AIR RAID PRECAUTIONS

BLACKOUT

for

SMALLER SHOPS

AND BUSINESS PREMISES

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FOREWORD

THE booklet is issued for the information of the owners or operators of smaller shops to assist them in complying with their local blackout regulations.

Its suggestions are planned with four objectives in mind:

(a) to assist you in making your Blackout thorough and effective;
(b) to enable you to do it at the smallest possible expense;
(c) to provide that Blackout preparations and restrictions will interfere as little as possible with your regular business;
(d) to protect your premises as adequately as possible.

In writing for the benefit of "smaller shop" operators, we have in mind those stores whose selling space is entirely or chiefly on the street floor. Where two or more floors are open to the public, the problems are quite different and are dealt with in another publication. Even among smaller shops, conditions will differ in so many ways that it is impossible to solve all problems in detail. The best that can be done is to set down certain guiding principles and suggest certain tested methods. Each shopkeeper will need to work out his own plan to best suit his own conditions.

It is strongly recommended that you discuss your blackout problems and plans with the Air Raid Warden for your Sector and invite his inspection when your blackout preparations are complete. Your Air Raid Warden is able and anxious to give you every possible assistance and co-operation.

R. Maunsell

Director of Civil Air Raid Precautions

Ottawa, 1942.

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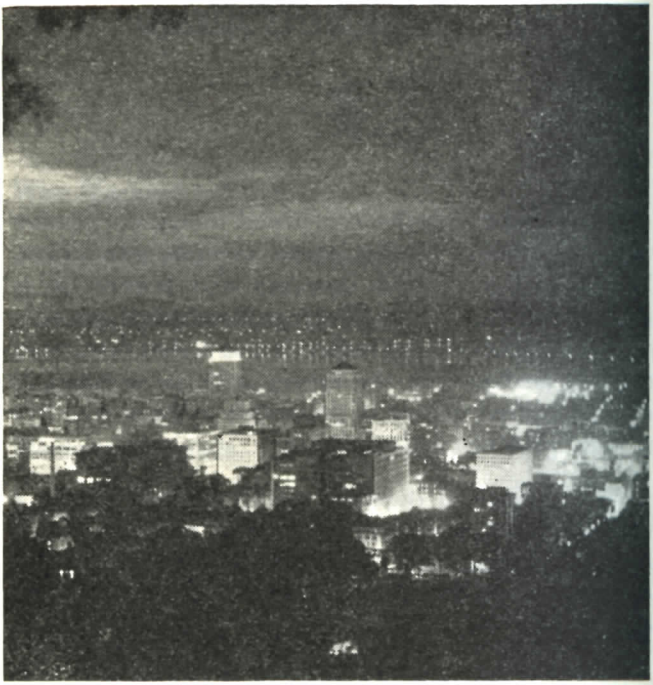
WHY BLACKOUT IS NEEDED

Blackout is perhaps the most useful weapon of passive defence available to the whole civilian population. Blackout is a preventive measure and prevention is always better than cure. Effective Blackout is not only an obstacle to the enemy raider; it also assists the armed forces in dealing with the enemy and, in addition, it affords a marked degree of protection to those who live or work in the blacked-out areas.

Efficient Blackout depends mainly on two things: a complete understanding of its purpose and how it may be accomplished; and whole-hearted, public-spirited co-operation on the part of every individual in the community.

This being the case, the purpose of this booklet is to give a working knowledge of the "why" and "how" of Blackout for smaller shops and business premises. The details of the blackout problem will vary with the size and type of shop or business premises, with the conditions in the particular community and with the proximity of the community to the likely points of enemy action. For these reasons, all that can be done here is to outline the purposes of the Blackout, to indicate what must be accomplished, and to suggest some simple means of achieving the desired results. These suggestions, of course, will require adaptation to suit each particular case.



The Four-Fold Purpose of Blackouts

The first object of a Blackout is to remove the tell-tale pattern of the community which would facilitate the spotting by enemy airmen of targets within it or near it.

The second object is to conceal the identity of localities which might be used as sign-posts or direction finders by enemy airmen trying to locate important military or industrial targets.

The third object is to discourage the indiscriminate bombing of cities and towns by enemy airmen, who, having failed to find their assigned targets, would dump their bombs on any town or city rather than carry them back to their bases unused.

The fourth object is one that concerns you and not the enemy. Blackouts reduce to a minimum the traffic on the streets. During a threat of, or actual, enemy attack the safest place is indoors. The Blackout tends to keep everyone indoors. Therefore, it is in itself an important safety measure for civilians.

