

Eddy County Civil Defense
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FIRE FIGHTING FOR

HOUSEHOLDERS

DEPARTMENT OF DEFENSE
OFFICE OF CIVIL DEFENSE

H-8 (Formerly PB-4)



FIRE IS ALWAYS AN ENEMY



Small fires can
grow quickly into big fires that
may join to destroy an entire city!

Fire costs more than 10,000 lives and a billion dollars in property damage in the United States each year—even in peacetime.

No estimate is possible of what the fire toll would be if the United States became a target for enemy attack.

If an enemy attack were made on your city, it could start fires many miles outside the target area. Fire departments could not handle all the fires.

Fighting the fires in your home or neighborhood would be up to you.

Quick action can put out fires while they are small—if you have the know-how and tools.

Knowing how to put out fires can pay dividends even if we have no war, since fire is always an enemy. In time of war, this knowledge could save your home, your neighborhood, or even your city.

Fire Fighting Is Your Job: Learn What To Do—Right Now

Fire, not blast, caused 80 percent of the bomb damage in World War II. Fires killed more people in Germany than the explosions of the blockbusters. Fires did the same in Japan.

No one can forecast just where the bombs will fall, or just what types of weapons will be used if the United States were attacked. We do know that whether the weapons are H-bombs, A-bombs, high explosive bombs, incendiary bombs, or guided missiles, fires will be one of the greatest dangers to life and property.

All the knowledge and all the planning in the world cannot save your home if it is within the area of complete destruction from a nuclear bomb explosion. If it is outside an area of complete destruction, however, elimination of fire hazards now will make it less likely to burn.

Preparation for the possibility of a peacetime fire in your home will help to meet wartime fire hazards as well.

A nuclear explosion many miles away could start dozens of fires around you. Those could grow into one big fire unless put out at once.

Even under the most favorable circumstances, organized fire departments could not handle all the small fires. It would be their job to control the main blazes so that rescue teams could reach injured or trapped people who otherwise would burn to death.

If your home is located in the fringe area of damage, your job would be to fight fires in your own neighborhood. Knowing how to fight a fire could save your life, and the lives of your family. It could save your home, and your neighbor's home, or even your part of the city. It could keep a small fire from growing into a big one.

Householders in England, many of them women, successfully fought fire in World War II. In some cases bombs started fires in every house on a street, yet every house was saved. In one town 150 small fires were started by one air raid. Only two grew so big that the regular fire fighting services had to deal with them.

Training, tools, and plenty of practice drills are the basis for good fire defense. At least one member of your family should receive training in fire fighting techniques, then pass on to the others what he has learned.

Fire fighting drills should be held by your family. Give detailed duties to each member so that all learn to work as an efficient team. Switch places from time to time to learn all the jobs. Meanwhile,

be sure everyone in your home understands what starts fires, how they spread, and what can be done to control them.

HOW BOMBS CAUSE FIRE

Nuclear bombs, besides causing radioactive fallout, are super-explosive and fire bombs on a large scale. Use of nuclear weapons against this country could be expected in any large-scale war, because of the tremendous damage they can do.

The first effect of a nuclear bomb is a heat flash. This spreads out in every direction from the ball of fire at the center of the explosion. The fire ball itself is hotter than the surface of the sun. The heat flash that comes from it lasts only about 3 seconds, but that is long enough to set fire to paper, cloth, rubbish, and dry wood. It also is long enough to burn people unless they are protected from the flash.

Right on the heels of the flash comes a blast wave which causes fires by knocking down chimneys, wrecking heaters, and breaking electric wires and gas pipes. Fires would spring up for miles around.

Incendiary bombs burn when they hit, or they explode and throw burning material over large areas. High explosive bombs cause fire indirectly by breaking gas pipes, short circuiting electrical wiring, and upsetting stoves, furnaces, and lamps.

WHAT MAKES A FIRE

If you know what makes a fire, you can learn more easily how to prevent one from starting—and how to put it out. Three things are needed for a fire. They are (1) fuel to burn, (2) heat to make it burn, and (3) air to keep it burning.

A kitchen match is a good example. When you strike it the head flares hotly for a moment, setting fire to the matchstick, which is the fuel. The oxygen in the air then keeps the match burning.

