

## Creosote build-up causes chimney fires

NEWARK, Del. — These days, many people are enjoying the warmth and cheer of a fireplace or wood stove. Unfortunately, this warmth and cheer has given rise to an increasing number of dangerous chimney fires, points out Delaware Extension Safety and Energy Specialist Ronald Jester.

Every year in the United States there are thousands of such fires resulting in over 20 million dollars worth of damage.

Chemical changes occur in wood when it is burned, says Jester. As a result, gases and tiny droplets of tar and water are released as smoke

The heat generated by these burning gases accounts for a large percentage of the wood's total heat output. However, these gases will not ignite until the fire's temperature has reached 1100 degrees Fahrenheit.

Because wood combustion is never perfect, smoke going up the chimney always contains some of the unburned gases and tars. If the chimney's inner surface is cooler than the smoke, as it almost always is, then some of the unburned gases and tars will condense out of the smoke onto the chimney's surface. This condensed material is called

creosote. When creosote condenses on a relatively cool surface, it will contain a large amount of water and so will be fluid. If the surface is 150 degrees or hotter, the creosote will contain little water and will be thick and sticky like tar. This tar-like build-up will eventually change to a solid or flaky form.

There is no way to completely prevent the formation of creosote, notes Jester. But it can be minimized by avoiding smoldering fires, by burning seasoned hardwoods, and by using interior chimneys.

Air leaks, via cracks in the

chimney or in the clean-out doors, provide a source of dilution which lowers the stack temperature and increases the accumulation of creosote.

For safety as well as maintenance, one should inspect a chimney thoroughly to insure that it is without cracks and that clean-out doors are air tight," Jester says.

"It is important to note that creosote condenses from flue gases when the stack temperature drops below 250 degrees. This means that chimneys which are insulated or interior and allow less heat to escape are preferred, especially for air-

tight wood stoves."

Most creosote fires are associated with poor chimneys that have low draft, cold walls, and too low a rate of burning.

How do you know that creosote has built up in your chimney or flue?

The most obvious way is to inspect the inside of your chimney or stovepipe, Jester explains. You may also notice back drafting and smoking as you load your stove. The connector pipe will also radiate less heat, as creosote is an excellent insulator.

If there is more than one-quarter inch of creosote build-up, or if there are small raised bumps of creosote, a cleaning is needed.

Reports from fire victims indicate that a chimney fire is a frightening experience and a potentially dangerous situation. With proper installation and maintenance, regular inspection and cleaning, your chances of a chimney-related fire are remote. Prevention is the best protection.

If for some reason you have a fire, here are the signs that you should recognize immediately so that you can respond as quickly as possible, Jester notes:

— a distinct crackling noise in the chimney or stovepipe;

— "sucking sound" of air being drawn into the stove or chimney. This may increase a loud roar;

— the stovepipe may shake (beware that it could fall apart spilling flaming creosote);

— the stovepipe may glow red-hot;

— sparks and flames may shoot out of the top of the chimney or stovepipe — and you'll probably get phone calls from your neighbors.

What can be done in case of a chimney fire:

— Call the fire department. (You may not need them, but if you do, calling later may be too late).

— Gather all occupants of the building and be ready to leave if the situation worsens.

— Cut off air to the fire. If you are using a wood stove, close all its draft and damper controls. If you have a fire in the fireplace, cover the opening with any rigid, noncombustible material (but beware of strong suction caused by the fire). Do not close the fireplace damper as smoke from the fire in the fireplace will then come into the room.

— Use a fire extinguisher. Best is a flare-like one designed specifically for chimney fires. Ignite it like a road flare and place it inside the stove or fireplace. Regular CO<sub>2</sub> extinguishers can also be used.

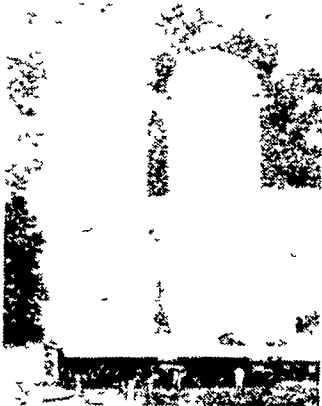
— Do not pour or spray water directly into the chimney as the rapid contraction caused by sudden cooling may break some of the tiles.

— Continue to check outer surface of the chimney and any inner walls near the chimney for excessive heat — even after you think the fire is out.

— Check outside to see if sparks and embers blown out the chimney top are igniting roof or brush.

— When the fire's out, sweep the chimney and carefully check for any damage. Resolve to clean your chimney more often.

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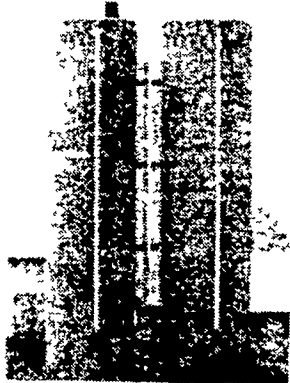


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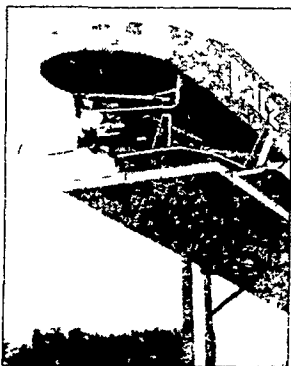
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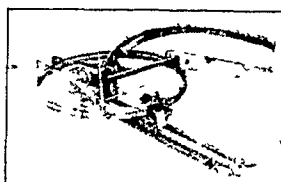
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## Beat inflation

(Continued from Page B2)

Glenn's cost and return figures for 1980 - which would vary from farm to farm, of course - you'd need 241 cows at 10,123 pounds; 52 cows at 12,687 pounds; 28 cows at 15,339 pounds, and only 18 cows at 19,245 pounds.

There is a lot to be said for getting good before getting

big," Shirk observes.

"As we feel the pinch of rising costs let us not be too quick to make a desperation move to get too big too fast. It might be more profitable, and more enjoyable, to work for a more productive herd and a wider margin of profit per cow. You'll be in a better position to ride the tides of inflation."

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