Thoroughness of Blackout Essential

It is almost impossible to achieve total blackout. On clear nights it is not possible wholly to conceal the presence of communities, while waterways, paved highways and even railways can be picked out from a great height by the reflected light of the moon or stars. This makes it imperative to prevent the escape of even the smallest amount of light. Blackout measures should wholly blanket all artificial illumination visible from the air and tone down as far as practicable all reflections of natural light, flares, fires, searchlights, etc.

No community or individual can or must be satisfied with a blackout that is less than 100 per cent of possible effectiveness. Even an odd light or reflection here or there will defeat its major purposes.

Blackout a Civilian Responsibility

Blackout is a means of civilian defence. Therefore, it is essentially a civilian responsibility. Everyone is responsible for doing the most thorough job possible on the property he or she occupies or for which he or she is responsible. Failure to do so endangers not only your own life and property and your own community, but may assist the enemy in locating vital war industries, power plants and other installations.

Your Blackout must be as completely effective as it is practical to make it. Failure is an offence. It is the duty of your Air Raid Warden to report such failure to his superior officers. Stern penalties are provided for those who fail in this important duty.

A Natural Blackout Question

Since electricity is the source of most lighting in the populated centres of Canada, the question naturally arises: "Why not make sure of complete blackout by simply pulling the main switch at the power distribution station?" Such a step would be effective but, unfortunately, is not practical. To cut off the power supply would halt all street cars and trolley busses in their tracks, would stop elevators between floors, would shut down operations in vital industrial plants, would plunge hospitals and public buildings into dangerous darkness. Moreover, to plunge communities into total darkness, perhaps for hours, would play havoc with civilian morale.

For these reasons Blackout must be accomplished to a large extent by the screening of lights rather than by extinguishing them.

Importance of Planning Now

Effective Blackouts are not achieved by spectacular individual efforts at the beginning of or during an air raid. As a matter of fact, little or nothing can be done to improve a blackout or make it more effective after an air raid has commenced.

Effective blackouts are achieved, more than anything else, by advance planning and preparation and painstaking effort on the part of every person in every community. The essence of the matter is to understand the problem, to plan, to install and to test your blackout preparations **now** while there is time and opportunity for making needed adjustments.

Your Air Raid Warden will be glad to advise and assist you with your blackout preparations. It is your immediate responsibility to co-operate fully with him and to do a thorough blackout job. Don't delay. To do so may involve serious or even fatal results not only to yourself and your staff but to your community as a whole.

OUTSIDE LIGHTED SIGNS

Lighted signs and display windows create a glare at night which is much more noticeable from a distance than from close quarters. And since the number of signs and displays is usually proportionate to the size and importance of the city, the glare they create may serve as an accurate guide for raiding enemy aircraft. It is readily seen, then, that even the blacking out of lighted signs and display windows will materially alter the appearance of a city or town viewed from the air at night, and thus help to confuse the enemy. It is obvious, therefore, that if no precautions were taken with regard to this type of illumination, and the enemy were to stage an unexpected raid, the blacking out of homes would not be of much help. So study now the steps to be taken to blackout your lighted signs and display windows.

In areas where Blackouts (or partial Blackouts) are in effect every night, local regulations will probably prohibit the use of outside lighted signs altogether or at least will permit of their use only provided someone is on the premises at all times when such signs are lighted so that they may be immediately extinguished when the blackout signal sounds.

The same principle will apply in areas where Blackouts are on signal only. Lighted signs, window and store lights may be left on after store closing, only if someone is on the premises to extinguish them at once when the Blackout signal sounds.

Many shops have been equipped with time-clock switches which automatically turn off sign and window lights at a given hour. All such time switch devices should be disconnected at once. No lights may be left burning in a shop, in any area, unless someone is in attendance to turn them off when required or unless they are effectively screened.

BLACKOUT MATERIALS

In view of the many necessary restrictions and limitations imposed by wartime conditions, most owners of smaller shops and business premises will wish to provide for blackout requirements with the least possible expenditure. This will be especially true in shops which do not have their own display and maintenance departments and therefore must hire outside help for any carpentry or other similar work that may be required. Don't rush out and purchase a lot of new material for blackout purposes. Not only does this involve expense, but the raw materials, labour and machines used in the manufacture of such materials are vitally needed for the war effort.

Search your storerooms, cellar, shipping room and other similar places for supplies of heavy light-proof material—wood, sheet metal, cardboard, strong black paper, oilcloth, discarded draperies and other such material which can be put to use. Often discarded shop fittings, even packing cases, will furnish the wood needed for the frames of blackout screens. Use your ingenuity instead of your money in making your blackout plans.