If you drop the lighted match into a small bottle and put your hand over the opening, the flame soon will smother for lack of air.

Quicker still, dip your lighted match into a glass of water. It will go out at once. The water has cooled the fuel so that the flame no longer can make the match burn.

Most small fires can be put out by cooling or by smothering. As a rule, burning liquids such as gasoline or grease are smothered. There

is little difference between throwing a handful of soda into a blazing skillet and using chemical foam to blanket an oil tank fire. The results are the same. Both fires go out for lack of oxygen.

Burning solids like wood, cloth, or paper are best cooled with water. Turning your garden hose on a trash fire has the same effect as pouring water into a blazing building. The fire goes out in either case because of the cooling effect of the water.

HOW A FIRE GROWS AND SPREADS

Fire spreads from one material to another, and from one place to another, in three different ways. It can be conducted by something like sheet metal, which by itself will not burn, but which may get hot enough to set fire to anything it touches. That is why stove pipes should not be allowed to come in contact with woodwork.

Or, fire can be carried by flying sparks or drafts of hot air. Firemen often find that a fire on a lower floor has made hot air rise through stairways or elevator shafts. This superheated air often gathers at the top of the building and makes it burst into flames, although there may be no fire on the floors between.

Finally, the radiation of heat from a burning building may cause a nearby building to catch fire, just as the heat from a bonfire might set fire to your clothes if you stood too close to it, even though the flames couldn't reach you.

FIRES CAN BE PREVENTED

Most accidental fires can be avoided with a little care. Firemen have a saying that "a clean building seldom burns." This means that the majority of all fires start in trashpiles, rubbish, or stored odds and ends that accumulate around the house. Closets, attics, and cellars are the main source of home fires, and plain ordinary good housekeeping is the first line of defense against these fires.

Fire hazards in peacetime become doubly dangerous in wartime. Check your closets, attic, and basement for castoff articles that would burn easily. They include such things as curtains, draperies, tablecloths, bedclothes, lamp shades, coats, suits, dresses, wicker and wooden furniture, rags, and linoleum.

Clean out your storage places. You will be surprised at how many burnable odds and ends are really useless to you. Don't let them make your home a fire hazard. Get rid of them. If local welfare agencies can't use them, call the junkman.

Don't stop when you've cleared out the inside of your house. Go after the rubbish in your back yard, in alleys, and in vacant lots near your home. Collect the rubbish and burn it. Don't leave it around to burn if there is a nuclear attack. Be sure to burn rubbish in metal containers.

Instead of an attic, many modern homes have an air space between the top floor ceiling and the roof. If your home has such a spot, make sure you can get into it through a trap door. Keep a ladder handy. You won't be able to put out a fire in this space unless you can reach it quickly. Never store anything there.

Whenever you leave your home you can improve its fire resistance by shutting all doors and windows. *Closed interior doors* will confine a fire to the area of origin for some time and prevent rapid spread within the building.

CHECK YOUR WIRING SYSTEM

Many electrically caused fires happen in homes every day, most of them simply because people are careless. They overload circuits by plugging in too many appliances to a single outlet. They switch on an iron, then go away and leave it. They use old wornout cords and stretch them under rugs, or staple them to baseboards and door frames. They string wires all over the house.

Don't let such things happen in your home. Take a look at your electrical system. Buy new plugs and cords if yours are worn. It is wise to get advice from an electrician if your fuses blow frequently. They may be dangerously overloaded. His advice may prevent a bad fire.

BE SURE YOUR HEATING PLANT IS SAFE

Every winter costly fires are started by faulty furnaces, stoves, and other heating plants. Some result from too much soot in chimneys. Others are caused by rusted or cracked pipes and fittings. Look over

your heating system now. If your chimney needs it, clean it out. If the furnace pipes and connections are cracked and rusted, replace them.

Train your family not to put magazines, papers, or clothing on radiators or near open fireplaces or stoves. Do not allow paper lamp shades to come in contact with light bulbs. Remember that such things don't have to touch flame to burn. They will catch fire simply because they are too close to the heat for too long.

