



AIR RAID PRECAUTIONS

ADVICE TO HOUSEHOLDERS

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AIR RAID SIGNALS BY SIREN

1 PREPARE FOR AIR RAID

A SERIES OF ALTERNATE SHORT & LONG BLASTS



2 RAID IMPENDING

*A SERIES OF SHORT BLASTS OF 5 SECONDS ON WITH
2 SECONDS BREAKS*



3 ALL CLEAR

A CONTINUOUS BLAST OF 2 MINUTES



LOCAL SIGNALS BY WARDENS

Sharp blasts on the whistle—Take Cover or Incendiary
Bombs falling.

Hand rattle—Presence of Gas.

Hand bells—All Clear.

CONTENTS.

	PAGE.
AIR RAID SIGNALS Inside front cover.
SECTION 1.—THINGS TO DO	7
SECTION 2.—THINGS TO DO IN AN AIR RAID	9
Action to be taken; Fire Prevention; Incendiary Bombs and how to deal with them; After the Raid.	
SECTION 3.—LIGHTING RESTRICTIONS.	
Part 1.—Lights in Domestic Premises	14
Responsibility of Police Department; Objective; Emission of Light and Instructions.	
Part 2.—Road Vehicles and Pedestrians	19
SECTION 4.—Shelters.	
Part 1.—Refuge Rooms	22
Requirements and Instructions.	
Part 2.—Garden Shelters	29
Open Trench; Partly sunk; Surface and Underground; Construction of and Materials for Underground Shelter.	
DIAGRAM—Risks from air raids	35
SKETCHES OF SHELTERS	36
Open Trench; Partly sunk; Anderson; Surface; Pill-box, and Underground.	

AIR RAID PRECAUTIONS.

ADVICE TO HOUSEHOLDERS.

SECTION 1.—THINGS TO DO.

On board ship, both crew and passengers are instructed beforehand and not when a state of emergency arises, where to go and what to do. The captain considers this instruction a matter of ordinary routine and everyday precaution. He prepares against the possibility of a shipwreck—which he hopes will never happen. Every householder or head of a family or business should consider himself as the “captain of the ship” and should know beforehand how to protect, in war time, his own people and home from the effects of high explosive bombs, incendiary bombs, and poison gas.

If air raids come to this country, every home will need to have a place specially prepared in which the whole household can take shelter. All the precautions recommended in this booklet are useful. Most of them can be adopted to some extent by everyone. The essential things cost little to do, and some of the more elaborate ones you will find you can do quite easily, either yourself or acting in conjunction with a neighbour.

Things to do.

Decide, after reading this booklet, what form your shelter will take. It may be a garden shelter, or it may be a refuge in your home (see Section 4).

If you are in charge of a business or shop, an hotel or boardinghouse, or of tenements, decide upon places of shelter for those for whose safety and welfare you would be responsible.

Study carefully the precautions you can take against fire, and especially the instructions for dealing with a small incendiary bomb.

In time of war, buildings have to be darkened completely at night. Consider this question for your home and any other premises for which you are responsible.

Give consideration to—Materials for gas-protection and for darkening your whole house or business premises and the things you would need in your place of shelter.

See that your radio set is in proper working order to receive information and instructions.

See that all grown-ups are familiar with the contents of this booklet and know of the arrangements you are making for their safety.

Read through these notes carefully, think them out, and consider how to apply them to your own home. You will know, then, exactly what to do. Having considered the problem before danger arises, you will have your plans made and be ready to carry them out quickly if there is need.

Prepare and equip your place of shelter. Equipment should include a pick, shovel, axe, crowbar, first-aid kit, and simple fire-fighting appliances for the room or shelter. A pair of scissors, a supply of string, paper, and paste should be available for use in a gas-resisting room.

The equipment should also include a tray and brush and a supply of chloride of lime (bleaching powder) so that if gas is used in an air raid, you will have available, outside the entrance to the place of shelter, means of decontaminating the footwear of persons entering the shelter.

See that you have spare clothing available so that, if gas is used in an air raid, contaminated clothing can be removed and replaced with clean clothing, before entering gas-resisting room or shelter.

All windows, skylights, fanlights, glazed doors, or other openings in parts of the house where lights are used, must be completely screened after dusk, so that no light is visible from outside.

If blinds alone are used, they must be of stout material, dark in colour, opaque, and must cover the windows completely. Blinds of light and non-opaque material can be made suitable for screening if treated with oil-bound water-paint or distemper of a dark colour. If curtains are used, they must be dark and thick. Dark blankets, carpets or thick sheets of brown paper can be used to cover windows temporarily.

Special care must be taken to cover completely skylights and other windows directly visible from the air.

All lights near an outside door must be screened so that no light can be seen when the door is opened. Outside lights, garden and porch lights, must not be used. If they are electric, take the bulbs out altogether (see Section 3 for further details).

An air attack may include the use of numbers of small incendiary bombs. So many fires might be started that the fire brigades could not deal with them all, and every citizen must be prepared to help.

Clear the loft, attic or top floor of all inflammable material, paper, litter, lumber, &c., to lessen the danger of fire and to prevent fire from spreading.

If the materials are available, protect the floor of the loft, attic, or top floor with asbestos wallboard, or with 2 inches of dry sand (if the floor will bear the weight).

It is advisable to coat all woodwork in the attic or roof space with limewash to delay its catching fire. A suitable mixture is 2 lb. of slaked lime and 1 oz. of common salt with 1 pint of cold water. Apply two coats.

For dealing with an incendiary bomb, have available a bucket or box of dry sand, a shovel (preferably with a long handle and square mouth) and a hoe.

Water is the best means of putting out a fire, but water mains may be damaged in an air raid or the flow restricted by fire-fighting operations, so make sure that you have water ready in buckets or cans in convenient places about the house; also, if possible, a stirrup hand pump fitted with 30 feet of hose and a dual purpose nozzle.

SECTION 2.—THINGS TO DO IN AN AIR RAID.

This section describes the ACTION you would need to take as soon as you receive warning of the actual approach of hostile aircraft. Only at such a time will the value of the previous section become fully apparent. The head of the house takes command, and every one in the household knows what to do and where to go. Risk is reduced to a minimum. Appointed tasks are undertaken, appointed places manned without hesitation or confusion.

It must be emphasized that it is very dangerous to remain in the open during an air raid and not to take cover. Fragments of anti-aircraft shells, including the heavy nose cap, may fall miles away from the firing point. No time should be lost in taking cover in the nearest shelter. Even such protection as that offered by archways, doorways, balconies, and against walls or in unprotected houses is better than remaining in the street

(see diagram, page 35). Bodily contact with a solid matter such as a wall should be avoided, since there is a danger of injury being sustained through the earth shock set up by an exploding bomb. If no shelter of any form is available, the person should throw himself flat, preferably in a gutter or depression in the ground, face downwards, supporting the head on the folded arms. Protection of the lungs against blast can be secured to some extent by keeping the mouth slightly open and gripping firmly between the teeth a piece of rubber, soft wood, or a handkerchief rolled tightly. To protect the ear drums from shock, it is useful to place in the ears a small pad of loosely packed cotton wool.

Owing to the use of "trembler" fuzes and missiles of unusual shape and sensitivity, it must be emphasized that it is very dangerous to touch any object dropped from the air.

On hearing the warning, you should as head of the household personally supervise the following precautions.

1. Send every member of the household immediately to the place of shelter.
2. Make some other member of the family previously appointed for the purpose responsible for checking that all the articles needed for the place of shelter are in position, the shelter is properly sealed up against gas, the fire put out, the chimney blocked up, and the blanket over the entrance made damp.
3. Go round the house, closing all doors and windows to reduce the amount of gas which can get into any part of the house.
4. After dusk, see that no lights are left burning that may be visible from outside.
5. Extinguish all fires in grates. Fires cause currents of air which may draw in gas from outside. Do not put out these fires with water, as this will fill the house with irritant fumes. Smother them with salt, sand, or earth.
6. Turn off the gas at the meter in case the pipes in the house become damaged and leak. Do not use acetylene, kerosene or other oil lamps in the shelter, and if you use candles do not burn more than is necessary, to avoid using up oxygen. If the passages to the refuge-room are very dark, you may light them with candles.
7. See that the water buckets or cans which you have placed about the house are full and ready for use.
8. See if any passer-by requires shelter—you may be a passer-by on some other occasion.

When these duties have been seen to, the head of the house or other responsible person should go to the place of shelter, and, after making certain that every one is there, close the entrance and see that the sealing arrangements are everywhere intact.

Rules to be closely observed in the place of shelter.

1. Sit down and keep still; if warmth is required, use blankets or other covering.
2. Don't smoke.
3. Don't light fires.
4. Pass the time reading, writing, sewing, playing cards or quiet games, listening to the wireless or gramophone. Avoid exertion. Don't let the children romp about.
5. Do not eat food that has come in contact with gas. A food chest of some kind, or air-tight jars and tins, will guard against this danger.
6. Don't go out unnecessarily until you hear the all clear signal. Be very cautious even then. The raid may be over, yet the rest of the house may still be full of gas. So except in an emergency keep your family in the shelter until you are sure the house is cleared of gas.

What to do if fire breaks out.

A fire resulting from an incendiary or an explosive bomb is like an ordinary fire, but the incendiary bomb itself requires special treatment (see below). Whenever possible, wardens will indicate that incendiary bombs are falling by sharp blasts on a whistle.

Do your best by the use of water, sand, earth, or any other means available to control immediately the spread of fire. If unable to do so, call the fire brigade.

