

## Investigating Smoke Odors - Fire Rescue Interactive August 2002

We are frequently called to homes and business because the occupants smell smoke. Do you have an SOP for investigating these calls? I'll wager that you don't. You probably walk in, sniff the air, and make a decision based on what you smell. This is how most departments do it and have done it for years. It seems to work, but there is more that you should do.

I know of one department that was called to an odor of smoke in a commercial building but found nothing and left. This happened several times during the day. That night, after the building was closed, it burned down, the result of an electrical short. Just sniffing did not work for this department and, as a result, the lawyers were kept very busy defending the members in court.

Some odors are easily identifiable like food on the stove or an overheating fluorescent light ballast and may be easy to locate. Other odors are not so easy to identify or find. Sniffing is a good first step when investigating an "odor of smoke" call, but long-term exposure to an odor can desensitize you to it. You will no longer be able to smell it. It is a good idea to keep a few fresh noses outside while you search the house. You can bring them in to help if you can't find the source of the odor or if the search takes a long time. Ask the person who noticed the odor where he was and what he was doing when he first noticed it, then find out what was going on in the house at that time.

Look into the oven and microwave and check out the stovetop burners. Is there any burnt food, paper, or melted plastic anywhere in the kitchen? Adults (because they are embarrassed) and children because they are afraid of getting in trouble) will sometimes try to hide their mistakes. You have to be a detective. Sniff. Feel appliances, TVs, and other electrical devices. Don't forget the heating and cooling units. Sniff by the heating and cooling ducts. Is the odor being transported from one location to another via the ductwork? Check the garbage pail, the toilet, and the tub. I once found an ashtray and burnt paper in the tub, hidden there by a child who was smoking and did not want to be punished.

Be systematic. Check every room and, if necessary, check the exposures. Is the odor coming in from an adjoining building or from the street? Routinely bring your CO meter and thermal imaging camera in with you on these calls. While CO has no odor, it is often accompanied by some other odor from the appliance that is generating it. The thermal imaging camera can check for overheating wires in the wall and hot spots in appliances and light fixtures and can help you rule out or discover many possible odor sources.

When do you leave the scene? First, you must be sure that there is no danger. If the occupants go to sleep, will they wake up to a fire? After the commercial building is locked up for the night, will you be called back to a structure fire? Once the odor dissipates and you determine there is no danger, make sure that the occupant will call you again if the odor returns. Do not embarrass him for calling you. Tell him he did the right thing by calling and that he should call again if the odor recurs. Take as much time as you need to make a thorough investigation. Remember, once you tell the occupants that they are safe, you are responsible for their safety.