FIRE PROOFING MATERIALS

You can't make materials completely fireproof, but you can make many of them fire-resistant. That can be done by treating or coating them with certain chemicals. Some fabrics are treated at the factory where they are made.

You can buy fire-resistant drapery and furniture-covering materials. Or you can mix a fire-resistant solution for rayons and cottons yourself. It's cheap and easy to use, and it works.

Just dissolve 9 ounces of borax and 4 ounces of boric acid in a gallon of water. Dip your curtains, drapes and slipcovers in it. This solution won't hurt anything that water won't hurt. You'll have to use it again each time you wash the fabric, however.

It is important to remember that materials treated with fire-resistant chemicals will burn if they get hot enough. The chemicals just make it a little harder for them to burn.

Even "fireproof" buildings aren't really fireproof. Some are fire-resistant—which means that the structures themselves will resist fire. But their contents will burn. And if the rugs and furniture and draperies in a home or office go up in flames, the building will be weakened no matter how strongly it is built. Glass, steel, and even concrete break down when exposed to great heat.

STORE FLUIDS CAREFULLY

Gasoline, benzine, naphtha, and similar fluids should never be used indoors. When mixed with air, their vapors can be ignited by the spark of a light switch or an electric fan, or the tiny flame of a pilot light. Keep such fluids in tightly closed metal containers outside your home.

Oil-soaked rags, especially rags that have been used to spread quick-drying liquids such as turpentine, paint thinners, and some furniture

polishes, have been known to catch fire by themselves. This happens when there is enough air to provide oxygen, but not enough air to carry away the heat that is caused when they give off vapor. When those vapors get hot enough, they burst into flame. Oily rags should be stored in air-tight metal containers. It is best to keep them outside the house.

WHAT TO DO ABOUT UTILITIES

Most local utility companies already have issued instructions. If you have not received instructions, check with your local companies and follow their advice. They will be glad to tell you what to do.

YOUR FIRE FIGHTING EQUIPMENT

You will need some equipment to fight fires at home. The equipment need not be expensive. The simplest kind of tools will do the trick if you act promptly. Even a wet mop or broom will serve. So will a burlap bag or small rug soaked in water. However, the most useful fire fighting tools are a garden hose, a hand pump, and some buckets for water and sand.

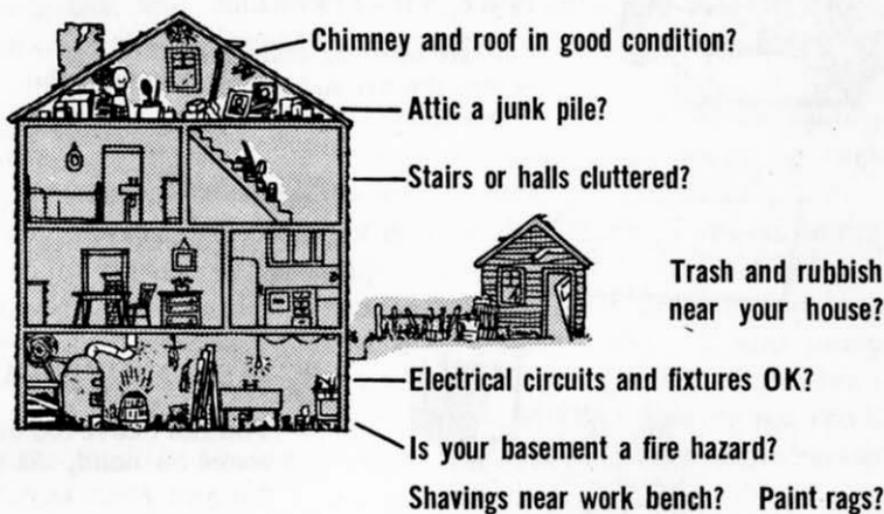
Because water is your best simple weapon against fire, you can't have too much near at hand. After an attack the organized fire fighting services would need large quantities of water, and with possible breaks in the water mains also cutting down the supply, this might leave very little water for homes.

The most critical need for water in emergency will be for drinking purposes. If you can assure yourself of an adequate supply, water may be used for fire fighting. It is wise to have supplies on hand for both purposes.

