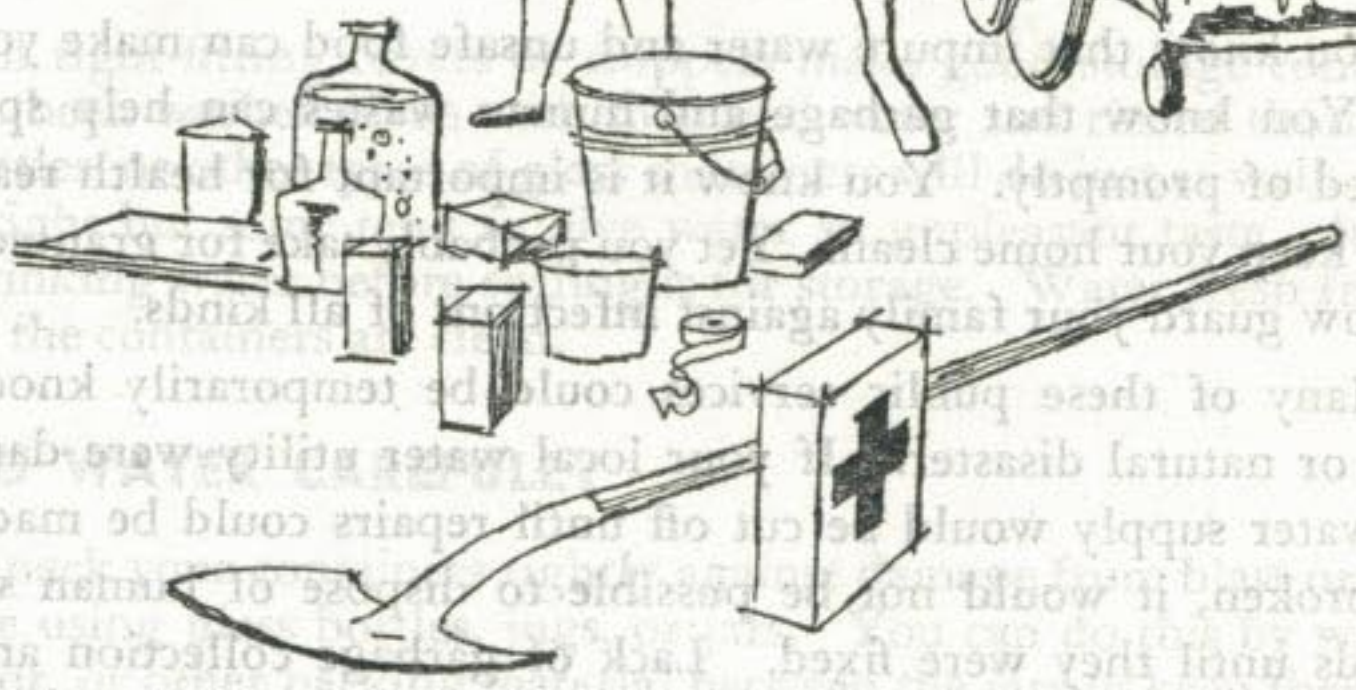


# EMERGENCY SANITATION AT HOME

A FAMILY HANDBOOK  
H-1



Many of these public health services could be temporarily knocked out by enemy attack or natural disaster. If your local water utility was damaged, your household water supply would be cut off. If sewer mains were broken, it would not be possible to dispose of human wastes by the usual methods until they were fixed. Lack of collection and garbage disposal service would encourage the increase of rats, flies, and other disease-carrying agents. It would be hard for the people who supply you with food and fresh milk to ensure their usual service for some time after disaster struck. You would be on your own until these facilities could be reestablished and through the extra work there are a few simple steps you can take now to assure your family safe water and safe food free from harmful contamination. Also, you can be ready to handle the disposal of garbage and other wastes if you take a few prior precautions.

## EMERGENCY SOURCES OF LIQUIDS

Water-packed fruit and vegetables are a good source of liquids for drinking purposes in an emergency. Fresh fruits that have been under cover and especially citrus fruits are also good sources of liquids.

DEPARTMENT OF DEFENSE

Office of Civil Defense

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## INTRODUCTION

The purpose of this handbook is to tell you what materials you need, and what you can do now to maintain sanitary conditions in your home or shelter if you are isolated by an enemy attack or a natural disaster.

You know that impure water and unsafe food can make you sick, or even kill you. You know that garbage and human wastes can help spread disease if not disposed of promptly. You know it is important for health reasons to keep clean, and to keep your home clean. Yet you probably take for granted the public services that now guard your family against infections of all kinds.

Many of these public services could be temporarily knocked out by enemy attack or natural disaster. If your local water utility were damaged, your household water supply would be cut off until repairs could be made. If sewer mains were broken, it would not be possible to dispose of human wastes by the usual methods until they were fixed. Lack of garbage collection and garbage disposal service would encourage the increase of rats, flies, and other disease-carrying agents. It would be hard for the people who supply you with food and fresh milk to resume their usual service for some time after disaster struck. You would be on your own until these facilities could be restored.

There are a few simple steps you can take *now* to assure your family safe water and safe food, free from harmful contamination. Also, you can be ready to handle the disposal of garbage and other wastes if you take a few prior precautions.

## CHAPTER 1

### YOU MUST HAVE SAFE DRINKING WATER

You and your family could get along for quite awhile without food, if necessary, but you must have safe water to drink.

Interruption of this vital service, as a result of major disaster, is not the only thing that could happen to your home water supply. Leaking sewage, poisonous chemicals, radioactive materials, or even disease-carrying organisms from biological warfare attacks might get into the pipes and make your drinking water unsafe. If household pipes were broken you would want to shut off the water yourself, to avoid flooding your shelter. Or, local authorities might ask you to shut off the water supply to your home to maintain fire-fighting pressures in some other part of the city.

To insure a safe supply for emergency use, store enough drinking water for your family right now. You should have available at least seven gallons of water or other fluids for each member of your family.

This may sound like a lot of fluid to store, but the chances are that you usually have on hand several quarts of various liquids that can be used for drinking purposes. Milk serves as a substitute for water when your family is thirsty. So do all other bottled beverages such as soft drinks, fruit drinks, and liquids from water-packed fruits and vegetables. There are many emergency sources of drinking water in your home that you can use if you must, as you will read later on in these pages. To be on the safe side, however, you should store some water for drinking purposes only.

Glass jugs with tight-fitting covers or stoppers make good storage containers, provided they have been washed clean with soap and water and rinsed thoroughly. Fruit jars, quart bottles, or other types of glass containers will do just as well. Metal containers are all right but some tend to give water an unpleasant taste. It is not necessary to boil drinking water before sealing it for storage. Water fresh from the tap is safe provided the containers are clean.

#### STORE DRINKING WATER CAREFULLY

It is a good idea to pack your containers tightly against damage from blast or shock, especially if you are using glass bottles, jugs, or jars. You can do this by wadding newspapers, excelsior, or other packing material between the jars to keep them from coming in contact with one another. Pack them as though for a long move. Then your containers will be less likely to break if there is an explosion near your home.

Drinking water may develop undesirable tastes and odors during storage. Since waters throughout the country vary in quality, the periods of time in which these distasteful properties may develop also vary. Therefore, as a general rule, the stored drinking water supply should be changed every 3 months, particularly if, on the basis of experience, undesirable tastes, odors, or appearances have developed.