Remember that effective screening of light is the important point. Most shopkeepers are keen to have their shop look "smart" at all times but remember during a Blackout only authorized persons should be on the street. Those who are outdoors will see little in the dark and will be too busy to observe the appearance of your Blackout. Real "smartness" in Blackout preparations consists of doing a thorough, rather than a good-looking, job.

LIGHT IS NOT THE ONLY PROBLEM

In planning your Blackout, you must bear in mind that the screening of light is not the only problem.

You must consider the danger of windows and the glass in doors being shattered by bomb blasts or splinters. Flying glass is a most frequent cause of serious injury during an air raid. It is a danger to those both inside and outside the shop. Besides the danger of injuries you must consider the cost of replacing shattered glass and the risk of damage to or loss of merchandise because of broken show windows. Another point to be considered is that a shattered window often destroys a light-weight screen and with it destroys your Blackout.

Unfortunately, Blackout increases the risk of burglary. In planning your Blackout you should also provide added resistance to forced entry. It is well to arrange also to assist the police on night duty in the regular inspection of your shop. Suggestions in regard to all these additional problems are given later in this booklet.

BLACKOUT FOR DISPLAY WINDOWS

Display windows of smaller shops or business premises vary in size, type and arrangement to such a degree that every shop presents a different blackout problem. Broadly speaking, however, such display windows may be grouped into three classes:

(1) Display windows which are completely cut off from the store proper by partitions with openings that provide easy access to the window space for the adjustment of inside blackout screens.

(2) Display windows which, though partitioned off from the store proper, cannot be easily entered either because of their small size, because of the lack of adequate openings in the partition or because of the type of display in the window itself.

(3) Windows which open right into the store or premises and through which light from the store proper will be visible from the street.

Methods of blacking out each type of display window will be dealt with later, but no matter which type of window you have, there are certain general facts to be considered.

In Canada, for the present at least, there is no complete blackout except when the "Alert" or "Alarm" signal is sounded.

If you are located where partial Blackout is in effect every night, you must make sure you thoroughly understand the local regulations and arrange to extinguish or screen your store and window lighting accordingly.

In any part of Canada, when an "Alert" sounds, full and complete Blackout goes into effect. All but official traffic on the streets must stop at once. Therefore business will stop also and the simplest method is to turn off all lights, close the shop and retire to the basement or some other part of the shop selected as the safest Refuge. In the Refuge Room the windows must be screened so that a little light may be kept on. The same thing will apply when your staff is working at night even though your premises are closed to the public.

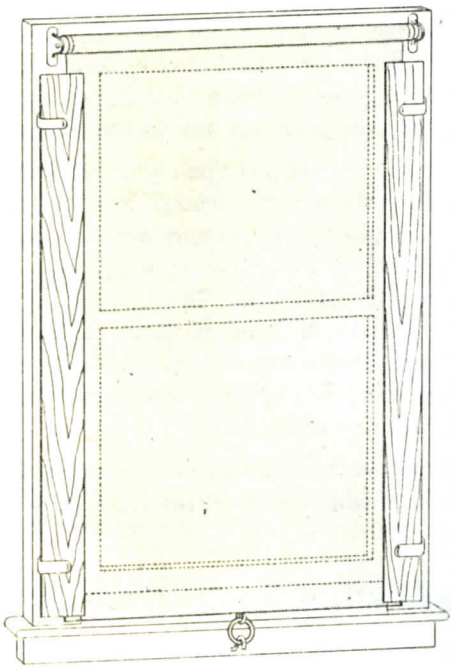
However, if your shop is open after dark (this applies to every shop during the winter months) an "Alert" may sound while many persons are on the premises. Unless their homes are very close by, they should not leave during the Blackout. The interior of your shop then must remain at least partially lighted to avoid confusion and possible panic, as well as to reduce the risk of shop lifting. In such circumstances your windows and doors must be screened.

Just how this screening can best be done will depend largely on with which of the three types of windows you must deal.

WINDOWS PARTITIONED OFF FROM SHOP

For this type of window you have the choice of four methods of blackout, any of which will permit of lights inside the shop being kept on.