By keeping close to a wall, it is sometimes possible to move safely about a room or corridor or down a staircase which has been weakened by the effect of fire.

When you have to go near the seat of a fire keep low, and, if possible, crawl because smoke and fumes are less dense near the floor.

Incendiary Bombs and How to Deal with them.

These vary in weight from 2 to 50 lb. The 2-lb. incendiary bomb is 14 inches long (including the tail) and 2 inches in diameter, and is composed of an alloy of magnesium and aluminium. It contains thermite and burns at a high temperature for ten to fifteen minutes and it may remain

active for as long as twenty minutes, setting fire to anything inflammable within 30 feet. It will burn through almost any material, consequently it can cause large fires if not immediately controlled. It may contain an explosive charge which operates within two minutes of starting to burn. Fragments and pieces of burning magnesium may be thrown a considerable distance. All citizens are urged to assist in dealing with incendiary bombs.

You can tackle a small incendiary bomb yourself if you follow these directions.

In view of the possibility of an explosion, no attempt should be made to tackle the bomb for two minutes after the commencement of burning, unless there is risk of a serious fire, in which case full use should be made of all available cover such as doorways, up-turned tables, &c.

Before you can get close enough to do anything, you will probably have to cool down the room with water, preferably using a line of hose.

It may be advisable to put on a pair of dark glasses and protect your body with an asbestos shield.

There are two ways of dealing with the bomb itself, viz.:-

1. It can be controlled with a fine spray of water. The best way is to use the ordinary household water service and hose as a means of directing a jet of water on to the fire surrounding the bomb and then a fine spray on to the bomb itself. *Water must not be used on a bomb in any other way than as a fine spray; or an explosion will result.*

However, complete reliance can not be placed on the ordinary service as water mains may be damaged during a raid, or fire brigade activities may seriously reduce the available supply. Consequently, an independent source of water supply should be provided in tanks, buckets, cans, or other receptacles. The ideal equipment for use under these conditions is the stirrup hand pump or bucket spray pump fitted with 30 feet of hose and a dual purpose nozzle, giving a jet of 30 feet and a spray of about 15 feet. The equipment may be operated effectively by two people, but three are preferable. One takes charge of the fire-fighting and operates the nozzle, a second pumps the water from the bucket and the third replenishes the supply in the bucket and relieves the others as necessary, in addition to keeping a lookout for further possible outbreaks of fire. The duties of the second and third members are combined when only two people are operating. To approach the fire without being overcome by smoke, fumes, and heat, the fire-fighter should lie down and keep his face near the floor, where it will be found easier to breathe and to see. He should have a fireman's axe or hatchet

for dealing with obstacles in his approach to the bomb, and an electric torch for use in searching for smouldering remains. A wet blanket folded and slung across the left arm will help to provide protection against the heat and spluttering magnesium. The bomb will violently splutter for about a minute and might explode within two minutes, after which the situation should be tackled as follows:-

- (a) The fire caused by the bomb should normally be controlled first by means of the jet, thus enabling the fire-fighter to approach to a distance of about 15 feet from the bomb.
- (b) The spray should then be directed on to the bomb and the fire-fighter should gradually work nearer to the bomb, finally attacking it from about 6 feet. He should continue to direct the spray upon the bomb until it is entirely consumed, but it may be necessary to stop spraying the bomb occasionally so as to keep the resultant fire under control with the jet.

2. It can be smothered with dry sand where you can get at it. This will control the combustion enabling a close approach to the bomb. The equipment for use with this method consists of a sand container or bucket, a long-handled square mouth shovel, and a hoe. The bucket should be kept full with dry sand. Smother the bomb by throwing sand on to it with the shovel. Then, placing an inch layer of sand on the shovel, the bomb can be approached, and, by means of the hoe, raked on to the shovel. Place the bomb in the bucket, making sure you have some sand under it, take outside and empty the contents in a place where the bomb will burn itself out harmlessly.

Remember that the bomb might burn through a floor before you have had time to control it, and you might have to continue to deal with it on the floor or ground below.

After the raid.

On emerging from shelter, refrain from making inquiries by telephone how others have fared as the Civil Defence Authorities will need this facility for receiving reports and ordering assistance when the factor of time will be of paramount importance. Speedy communication may be the deciding factor in the preservation of life. It is better to go out and help others than to stay home and fret.

Act Promptly. Prompt Action may be the Means of Saving Lives. Prompt Action will Prevent Serious Damage. Prompt Action will Minimize the effect of any Raid.

SECTION 3.—LIGHTING RESTRICTIONS.

Part I.—Lights in Domestic Premises.

1. Responsibility of Police Department.

The Lighting Restrictions Regulations prescribe the extent to which the occupier of premises and others are responsible for the prevention of the emission of artificial light. They empower the Chief Commissioner of Police to enforce the Regulations or to grant exemptions under specified conditions. The Police Department is not responsible for prescribing methods whereby citizens may comply with the Regulations, but in these notes it desires to offer some general guidance which may be of assistance to householders.

2. Objective of lighting restrictions.

The objective of Lighting Restrictions Regulations is a simple one, namely, that hostile airmen shall see no lights which might help to guide them to a particular objective or help them to determine their position.

3. What is meant by the emission of light.

It can be said, as a general rule, that illuminated surfaces which are plainly visible to ground observers at night can be seen by airmen overhead. Householders must therefore prevent the emission of any light whatsoever from their homes.

4. What householders will be required to do when lighting restrictions regulations are enforced.

- (a) Screen windows so that no light is emitted. This screening may take the form of shutters, curtains, dark blinds, adhesive treatment on glass, &c. Information regarding these methods is furnished below.
- (b) Screen all internal lights so that if windows are broken no direct light will show outside the building. Those who have indirect bowls or semi-indirect lighting fittings or portable lamps must make sure that the lamp bulb is so located as to prevent any direct light from the lamp falling upon the window area.
- (c) Screen all doors so that no light is emitted, either continuously when the door is open or momentarily when the door is opened. This screening can be

best effected by removing the globes from the lighting fittings immediately inside outer doorways, and erecting curtains within. The objective is to ensure that a perfectly dark area exists inside each outer door, so that persons using the door have to pass through this dark area before reaching the lighted portion of the house.

- (d) Screen all sky lights, ventilators and other such areas which emit light.
- (e) All outdoor lamp bulbs, such as those in open porches, verandahs, sheds, &c., or those lighting the garden or pathways should be removed from the lamp sockets.

5. What to do under air raid conditions.

- (a) All screens, whether on windows, doors, sky lights, or the like which are open by day to permit the entry of daylight, should be closed before dark to avoid the emission of light should the lights be turned on in an unscreened room.
- (b) To guard against failure of supply have on hand an emergency means of producing light. For safety reasons this emergency lighting should be chosen with a view to reducing fire hazard to a minimum. Household types of oil lamps are unsatisfactory in this regard, due to the possibility of an explosion in the vicinity, causing the lamp to upset. Hurricane lamps are more satisfactory from the safety point of view. Motor car batteries, as a source of lighting supply, and small electric lamps are valuable, provided the difficulty of charging a run-down battery can be easily overcome. Should electric torches for emergency use be kept on hand, remember that the ordinary type of torch is not permitted for use outdoors, and the only type of outdoor torch which would be permitted is a special A.R.P. type of torch which will no doubt become available should circumstances warrant.

6. What to do during an actual air raid at night.

All household lights, other than in the place of refuge, should, as far as possible, be kept turned off to avoid the possibility of emission of light as a result of damage to screening devices from explosion or weather.

Any temporary electric wiring required in the place of refuge should be installed by a licensed electrician, as it is important that the creation of fire hazards due to faulty temporary wiring be avoided.

7. Light from flames or out-door fire.

Lighting restrictions apply to any form of glow produced from any source, such as an indoor fireplace or an outdoor destructor. Care should be taken to avoid creating flames in the fireplace likely to cause a glow above the chimney. Similarly, burning off, destroying rubbish, &c., should be done in daylight and all glowing embers carefully quenched before dark.

8. Methods of covering windows.

In England, window and door covering methods, which are designed to comply with lighting restrictions regulations and also afford protection against shattered and flying fragments, are divided into two categories.

(1) Protection against the "near effects" of explosions.

(2) Protection against the "distant effects" of explosions.

To protect against "near effects" means the covering of window and door openings by any of the means described on page 26. These measures may, however, prove impracticable, as extra wall thicknesses would also be necessary in most houses.

Should householders desire to adopt lighting restriction methods which will afford some protection from "distant effects," they should take steps to guard against flying glass by adopting some form of window covering such as described on page 27, and again at the foot of this page and the following two pages.

The information set out below is intended to indicate methods whereby the Lighting Restrictions Regulations may be complied with, and the methods outlined do not, in general, provide protection to the occupants from the effects of bomb explosions. The principal dangers of explosions are flying bomb or other fragments and flying pieces of glass caused by the window glass being destroyed by blast. Light weight wooden or steel shutters or devices of similar strength would undoubtedly afford some protection, provided that the resistance of the fixings to blast or flying fragments were equal to the strength of the shutters or screens themselves. The danger of flying glass is a very real one, and this can be guarded against by fixing $\frac{1}{2}$ -in. strong wire mesh inside the glass and as close to the glass as possible. The frames carrying the wire mesh should, of course, be very securely fixed and, unless the glass be removed, such wire mesh should be used inside the glass, even though the windows be protected outside in some structural fashion. So important is it considered from a protection point of view to guard against flying glass that such wire mesh frames may be considered to be the starting point in window protection.

The principal methods of covering windows from a lighting restrictions view-point may be divided into two categories:—

A. Methods which will permit the entry of daylight.

B. Methods which partially or wholly restrict the entry of daylight.

A.—Methods which will permit the entry of daylight.

