



Fire Safety

Teaching Notes for Powerpoint Slides

Slides #2 to #19 FIRE!

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In the 1970s, a group of government agencies studied stable fires and the NFPA published a report. What they found was:

- Horses can survive a fire less than one foot in diameter or with a temperature less than 150°F at a level of 15 feet. If a fire starts in a stall, the horse has less than 30 seconds to be rescued. Sadly, most horses in a burning stall will die from smoke inhalation.
- Depending on the stall construction, horses in the adjacent stalls have up to five minutes to be rescued.
- In one to two minutes a burning bed of straw will generate more heat than a pool of burning gasoline.
- Fire doubles in size every three minutes and it only takes three minutes to reach a temperature over one thousand degrees.

The sad truth is that there is no detection device available that will save your horse's life if there isn't someone IN the stable to begin evacuation immediately. That includes the high tech smoke detection systems that buzz into the local fire department. Properly installed sprinklers, on the other hand, will extinguish 95% of all stable fires. They control and prevent major fire spread and generally reduce the damage. What the Fire Safety Standards tell us in their guidelines is that regular smoke alarms are useless because false alarms are set off by dust and moisture in the stable. There are systems available for stables but the only truly safe system uses sprinklers. In fact, the only answer— other than 24/7 turnout -- is a good sprinkler system and vigilance.

#1 – CARELESSNESS

The MOST careless action is smoking around the stable. Even if you are a smoker you know that it's dangerous. Do not allow smoking around your stable. Period. Even if it's you.

If you are like most of us, you like the idea of having an attractive entryway to your property. But that can be like the fuse on a firecracker. Someone driving by tosses a cigarette on a hot summer day. The dry grass at the roadside burns to your decorative shrubbery or dried out grassy area, and WHOOSH! The fire flies up your driveway to your stable. Is there a pathway of burnable material leading from the road directly to YOUR stable? If possible leave a barren strip 15 to 20 feet wide along the driveway and the road as a firebreak. There should also be a strip around the stable. Do you have a defensible space around YOUR stable? Keep the outside clean as well. Clean off your roof and gutters regularly. Brush and dry grass are conduits to the stable so keep weeds cut down, and shrubs and trees pruned back.

Do you park your vehicles close to the stable? Anything that runs on fuel or has a motor that heats up is dangerous around hay and bedding. A safe distance for this equipment (and the fuel) is 50 feet. That includes tractors, lawn mowers, and chainsaws – anything that runs on fuel. Make sure all refueling is done at a safe distance from your stable. Gasoline vapors are heavier than air. They can settle in depressions in the floor of the stable such as drains or beneath the foundation. Just pouring fuel from a can into a vehicle fuel tank allows vapors to escape.

#2 -- ELECTRICAL

Electrical fires are often caused by faulty wiring, or from using residential type outlets and extension cords. Take a look at the wiring in your stable when you go home. Is it enclosed in conduit or do you run extension cords and wiring where horses or mice can chew on them? Are your appliances plugged into an extension cord you brought out from your house? Maybe draped over nails?

Surprisingly, cobwebs are a major cause of fires. Fire can race along the strands of the webs, dropping fire along the way into the straw or shavings in stalls, hay nets, bales of hay, clothing, and blankets.

Exposed light fixtures can be damaged by horses, and when a rearing horse hits a hot light bulb, the fragments fall to the bedding, and the results can be fire. It's been said that horses are like three year old children that happen to weigh a thousand pounds. When they're kept in stalls with nothing to do, they'll often LOOK for trouble!

Appliances such as heat lamps, water heaters, microwaves, radios, and clippers that get covered in dust and cobwebs can overheat and shower sparks into bedding or feed. Do you unplug all of your appliances when you're finished using them? Do you dry your wet blankets on a heater? Do you leave your hot clippers on a nearby hay bale or a shelf covered in dust and cobwebs when you're finished using them?

#3 – HAY STORAGE

Improperly cured hay can be damp and is a hazard. Due to leaf content clover and alfalfa hay are the most prone to incomplete curing. Damp hay can smolder for quite a while, then, when oxygen is introduced, it flares up into fire. If there is a "sooty" odor or your eyes water when you're around the hay, it could be damp. If you suspect a problem, make sure you have your fire extinguisher sitting next to you BEFORE you move the bales since they can ignite when they're moved.

Ideally, hay should be stored in a separate building and in multiple small stacks instead of one huge stack. It used to be common practice to sprinkle a light layer of rock salt on each row of bales while stacking them. This is supposed to help prevent fire by soaking up the moisture in the bale. And horses don't seem to mind it.

