



MANAGEMENT

Livestock Handler's Safety

no. 1.813

by M. Legault, A. Swinker and T. Grandin ¹

Quick Facts...

More people get killed by horses in Colorado than any other species of livestock.

Reducing animal stress during handling improves productivity and performance, while improving handler safety and animal welfare.

Cattle, horses and sheep have more sensitive hearing at high frequencies than humans. Avoid loud or novel noises — they distress livestock and can result in balking and agitation.

Cattle, horses, sheep and pigs are common livestock species in Colorado. Llamas and ostriches are two of the few exotic livestock species. Accidents caused by livestock every year account for a significant number of the deaths and injuries to people. These deaths and injuries are related to recreation and work. Over the last 10 years, Colorado reported 19 deaths due to horses, four due to cattle and one due to sheep. Both experienced and inexperienced handlers were killed.

Intact males of any species pose the greatest threat. The second most dangerous animals are females with young offspring. For every death there are approximately 100 to 400 disabling injuries reported. Disabling injuries, as defined by the National Safety Council, are those that result in lost time (one day or more) from work or a trip to the hospital.

Understanding livestock behavior will ease handling, reduce animal stress and improve handler safety and animal welfare. All livestock are herd animals and have several things in common. Avoid isolation of individual animals, except with special handling facilities.

Livestock have wide-angle vision. Cattle and pigs have a visual field in excess of 300 degrees (see Figure 1) and sheep have a field of vision that ranges from 191 to 320 degrees, depending on the amount of wool on their heads.

Livestock have poor depth perception when in motion. This is why they often lower their heads and stop to look at strange things on the ground or balk and refuse to walk over a puddle. Horses even shy at shadows or a change in flooring surface or texture. Minimize shadows and bright spots and orient livestock to slatted flooring so they can walk across the slats. Pigs, sheep and cattle will naturally move to a more brightly illuminated area, unless it is a bright, glaring light.

Cattle, horses and sheep have more sensitive hearing at high frequencies than humans. Avoid loud or novel noises--they distress livestock and can result in balking and agitation. Any quick movements by the handler can cause the animal to shy away from the handler.

There are genetic differences among the different livestock breeds. Study these differences before selecting a specific breed. Contact your Colorado State University Cooperative Extension county office or the breed association for information.

Flight Zone

Another point to consider when working livestock is the flight zone (see Figure 2). The flight zone is the animal's "**personal space.**" Movement into an animal's flight zone causes the animal to move away. Understanding the flight zone can reduce animal stress and help prevent accidents to handlers. Flight zone



Putting Knowledge to Work

© Colorado State University
Cooperative Extension. 1/94.

Reviewed 10/03.
www.ext.colostate.edu

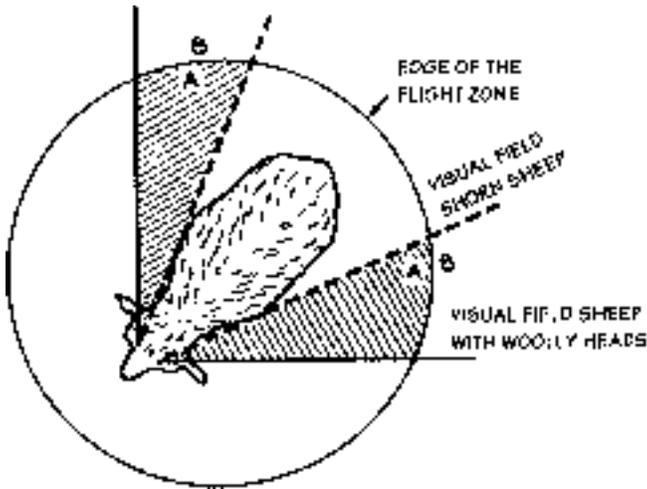


Figure 1: The circle represents the edge of the flight zone. The handler should work on the edge of the flight zone. Move to position A to make the animal move forward and to position B to make the animal stop. A sheep's visual field varies from 191 to 320 degrees, depending on the amount of wool on the head. Stay within the shaded area; farther forward will force the sheep to move back.

size depends on the tameness or wildness of the livestock. With frequent handling, the flight zone decreases in size. An animal that is approached head-on has a larger flight zone than if it was approached from the side. The edge of the flight zone can be determined by slowly walking up to the animal. The point where the animal begins to move away is the edge of the flight zone.

Tame animals may not have a flight zone and should be lead by halter or feed bucket. **Never tie or wrap a lead rope or halter to the body of a handler, no matter what species of livestock you work with.**

If a handler enters the flight zone too deeply, the animal will either bolt and run away or turn back and run past the person.