Turning Off Window Lights—The first method is to turn off the window lights. If you adopt this method you must be very sure that any glass or openings in the partition between the window and the shop are well screened with wallboard, heavy paper or cardboard so that no light escapes to the outside. A coat of dark paint on the glass, perhaps overlaid with a decorative



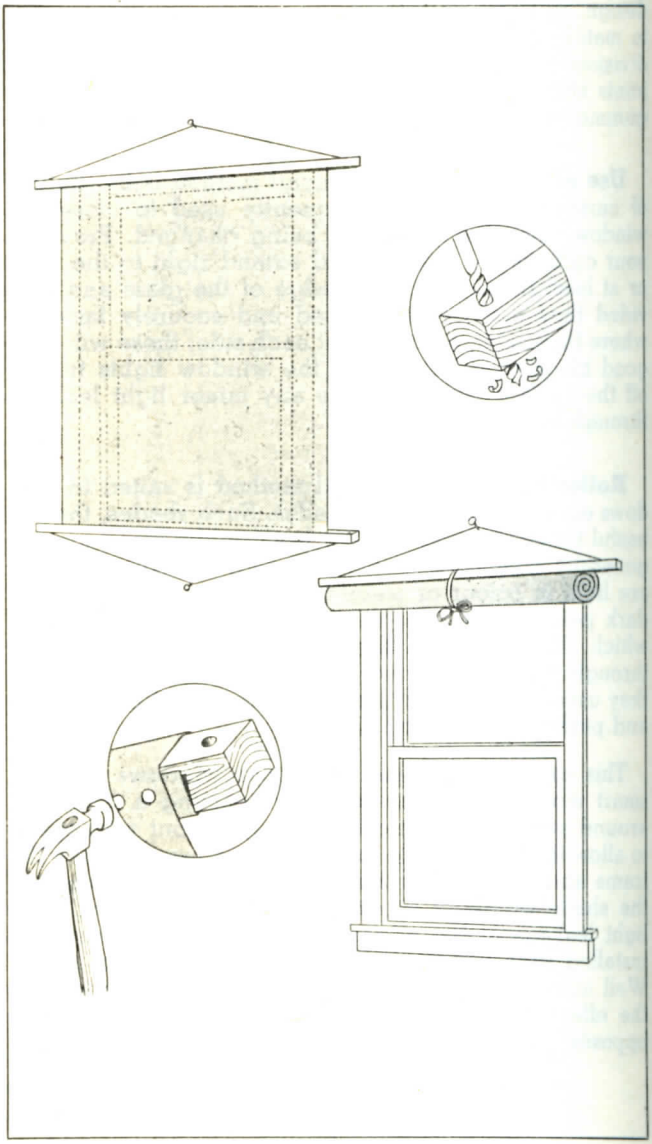
ROLLER-SHADE WITH BAFFLE-BOARDS
TO PREVENT LIGHT LEAKAGE AT SIDES

design, will also do the job, or screens can be painted to match the partition and left always in place. If the divisions of the partition do not fit tightly together, the joints should be covered with adhesive tape or heavy gummed paper or otherwise made light-tight.

Use of Curtains—The second method is by the use of curtains such as are frequently used to close the window when the display is being changed. Provided your curtains are opaque and extend right to the floor or at least below the lower edge of the glass and provided they can be overlapped and securely fastened where they meet, as well as at each side, these will give good blackout results. With the window lights turned off the curtain will overcome any minor light leakage through the partition.

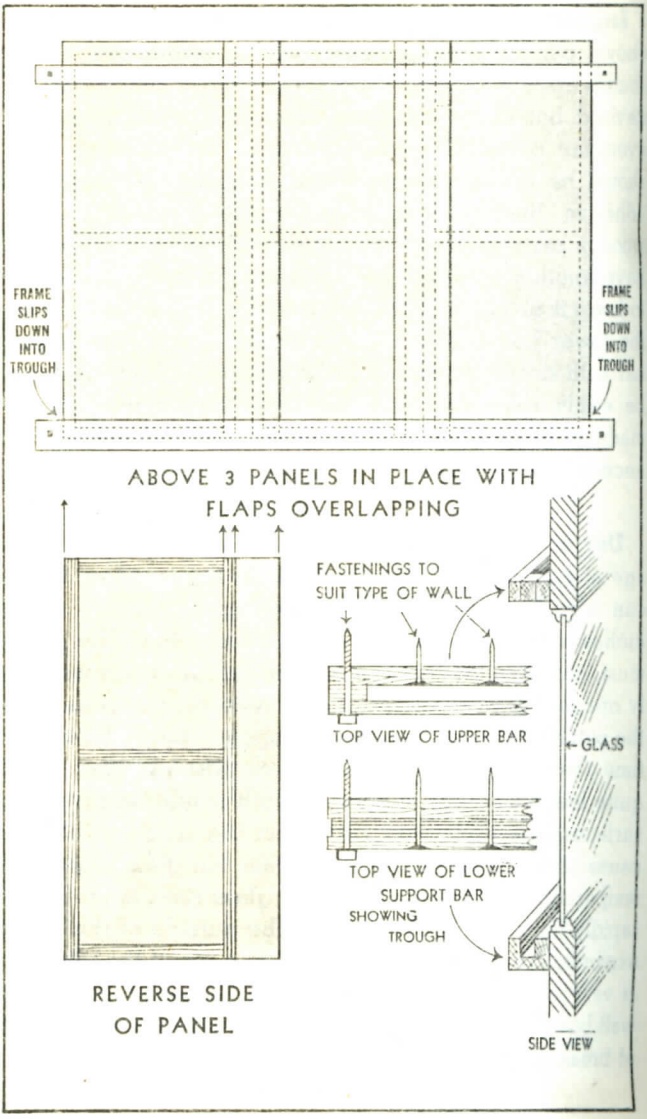
Roller Shades—The third method is suited to windows equipped with roller shades. Such shades, though useful for closing the window from public view, are not generally completely satisfactory for blackout. If they are light in colour or weight, they may need a coat of dark paint on the side next the glass to prevent light which shines through the partition from also shining through the shade. However, the real difficulty is that they usually allow light leakage at the sides and bottom and perhaps at the top.