(a) *Shutters*.—Shutters should be close fitting, and the catches employed should be such that there is no danger of the shutters opening due to vibration. The necessity for strong fixings has been mentioned. Most shutters tend to emit light through cracks and crevices, and, consequently, use of internal dark curtains or blinds is recommended as an adjunct to the use of shutters. The nature of material used for the shutters and its thickness will depend upon the degree of physical protection it is proposed to provide in the individual case, but in England protection against "Distant Effects" means shutters of 1 inch to 3 inches thickness.

(b) *Curtains*.—Opaque internal curtains of dark material are a very effective means of preventing the emission of light. The curtain should overlap each side of the window opening by at least 1 foot, and should be fixed down the sides to prevent its disturbance by wind, or heavily weighted for the same purpose. Curtains should, if possible, be in one large piece without any opening in the middle of the window. The material should be such that, when held in front of a naked electric light globe, it allows the transmission of only the tiniest pin-points of light. When viewed from the outside of the house, with the room behind the curtain brightly lighted, there should not be the slightest suggestion of the emission of light. A curtain of a heavy type will also afford some protection against flying glass resulting from blast.

(c) *Blinds*.—Blinds may be effectively used to prevent the emission of light, and tests similar to those prescribed for curtains should be employed. Permanent cover strips should be fixed down the sides of the window to cover the edges of the blinds when drawn. Blinds should have an overlap of at least 6 inches all round the window. Alternatively, heavy side curtains should be employed to prevent any leakage of light around the sides of the blind.

B.—Methods which partially or wholly restrict the entry of daylight.

(a) *Adhesive Treatments on Glass.*—Various ways of covering glass with the object of preventing the emission of light, and also, in many cases, to provide some protection against flying splinters resulting from the shattering of the glass by blast, take the form of materials fixed to the glass with an adhesive, or of materials applied in liquid form to the glass by brush or spray. In selecting a window treatment the important requirements are:—

- (i) The material should adhere strongly to the glass to which it should be attached on the inside.
- (ii) The material and adhesive should retain their properties for a reasonable time under exposure on the window.
- (iii) If it is the intention to provide some protection from flying glass, resulting from the shattering of glass by blast, the material should, in addition to its other qualities, possess considerable textile strength or flexibility.

Following are some details of materials for use in adhesive treatments on glass:—

- (i) *Paper.*—Papers that are thick and tough are preferable to thin papers, of which the non-splintering effect is likely to be slight. Papers reinforced with a mesh of cotton, linen, hemp, sisal, or other fibre are better than other types.

It is important that the adhesive should remain slightly tacky. Suitable adhesives are an ordinary flour paste with 5 per cent. of glycerine or treacle added, or gum arabic with 5 per cent. of glycerine added.

- (ii) *Cardboard.*—Where permanent obscuration does not matter, an all-over covering of cardboard may be used. Adhesives should be stronger than those used for paper; suitable adhesives are flexible glues for either cold or hot application, paperhanger's paste or "cold water paste." The last two materials should be made rather stronger than usual, and it may be necessary to wet the cardboard before applying the adhesive to it.

(iii) *Textile Materials.*—Various textile materials can be glued to the glass and provide permanent obscuration of daylight except when the windows are open. Hessian pressed into a bituminous emulsion painted all over the glass is opaque and gives good resistance to splintering.

(iv) *Paint.*—Paint may be applied on the outside to permanently obscure windows, but has the disadvantage, in that any slight scratches allow light to be emitted, and daylight is permanently obscured except when windows are opened.

Paints containing rubber latex as an ingredient are particularly effective for obscuration purposes, but only those compositions that contain pre-vulcanized latex or vulcanizing ingredients are likely to have more than a short life.

Paint, with the exception of rubber latex, offers little or no resistance to shatter. Rubber latex paints, when properly applied, offer valuable protection from shatter when applied to small panes.

Part II.—Road Vehicles and Pedestrians.

Lights Carried by Road Vehicles in the Defined Area.

Lighting restrictions applied to road vehicles are an important feature of the precautionary measures to be taken against air attack. The aim is to ensure that hostile airmen shall see no lights which might serve to guide them to a particular objective or help determine their position.

It may briefly be explained that, unless expressly authorized by the Regulations or by the Chief Commissioner of Police, no lights other than those masked or screened by contrivances approved by the Chief Commissioner of Police may be used on the outside of any road vehicle.

What to do to Comply with the Regulations under Air Raid Conditions.

The following simple method of masking or screening lamps on road vehicles must be applied to meet the requirements of the Regulations.

1. Headlamps.

Two headlamps (i.e., lamps exceeding a power of 7 watts or its equivalent) may be used, provided they comply with the following conditions:—

- (a) The lower half of each bulb must be completely obscured by means of black paint or by fitting a metal cup.
- (b) An opaque cardboard disc must be fitted immediately behind the glass or lens of each lamp covering the whole area of the glass or lens except for an aperture $1\frac{1}{2}$ inches wide running horizontally across the centre.
- (c) The lower part of the reflector of each lamp must be completely blacked out up to a distance of half an inch above the centre line of the reflector, e.g., with black cardboard, paper or with two coats of matt black paint.

2. Rear Lamp.

Every vehicle must carry a lamp displaying to the rear of the vehicle a red light screened and dimmed to comply with the following conditions:—

- (a) The bulb must not exceed 7 watts in power or its equivalent.
- (b) The reflectors of the lamp must be painted with matt black paint or otherwise rendered non-effective.
- (c) In the case of a lamp having a surface area through which light is emitted greater than a circle of 2-in. diameter or its equivalent, the lamp must be partially masked by reducing, by means of an opaque screen, the aperture through which light is emitted to a circle of 2 inches or equivalent area.
- (d) The aperture through which light is emitted must be partially obscured by inserting behind the glass, paper or some other uncoloured material having a density equal to that of two sheets of newspaper, or by applying a thin coat of paint to the interior of the glass in such a way that approximately the same effect is produced. The paper, paint, or other material must cover the whole of the portion of the front glass through which light can pass, and must not be wetted, oiled, varnished, or treated in any other way to increase its transparency.
- (e) All panels other than the obligatory red light and any stop light must be completely obscured.

3. Parking and Side Lamps.

- (a) Two side or two parking lamps may be used, provided they are screened and dimmed in accordance with paragraph 2, (a), (b), (c), and (d) above.
- (b) Side, rear, and top panels must be completely obscured.

4. Stop Lights.

Stop lights may be used, provided they are screened in accordance with the conditions laid down for rear lights, and are further restricted so that the aperture through which light is emitted is of area not exceeding 1 square inch.

5. Dual Purpose Lamps.

In the case of motor cycles and other vehicles on which the same lamp serves both as a headlamp and parking lamp, the dual requirements may be met by masking the lamp in the manner prescribed in paragraph 1, (a), (b), and (c).

6. Lights Inside Vehicles.

From sunset to sunrise no light which is visible from the outside must be used to illuminate the interior of any vehicle unless expressly authorized by the Regulations or by the Chief Commissioner of Police.

7. Lights on Pedal Cycles.

Lights on pedal cycles may be used, provided that they comply with the following conditions:—

Head Lamp.

- (a) The upper half of the front glass must be completely obscured.
- (b) The lower half of any reflector must be treated with black paint or otherwise rendered non-effective.
- (c) Panels or windows provided for the emission of light, other than that facing to the front, must be completely obscured.
- (d) All other apertures, such as those provided for ventilation purposes, must as far as practicable, be screened to prevent the emission of light, particularly in an upward direction.
- (e) The light emitted by the lamp must be white.

Tail Light.

- (a) The tail light must be screened and dimmed in accordance with the conditions laid down in paragraph 2.

8. White Paint on Vehicles.

As a safety measure white paint may be applied to bumpers and to the edges of running boards, or to the equivalent positions on vehicles to which this requirement may be inapplicable.

9. Pedestrians.

Pedestrians when out on the streets or roads at night should do their best to make themselves visible to other people, particularly to drivers of vehicles. A light-coloured suit or overcoat, or white handkerchiefs attached to the arms would help considerably.

What to do During an Actual Air Raid at Night.**1. First Warning Signal.**

On the sounding of the first warning signal—"Prepare for Air Raid" (a series of short and long blasts), all vehicular lights must be immediately dimmed by reducing the power of all lights to a power not exceeding 7 watts or its equivalent.

2. Second Warning Signal.

On the sounding of the second warning signal—"Raid Impending" (a series of five-second blasts with two-second intervals), all vehicles must be brought to a halt as near as possible to the kerb or roadside, and all lights extinguished.

3. Third Warning Signal.

On the sounding of the third warning signal—"Raiders Passed" (a continuous blast of two minutes' duration), vehicles may again be driven under the conditions referred to in Part II. of this section.

SECTION 4.—SHELTERS.**Part I.—Refuge Rooms.****Structural requirements.**

Full scale experiments conducted with 500 lb. high explosive bombs show that, outside a 50-ft. radius from the point of explosion, the average well-built brick house should give its occupants substantial protection against blast and splinter effects, machine gun bullets and light missiles, subject to certain provisions being made.

Windows and doorways should be blocked up at least to a height of 6 feet, or barricaded either internally or externally, ceilings must be supported in case of collapse of the roof or upper storey, and wall thicknesses should be brought into line with the following standards of lateral protection:—

- (1) 1½ inch thickness of mild steel plate or plates.
- (2) 12 inches thickness of reinforced concrete.
- (3) 13½ inches of sound brickwork or stonework.
- (4) 15 inches thickness of unreinforced concrete.
- (5) 2 feet thickness of ballast or broken stone.
- (6) 2 ft. 6 in. of earth or sand.

