



# The A-R-P

Air Raid Precautions

# BULLETIN

PUBLISHED BY THE OFFICE OF CIVIL AIR RAID PRECAUTIONS

OTTAWA

## New Advice on Incendiary Bombs

### *Stream of Water more Effective Than Spray—Danger no Greater*

Tests recently conducted on both sides of the Atlantic have resulted in the discovery that a solid stream of water is better than a spray because:

1. It extinguishes the bomb in only a few seconds instead of several minutes—and incendiaries, usually dropped in clusters, demand quick action.
2. Less than half as much water is needed.
3. The firefighter can play water on the bomb from a safer distance, and, if the bomb explodes, the stream from the hose will force the molten fragments away from him.

Previous misunderstanding of incendiaries is traced to early experiments by scientists who studied the laboratory behaviour of pure magnesium, which burns fiercely in water. They concluded that magnesium incendiary bombs would behave in the same way. But the metal in real bombs is only 80% magnesium. The rest is an alloy to make them tough enough to penetrate roofs.

Until now all recommendations concerning the control of fire bombs with water have been based on the fact that when water is concentrated on a burning bomb it will explode in a shower of molten metal and that each of these molten particles can start a fire. It was thought best, therefore, to confine the danger to one point only and accelerate the burning of the bomb by playing a spray upon it, thus reducing also the risk of personal injury.

Recent experiments with live incendiary bombs brought out the fact that molten metal particles from an exploding bomb can be put

out with ease and that they are far less hazardous than the bomb itself. This led to the discovery that these particles are not dangerous unless they lodge between clothing and skin or strike a person in the eye; they usually bounce off the skin harmlessly.

Therefore, instead of losing valuable time by spraying the bomb, A.R.P. workers and civilians are advised by the Office of the Director of Civil Air Raid Precautions to direct a strong stream of water on the fire bomb so as to drown it. (In a room in which there are many drapes and pieces of upholstered furniture it would probably be wiser to use the spray at first.)

Because the so-called magnesium bombs are NOT 100% magnesium but a magnesium alloy many of them will not explode with any great force. Furthermore, because a stream of water can be directed from a distance, the firefighter can stand well out of the danger zone and, should there be an explosion, walls and other obstacles in an ordinary room will stop the flying particles. If the firefighter acts quickly he can extinguish these in a few minutes. The Russians claim that a cool and steady person can even shovel a burning bomb into a bucket of water. This method, however, has not been fully tested on this continent as yet. When it has, the public will be advised. Pouring a bucket of water on a burning bomb is still dangerous.

In studying Incendiary Bomb Control, A.R.P. workers therefore, will bear in mind the foregoing instructions which cancel any advice to the contrary regarding the control of incendiary bombs with water.

### Will We Have Air Raids in Canada?

#### Modern Planes are Fast

Let's look at the record:

1909—Bleriot flew the English Channel—21 miles.

1919—Alcock and Brown flew the Atlantic—1,600 miles.

1938—Three British Bombers flew non-stop from Ismailia to Darwin—7,162 miles.

The distance from enemy occupied Norway to Winnipeg is 3,600 miles.

Large bombers with a bomb load of 5½ tons have a range of 3,000 miles at a speed of 300 m.p.h.

Air Chief Marshal Sir A. T. Harris says: "If Britain has bombers of this capacity, we can be sure the enemy has too."

"Make no mistake about it," says Hon. Humphrey Mitchell, Dominion Minister of Labour, "Japan's invasion of the Aleutian Islands is undertaken to provide advance striking bases. The eventual objective is to bomb Pacific Coast cities, shipyards and aeroplane factories."

"Right now the Japs are less than eight hours' bombing distance from British Columbia ports. They will try to work steadily closer."

Facts speak for themselves.

O C A N A D A ! W E S T A N D O N G U A R D F O R T H E E



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Civil Air Raid Precautions,  
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Ottawa.