This can be overcome, and your windows given a smart modern touch as well, by erecting a frame all around your window close to the glass but with space to allow the roller shade to be drawn down between the frame and the glass. If this frame overlaps the edges of the shade by about six inches all around it will stop light leakage at the edges. Many modern stores have installed such window frames for display effect alone. Well made and installed, they can add considerably to the effectiveness of your displays. The sketch on the opposite page illustrates this method.



Improvised Shades—The frame method, described above, can be adopted even where permanent roller shades are not in use. A temporary roller shade can be devised out of heavy dark-coloured fabric, paper or even tar paper. If several widths are needed they should be well overlapped and secured with a strong adhesive. Such an improvised shade is fastened by a wooden bar well above the limits of the glass and should have another wooden bar fastened to the lower edge to keep it in place. When not in use it is rolled up on the lower bar and is then securely tied to the upper bar with strong tapes tied in bow knots so that they can be easily released. Such a shade sometimes can be made to extend beyond the glass, thus removing the necessity of the frame.

Use of Opaque Paint—The danger of light leakage at the sides, top and bottom of the window blind can also be overcome by painting a border, eight inches to a foot wide, all around the glass. The paint must, of course, be black or dark in colour and thoroughly opaque. A word of caution is necessary in regard to the painting of show windows in opaque paint. In winter time the temperature in the show window may drop quite low. The glass is cold on both inside and outside surfaces. If a warm sun shines on the outside and because of the paint cannot penetrate the glass, then the temperature of the outside of the glass rises much more rapidly than that of the inside. The outside of the glass expands, the inside does not and as a result the window is very apt to crack badly. Strips of heavy paper or wall board tight against the glass involve the same risk of breakage though to a lesser degree.


FRAME SLIPS DOWN INTO TROUGH
FRAME SLIPS DOWN INTO TROUGH
ABOVE 3 PANELS IN PLACE WITH FLAPS OVERLAPPING
FASTENINGS TO SUIT TYPE OF WALL
TOP VIEW OF UPPER BAR
GLASS
TOP VIEW OF LOWER SUPPORT BAR SHOWING TROUGH
REVERSE SIDE OF PANEL
SIDE VIEW

Outside Screens—The fourth method is by all means the most satisfactory, but is likely to be the most expensive. Unlike the other three methods already described, which will achieve satisfactory blackout results but will not protect the glass against shattering, this fourth method does both.

This method is to attach to the outer wall of the building, above and below the window, a right angular wooden trough and then to build in sections a light wooden screen which can be slipped, section by section, into the trough so as to completely cover the glass. The screen sections should be built on a wood frame just heavy enough to prevent warping and twisting and should be covered with wallboard or ply wood.

The heavier the covering, without making the sections unwieldy, the greater the protection to your glass. The sketch on the opposite page illustrates this method and shows the construction of the screens and troughs. Special note should be made of the method used to overlap the sections of the screen so that no light leaks through where they meet. This is much more simple than trying to make a perfect fit, especially as there is bound to be some warping due to weather.

When this outer screen method is adopted it is recommended that the screens be put in place when the shop is closed each night. Then, should an air attack come during the night, your windows will be reasonably protected against shattering by bomb blast or splinters except from a very nearby explosion.

Inside Screens—A fifth method is to build framed screens covered with plywood, wallboard, heavy oilcloth, sheet metal or any other suitable material on hand or easily available.

