

Norfolk Volunteer Fire Department

Chimney *Fires*

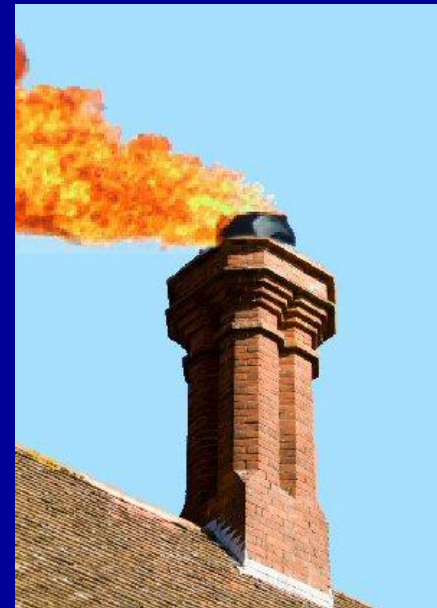


2018
Training



Chimney Fire Definition:

- A **chimney fire** is the combustion of residue deposits referred to as creosote on the inner surfaces of chimney tiles, flue liners, stove pipes, etc.



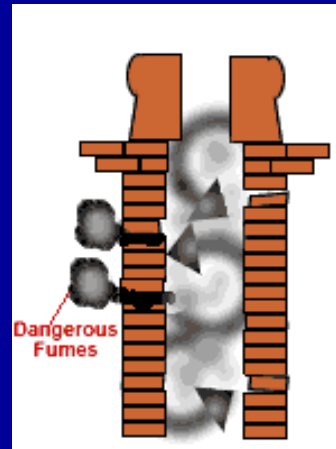
Chimney Fires:

- 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 may report being startled by a low rumbling sound that reminds them of a freight train or a low flying air plane.
- A Chimney fire can quickly ignite asphalt shingles or other combustibles.



Chimney Fire Hazards:

- Failure of the chimney to maintain its integrity, and the spread of fire within adjoining partitions of the structure can quickly escalate into a house fire. Make use of the Thermal Imaging Camera (TIC) to check for any possible extension.
- Additional hazards include the possible buildup of toxic gases such as Carbon Monoxide (Co) within the structure due to restricted flues. Always Meter!!



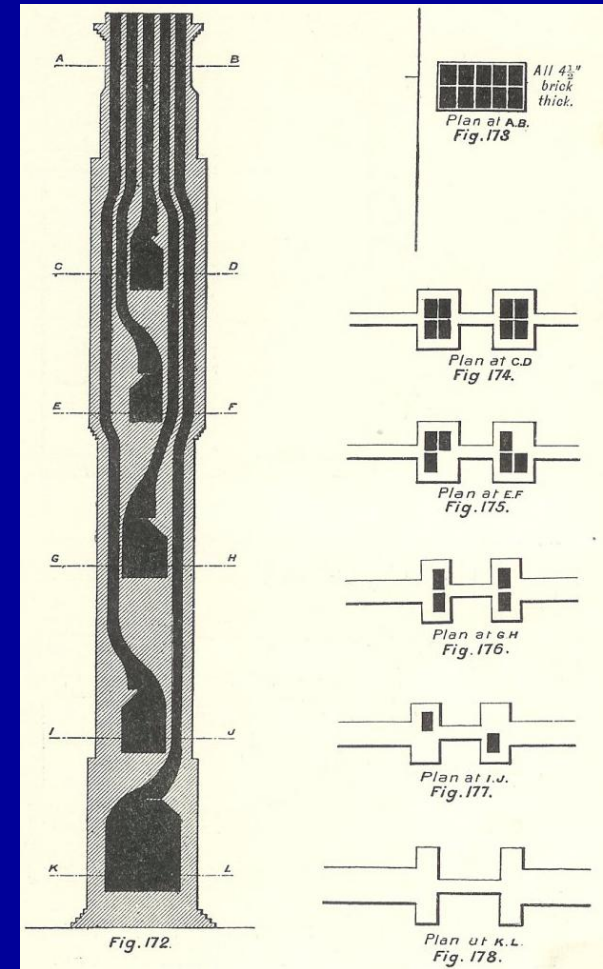
Types of Stoves:

- Standard Fire Place and Inserts



Internal Flu Systems

- Multi-level houses will have separate flu's for every fire place



Types of Stoves:

- Fire Box

- Exposed Flu pipe into the chimney

- Creosote will form heavily at bends in any piping, at angles in a chimney, and where the chimney exits the roof line (Temperature difference creates creosote build up)



Types of Stoves:

