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WOODSTOVE SAFETY & OPERATION TIPS

Welcome to the ever increasing numbers of woodstove owners who are enjoying the energy saving comforts of wood heat. When operated correctly, woodstoves are a safe and economical way to keep your home warm through the coldest winter months. The following tips have been prepared to keep you warm, safe and happy with your woodstove.

1. The first time you use your stove, the paint will "cure". This curing can cause a strong odor and often makes a smokey haze in the room. For this reason, it is best to make your first firing during a day when you can leave your doors and windows open for a while to air out the house. Also, remember not to place objects (kettles, trivets, etc.), on the stove surface until the paint has finished curing.
2. The first three or four fires in your new stove should be of relatively low temperature. This is a time to gently "break-in" and relieve the stresses in your stove. A temperature of 350-400 degrees is hot enough to cure the paint and allow these stresses to dissipate. Allow the stove to cool to room temperature between firings during break-in period.
3. Feel free to use enough paper and kindling to get your fire off to an easy start, but never use your stove as an incinerator. This practice not only overheats and abuses your stove, but is also the most common way of starting a chimney fire. Never burn trash, milk cartons, plastic containers or treated woods in your stove.
4. In general, operate your stove hot enough to give you the heat you want from it. However, surface temperatures in excess of 700 degrees should be avoided. To keep the chill off the house at night, load one or two unsplit logs in your stove, and close down the damper as low as you can without putting the fire out. You should have a good bed of coals waiting for you in the morning. Keep experimenting until you learn the right balance of fuel and air for your comfort.
5. Creosote is a tarry substance which condenses on the inside of your stove and chimney when wood has not burned completely. It is flammable and it is the fuel that feeds a chimney fire. Since complete combustion does not occur until about 1,000 degrees, creosote usually cannot be avoided. However, its accumulation can be reduced by proper operation. Always burn dry and well seasoned wood. Fuel your stove as you need the

WOODSTOVE FUEL - SELECTION AND HANDLING

As wood burns, it gives off volatile gases; gases containing fine particulate matter that contribute dramatically to Nevada County's air pollution, if not completely combusted. Air monitoring research indicates that the incidence of poorest air quality occurs during the winter months and during the early morning and late evening hours of the day; a timing that coincides with the residential and commercial wood heating season. Consequently, this degradation in air quality has been linked to the improper combustion of fuels in inefficiently operated woodburning appliances. Your application of the following recommendations for the proper selection and handling of your fuel will contribute to the efficient operation of your woodburning appliance and the protection of our air quality:

- 1) **SELECT HARDWOOD OVER SOFTWOOD** - The higher combustion efficiency and higher heating value of air-dried hardwoods (such as Oak) relative to air-dried softwoods (such as Pine) makes hardwoods the fuel of preference. Softwoods make a good fuel, but in general, may burn less efficiently than hardwoods due to their high resin content.
- 2) **USE AIR-DRIED WOOD ONLY** - Avoid burning freshly cut fuel wood. Either purchase properly seasoned wood or plan ahead by purchasing or gathering "green" wood far enough in advance of its use to allow sufficient time for proper drying. Your wood should be air-dried, or seasoned, in the warm summer sun for at least 6-8 months, preferably, 1 year. Ideally, burn wood that has a moisture content between 15-25 percent.
- 3) **SPLIT WOOD TO A 3 - 6 INCH DIAMETER** - To hasten the seasoning process, and to achieve optimum combustion conditions, your wood should be split into pieces 3 to 6 inches in diameter.
- 4) **STACK YOUR WOOD TO PROMOTE DRYING** - Just as splitting hastens seasoning, proper stacking also aids the drying process. Store your wood loosely leaving "air-spaces" between pieces and provide for good air circulation up through your stack by preventing it from coming in contact with the ground.
- 5) **COVER YOUR WOOD TO MAINTAIN DRYNESS** - Store your wood in a location that promotes seasoning by allowing it to remain uncovered and exposed to the warm summer sun. As winter approaches, maintain your wood's seasoning by protecting your stack from the rain or snow. Avoid choosing a location in or near your home. Fuel wood stored in these locations can pose a potential fire hazard or an avenue for insects to enter your home.
- 6) **KNOW WHAT NOT TO BURN** - Make sure your wood is clean and free of soil, mud, and noxious chemicals. Notably, avoid using wood that has been coated with paint or treated or manufactured with noxious additives, adhesives, or preservatives. Such woods include railroad ties, utility poles, mud sills, all types of particle board, and plywood. Don't burn plastics, rubber, styrofoam, metal or garbage!

