*Moderator - Paul DuBois*



# Understanding Cattle Behavior Makes Handling Easier

**Temple Grandin**
*Department of Animal Science*
*Colorado State University*
*Fort Collins, CO 80523, USA*

Cattle are visual animals that are motivated by fear. In the wild they are ever vigilant and any novel sight or sound is perceived as a possible danger. Their ears are more sensitive to high pitched noise than human ears and their wide angle vision enables them to scan the horizon for predators while they are grazing.

1. *Fear of Novelty* - Cattle will often balk and refuse to walk over a shadow, puddle, or change in flooring surface. They are wary of abrupt changes in color and high contrast. A coffee cup on the floor of a single file race or a small chain that jiggles on a fence will make them stop. If cattle balk and refuse to move through a facility one needs to get down in the race and pens and see what the cattle are seeing. Some of the most common things which will make cattle stop are: jiggling objects, a coat on a fence, reflections off puddles and seeing people moving up ahead. Calm cattle will look right at the things that they are scared of. If the cattle become excited it becomes impossible to determine why they refuse to walk down a race.

Novelty can be both fear inducing and attractive. Calm cattle in a corral will approach and sniff a paper cup on the ground, but that same cup will cause them to balk and turn back if one attempts to force the animals to walk over it. Cattle are most likely to panic when they are suddenly confronted with a novel sight or sound.

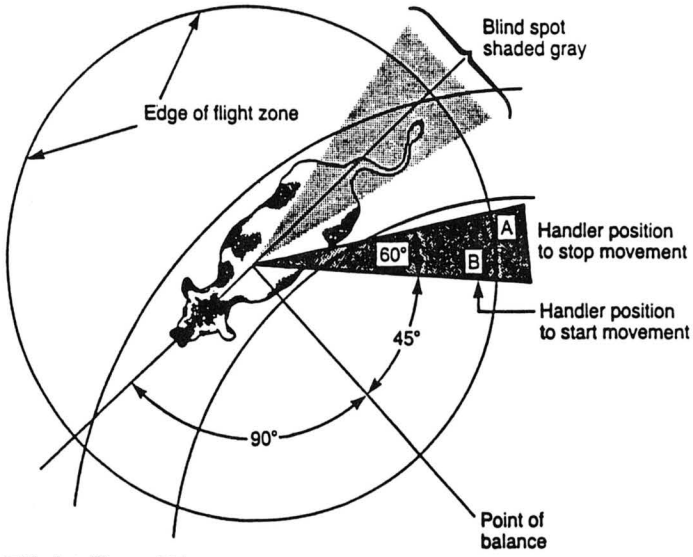
Cattle can be trained to tolerate novelty and changes in their routine. Cattle in the Philippines are not afraid of cars and motorcycles because they have seen them since birth while grazing along the roads. The vehicles are no longer novel. Cattle that have never seen horses may become agitated when they are first moved with horses and be calm when moved by handlers on foot. However, animals accustomed to handlers on horseback may panic if suddenly confronted with people on foot. If new handling procedures are introduced slowly the animals can be trained to accept them. When a new procedure or a new facility is first introduced to the cattle, their first experience with the new people and equipment should be relatively pleasant. If the animal's first experience is painful or scary the cattle will have a permanent strong fear memory. It is advisable to train cattle by walking them through new yards, races and chutes prior to any painful procedures.

Fear is a very strong stressor. For wild, extensively reared cattle, being restrained in a squeeze chute (crush) can be almost as stressful as branding. In tame dairy cattle, branding is much more stressful than restraint. The highly variable results in many handling and transport studies are likely to be due to different levels of fear stress in cattle with differing degrees of tameness.

There is an old saying, "You can tell what kind of a stockman a person is by looking at his cattle." A good stockman who handles cattle calmly will have calmer animals than a bad stockman who gets them excited. Livestock have excellent memories and if they are mistreated they will remember it. Handlers should spend time walking quietly among their cattle to get them accustomed to people moving among them. The person should become a neutral entity who is not associated with either food or going to the corrals. This will make

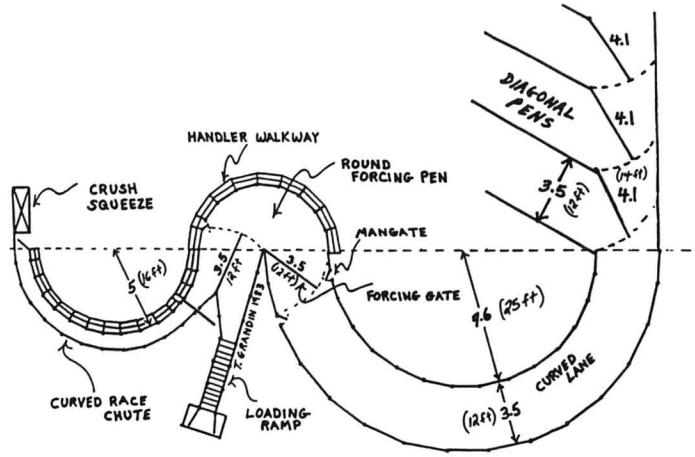
it easier to move cows and calves to a new pasture at a slow walk. Moving cows slowly will prevent small calves from being separated from the cows when the animals are moved. When cows are fed from a vehicle it is best to train them to come when the horn is blown. Otherwise they will chase the vehicle when you drive around to look at them. They should associate being fed with the horn instead of the vehicle.