Make sure you put your hay up on pallets so it's well ventilated, and that there are no leaks in the roof that will soak the bales. And plan delivery of hay on non-rainy days. Portable garages with pallet floors can make good hay storage areas. The most important considerations are ventilation, isolation and protection.

WHAT YOU CAN DO

Every stable should have at least two exits. According to the Humane Society of the US, if you have less than 12 stalls, two exits are sufficient. In larger stables, 12-24 horses require 3 exits. All aisles should be wide enough for two horses to pass each other easily and all exits should be as wide as the aisles, with no blind corners where rescuers and horses can get hung up in heavy smoke.

The stall doors should either slide open completely or open outward. They should never open inward. All latches should be easy to operate with one hand. If you've ever tried to hold onto the lead of a jumpy horse while you fight with a stubborn latch, you'll know what I'm talking about!

There should be a fire extinguisher at each exit door and it should be obvious. If the stable is particularly long, put another at the half way mark. Figure on one every thirty feet, or so.

QUESTION: Where DON'T you want your main fire extinguisher? In the middle of the stable, where you have to run past the fire to use it; in the tack room.

Did you know that the most common fire extinguisher weighs 5 lbs. and lasts for 9.2 SECONDS?

*Did you know that most people who **HAVE** fire extinguishers have never used one, don't have a clue if they work, and have no idea the best kind to use?*

Every stable should have at least one phone and it shouldn't be buried at the back of the tack room, under a pile of blankets or show catalogs.

QUESTION: Where would you want a phone located in a burning stable?

Probably near the exit.

Phones are easy and cheap to wire – even for a novice – and they're so handy to have if you have a sick horse. How many of you write notes in the barn to take into the house – with me it's usually that I need to order some supplies -- and then find them days later when you take your jeans out of the washer?

Don't rely on just your cell phone. Even if you have consistent coverage, can you be 100% sure the battery will be charged when you need it and you won't lose your call as you move around the stable. Install a "hard-wired" land-line – a phone that doesn't have to be plugged into an electrical outlet. Then when the power goes out, you'll still have use of the phone.

Next to the phone, post written directions to the stable including landmarks, the physical address, as well as all emergency contact information like veterinarians, and home, work and cell numbers for anyone with a horse in your stable. It's a proven fact that

when an emergency happens your brain will disconnect and you'll forget your address, and even your name!

Keep the aisles clear. Getting horses out of stalls that are partially blocked with wheelbarrows, buckets and poorly designed and maintained stall doors; quickly and safely moving horses down aisles with dangling extension cords and hay bales; searching for halter and leads amongst blankets, clothing, tack, and boom boxes -- well, you can picture the problems. And these same problems are even more of a hazard for firefighters who don't know what's awaiting them in smoke filled buildings.

Have a cache of fire fighting tools on hand. Besides fire extinguishers, have water faucets on each side of your stable with long enough hoses to reach all the way around your stable and leave a bucket at each faucet. Have a shovel like a garden spade – with the pointy end – to dig dirt to throw on fire spots. It's a good idea to have a battery powered radio in your stable so you can monitor emergency channels and the news if the power goes off. And, finally, have a couple ladders long enough to reach the roof. You can tie them along the base of the outside wall so they'll be out of the way but easily accessible. These items should be used just for fires and everyone who uses your stable should know their location.

SLIDE #20

SPEED IS PRIMARY

IN CASE OF FIRE

The most important thing is to keep calm. Walk; don't run. When you speed up your body you take blood away from your brain and you'll need it! So breathe and think before acting. When you call 911, make sure you identify your exact location including landmarks – landmarks that are really there and recognizable, not "the old Jones place".

Unfortunately, if the barn is fully involved, it may be too late to save the horse. Horses have very delicate respiratory systems. Smoke inhalation will overcome a horse in a very short time and the horse will be lost.

ONCE YOU HAVE A HORSE OUT OF A STALL, SHUT THE DOOR! If there are more stalls, shut them ALL once the horses are out.

SLIDE #21**GETTING A HORSE OUT**

One person in the team will work with the horse (“handler”); the other will man the door (“doorman”). If the horse is standing facing the door, the handler will try to put on the halter from outside the stall.

Do not open the door until you have a firm grip on your rope. Be prepared for the horse to lunge out of the door.

If the horse is facing away from the door, the doorman needs to watch the horse at all times while the handler goes into the stall.

Bring a halter and lead rope. Talk to your horse as you approach. As soon as you step into the stall, touch the horse on his butt. Keep your hand on the horse as you make your way up to his head. Slide the rope around his neck, then put on the halter.