Windows and doorways may be blocked by various methods such as:—

- (a) 13½-inch brickwork built into the openings after the removal of the frames, or building up on the outside from foundation level.
- (b) By means of concrete blocks similarly used.
- (c) By means of framed barricades consisting of boards, corrugated iron, or suitable framing attached to the walls covering the openings, and filling the space with ballast, sand, or earth to the required thickness.
- (d) By timber, stacked solid to a thickness of 3 feet laterally.
- (e) By means of sandbag revetments, which, however, have a limited life as exposure sets up rot, ultimately causing collapse.

Strengthening and supporting of ceilings should only be carried out under the supervision of a qualified person.

Limits of Accommodation.

Although an actual raid may be over in a few minutes, it may be necessary to stay in the refuge-room for some time, even perhaps for several hours, until the gas which may be in the neighbourhood has been cleared away. You should therefore know how many persons can remain safely in a sealed room without suffering any ill-effects. For rooms of normal height (9 to 10 feet) an allowance of 25 square feet of floor area for each person will enable those persons to remain in the room for a continuous period of two hours without ventilation.

A room 10 ft. x 10 ft. will therefore hold 4 persons.

A room 15 ft. x 10 ft. will therefore hold 6 persons.

A room 20 ft. x 12 ft. will therefore hold 9 persons.

Selection.

General.—Some rooms are more suitable as refuges than others. Choose a room that is soundly constructed and is easy to enter and leave. Its windows should be as few and small as possible. A room with large windows should be avoided. If a ground floor room facing a wide street or a stretch of level open ground is chosen, the windows should, if possible, be specially protected. A room facing a garden or field should be selected and is always preferable to one facing a street or paved area unless existing protection is much greater. The stronger the walls, floors, and ceiling are, the better. Brick partition walls are better than lath and plaster, a concrete ceiling is better than a wooden one. Perhaps an internal passage could be converted, or a special room might be built on to the house. In many cases difficulty may be experienced in choosing a room suitable for use as a refuge. A garden shelter of the covered type, *vide* page 29, may be a ready means of overcoming this difficulty, since timber or partially timber houses do not, without adaptation, offer the degree of protection desired.

The Best Floor for a Refuge-room.—A cellar or basement is a good place for a refuge-room if it can be made gas-resisting, if there is no likelihood of its becoming flooded, the entrances are not likely to be covered with fallen debris, and the ceiling is strong enough to bear the weight of debris. A basement is definitely not suitable unless these conditions are satisfied.

In cities where there are multi-storied steel frame buildings, the inner rooms on the third, fourth, and fifth floors, providing that there is a roof and at least two floors above the refuge-room, are suitable.

Alternatively any room on any floor below the top floor may be used. Top floors and attics should be avoided as they usually do not give sufficient overhead protection from small incendiary bombs. These small bombs would probably penetrate the roof but be stopped by the top floor, although they might burn through to the floor below if not quickly dealt with.

In flats or tenements each household can either make its own arrangements or arrange for communal refuges. It is, however, important that top floor dwellers should find shelter accommodation downstairs. They might share a refuge-room or they might arrange to occupy the basement. But the basement premises will have to be prepared as refuges in the same way as ordinary rooms, according to the instructions given in this booklet. It is suggested that in any flats or tenement houses, or in a house occupied by more than one family, representatives be chosen and formed into a protection committee to decide upon the most suitable rooms, and to prepare them as refuge-rooms if it should be necessary to provide for the safety of all.

You can make a refuge-room even if you have no surplus room to set aside. If you have only one room you can make it a place of greater safety—even if you adopt only some of the suggestions contained in this booklet. A room within solid walls is a safer place than in the open, *so don't run into the street* to find better shelter if you hear an air raid warning.

Gas resisting methods.

No serious amount of gas will come into a room unless there are draughts or currents of air to carry it in, so any cracks or openings which might admit draughts must be sealed up.

How to deal with cracks in walls, floors, and odd places.

In old houses, especially, windows and doors may shut badly. There may be cracks underneath the window sills on the inside. There may be cracks in the ceiling. Fill in all cracks and crevices with putty. Place pleated gummed paper over the cracks when filled. Seal all door and window frames with pleated gummed paper—the pleat allows of a certain amount of movement due to concussion without breaking the paper. Fill in the cracks between floor boards and paste sheets of paper over the whole floor. If you have linoleum or an overall carpet, it should be replaced after the cracks underneath have been attended to. Fill in all cracks around the skirting boards and where pipes pass through the walls. All trap doors, skylights, and hatches in the room should be sealed with pleated gummed paper. All ventilators in the outside walls of the house below the floor level should be stopped up with rags or paper, occasionally removing and replacing these when opportunity offers, to allow access of air to prevent rotting of floor timbers. Ventilators above the floor level should be similarly treated or preferably be fitted with close-fitting adjustable covers. If there is a fireplace, stuff the chimney with paper, rags, or sacks. Do not, of course, light a fire in the grate afterwards. Place a sheet of plywood in front of the fireplace and seal with adhesive tape. Plug key holes. In unsewered areas plug waste pipes or overflow pipes in any basin or sink in the refuge room. If you are doubtful whether holes or cracks let in air, play for safety and seal them up. You can still use the room for ordinary living purposes, provided you can do without a fire. If a fire is necessary, be ready to put it out quickly and to seal the chimney and fireplace.

How to seal the windows.

The windows should be sealed so that draughts or gas cannot come in. Wedge firmly to keep them tightly fixed in their frames. Seal all round the frames with pleated gummed paper wherever there is a crack. Be cautious and make a thorough job of it. Any broken panes should be replaced, boarded in, or

the holes pasted over with strong paper. This will not eliminate the possibility of glass being broken by the blast of a bomb explosion, perhaps quite a long way off. So protect the glass in one of the ways suggested later.

Be ready to re-seal the window openings if the glass gets broken. For this purpose have some stout materials handy to hang or fasten over them. Use a close-woven material or a blind, for instance, if it is large enough. Fasten by nailing it with thin strips of wood to the window frame all round and then seal the edges with adhesive tape.

How to seal the doors.

Doors which need not be used should be permanently sealed. Pleated gummed paper should be fixed firmly all round the cracks or openings, especially at the foot, and the key-hole plugged.

Doors which have to be used should be sealed against gas. Nail a piece of wood, padded with felt, to the floor, so that the door, when closed, presses tightly against it. Strips of felt may also be tacked round the inside of the door to exclude draughts. Fix a blanket outside the door if the door opens inwards, or inside the door if the door opens outwards, with strips of wood. The top of the blanket should be fixed to the top of the door frame. One side of the blanket should be fastened down the whole length of the door-frame on the side where the hinges are, by means of a strip of wood nailed to the frame. The other side of the blanket should be secured not more than 2 feet down so that the flap is left free for going in and out. Arrange the blanket so that at least 12 inches trails on the floor, so as to stop air from blowing underneath it. If the blanket is kept damp during an air raid, it will provide better protection.

Alternatively, if desired, an adjustable roller blanket curtain mounted on a timber frame could be fitted to the door frame.

Preparation against the effects of explosive bombs.

There are three main types of bombs—an incendiary bomb, a gas bomb, a high explosive bomb. Precautions against fire are described on page 9, and the way to deal with the incendiary bombs and fires, under the heading "What to do if fire breaks out," on page 11. What to do to protect yourself against gas has been indicated. How to provide some protection against the effects of explosive bombs is dealt with here. The essential thing is to protect the refuge-room against the shock of a bomb that may burst some distance away, and from flying glass and splinters caused by the explosion.

Protecting the windows.

Unless a window is barricaded, as mentioned on page 23, it is not easy to prevent the glass of closed windows being shattered by the blast of an explosion, even at some distance away. But you can limit the number of splinters of glass being blown into the room, and generally strengthen the windows by covering them inside by one of the following three methods:—

- | | | |
|---|---|--|
| (1) Paper or cardboard
Textile material
Transparent coverings | } | Glued or gummed to the inside
of the window pane. |
|---|---|--|

