

The Ephrata Fire Department has been the recipient of the Life Safety Achievement Award each year since 2002 due to our outstanding Fire Safety Education Programs.

PROTECTING YOUR FAMILY FROM FIRE

Understanding & reducing risk



**EPHRATA
FIRE DEPARTMENT**

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FIRE IN THE HOME

American homes suffer an unwanted fire every 10 seconds, and every 60 seconds they suffer a fire serious enough to call the fire department. Most importantly, every two and a half hours someone is killed in a home fire--that's 4,000 people killed in 1991 alone. Another 20,000 people are injured in home fires in a typical year.

Protecting your family from fire requires advance planning for what to do if fire strikes. This includes the use of protective devices, usually smoke detectors, to provide early warning of fire, especially at night when they are most vulnerable. However, depending on the size and layout of your home and the characteristics of your family, you may need to do more to assure their safety. This brochure was written to provide the information you need to decide what you must do to protect your family from fire.

THE DANGERS OF HOME FIRES

Most home fires occur in the kitchen while cooking, but are often extinguished with only minor damage since a person is generally present. The most dangerous fires occur at night while most people are asleep, starting from carelessly discarded smoking materials igniting upholstered furniture or mattresses. These fires break out in the first few hours after people go to bed in the rooms that they were in just before retiring. Heating appliances, including space heaters and fireplaces also start fires at this time, igniting furniture or other combustibles left too close to the heater.

Most victims of fire succumb to the smoke and toxic gases and not to burns. Fires produce poisonous gases that can spread rapidly and far from the fire itself to claim victims who are asleep and not even aware of the fire. Even if they awaken, the effects of exposure to these gases can cloud their thinking and slow their reactions so that they cannot make their escape. This is why it is so crucial for you and your family to have sufficient warning so that you can all escape before your ability to think and move is impaired.

In addition, more than half of fatal fires in homes occur when people are asleep--which represents only a third of a 24-hour day. Therefore, any fire protection system must be able to protect people who are asleep in their bedrooms when fire starts.

Furthermore, nearly half the people killed in home fires each year are either preschool children or adults 65 years old or older. Add in people with physical, mental, or emotional handicaps, and it is clear that home fire protection must be designed for people with limitations. That is why every fire safety program includes provisions for people with special needs.

CHILDREN AND FIRE

Children playing with matches or lighters is a leading cause of home fires and one in which the children and others present are often hurt. Children have a natural curiosity about fire and are tempted to play with matches or lighters left within their reach. In many cases, children who start fires have a history of fire setting. Many fire departments offer counseling programs for juveniles who set fires. If your child is setting fires, you should contact your local fire department for counseling before the situation gets out of hand and your child gets hurt. However, the most

important thing is to keep all matches and lighters out of the sight and reach of children at all times. Store them up high, preferably in a locked cabinet.

Even though they have a natural curiosity about fire, children may become frightened and confused in a fire and hide rather than escape to safety, especially if they started the fire. Children are often found hiding in closets or under beds where they feel safe.

Therefore, it is crucial for your child's safety that you hold fire drills in the home at least twice a year to let them practice the right things to do in an emergency.

Clothing fires are a significant cause of fire injuries to children (and to adults, too). They set their clothes on fire by getting too close to heat sources such as open fires or stoves, or when playing with matches or lighters. Here too, the best defense is a respect for fire and training in what to do if their clothes do catch fire. Their natural reaction is to run--which will make the situation worse. **STOP, DROP, and ROLL** is taught as the correct action and has saved many lives in clothing fires. The moment clothes start to burn, stop where you are, drop to the ground, and roll over and over with your hands covering your face to smother the flames.

Of course, young children should never be left alone in the home. Even if they don't play with fire, unattended children can accidentally start a fire by attempting to cook something or by using a heater or electrical appliance in the wrong way. All too often, tragic fires occur when young children are left unattended, for even short periods.

CHILDREN'S SLEEPWEAR

In the 1970's, the hazards of accidental ignition of sleepwear on young children was addressed through federal legislation. The Flammable Fabrics Act required that children's sleepwear (sizes 0-6X) be flame retardant. In a short time, this had a dramatic impact on deaths and injuries, reducing them by 95%.