2. *Flight Zone* - People working with cattle need to understand the flight zone. The flight zone is the animal's personal space. When a handler enters the flight zone the animals will move away. The size of the flight zone depends on how wild or tame the cattle are. Wild cattle will have a larger flight zone than tame cattle. Cattle that have been handled quietly will have a smaller flight zone than cattle which have been handled roughly. A tame high producing dairy cow may have no flight zone and she will allow people to touch her, but a wild cow that seldom sees people may have a flight zone of many meters. Flight zone size is determined by three factors: amount of contact with people, quality of the contact (quiet vs rough) and genetics. When a person enters a pasture the cattle will turn and face him, as long as he stays outside their flight zone. This is a predator avoidance behavior. Cattle turn and face potential danger and keep a safe distance. When the handler walks inside the flight zone the animals will turn away. Excited cattle will have a larger flight zone than calm cattle and if cattle become excited it takes 20 to 30 minutes for them to calm down.



Flight Zone Diagram

To move cattle quietly, the handler should walk on the edge of the flight zone. The handler pentrates the flight zone to make the cattle move and backs away to



Basic curved handling facility.

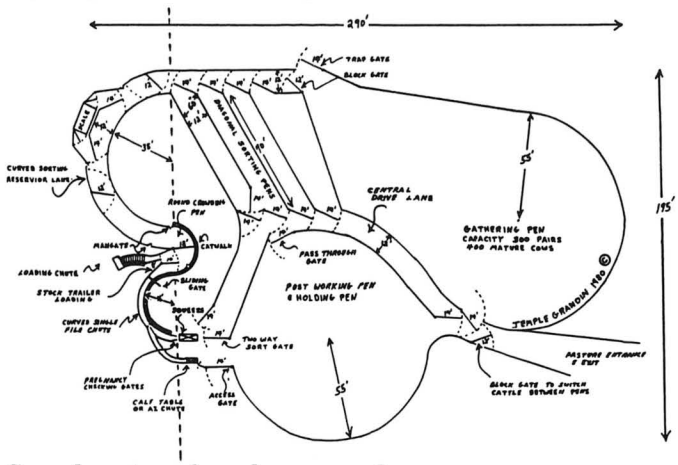
stop movement. The principle is to alternately enter and withdraw from the flight zone. When the cow moves, the handler should reward her by retreating from her flight zone. The flight zone is larger when an animal is approached head on and smaller when she passes by a person. In confined areas such as an alley, handlers must be careful to avoid cornering an animal and deeply invading the flight zone. Cattle sometimes turn back and run over people because they want to get the person out of their flight zone. If cattle in a confined space become agitated, turn back or rear up, the handler should immediately back up and retreat from their flight zone. Everybody who handles cattle also needs to understand the point of balance at the shoulder. To move an animal forward, the handler must be behind the point of balance and to make the animal back up the handler must be in front of the shoulder.

3. *Effect of Genetics* - Genetic factors will also affect how cattle will react to handling. Cattle with an excitable temperament are more likely to panic and become agitated when they are suddenly confronted with novelty. In North America, the author has observed increasing problems with European Continental cross cattle that have no tolerance for novelty. If they are handled quietly on their familiar home ranch or farm they will be quiet and easy to handle. But they become highly agitated when confronted with the novelty and noise of an auction market or slaughter plant. These animals are more likely to injure themselves or handlers when suddenly confronted with novelty. Excitable cattle have a temperament that is more like a horse's temperament. They have a greater tendency to panic.

*Cattle are herd animals*. Animals isolated by themselves are likely to become highly agitated because they want to rejoin their herdmates. Animals with an excit-

able temperament become more agitated when separated from the group than animals with a calm temperament.

Problems with excessive excitability in European Continental cattle appears to be related to the increasing emphasis on breeding lean animals. The cattle with



Corral system for a large ranch.

the worst temperament are the fine boned slender lean animals. Cattle bred for leanness with large bulging muscles often have a calmer temperament.

Research by the author has revealed that temperament must be evaluated more than once to get a really accurate evaluation. In one study 9% of the bulls became highly agitated in the squeeze chute every time they were handled and half the bulls remained calm. The animals were handled four times at 30 day intervals. There was also a large group of animals that were sometimes agitated and sometimes calm. To identify the really bad animals temperament must be evaluated more than once to avoid culling animals that may have become agitated because an animal next to them became excited. To rate temperament during restraint in a squeeze chute a simple scoring system can be used.

1. Calm - stands still
2. Slightly restless
3. Very restless
4. Vigorously shakes the chute and attempts to escape
5. Acts berserk, frenzied.