## New Fire Protection Order for Buildings

### Places Responsibility on Owners and Occupiers

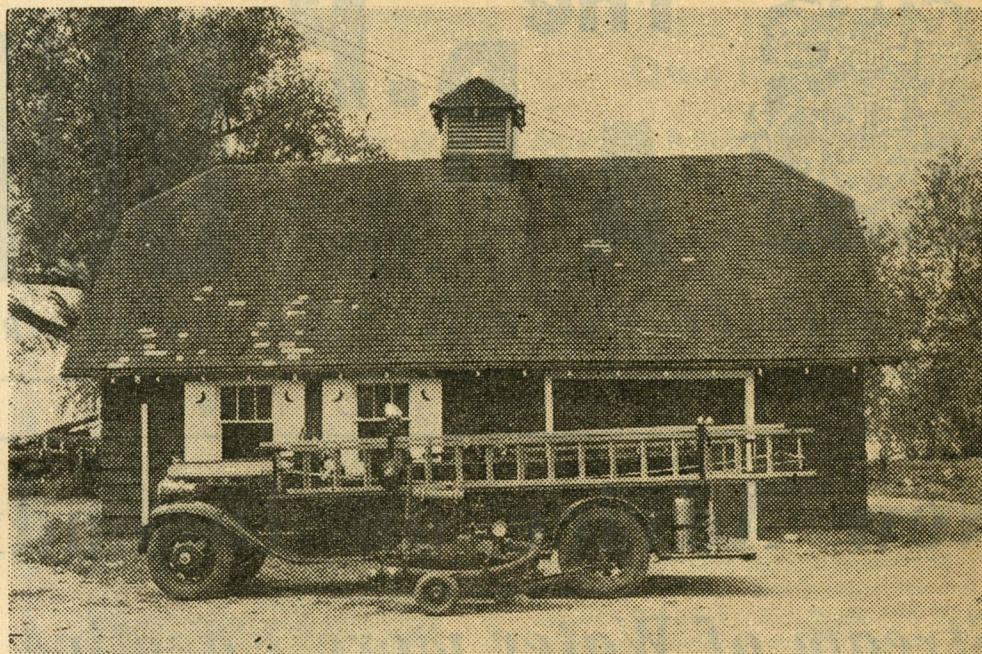
Order-in-Council P.C. 4933, dated June 10, 1942, is of particular interest to householders, industrial concerns, business proprietors and institutions in that power has now been given to the Minister of Pensions and National Health enabling him to issue orders for the prevention and minimizing of fires which may result from enemy action or counter-action.

The Defence of Canada Regulations are amended by adding to paragraph 1 of Regulation 35 the following:

(1) The Minister of Pensions and National Health, or any person authorized by him to act under this regulation, may by order provide:—

- (f) For preventing or minimizing the spread of fires due to enemy action or counter-action by such means as the Minister or such other persons so authorized deems necessary and, without restricting the generality thereof, for compelling owners, lessees and occupiers of buildings and other premises—
- (i) to furnish and maintain such equipment, materials and facilities as may be prescribed for the prevention or extinguishment of fires;
- (ii) to remove or remedy any condition which may be deemed by the Minister, or by such other person so authorized, to be a fire hazard;
- (iii) to organize and carry out training in fire-fighting and fire practices by their employees in respect to such buildings or other premises; and
- (iv) to maintain fire watchmen and spotters in or upon such buildings or premises.

A.R.P. organizations might suggest that owners and tenants of buildings get together with them to discuss this subject, which is of mutual interest and importance.



*Auxiliary Firemen at Hamilton Beach, Ontario, have constructed their own combination hose wagon and pumper and store it in this building. See "Provincial Notes."*

## Provincial Notes

### FROM HERE, THERE AND EVERYWHERE

#### Ontario:

*Toronto*—An interesting event took place in Toronto on Sunday, June 21st, when the Auxiliary Fire Services were presented with colours. More than 400 men were on parade and thousands viewed the ceremonies. This type of activity impresses the public with the importance of A.R.P. work and draws new recruits daily.

*Hamilton Beach*—The fire fighters in this locality have taken their responsibilities with true seriousness and independence. When furnished with a 205 g.p.m. Bickle-Seagrave pumper from Hamilton, they purchased a used motor truck and converted it to a service machine with ladders, axes and other necessary equipment. Their truck and pumper is kept in a converted barn and the men have justifiable pride in their achievements.

#### British Columbia:

*Ladner, B.C.*—The A.R.P. organization at Ladner, B.C., is to be commended upon its initiative. This unit has equipped a 12-bed emergency hospital in a Sunday Schoolroom

which can be set up in 20 minutes. It is complete with linen, first aid supplies, bed tables and other articles necessary for emergency casualties. From the headlight of an automobile a local mechanic constructed an operation spotlight. All this was done at no expense to the Federal or Provincial organizations.

