating smell like bleaching-powder. Repeated exposure rots clothing. The effects upon the human body are similar to those of phosgene, but more irritant and less poisonous.

145. Persons affected or believed to be affected by these gases must be moved at once from the gas area. Even if they think they have recovered, make them lie flat on their back and stay there without moving until a doctor is summoned or they are sent to hospital as stretcher cases. Keep them warm with blankets and hot-water bottles, and loosen all tight clothing. Moisten their lips with sips of warm sweetened tea or water. Sponge their mouths frequently, but do not allow any liquid to pour down their throats. Do NOT apply artificial respiration nor give any stimulant.

C. Blister Gases (Very Dangerous).

146. (*f*) **Mustard Gas** is a persistent, heavy, oily liquid, dark-brown or straw colour, with rainbow colours on wet surfaces. The liquid penetrates all surfaces except metals and glass, but rubber materials give a long period of protection. Ordinary clothing gives no protection at all. The liquid is **slowly** destroyed by water or alkali. It gives off an invisible gas with a **faint** smell of garlic, onions, horse-radish, or mustard. Some people are unable to smell it. Serious exposure to vapour irritates and inflames the eyes, with swelling within twenty-four hours; it causes coughing and loss of voice; and irritates and reddens the skin, particularly tender and moist parts, often with blistering after twelve or more hours. The liquid irritates the eyes **at once** and reddens the skin in about two hours, followed by blisters in twelve to twenty-four hours.

147. (*g*) **Lewisite** as used in war is a persistent, heavy, brown liquid, smelling strongly of geraniums. It has great powers of penetration, contains arsenic, and gives off an invisible gas. It is rapidly destroyed by water or alkali. Unlike mustard gas, lewisite, whether liquid or vapour, produces severe **immediate** irritation, although **slight** exposure to the vapour of either gas has little injurious effect.

148. Injured persons must be quickly moved away from the gas and treated at once. After protecting the hands by rubbing them with bleach cream or kerosene, take off the contaminated clothing (do this outside or in the air-lock and put in a dust-bin or other covered container). With a dry rag dab off any liquid visible on the skin, but be particularly careful not to smear the liquid on to unaffected parts. Provided no reddening or blisters have developed, rub in anti-gas ointment No. 2 or apply bleach cream, if available. (Wipe or wash off **bleach cream** after two minutes.)

If liquid has got into an eye, wash it out at once with plenty of water or with a solution of 1 teaspoon of either salt or baking-soda to a pint of water. Use 1 pint of the solution for each eye and put the used water in an airtight receptacle. Take care not to contaminate the other eye or other parts of the body. If the liquid gets into the mouth, rinse it out with the solution; then drink a pint and vomit. Bathe the whole body with soap and water, preferably warm.

D. Nose-irritant (Sneezing) Gases.

149. (*h*) **D.A.,** (*i*) **D.M.,** and (*j*) **D.C.** are all non-persistent and practically odourless and invisible. They are released as small particles of arsenical solids. The symptoms, which do not appear for some minutes, are burning and aching pains in nose, mouth, and throat, and later in the chest, accompanied by sneezing and, in more severe cases, vomiting and acute mental depression. The delayed symptoms may get worse when you put your respirator on. Do NOT remove it until you are in fresh air, as other more dangerous gases may also be present. If the respirator is put on in time,

only fresh air and rest may be needed. In severe cases gargle and wash out the nose with a warm solution of 1 teaspoonful of baking-soda to a pint of water. Watch the victims carefully for some time because of the acute mental depression.

E. Systemic Poisoning Gas.

150. (*k*) **Arsine** is a non-persistent, invisible, almost odourless gas liberated by the action of moisture on calcium arsenide, a grayish-white powder. It causes weakness, breathlessness, headache, nausea and vomiting, and pain in the back and stomach. It affects the blood, liver, and kidneys (blood in urine). The severe symptoms are delayed for an hour or two.

151. Complete rest and warmth are essential. Give hot sweetened tea. Treat persons affected as stretcher cases and get medical advice.

152. Identification of Gases.—The enemy may release several kinds of gas together. Until the E.P.S. gas experts have definitely ascertained what the gases are, the only safe rules are to assume that (*a*) all liquids are "blister gases"; (*b*) all gas clouds are "choking gases"; (*c*) all smokes are "sneezing gases," even if there is a fire about somewhere.

153. Preparing a Gasproof Room.—The following information may be useful for Wardens, but they should not discuss it with the public except with the guidance of the E.P.S. Gas Unit after careful consideration of local conditions. It will not be possible to gasproof completely the rooms of many New Zealand timber dwellings. Some protection can, however, be obtained by shutting all doors and windows and then going to a specially prepared room. The ideal room for gasproofing will have:—

(*a*) Only one door:
(*b*) As few windows as possible. (These should be small, should face soft ground, and should be protected as described in paragraphs 91 and 92):
(*c*) Twenty square feet of floor space for each person:

(*d*) Only one external wall, away from prevailing winds:
(*e*) As much protection as possible from blast and splinters and from wind and draught:
(*f*) No fireplace. If there is one, plug it up with paper, rags, sacks, or cushions.

