

BEWARE THE DREADED

By Bradley Carroll

When you light the wood in your fireplace or wood stove in preparation to bask in warmth, you are taking part in a ritual of comfort and enjoyment handed down through the centuries.

Before lighting those fires, give some thought to the condition of your fireplace or stove, or the enjoyment may be short-lived. Dirty chimneys can cause chimney fires, which damage structures, destroy homes, and injure or kill people.

Chimney fires can burn explosively. Many liken the sound to a freight train coming close. Flames can shoot out of the chimney (see photo), and flue temperatures can reach 2,000° F. 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 or more damage to the chimney.

Either form of chimney fire can spread to structural members of the house through loose mortar, by the warping of metal

chimneys, or just from the extreme heat radiating from the fire in a metal chimney.

Fueling the Fire

Fireplaces and stoves are made to safely contain wood-fueled fires while providing welcome heat. A chimney's job is to expel the products of combustion. When these products leave the fireplace or stove and flow up into the cooler portion of the chimney, they condense into residue called creosote that sticks to the inner walls of the chimney. Creosote is black or brown and can take on different consistencies (see photo page 16). Whatever form it takes, creosote is highly flammable. If creosote builds, it can catch fire inside the chimney. Factors that contribute to creosote buildup are:

- Restricted air supply – Air may be restricted by closed glass doors or by failure to open the damper wide enough to rapidly move heated smoke up the chimney. Conditions for developing creosote improve the longer



Flames stream from the stove pipe during this chimney fire.

smoke and heat remain in the flue.

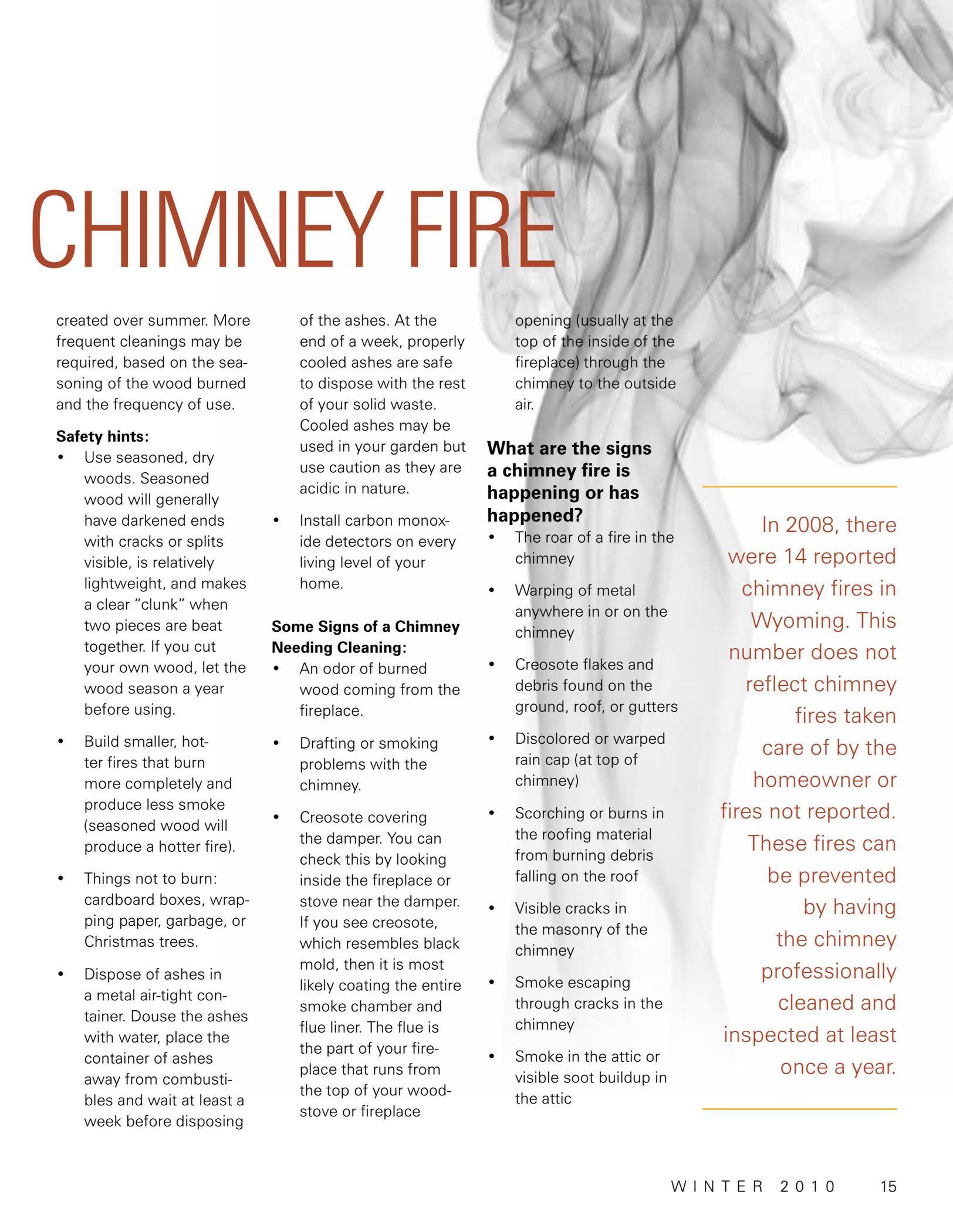
- Unseasoned wood – The energy used to burn off moisture in the wood keeps the smoke cooler than using dry wood, resulting in cooler than normal flues, which contribute to the buildup of creosote.