#### EMERGENCY SOURCES OF LIQUIDS

Water-packed fruit and vegetables are a good source of liquids for drinking purposes in an emergency, provided the containers are undamaged. Fresh fruits that have been under cover, especially citrus fruits, are also good sources of liquids. If

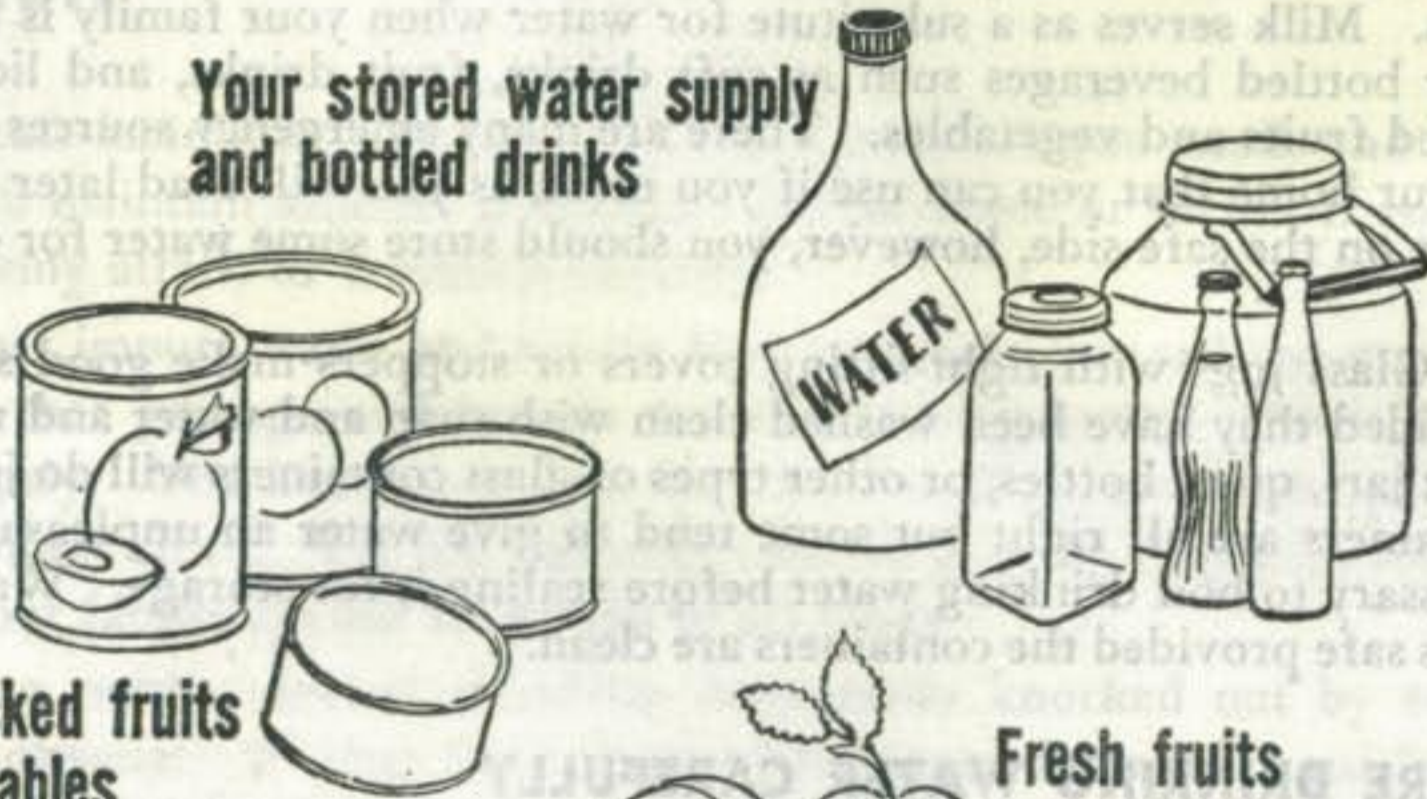
they have been exposed to radioactive dust or mist, however, oranges should be wiped clean before being squeezed. Other fruits such as apples or peaches should be peeled before being eaten.

Another source of good drinking water would be your refrigerator. Unless the refrigerator itself were damaged by blast, it would protect the contents against radioactive dust or mist. Even if the electricity or gas by which it operates were shut off, you could drink the water from the melted ice cubes in the trays. All other liquids stored in the refrigerator would be suitable for drinking purposes, provided they had not had time to spoil.

The water in the storage tank of your hot water heater can be used for drinking purposes if you run short. Home hot water heaters usually have a capacity of 30 or 60 gallons. Keep the hot water tank free from rust and sediment by opening the drain valve at the bottom of the tank at least once every month until the water runs clean. That is a good thing to do even in peacetime. It also assures you an extra supply of water for washing and cooking purposes in an emergency. When not under pressure (i. e., when house main valve is closed) all hot water tanks require venting to the atmosphere before a free flow of water can be obtained from the drain cock. Some are harder to vent than others, depending on the piping arrangement. Most require only the opening of a faucet on the hot water line; others may require disconnecting the hot water line from the tank at the coupling

## SOURCES OF LIQUIDS

Your stored water supply and bottled drinks



Water-packed fruits and vegetables



Fresh fruits

Ice cubes and liquids stored in undamaged refrigerator



Water from hot water heater, if clean

usually located at the top of the tank. Know your system and its requirements for obtaining water from the tank. Where necessary, have proper tools (pipe wrenches, etc.) handy to accomplish this.

## DON'T WAIT TO STORE WATER SUPPLIES

Water to be stored should be drawn into containers *before* it is needed. Don't wait until an emergency happens before laying in your household supply. When an attack occurs, it may be too late to act. The public water service may already be interrupted or contaminated. Also, if thousands of householders tried to fill water containers at the same time, they would reduce the pressure in the street mains. That would make fire fighting more difficult. Waiting until something happens before you draw and store the water you need could cost you your home, or even your life.<sup>1</sup>

## HOW YOU SHUT OFF THE WATER SERVICE VALVE IN YOUR HOME

The water service valve usually is located in the basement or just outside the house, often near an outside faucet. Or, it may be found in a curb box. You should know where to find the shutoff valve that controls the water service to your home, and all members of your family should be acquainted with its location as well. Try the valve to make sure that it works freely. If a tool, such as a wrench, is needed to operate the valve, be sure you know where to lay your hands on it quickly in an emergency. And be sure you know how to use it.

## HOW TO PURIFY YOUR DRINKING WATER

If you do not have enough stored water on hand in your home following a disaster, you will need to know where to get more from outside. Also you will want to know how to treat the water to make it safe. Do not use water direct from a tap immediately after an attack. If the system is still working, or as service is restored, you will be notified when it will be safe to use water drawn from the tap. Follow the instructions of the authorities. In other cases emergency water rations may be delivered to distribution points in your neighborhood. Or, you may be instructed to use water drawn from taps or wells after you have taken certain steps to purify it. Good methods of purifying water include the following:

(a) *Boiling*.—Most water can be purified for drinking purposes by boiling for 5 or 10 minutes. This will destroy the germs. If desired, to improve the taste of the water after boiling, simply pour the boiled water, after it has cooled, from one container to another several times.

(b) *Chlorination*.—It may not be possible to boil your drinking water due to the failure of gas or electric power, or damage to your stove. Open flames are a good thing to avoid in the first few hours following an enemy attack, due to the danger of fire from gas or fuel oil leaks in your home or neighborhood. Under these conditions it would be better to chlorinate your drinking water instead of boiling it.