154. When you have selected your room—

(*a*) Plug with pulped newspapers all cracks around windows, in ceilings, in walls, between floor boards, and between the skirting and floor boards or walls. Gas travels mainly with air currents, which force it through the finest cracks:
(*b*) Block all ventilators and keyholes:
(*c*) On the inside of the door, nail strips of felt to stop draughts:
(*d*) On the outside of the door (*a*) nail a piece of wood padded with felt, so that the closed door presses firmly against it; (*b*) nail a blanket to the top and hinge side of the door-frame with at least 12 in. trailing on the ground. Also nail it a third of the way down the other side:
(*e*) Before using, wet the blanket thoroughly with water:
(*f*) Prepare the room for a complete black-out.

155. Air-lock.—There should be an air-lock at the entrance if people have to go in or out while there is gas outside; otherwise gas will enter every time the door is opened. An air-lock consists of two gasproofed doors or screens separated by a gasproofed compartment. Both doors or screens must **never** be opened at the same time. The larger the air-lock the better. If no air-lock can be made, place blankets on both sides of the door. Wherever possible keep some bleaching-powder outside the air-lock to decontaminate the shoes of those about to enter. Contaminated outer clothing should be removed outside and placed in a dust-bin or other covered container. Have in the air-lock some anti-gas ointment, bleach-cream, or kerosene to rub on the hands before removing boots, &c.

156. Equipment for Gasproofed Room.—The following simple necessaries should be kept available for the room :—

Electric torches or, failing them, candles and matches; essential furniture, especially seats, blankets, cushions, &c.; sanitary utensils, soap, disinfectant, and anti-gas ointment; water for washing and drinking (latter in covered airtight containers); cold provisions in covered airtight containers; plates, knives, forks, spoons, cups, &c. (keep these covered and wash before using); buckets, hammer, tacks, spare newspapers, paste; a radio receiving set; spare clothing.

If water and electricity are laid on, so much the better.

No smoking should be permitted.

157. If caught in the open without your respirator, keep calm and do not expend unnecessary energy. You will use ten times the amount of air if you run fast over the same distance as you will if you walk. Breathe as little as possible. Take a breath and walk as far as you can against the wind. Continue doing this until you are out of the gas or reach safety. A wet handkerchief will partly protect the eyes, mouth, and nose.

SECTION No. 10.

LIGHTING RESTRICTIONS.

158. This section sets out those portions of the lighting restrictions which were not suspended on the 24th December, 1942. Wardens will be kept informed of any changes made in the future, and, if in doubt about any point should ask for an authoritative ruling through their senior officers.

159. Time when Restrictions apply.—Generally speaking, the lighting restrictions apply during hours of darkness (from half an hour after sunset to half an hour before sunrise). The various E.P.S. Chairmen have been authorized to modify slightly the times of local application.

160. Responsibilities of Wardens :—

(*a*) Wardens must themselves know the requirements thoroughly before attempting to advise or instruct others :

(*b*) In an emergency Wardens must see that all lights in their area comply with the regulations. This includes inside, outside, and street lights. Any unscreened light, whether at the back or the front of a building, can guide an enemy aeroplane to its target :

(*c*) Each Warden should be allotted a beat which he can comfortably cover twice on each patrol, so that he can call again where he has already pointed out an infringement :

(*d*) In areas visible from the waters of the Waitemata Harbour or of Port Nicholson the streets should be patrolled several nights a week. Wardens must instruct all householders —*e.g.* early morning workers—who switch on lights before dawn to maintain their brown-out (an enemy attack might very well come at this time) :

(*e*) Wardens have the right to go to the door of any premises, but they have no power to enter unless they produce from the Central Committee a written authority to do so (see paragraph 9 *supra*) :

(*f*) Whenever Wardens notice any infringement of the lighting regulations they are duty-bound to call upon the occupier of the premises and bring it to his notice. If assistance or advice are refused, or if warning and persuasion prove ineffective, they should report the matter to their senior officers. For this purpose a pad of suitable forms should be used. One copy of the completed form, signed and dated, is left with the offender, and the duplicate remains in the pad for further action.

161. Responsibilities of Individuals and Public Authorities.—**Any person,** whether the occupier or not, who wrongfully displays lights on any private or public premises is personally responsible. **Every occupier** must make provision to black-out or brown-out his premises as required by the regulations. He is personally responsible if he fails to make such provision, but is not necessarily responsible if, after he has done this and everything else in his power, some other person breaks the regulations on his premises and without his knowledge. The penalties for individuals are up to three months' imprisonment or a fine of £50. Although the Crown itself cannot, of course, be prosecuted, every State employee (including members of the armed forces) is individually liable for any offences he commits.

