



# Security News

**Burglar and Fire Detection, Video Surveillance, Access Control, Gate Automation**

## Home Safety-Carbon Monoxide

**C**arbon monoxide (C/O) is an interesting gas that the body naturally produces in small quantities and is used to prevent inflammatory reactions, severe malaria and atherosclerosis. C/O also has a myriad of industrial uses, it is used to color meat to make it look fresh and is used in making medicines and metals. C/O in very low concentrations of around 667 parts per million (ppm) can cause the body to lose 50% of its oxygen carrying capacity and can have long term effects on the fetus of any pregnant woman as well. OSHA permits exposure up to 50 parts per million (ppm) in workplace environments but long term exposure at over 100 ppm can have serious physical results. Traditionally people are exposed to C/O from improper combustion during the heating processes from stoves, ovens and home heating equipment. Around 170 people die yearly from C/O poisoning and about half of them from running generators indoors without ventilation. Walking into a room with 1.3 percent C/O gas in the air can be fatal in less than four minutes.

On December 29, 2008 Sloane Dwinell was found dead in her bed on Vashon Island near Seattle. She attended school with one of our friend's daughters. This young lady had a very promising future cut short by acute carbon monoxide poisoning. The gas appliance in the room next to her bedroom likely had a faulty ventilation system and it allowed the odorless and colorless gas to invade Sloane's bedroom fatally exposing her while she slept. As our homes become better insulated and we eliminate the intrusion of fresh air through door and window gaps we increase the risk for home-generated gases to concentrate into problem levels for the occupants.

One of our clients in Montana had their carbon monoxide sensors being triggered every few days and even after making sensor changes the alarms continued. We did not know if we had a bad batch of sensors or some other technical problem. Using a commercial carbon monoxide tester it was determined that when certain windows were left open in their boiler room it allowed C/O gas to seep back into the sleeping areas of their guest quarters, triggering the C/O detectors which turned out to be operating correctly. This is the third incident in the past 12 months of C/O problems our clients have experienced.

We have found that there are several common denominators in locations where carbon monoxide gas (C/O) is found:

- Houses that have radiant heat floors use heated water running through piping in the floors as the warming source. This system requires large equipment rooms to operate the water heating components. The assumption we make is that they may be having these problems because household heating is concentrated into one room versus several locations on traditional heating systems. Proper venting is a critical issue when using a radiant heat floor system. We don't believe that these systems, which are becoming much more popular because they moderate temperature changes inside the home better than forced air systems, are inherently more dangerous, they just need really good ventilation.
- Forced air heaters, which are the more common means of heating homes, use a metal heat exchanger to transfer heat into the moving air being blown through the furnace. Several of our clients over the past 10 years have reported having headaches and sleeping problems that were eliminated when they changed out their forced air furnaces.

Their furnace companies found cracked heat exchangers inside the furnace that allowed combustion air to mix with supply air that was being forced into the air ducts. These clients did not have carbon monoxide detectors in their homes but were likely victims of low level C/O poisoning that was averted by replacing their furnaces.

There have been C/O detectors in both new and older homes that have generated alarms, albeit only rarely. Once the families get up and moving around during the day and they have windows or doors open, it is extremely difficult to detect these low levels of C/O, particularly when we respond to do an inspection because what C/O gas there was in the house has been diluted by fresh air or the heaters have turned off by the time we got there to do service.

**Recommendations:**

If you wake up with headaches, find you are nauseated within 2-3 hours of getting home, have dizziness problems after a few hours or are having sleeping problems that you cannot connect to other environmental or lifestyle causes, you should install a carbon monoxide sensor in your alarm system. We have new detectors that can mount on the ceiling just like a smoke detector so they are not as much of an aesthetic challenge as previous wall-mounted C/O sensors.

1. If your forced air furnace is 10 years or older, ask your furnace service vendor to do a focused inspection on the heat exchangers and to replace any that appear cracked or suspect.
2. If you have an enclosed boiler room for radiant heat we should look at installing a C/O detector inside that room and also add a detector or two in your sleeping areas. The ventilation systems for any enclosed heating system should be carefully inspected during an annual furnace service.

If you do not presently have a carbon monoxide detector in your home, consider having us add one. While not cheap, these units might save your life, which of course, is priceless.

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**Who's at the door?**

Do you automatically open your front door just because someone rings your doorbell, if so, why? While we want to be welcoming and gracious to our visitors and guests alike there is nothing that commands us to open our doors to strangers and expose ourselves to uninvited solicitors or others who may have more sinister motives. Ideally we'd like all our clients to have a small gate or barrier that keeps solicitors away from the front door so if you do open your door that person cannot just force their way inside.



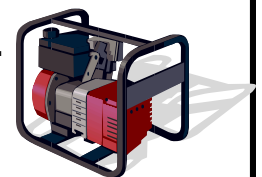
Let's say you open the door in response to a knock or a doorbell and the person wants inside your home without your permission. Do you know how to activate your panic button? Did you put your pepper spray in your back pocket before you went to the door? Do you have a portable panic button you can carry with you?

If you had an intercom or better yet, a camera at your front door, you could make an informed choice about who is there before you open the door. Based on the questions above, could you see where not having to go to your door might be more convenient, less intrusive and spare you the exchanges with pushy solicitors and others more dangerous? We can install two way voice systems that operate over your existing phone wiring and video cameras too. The costs are reasonable and typically based on your existing construction and infrastructure. Call to discuss and get pricing.



**Generator Owners:**

**Time to change the oil and old gas for the Winter storm season that is fast approaching!**



**Call for service.**