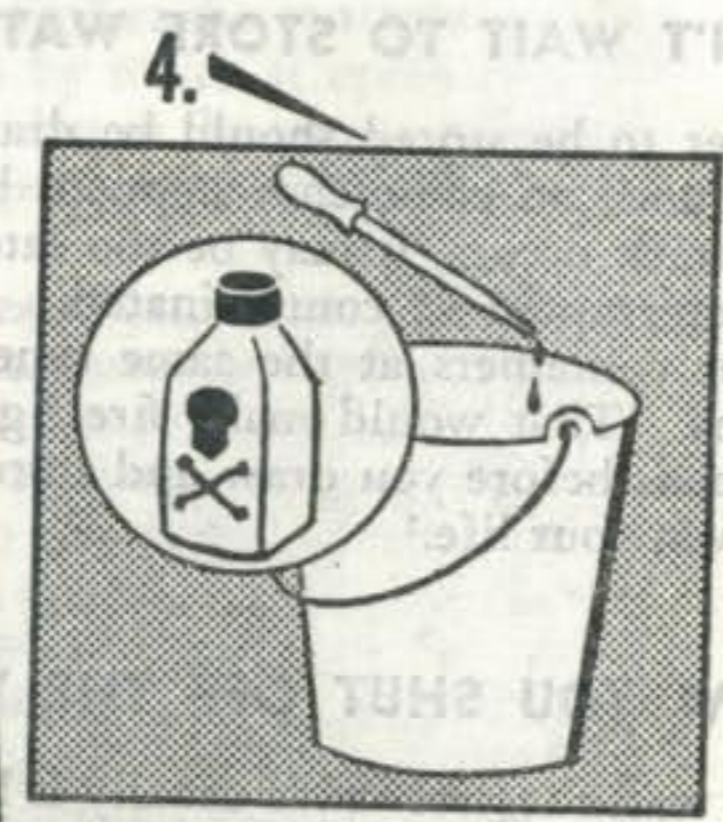
Any household bleach solution available in grocery stores that contains hypochlorite, a chlorine compound, may be used for this purpose. Bleach solutions having 5.25% sodium hypochlorite by weight, as the active ingredient, are most commonly available. You can add the disinfectant solution to the water in any clean container in which it can be thoroughly mixed by stirring or shaking. The proper amounts to be used can be estimated from the table on page 5.

<sup>1</sup> *Fire Fighting for Householders*, PB-4, OCD.

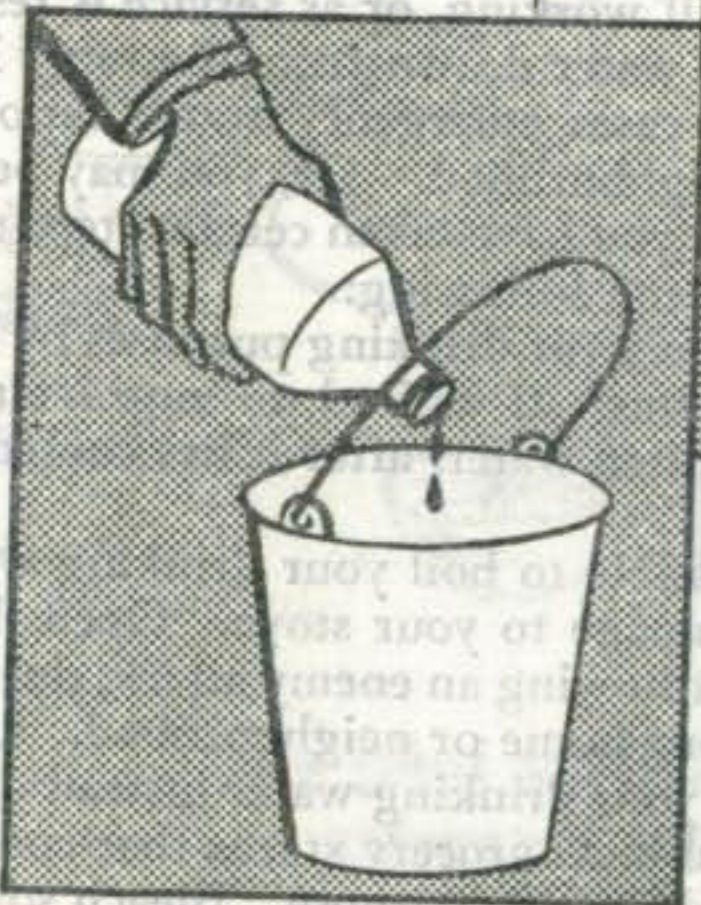
# FOUR METHODS OF WATER PURIFICATION



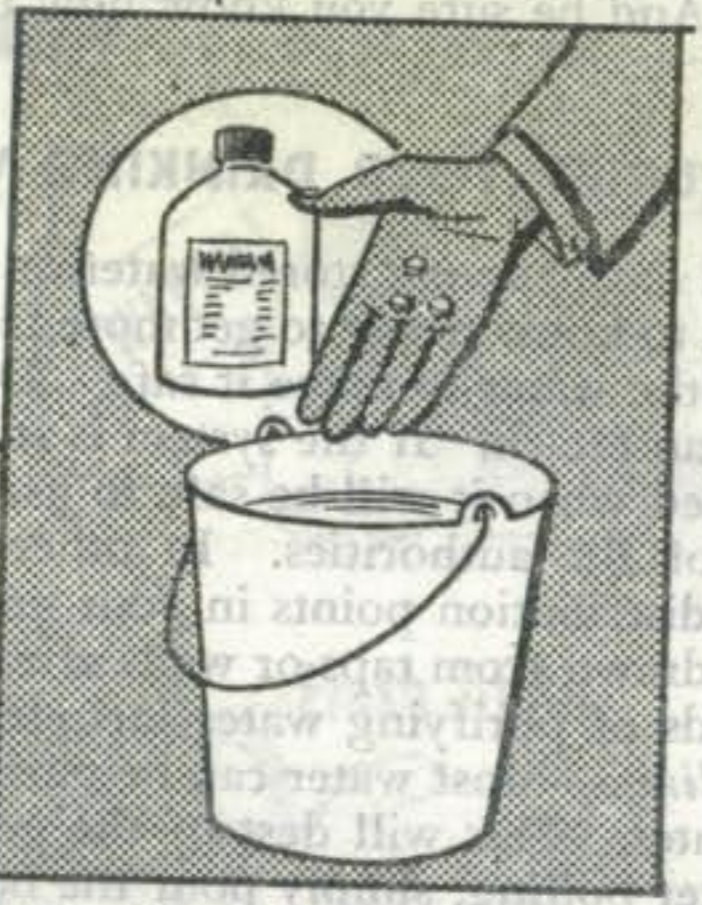
**Boiling**  
5 to 10 minutes



**Iodine**  
2-3 drops per quart  
of clear water



**Purification tablets**  
Use manufacturer's  
directions



**Chlorination**  
See TABLE for directions

## Dosage<sup>2</sup> of Chlorine Solution for Disinfecting Drinking Water

Gallons of water	Dosage of 5.25% solution for—	
	Clear water	Cloudy water
1/4 (one quart).....	1 drop.....	3 drops.
1 .....	4 drops.....	10 drops.
5 .....	1/4 teaspoon.....	1/2 teaspoon.

<sup>2</sup> For different chlorine strengths and for other volumes of water, the dosage should be adjusted proportionally.

After adding the proper dosage and stirring, allow the water to stand for 30 minutes. After that length of time it should have a distinct taste or smell of chlorine. If this taste or smell is not present, add another dose to the solution and let the water stand for another 15 minutes. The taste or smell of chlorine in water thus treated is a sign of safety. It is not harmful. On the contrary, if you cannot detect chlorine in water that you are trying to purify by this method, do not drink it. The solution may have become weak through age or for other reasons.