You will need a hand pump to make best use of the water you have stored. The pump could be part of a hand water-pump extinguisher, or a separate pump for use with any kind of water container.

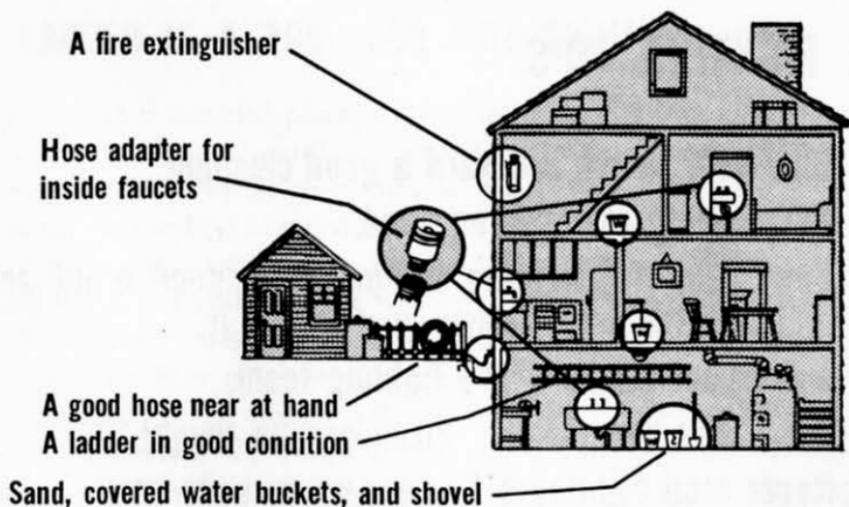
A hand water-pump extinguisher holds 4 or 5 gallons of water and is easy to refill. This type is best operated by three people; one to use the hose, a second to pump, and a third to bring up additional water.

REMOVE HOME FIRE HAZARDS



THEN

When your house is cleared of fire hazards assemble your fire fighting tools:



TEAR OUT THIS SHEET AND USE AS YOUR CHECK LIST

Fire Needs Fuel, Air, and Heat To Burn



1. TAKE AWAY FUEL

Remove burning material before the fire spreads, if possible.



2. TAKE AWAY AIR

A wet rug will smother the fire.



3. TAKE AWAY HEAT

You can't have too much water on hand. It will put out most any type of fire.

TAKE AWAY ANY ONE OF THE THREE THINGS A FIRE NEEDS, AND IT WILL NOT BURN

FIRE FIGHTING TIPS

1. Give your house and yard a good cleaning.
2. Keep plenty of water on hand.
3. Keep your fire fighting equipment in good order and ready for use. Know how to use it.
4. Make your family a fire fighting team.
5. Don't lose your head. Fires can be fought.
6. Never stop fighting a fire except to save your life.
7. Don't search a burning building alone.

However, two persons could operate it, one to handle the hose and pump, while the second acted as water carrier.

Hand water pumps without containers can be used with almost anything that will hold water. They are light and easy to carry. Any of these devcies should have a nozzle that will shoot either a spray or a solid stream of water.

Be sure your garden hose has a connection that will fit the faucets you may have to use. The usual hose coupling will not go on your kitchen or bathroom faucets, so get adapters.

A hose doesn't take the place of a hand pump, because you cannot be sure the regular water supply system from city pipes will be functioning after an attack. A hand pump and a stored water supply is certain. Test your equipment at least every 2 weeks. A rusty pump or leaky hose won't be of much use in time of need. If you have chemical fire extinguishers, keep them filled and know how to use them. They are good for putting out small fires, but cannot be refilled easily during an emergency.

Should a magnesium fire bomb fall on your home or nearby, you would probably have most of the tools around the house for disposing of it. These would include a long-handled shovel, heavy gloves and a coal scuttle or metal bucket. One of your sand buckets would do. Later on you will read how to fight fires caused by magnesium bombs.

A LADDER IS A TOOL FOR FIRE FIGHTING

A ladder is a useful piece of household fire fighting equipment. If yours is not in good condition, either repair it or get a new one. An unsafe ladder is worse than none at all.

