

## **BARN FIRE SAFETY:** Fact Sheet for Horse Farms



Britton W Cosby, Photographer

A self safety emergency plan is an important step to maintain the professional integrity of your equine business. By establishing procedures and protocols in advance of a pending or sudden disaster the safety of the horses and humans involved are better served. Some of the disasters to consider are: Structure Fires, Brush/Forest Fires, Hurricanes, Ice Storms, Blizzards, Tornados and Severe Cold.

It is of extreme importance to develop an horse farm barn fire safety program for your facility. The purpose of the plan should be for the safety of the horses, handlers, and others who are in direct contact with the horses and your barn. Following a barn fire safety plan can help prevent injury and/or loss of life to both animals and humans.

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[www.horse-safety.com](http://www.horse-safety.com)

**Equine Risk Management Group**

ERMG Document No. 2011 - 006

Disclaimer: The content and information conveyed in this document provides the reader with basic information associated with the safe care, driving, handling, and riding of horses. The application and utilization of the information and practices conveyed herein are considered to be best practices and/or those steps associated to accomplish safe equestrian practices. The reader is reminded the inherent risks associated with horses can be overpowering to the equestrian regardless of what safe practices are being applied to the animals. The purpose for implementation of safe equestrian practices is to reduce and/or eliminate the death, injury and dismemberment directly or indirectly from participating in an equestrian activity. ERMG makes no claims that following the procedures, recommendations and suggestions contained herein will prevent death, injury and dismemberment from and in association with participation in equestrian activities.

**The News Headlines Tell the Story of Fire Disasters**

The news headlines in newspaper, magazines and on the internet tell the story of disasters and tragedy, everything from a structure fire, blizzard, tornado, flash flooding and hurricane.

Read these headlines reporting on barn/stable fires and ponder how you would deal with these emergencies, and whether your preparedness is sufficient to handle a crisis like these, and perhaps prevent them from becoming a disaster. If you can prevent these, you are a good risk manager.

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**Criminal intent ruled out as cause of barn fire that killed 2 people, 43 horses**

Dayton Daily News, December 5, 2009.

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***19 Horses Rescued, One dies in Chatham Township barn fire***

The Media Gazette, July 16, 2009

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**27 Horses Killed in Stable Fire**

By Mike McPhate, Washington Post. September 6, 2010

At least 27 thoroughbred race horses died early Monday near West Virginia's Charles Town Races after a fire broke out at a group of privately-owned stables, local and race officials said.

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Stable fire kills at least 14 horses

**Retired racehorses and their young die**

By Dave Stafford The Herald Bulletin. April 12, 2010

CHESTERFIELD, Ind. — At least 14 horses died as a wind-swept fire destroyed a stable Monday morning in southeastern Madison County.

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***Equine Therapy Barn Loses Six Horses in tragic February 20th Fire***

By Linda Ann Nickerson Equestrian Examiner February 21, 2011

Fire broke out in a Missouri equestrian barn Sunday, destroying the stable and killing six therapy horses.

## Introduction to Fire Safety

The last words you want to hear hollered at your horse farm are, “Fire! Fire! Fire!”, followed by “What do we do? What do we do?”.

Horse farm fire safety is about prevention and learning what *not to do* in and around barns and stables. So much of the information is common sense however, it takes time to learn where some of the risks are and how they will impact on the safety of your animals, structures and well being of humans. Fire prevention is not instinctive, you must learn the types of risks and methods of prevention when working in barns and stables.

Do not delay in organizing a fire prevention program for your farm. After reading the following information, put a plan into action. It could save lives for both horses and humans.

Think about these comments from an expert on fire prevention:

*Such a terrible, unforgettable sight – in the blink of an eye, fire can destroy a barn structure and all its occupants while humans stand back and watch helplessly. It follows that the largest fire and most spectacular incident that many small community and rural fire departments face is the common barn fire. Yet, in the mindset of owners of these structures they cannot believe it would happen to them, so any means of fire detection/prevention is often overlooked, and they leave fire protection entirely to chance. However, the fact remains that annually there are more than **1,200 barn fires**, most of them preventable, occurring each year in the United States and result in nearly **\$33 million dollars in property damage**.<sup>1</sup>*

You need to work to achieve this outcome.....