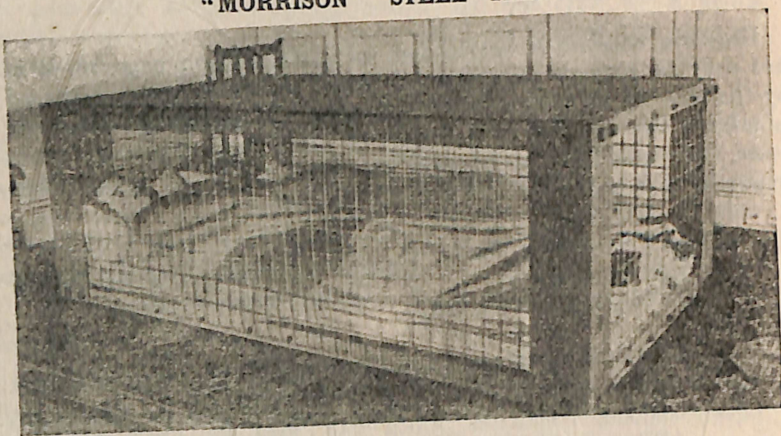
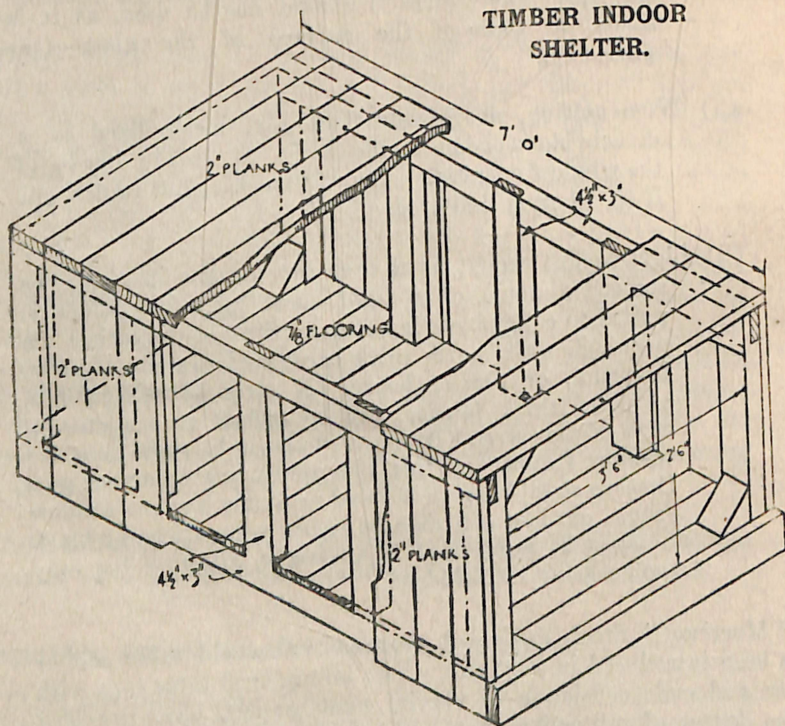
Adhesives such as gum, flour paste or paper-hanger's paste are suitable if a little glycerine or treacle is added. Flexible glues can also be used—Sodium Silicate ("waterglass") should not be used, as it is liable to damage the surface of the glass—(see page 18).

- (2) Wire netting, not bigger than $\frac{1}{2}$ -in. mesh, fixed to a detachable wooden frame made to fit the inside of the window opening. This will not keep out rain or gas if the glass is shattered.
- (3) Light-weight screen fixed over the window inside. The screen is made of a light sheet material, which is nailed to a light wooden frame. Suitable materials are plywood, wall board, thick cardboard, tin sheets, felts, linoleum, or plaster board. A strip of rubber, felt, or other thick fabric, may be tacked on the outside edge of the screen frame to make it fit tight into the window frame, and this also assists in keeping out gas. Screens should not be screwed or firmly fixed to window frame, as they will then be liable to breakage by blast. A tight fit is all that is necessary, allowing for easy replacement if dislodged.

"Morrison" Steel Table.—A form of household table shelter has been introduced in England, where strong steel table tops with sides and ends consisting of special mesh panels, have provided some degree of protection in a number of homes. Some idea of the construction of this type of shelter will be gained from a study of the illustration on page 28.

It is designed to take two people and all sides are arranged to permit of easy egress. It gives good protection from debris and should be placed in the centre of the room and not along a wall. An adaptation of this table could be built from thick timber, preferably jarrah, which is the most fire-resisting timber. See illustration on page 28.

"MORRISON" STEEL TABLE

TIMBER INDOOR
SHELTER.**Description.**

This timber shelter is an adaptation of the "Morrison" Steel Table. It is designed for use within the home and is large enough for two people to sleep in.

Construction.

Frames of $4\frac{1}{2}$ " x 3" hardwood strengthened at corners with angle brackets. Top and sides covered with planks 2" thick. Ends are left open for ventilation. Floor $\frac{7}{8}$ " T. and G. Hardwood.

Position.

Place shelter on a firm floor so that a boxed side and not the open end faces the window. If floor is not strong it is advisable to build piers from ground to carry corners of shelter.

Part II.—Garden Shelters.

There are four types of garden shelters which will give good protection from blast and splinters. Three of them give overhead protection and can be made gas-resisting. These four types are—

1. The Open Trench, providing no overhead protection, is the simplest form of garden shelter, and is suitable for temporary emergency. It consists of a trench 4 to 5 feet deep, $4\frac{1}{2}$ feet wide at the top, tapering to $3\frac{1}{2}$ feet wide at the bottom.

It can be excavated in firm earth, shale or clay, and if the sides show signs of falling in, they can be supported with suitable posts sheathed with boarding or corrugated galvanized iron.

The earth from the excavation should be thrown about a foot clear at the top, and distributed all round to keep out surface drainage.

Duckboards or planks placed on the floor of the trench are desirable. Allow 3 feet length of trench for each person to be accommodated. An open trench should not be straight for more than 15 to 20 feet. See sketch No. 1, page 36.

2. Partly-sunk Shelter.—See Sketch No. 2, page 37. This covered trench is a development of type No. 1. The overhead cover provides against flooding, in addition to raid protection. The sides can be built up with sandbags or boxwood cases filled with earth. Roof timbers support the corrugated iron carrying the earth cover. If the sides of the trench show signs of collapse they can be supported as in type 3.

A convenient type is provided in the Anderson shelter, which is constructed of heavy galvanized corrugated steel on a steel-framed base sunk partially in the ground and covered with earth. It is 6 ft. 6 in. long, 4 ft. 6 in. wide, and 6 feet high, and is designed to accommodate four persons. It has been used extensively in England, and has proved satisfactory. No attempt should be made to make the Anderson shelter gas-resisting since the effect of so doing would make it uninhabitable through lack of ventilation. See Sketches 3 and 4, pages 38 and 39.

3. Surface Shelter.—This type of shelter is suitable for erection on the surface where rock, sand, or water-logged soil is met with.

It is called the pill-box type, and is built of reinforced brickwork, concrete, or concrete block masonry, with reinforced concrete roof and a concrete floor, the minimum floor area being 6 ft. 6 in. x 4 ft. 6 in., accommodating six persons. It is desirable that a bituminous damp course be placed near ground level and that the roof projects outside the walls a minimum distance of 3 inches. Shelters may be built singly or grouped on the boundaries of properties where convenient. Grouping offers the advantage of economy. Wall thicknesses should conform to the standards mentioned previously in this booklet. The roof should consist of 5-in. reinforced concrete, either cast in position or of pre-cast sections, and the floor can be of brick or concrete of normal thickness. The 5-in. concrete roof will give good protection against incendiary bombs and flying missiles. See Sketch No. 5, page 40.

Shelters of the partly-sunk type should be placed so that the entrance is facing, and within 6 to 15 feet, of the house, so that the house, if brick, will provide protection for the entrance. In other instances, protection of the entrance will necessitate a solidly-constructed wall.

4. Underground Shelter.—See Sketches 6 and 7 at end of booklet.

The shelter consists of a main chamber which, if necessary, may be made gas-resisting by the provision of two blanket screens placed about 4 feet apart in the entrance to the shelter.

With the blanket screens in position five persons may remain in the sealed main chamber for a continuous period of one hour without ventilation.

Site.—Underground shelters should be so placed that there is no danger of their being covered by debris from near-by buildings. Excavate them at a distance at least equal to half the height of the nearest building. The site should preferably be in stiff clay or other firm material.

Materials.—The quantities of timber and iron required are given on page 33.

Excavation.—Excavate a trench with vertical sides and ends 17 ft. 9 in. long and 5 feet wide to a depth of 6 ft. 6 in. Square off from one end of this trench, excavate another 6 ft. 9 in. long, 3 ft. 9 in. wide to a depth of 6 ft. 3 in., and cut out

at its end the steps as shown on the sketches. About 32 cubic yards of excavation are necessary to cut these trenches. The material dug out should be deposited temporarily a few feet outside the lines of the trenches so that it will be readily available for covering over the roof when the framework of the shelter has been constructed.

In digging the trenches precautions should be taken against the possibility of the earth on the sides sliding into them, particularly if the work is being carried out after heavy rains, or where the nature of the earth is such that a slide might be expected. If there is any doubt of the earth not standing up, especially after excavating to a depth of say 3 feet, place timbers along the sides and temporarily strut them with cross timbers. To save unnecessary labour in digging, it is important that the sides be made vertical and true.

Drainage.—Cut out the V-shaped section on the floor of the longer trench and dig a pit opposite the entrance about 2 feet square and 2 feet deep so that any water that might accumulate can be baled out. The V-shaped drain should be slightly graded with a fall of a few inches from the ends of the trench to the drainage pit. Another pit for drainage should be dug at the foot of the steps as shown.

Construction.—With the digging completed, it becomes necessary to place the iron and timbers to form the shelter. Mark out on the floor of the trench the positions of the 4-in. x 4-in. uprights at the corners. These are at 17 ft. 1 in. and 4 ft. 3 in. centres. Space out the positions of the intermediate uprights; these are 1 ft. 6 in. centres on the long side and about 1 ft. 5 in. centres on the ends. Dig small holes with a bar to a further depth of 8 inches at these positions so that they will easily take the uprights in them. For ease in placing the iron on the sides, drive timber pegs, say 9 inches x 2 inches x 2 inches, horizontally into the sides of the trench at say 2-ft. spacings opposite the position of the 4 in. x 1½ in. timber battens.