The best place for a handler to work is on the edge of the flight zone. There is a point-of-balance for moving animals back or forward. The point-of-balance is at the shoulder, perpendicular to the length of the body. Stand in front of the point-of-balance to back up an animal and to the rear of the point-of-balance to move the animal forward. If the handler makes the mistake of invading too deeply into the flight zone when driving livestock down an alley or into a crowded pen, the handler stands the risk of being run over by the livestock as they bolt back and run by or over the handler.

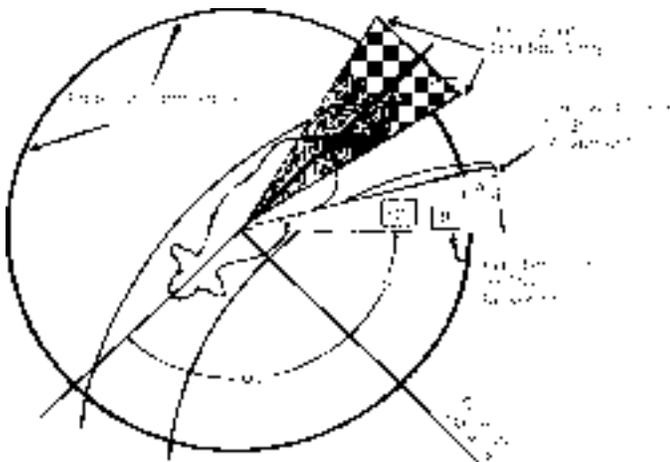
If the handler becomes upset, pause, step away from the task and calm down. Many people are injured or killed from becoming too excited while handling animals. This can result in agitating the livestock to the point where they may react unpredictably.

Facilities

Livestock handling chutes should curve and have solid sides that reach at least three-fourths to the top rail. Solid sides (on the chute, crowd pen and crowd gate) shield the livestock from distractions that may frighten them. Curved, single-file chutes are the most efficient design to handle livestock because: 1) they prevent the animals from seeing what is at the other end of the chute, and 2) they take advantage of the natural tendency to circle a handler moving along the inner radius.

Squeeze chute levers that are especially long can hit an operator under the chin and easily break a person's neck. If there is a chute like this on your operation, keep the latch in good working order. **Replace the latch with a new one, if it is worn out. Do not try to repair or fix the latch with a welder.**

Figure 2: The circle represents the edge of the flight zone. Positions A and B are the most efficient positions for controlling the movement of livestock.



Horses

Most of the deaths related to working with horses are from a head injury from being thrown or falling off a horse. Safety studies show that wearing a safety helmet with a secured chin harness can prevent life-threatening situations. If the handler is not experienced with horses, seek instruction from someone experienced. Choose a saddle that fits the rider and the horse. Wear shoes or boots with heels. Heels prevent the foot from passing through the stirrup, which can result in the rider being dragged by the horse. Most importantly, wear a safety helmet.

Horses use their feet and teeth for weapons. They can kick directly to the rear or strike with the front feet. Some horses bite. If working at the rear of the horse, either keep in close contact or far enough away so as not to be struck if the

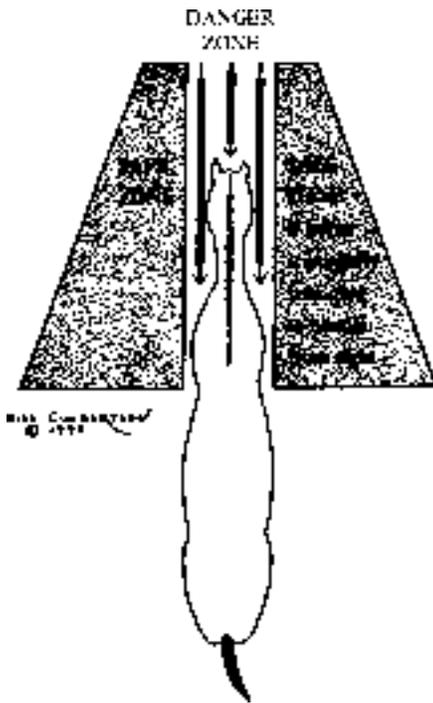


Figure 3: The shaded areas indicate the safe areas for showing a horse from either side. Note the danger zone directly in front of the horse. Learn to stand toward the front, not in the danger zone, and out of the direct line of action of a strike or lunge. It is permissible to cross the danger zone to get from one side of your horse to the other. Remaining in the danger zone is considered a fault. Use positions within the safe zones where both the horse and judge can be observed.

horse kicks. If handlers stay close to the horse, they will be pushed but not kicked. Keep a hand on the horse while walking around the back to let the horse know where you are. At the front, the horse can strike with its front hooves at a distance equal to the length of its leg. When working around a horse, try to stay in the safety zone (see Figure 3). A horse often uses its head to swat at annoyances. Handlers are seriously injured when a horse's head contacts their own.