Such screens, on the inner side of the glass, offer better protection against shattered glass inside the window or shop and also have the advantage, over the outside screen, that they require no work on the outside of the building. Inside screens are, however, only practical when the window is easy of access and when the nature of the display does not interfere with the quick placing of the screens when required. (Page 24).

In business premises where the windows are not used for display purposes, it may be convenient to build inner screens of a hinged folding type which can be permanently attached to the window frame and closed when required.

Venetian Blinds

Where windows are equipped with venetian blinds, these, combined with opaque curtains, completely screening the windows, will provide a satisfactory blackout arrangement. Curtains and blinds together prevent light from being visible from the outside. The venetian blinds afford reasonable protection against shattered glass.

Partitioned Windows Not Easy of Access

If getting at your window is difficult or impractical, then you can use either the first or the fourth method mentioned above. Curtains, inside shades or screens, will not be practical. In other words, either you must make sure the partition between your shop and your window is made light-proof and then turn off the window lights or you must use the outer screen method which, in addition to blacking out, will protect your glass and the merchandise in your window.

WINDOWS NOT PARTITIONED FROM THE SHOP

If you have this type of window you have only two courses open to you. Either you must close your shop, turn out the lights and retire with your staff and customers to a Refuge Room where lights are thoroughly screened, or you must use the outside method of screening and thus be able to keep lights on in the shop provided all other windows and doors are properly screened. This second method is recommended especially for restaurants, soda fountains and similar shops which may be forced to accommodate a large number of customers and likely will not have a suitable Refuge Room other than the shop itself. In some such premises, where windows are not used for display, the inside screen may be practical and is recommended as affording better protection to those on the premises.

Dangers From Reflected Light

Even a very small amount of light, when reflected from large smooth surfaces such as automobile tops and store windows, can be easily seen from a great height and distance. The subject of reflection from skylights is referred to in a later paragraph. It is important, therefore, to prevent such reflection where at all feasible.

Dark curtains or shades close to the glass will help but the outside screen of wood, weatherproofed fabric or wire netting backed by fabric, in addition to its other advantages, removes all possible danger of reflection.

OTHER SHOP WINDOWS AND DOORS

Although the show windows usually will be the main blackout problem for smaller shops, there are other windows such as those in offices, workrooms, stockrooms, cellars, etc., to be given consideration.

Any small windows, fanlights or transoms which are not necessary for light or ventilation should be permanently covered with light wood, wallboard, cardboard or other opaque material. Dark paint on the outside of the glass will serve for blackout but it will not prevent shattered glass flying about if the window is smashed by an explosion. Moreover, if the window breaks, the effectiveness of the blackout is destroyed.

Back shop windows which are needed for light and air in normal times should be provided with curtains, roller shades or screens as indicated in the sketches on pages 14, 16 and 24. The framed screen, covered with plywood, building board or other material of substantial weight, is highly recommended because in an emergency you will probably use these back shop rooms as Refuge Rooms and then protection against flying glass is important.

Doors

Glass in rear and side doors is best blacked out with a good screen on the inside. This protects against flying glass and also prevents the door from being opened from the outside if the glass is broken.

Glass in front shop doors should be treated under the same plan as the show windows. Curtains, roller blinds, temporary blinds or screens may be used. The outside or inside screens are strongly recommended because, in addition to preventing light being visible from outside, they protect the glass against shattering, keep out the weather and provide a safeguard against prowlers.

Burglary Lights

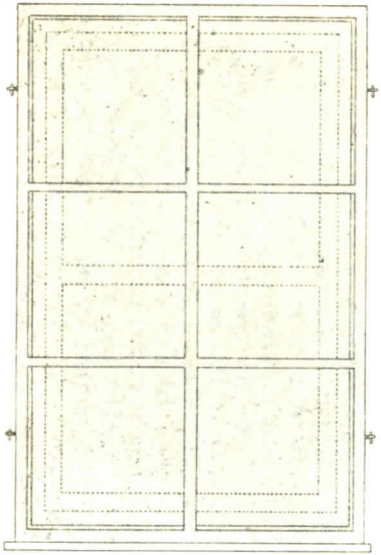
It is never wise to leave your shop without the protection of a burglary light. This applies equally whether your Blackouts are nightly affairs or only on signal.

Local blackout regulations provide for burglary lights being left on provided they conform to certain conditions. Of course, if you screen all your windows and doors, the burglary light will be of no help to the policeman on the beat in protecting your shop.