#### Federal District:

*Ottawa*—One way to make your citizens realize just what has to be done was demonstrated in Ottawa recently.

Some time ago sand had been deposited in school yards and people were asked to call and obtain supplies of it, but the response was disappointingly small.

The junior Board of Trade took the matter in hand and literally "went to town." 750 school-boys were recruited and loaded on trucks and cars together with quantities of sand. An extensive campaign was organized over a period of several days. The people were well warned of the campaign and the miniature army set out. The citizens generally entered into the spirit of the effort and provided receptacles ranging from the usual pails to obsolete bath tubs.

*(Continued on next page)*

**ENLIST AN A.R.P. RECRUIT EACH WEEK — BEGIN TODAY!**



## Provincial Notes (continued)

30,000 homes were covered and sand was delivered to nearly all of them. The people were impressed. The Junior Board of Trade felt the effort was extremely worthwhile. The boys thoroughly enjoyed themselves. As one youngster put it, "At some places I got ten cents; at some places I got five cents; at some places I got hell but I had a good time."

### New Brunswick:

*Fredericton*—Provincial A.R.P. Committees across Canada have devised various methods of keeping running inventories as to where equipment has been placed, but the one set up by New Brunswick is remarkably simple.

It is arranged in the form of a positive blueprint chart. The downward columns show the A.R.P. Officers, the locality, and the population. The horizontal columns show the type of equipment. Entries may be made in ink or pencil.

When necessary, a blueprint of the original can be made and sent to the Federal Office or any other interested organization, showing the complete provincial picture.

A similar chart with a few alterations has been prepared at the Federal Office and supplies will be sent to all provincial A.R.P. Committees. If these are used it will be an easy matter to compile complete statements of supplies at any time.

### Prince Edward Island:

*Charlottetown*—C. A. Beer uses colours in identifying each fire-fighting unit. Each group has some distinctive colour which appears on his uniform, on his pump, and even on the hose. A band of colour is painted on the ends of each length so that, in case hose becomes mixed, the equipment of any unit may be quickly recognized.

### Nova Scotia:

*Dartmouth*—The local A.R.P. organization has a completely independent telephone system from the central control room to each Warden's Post. It is magneto operated and is complete with its own switchboard. W. H. Stevens, A.R.P. Officer at Dartmouth, can tell you about it if you write to him.

### Quebec:

*Montreal*—All the large departmental stores have complete A.R.P. organizations set up. Ogilvie's store held a drill recently and made an excellent showing. A.R.P. signs have been set up at strategic points in the store to guide patrons in an emergency. The store also boasts of several capable incendiary bomb disposal squads.

## Suggests Methods of Preventing Hose Wear from Pump Pulsation

### Simple but Practical Solutions of Problem Offered by Manufacturer

Because a number of local A.R.P. Auxiliary Fire Service units, who have received the Bickle-Seagrave 205 g.p.m. Trailer Pumper, have reported hose wearing through from friction caused by the pulsation of the pumper when in operation, the Federal A.R.P. Office has gone exhaustively into the matter in an attempt to solve this difficulty.

From the advice of technical experts who have been consulted and a wealth of suggestions from the "field" (many of which have been most ingenious) it is believed that several simple and practical means of overcoming such hose wear have been found. In the hope that they may prove of value, they are passed on to all A.R.P. Auxiliary Fire Services.

Many are inclined to condemn the pumper because of what they term its excessive pulsation. As a result of investigations, officials of the Federal A.R.P. Office are inclined to believe that more blame attaches to faulty operation of the pumper than to the pumper itself for any "excessive pulsation."

It is not necessary to rekindle the old controversy in regard to the respective merits of the rotary type and centrifugal type pumper. Each has its advantages and disadvantages. Suffice it to say that the particular type of pumper now being supplied by the Dominion Government was selected on the advice of a group of recognized experts as the type best suited to the general needs of A.R.P., having in mind that their operation would be largely in the hands of "amateur" rather than experienced "professional" fire fighters.

Now on the question of pulsation. Pulsation is a normal characteristic of the low capacity rotor type pumper and because it appears to "vibrate" more than some other types of pumper does not mean that it is in any way defective. That is a condition we must meet. It is not possible to entirely eliminate pulsation in this type of pumper but it is possible to counteract it to a very considerable degree—and to do so by very simple means.