If working with an unbroken horse, find someone who is skilled and competent in breaking such horses to ride. Do not try to break a horse if you are inexperienced.

Cattle

Cattle can kick to the side and to the rear. Many breeds of cattle have horns that should be removed at branding. Use caution when separating calves from the dams--there are genetic differences among cattle breeds. For example, Brahman are gentle if handled quietly. With rough handling, they are more excitable and harder to handle than English or European breeds. Brahman cattle bunch together tighter during handling than European breeds. Brahman are more difficult to block at fences, unless the fences are visually more substantial (i.e., constructed with planks or a wide belly rail). Brahman cattle seldom run into a fence that appears to be solid. If Brahman cattle become too highly excited they may lie down and become immobile when repeatedly prodded with an electric prod. They may even die if subjected continuously to an electric prod. English or European breeds seldom get immobile. If you avoid using the electric cattle prod, it will make moving and working cattle easier. A flag tied to the end of a stick or a brightly-colored paddle on the end of a rod works well. These two types of sorting sticks use the principle of the flight zone to move cattle calmly and quietly.

Dairy bulls have a reputation for being dangerous. As calves, they are bottle-fed by hand and imprint on people. When they get older they try to exert dominance over people, not cattle. Their size results in either serious or fatal injuries to the handler. This problem can be minimized by rearing bull calves in groups. However, hand-reared steers and heifers do not become aggressive.

The most workmen's compensation claims from ranchers are for women who strain their backs by roping calves and dragging them to the branding area. Properly designed working chutes and a calf table can significantly reduce workmen's compensation claims.

Pigs

Different breeds of swine can move at different rates or behave differently. Some hybrid pigs have extreme shelter-seeking behavior and can be difficult to drive. Pigs are very sensitive to electric shock and handlers should never use electric prods on them.

Pigs become calmer if they are given play toys (i.e., hanging a rubber hose from the ceiling) and are petted on a regular basis. With this type of treatment, a confrontation with a stranger or walking through a narrow chute is much less traumatic.

In an effort to handle pigs easier, the handler may exert dominance over young boars. To do this, use a pig board and press it against their necks. This simulates the pushes given by a dominant pig. If the most dominant pig is herded first, the other pigs will identify its scent on the board along with the handler's and will become more submissive and more likely to move the way the handler wants. Hitting or slapping pigs has little effect on their behavior. Exerting dominance has to be done using the animal's natural method of communication.

Sheep

If a handler knows a breed, it helps in working the sheep. Rambouillet sheep tend to flock tightly together and remain in a group. Suffolks, on the other hand, will scatter. Rams can be aggressive during mating season. Children are especially susceptible to injury at this time; therefore restrict their access to breeding stock.

Transportation

To reduce transportation stress: provide good footing (sand or bedding on the trailer floor), avoid rough roads, travel early in the morning or later at night on hot days to reduce heat stress, provide a blanket (horse) or side boards if excessively cold or ventilation if hot, and avoid heavy traffic when possible.

Make sure the trailer is in good working condition and good repair (check brakes, lights and turn signals). Make sure the trailer has adequate suspension and stabilizer bars, and use good driving techniques (slow starts and stops, easy corners). Train horses to load, ride and unload well in advance of the trip. Transport animals with a familiar companion to reduce stress. Livestock are gregarious and want to be with other animals. Provide hay and water at regular rest stops on long trips and don't feed grains. Make all efforts to reduce physical and mental stress to the transported animal.

Handle livestock, whether for recreation such as exhibition at shows and fairs, cattle drives, trail rides or just everyday care, in a responsible manner. Do not fool around. Horseplay is dangerous and remember, alcohol and livestock handling do not mix.

¹M. Legault, Colorado State University agricultural safety coordinator and research associate, agricultural and chemical engineering; A. Swinker, Cooperative Extension horse specialist and assistant professor; and T. Grandin, assistant professor, animal sciences.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Milan A. Rewerts, Director of Cooperative Extension, Colorado State University, Fort Collins, Colorado. Cooperative Extension programs are available to all without discrimination. No endorsement of products mentioned is intended nor is criticism implied of products not mentioned.