Recently, an increase in injuries has been reported among children sleeping in garments classified as "daywear" such as teeshirts and jerseys. These garments look just like sleepwear but are not fire retardant. The only way to tell the difference is by careful examination of the garment label. Therefore, parents should be careful to buy only fire retardant sleepwear for their children in sizes 6X in order to enjoy the fire safety benefits of these garments.

FIRE AND OLDER ADULTS

The risk of death from fire for Americans age 65 and over is two times greater than the risk for adults under 65, and hospital stays of more than 40 days are common for older burn victims. Thus, older people need to be especially careful with fire.

People can become victims of fire by falling asleep smoking, either in bed or in a favorite chair, especially after consuming alcohol or taking medication. Ashtrays emptied before smoldering materials are completely out also start a number of fires in homes of smokers. Cooking is a major cause of fire injuries among older persons when loose-fitting clothing is ignited when the wearer reaches over a hot burner, potholders or towels are ignited when placed too close to a burner, or the person slips and falls onto the stove.

SMOKE DETECTORS

One of the most important fire safety devices for the home is the self-contained smoke detector. After becoming generally available in the early 1970's, home smoke detector sales grew rapidly and the price fell, so that by 1991, 88% of US homes had at least one, and detectors could be bought for under \$10.

Several studies have concluded that if a person has a fire, smoke detectors cut their chances of dying in half. The smoke detectors currently in place have saved thousands of lives, but several problems exist. First, the 12% of homes without detectors have more than half of the fires; second, it is estimated that a third of the detectors in place are not working, often due to failure to replace a worn out battery; and third, many homes do not have as many smoke detectors as are needed to protect the occupants properly. In this chapter, we will examine how to protect your family with smoke detectors.

HOW MANY DETECTORS ARE NEEDED?

The primary job of your smoke detector is to protect you from fires while you are asleep. Thus, your detectors should be located between any sleeping persons and the rest of the house--outside bedrooms or sleeping areas. However, tests conducted in the 1970's clearly showed that this might not be enough.

In multi-story homes, fires on a floor level without a smoke detector can grow to dangerous conditions before sufficient smoke can rise in a stairway to set off a detector on the upper floor. Based on this observation, most codes require that additional smoke detectors be located on each floor level of the home.

A closed door provides protection from smoke on the other side, but will also prevent smoke from reaching a smoke detector. This is particularly a problem in bedrooms. If you sleep with your bedroom door closed, you should add a smoke detector in the bedroom; particularly if you smoke in the bedroom or there is a TV, air conditioner, or other major appliance in the bedroom that might start a fire.

If you sleep with the bedroom door open, the detector in the hall outside will detect a fire in the bedroom or elsewhere.

There are a few places where a smoke detector should not be placed. These include kitchens and garages (cooking fumes and car exhaust are likely to set them off) and unheated attics and crawl spaces (where it can get too cold or hot for the electronics to work properly). Fires beginning in these areas are generally detected by the other smoke detectors in enough time to escape safely. If a detector is desired in these spaces, heat detectors are available which can be used. Nevertheless, remember that the smoke detectors are the primary safety devices in any home protection scheme.

Before you add detectors in locations like an attic or garage, make sure you will be able to hear those detectors in your living room or bedroom. A detector that can't be heard in any of the principal occupied areas will have little life safety value.

WHAT KIND OF SMOKE DETECTOR SHOULD YOU GET?

There are two types of home smoke detectors available: the ion type and the photoelectric type. The ion type reacts faster to open flaming fires and is usually the least expensive. The photoelectric type reacts faster to smoldering fires and is less likely to react to cooking. Both types provide good protection and can be used without worry. If you need more than one detector, you might get one of each. There are also multiple ways to power smoke detectors. Most operate on a battery (usually 9 volt), which should be replaced at least once a year. When the battery needs changing, the smoke detector will begin to "chirp" every 20 seconds or so, which will persist for a month. This is most likely to start in the middle of the night (when the temperature in the house drops) so that you have to get up and remove the battery so you can sleep. To prevent this nuisance you should pick a special day and give your detectors new batteries once a year. Some fire safety organizations promote "change your clocks, change your batteries" when the change is made back from daylight savings time each fall. Always make sure that you use the right battery--the required battery type is marked on the detector near where the battery goes.

