

IOWA BEEF CENTER

LOW STRESS CATTLE HANDLING



Low stress cattle handling has been advocated by many different groups and individuals within the beef industry. There are observed benefits to implementing low stress handling, including improved performance, animal welfare, and handling efficiency. However, there is some confusion about low stress philosophies and techniques advocated by different experts. Fundamentally, there are positive aspects of each system and different techniques may work better with some individuals or groups of cattle. Cattle responses to handling result from their innate and learned behavior. By understanding all of these aspects, cattlemen will be able to read different situations and adjust their handling techniques to lower stress for the animal.

Natural Behavior of Cattle

No matter what cattle handling philosophy you choose to implement, there are some innate cattle responses that are utilized when moving cattle. Cattle will respond primarily to visual cues. Due to eye position on the side of the skull, cattle see approximately 310 degrees around them with the only blind spot directly behind them. Since most of their vision is peripheral, they notice slight movements to which they respond readily. Their vertical vision is only about 60 degrees, so in order to see things above them they need to lift their heads up, which stops forward motion.

As a herd animal, cattle like to be moved in groups. Cattle will naturally form a herd structure with different social groups within that herd. Within a herd, cattle will maintain some degree of proximity and participate in herd defense. By watching and interacting with mature, experienced individuals in a herd, naïve cattle learn to identify appropriate food, water and shelter resources in the environment as well as identifying potential threats. Even in large herds, social groups typically comprise 10-20 related cows. In addition to strong bonds with their offspring, cows often develop bonds with specific individual cows. Separating these strongly bonded individuals can be stressful and may result in handling difficulties. Mature bulls tend to be solitary

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if allowed, whereas young bulls prefer small social groups of 2-3 individuals. During the breeding season mixed sex groups form.

Confined feeding operations drastically alter herd behavior. Upon arrival feedlot calves have lost their normal social structure due to lack of mature cows. This effect is exacerbated for calves that are shipped immediately at weaning due to additional stressors from loss of the maternal bond and milk. Eventually these calves will develop their own structure, but will continue to experience competition for resources relative to the typical pasture or range-based cow-calf environment. Confined cattle do not have all the space they need to form and maintain social groups. Cattle at the bottom of the pecking order may not be able to keep a large enough social distance from dominant animals and are subject to aggression. Continually introducing new cattle to a herd will cause stress as social dynamics are constantly altered

Principles for Handling Cattle

Reading each animal's responses will allow cattle to be moved with minimal fear and distress. Cattle have long memories so limiting negative experiences can be beneficial because cattle will remember these and become stressed when faced with similar situations. What each animal has learned from its previous handling experiences affects how it will respond in the future. Cattle that experienced excessive electric prod use in the past are likely to be apprehensive as they move through a working facility, anticipating this prod use again. This can become a vicious cycle since apprehensive cattle may stop moving, prompting the handler to use the prod again and affirming the cattle's negative association with the working facility or handlers. Dogs are another potential stressor for cattle, although properly trained dogs can be useful and cause minimal stress when rounding cattle up. When cattle move away from a well-controlled stock dog in the proper direction, they are reinforced because the dog is removed from their flight zone. However, once cattle are in a confined area, such as a working facility, the presence of a dog itself can be distressing when cattle can't move away.

General principles of cattle handling are based on cattle avoiding or moving away from the handler. Cattle have a flight zone which is their personal bubble that when breached, causes them to respond by moving away. To influence cattle movement and direction, a good handler exerts pressure on cattle by working the edge of the flight zone (sometimes referred to as the working zone or pressure zone) and paying attention to the point of balance. The size of an animal's flight zone is influenced by its fearfulness, its relationship to the handler and familiarity with the handling environment. Cattle handled with low stress principles will

have smaller flight zones compared to cattle never handled or handled roughly in the past. It is best to work cattle from the side so they can see you and respond to your pressure to move in the direction you desire. If you are in a cow's blind spot she will naturally turn around in order to keep you in her field of vision.

When trying to move cattle in an open area the first step is to group the cattle into a herd so you can move them together. Walking back and forth in straight line that is perpendicular to the direction you want cattle to go will often help assemble the herd. In cow-calf herds, it is important to pair them up, which may be accomplished by moving through the herd. It often requires patience to make sure all pairs are in the same proximity particularly in rough country.