All the preparatory work in the trench having been completed, now proceed to place the iron and timber in position, making sure the timbers are cut to the proper lengths before starting. Place the 7-ft. sheets of galvanized corrugated iron with the corrugations vertical; allow an overlap of two corrugations per sheet, and nail them to the pegs you have driven into the sides. Place the 4-in. x 1½-in. battens in the positions as shown and nail them to the pegs. Place the 6-in. x 3-in. bed plates on the ordinary ground level just outside the edges of the trench, bed them in sand or earth, and ram them

firm. Place the 6-in. x 3-in. x 8-ft. rafters across the top of the trench and seat them on the bed plates. The position of these will be such that the edges of the uprights will come flush with their sides. Then place the uprights in position, hard up against the battens, ram earth around their bases and secure them at their tops to the 6-in. x 3-in. rafters with $\frac{1}{2}$ -in. bolts or 4-in. nails. Bore holes for them. Bolts are preferred. Now place the 2-in. x 2-in., 3-in. x 2-in., and 4-in. x 2-in. timbers (purlins) on top of the 6-in. x 3-in. rafters and skew nail them. Place the 8 feet corrugated sheets on the purlins with the corrugations across the trench, allow two corrugations overlap of sheets, and place earth at the ends of sheets to hold them down, or nail them. Allow for construction of an emergency exit through roof as shown on drawing.

The construction of the entrance is similar to the above, except that the overhead lining boards are nailed to the bed plates, and the rafters over the trench opposite the entrance are longer than the ordinary rafters.

Place the timber sheeting at the entrance to retain the earth.

Now shovel over the roof all the material excavated, so that there will be at least 2 feet of earth over it *all* round.

Place 6-in. x 1-in. timbers to form the steps into the shelter, put in the floor to the shelter, and, if required, the seats. When laying the floor provide a square lid over each drainage pit, so that baling of seepage water can be done without having to take up the flooring boards. Lay the boards on the floor of the entrance, and if any openings are showing between or under them fill with sand or clay, thus preventing gas from filtering through under the floor.

Provide a fairly heavy blanket, cut it to two suitable sizes and nail them to frames placed about 4 feet apart in the entrance, making sure they are air-tight.

The life of the shelter will be lengthened if (1) all timbers which come in contact with the earth are of red gum, or jarrah, instead of hardwood; that is, the uprights, bed plates, rafters, 3-in. x 2-in. spreaders below the floor, seat posts, flooring in the entrance and the sheeting above the entrance; and (2) the external face of the iron is given a coating consisting of bitumen emulsion, with dry sand thrown over it, the coating being allowed to dry out before the iron is used. Alternatively, two coats of anti-corrosive paint may be applied.

If timber is used for the sides instead of iron it should be 1 inch thick, placed horizontally, in which case the 4-in. x $1\frac{1}{2}$ -in. battens can be dispensed with.

The type described represents what may be termed a model form of trench shelter providing a certain amount of comfort as well as protection from blasts, splinters and gas. A shelter of this type exists in Treasury Gardens, Spring-street, Melbourne.

Materials required for construction of underground shelter.

Sawn Timber—

Posts, 4" x 4"—6/8'.

Posts, 4" x 2"—33/8', 2/5' 6", 2/4', 2/2'.

Bed plates, 6" x 3"—1/17', 1/20', 1/16', 1/12', 1/8'.

Rafters, 6" x 3"—3/10' 3", 10/8'.

Sheeting posts, 3" x 3"—2/4'.

Sheeting, 6" x 1"—5/8'.

Flooring, 6" x 1"—4/7', 7/7' 6", 5/20'.

Steps, 6" x 1"—14/3' 6".

Seat posts, 3" x 2"—8/2' 6".

Seat bearers, 3" x 2"—8/2'.

Seat rails, 3" x $1\frac{1}{2}$ "—4/20'.

Battens, 4" x $1\frac{1}{2}$ "—4/19', 2/18', 4/16', 1/14', 3/13', 2/9', 2/6', 4/5'.

Roof purlins, 4" x 2"—1/20'.

" " 3" x 2"—2/20'.

" " 2" x 2"—2/20', 2/8'.

Floor bearers, 3" x 2"—13/5', 6/3' 6".

Pegs, 2" x 2"—60/9".

Lining boards, 6" x $\frac{1}{2}$ "—6/5'.

Timber for Emergency Exit—

Corner posts, 2" x 2"—4/3'.

Sheeting, 6" x 1"—24/2' 6".

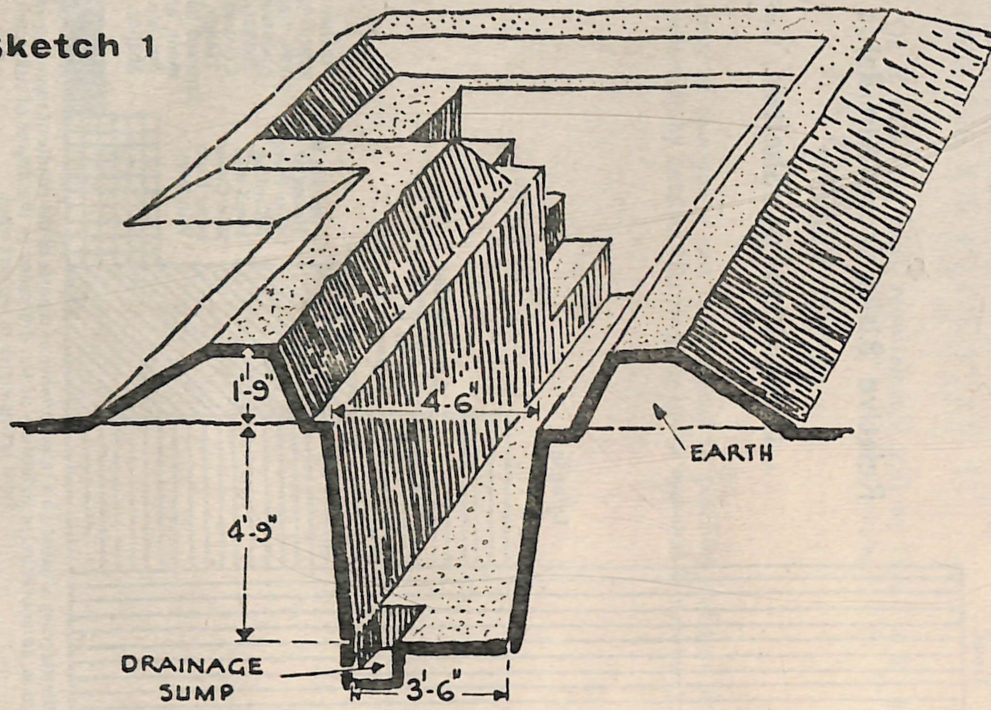
Braces, 4" x 2"—2/2'.

Cover, 6" x 1"—6/3'.

Cleats, 2" x 2"—4/3'.

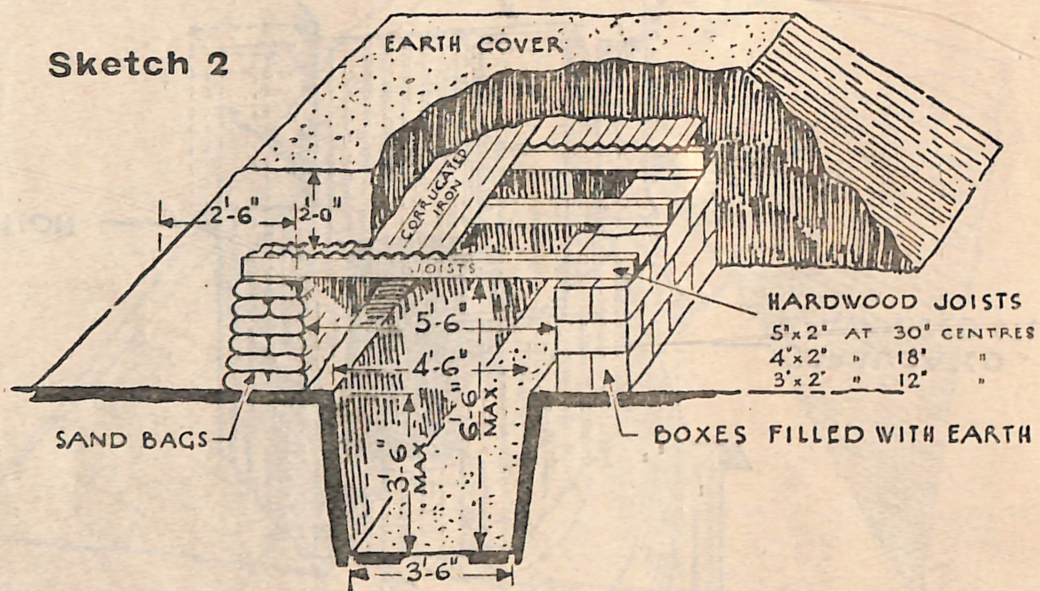
Ladder, 3" x 2"—2/10', 2" x $1\frac{1}{2}$ "—11/1' 9".

Sketch 1



See page 29.