That, in most cases, excessive pulsation is due to faulty operation has been conclusively demonstrated to A.R.P. officials. The chief fault appears to be operating the motor at too low a speed. The faster the motor revolves, the less the pulsation and, if the pumper is operated in strict accordance with the instructions furnished with it by the manufacturer, there should be no excessive vibration.

A significant sidelight on this particular aspect of the matter is the fact that the manufacturer has used the same lengths of hose for all underwriters' tests on more than 500 of these pumps over a period of about two years and has yet to experience a single break or serious abrasion.

To eliminate or reduce pulsation, a number of Fire Chiefs have suggested the creation of expansion chambers of various types; others have advocated coupling in a length of 2½" hose between the outlet gate and the siamese; others have recommended jacking up the pumper to take it off the wheels. All these suggestions have merit, but practical tests of most of them have failed to confirm that any one offers a complete or entirely satisfactory solution to the problem.

Two simple expedients are suggested by the manufacturer. One is to turn hose at a right angle close as possible to where it is coupled to the outlet gate or siamese and then turn it again where it touches the ground. It is claimed that if this is done, there will be less vibration of the hose and consequently less friction with the ground. The second is to provide small cradles of wood and fabric on which to place the hose where it normally first touches the ground and thus eliminate friction that causes the wear.

The Billings Bridge, Ont., unit has used the latter method with a great deal of success. The members made cradles by nailing two blocks of 2" x 4" lumber, about four to six feet long, to a flat board so that they lay parallel about four inches apart and then stretched a piece of canvas loosely between the two blocks upon which the hose rests about two inches off the ground. This unit carries these cradles on the pumper and uses several with each length of hose to carry the latter for a short distance from the point where normally it would touch the ground. The hose, after considerable use, shows no signs of chafing or abrasions.

For those communities that received the first lots of 205 g.p.m. pumps which were originally mounted on skids, Director Bond of the Hull, P.Q., Fire Department, offers a valuable suggestion that he has put into practical application with great success. He recommends that the pumper be reversed on the chassis subsequently provided so that the hose connection outlets are at the rear or at the opposite end to the draw-bars. This, he states, puts the engine right over the axle and wheels, which, he claims, reduces the vibration considerably. It may be necessary to add another cross-bar to the chassis to strengthen it if this plan is followed, but any good mechanic can do this.

#### KEEP THIS BULLETIN

It contains important information and useful articles. Punch marks are indicated on the margin for easy filing.



## More Blood Banks Urgently Needed

It takes the blood donations of five people to prepare sufficient serum to treat one patient. To build up a bank sufficient to meet the needs of the population of Canada, in case of emergency, would require thousands of donors. In addition to our needs in Canada, we have undertaken to supply Britain with as large a quantity as possible.

Wardens, in approaching people, can do valuable work by encouraging them to donate their blood to this humanitarian cause which they may some day need themselves. Often all it requires to bring in many donors is to mention the subject and to supply the information as to where the blood clinic is located.

Donating blood is just as essential as training fire-fighting groups, ambulance squads and other A.R.P. services. Moreover, people will listen to this appeal because of its rational and emotional values.

## Two Useful Hints for Home Lighting

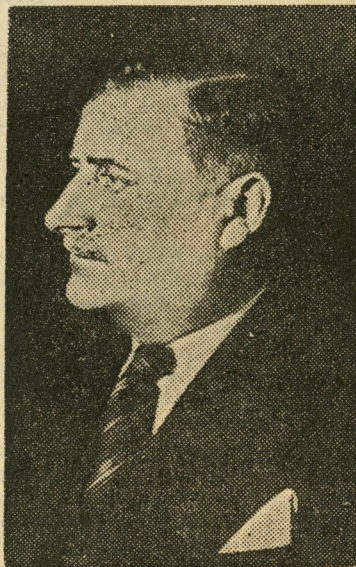
Two practical solutions to the question of providing sufficient and economical interior lighting to enable one to move about in safety and yet eliminate the provision of elaborate drapes and devices are suggested by Mr. A. S. L. Barnes of Toronto. The second suggestion was originated by Mr. Barnes himself, but may be more difficult to arrange at the present time than when he suggested it, due to recent restrictions on electrical goods. But it has merit and possibly some people could adopt it. These are Mr. Barnes' suggestions:

(1) The use of a low-power orange coloured bulb which has been blackened with the exception of a small spot about the size of a five-cent piece on the bottom. Sufficient light is given to enable a person to move about the room with the ordinary blinds in place. This would be useful in toilets, hallways, sick bedrooms, etc., where it would be impractical to install elaborate drapes.