Once cattle are grouped you can move toward where you want the cattle to go. As you move into their work zone their first reaction will be to move in the direction that they are facing. If they are not facing where you want them to go then you will need to redirect them. Cattle will naturally follow you with their eyes and head as they want to keep you in their sight. There are usually a few individual cattle that are paying particular attention to you and these animals are likely to be the most responsive when initiating herd movement. Once you have their attention and oriented appropriately, you can then apply pressure to their flight zone using the point of balance to direct them where you want them to go. This may require repositioning of the handler to ensure visibility to the animals.

The intensity of pressure, due to handler speed of movement and posture, will influence the intensity of the animal's response. A quiet, relaxed handler is likely to provoke curiosity whereas a loud, tense handler may provoke alarm. Similarly, direct, focused eye contact tends to provoke anxiety in cattle and should be applied as a deliberate form of pressure. The shoulder is typically the point of balance. When pressure is exerted behind the point of balance, cattle will move forward, conversely when pressure is exerted in front of or too close to the point of balance cattle will respond by changing direction (backing up or turning away). It is as important to release pressure when cattle are moving in the desired direction. Continuing to apply pressure in the face of correct animal responses is counterproductive, often resulting in high levels of arousal and undesired behaviors such as bolting or scattering of the herd.

Handlers should constantly be aware of their cattle and notice what causes apprehension or stress. Identifying and mitigating stressors will make cattle handling easier in the future. Anytime cattle are handled the goal should be to make it either a positive or neutral event and eliminate negative

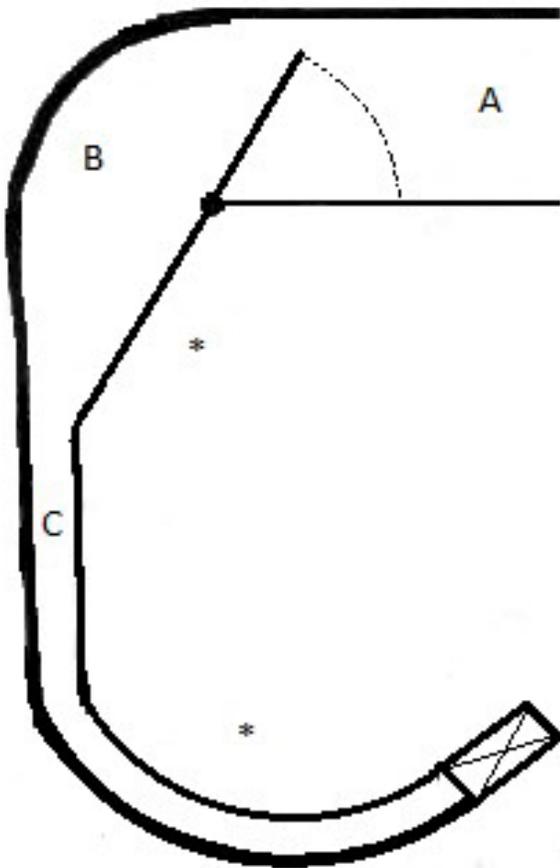


Figure 1. A typical round tub facility with a drover's alley or holding area (A), a round tub (B), and an alley way (C) leading to the restraining chute. This system works by providing a tub as a transition between the holding area and the alley way to control flow of animals. The tub should be filled no greater than half capacity to prevent crowding and facilitate movement into the alley way.

events as much as possible. Extremely aversive procedures such as branding and dehorning should be done in a different facility than the routine procedure facility if possible so that the animal does not associate those procedures with normal handling procedures. Additionally, since cows have long memories change should be limited or introduced slowly. A new working facility, different caregiver, or other changes can introduce some stress to the cow herd because it is different than their normal routine.

Facilities

The two most common designs for low stress cattle handling are the round tub and alley system popularized by Temple Grandin and the Bud Box system popularized by Bud Williams. Cattle can be successfully handled with minimal stress using either system, if they are designed and used properly. Both systems capitalize on visual perception and herding responses of cattle to focus their attention and