(c) *Purification tablets.*—Tablets which release iodine may be used safely to purify drinking water. These are not generally available in commercial retail stocks, at present, but may occasionally be found at drug and sporting-goods stores. Use tablets in accordance with instructions on the package. Usually one tablet is sufficient for one quart of water; the dosage is doubled with cloudy water.

(d) *Iodine.*—Ordinary household iodine may be used to purify small quantities of water. Add 2 or 3 drops of tincture of iodine or iodine solution to each quart of clear water (8 to 10 drops for cloudy water). Mix and allow to stand for 30 minutes.

(e) Other methods of purification may be recommended by the proper authorities if special conditions arise. In such cases follow the instructions of your local government officials.

### SPECIAL TIPS ABOUT WATER USAGE

If you are asked to shut off the service valve that controls the water supply to your home, or if the taps do not flow following a disaster, turn off all the water outlets. These include taps or faucets, valves on pipes supplying float-controlled equipment such as flush toilets, air-cooling equipment, and heating equipment. Then, when the water comes on again your home will not be flooded.

Turn off the gas or electricity that supplies your hot-water heater after closing your home water service valve, or when your water supply is interrupted for any other reason. Otherwise, if the limited supply of water remaining in your hot-water storage tank continues to be heated, an explosion may occur. Also, if no more water can reach the tank, continued heat will soon muddy its contents and make the water useless for washing or drinking purposes.

If your water service is cut off following enemy attack, do not try to telephone or otherwise communicate with your local water department or water company. The officials in charge will be doing all they can to restore your service. Complaints will only add to their burdens. Besides, you will be using telephone lines that are needed for other emergencies.

Once service is restored, the water from your faucets may have a strong chlorine taste. Do not worry about this. It is a sign that extra precautions are being taken for your safety. If there is any doubt about leaks in the water mains or other pos-

sible sources of contamination, more chlorine than usual will be added to the water supply by health officials to make sure that it is safe.

Do not drink or use for cooking purposes any water other than that obtained from your faucet, or other recommended emergency source in the home, or from special water dispensing stations operated by proper authorities. It is dangerous to use water that has not been properly purified or approved. This applies to all other sources that have not been inspected, such as wells, cisterns, streams, or ponds. If the public water supply service cannot be restored within a reasonable time following disaster, emergency water rations will be made available to you. Meanwhile, play it safe.

Be alert for instructions regarding water usage from your public health officials, or from the water department itself. These are the proper authorities to advise you about the safety of your water supplies. Their instructions will be relayed to you by messengers, radio, mobile loudspeakers, handbills, or newspaper stories. Don't listen to any rumors from other sources about the safety of your water supply, or pass on rumors to others. Pay attention to official instructions only.

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### SPECIAL TIPS ABOUT WATER USAGE

If you are asked to shut off the service valve that controls the water supply to your home, or if the tap to not flow following a disaster, turn off all the water outlets. These include taps or faucets, valves on pipes supplying floor-controlled equipment such as flush toilets, air-cooling equipment and heating equipment. Then, when the water comes on again, your home will not be flooded.

Turn off the gas or electricity that supplies your hot-water heater after closing your home water service valve, or when your water supply is interrupted for any other reason. Otherwise, if the limited supply of water remaining in your hot-water storage tank continues to be heated, an explosion may occur. Also, if no more water can reach the tank, condensed heat will soon reach its contents and make the water useless for washing or drinking purposes.

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## CHAPTER 2

# YOU MUST HAVE SAFE FOOD

After an attack the contents of cans, jars, cartons, and other food packages that have not been broken or punctured by a nuclear bomb blast would be perfectly safe to eat. Most radiation that is destructive to living tissue is not damaging to most other materials, including packaged food.

However, it would be well to wipe or wash carefully any can, bottle, or other containers—or any covered dish—that had been exposed to radioactive mist or dust. Tiny particles of "bomb ash" often are to be found in such mists and dusts. These particles are still radioactive and can make you sick if enough of them get inside your body. Radioactive dust on cooking or eating utensils is another problem. Such dust cannot be made harmless by boiling. The particles can be washed or wiped away, but that does not render them harmless. They are still "hot" and will remain on the cleaning cloth or in the wash water.

After an attack, you should not drink water that has been exposed to the open air until local officials announce that it is safe. Water from closed containers will be all right. Water stored in open tubs or buckets may not be. The same thing applies to food that may have been left out in the open. Food that has been stored in closed cupboards or in your refrigerator should be safe to eat after an attack. Food that has had no protection may not be.

## INCREASE HOME FOOD STOCKS

After a thermonuclear attack, a most difficult task of survivors will be that of obtaining food and water without overexposing themselves to fallout radiation. This fact emphasizes the importance of keeping on hand at least a 2-week supply of food and water. This supply can mean the difference between life and death.

During emergencies, stored food and water should be used conservatively to prevent wasting them or exhausting them too rapidly. If refrigerators or deep-freeze units become inoperable, the food in them should be used first. By opening them only once daily, you can keep remaining food in them from spoiling for a reasonable time.

If you do not already keep a 2-week food supply in your home, increase it accordingly at once. Maintain it continuously by one of the following methods:

(a) *Increase current food stock.*—This method merely means that you keep a 2-week supply of food on hand. It is no different from the food that you normally use in preparing your daily meals. You just make sure that there is always sufficient food to last for 2 weeks by replacing the food as you use it.

(b) *Shelter reserve food supply.*—This method means that you always keep a 2-week supply of selected food stored in your family shelter. For a shelter reserve food supply, select foods that store easily, keep for months without refrigeration, are easily prepared, and require little or no cooking.

Foods canned in metal and glass will stay in good condition for 6 or more months if kept in a dry place, protected from sun and dust, and kept at a fairly cool temperature—preferably not above 70° F., or below freezing. To keep food in paper boxes as long as 6 months, place them in tightly closed metal cans or

cabinets and store them under the dry, cool, clean conditions specified for canned foods, so that rodents and insects are not likely to attack them.

It is good practice to rotate foods in cans at least once or twice a year and foods in paper boxes (without added protection) at least every 3 months. This will insure having a reserve supply of food that is good tasting. As food on the reserve shelf is used for meals for unexpected company and the family, replace it, putting the older stocks in front of the new supply.

If required, include special milk or strained, chopped, or other special foods for infants, toddlers, older persons, diabetics, invalids, and others on a special diet.

Cans and jars in sizes which will meet family needs for only one meal are best for meat, poultry, fish, vegetables, fruit, evaporated milk, and other foods which deteriorate rapidly, unless refrigerated, after the container is opened. This also helps to eliminate the problem of leftovers.

### HOW TO EAT SAFELY

All cooking and eating utensils, including tableware, should be thoroughly scrubbed with soap and water if there is any possibility that they have been exposed to radiological, chemical, or biological contamination. Packaged dishwashing powders are all right for washing such utensils. So are strong soaps. If your water supply has been cut off, wash only the utensils you need to use.