### **Barn Fire: Sprinklers Save Harness Horses**

by: Tracy Gantz The Horse.com

Sprinklers in a barn at Plainridge Racecourse, a harness racetrack near Boston, saved some 35 horses when a fire broke out May 9. High winds could have sent flames to other barns when the blaze began about 3 a.m. The racetrack, located in Plainville, about 35 miles southwest of the Boston area, had a sprinkler system installed in the barns in 1999.

Not this outcome.....

### **Indiana Barn Fire Leaves 13 Horses Dead**

by: Kelsey Riley The Horse.com

A barn fire at Indiana Stallion Station near Anderson, Ind., the morning of April 12 resulted in the death of 13 horses and sent three stable employees to hospital. The fire erupted around 10:30 a.m. on April 12.

<sup>1</sup> William Eppich. [Barn Fire Protection](http://www.firesafetyinbarns.com). www.firesafetyinbarns.com. 2011

**The Common Causes of Barn and Stable Fires**

As you read down the following list, recognize the number of common causes for a barn and stable fire, most of which you can eliminate or reduce the risk if you had been warned in advance. We must remember, the barn and stable are not a house where we take so many things for granted when it comes to fire prevention. So, may be it is time to think about the barn and stable as a “home”, and practice those tips for our horses like we do for our human family.

These are not ranked in order of importance.

- Spontaneous composition of improperly cured hay and forage type bedding
- Lightning strikes to buildings
- Careless smoking in barns and stables
- Overheating of plumbing related heater devices to prevent frozen pipes
- Overheating of electric supplemental portable heater appliances during winter
- Faulty electrical wiring and circuit boxes
- Defective electrical appliances [i.e. coffee pots, microwave ovens, toasters, etc]
- Overheating of electrical or gas hot water heating elements
- Defective electric fence chargers
- Defective and/or excessively dusty electric fan motors
- Sparks from machinery operating in areas close to barns and stables.
- Sparks from a forge being operated in and near barns and stables.
- Overheating of portable lighting and heat lamps
- Careless burning of waste materials and rubbish
- Overloaded, improper gauge extension cords
- Presence of accelerants [i.e. aerosols, gas, kerosene, diesel, propane, etc]
- Arson

And so, here are the statistics on the leading causes of structural fires. It is important to note, there are no statistics that breakout specifically horse barns in this study. Therefore, horse barns/stables are combined with all types of agricultural “barns” for the purpose of reporting this data. However, the important point is the statistics support the list above in the main causes of barn and stable fires.

**Leading Causes of Structure Fires in Barns****2002-2005 Annual Averages<sup>2</sup>**

<u>Leading Causes Fires</u>	<u>Average Annual Fires</u>
Heating equipment	230 (21%)
Electrical distribution and lighting equipment	150 (14%)
Intentional	80 (7%)
Lightning	60 (5%)
Playing with heat source	30 (3%)
Animal	30 (3%)
Smoking materials	20 (2%)
Spontaneous combustion or chemical reaction	20 (2%)

<sup>2</sup> Source: NFIRS 5.0 and NFPA Survey

From the chart below, it becomes obvious where the emphasis needs to be placed on assessment of risk when using any of the listed equipment. Over 25% of the fires reported in this study were caused by some form of heating system. This suggests to reduce the risk of fire in the barns and stables is to carefully impose policies to prohibit or reduce the use of such equipment to directly impact on the potential to causing a fire.