Smoke detectors installed in a new house will be operated from the household electrical power and do not need battery replacement. These types all have a "power on" light to tell you that the detector has power. Fires do not generally affect the power until they get very large, so it is rare that such detectors fail to work due to a loss of power. Smoke detectors are available which run on house power but also have a battery in case the main power fails. Since the battery is not normally in use, such backup batteries will last about six years before they need replacing (the detector will "chirp" like the battery-powered ones).

HOW SHOULD IT BE INSTALLED?

Smoke detectors are normally installed on the ceiling or high on the wall, with the top of the detector not closer than 4 inches nor further than 12 inches from the ceiling. Detectors should be no closer than 3 feet from supply registers of forced air heating systems (that might blow on the detector preventing it from seeing smoke) and no closer than 3 feet from the door to a kitchen or a bathroom containing a shower (steam can set the detector off when the door is opened).

If a detector is mounted on an exterior wall or a ceiling below an unheated attic that is poorly insulated (the surface gets noticeably cold in the winter and warm in the summer), the temperature difference can prevent smoke from getting to the detector. Placing the detector on an inside wall avoids the problem. In desert climates where evaporative coolers are being used, mount smoke detectors on walls 12 inches below the ceiling because these coolers add moisture, which can cause the smoke to drop.

Older adults may have difficulty reaching detectors on ceilings to change batteries. If house-powered detectors are impractical, wall mounting 12 inches down should be considered.

WILL YOU BE ABLE TO HEAR YOUR DETECTORS?

The ultimate test for smoke detectors is their ability to wake you when you're asleep. This generally means that the nearest detector to the bedroom can be no further away than in the next room with the intervening door open.

House-powered detectors can be connected together (with a wire) so that when one detector activates, all interconnected detectors go off. Many detectors in new homes have this feature. It means any detector in the home can awaken you in your bedroom if the nearest detector is loud enough to do so.

For homes with battery-powered detectors, there are models that contain a radio transmitter, which will activate a receiver that can be placed in the bedroom. An advantage of this type is that, when you go on vacation, you can give the receiver to a neighbor who could call the fire department if a fire starts. Of course, these are a lot more expensive than the simple smoke detectors.

All battery-powered and most house-powered smoke detectors use a high-pitched electronic horn, which is difficult for some people to hear. Test detectors before installation to make sure that all members of the household can hear them clearly.

People with hearing impairments can get smoke detectors with bright, flashing lights or vibrating signals. To awaken you, the light needs to be over the head of the bed and should be rated at least 110 candela. Such bright lights must be powered from house power, so if it is battery operated, it is probably not bright enough to use in the bedroom

TESTING AND MAINTENANCE

Smoke detectors should be tested at least once a month. All smoke detectors have a test button, which you push to check out the entire detector, including its sensitivity (how much smoke it takes to set it off). If the testing mechanism does not work properly, the detector should be replaced immediately. Never use open flame devices to test a detector.

Older adults and the physically impaired may have problems reaching their detectors to test them. There is one brand of smoke detector on which the test feature can be activated by shining a flashlight on it. Another brand has an automatic test, which activates at the same time and day, once a week. These models can be used where proper testing might not otherwise be done.

Smoke detectors need no maintenance other than changing batteries (in those that have batteries) and an occasional vacuuming of dust or cobwebs. Every smoke detector comes with a homeowner booklet, which describes how to use and take care of that particular detector. You should read that booklet and keep it in a safe place for future reference.

WHAT IF YOUR DETECTOR "ACTS UP"?

Smoke detectors are highly reliable but can sometimes be fooled by cooking or steam. If it alarms when there is no fire, it may need to be moved a few feet to a new position where it is not in the way of cooking vapors or steam. It may also have insects in it, so you should take it down and vacuum it out. If it continues to act up, simply replace it with a new detector (they are inexpensive to fool with).

HOW LONG SHOULD YOUR SMOKE DETECTOR LAST?

Smoke detectors have a useful life of about ten years. At that age, they should be replaced, even if they seem to be working. This will assure that the detector will be working when you need it.

Even though prices of today's smoke detectors are many times lower than you might have paid some years ago, the detectors themselves are generally more reliable. Thus, it is usually not worth keeping an old detector rather than buying a replacement.

FIRE ALARM SYSTEMS

A home fire alarm system is usually part of a total security system providing burglary protection in addition to fire protection. Such a system supervises doors and windows and spaces within the home for break-in and may also provide monitoring services by dialing your telephone to report a fire or intrusion to a security office, where it will be reported to your local police or fire department.