Pellet/Coal Stoves

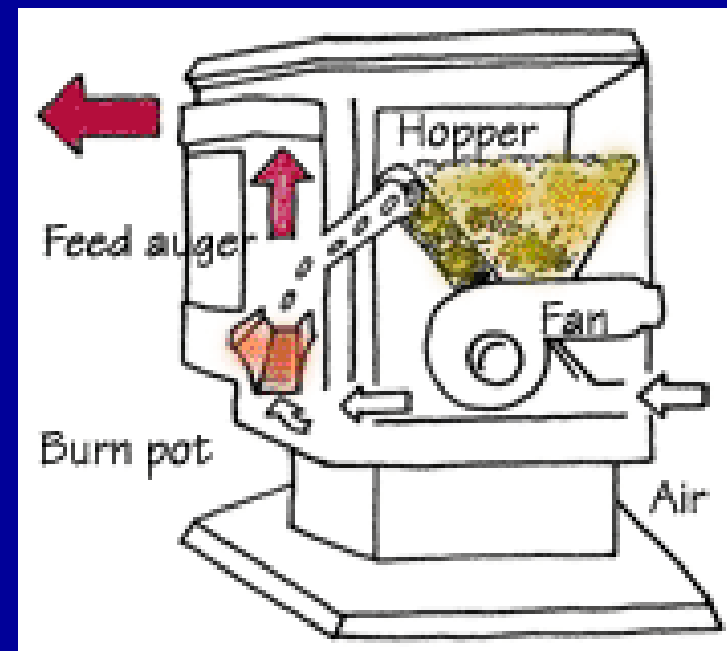
- Inserts or free standing units are common.
- Direct Vent thru walls or into chimneys
- 2 fans: 1 Exhaust fan, 1 Circulator fan (Hot air)
- All come with temperature sensors that “Should” shut unit down in case of a malfunction.



Pellet Stoves:

Concerns:

- Broken or cracked front glass
- Door Gasket damaged, needs to be sealed for proper operation.
- A power failure prevents the exhaust of smoke, filling the house.
- Lack of cleaning and maintenance
- Not installed properly



Chimney Cleanouts:

- Cleanouts are located at the lower portion of the chimney.
- Maybe located outside, under snow and ice.
- Cleanouts can cause a fire hazard if not closed and next to combustible materials.



Chimneys and Creosote:

- Creosote is black or brown in appearance. It can be crusty and flaky...tar-like, drippy and sticky...or shiny and hardened. Creosote is highly combustible. If it builds up in sufficient quantities – and catches fire inside the chimney flu instead of the firebox of the fireplace or wood stove – the result will be a chimney fire.



Chimney Damper:

- Chimney Dampers are designed to close off the flu, preventing heat from escaping when the fire place is not in-use.

Open Damper

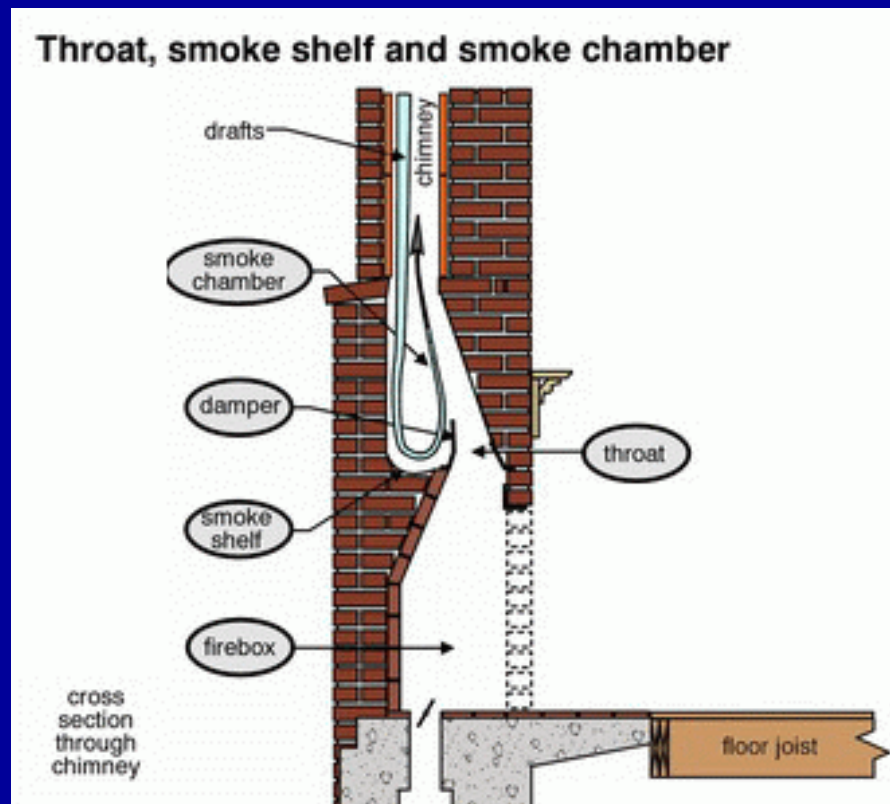


Damaged Damper



Chimney Shelf:

- Burning Creosote will breakaway from chimney and land on the smoke shelf and continue to burn.
- The Up-Draft will carry small particles up chimney and re-ignite any un-burnt creosote.