Skylights

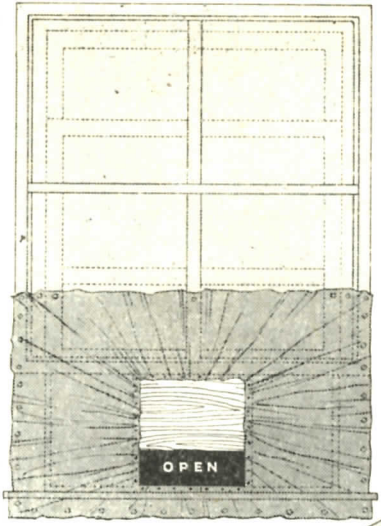
If your shop has a skylight it will require as careful consideration as your windows. It may be blacked out with curtains or blinds if a screen of wire netting, with a mesh not larger than one-half inch, is placed on a sturdy frame **above** the blackout material. This is important, for a shattered skylight will shower the room below with dangerous glass fragments. Skylights are usually difficult to get at and, for this reason, no matter what type of blackout screen is used, it should be arranged so that it can be easily and quickly adjusted from the floor by means of ropes and pulleys.

Reflection is an important consideration in regard to skylights. The glass in most skylights is placed at such an angle that it provides a high degree of reflection of light from the moon, searchlights or enemy flares. The simplest way to overcome this reflection danger is by applying black paint—of a good quality made for exterior use—to the outside of the glass. This, of course, will definitely eliminate the usefulness of the skylight for admitting light. If for this reason the skylight cannot be "painted out," then it is advisable, if at all practical, to provide a framed screen for the outside of the skylight, but means must be found to put this in place quickly and easily when a blackout is ordered. If the outside screen is used, a wire screen must be used inside to protect against shattered glass.

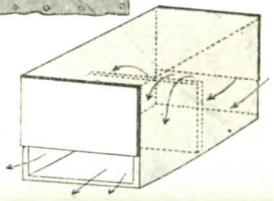


SCREEN FITS TIGHTLY TO EDGE OF WINDOW. NO LIGHT WILL SHOW.

SIDE VIEW OF WINDOW SHOWING HOOK HOLDING SCREEN TIGHT TO WALL



VENTILATION - BOX SHOWING PASSAGE OF AIR INTO ROOM— NO LIGHT PASSES OUT



VENTILATION DURING AN "ALERT"

Ventilation, always important, becomes a very serious consideration if a number of people are crowded into a limited space for any considerable time. Maintaining a supply of fresh air in a room with all windows blacked out seems, at first glance, a difficult problem. However, it is not. The simplest solution is by the use of what is known as a blackout ventilation box, which is illustrated on the opposite page.

The box is really a tunnel passing from the room to the outdoors. One-third of each end is open to allow the passage of air. In the centre is a partition, also leaving one-third open, but placed opposite the openings in the ends so as to prevent the escape of light. The air will flow around the partition. Light, unless reflected, travels only in a straight line. Reflection within the box is overcome by painting the whole inside with a dull black paint.

When used in a double sash window which slides up and down, the box is placed on the lower sill and the window brought down tightly on top of it to hold it firmly in place. The window above the box and the space around the box must be well screened. A heavy dark cloth attached closely around the box and around the window frame will serve admirably.

At least two windows, on opposite sides of the building, should be fitted with ventilation boxes. Arranged as indicated in the sketch, they can be easily and quickly placed in position when needed.

GAS, WATER AND ELECTRICITY

It is not recommended that gas, water or electricity should be shut off at the main valve or switch when an "Alert" sounds.

Gas should be cut off if an actual air raid appears imminent. Water will be badly needed if fire develops and should not be turned off until it is decided to abandon the building and then only to avoid the danger of flooding and the waste of water which may be sorely needed elsewhere. Electricity should be left on so that those within properly screened portions of the building may have light. To remain, perhaps for hours, without light is very damaging to morale. Electricity should be cut off only if the building is hit or seriously damaged by bombs.

Emergency Lighting

Because reasonable lighting of the Refuge Room section of your shop is so important, adequate provision should be made for emergency lighting in case the electric current should be cut off by bomb explosion or other misadventure.

Good flashlights, or lanterns operated from dry cell batteries, are the safest and most satisfactory. Hurricane lamps or other enclosed type lanterns are next best. Candles give a lot of light for the amount of oxygen they consume from the air but, if used, they must be in protected holders that cannot be easily upset. The ordinary oil lamp is not recommended because of the great fire hazard, especially when people are not accustomed to this method of lighting.

According to your facilities, provide some form of adequate emergency lighting for those parts of your shop where staff or customers are likely to remain during an air raid.