I. RULES WHICH APPLY EVERYWHERE BEFORE AN EMERGENCY.

162. (*a*) Except for police inspection lights, **no time-switch-controlled light may be used anywhere at any time.**

(*b*) **No light of any sort** may be left on outside after dark unless some one aged fourteen or over is available to switch it off immediately if necessary.

(*c*) The same rule applies to **inside** lights except where the room in which the lights are on is completely blacked out.

163. Police Inspection Lights.—Some firms have a standing arrangement whereby the police inspect safes and strongrooms at night, a light being left on inside to enable these to be seen through the window or door. Such arrangements can be continued under certain conditions which will not create any risk during an emergency; but approval must be obtained from both the E.P.S. Chairman and the local Senior Police Officer. The approval may be withdrawn at any time, and lapses at once if **any** of the following conditions is broken:—

(*a*) The amount of light and unscreened window space must be no greater than is considered necessary by the Local Lighting Controller:

(*b*) The light must be contained in a reflector which directs all the beams on to the door of the safe or strongroom:

(*c*) Both the light and the reflector must be so fixed that they cannot swing or tilt.

164. Seaside Abodes.—Many beach resorts, baches, &c., are let or sublet to a series of tenants through the summer season. Since it would be unreasonable to expect each **tenant** to provide black-out screens for the bach windows and doors, the person who lets the bach for short periods must provide and maintain them. Each tenant must leave the black-out screens, &c., in good condition. The order applies to any type of fixed or movable structure (including tents) at a seaside holiday resort.

Provisions for a Black-out.

165. Whenever the warning-signals are sounded at night a complete black-out must be enforced at once. To provide an instantaneous black-out requires much preparation in advance. Here is a summary of the steps to be taken in various types of premises:—

166. Street Lighting, &c.—Each system of lighting used for roads, streets, harbours, wharves, yards, tramway tracks, traffic signals, and outside premises must be under centralized switch control.

167. Residential Premises.—The occupiers of all types of residential premises must have prepared for use at a moment's notice at least one room which can be completely blacked out in an emergency. The room must be large enough to house under healthy conditions, and, if necessary, for the whole night, as many persons as are likely to be on the premises.

168. Business Premises, &c.—In an emergency most factories, offices, and business premises would immediately shut down and disperse the staff to safety. It would not be reasonable to require the occupiers to provide sufficient blacked-out space for the whole of the staff. Each E.P.S. Chairman has therefore been given power to exempt the occupiers in writing from completely blacking out the **whole** premises. Sufficient blacked-out space must, however, be provided for all persons who have to remain on duty in the building during an emergency.

169. Essential Activities.—Even in an emergency certain essential activities will be maintained as far as possible (telephone-exchanges, munition-manufacture, &c.). In order that such work may continue without interruption **the whole** of the premises must be provided with a complete black-out. The Dominion Lighting Controller may also at his discretion require at any time the complete blacking-out of certain other premises which he specifies.

170. Dangerous Places.—As a safety measure for the public and for E.P.S. personnel during a black-out all local authorities should paint pavement kerbs white (especially at street intersections): also the steps on any public right-of-way and other places of danger which normally would be lit at night.

171. Hints on preparing a Black-out.—Dark blinds, curtains, and various other materials will provide a total black-out. A good way to test your blacked-out room is to fit it up in the daytime and see if any light comes **inside.** Avoid any cracks between curtains, or any gleam of light round the edges. If you open the door of a blacked-out room, remember that light can show into the hall or passage or some other room of your house and from there it may be visible outside.

172. Blinds of light-coloured material can be treated for black-out purposes with oil-bound water paint or dark distemper. Or you can use this mixture: 2 oz. of concentrated size, 6 oz. of lamp-black, and 2½ teaspoons of gold size (ask the chemist for 2½ drams). Mix the size and lamp-black powders dry; then add the gold size (which is in liquid form); finally add 2½ pints of boiling water. Apply with a brush. This quantity will cover 90 square feet.

173. It is convenient to fit your black-out blinds on to spring rollers. But you can also nail them to laths at top and bottom and fix the laths to hooks on your window or door frame. Some materials deteriorate quickly if they are bunched or if dust collects in the folds. Most textile and paper fabrics last longer when rolled.

174. Windows or skylights can also be painted inside with distemper or paint. This mixture will serve: 7 lb. of whiting and ½ lb. of black distemper mixed with water into a thick paste.

II. RULES FOR A COMPLETE BLACK-OUT DURING AN EMERGENCY.

175. (*a*) No **outside** lighting of any type is permitted, not even a match or a cigarette.

