Heating Your Home Safely

by Stephen Ruback, Professional Home Inspector [TREC License #6030]

Tis the season to heat your home. Space heaters, gas furnaces and fireplaces require extra care not usually required for central electric heating. Nothing can spoil your day and the secure enjoyment of your home more effectively than the generation of toxic carbon monoxide or a house fire. With a bit of care and routine maintenance, you can avoid both of these deadly threats.

Fireplaces and Chimneys

Even if you never use yours, make sure they remain properly sealed outside to keep water from entering your structure. If you decide to crank up a fire, a little planning ahead is worth the effort.

Inspect the fire box and inside of the chimney for excessive tar and combustion byproducts. Too much gunk in the chimney can cause a chimney fire – both scary and dangerous. The fire box should be free of cracks, loose or missing pieces. It's what separates the fire from your walls.

Be sure you have at least 18 inches in front of the fireplace that is tile or other non-burnable surface, No flammable materials within a foot of the sides or top of the opening, and your screen operates and closes properly. No one needs sparks jumping out, starting their own fire.

You need combustion air from outside. Most older houses are loose and open enough to provide sufficient air flow. Newer, tighter houses are well enough sealed to require outside air just to maintain a good fire. If you were not blessed with an exterior combustion air vent, crack open a window to provide the needed air. This makes for a better fire and helps avoid combustion gas and carbon monoxide from being dumped into the room.

Make sure your chimney is equipped with a proper spark arresting screen. Setting your roof on fire is an expensive way to provide entertainment for your neighbors. This screen also keeps critters from raising their families in your chimney.

When in doubt about any of these items, consult a qualified professional. "Better safe than sorry" hasn't lost any value.

If you ever use those artificial, store bought, wax based wood chip/sawdust logs, follow the instructions carefully. The "If one is good, then two must be better" concept is a very dangerous idea.

Be sure to open the damper before you light your fire!

Gas Logs

A very convenient and decorative way to use a fireplace, gas logs are increasingly popular. These should be installed by a qualified professional. The most common safety hazard is not installing a blocking device on the damper to prevent full closure, and a very important safety detail, but seldom done.

Should your gas log have a leak, natural gas is lighter than air and probably will escape up the chimney. If your damper is closed, it *will* flow into the house. All you need then is a spark for an instant, unplanned renovation. You can easily install a small, steel "c" shaped clamp found in the electrical department of any hardware store for less than a dollar.

Keep flammable materials away from fireplaces.

Gas Heaters Disguised As Fireplaces

These appear to be a safer version of a space heater with more visual appeal, but no portability. Instead of a chimney, they often vent the exhaust gases out the side wall. They should be checked for safe condition, proper operation and unobstructed source of outside combustion air each year.

Gas Furnaces

They lurk out of sight and are ignored during the warm season, then suddenly, during a cold snap they are expected to perform perfectly, year after year. Most problems show up that first time in the season we turn them on. It is a very good idea to have your furnace inspected every year to make sure it is working properly – before heating season starts. This should include a general system visual inspection, a leak check, general operation check and heat exchanger inspection [especially if the unit is over five years old].

The general inspection should verify that there are no flammable materials in contact with the flue pipe and it is properly connected. This pipe directs hot exhaust gases outside. Any problems related to product recalls, gas supply, faulty ducts, inadequate combustion air supply or electrical connections should also be taken care of.

A leak check takes little additional effort when the technician is already there. Leaks are always a surprise, and never fix themselves.

A general operation check should make sure the system actually works effectively. Then you will be ready to meet your heating needs for the winter season.

Check that heat exchanger! This is the metal device inside the furnace that separates the flame and combustion byproducts from the air in the house. It survives in a hot corrosive atmosphere during operation, then sits there, in a humid environment until the flames start again. If you wanted to destroy a piece of metal by corrosion, it would be difficult to find a better place to do it. Any leaks or holes will allow exhaust gasses [including carbon monoxide] into your home.

These gasses are toxic. Even worse, carbon monoxide is colorless, tasteless odorless and only a few parts per million *will* kill. Anyone with any kind of gas heat should have one or more working carbon monoxide detectors installed in their home. A sleeping room is a good place to start.

While you're at it, take the time and effort to improve the flooring to and around your attic appliances. That makes it easier to access and work on without a significant likelihood of someone sticking their foot thru your ceiling. The flooring should be at least 3/4 inch thick, and 30 inches wide to and around those appliances.

This includes the water heater if you have one in your attic. It's a good idea to have it checked for proper function at the same time.

Electric Space Heaters

While useful for spot heating, these can be quite dangerous. If you must use one, be sure the cord is out of walk ways. Keep at least three feet from any wall hangings floor coverings, drapes or other flammable materials. Be sure it is not easily tipped over and has a tip-over safety switch. Place it only on a nonflammable surface. Keep children and four legged pets away at all times. Never leave one plugged in or turned on unattended.

Fuel Burning Space Heaters

Generally speaking, in my opinion, these are unsafe at any speed. If you must use one, be sure the gas

line is out of walk ways or areas where it can be hit by moving objects. Check for any leaks before lighting. Be sure you have plenty of combustion air and ventilation available. Never use one in a closed room. Keep at least three feet from any wall hangings floor coverings, drapes or other flammable materials. Maintain at least three feet underneath and around the bottom, covered with a fireproof material such as tile or cement board. Never leave one burning unattended. Make sure it is stable and cannot be readily knocked over. Keep children and four legged pets away at all times. Finally, replace it with a safer type of heater at the earliest possible time.

Stephen Ruback is a licensed Professional Inspector; member of TAREI [Texas Association of Real Estate Inspectors] and HAR [Houston Association of Realtors]; approved by TREC [Texas Real Estate Commission] as a Professional Home Inspection Instructor.

In addition, he has earned a BS in engineering from Trinity University, is an author of several books and teaches a variety of self empowerment courses in the Houston area. For more information, he can be reached at 832-489-1071.

Visit his website at: www.sruback.com