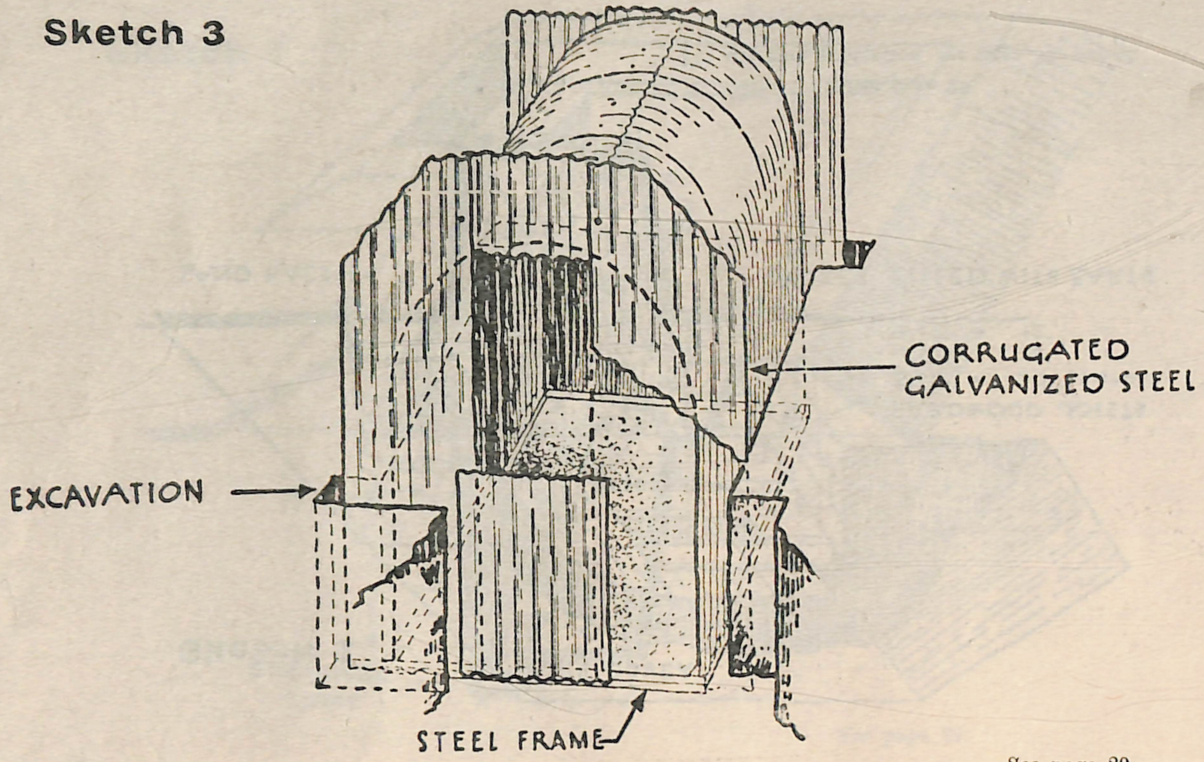
Sketch 2



See page 29.

For entrance protection, see page 30, par. 2.

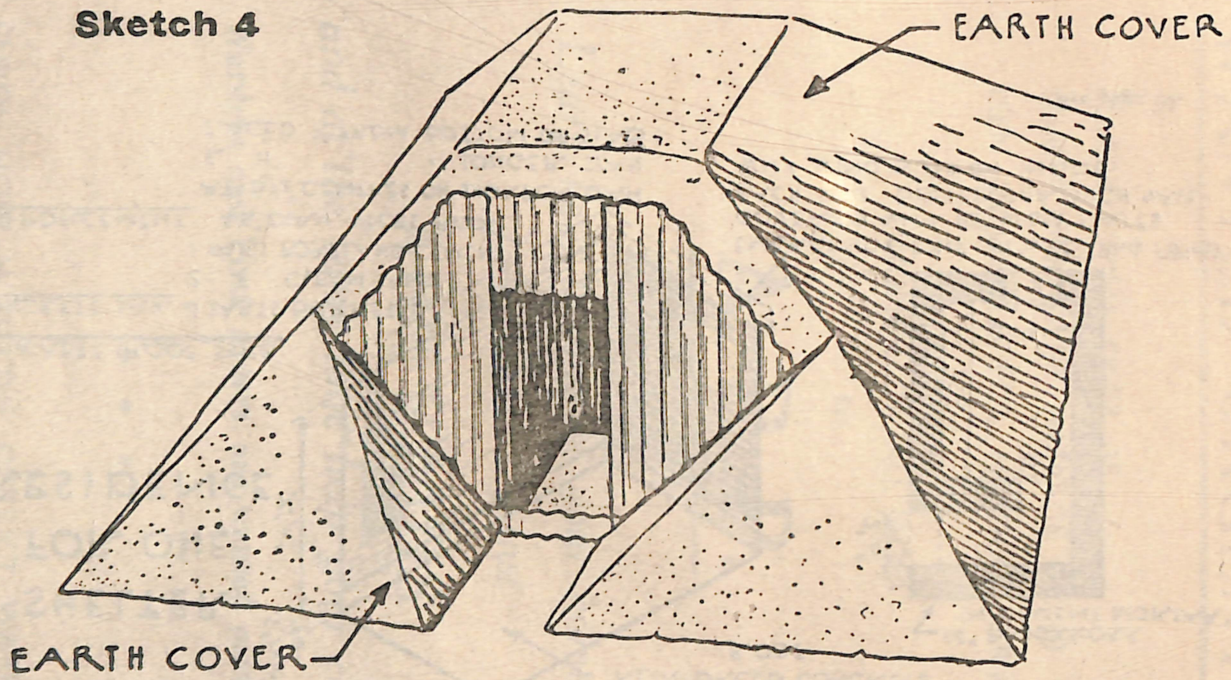
Sketch 3



See page 29.

38

Sketch 4



THE COMPLETED SHELTER

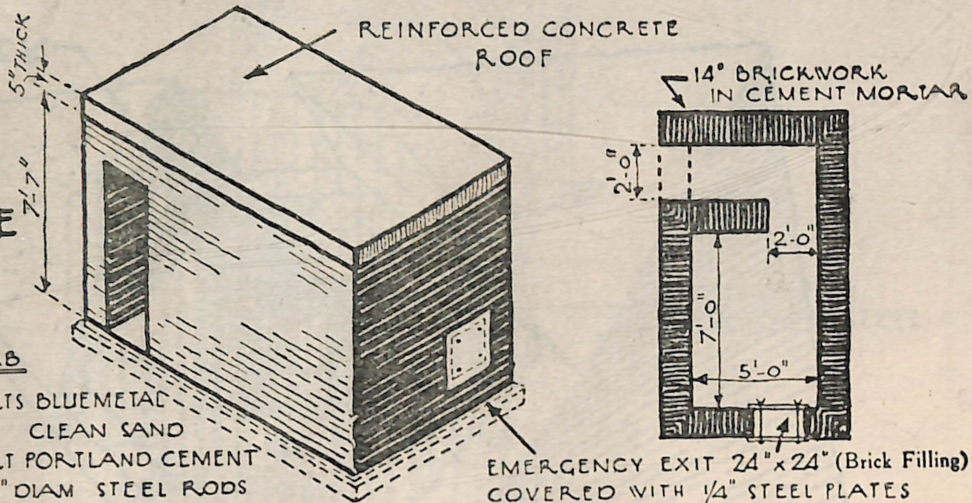
See page 29.

For entrance protection, see page 30, par. 2.

39

Sketch 5

SHELTER FOR ONE RESIDENCE



CONCRETE ROOF SLAB

CONCRETE MIX. 4 PARTS BLUEMETAL
2 " CLEAN SAND
1 PART PORTLAND CEMENT

REINFORCEMENT 3/8" DIAM STEEL RODS
AT 5 1/2" CENTRES ON SHORTER SPAN
& 11 " " " LONGER SPAN
PLACED 1" FROM BOTTOM OF SLAB

EMERGENCY EXIT 24"x24" (Brick Filling)
COVERED WITH 1/4" STEEL PLATES
EACH SIDE BOLTED THROUGH WALL
WITH WING NUTS ON INSIDE

See page 30.

WANTED URGENTLY!