(*b*) **Hand torches** may, however, be used, but **only** if the glass is completely obscured except for a circle ½ in. across, **and if** that ½ in. is covered with one thickness of white tissue paper.

(*c*) Buildings must maintain a complete black-out by any of the means above described.

(*d*) No **vehicle** may display any light except outside lamps not exceeding 7 watts in power which are covered with some material which obscures the light as effectively as two sheets of newspaper that are not wetted, oiled, varnished, or otherwise treated to increase transparency. No light may be displayed at any time while the vehicle is parked. Ambulances, police and fire-brigade vehicles are exempted from these requirements while performing urgent duties. Vehicles used by the armed forces adjust their lighting in accordance with Naval, Army, or Air Force orders. **Specially authorized** E.P.S. vehicles may travel with two unobscured 7-watt parking lights and a tail light.

(*c*) Special rules apply to lights used for rail and tramway traffic signals, lighthouses, beacons, &c., lights used by repair gangs working on essential services, and any others specially exempted by the Dominion Lighting Controller.

176. Bomb-craters in Roadways.—If bombs have exploded in roadways, Wardens must indicate to traffic where the craters are. After dark a red light from a dimmed, well-screened hurricane lamp may be used if it throws no light above the horizontal and casts little glow on the road surface. These lamps must not be over 1 candle-power. Where roads are partially blocked a safe route for traffic should be promptly marked with large patches of white paint.

III. ADDITIONAL PRECAUTIONS AT CERTAIN HARBOURS.

177. In certain **defined areas** special rules apply to those lights **which are visible from the waters of the Waitemata Harbour or of Port Nicholson.** Wardens in the localities affected must ensure that they know the boundaries of these areas so far as their own district is concerned; and the boundaries should be noted on the maps at the Wardens' Post. Every light in any road or street forming the boundary of the restriction area, and every light in or attached to any premises fronting either side of any such road or street, is also deemed to be within the area **if it is visible from the waters of the harbour.**

Outside Lights visible from the Harbour.

178. Road and Street Lighting.—(*a*) The bluish-white or bright-orange lamps known as electric-discharge lamps must **not** be used.

(*b*) The street lights must be shrouded and adjusted in power so that neither the lights nor their shrouds can be seen after dark with the naked eye from any part of the harbour, and so that no undue amount of light escapes on to, or is reflected by, nearby premises or structures.

179. Wharf working lights and railway-yard lights must, as far as practicable without unduly interfering with working-conditions, be screened so that neither the lights themselves nor their shrouds can be seen from any part of the harbour.

180. Other outside lighting must be so shrouded that neither the light nor its shroud can be seen after dark with the naked eye from any point a mile or more away, and so that no undue amount of light escapes on to, or is reflected by, nearby premises or structures.

181. Special rules apply to navigation lights, harbour lights, and aircraft obstruction lights.

Inside Lights visible from the Harbour.

182. Windows.—Where rooms are lighted at night-time all windows and fanlights visible from the harbour must be covered with blinds, curtains, screens, or other materials. Whatever is used must be at least as effective as a beige-coloured holland blind. Windows may be partly opened for ventilation **so long as no direct rays from the lamp shine through the opening.** It is permissible for occasional chinks of light to escape at the edges of the blind.

183. Skylights need not be covered if the inside lights are so shaded that no direct rays shine upwards and if the Local Lighting Controller is satisfied that there is no excessive light reflected through the skylight from the interior. Otherwise they should be treated the same as windows.

184. Doorways.—If light would otherwise escape through any doorway, the door must be kept closed after dark except when people are passing in or out. Doors facing the harbour may, however, be left open to cool the house if the hall lights, &c., are switched off.

185. Shop Windows and Shop Fronts.—Instead of complying with paragraph 182 above, shopkeepers may display lights in the window and inside the shop without brown-out screens **provided that**—

(*a*) They are so shielded with light-proof material or paint that no direct rays can be seen from the outside;

(*b*) Not more than one-tenth of a foot candle of light reaches the street. The measuring-point has been fixed at 6 ft. from the building and 4 ft. above the ground, and each E.P.S. has been supplied with measuring-instruments:

(*c*) No one **window** light is of greater power than a 60 watt filament lamp.

Partial Blackout.

186. The senior Army or Navy Officer at Auckland or Wellington may order the immediate disconnection and extinguishment of all road, street, harbour, wharf, ship, and railway-yard lights. While these lights remain extinguished, **no vehicle** situated in any position from which its lights could directly or by reflection **be seen from any point in the harbour** is permitted to display lights or to be moved after dark, except in accordance with the rules which apply during a complete black-out (see paragraph 175 (*d*) above).