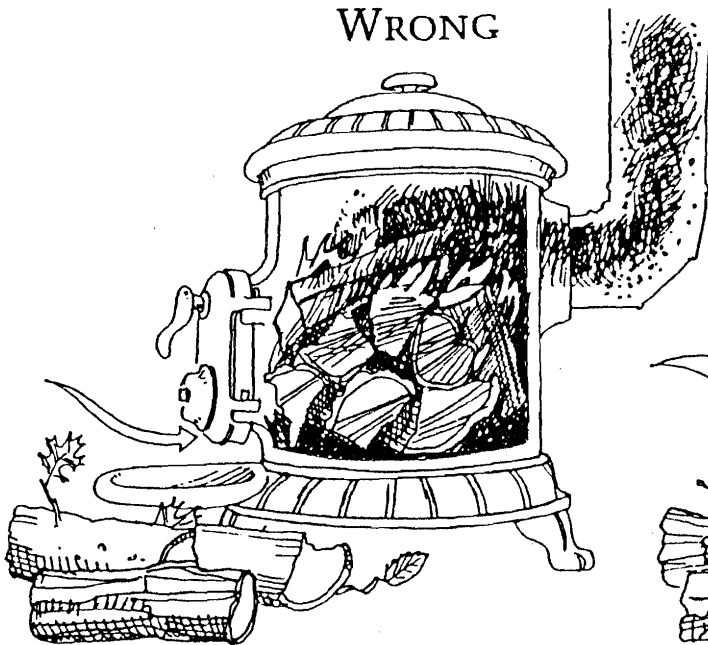
Operating a woodburning appliance **EFFICIENTLY** is **NOT** as simple as opening its door, throwing in something that you hope will burn, closing its door, and happily walking away. The efficient operation of your woodburning appliance requires a conscious effort on your part to supply it with the proper mix of **FUEL, OXYGEN, and FIRE TEMPERATURE**. When considering your fuel, always satisfy the following factors: **SELECT** it carefully, know and maintain its proper **MOISTURE CONTENT**, cut or purchase it split to the appropriate **SIZE**, and safely **STORE** it in a way that protects its seasoning. Always **PLAN AHEAD**; if possible, acquire your fuel needs 1 year in advance. For additional information, contact the Northern Sierra Air Quality Management District office in Nevada City at 265-1398.

Remember, a **SMALL HOT FIRE, FREQUENTLY STOKED** with **DRY, CLEAN, 3-6" DIAMETER FUEL**
provides for

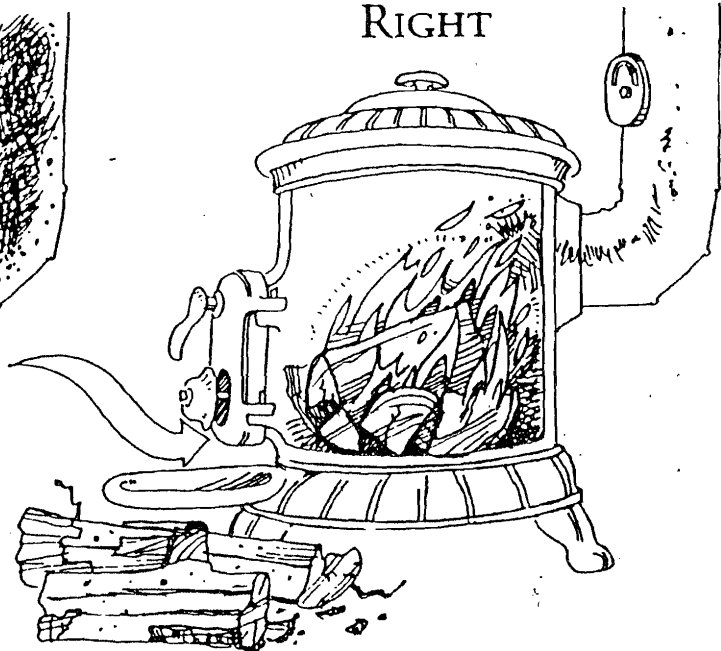
MAXIMUM COMBUSTION = MAXIMUM HEATING VALUE = MINIMUM AIR POLLUTION

Getting The Most From Wood Stoves

WRONG



RIGHT



Using a wood stove does not require an operator's license. But there are certain "rules of the road" that will dramatically affect the performance (and your opinion) of wood stoves.

BURN IT HOT! is the most important dictum. The hotter the fire, the more complete the combustion. Small loads of wood and an open draft will provide a hot fire and efficient use of the fuel.

As wood burns, it gives off volatile gases (including carbon dioxide, carbon monoxide, hydrocarbons and a variety of polycyclic organic compounds). These vapors, which contain about 50 percent of the wood's heat value, are released at relatively low temperatures, but will not burn until they are ignited at temperatures of 1,100 to 1,200 degrees F.

Sluggish fires never get that hot. The volatile gases never reach full combustion, and the result is an inefficient stove that belches smoke, odor, creosote and air pollution.

When adding wood to the stove, open the draft controls to a maximum setting for 10 to 30 minutes to bring the combustion temperature up quickly. Then partially

close the draft to obtain a moderate (but hot) burn rate.

Burn wood that has been seasoned for at least one year. Air-dried wood has less moisture (15 to 25 percent) than freshly-cut timber (40 percent or more), and typically yields 20 percent more available heat. Wet wood lowers the burning temperature, causing incomplete combustion.

Getting the most from any wood stove is predicated on having the right size unit for the job. **BIGGER ISN'T NECESSARILY BETTER!** An oversized unit can be very inefficient. A correctly sized and installed appliance will make it easier to reach and maintain proper combustion temperatures. Consult your stove dealer about the right appliance for your needs.

Also ask about a flue thermometer. This handy device will help you burn a hot fire by indicating the temperature inside the stack. The reading will tell you if any fuel or air adjustments are necessary in order to increase or decrease the fire's intensity.

By following a few simple rules, homeowners can keep their stoves operating at peak performance and get the most for their heating dollar. □