Paper cups and plates are handy things to have if the water supply is cut off, because they need not be washed and can be burned with the rubbish. Paper towels and napkins are good, too, when laundry needs cannot be met. If you have room,

(Continued on page 13)

### HERE'S WHAT YOU NEED FOR EMERGENCY SANITATION

1. Stored drinking water or other liquids to quench thirst (7 gallons for each member of your family).
2. A 2-week supply of proper foods for your family, including milk. (This can include food already in your refrigerator, plus canned or packaged foods on your cupboard shelves.) Also store paper plates and napkins.
3. Towels for emergency table use, plus cooking and eating utensils, measuring cup, can and bottle openers, pocket knife, and matches.
4. Canned milk for baby, and emergency canned foods for diabetics or others requiring special diets.
5. At least one large covered garbage can (20-gallon size, if you are a householder) to keep garbage until you can dispose of it.
6. At least one smaller garbage can with tight-fitting lid (10-gallon size) as a container for human wastes.
7. A covered pail or other receptacle that can be used as an emergency toilet, if water is not available to flush household fixtures.
8. A supply of soap, toilet tissue, sanitary napkins, and disposable diapers (if there is a baby in the house).
9. If there is illness in the family, spare rubber sheeting, extra medicines, and a reserve supply of any special equipment needed by the patient.
10. A supply of grocery bags (large) and a week's accumulation of daily papers, for soil bags, garbage wrappers, and other sanitary purposes.
11. Household chlorine solution (2 pints) for purifying drinking water, and 1 quart of 5 percent DDT solution for use against insects.
12. Screwdriver, wrench (for turning off valve on house water service line) and shovel (for burying garbage and other wastes), and other tools.

# BEFORE DISASTER STRIKES



## YOU SHOULD KNOW . . . .



**Where to find safe water**



**How to turn off water service valve**



**How to purify water**



**What foods to store and how to prepare them**



**What foods are unsafe**



**How to dispose of garbage**



**How to dispose of human wastes**



**How to make soil bags**



**What to do with frozen foods**

## YOU SHOULD HAVE . . . .



**Stored water or other liquid (7 gals. per person)**



**A 2-week supply of proper foods, paper plates and napkins**



**Cooking and eating utensils, measuring cup, can and bottle openers, pocket knife and matches**



**Special foods for babies and the sick**



**Large garbage can to keep garbage**



**Smaller can for human wastes**



**A covered pail for bathroom purposes**



**Toilet tissue, paper towels, sanitary napkins, disposable diapers, soap**



**Rubber sheeting and special equipment for the sick**



**Grocery bags, week's supply of newspapers for sanitary uses, waterproof gloves**



**2 pts. of household chlorine, 1 qt. of 5 per-cent DDT**



**Wrench, screwdriver, shovel, and other tools**

**TEAR OUT THIS PAGE FOR YOUR CHECKLIST**

## HERE'S WHAT YOU CAN DO ABOUT EMERGENCY SANITATION:

1. Drink only water or other liquids that you *know* are safe. Store right now the extra drinking water that your family might need. Don't wait for an emergency.
2. Know how to turn off the water service valve if necessary, and learn where to get water for emergency drinking, cooking, and washing if your outside supply fails.
3. Be prepared to purify water for drinking purposes in your own home, if necessary. This booklet tells you how.
4. Eat only safe foods prepared under safe conditions. Keep a 2-week supply on hand, and replace the things you use to keep your stock fresh or in good condition.
5. Avoid using foods or liquids that might be contaminated. Know what you can eat or drink safely.
6. If the emergency lasts for several days and if there is no danger from radioactive fallout, bury your garbage.
7. Provide for the disposal of human wastes in covered containers in case flush toilets are inaccessible or not working. Never expose human wastes to disease-carrying insects or animals. That's how epidemics start.
8. Learn how to make soil bags for emergency use if your other sanitary arrangements fail.
9. You should keep your food where it will be safe from contamination. Most kitchen cabinets, pantries, or closets have doors that close tightly enough for safety.
10. Be ready to take care of frozen foods and refrigerated food supplies if the gas and electricity are shut off. Eat or cook such foods before they spoil. Don't refreeze any frozen foods that have completely thawed without cooking them first. If the food still contains some ice crystals, it may safely be refrozen, even though the quality may suffer.<sup>3</sup>
11. Don't listen to rumors about the safety of food and water supplies, and don't pass the rumors on to others. Observe official instructions only.

<sup>3</sup> *What To Do When Your Home Freezer Stops*, USDA Leaflet 321.

store a good supply for emergency use. The wrappers they come in will protect them from radioactive dust and mist unless the packages are broken.

Refrigerators and home freezer units should be kept closed as much as possible once the services they depend on are cut off. The foods they contain will keep longer if you don't open the doors any oftener than necessary. If the gas or electric service is not restored within 12 hours, eat or cook the most perishable items in your refrigerator before they spoil. If foods show signs of decomposition, throw them out before they contaminate other foods that keep better.

Food will keep in home freezer units, after they are shut off, for varying periods depending on the amount and kind of food, the temperature at which it was kept, and the construction of the freezer. Frozen meats and other frozen foods can be preserved for later use by cooking them soon after they have thawed or by quick refreezing before they have completely thawed.<sup>4</sup>

Milk needs special attention when an emergency occurs because it is easily contaminated. If you are not sure your supply of fluid (bottled) milk has been pasteurized, you should heat-treat it at home before using. You need not worry about canned milk because it has been heat-treated in processing. Heat-treating gives bottled milk a cooked flavor, but it is a wise precaution to take when public sanitation services fail. Here are two simple methods for heat-treating fluid milk at home:

(a) Bring the milk quickly to a boil in an open saucepan while stirring constantly. If a good cooking thermometer is available, heat the milk to 165° F. instead of to a boil. Then place the saucepan in cold water and stir the milk until it has cooled.

(b) Pour water into the outer unit of a double boiler and bring it to a vigorous boil. Pour the milk into the inner unit and settle it in place, letting the boiling water in the outer unit heat the milk. Cover and maintain water at a boil for 10 minutes.

Produce from your home vegetable gardens may be contaminated during an enemy attack. Do not eat such produce, or even collect it, until the neighborhood has been officially declared free of contamination.

Official instructions regarding food will be issued locally in the event of an emergency. These instructions will tell you the type of disaster and its effect upon milk and other foods. Follow official instructions closely. Don't listen to rumors, and don't pass them on to others.

## EMERGENCY COOKING

If public utilities are out, it may be necessary to improvise equipment for heating water or for cooking and serving meals.

Keep the following equipment readily available: One or two cooking pans; disposable tableware, paper plates, cups, and napkins; measuring cup; bottle and can opener; pocket knife; matches; and a small compact cooking unit which produces a small flame and uses little oxygen from the air. Since any flame uses oxygen, foods not requiring cooking are preferable in shelters.

In many natural disasters, or following an enemy attack (if radioactive fallout presents no hazard) out-of-doors cooking can be done over several types of fires such as the trench fire, the hunter or trapper blaze, or an improvised fireplace. Each of these can be easily controlled and offers adequate space for pots and pans.

<sup>4</sup> *What To Do When Your Home Freezer Stops*, USDA Leaflet 321.



# WHAT YOU SHOULD STORE:

## FOR YOUR BABY...

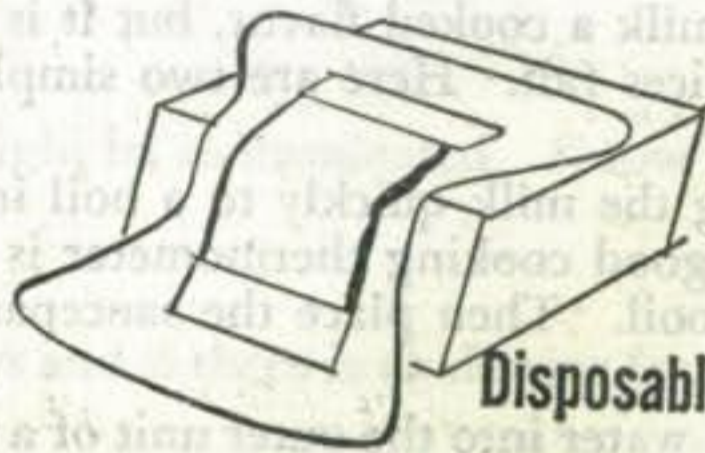


Water—one extra gal.