(2) The use of low-powered lights such as those in Xmas tree strings, with small cardboard shades. Mr. Barnes installed them to operate on either an ordinary bell transformer or a battery. In the case of the battery, complete independence of the ordinary lighting system and mobility were achieved.

Mr. Barnes' explanations are more detailed and we have merely picked out the core of the ideas. With these as leads we feel sure that ingenious adaptations can be made by the citizens themselves.

## Who's Who in A.R.P.



HON. IAN ALISTAIR MacKENZIE  
M.A., LL.B., K.C., M.P.,

Minister of Pensions and National Health

Born at Assynt, Sutherland County, Scotland. Gold Medalist at High School. Graduated from Edinburgh University with M.A., honours in Classics and LL.B. with highest distinction. Was awarded three first-class medals in university. Specialized in classical languages. Won Professor Blackie's Celtic prize in law for the study of Celtic and the Carnegie fellowship for research. Was awarded the "Throw" scholarship for the best graduating law student in Edinburgh. Took first prize and medal for Constitutional Law and History.

Came to British Columbia in July, 1914, but entered army as lieutenant before being called to the Bar. Enlisted in Seaforth Highlanders and had a distinguished war record at Ypres, Kemmel and the Somme.

Took up law practice upon his return to British Columbia in 1919. Was elected to the Provincial Legislature in 1920, re-elected in 1924 and 1928. Was Provincial Secretary in 1928. Invited to the Federal Parliament in 1930 and assumed portfolios of Immigration, Colonization, Soldiers' Settlement and Indian Affairs. Re-elected in 1930 and 1935.

Minister of National Defence 1935; Minister of Pensions and National Health 1939, under which the Air Raid Precautions Office for Canada was organized.

Represented Canada at unveiling of Memorial on Vimy Ridge in 1936 by His Majesty King Edward VIII and again at the Coronation of His Majesty King George VI in 1937.

Is unmarried. Religion—Presbyterian. Recreations—Golf, motoring, yachting and study.

## U.S. Cities Finance Own Defence Costs

### Financial Policy for Civilian Defence Differs from Canada

Speaking before the Canadian Conference of Mayors at Ottawa recently, the Director of Civil Air Raid Precautions drew an interesting and significant comparison between the methods by which civilian defence measures are financed in the United States and Canada. Whereas, in Canada, the Dominion Government, through grants to the Provinces, contributes substantially to the organizational and operational costs of A.R.P. organized by municipalities in vulnerable areas, the United States Government does not assume any part of such expenses and expects the individual States and municipalities to equip themselves, at their own expense, for civilian defence, though, as in Canada, the Federal Government supplies certain essential equipment.

Both States and municipalities have accepted the responsibility of financing civilian defence and to illustrate the degree, Dr. Manion gave authoritative figures from Washington as to the amounts appropriated for the current year to meet civilian defence costs by a number of United States cities. Here are some of them:

Philadelphia, Pa. (pop. 1,950,961)....	\$ 565,000
Portland, Ore. (pop. 301,815).....	350,000
Long Beach, Calif. (pop. 164,000)....	208,000
San Diego, Calif. (pop. 204,000).....	279,000
Seattle, Wash. (pop. 365,583).....	408,000
San Francisco, Calif. (pop. 634,394)...	1,500,000
Los Angeles, Calif. (pop. 1,238,048)...	200,000
New York, N.Y. (pop. 4,211,699)....	3,000,000

## NEW A.R.P. LITERATURE

The office of the Director of Civil Air Raid Precautions has recently issued a number of interesting new booklets for general distribution to A.R.P. personnel and the public. Among them are the following:

"Incendiary Bombs and How to Deal With Them"

"Blackout For Your Home"

"Blackout for Smaller Shops and Business Premises"

"A. R. P. — General Information for Civil Authorities."

Large consignments of these booklets have been shipped to the Provincial A.R.P. Committees for distribution in the areas under their jurisdiction. They contain a wealth of interesting, up-to-date and valuable information presented in non-technical language.

Requests for copies should be directed to the Provincial Committees and not to the Federal Office.

TAKE THE BULLETIN HOME FOR YOUR FAMILY TO READ