Preventing That Unwanted Fire

Thousands of homes experience chimney fires each year due to improper fireplace maintenance.

In 2008, there were 14 reported chimney fires in Wyoming. This number does not reflect chimney fires taken care of by the homeowner or fires not reported. These fires can be prevented by having the chimney professionally cleaned and inspected at least once a year. If the fireplace is used as a primary heat source, consider a cleaning and inspection at the beginning and end of each heating season to ensure no obstruction or flammable material – such as a bird's nest – was

CHIMNEY FIRE



created over summer. More frequent cleanings may be required, based on the seasoning of the wood burned and the frequency of use.

Safety hints:

- Use seasoned, dry woods. Seasoned wood will generally have darkened ends with cracks or splits visible, is relatively lightweight, and makes a clear “clunk” when two pieces are beat together. If you cut your own wood, let the wood season a year before using.
- Build smaller, hotter fires that burn more completely and produce less smoke (seasoned wood will produce a hotter fire).
- Things not to burn: cardboard boxes, wrapping paper, garbage, or Christmas trees.
- Dispose of ashes in a metal air-tight container. Douse the ashes with water, place the container of ashes away from combustibles and wait at least a week before disposing

of the ashes. At the end of a week, properly cooled ashes are safe to dispose with the rest of your solid waste. Cooled ashes may be used in your garden but use caution as they are acidic in nature.

- Install carbon monoxide detectors on every living level of your home.

Some Signs of a Chimney Needing Cleaning:

- An odor of burned wood coming from the fireplace.
- Drafting or smoking problems with the chimney.
- Creosote covering the damper. You can check this by looking inside the fireplace or stove near the damper. If you see creosote, which resembles black mold, then it is most likely coating the entire smoke chamber and flue liner. The flue is the part of your fireplace that runs from the top of your wood-stove or fireplace

opening (usually at the top of the inside of the fireplace) through the chimney to the outside air.

What are the signs a chimney fire is happening or has happened?

- The roar of a fire in the chimney
- Warping of metal anywhere in or on the chimney
- Creosote flakes and debris found on the ground, roof, or gutters
- Discolored or warped rain cap (at top of chimney)
- Scorching or burns in the roofing material from burning debris falling on the roof
- Visible cracks in the masonry of the chimney
- Smoke escaping through cracks in the chimney
- Smoke in the attic or visible soot buildup in the attic

In 2008, there were 14 reported chimney fires in Wyoming. This number does not reflect chimney fires taken care of by the homeowner or fires not reported. These fires can be prevented by having the chimney professionally cleaned and inspected at least once a year.

If you do suspect a chimney fire:

- Have all members in the home exit to the family meeting place
- Call the fire department
- Don't attempt re-entry into the home

Wood Stove Installation Affects Efficiency and Safety

The Environmental Protection Agency recommends certified wood stoves or fireplace inserts be professionally installed by a certified technician to ensure safety and proper performance. The safety of your home and family depends upon fully understanding and carrying out the critical manufacturer and building code requirements that include:

- Proper clearances between the stove and venting system and combustible materials, including wall components
- Proper protection of combustible floors
- Proper assembly of appliance and venting components

Errors in installation may not be visible, and problems may not be apparent for a considerable length of time – and then only by a resulting home fire.

Experienced professionals can properly size and place equipment for best heat distribution. The venting system (chimney) is a critical area that requires professional involvement.

This is the “engine” that drives the whole burning process – or causes it to perform poorly or fail.

Professional decisions about the venting system to ensure adequate draft include:

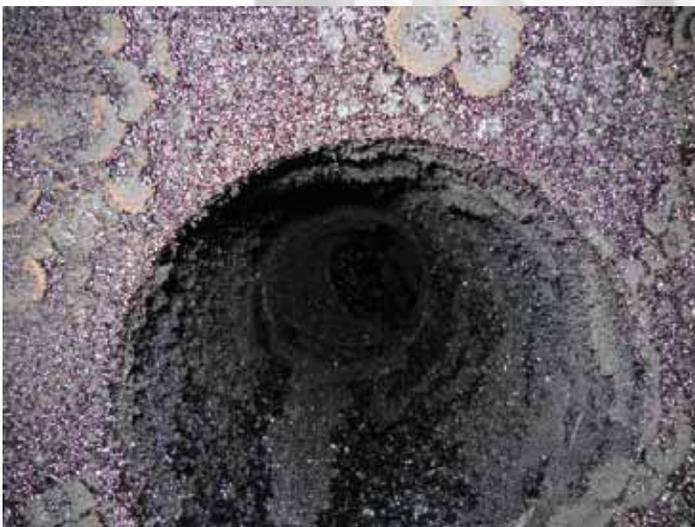
- Proper sizing (particularly avoiding oversized flues)
- Proper height (often taller than minimum code requirements)
- Proper location (interior of the house when possible) or protection from extreme cold
- Proper configuration (avoiding excessive horizontal runs and system turns in direction)

Any installation of a fireplace, fireplace insert, or wood burning stove

The safety of your home and family depends upon fully understanding and carrying out the critical manufacturer and building code requirements.

requires the homeowner to check with the local fire department, the local building department, and their insurance agent to see what applicable codes are required.

Remember, prevention is the key.



Creosote has accumulated to a dangerous level in this flue.



A chimney fire affects more than just a chimney. The extreme heat can cause nearby materials to catch fire and spread through a structure.

Bradley Carroll is the fire prevention specialist in the Wyoming Department of Fire Prevention and Electrical Safety in the Wyoming State Fire Marshal's office. He can be reached at (307) 777-8772 or at bcarro@state.wy.us.