Once the horse is haltered, pull him toward you and lead him out of the stall.

If the horse will NOT come out of the stall you may have to herd him out. Be sure to close all stall doors once the horses are out; close all barn doors once the horses are out of the barn.

If there are other horses at risk, leave the ones that will not come out easily.

EVACUATING YOUR HORSES

When you evacuate the horses, start at the exit and work your way into the stable. If your at-risk horses are closest to the stable doors they are easier to evacuate. Take them to a secure pasture or arena that’s nearby but out of the way of fire operations.

When the firefighters arrive they will be busy with the fire; so don’t expect them to evacuate horses. A thousand pound horse, already scared witless by the fire, your excitement and the chaos, will not react well to a firefighter in turnouts. And, the firefighter probably doesn’t have horse handling experience in the first place. The fire department IS the top authority at the scene of a fire however, superseding even law enforcement and YOU.

As each horse is taken from his stall, close the door behind him. Unless you practice blindfolding, now is PROBABLY not the time to introduce this new experience to your horses unless absolutely necessary.

If you have the manpower, don't leave a single horse alone in a pasture or arena. Have someone stay with him until at least one other horse is put in with him. Because horses are herd animals and a scared horse left alone could panic, minimize your risk of another disaster happening. Don't turn horses loose. It works in the movies – sometimes – but not in real life. They will run through firefighters, over equipment, into cars, onto the road, or back into the stable.

SLIDE #22**OBSTACLES AROUND THE BARN**

Hay – usually in bales – and other feed, often in bins or garbage cans. The bins may be in tack rooms or in front of stalls. Hay may be in lofts over stalls, in a stall, outside stalls, or in separate buildings

Tack and other equipment – often in tack trunks in front of stalls or hanging on the walls. Saddles may hang from racks on the walls

Cleaning materials such as rakes, brooms, and buckets

Carriages, manure carts, wheelbarrows

Electric fans and portable heaters; electric watering systems; electric fencing

Obstacles in the stalls

Inside the stalls – feed and water buckets – on the floor or attached to a wall; hay nets; stall mats; salt block holders nailed to a wall; automatic waterers; boxes or bins containing hay; even electric fencing

There may be webbing in the doorways called “stall guards”. They are hooked top and bottom to the wall with clips

Stalls may be double secured – slide bolts, hook and eye, latch and chain

Doors may slide open; swing in or out. They may have an electric wire on the inside

- Watch for highly emotional people – owners, barn managers, stable help – and excited dogs. Webbing across doorways
- Stalls may be secured with slide bolts, hook and eye, latch and chain, both high and low on the door (check near bottom of the door)
- Inside stalls – buckets, hay nets, stall mats

- Highly emotional people and excited dogs

SLIDE #23**DO HORSES REALLY RETURN TO THEIR STALLS?**

Although it goes against all logic, a horse will return to his stall in a burning barn. There is reason for this. If he is regularly stabled, he perceives his stall as a safe place. This is where food is available to him. This is his “space”. When he is scared witless, this is where he will return to find that feeling of security. Firefighters say that when children are found after a house fire they were hiding in a closet or under a bed. Horses are like children.

Outside his stall is chaos. Just like the average person who has no experience with disaster, he most likely will lose his mind and react, not act with deliberation.

He can sense the emotions of the humans outside his stall. There are loud machines, sirens, running and shouting people. Horses have a heightened sense of smell and the acrid smoke causes burning in his nostrils. He can hear sounds at much higher frequencies than we can so the engines, sirens and power tools are torture to his ears.

The horse has a highly tuned “flight or fight” instinct. He is a prey animal and his instinct will tell him to run away from the chaos outside. He associates the smoke with the chaos.

Every horse should have a halter and lead rope on or beside his door. NO EXCEPTIONS.

SLIDE #24**WRITE A FIRE PLAN AND DRILL**

Every stable owner should write up a fire plan and then practice it with regular fire drills. You won't know if it works unless you practice it. This is especially true if you have a boarding or training stable, where a number of people are passing through.

You can do some really inventive things to make it fun, such as to make up cardboard flames and hide them around the stable. Then send everyone out to find them. Or bring all the horses into the stable and time yourselves when you evacuate them. Or turn off the water to the barn and see who can find another source. If you do this with kids you can offer prizes. A rainy day activity would be to design a plan or drill, or to

write down what they would say if they were calling in a fire, or have a disaster treasure hunt where they find all the unsafe things around the property.