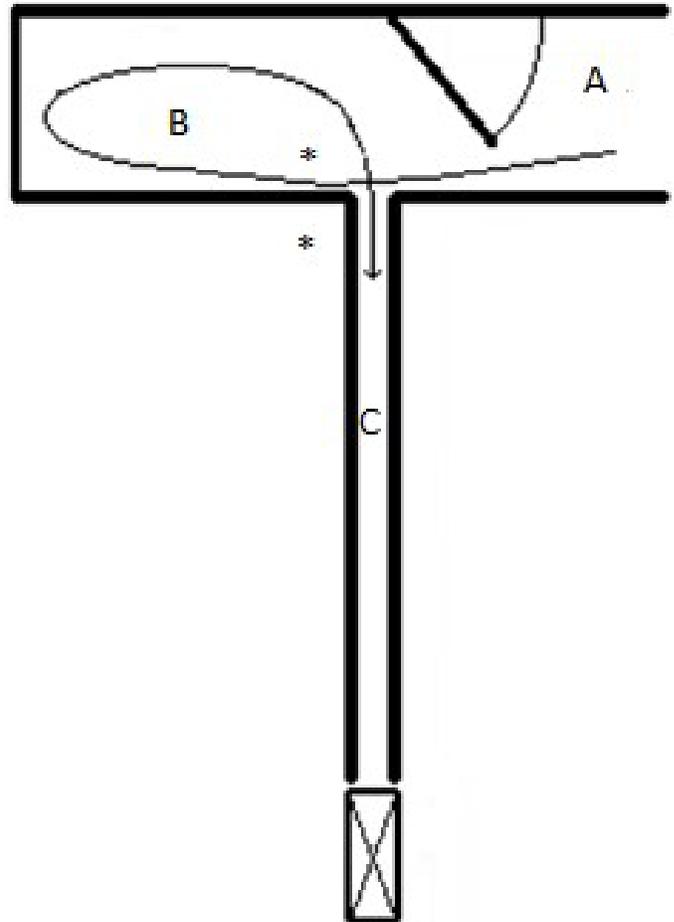


Figure 2. A typical Bud Box facility with a drover's alley or holding area (A), blind ended box (B), and an alley way (C) leading to the restraining chute. This system works with the Bud Box serving as a transition between the holding area and the alley way to control flow of animals. The Bud Box should be filled no greater than half capacity to prevent crowding and facilitate movement in the alley way.

direct them through the handling facility. Most facilities are constructed or modified to fit one or combination of these designs.

In the Grandin system (Figure 1), the curved nature of the tub causes cattle to turn as they move towards the middle of the tub from the holding pen (A). This is natural as it simulates the cattle turning to go back where they came from. If the alleyway (C) is open, they will naturally follow the curve into the alleyway. Cattle can often be worked through a tub without ever closing the swing gate.

The alleyway needs to be straight at the beginning for at least three cow lengths so cows can see where they are going. The reason the alley is curved towards the end is so cattle do not see what is happening at the restraining chute and also conserves space. In the set up design shown in Figure 1 the outer perimeter side, the tub, and the swing gate are solid,

so that cattle are not distracted by other activities. The inside perimeter is open enough that cattle can see and respond to the handlers (indicated by * in Figure 1). The open inside perimeter feature avoids the need for a catwalk and its associated risks to handler safety and cattle that balk to look overhead.

In the Williams system (Figure 2), as the cattle reach the end of the Bud Box they will turn around to go back where they came from. If the solid swing gate is closed then cattle will naturally turn and proceed down the alleyway (C). A classic Bud Box design utilizes all open sided fences and gates except for the swing gate between the holding pen and the Bud Box itself. This solid gate prevents the cattle from seeing where they actually came from to facilitate them turning down the alleyway. The open-sided features of the Bud Box system allow the handlers to work cattle from inside or outside the box (as indicated by * in Figure 2) to facilitate cattle going down the alleyway.

Features important for both systems to minimize fear and aversion by cattle include non-slip flooring, no sharp edges and moving cattle in small groups. Putting too many cattle in a tub or Bud Box, more than can immediately file into the

alley way, defeats the purpose in both systems. If there is not room in the alley way, cattle will turn around within the tub or Bud Box and the effect of the animal going back where it came from will be lost. Similarly, one should avoid holding cattle in the tub or Bud Box since they will try to escape by turning around.

Summary

Both cattle and handlers develop predictable responses to handling situations based on their experiences. Different experts have popularized low stress handling techniques and facility designs. Often these systems employ similar principles of animal perception, herding motivation and flight responses. Cattlemen may benefit by investing in facility designs and cattle handler training that incorporate some or all of these features as relevant to the needs of the operation.

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