IV. MOTOR-VEHICLE LIGHTS BEFORE AN EMERGENCY.

187. In certain defined roads and streets bordering the waters of the Waitemata Harbour and of Port Nicholson vehicles must display only the nearside headlamp, together with at least one but not more than three parking lights and a tail light, each not exceeding 7 watts in power. When the vehicle is on a flat road the beam of light from the headlamp must descend at the rate of not less than 8 in. in 10 ft., measured horizontally. Vehicles must **not park with their lights on** in any position from which the lights would be visible from any part of the harbour. Remember, however, that the Traffic Regulations prohibit any vehicle from parking without lights unless it is sufficiently close to a street light to be clearly visible at a distance of 150 ft.

188. Every vehicle which is or may be used at any time in any of the coastal roads or highways, &c., gazetted as headlight-restriction areas or parking-light areas must have its lights adjusted at all times so that the right headlamp may be immediately extinguished and the nearside headlamp "dipped" as described in the second sentence of paragraph 187.

SECTION No. 11.

GENERAL ADVICE TO THE PUBLIC.

189. Fire Precautions.—All householders should take thes precautions against fire :—

(*a*) Keep a supply of sand in a cool dry place on each floor ready for instant use :

(*b*) Make sure there is access to the ceiling and that manholes are easily uncovered. Fire bombs can stick in the rafters. (See Section 6.)

190. What People must do at Home when the Siren sounds :—

(*a*) At night complete the black-out. Make certain that no lights show outside :

(*b*) Fill the bath, wash-tubs, dust-bin, &c., with water. Then use water sparingly. (Whether the water-mains are damaged or not, water will be needed for fire-fighting) :

(*c*) Attach the garden hose to a tap near or in the house :

(*d*) Turn off the gas at the meter :

(*e*) Turn pots and pans upside down to prevent powdered glass getting into them. Cover all food :

(*f*) If you have a refrigerator : (i) Switch it off ; (ii) open all windows in the room ; (iii) close all doors but leave unlocked and unobstructed ; (iv) if any damage causes gas to leak, tell your Street Warden at once, stating the type of equipment :

(*g*) Animals, whether pets or beasts of burden, must be cared for, but do not take any of them into your air-raid shelter. Dogs may become excited by the sound of explosions ; so tie them up or muzzle them. Injured animals must be either treated or destroyed :

(*h*) If you have no special shelter, take cover where you are safest, away from outside walls :

(*i*) "Stay put" until the "all clear" sounds.

191. How to obtain Help : If there is a serious casualty or an urgent maternity case in the house, hang a sheet, towel, or white tablecloth from a window. At night call for your Street Warden, who will know where to seek assistance. In an emergency all first-aid and medical services will be organized from First Aid Posts and Dressing Stations. Do not call your own doctor. He will not be free.

192. Health Precautions in an Emergency.—Earthquakes or air raids may disorganize some of the public services provided in homes. Public health depends upon water-supply, drainage, and refuse-removal services. Wardens must see that households know—(1) how to improvise if these services are disorganized; (2) how to keep their homes sanitary.

193. Water-supply.—Have available enough water for at least one day's household requirements. Keep this covered. In wet weather collect rain-water from the downpipes. You can use the water in the hot-water storage tank for drinking. Turn off the electric switch first. In an emergency boil all drinking-water and milk.

194. Drains and Sewers.—Drains or sewers may become blocked through failure of the water-supply, &c. Whenever you receive instructions or whenever your drains are not functioning satisfactorily, stop using the lavatory. Do not make things worse by running waste water from sinks, baths, hand-basins, or wash-tubs into the drain. Use basins, buckets, &c., for temporary washing. Dig a hole or shallow trench for waste water. For a temporary privy use a tin or bucket in a shed or outhouse. You must have a cover to keep out flies.

195. Householders with available garden space must bury nightsoil on their own property. **If nightsoil is not buried public health is endangered.** Use this method: Mark off a rectangular section, say 8 ft. by 12 ft. Along one side dig a trench 2 ft. wide and 1 ft. deep. Take the earth to the opposite side of the area. Place the nightsoil in the trench and rinse out the bucket with used washing-water. Pour the rinsings into the trench and then cover immediately with clean earth. Do this daily. At least 6 in. of earth should be

placed upon the deposit. Fill up the first trench with the earth from the next one, dug parallel with the first and about a foot away. **Avoid digging holes haphazardly.** Do not add disinfectant, but sprinkle kerosene on the surface to keep flies away. Any household refuse which is left to accumulate is a danger to health. It must be buried or burnt.

196. Protection of Food.—When sanitary services are disorganized, guard against food contamination. Keep all food in flyproof cupboards, muslin screens, &c. Use as few dishes as possible; wash them directly after the meal; keep them covered. Boil your water before washing dishes. If it cannot be boiled, add a few Condy's crystals (permanganate of potash). Wash your hands before preparing or eating food.

