



Crystal Park Volunteer Fire Department

#496 Palmer Trail, Manitou Springs, CO 80829

Community Safety Bulletin #9

Issue 9, Oct 2010

Chimney Fires can burn explosively - noisy and dramatic enough to be detected by neighbors or passersby. Flames or dense smoke may shoot from the top of the chimney. Homeowners report being startled by a low rumbling sound that reminds them of a freight train or a low flying air plane. However, those are only the chimney fires you know about. Slow-burning chimney fires don't get enough air or have enough fuel to be as dramatic or visible. But, the temperatures they reach are very high and can cause as much damage to the chimney structure - and nearby combustible parts of the house - as their more spectacular cousins. With proper chimney care, chimney fires are entirely preventable.

Creosote and Chimney Fires: Fireplaces and wood stoves are designed to safely contain wood-fueled fires. The chimneys that serve them have the job of expelling the by-products of combustion - the substances given off when wood burns. As these substances exit the fireplace or wood stove, and flow up into the relatively cooler chimney, *condensation occurs*.

The resulting residue that sticks to the inner walls of the chimney is called creosote. Creosote is black or brown in appearance. It can be crusty and flaky ... tar-like, drippy and sticky ... or shiny and hardened. Often, all forms will occur in one chimney system. Creosote is highly combustible. If it builds up in sufficient quantities - and catches fire inside the chimney flue- the result will be a chimney fire. Certain conditions encourage the buildup of creosote, restricted air supply, unseasoned wood and cooler-than-normal chimney temperatures are all factors that can accelerate the buildup of creosote on chimney flue walls.



Air Supply: The air supply on fireplaces may be restricted by closed glass doors or by failure to open the damper wide enough to move heated smoke up the chimney rapidly (the longer the smoke's "residence time" in the flue, the more likely is it that creosote will form). A wood stove's air supply can be limited by closing down the stove damper or air inlets too soon and too much, and by improperly using the stovepipe damper to restrict air movement.

Burning Unseasoned Firewood: Because so much energy is used initially just to drive off the water trapped in the cells of the logs - burning green wood keeps the resulting smoke cooler, as it moves through the system, than if dried, seasoned wood is used.

Cool Flue Temperatures: In the case of wood stoves, fully-packed loads of wood (that give large cool fires and eight or 10 hour burn times) contribute to creosote buildup. Condensation of the unburned by-products of combustion also occurs more rapidly in an exterior chimney, for example, than in a chimney that runs through the center of a house and exposes only the upper reaches of the flue to the elements.

How Chimney Fires Damage Chimneys:

Masonry Chimneys: When chimney fires occur in masonry chimneys - whether the flues are an older, unlined type or are tile lined to meet current safety codes - the high temperatures at which they burn (around 2000' F) can "melt" mortar, crack tiles, cause liners to collapse and damage the outer masonry material. Most often, tiles crack and mortar is displaced, which provides a pathway for flames to reach the combustible wood frame of the house. One chimney fire may not harm a home. A second can burn it down.

Pre-fabricated, Factory-built, Metal Chimneys: To be installed in the United States, factory-built, metal chimneys that are designed to vent wood burning stoves or pre-fabricated metal fireplaces must pass special tests determined by Underwriter's Laboratories (U.L.). Under chimney fire conditions, damage to these systems still may occur, usually in the form of buckled or warped seams and joints on the inner liner. When pre-fabricated, factory-built metal chimneys are damaged by a chimney fire, they should no longer be used and must be replaced.

Chimney Fires don't have to Happen. Here are Some Ways to Avoid Them:

- Use seasoned woods only (dryness is more important than hard wood versus soft wood considerations)
- Build smaller, hotter fires that burn more completely and produce less smoke
- Never burn cardboard boxes, wrapping paper, trash or Christmas trees; these can spark a chimney fire
- Install stovepipe thermometers to help monitor flue temperatures where wood stoves are in use, so you can adjust burning practices as needed
- Have the chimney inspected and cleaned on a regular basis

How to contact us: If it's an emergency – **Dial 911**
Visit our Website at: Crystalparkvfd.org

Email the CPVFD Officers

Chief – John Hennessey ~ jhennessey@crystalparkvfd.org
DChief – Paul Welsch ~ pwelsch@crystalparkvfd.org

Generator Safety

Many Crystal Park residents have back-up generators to provide emergency power in the event of a C/S Utilities power outage. Fall is the time to check your generator to ensure its safe operation in the fall/winter months ahead. Here are some helpful Generator safety tips to ensure that you stay safe this season.

Please store your fuel away from the house in a well-ventilated area.



- Always read the Owner's Manual and instructions for your generator.
- Carefully follow all instructions and warnings in order to safely start and operate the generator. Do not cut corners when it comes to safety.



- Permanently installed automatic standby generators are the safest way to provide backup power to your home.
- Portable generators will also provide electricity for your home when the power goes out. But you have to know how to use them safely.



- Portable generators can produce carbon monoxide, or CO. CO is a poisonous gas. You cannot see it or smell it, or taste it. It can hurt or even kill you.
- When using a generator always have a battery operated Carbon Monoxide (CO) alarm in your home. CO alarms will warn you if there is a dangerous level of gas in your home.



- The most important thing is to put your portable generator in the right place. It should always be used outdoors, placed away from window openings.
- Never use a portable generator indoors or in any enclosed space, such as a garage. This can cause a dangerous build-up of CO gas.
- Be careful when refueling generators to avoid starting a fire. Have a portable fire extinguisher nearby.



- Be sure the generator is connected correctly.
- Use only UL approved, *grounded*, extension cords.
- Never try to power the house wiring by "backfeeding" the generator into a wall outlet. This can put utility workers and neighbors in danger.



- After starting a generator wait 10 seconds for the power to stabilize, then plug in your appliances. This helps avoid electrical shocks. The generator should increase its idle as you plug in appliances and draw power.
- Always read the owner's manual to learn how to use your portable generator safely.

