

Constant Comfort

news

A Tradition of Service Since 1912



SUMMER 2001

Questions and Answers:

Carbon Monoxide

What is carbon monoxide?

Carbon monoxide (CO) is an odorless, colorless and tasteless gas that can be released into a home by any equipment that burns solid, liquid or gaseous fuels.

How does it affect the body?

It combines with red blood cells and replaces oxygen in the blood stream. Therefore, it interferes with your blood stream's ability to deliver oxygen to the cells of your body.

What effect does exposure to carbon monoxide have on your health?

The health effects can vary from a mild headache to death, depending upon the exposure levels and time. Carbon monoxide is a very dangerous gas. A concentration of only 1% of the air, or 10,000 parts per million (PPM), will cause death in one to three minutes. The USEPA has set 35 PPM as the maximum allowable concentration for an 8-hour exposure.

What are the main sources of carbon monoxide in the home?

Carbon monoxide is produced as a by-product of the combustion process when any gaseous, liquid or solid fuel is burned. Some primary sources of CO in the home include automobile exhaust, wood stoves and fireplaces, barbecues, home heating equipment and gas stoves and ovens.

continued on page 4

**North Shore Fuel
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Great Question!

Someone asked, "Does the type of paint used on a radiator make a difference in the amount of heat that radiator will put out?"

Answer: A cast-iron radiator puts out about sixty percent of its heat by convection. Convection is what happens when the radiator heats the surrounding air. The hotter air rises and the cooler air at the floor level moves in to take its place. Before long, you have this Ferris wheel of air moving around the room.

The remaining forty percent of the heat leaves the radiator by radiation. The radiation side of things is very different from the convective. Radiation doesn't know up from down; it just knows straight out from its source.

In the 1920s, engineers discovered that certain types of paint can affect the radiator's ability to heat a room. Specifically, any paint whose pigment contains aluminum or bronze flakes can reduce a radiator's ability to radiate by as much as twenty percent. The paint has no effect whatsoever on the convective currents around the radiator, and it's only the final coat of paint that matters. In other words, you could put ten coats of aluminum paint on a radiator, but if your eleventh coat is, say, white, the radiator will radiate to its fullest capacity.

Aluminum and bronze-colored paints do have their uses, though. Old-timers often used these colors as a final coat over a primer to tame an oversized radiator. Paints with lead, zinc or other metals have no effect on the radiator's ability to radiate.

The many layers of paint you'll find on old radiators have no measurable insulating effect. That heat just conducts right through the paint.

If, however, you have an air vent on that old steam radiator, don't paint it. *You're likely to seal the air hole*, and the radiator will not work properly.

Projects We've Done

Last December, we were called by the Town of Belmont, which had been recommended to us by a consulting engineer who knew of our work, and we corrected some problems.

About a month later, the boiler at the Police Department started leaking steam from beneath the jacket and we ended up installing a second boiler in the boiler room with only a few hours of boiler shutdown. Belmont's finest stayed warm, protected from the cold.

Sorry, but we don't sell bullet-proof vests.



Keeping the heat on the police.

Employee Profile

Jay West

One of the newest members of our team, Jay came to us from an Osco drug store, where he worked while attending the Peterson School for Heating. He's worked with all our other technicians



Jay West

and has been complimented by all of them for his willingness, neatness and quickness of learning.

Jay lives with his wife, Tony and they'll celebrate

their first anniversary this September. In his spare time, Jay plays with the computer and enjoys woodworking. If you're lucky, you may get to hear him sing while he works.

Experience Counts

"The measure of success is not whether you have a tough problem to deal with, but whether it's the same problem you had last year."

—John Foster Dulles

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Carbon Monoxide *continued from page 1*

How much carbon monoxide is produced by home heating equipment?

In tests conducted at Brookhaven National Laboratory, it was determined that, on average, properly adjusted flame retention oil burners produce about 32 PPM of carbon monoxide. Research conducted by the American Gas Association and the Gas Research Institute indicate that average CO emissions for properly adjusted gas heating equipment is about 47 PPM. Both of these CO levels are very safe, especially since the CO being produced is carried up the chimney with the flue gases.

Wood stoves and fireplaces produce CO levels hundreds of times higher than oil or gas burners. USEPA data indicate that wood stoves and fireplaces can generate CO levels of more than 20,000 PPM, or 2% by volume. Therefore, wood stoves and fireplaces represent a very serious health risk if the combustion exhaust gases are not fully and completely vented from the house.

What happens to CO levels when heating equipment is not properly adjusted?

Oxygen is necessary for complete combustion. When the available oxygen is decreased, it adversely affects combustion. Both oil and gas heating equipment can produce elevated levels of CO when combustion air is decreased. However, they operate somewhat differently. Oil-fired equipment will smoke first and generate elevated levels of CO second. Gas equipment, on the other hand, will generate elevated levels of CO first and smoke second. Therefore, oil equipment has an important safety advantage. According to the U.S. Consumer Product Safety Commission, from 1981 to 1991, 3,036 people died in the United States from CO poisoning. Of that total, 78% of the deaths were caused by gas equipment and only 3% by oil equipment.

Should I have a CO detector and, if so, where should I locate it?

CO detectors are an important safety device that should be present in every home. Both plug in and battery operated types are available. CO detectors do not have to be located on the ceiling. Therefore, plug in detectors are recommended since they are easier to install and more reliable. They cost about \$30 and can be installed in any electrical outlet. CO detectors should be installed in the living space on each floor of your home. Do not locate them in the garage, over your boiler, or directly over a gas stove or oven. Experts also recommend that CO detectors that are more than three years old should be replaced, since the new generation of detectors are more accurate and less likely to generate false alarms.