197. Evacuation and Dispersal.—The Prime Minister recently stated :—

"As there can be no certainty as to when an enemy attack will develop, nor the locality which will be the object of attack, it would be most unwise in view of the disruption of community life to evacuate selected areas now. The important consideration which must be borne in mind is that essential services must not be impeded and industries must continue as far as possible. Our national effort must not be unduly impeded. If it should, however, be necessary to evacuate any area, those who have essential work to do in that area will be moved no farther than circumstances require. It may, however, be necessary to move women and children to some more distant locality when danger threatens and the appropriate instructions are issued. Until that time arrives, people should just remain in their homes and go on with their daily work in their normal way."

198. Evacuation means the moving of people to some safer area where they will remain until further orders. Families which are evacuated are required to pay their way. Billeting fees, not exceeding 4s. per person per day, are fixed by the E.P.S. for the locality which receives them. Cases of hardship will receive special consideration.

199. Dispersal does not go as far as evacuation. If one part of a city suffers badly in a raid, people may be moved for the time being to other parts, or if any part of the city is specially threatened it may be cleared to prevent casualties. If people are bombed out of their homes Wardens will direct them to the nearest rest centre. The Accommodation Unit provides for billeting or rehousing where necessary.

200. Food-supplies : The E.P.S. Supply Unit will deal with emergency food arrangements, but Wardens should encourage all householders to keep their own stocks **within reasonable limits.** Evacuees are expected to carry from their own homes any food and other supplies that permit of transport. **No panic buying or hoarding will be tolerated in a crisis.**

201. What to do if an Invasion Occurs.—If fighting breaks out in the neighbourhood, civilians are ordered to "stay put." They should keep indoors or, better, in their shelter until the fighting passes by. Persons at work or those who have special orders should carry on as long as possible and only take cover when danger approaches. People going to work should continue on their way if possible. If a few enemy soldiers or tanks are seen, do not assume that the enemy have taken control. They may merely be an advance party or stragglers from the main body. Civilians should try in general to behave as normally as possible.

202. People who want advice should be encouraged to come to the Wardens for it. Orders will be given to the public by the police and by E.P.S. Wardens, but there may be times when they will have to take orders from officers of the armed forces. If any one doubts the genuineness of orders he receives from some one in uniform he can ask to see that person's papers. Faked orders, false information, and rumours may be used by the enemy. Don't let the enemy use **you** as his unwitting agent. Wardens should (*a*) squash all rumours and (*b*) circulate promptly all reliable information.

203. The Government may give instructions over the radio. If so, the Wardens will pass these on. Any official leaflets will be distributed only by policemen, Wardens, or postmen. Genuine posters and instructions will be put up only on E.P.S. notice boards

and official sites such as police-stations, post-offices, E.P.S. posts, town halls, and schools. Wardens should find out and tell the public where to find official notices or news bulletins. Report to the police any case of faked orders or bogus news.

204. Newspapers and radio services will carry on as far as possible. If there is any temporary breakdown in news supply, do not listen to rumours or pass them on. Wait until correct news comes through again.

205. Denial of Resources.—Wardens may have to assist in the programme of denying resources to the enemy. The Army Command may decide that in the event of an invasion vehicles and anything else that may be of use to the enemy shall be destroyed or removed in certain areas. Orders of this nature will be issued only from Army Headquarters and will come to Wardens **only** through their E.P.S. superiors. In each locality an E.P.S. Technical Committee is responsible for all Denial plans. Wardens must get their definite instructions from this Committee, and they must tell the residents concerned beforehand what they must destroy (and the method) when the order comes.

SECTION No. 12.

SOME USEFUL HINTS.

206. Since the duties of a Warden are more varied than those of other E.P.S. personnel, versatility must be one of his leading qualities. The Warden must be master of many things; he must be able to improvise; he must be adaptable to circumstances. Here are some hints on situations which may well confront a Warden during his preparations and during an emergency.

207. Taking a Casualty down a Ladder.—Unconscious or badly wounded persons can be moved only with special appliances. If such persons are in the upper story of a house it is better to leave them in a comfortable position than to risk further injury by carrying them wrongly. To take a patient down a ladder the rescuer goes first. A patient who becomes dizzy or faint can be spread across

the ladder with his arms and feet clear of the runners. The rescuer stands behind him, placing his arms under the patient's arm-pits and, descending slowly, he sustains the weight on his forearms and knees.

FIGURE 11.—Taking a casualty down a ladder.

208. The Fireman's Lift is very useful for persons suffering from faintness or shock **but otherwise uninjured.** If constantly practised, this lift is easier for the bearer than pick-a-back, but it is not so comfortable for the patient. Here is how to do it: Roll the patient on to his face, keeping his arms to his sides. Stand at his head, put your hands under his shoulders, and raise him to a kneeling position or get some one to help. Put your hands under his armpits, and raise him up a little. Then stoop and place your head under his right arm, put your own right arm between or round his legs,

bring his weight well on to your shoulders, grasp his right wrist with your right hand and stand up, working the weight well up on to the back of your neck. When you practise with healthy patients remember that they give you a certain amount of help, knowing what is expected.