<b>Breakdown of Identified Heating Equipment Involved in Barn Structure Fires<sup>3</sup> 2002-2005 Annual Averages</b>		
<b>Identified Heating Equipment Fires</b>	<b># of Fires</b>	<b>% of Total</b>
Heat lamp	130	12%
Heater, excluding catalytic and oil-filled heaters	30	2%
Unclassified heating, ventilating & air conditioning	30	2%
Stove intended for heating	20	2%
Water heater	20	1%
Oil filled heater	10	1%

The distribution of the frequency of fires during a 24 hour period are quite interesting as a means to assess the highest to lowest risk times.

Midnight to 7am	22%
7am to 7pm	56%
7pm to Midnight	23%

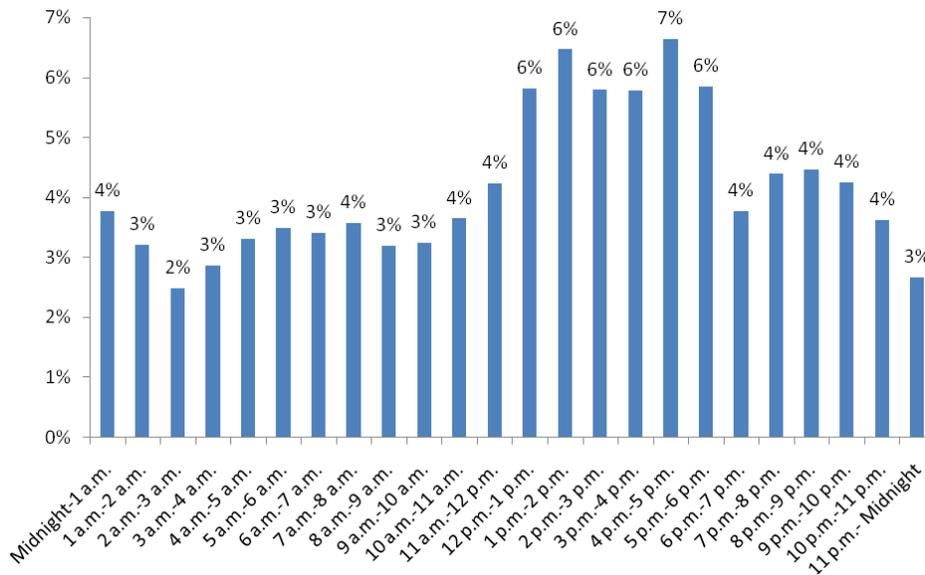
From this information we can see the majority of the fires occur during the normal working hours, when typically more people are working in and around the barn/stables. It could be concluded that the interaction of people during their daily chores does have an impact on the ignition of fires. This simply re-enforces the notion that staff need to be trained in fire prevention and detection, as their presence does impact on the potential for reduction of this risk.



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<sup>3</sup>Source: NFIRS 5.0 and NFPA Survey.

**Structure Fires in Barns by Alarm Time, 2002-2005<sup>4</sup>**



So, if the presence of persons during the day have an impact on the risk of creating fire in a barn and stable, does the time of year contribute to this factor. In the following chart, it becomes obvious the traditionally colder months of the year are the months where there is a greater number of barn fires per month. Once again, there is a direct correlation between the cold season of the year with the need for providing supplemental heat to prevent water sources and pipes from freezing. Further, the use of heating equipment to provide a source of heat for good animal management as well as provide warmth for persons working on and around the barns and stables becomes another factor in the process of understanding the risk of fires in barns and stables.

**Structure Fires in Barns by Month, 2002-2005 Annual Averages<sup>5</sup>**

Month	Fires
January	110 (10%)
February	110 (10%)
March	120 (11%)
April	120 (11%)
May	90 (8%)
June	80 (7%)
July	100 (9%)
August	70 (7%)
September	70 (7%)
October	60 (6%)
November	80 (7%)
December	80 (8%)

**Total 1,090(100%)**

<sup>4</sup> U.S. Structure Fires in Barns, 10/08 NFPA Fire Analysis and Research Division, Quincy, MA