Here are some questions to ask yourself as you design your fire plan (handout):

- Do I need to rearrange the parking area so that emergency vehicles have a clearer access and room to turn around? How much clearance do you need? Typically, you need twelve feet in height, twelve feet in width, and make sure that no parking is allowed in the turnaround area. Ask your fire department about their space requirements.
- Do I have defensible space around the stable or do I need to clear up vegetation and debris like empty feed sacks and McDonalds bags?
- Where are the fire extinguishers located and do I have enough? Does everyone know how to USE a fire extinguisher? You can buy Class A water extinguishers on EBay for about twenty dollars. These are larger than the normal fire extinguishers and you can refill them with water, and then pressurize them with a compressor or even a bicycle pump. Because they just have water you can play with them. Have water fights.
- Where are the halters and lead ropes? There should be a set outside every occupied stall. And everything should work on them.
- Will the horses leave the stable? Can they be blindfolded? Do we need to practice this? How will they react to firefighters in turnout gear?
- Are the most vulnerable horses stabled closest to the exits? These are the horses with injuries, illnesses, maybe respiratory problems or are old and don't move too fast. They are also the horses that will easily be caught and led. If you have to fight with a horse to catch him in his stall or get him outside, your other horses are put at further risk.
- Is there a phone in the stable? If the stable is large, are there phones at each end of the stable?
- Are emergency numbers posted by the phone? Who gets called?
- Are there hoses by the exits on each end of the stable? Are they long enough to reach down one length of the stable?
- When you hold your fire drills, the person you designate to be in charge should be the person with the most knowledge of the animals and the stable. They should know:
 - How many horses are in the stable and are they all evacuated?
 - Are there other animals like cats, dogs, or goats living in and around the stable?

- Where is the electrical shutoff and is it visibly labeled?
- What is the layout of the stable? Is there a diagram of it and the property?
- Where are the water sources? That includes hydrants, spigots, ponds, and storage tanks.
- If you have a pond, do you have a standpipe the fire department can hook onto? Can emergency vehicles easily and safely access the pond?
- Is there hay storage in the stable, and if not, where is it?
- What other hazards are there? Tack trunks, bales of hay, or manure carts and pitchforks in the aisles? Tack rooms?
- Who is capable of handling the horses and who isn't?
- Where are the safe locations for evacuated horses?

SAFETY CHECK

Invite your local fire department to your stable to go over your safety measures and your fire plan. This accomplishes two things. The fire department knows where you are; that you have horses and other animals on-site; when they can expect to find humans around; if you have additional water sources and where they are located, including ponds and water storage tanks; and they'll know if their rescue equipment will be able to get into your property.

YOU gain the insight of a professional and the viewpoint of a non-horse person. If there is any unease on the part of firefighters about approaching horses, you can work with them to alleviate that. Invite them to meet your horses. Or organize a class for them to learn about horse behavior and how to be safe around them. Make sure you post your evacuation plan in a highly visible place and make sure everyone who uses your stable understands what to do. You DO all have evacuation plans, right?

And finally, organize your horse owning neighbors. When fire breaks out at your house, your neighbors will come to help. They know horses; they know YOUR horses AND your dogs, and the other animals in and around your stable; they're close by. And, if you all hold fire drills at each other's stables, you'll all have a working knowledge of what you'll need to do.

SLIDE #25**FINAL WORDS**

If you try to fight the fire yourself, remember how little time you have with an extinguisher. About 9 seconds. And toxic substances like cyanide and arsenic may be in the smoke.

Did you know that if you inhale pure carbon monoxide for three minutes you will die? Is there carbon monoxide in a fire? **Yes.**

A stable fire is not just grasses and wooden walls. Its tack cleaner and plastic coffee pots and manure carts with tires and baling twine and bridles and saddles and light fixtures. The smoke will be filled with highly toxic and deadly material. Cover your nose and mouth to keep out the worst of it.

A wet rag is good for stopping smoke, but it's super dangerous around the fire itself. If the heat of the fire is intense enough, it could heat the rag's moisture to steam, which will sear your lungs and burn your face.

If you feel sleepy or like you're running through quicksand, or you're disoriented, you may be suffering from smoke inhalation. You need to get to fresh air immediately. Don't try to fight your way through the feelings. They're your body telling you it's in trouble and you could pass out soon.

When the firefighters arrive, identify the person in charge. This isn't the person of the highest rank or the owner of the stable. It's the person who is truly the most knowledgeable about the stable and the horses.

And, please be thoughtful of the folk arriving to save your animals. They're going to do everything they can to help you, but you need to help them do their job. Keep the aisles clean, tell them up front what to expect if they DO get inside the stable, and stay out of their way unless they ask for your help.