209. The Chair Knot.—Wardens should know how to tie a chair knot. The shorter loop which goes under the arms should be the full length of the patient's arm and the other one which goes under his knees should be about 2 ft. longer. These loops when formed are held in position by half-hitches as shown in the second illustration and the half-hitches are drawn tight to lock the knot firmly. The chair knot is useful for lowering a person from a height and is superior to other knots because it can be more easily adjusted and because there is less liability to spin while descending. The person cannot get out, however much he may struggle, but no undue pressure is caused upon his body. A Warden can also use the knot to lower himself if he has a long-enough rope. The long loose end is passed round a beam or some furniture which will support the Warden's weight, and he lets the rope out as he descends.

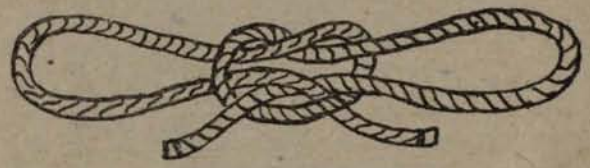

FIGURE 12.—Chair knot.

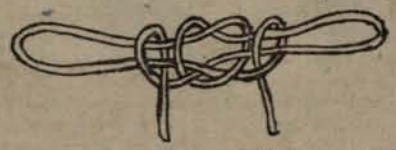

FIGURE 13.—Chair knot with half-hitch round the bights.

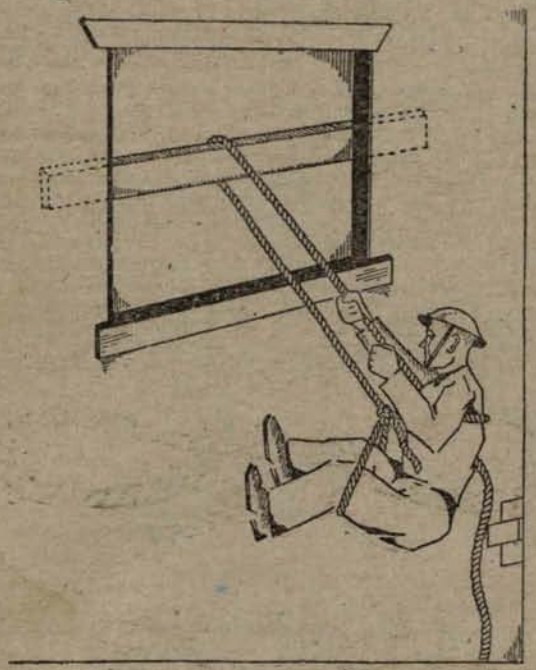

FIGURE 14.—Warden using a chair knot to lower himself.

210. Forced Breathing.—As a Warden may have to enter an atmosphere charged with coal-gas without protective apparatus he should be trained in forced breathing. By means of this a man can enter a poisonous atmosphere to a distance of approximately 40 yards and bring out a person of average weight to fresh air without himself inhaling. In forced breathing a dozen breaths are taken in quick succession, after which there is no desire to breath for a minute or so. During this time a man can do fairly strenuous activity without harm to himself. The period of no breathing varies according to the activity undertaken and to the individual (60 to 100 seconds if resting and approximately 60 seconds while doing strenuous work). A man merely holding his breath would last only from 15 to 45 seconds doing strenuous work. Native pearl divers used forced breathing long before the invention of diving devices.

211. How to throw Water on to a Blaze.—A forceful throw of a bucket of water can frequently put out a fire and save a building. Accurate and effective aim is impossible with one hand holding the handle and the other holding the bottom, and much water will be wasted. Close the handle down to the rim and grasp both top and bottom of the bucket. Only half fill the bucket. You cannot control a full one or throw it any distance. It is better to tip a little to waste than waste the lot. Two large buckets, used alternatively, are ideal. Watch as you swing back so as to get the maximum swing without losing water. Follow through the throw, always pointing the mouth of the bucket at the blaze. With practice you will be able to judge the distance and the weight of water you can handle, to aim accurately, and to get the maximum force from your throw. As it is quicker to fill your bucket from a full bath, leave the tap running while you fight the fire.

212. Finally, in all your duties, always prepare for the worst, but hope for the best.

213. TWENTY-SIX USEFUL KNOTS.

KNOT TO MAKE A STOP ON A ROPE.

1. **Figure of Eight Knot :** Fairly secure and easy to undo.

KNOTS FOR JOINING ROPES TOGETHER.

2. **Reef Knot or Square Knot :** Easily undone ; used for small dry ropes of equal size. Not very secure with wet rope.