Extinguishing a Chimney Fire

- Determine where fire is burning.
- Determine if the fire is contained to chimney or flu
- **Check for extension out of the Chimney. TIC!!**
- Wear Proper PPE & SCBA when operating near the chimney.

Access to Chimney:

Ground Ladders

Aerial Trucks



Roof Operations:

- Wear proper PPE and your SCBA!
- Remove the Chimney cap if necessary
- Burning creosote needs to be removed from the chimney and flu.
- Stay upwind from the top of the chimney. Don't stand in the Smoke
- Have a hand line ready incase the roof catches fire



Roof Operations Cont.:

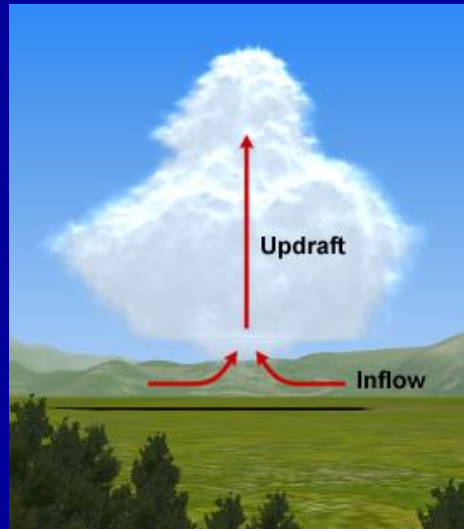
SAFETY ON and OFF THE ROOF!!!

- Wear proper PPE and your SCBA!
- Roofs are steep and slippery. Maintain contact with the roof ladder or aerial.
- Snow and Ice make a dangerous situation, make use of an aerial truck if possible.
- Use utility rope to tie off tools from falling.
- **NEVER STAND BELOW THE ROOF WHERE TOOLS CAN HIT YOU!!**



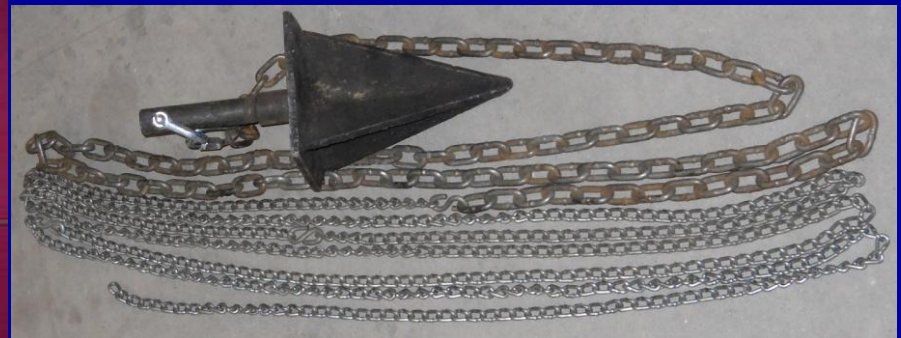
Roof Operations Cont.:

- The Natural updraft carries particles out, *Never look directly into chimney!* Use mirrors to check progress.
- The updraft from the chimney also makes spraying water down the chimney less effective than from the bottom up. Misting water is most effective inside only.



Roof Operations Cont.:

- Use of weights and scrubbers will break apart the creosote in the chimney.
- Drop the chimney brush until chimney sides are clear of debris and you can see the bottom.



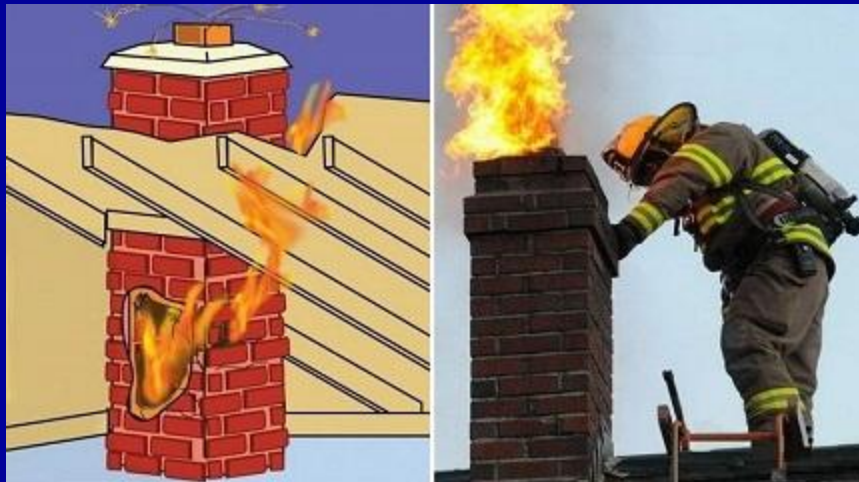
Indoor Operations:

- Set up canvas tarps from the fireplace to the exit
- Extinguish fire in firebox and clear out the fire shelf
- Remove ashes and logs
- Work with the roof team to shovel out ashes/embers as they are knocked down
- Spray the water can into the chimney and allow steam to extinguish fire (if needed)
- Never Look up the chimney, watch for the falling weight and ashes with mirrors
- Wet down the ashes outside



Chimneys can fail due to:

- Damage
- Cracks
- Excessive Heat
- Improper installation



Fire Extension:

- Use the Thermal imager on all floors to check for possible extension.



The Homeowner:

- **Advise the homeowner that even though the fire is extinguished, a thorough cleaning is needed by a professional cleaning company**
- The fire place should not be used until inspected for any cracks in the chimney liner, missing or damaged bricks, or damage from excessive heat
- Report any findings, damage to homeowner
- Contact the BUILDING INSPECTOR and/or FIRE MARSHAL if any doubt of improper installation of a stove unit exists



Preventing Chimney Fires

- 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



Different Types of Chimneys:



Different Types of Chimneys:

Brick - Metal



**Remember:
MASK UP!**



if you can position it near the house, Ladder Trucks offer a safer approach than Ground Ladders.



Have Screw Drivers available to remove Chimney Caps





Pellet Stoves use 3"- 4" double walled exhaust pipe

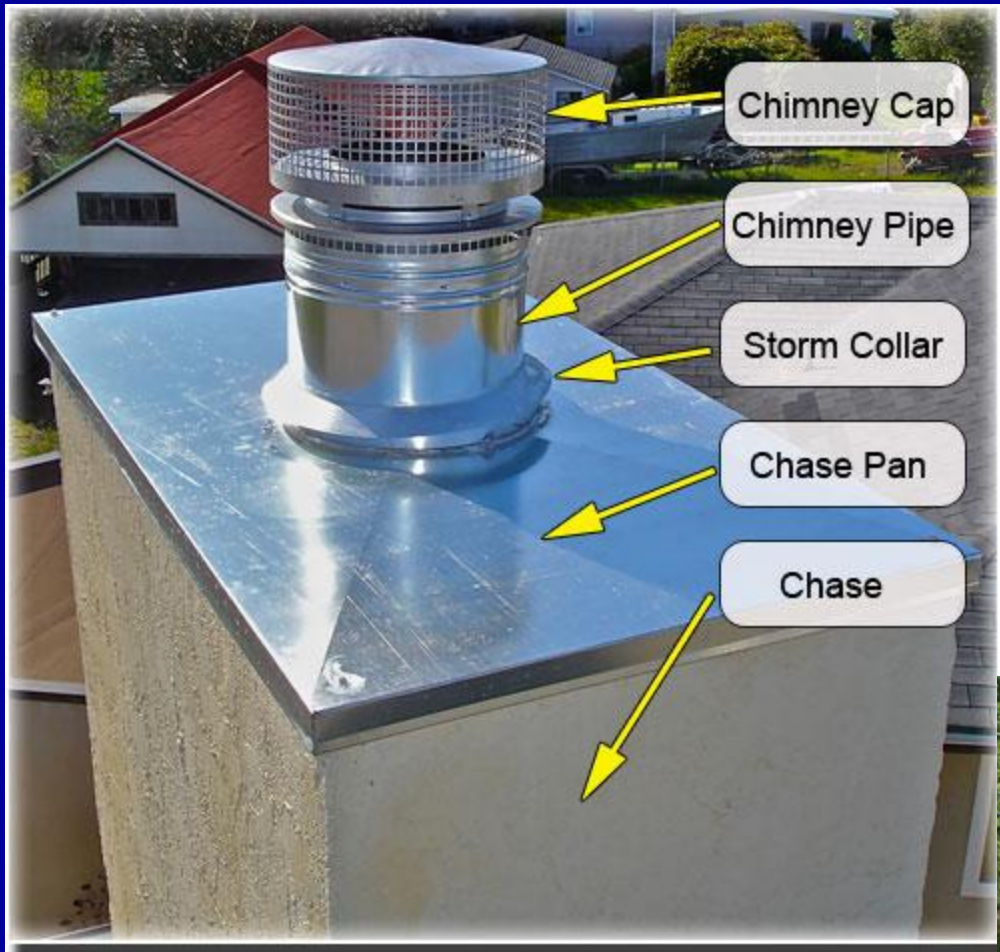


Wood Burning Stoves use 5" to 10" diameter piping depending on the application



Think it's a Brick Chimney?











Questions?