Powdered mixture for formula

Canned or powdered milk and easily digested foods, funnel



Disposable diapers

## FOR INVALIDS ...

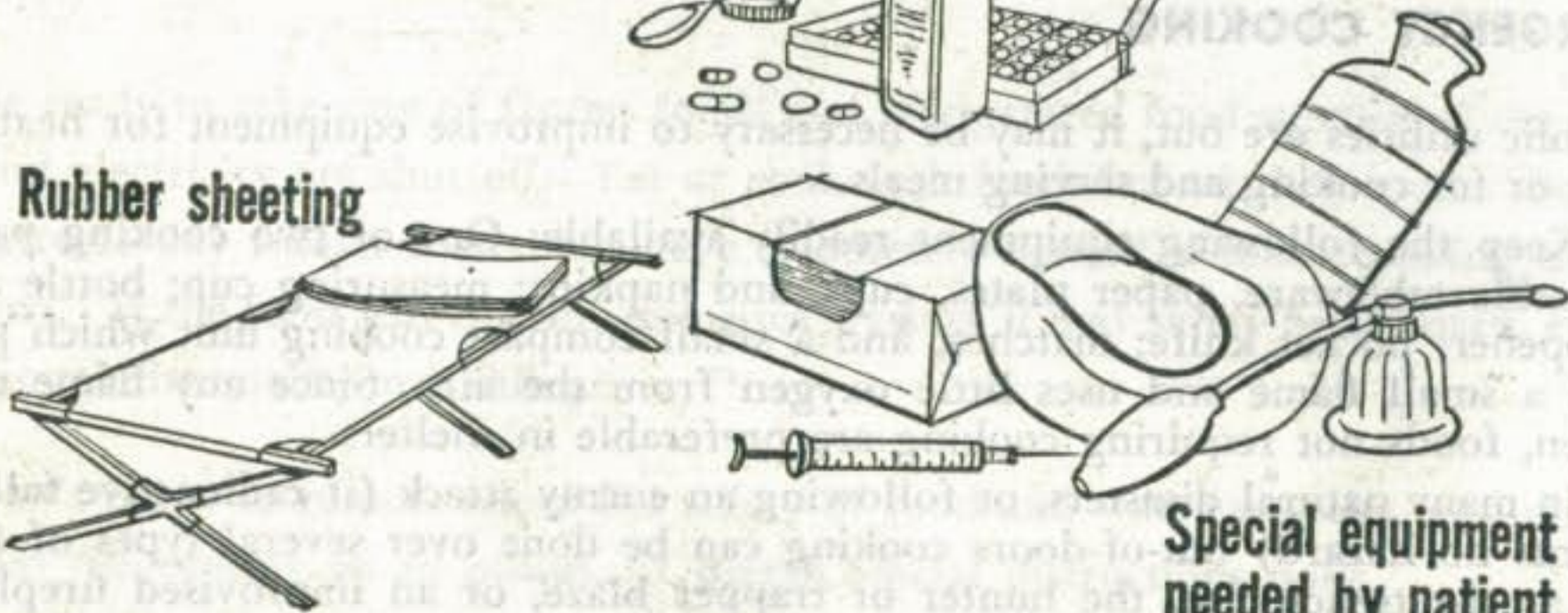


Canned foods for special diets



Extra medicines

Rubber sheeting



Special equipment needed by patient

A trench fire is nothing more than a fire built in a trench dug in the ground—if possible, to face the wind. This assures proper draft unless too strong a breeze is blowing, in which case an open fire should not be built.

Support for the pots and pans can be made from articles such as a piece of flat scrap sheet iron or a sliding grate from a kitchen stove. Many more materials can be used as supports for pots and pans in which to cook or heat water over a trench fire.

## OUT-OF-DOORS COOKING



Trench fire



Trapper blaze



Charcoal grill

The hunter or trapper blaze is a fire laid between two parallel green logs, flat rocks, rows of brick, or pieces of beams placed facing the wind. By varying the angle of the beams, rocks, or brick it is possible to accommodate varying sizes of pots and pans.

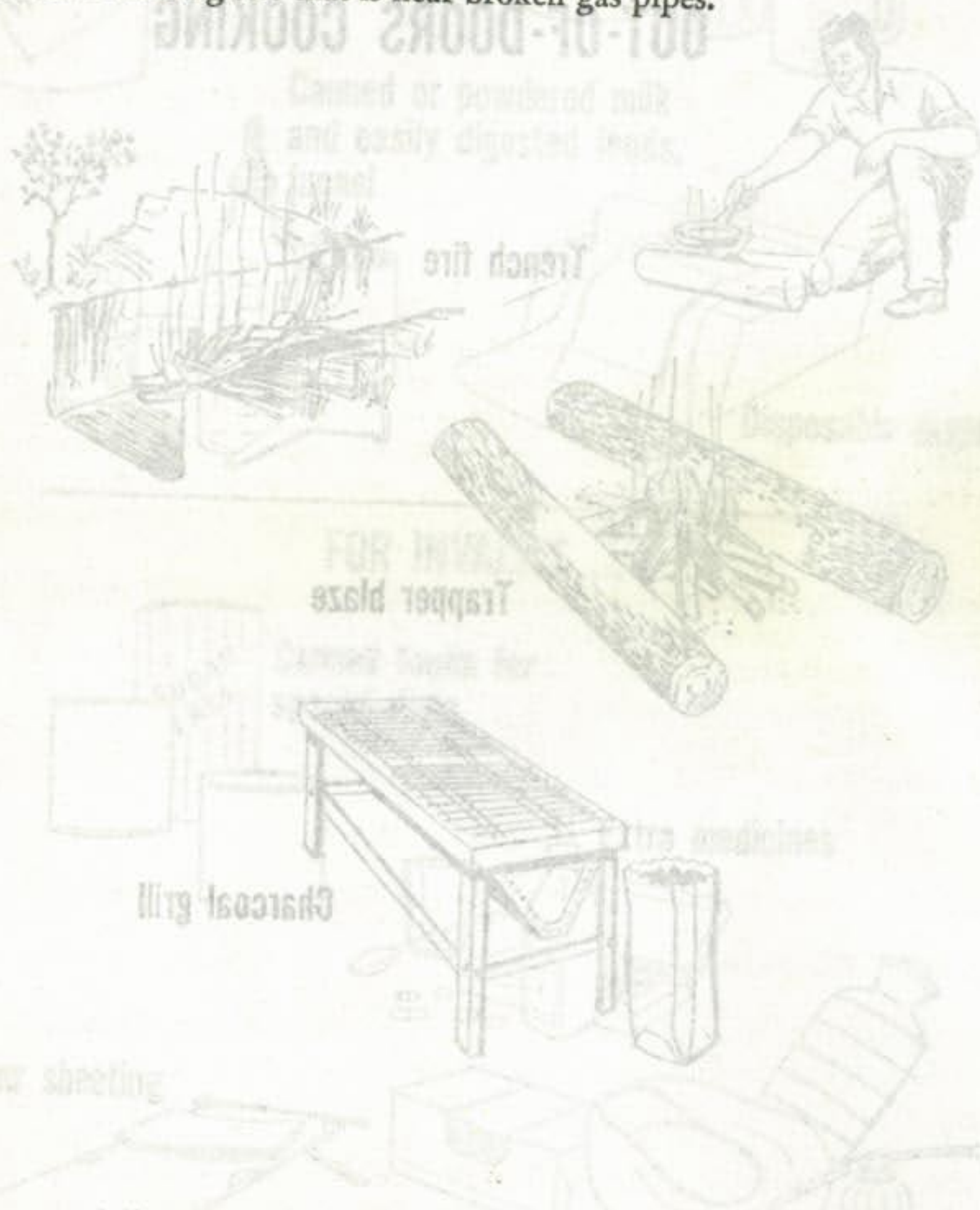
Another type of fire can be laid in an improvised fireplace made of bricks or rocks. The fireplace may be nothing more than a slanting hole dug into the side of a hill or in your backyard. The fireplace must have a chimney for proper draft.