<sup>5</sup> Source: NFIRS 5.0 and NFPA Survey

## Initiate A Fire Prevention Program

1. Have an emergency list of other barns in the area that may be able to assist you in the time of a fire
2. Know what fire departments are closest to your facility
3. Have directions to the farm with important telephone numbers on display throughout the barn
4. Work with your local fire department on establishing the best practices you can do to prevent a fire.
5. Have the your staff attend emergency fire fighting short courses, on use of fire suppression equipment, including the proper uses of water vs chemical.
6. Ask for a fire inspection of your barns/stables and buildings to assist you in creating a prevention program.
7. Get your neighbors involved in your plan, even those without horses. They may be the difference between life and death of your horses if no one else is around
8. Post "No Smoking" signs at all entrances to the barns and buildings. You can add a touch of class by stating on the signs, "Please NO Smoking".
9. Make sure all doors are working and are able be open or shut in an emergency situation
10. Install smoke detectors in all offices, bathrooms, kitchen and cooking areas as well as sitting areas, and public rooms.
11. Install automatic sprinkler systems in all barns and stables where animals are housed.
12. Install an alarm system to notify all persons in the barn and stable areas there is a fire emergency, and they should report to their pre-assigned locations for assisting with the evacuation of animals and/or the fire suppression.
13. Test fire extinguishers annually to make sure they are properly charged. Remove all expired and used fire extinguishers. Replace extinguishers according to the manufacturer's labeling.



## The Fire Prevention Program

1. Establish an Escape Plan for Horses and Humans
2. Conduct Fire Drills for the Emergency Evacuation from the Structures
3. Participate in Fire Fighter Training
4. Assessment of Horses Behavior
5. Know How to Use Fire Suppression Equipment

## 1. Escape Plan:

- An escape plan should be established, displayed and given to all staff and persons using your barn and stables, including boarders.
- The escape plan should include diagramed routes of escape around the structures.
- Fire exit signs need to be posted at all appropriate safe exits the facility
- Determine a paddock and/or pasture large enough and far enough away from the barn and stables to hold horses if a fire occurs
- Practice the escape plan route, include all staff and stable boarders in an actual “walk-through” with the plan.

## 2. Fire Drill:

- Annually practice a fire drill. If you have changes in personnel and boarders perform drills on an as needed basis
- Work with your local fire department to figure out a response time and learn how to handle horses in a fire situation
- Establish how long you have to remove horses safely from the fire
- Take into consideration that horses will go back into a burning barn even after being led to safety. Get horses out of the barn and into a safe fenced holding area as carefully and quickly as possible.

## 3. Train Firefighters:

- Annually schedule for a visit from the fire department visit to check for fire safety hazards
- Give the firefighters a layout of the barn and have them perform a full fire safety inspection
- Firefighters would much rather visit the premises before a fire outbreak
- Train the firefighters on the process of handling horses, allow them to lead the horses in and out of the stalls
- Training the firefighters on handling horses will not only save the lives of the animals but the lives of the fire fighters.
- Make sure the fire fighters know where to find halters and leads.



## 4. Horse Training:

- Assess which horses will be a problem should a fire occur
- Be aware the horses may be frightened by the visual and audio threats of firefighters, flashing lights, sirens, hoses, extra lighting, etc.

- Practice the escape plan with horses so they will know what to expect should smoke or dangerous situations arise. In some cases, artificial smoke could be used to simulate a fire, to train horses, farm personnel and fire fighters about the risk of handling horses in these conditions.

## 5. Equipment:

- Mount fire extinguishers every 50 feet and have them inspected and tagged annually
- Use at least 10 lbs size extinguishers rated ABC or those recommended by your local fire officials.
- Always have halters, ropes and lead shanks near every stall.
- Have designated areas to keep flashlights, mobile phones, fire blankets, and first-aid kits

**REMEMBER, the best method to deal with fire prevention is to:**

**PLAN, PLAN, PLAN**

**and always keep safety in the forefront of your horsemanship skills.**

## Don't Let This Happen To You



The Batavian, 2011