Due to their relatively high cost, these systems are generally found only in larger homes. The system can cost \$1,000 or more to install, with 24-hour monitoring service adding \$15 to \$20 per month.

COMPONENTS OF THE SYSTEM

These systems consist of a central control panel to which smoke and heat detectors are connected, along with bells or horns that are activated when the system triggers an alarm. Other sensors associated with the burglary functions connect to doors and windows or monitor rooms for motion or body heat. The control panel operates from house power but also usually contains an emergency battery, which can operate the system for about 24 hours during a power outage.

The basic requirements for the number and locations of detectors are exactly the same as with the self-contained detectors discussed previously. The difference is that a fire alarm system gives you more flexibility to locate additional detectors and additional bells or horns (or flashing lights, should a person in the household be hearing impaired).

Fire alarm systems that provide remote monitoring services can also be used to provide medical alert services. Here, a person with health problems who lives alone carries a radio transmitter that can trigger the system in case they need assistance.

Signals received at the monitoring station are identified by type (fire, burglary, medical alert) so that the proper response can be made.

WHY HAVE A RESIDENTIAL FIRE ALARM SYSTEM?

The primary advantage of a home fire alarm system is increased reliability and the ability to place detectors and bells exactly where needed. However, the reason most people have them is that they wanted a burglar alarm system and the cost of adding fire alarm features to a residential burglary system is relatively small.

Another advantage is that they are the only way to obtain remote monitoring services. This becomes important in cases where family members may not be capable of escaping from a fire without assistance. For example, if you have an older or physically impaired person in your home and a fire started when no one was home to assist that person, detectors alone might not be enough to assure their safety.

A feature of most monitoring services is the ability to keep special information on the residence, which comes up on the computer screen whenever an alarm is received from that home. Thus, if there is a disabled person in the home who needs special assistance, this fact will be known to the operator and can be passed along to the fire department when they are called.

ESCAPE PLANNING

Smoke detectors can only warn of danger. You must then take action to escape. Unless you act quickly and effectively, the extra warning time provided by detectors could be wasted.

The best way to assure that your family will do the correct things in an emergency is to have an escape plan and practice it. The important factors in a home fire evacuation plan are:

1. Immediately leave the home.

Do not waste any time saving property. Call 9-1-1 from a neighbor's home. Take the safest exit route, but if you must escape through smoke, remember to crawl low under smoke.

2. Know two ways out of each room.

If the primary way is blocked by fire or smoke, you will need a second way out. This might be a window onto an adjacent roof or by using an escape ladder (tested and approved by a recognized testing laboratory). Practice escaping by both the primary and secondary routes to be sure that windows are not stuck and screens can be taken out quickly. Windows and doors with security bars need quick release devices to allow them to be opened quickly in an emergency. Practice escaping in the dark.