Remember, a large fire is unnecessary. Fires made from such hardwoods as oak, hickory, maple, ash, or beech last longer and produce the best coal bed. The coal bed makes the difference between easy and difficult cooking. The harder the wood the steadier and more even the heat.

If a Dutch oven (a cast iron pot with a lid) is available it can be placed directly on the coals. The coals should be heaped high around the oven.

In addition to these other methods of improvised cooking, it is possible to use an inexpensive charcoal grill that burns briquets or wood.

Actually, one need not be an expert to know how to cook out-of-doors. A little practice, patience, and some ingenuity will produce results. When selecting an outdoor cooking site, remove all flammable materials surrounding the site, and do not select a cooking site that is near broken gas pipes.



## CHAPTER 3

### EMERGENCY SEWAGE DISPOSAL

Water flush toilets cannot be used, of course, when water service is interrupted. The water remaining in the fixture is not sufficient to flush the wastes down the sewer. Clogging may result, and your living conditions then become just that much more uncomfortable.

Even if water is available, local authorities may ask you not to use flush toilets, wash basins, and other fixtures connected with soil pipes. The sewer mains may be broken or clogged, which would make it impossible to carry off such wastes. Or water may be needed for fire fighting. It is necessary for every family to know emergency methods of waste disposal, in case such conditions arise.

Failure to properly dispose of human wastes can lead to epidemics of such diseases as typhoid, dysentery, and diarrhea. At the same time, sewage must be disposed of in ways that will prevent contamination of water supplies used for drinking, cooking, bathing, laundering, and other domestic purposes. Here are simple steps that any family can take to prevent such dangers and discomforts:

(a) Right after a disaster, or during one, you will probably not have the time and tools to prepare a complex emergency sanitation system. If there is a delay of several days in restoring sewerage service to your neighborhood, you may find that disposal is a big problem. Your first task, however, is to make some temporary toilet provision for members of your family, especially the children. Almost any covered metal container will do. You can use a covered pail. A small kitchen garbage container with a foot-operated cover can be put to toilet use in emergencies. Anything that has a cover and will hold the contents until you can dispose of them will serve for sanitary purposes, at first.

(b) Keep on the premises at least one extra 10-gallon garbage can or other waterproof container with a tightly fitted cover. This should be lined with paper, and the cover should be fastened to the can to prevent its loss. Such a can may be used for the emergency storage of body wastes until the public sewerage system can be put back into action, or until other arrangements can be made. Empty your smaller vessel into it as often as necessary. A small amount of household disinfectant should be added after each use. If you live in an apartment, you may not have a large garbage can or room to keep one. In that case two smaller covered pails or other containers will do just as well.

(c) Keep a shovel on the premises if there are unpaved yard areas nearby. Burying human waste matter under 12 to 24 inches of earth is a satisfactory method of emergency disposal. Never deposit wastes, liquid or solid, on the surface of the ground. Insects and rodents may carry infections to other humans.

(d) Where radioactive fallout does not present a hazard, a temporary pit privy may be constructed in a yard area for use by several families. This offers a good method of waste disposal over extended periods of time. The structure need not be elaborate, so long as it provides reasonable privacy and shelter. The pit should be made flyproof by means of a tight-fitting riser, seat, and cover. A low mound of earth should be tamped around the base of the privy to divert surface drainage and help keep the pit dry. Accumulated waste should be covered with not less than 12 inches of earth when the privy is moved or abandoned. Outdoor toilets should not be located in areas that are subject to flooding, and should be built at least 50 feet from any well, spring, or other source of water supply. Otherwise the wastes may contaminate the water. Or, they might be washed out of the pit and deposited on

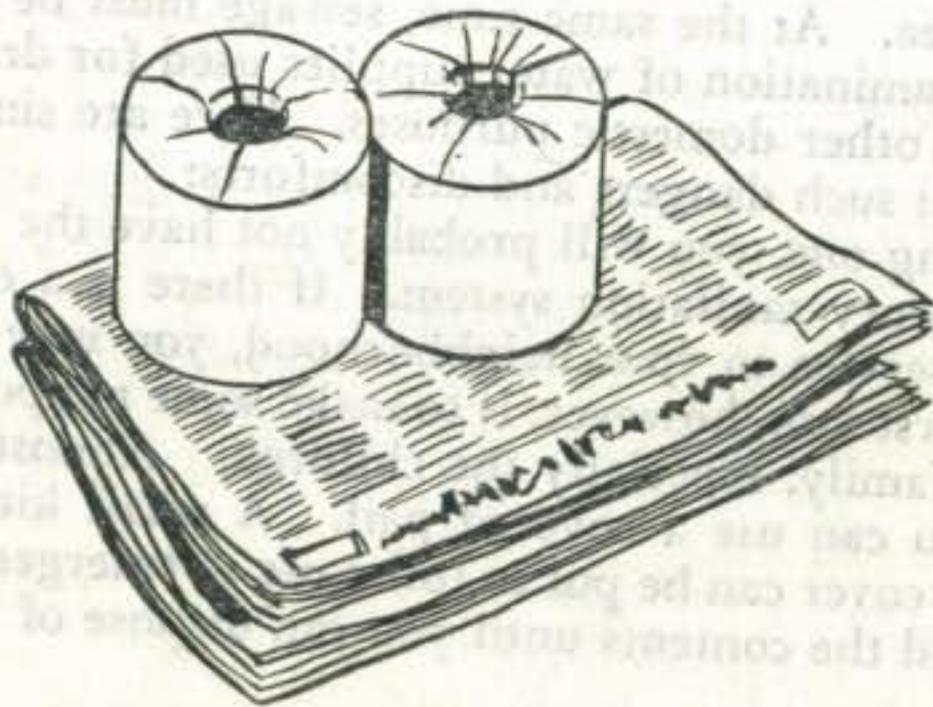
# FOR PROPER SEWAGE DISPOSAL YOU WILL NEED...



1. Covered container for bathroom



2. The materials to make soil bags



3. Newspapers, extra toilet tissue



4. Insecticide and deodorants



5. Tightly closed can for emergency storage of body wastes



6. Shovel

the ground surface where they would be exposed to flies, rodents, and other animals that might serve as disease carriers.

(e) Persons in city apartments, office buildings, or homes without yards should keep a supply of waterproof paper containers on hand for emergency waste disposal. Where flush toilets cannot be used and open ground is not available for the construction of privies, such disposable containers offer a practical method of emergency waste collection and disposal. Building managers should plan for the collection of such containers and for their final disposal. Before collection, the used containers may be stored in tightly covered garbage cans or other waterproof utensils fitted with lids. Homemade soil bags for this purpose may be prepared very easily by putting one large grocery bag inside another, with a layer of shredded newspaper or other absorbent material between. Apartment dwellers should have sufficient grocery bags on hand now for possible emergencies. A supply of old newspapers will come in handy for other sanitary uses, too, such as wrapping garbage and lining larger containers.