Keep your ladder in good repair. Don't leave it lying on the ground or standing against a wall. Fasten pegs or metal hooks to a wall and hang it up, preferably in the garage or some place under cover.

When need arises, use it safely. Set it so that the foot of the ladder is about one-fifth of its length away from the wall against which you have placed it. In other words, the bottom of a 20-foot ladder should be about 4 feet away from the wall it is leaning against. If you have time, tie the ladder at the top or bottom to keep it from slipping.

In climbing a ladder, the balls of your feet should be placed in the center of the rungs. Your body should be held erect. Keep your

upper body at arms length from the rungs and don't look down. Lift your right hand and right foot together, then the left hand and foot.

If you need to free both hands for work while standing on a ladder, brace yourself with a leg lock. Hook one knee over the rung above the one you are standing on. Then bring your foot back and hook your toes around the lower rung or side rail.

HOW TO FIGHT A FIRE

If you are in or around your home after an enemy attack, check to see if fires have started in it. Be sure to check the attic and the roof. If you have more fires than you can handle, call for help.

Don't wait for help to arrive. Assume that it can't. Go to work quickly with the tools at hand. If the organized fire fighters can come, they will, but don't stop fighting until the fire is out—or until it gets too big for you. Any delay increases the fire's chances of getting out of control.

If you are lucky enough to have no fires in your own home after an attack, you may be able to help someone else who has a fire to fight.

Remember there are three ways to put out a fire. It will go out if you remove its fuel, or rob it of air, or if the burning material is cooled below its combustion point.

If the burning material is removable, take it out of the house. Then kill the flame with water, a fire extinguisher, sand, or dirt. If the burning material can't be removed, get as close to it as you can safely and douse it with water or whatever fire fighting material you can use. Keep the area around the fire cooled with water to prevent it from spreading.

A small fire can be smothered by a rug or any other heavy material. If the material is wet, so much the better.

You might have to deal with incendiary bombs, especially magnesium bombs like those which caused so much damage to cities in World War II. These sputter for a few minutes, then settle down to a steady burning. This type makes a lot of smoke, so keep close to the floor in fighting it.

Keep something between yourself and the bomb as you approach it. Some fire bombs contain a charge which blows up several minutes after it starts to burn. Use a piece of sturdy furniture or something made of metal as a shield.

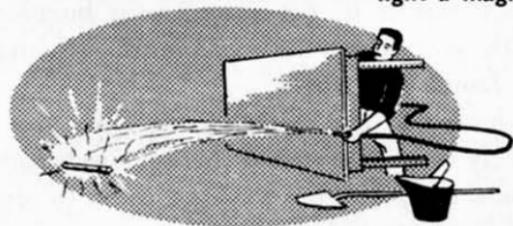
KNOW HOW TO DO SPECIAL JOBS:



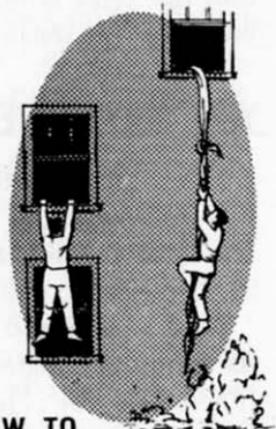
KNOW HOW TO
take a leg lock on a ladder



KNOW HOW TO
rescue an unconscious person



KNOW HOW TO
fight a magnesium bomb



KNOW HOW TO
get out of a burning building if stairs are blocked

Take your water pump or your garden hose with you. The best way to fight a magnesium fire is first to spray it and the area around it with water. Don't use a solid stream of water at first—it will only scatter the fire. As soon as the bomb stops sputtering turn the full stream of water on it. If you have no water, throw a shovelful of sand or dirt directly on the bomb.

If you can reach the incendiary bomb with your long-handled shovel, scoop it up and drop it into a coal scuttle or metal bucket that has an inch or two of sand in the bottom. Then carry it outside and dump it on the ground.

Watch out for other fires in the neighborhood that may spread to your home. If your house is made of wood and is near other houses that are burning, you must be alert. The walls and roof nearest the flames should be kept wet with a hose or buckets of water. All flying

sparks that land where they can set fire to your property should be doused or smothered quickly. If your house is of brick or stone, watch door and window openings. Pull down curtains and draperies and cool the frames with water.