3. Feel the door.

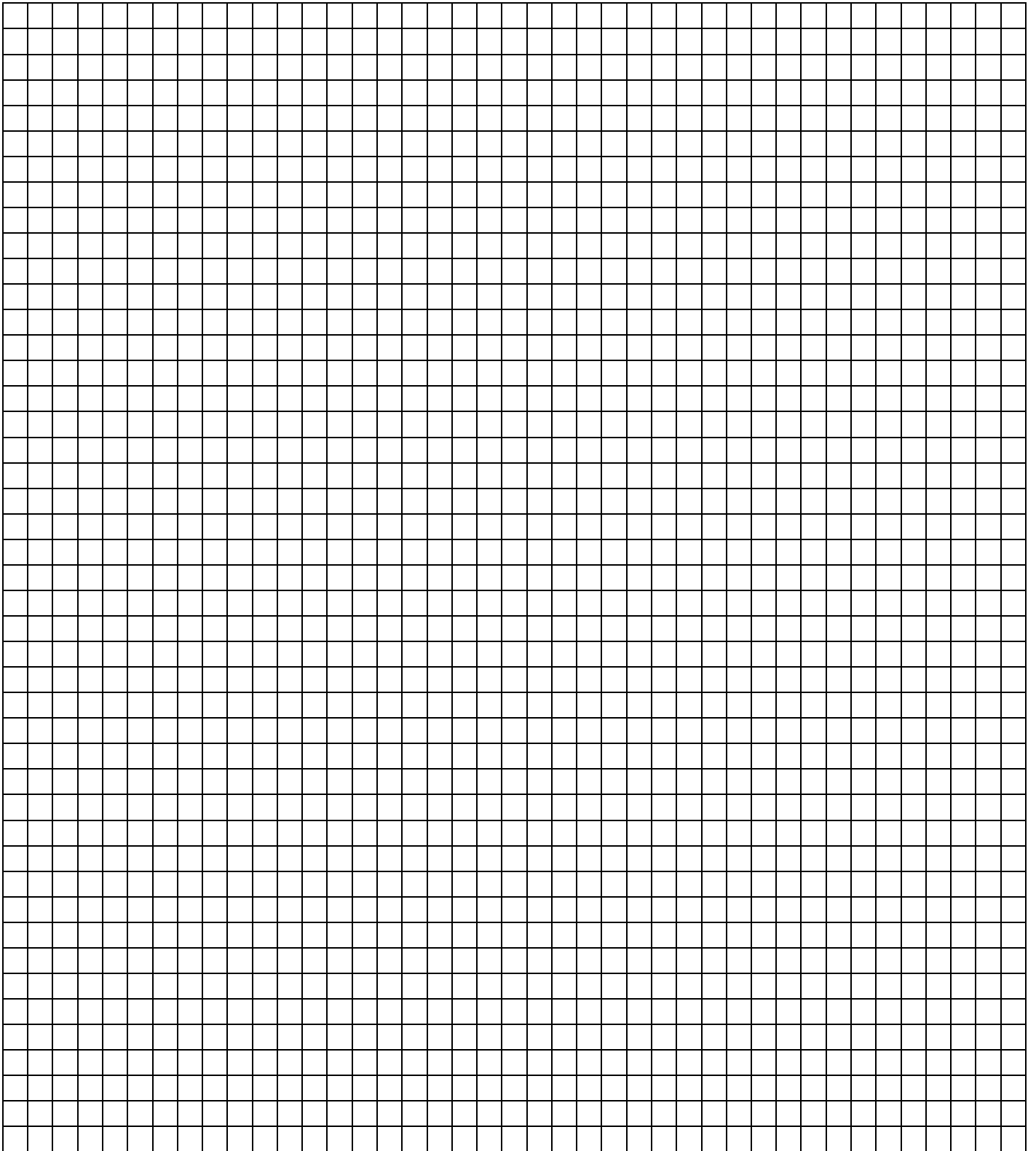
When you come to a closed door, use the back of your hand to feel the top of the door, the doorknob, and the crack between the door and doorframe to make sure that fire is not on the other side. If it feels hot, use your secondary escape route. Even if the door feels cool, open it carefully. Brace your shoulder against the door and open slowly. If heat and smoke come in, slam the door and make sure it is securely closed. Use your alternate escape route.

4. Have an arranged meeting place.

If you all meet under a specific tree or at the end of the driveway or front sidewalk, you will know that everyone has gotten out safely and no one will be hurt looking for someone who is already safe. Designate one person to go to a neighbor's home to phone the fire department.

5. Once out, STAY OUT.

Never go back into a burning building for any reason. If someone is missing, tell the firefighters. They are equipped to perform rescues safely.



Sketch the floorplan of your house and plan two ways out of every room.

PROTECT YOUR FAMILY FROM FIRE

- Respect fire and teach your children to respect it too.
- Install smoke detectors, either self-contained or as part of a system, outside bedrooms and on EVERY LEVEL OF THE HOME.
- Test and maintain your detectors as if your life depends on it. IT DOES.!
- Make sure everyone can clearly hear the sound of your smoke detectors from their bedrooms.
- Make an escape plan with two ways out of every room and practice it with your family.
- If there are family members who cannot escape unassisted, consider a residential sprinkler system.

EMERGENCY PHONE NUMBERS

**FIRE DEPARTMENT POLICE/SHERIFF AMBULANCE
CALL
911**

Record other emergency phone numbers here so you will have them when you need them.

Ephrata Fire Department: 509-754-4666 (Business, Monday – Friday)
Non-Emergency/After hours 509-762-1160

Ephrata Police Department: 509-754-2491 (Business, Monday – Friday)
Non-Emergency/After hours 509-762-1160

Doctor: _____

Father's Work: _____

Mother's Work: _____