ELECTRICAL APPARATUS

Most shops have a considerable amount of electrically operated equipment. Cash registers, sewing machines, electric irons and presses, electric refrigerators, electric fans, are but a few of many such devices. These appliances will require special consideration when planning your blackout. Such items as electric refrigerators, electric blowers for heating equipment, ventilation fans, etc., of necessity must be left in operation when the lights are cut off. Therefore, if you plan to accomplish your blackout by turning off all or part of your lights, you must be sure that your wiring is so arranged to permit such essential appliances being left in operation.

On the other hand, when such appliances are on a separate circuit, great care must be taken that when, in the excitement of a sudden "Alert," the lights are all turned off, motors, heaters or appliances not built for continuous operation are also cut off. Otherwise, if left running for hours in a tightly closed up shop without ventilation, they will become overheated and thus become a fire hazard, to say nothing of causing great and unnecessary wear and tear to themselves.

A REFUGE ROOM ON YOUR PREMISES

Reference has been made in several of the preceding paragraphs to a Refuge Room within your shop or business premises. What follows is intended to assist you in selecting, preparing and outfitting a suitable Refuge Room.

In Canada, for many good reasons, it has not been deemed advisable to provide any extensive scheme of public air raid shelters as has been done in Britain. To provide a suitable Refuge Room within the home or business premises is the responsibility of the owner or occupier. In most communities, provision has been, or will be made, to provide shelter in public or semi-public buildings for those caught away from home in an air raid and for those unable to make suitable arrangements of their own.

A Refuge Room is intended to provide protection against these three dangers during an enemy attack:

(1) danger from high explosive bombs, that is, from explosion blast and fragments of bursting bombs;

(2) danger from anti-aircraft shrapnel and machine gun bullets; and

(3) danger from poison gas.

The protection of the Refuge Room against gas is dealt with in a booklet, "Making Your Refuge Room Safe Against War Gases," issued by the Office of the Director of Civil Air Raid Precautions.

For protection against the first two types of danger a Refuge Room is best located in a good basement or on the first floor. The more protective layers of floor and ceiling between your Refuge Room and the roof the better the safeguard in case the building should collapse. An exit from the Refuge Room direct to the outdoors is very important in case the building is dam-

aged. This is not always possible in a basement room and in such cases the ground floor is recommended.

The Refuge Room should have as little outside (exposed) wall as possible. Walls of adjacent buildings and other rooms give added protection. The outer walls of most buildings of solid brick, stone, reinforced concrete or other substantial construction will provide adequate protection against bomb blast, splinters, shrapnel, etc. There is no adequate protection against a direct hit by a high explosive bomb but, fortunately, the likelihood of such a hit is extremely remote. Buildings of frame, brick encased, stucco or other less substantial construction will require barricades of sand bags or other similar protection added to make them safe against the effects of nearby bomb explosions.

The windows of the Refuge Room—and if possible there should be only one—must be well barricaded with sand bags, or other effective protection.

Unless the building is of thoroughly sound construction, it may be necessary to provide added support for the ceiling and floor above the Refuge Room so that it will withstand the weight of debris should the structure above it collapse.

There are various other points which will require consideration in planning your Refuge Room, including the comfort and well-being of the occupants during an air raid. These matters are discussed in principle, and with practical suggestions for their accomplishment, in the booklet, "Make Your Home Your Air Raid Shelter." Your Air Raid Warden will supply you with a copy of this book. With the assistance and advice of your Warden, you should have no great difficulty in applying the information in the booklet mentioned to the selection, protection and equipping of the Refuge Room in your shop or business premises.

PROTECTION AGAINST INCENDIARY BOMBS

Incendiary bombs are considered by those whose responsibility it is to study such matters, to be the most likely form of a concentrated enemy attack from the air on Canadian communities.

The office of the Director of Civil Air Raid Precautions has published a comprehensive booklet explaining this danger and how it must be met by concentrated civilian effort—by **preparation** now and by **action** in an actual enemy attack.

Every shopkeeper should secure, from his Air Raid Warden, a copy of this handbook and should take steps in accordance with recommendations contained therein to prepare and equip his premises to meet the danger. This involves arrangement for the necessary number of trained and equipped fire watchers to be on duty at any and all hours of the day or night when enemy attack threatens.

NOW IS THE TIME

Plan now and make your blackout preparations as thorough and complete as possible without delay. You can't do anything about these matters when an air raid is in progress. Then it is too late.

Study and understand the dangers of incendiary bomb attack. Make full provision now to protect your property.

Your Air Raid Warden is:

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Telephone No.....

The Warden's Post in Your Sector is at.....

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Telephone No.....

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O. H. M. S.

This booklet is one of a series prepared and distributed for the guidance of the public by the Office of the Director of Civil Air Raid Precautions, Daly Building, Ottawa, Canada.