The distance between your home and your neighbor's is important. In World War II only a 10-foot space between solid masonry buildings gave a fifty-fifty chance of preventing fire from spreading from one to the other. A distance of 50 feet is needed between wooden houses to reduce the chances of a fire spreading. This does not mean that the fight is hopeless if your frame house is nearer to a burning building. It means you will have to work harder to save it.

YOU MAY HAVE TO RUN FROM A FIRE

If you can't control a fire, get away from it before you are trapped. If you have to go through thick smoke to get out of your burning home, tie a handkerchief or cloth over your mouth and nose. Moisten it if you can. Crawl on your hands and knees.

Find a wall and follow it around to the door. Keep away from the center of the floor. It is likely to cave in first if there is fire below. If someone else is in the room and can't find his way out, shout to him from the doorway. You may be able to guide him to you.

Be careful of stairs in a burning building. Keep close to the wall and tread lightly. Don't run. Feel with a foot for each step to make sure it will bear your weight before you step on it.

If you can't get down the stairs, you may have to drop from a window. You can cut your fall by about 7 feet if you lower yourself out of a window as far as you can before letting go.

If you are caught on a second or third floor, tie sheets or blankets together with square knots. Tie one end of your improvised rope to a heavy piece of furniture. Drop the other end out the window, and climb down hand over hand. Your makeshift rope may not reach the ground, but it will get you that much closer to it. You can then drop the rest of the way with less chance of hurting yourself.

If you decide that you can't escape by yourself, shut the door and call for help from a window. A closed door will hold back heat and flame for some time. Stuff a folded rug or towel under the door to keep out smoke.

RESCUE TIPS

Take someone with you when you search a burning building. Teamwork is always better. You can search more quickly and thoroughly and you can help each other if necessary. Try to search from the top downward. People who are confused or frightened, especially children, often hide under beds or in closets. Look in every room and in every hiding place you can think of.

If a door is hot to the touch, you can expect to find fire when you open it, so be careful. If the door opens toward you, brace your foot against it and turn the knob gently. An explosive back draft may occur when you open the door. If the door opens away from you, turn the knob, push, and duck to one side until you can see whether flames are going to lash out through it.

Inside a smoke-filled room, keep close to the wall and feel under and on the beds, inside closets, and over large pieces of furniture. If you think the floor won't collapse, cross the room from one corner to another to make sure no one is lying in the center.

If you find an unconscious person, put him on the floor if he isn't already there. Turn him on his back and quickly tie his wrists together. A handkerchief will do. Kneel astride him and put your head between his tied wrists. You can then crawl forward, dragging him beneath you, even though he is much heavier than you are.

To move an unconscious person downstairs, place him on his back with his head toward the stairs. Put your hands under his armpits so that his head rests on the crook of your arm. Then back down the stairs yourself, letting his feet trail.

DANGERS IN FIRE FIGHTING

Air in a burning building may be dangerous. Many of the gases given off by burning materials are poisonous. Fire sometimes can heat the air in a burning building hot enough to scorch the lining of your lungs and kill you. Fire takes oxygen out of the air. If you were caught in a closed burning room for any length of time, you might smother.

Sometimes a fire may smolder for a long time in a closed building or room. When a door or window in the building is opened, the oxygen needed to make it flame is supplied by the inward rush of

air. The hot gases may flare up with the force of an explosion. This back draft can burn or injure you badly if you are in its path.

Like all dangers, those in fire fighting take courage to face, but all of them can be met if you use care and commonsense. The greatest danger of all comes from losing your head. That danger can be avoided by training and practice. If you are trained in the right things to do, you will do them if the need arises.

OCD Handbook H-6, "Fallout Protection: What To Know and Do About Nuclear Attack," contains comprehensive information on civil defense. The effects of modern weapons of war are explained—particularly radioactive fallout that would result from nuclear detonations. Measures being taken by Federal, State, and local governments for protection of the public are discussed, as well as the things individuals can do for their own protection. You can get H-6 from your local or State civil defense office.

(Revised May 1958)

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