(f) Insecticides and deodorants should be used when necessary to control odors and insect breeding in containers that cannot be emptied immediately. At least 2 pints of household bleach solution should be kept on hand for disinfecting purposes.

(g) Keep on hand an extra supply of toilet tissue, plus a supply of sanitary napkins. If there is illness in the house that requires rubber sheeting or other special sanitary equipment, make sure that adequate supplies are available. At least a week's accumulation of daily newspapers will come in handy for insulating bedding from floors, and lining clothes against cold, as well as for the sanitary uses already mentioned.

(b) If you have a baby in your home you may find diaper laundering a problem under disaster conditions. It is best to keep an ample supply of disposable diapers on hand for emergency use. If these are not available, emergency diaper needs can be met by lining rubber pants with cleansing tissue, toilet paper, scraps of cloth, or other absorbent materials. Or, any moisture-resistant material can be cut and folded to diaper size and lined with such absorbent material.

## DISPOSAL OF GARBAGE AND RUBBISH

Garbage may sour or decompose; rubbish will not, but offers disposal problems in an emergency. Garbage, or any mixed refuse containing garbage, must be carefully stored and handled if odor and insect nuisances are to be prevented. Since rubbish alone is fairly easy to dispose of, garbage should be kept separate from it and not mixed. The following suggestions will make it easier for you to take care of the refuse problem:

(a) Garbage should be drained before being placed in storage containers. If liquids are strained away, garbage may be stored for a longer period of time without developing an unpleasant odor. After straining, wrap the garbage in several thicknesses of old newspaper before putting it into your container. That will absorb any remaining moisture. A tight-fitting lid is important to keep out flies and other insects.

(b) You should keep one or more 20-gallon garbage cans on hand for emergency use, if possible. If you live in an apartment building, get the largest kitchen garbage container for which you have space.

Final disposal of all stored garbage and refuse can be accomplished in the following manner provided there is no danger from radioactive fallout:

(a) All stored garbage should be buried if collection service is not restored. If unpaved yard areas are available, keep a shovel handy for this purpose. Do not

# PROPER DISPOSAL OF GARBAGE AND RUBBISH

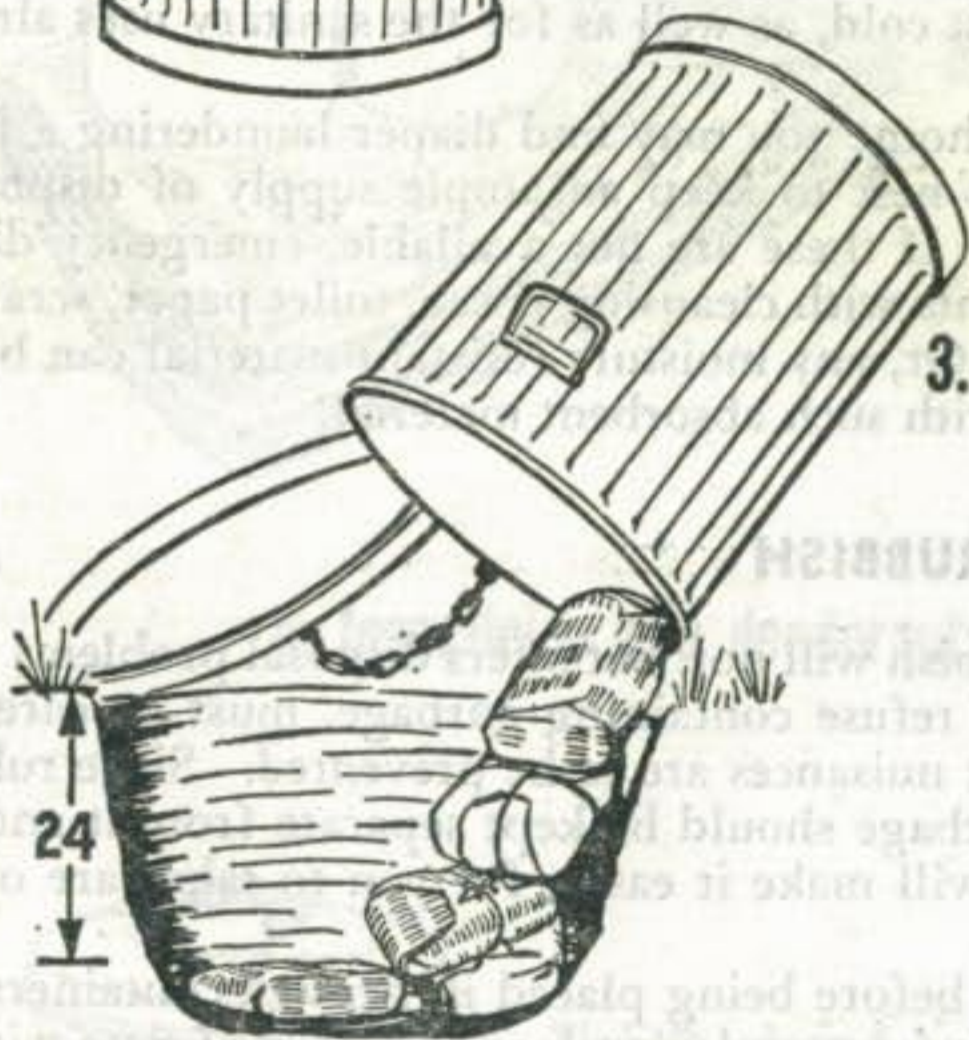
1. Liquids should be drained from garbage.



2. Garbage should be wrapped and placed in a large container with a tight lid.



3. Garbage should be buried as soon as possible under 12 to 24 inches of dirt.



4. Rubbish other than garbage may be burned . . . but safety precautions must be taken.

dump garbage on the ground, because that attracts rats and other scavengers. Dig a hole deep enough to cover it with at least 12 to 24 inches of dirt, which will prevent insect breeding and discourage animals from digging it up.

(b) Do not establish a community dump without permission from proper authorities. Garbage dumps quickly become infested with rats capable of carrying disease germs over a wide area. If necessary, local authorities will pick sites where refuse may be left for supervised burning or burial as soon as conditions permit.

(c) Other rubbish may be burned in open yard areas or left at dumps established by local authorities. Cans should be flattened to reduce their bulk. Do not deposit ashes or rubbish in streets or alleyways without permission. Such material may interfere with the movement and operation of fire-fighting and other emergency equipment.



## SUMMARY

### PREPARE NOW TO TAKE CARE OF YOURSELF AND YOUR FAMILY

Unsanitary conditions can disable you in a disaster. If an emergency occurs, keep calm. Drink only water that you know is safe. Eat only safe food that has been prepared under safe conditions. If you cannot be sure that the things you want to eat or drink are safe, go without until help comes.

Prepare now to take care of yourself and your family. If your home resources fail, don't lose your head. Do the best you can to eat and drink sensibly and protect your health until help can reach you.

# EVERY AMERICAN SHOULD LEARN:

1. Warning signals and what they mean.
2. His community plan for emergency action.
3. Protection from radioactive fallout.
4. First aid and home emergency preparedness.
5. Use of CONELRAD—640 or 1240 on AM radio—for official information and instructions.

## SUMMARY

### PREPARE NOW TO TAKE CARE OF YOURSELF AND YOUR FAMILY

Emergency conditions can disable you in a disaster. If an emergency occurs, keep calm. Drink only water that you know is safe. Eat only safe food that has been prepared under safe conditions. If you cannot be sure that the things you want to eat or drink are safe, go without until help comes.

Prepare now to take care of yourself and your family. If your home resources fail, don't lose your head. Do the best you can to eat and drink sensibly and protect your health until help can reach you.



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