MARRIED MEN OVER 35
SINGLE MEN OVER THE AGE OF 40
MEN INELIGIBLE FOR MILITARY SERVICE

and
WOMEN OF ALL AGES
for

A. R. P.

*Learn how to protect your home and
loved ones against*

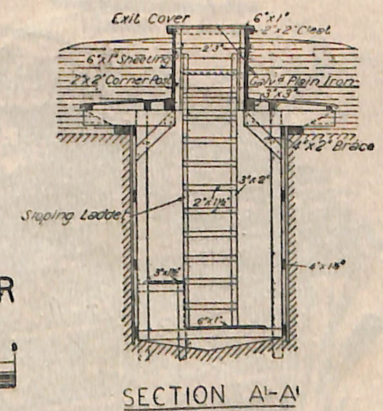
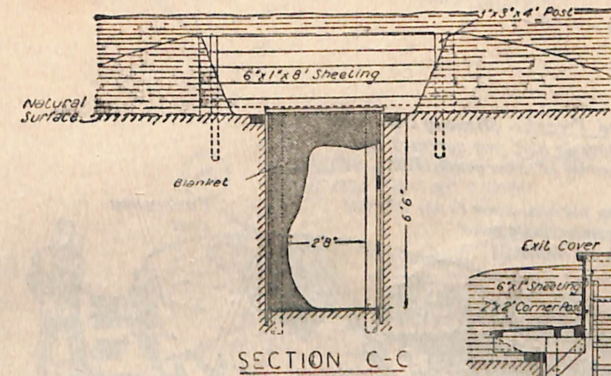
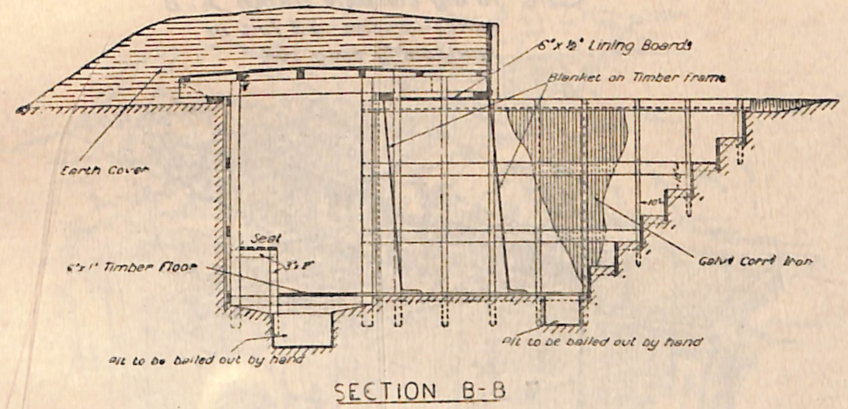
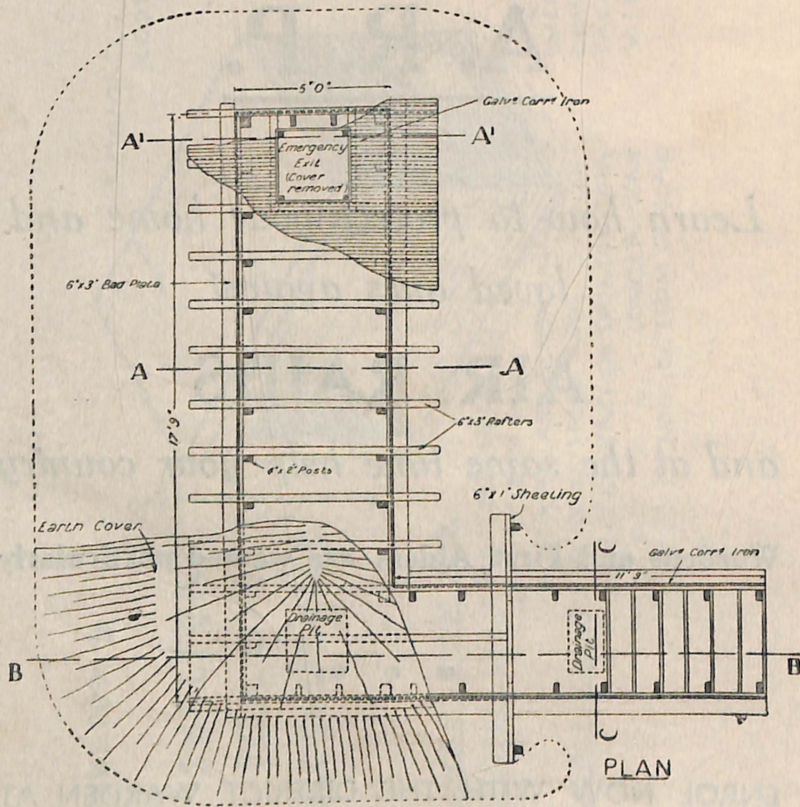
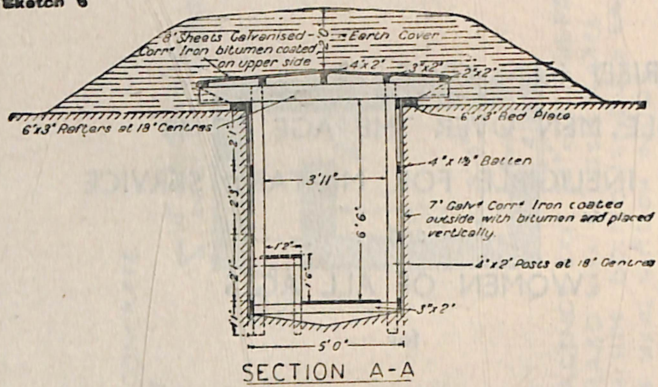
AIR RAIDS

*and at the same time help your country
Wardens and First Aiders are wanted particularly*

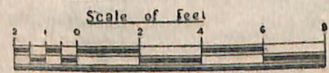


ENROL NOW WITH THE DISTRICT WARDEN AT
YOUR LOCAL TOWN HALL

Sketch 6



AIR RAID SHELTER

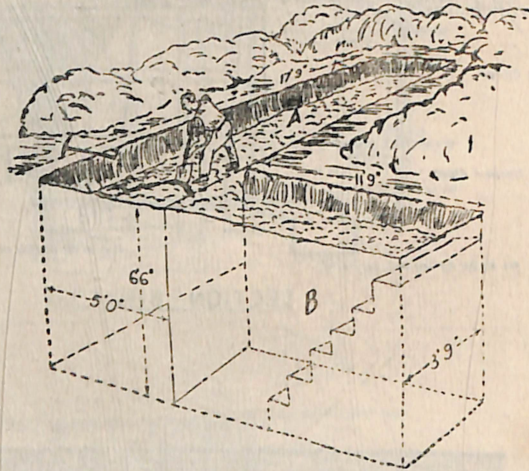


Emergency exit 2'3" square internally fitted with cover 2'10" square overall and lined inside with felt or blanket and held in place with hook and eye on opposite sides.

89/77
S.E.I.

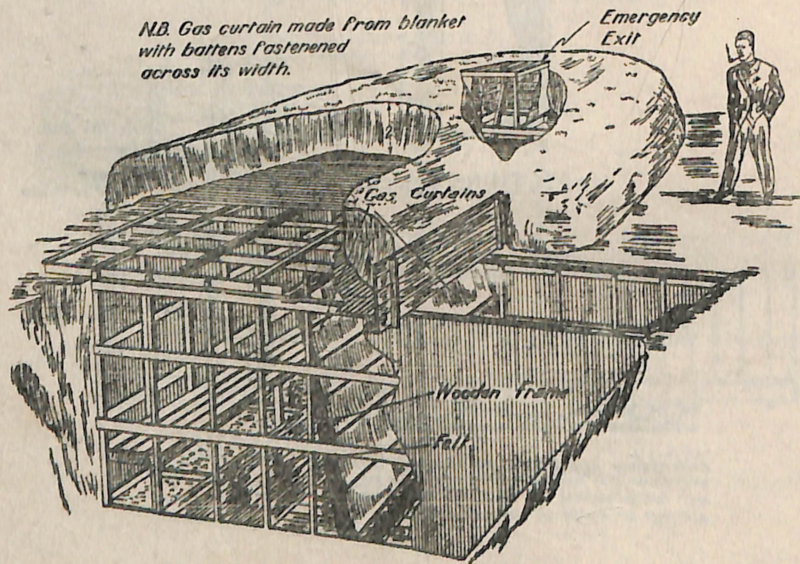
Sketch 7

① *1st Stage:- Dig trench A first. To dig complete trench A-B takes approx. 48 hrs. in reasonably easy soil.*

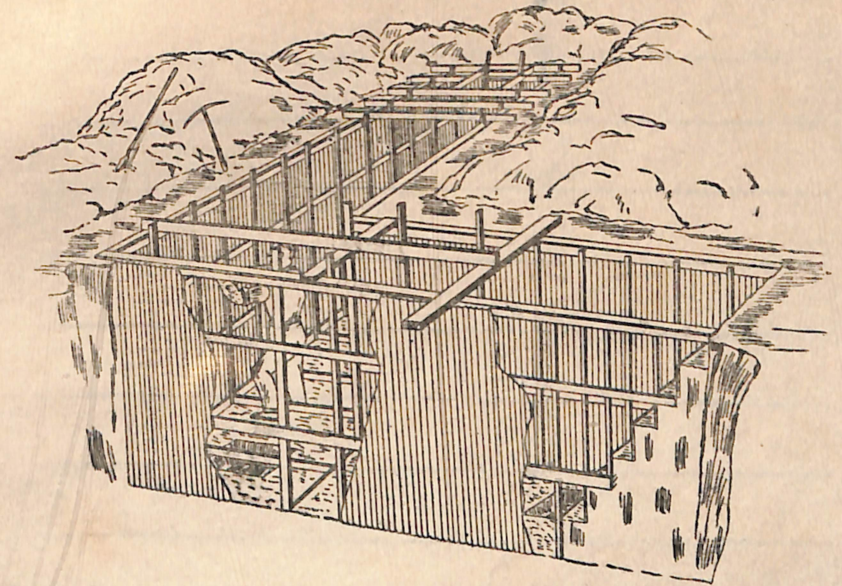


③ *Finished Trench:- Showing iron roof, floor boards laid, gas curtains and construction of emergency exit.*

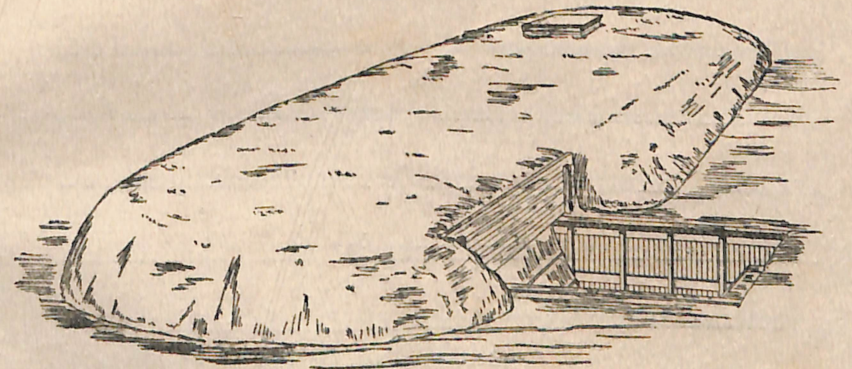
N.B. Gas curtain made from blanket with battens fastened across its width.



② *2nd Stage:- Shows construction, spreaders, uprights and wallplates in position.*



④ *Finished Trench:- Covered with two feet of earth.*



AIR RAID SHELTER

Sketches shewing various stages in construction.

NOTES.

N O T I C E

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The only regulations in this book applying to Ballarat at present are those that have reference to Blacking-out.
(Section 3, Pages 14 to 22)

DISTRICT WARDEN.

NOTES.

**Consider the contents of this booklet carefully.
Plan thoroughly what you would do in case of an
emergency.**