

Barn Fire Prevention

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Barn fires are one of a horse owner's biggest nightmares. Thankfully, most barn fires are preventable. Fires need heat, fuel and oxygen. A barn with good ventilation provides oxygen, and fuel can be anything from wood, hay, bedding, alcohol and liniments. The heat source can be sunlight, friction, electrical energy, flame and bacterial/chemical reactions. Use the rules below to evaluate your barn for sources of heat, fuel and oxygen.

Stable Rules for Fire Prevention Stringently enforce "No Smoking" rules!

Keep your barn clean!

A broom and a rake are excellent fire-prevention tools. Use the broom to regularly clean cobwebs, which provide pathways for the flames to travel. Keep all loose hay and straw raked up. Cover openings if you have hay drops from loft into the barn.

Keep the barn cool.

Hay or sawdust that is incompletely cured can have a chemical/bacterial reaction. This can generate heat, causing spontaneous combustion, mild irritation or a sooty odor, which may indicate spontaneous heating.

Check newly baled hay for at least 6 weeks.

You can insert a meat thermometer into the center of the bale. If the thermometer reads over 150 F, recheck every four hours. At 175 F or higher, call the fire department to have fire fighters standing by with charged hose lines when the bales are moved, as they may ignite due to the increased availability of oxygen.

Electrical malfunctions are a major cause of fires.

All wiring should be enclosed in metal or PVC conduit (pipe). Conduit protects wires from corrosion and destruction by animals. Hire an electrician to install a switch which will turn off all electrical power to the barn without turning off power to the water pump. The switch should be located on the outside of the barn and clearly marked.

Electrical appliances are also a concern for barn owners. Portable heating units and heat lamps are a major cause of barn fires. No heating appliance should ever be left

unattended. Radios, clippers, extension cords and water heating coils should be disconnected when not in use. Routinely, (every three months) clean the dust from electrical devices and outlets with a can of compressed air.

Look outside your barn for fire prevention.

Remove weeds, trees, old equipment, and wood piles and debris from around the barn. This is fuel that can ignite and start a barn fire or can aid the spread of fire from one structure to another.



Stable Fires are one of the biggest nightmares for any horse owner. Photo courtesy of Bath Fire Department, Bath, Ohio

Consider your farm equipment

Tractors and other vehicles should be parked at least 50 feet away from the barn. Refueling should be done far away from the barn, as gasoline vapors can easily ignite. Be sure to clean off equipment after each use as dried grass or plant material on the tractor can ignite. Never leave a tractor running in the barn! All

engines produce an odorless gas called carbon monoxide, which displaces oxygen from red blood cells resulting in unconsciousness and death.

Fire Detection/Alarm Systems

Most residential and commercial smoke detectors will not work in a barn if dust clogs the mechanisms. There are fire-safety companies that specialize in smoke-detection systems for barns. Heat detectors can be used in a closed room like a tack room. They are activated when the air temperature rises 10 degrees in 60 seconds. An intercom system between your house and barn can also be very valuable if someone is home to monitor it. The safest and best fire alarm systems include a device that sends the alarm to a monitoring station through the phone lines to the fire department so that response is immediate, however regular cleaning and maintenance is required to minimize false alarms.

A telephone is a necessity in the barn. In most cases it is best to call 911, however *a sign near the phone should clearly state the number of the fire department and the barn address.*

Lightning Protection

Nine out of ten barns struck by lightning burn to the ground from the resulting fire. Lightning may start a fire by striking a metal object, striking and following a power

line to the building or lightening may arc from a tree to the building. Lightning rods are the best protection because they provide the lightening a path to the ground.

You can find a certified lightening rod installer in your area by calling the Lightning Protection Institute at 800-488-6864 or online at www.lightning.org.

Building a Fire Safe Barn

- Use fire resistant materials (FRTW). Fire retardant treated wood will reduce flame spread. The wood should have a stamp indicating the fire rating of the material
- Use fire retardant paints and varnishes
- Make sure that the barn has large and wide exits! Exits should be as wide as the aisle
- Aisles should be at least 10 feet wide
- Stall door latches should be easy to operate with one hand
- Hay and bedding should be stored in a separate barn whenever possible
- Upper level hay storage is preferred to ground level because flames and smoke move upwards
- A solid partition (floor to ceiling) should be present in every fourth stall to keep flames from jumping into the next section
- Consider a sprinkler system. They save lives. Dry hydrants can be installed in local ponds

Some excellent resources regarding fire safety in barns are The National Equine Safety Association
rb4bar@quixnet.net
Lightning Protection www.lightning.org
Fire Retardant Coatings www.flamecontrol.com
Dry Hydrants www.heimanfireequipment.com

Responding to a Fire

What to Do When a Fire Starts

Every second is critical once a fire starts! *Call the fire department first before you do anything else!* Be sure to state to the dispatcher that you are reporting a stable (not barn) fire and horses are involved. Stay on the line until the dispatcher is finished asking questions.

Try to save what you can, but *do not endanger your life or others*. Remember, once the fire department arrives, the fire department assumes responsibility until the fire is determined to be extinguished. You are required by law to follow all orders issued by the fire department at the scene of a fire. Evacuating animals is not the job of the fire department; however, fire fighters will help you with an orderly evacuation of animals. The fire fighters may not be able to predict what a horse will do, but they understand

what the fire will likely do.

Evacuation

A barn's fire evacuation plan must be individualized for each stable and is dependent on where the fire starts and how it is moving. Having a plan in place and going over it with barn staff and boarders ensures a better response if a fire does break out. When evacuating, start with the most accessible horse. Blind fold only if absolutely necessary. Horses must be led out and away from the barn, otherwise they may attempt to return to a perceived safe place....their stall. Do not just turn the horses loose! It is dangerous for the horses and the emergency personnel. The horses should be kept together and tied or placed in a paddock with a secure gate. Remember they are herd animals and seek companionship when frightened. Some horses will remain fixed and unwilling to leave their stall. Try to comfort the horse and remain calm. Sometimes horses will follow another horse out of the barn. The National Equine Safety Association (NESA) has a more in-depth evacuation plan, which can be tailored to your barn.

Fire-Suppression Techniques

Fire-suppression techniques include portable fire extinguishers, water supplies and sprinkler systems. Never fight a fire if the fire is already large, spreading or could spread and block an escape route. Never use a fire extinguisher if you are not sure it is the right type of extinguisher for that fire. For instance, do not use a Type A Extinguisher on an electrical or grease fire. It is optimal to have a water source close to exits that can be used in the case of fire. Fire suppression is best left to the professional, but in an emergency we all do what we can. Just be safe and don't risk your life or the lives of staff or boarders.

Fire extinguishers should be located near the exit doors, in the tack room, and near the electrical box. Extinguishers should be checked and kept clean monthly and recharged annually. Fire protection companies will do an annual test and recharge of your fire extinguishers to ensure they are ready when you need them and are also able to train you and your staff in the proper use of fire extinguishers. You can find out more about fire extinguishers by going to www.osha.gov/doc/outreachtraining/

Your best resource is you local fire department. Most *local fire departments are willing to come out to inspect your farm!* In doing so they can point out hazards that you may be able to easily remove, they get to know the layout of your property and where your animals are housed. The fire department will be able to make suggestions on fire extinguisher type and placement as well as direct you to resources to develop a fire safety plan for your facility.