3. **Draw Knot :** Similar to reef knot, except that running end is returned through loop. May be undone easily from a distance by pulling running end.

4. **Sheet Bend :** For ropes of unequal size. Difficult to untie, and more secure than reef knot. A useful knot.

5. **Double Sheet Bend :** Used for greater security, especially with wet ropes of unequal size.

6. **Carrick Hitch :** Secure for general purposes. Tighten knot carefully.

KNOTS TO ATTACH ROPES TO SPARS OR OTHER ROPES.

7. **Half Hitch :** For unimportant lashings under steady pull only.

8. **Clove Hitch :** A useful knot for securing guys. For greater security running end should be secured to the standing part.

9. **Magnus Hitch :** More secure than clove hitch.

10. **Timber Hitch :** A useful knot for steady pull only ; easily undone.

11. **Two Half Hitches :** Used for belaying a rope ; more secure if running end is made fast to standing part.

12. **Round Turn and Two Half Hitches :** A useful belaying knot.

13. **Rolling Hitch :** Fairly secure and easily cast off.

14. **Fisherman's Bend :** Often used with rings. Secure under intermittent pull. Good permanent knot if running end secured.

15. **Draw Hitch :** Very secure under intermittent pull ; easily untied.

16. **Killick Hitch :** Used for hauling and lifting spars.

17. **Lever Hitch :** Used with a lever to draw pickets or for rope ladder.

KNOTS FOR USE WITH HOOKS OR RINGS.

18. **Blackwall Hitch :** Easily adjusted and secure if running end is held.

19. **Catspaw :** Very secure for heavy loads.

20. **Becket Knot :** For securing rope to block rings.

KNOTS TO MAKE A LOOP ON A ROPE.

21. **Harness Hitch :** A loop for a man's shoulder when dragging on a rope.

22. **Running Knot :** Will draw taut round an object.

23. **Bowline :** A non-slip loop for use at the end of rope.

24. **Bowline on a Bight :** A non-slip loop for use at the middle of rope.

25. **Running Bowline :** Can be slipped along a spar and tightened at any point as required.

26. **Flemish Loop :** Very secure, but sometimes difficult to untie.

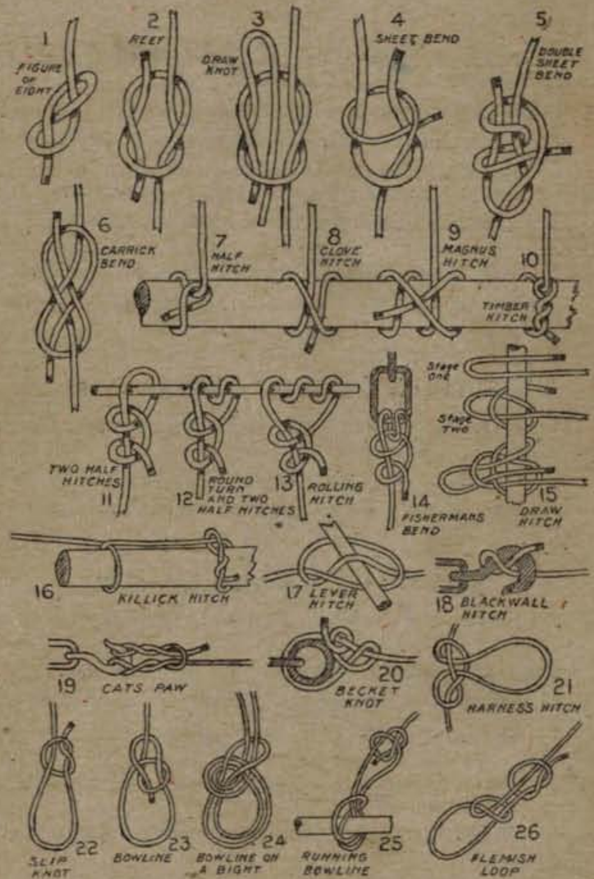

FIGURE 15.—Twenty-six useful knots.

NAMES AND ADDRESSES OF WARDENS ALLOTTED TO A POST.

Name.	Home Address.	Phone No.	Work Address.	Phone No.
District Warden :				
Block Warden :				
Other Wardens :				

NEAREST TELEPHONES WHICH CAN BE USED.

Place.	Phone No.

LOCAL E.P.S. ORGANIZATION.

Addresses.	Phone Nos.
District Wardens' Post—	
Block Wardens' Post—	
Nearest Police-station—	
Nearest Fire-station—	
Nearest First-aid Post—	
Nearest First-aid Party Depot (if any)—	
Nearest Rest Centre—	
Nearest Decontamination Depot—	

LIST OF NEAREST PUBLIC SHELTERS :—

Capacity.	Place.

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N.B.—References are to Paragraph Numbers.

Space for plans and local notes.

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