**Temperament ratings while restrained in a squeeze chute are also highly correlated with the position of the spiral round hair whorls on an animal's forehead. Cattle with spiral hair whorls on the forehead above the top of the eyes become more excited and agitated while held in a squeeze chute than cattle with spiral hair whorls below the eyes. This effect is most likely to be observed in extensively reared cattle that are not completely tame. Hair whorl position is also correlated with flight zone distance. In groups of cattle with identical previous handling experiences, the animals with hair whorls high on the forehead were more likely to have a large flight zone.**

It is important for producers to select for temperament. Cattle that become highly agitated at auctions and slaughter plants are dangerous for people to handle and they are more likely to have dark cutting meat. In the U. S. the incidence of dark cutters has more than doubled partly due to genetic lines of cattle with an excitable temperament. A recent study we conducted showed that cattle which went beserk in the squeeze chute (temperament rating of 5) had more dark cutters. Cattle with an excitable temperament also had lower weight gains in the feedlot.

4. *Principles of Restraint* - Since cattle have good memories it is important to make restraint for veterinary procedures as pleasant as possible. To hold the head for blood testing or IVs, use a halter instead of nose tongs. Nose tongs hurt and cattle remember it.

Cattle that are extensively raised and not accustomed to close contact with people will often become highly agitated when they are held in a squeeze chute for veterinary treatment. One reason why the cattle become so excited is because they can see people deep in their flight zone through the open barred sides of the chute. Covering the sides of the squeeze chute to prevent the animals from seeing people standing close to them will make them calmer. Installing solid sides on the restraining chute will also prevent the cattle from lunging and bashing into the head stanchion as they enter the squeeze chute. If you do not believe that solid sides on squeeze chutes work, try installing some temporary solid sides made from cardboard.

Many cattle are injured when they hit the head stanchion too hard. Cattle movement into the head stanchion can be slowed down by installing a solid sliding gate 1.2m (4 ft) in front of the head stanchion. As the animal enters the squeeze chute the solid sides prevent it from seeing people. The only thing the animal should be able to see is a lighted opening to put its head through. If the animals are handled inside a building it may be necessary to install an overhead light in between the solid sliding door and the head stanchion so that the animals will see a lighted opening to put their head through. **The light must be positioned so that it illuminates the stanchion, but it must never be pointed directly into the eyes of approaching cattle.**

Since the solid sides and front sliding door prevent the animals from seeing people and a pathway of escape, most animals will quietly enter. A solid barrier in between them and people makes them feel safe. Since the animal enters at a slow walk the head stanchion

and squeeze sides can be closed with a steady smooth motion. Sudden jerky motion of the apparatus excites and slow steady motion is calming. There is also an optimum pressure for holding an animal. The chute must apply enough pressure to make the animal "feel held" but excessive pressure which would cause pain must be avoided. Many people make the mistake of squeezing the animal tighter if it struggles. It is important that the restraining chute holds the animal firmly. If the squeeze sides jiggle and rattle when the animal struggles it is more likely to fight restraint.

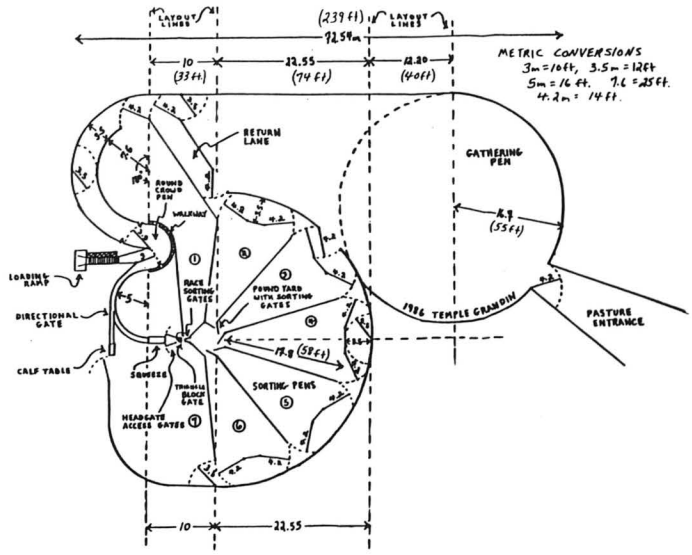
Below is a list of the principles of low stress restraint for wild extensively reared cattle:

1. Block vision to prevent the animals from seeing people deep in their flight zone.
2. Block vision of an escape route, but cattle entering a restraining apparatus must see a lighted area. They will not walk into a dark space.
3. Slow steady pressure applied by a restraint device is calming and sudden jerky motion causes excitement and agitation.
4. Optimum pressure - a restraint device must apply sufficient pressure to provide the feeling of being held but excessive pressure that causes pain must be avoided.
5. Cattle will stand more quietly and remain calmer if they can see another animal within 1m (3 ft) of them but they may lunge and become excited if they see herdmates many meters away. They become excited because they want to rejoin their herdmates.


### *Acknowledgments*

The author would like to recognize colleagues who worked on temperament testing of cattle: Bridgette Voisinet, Julie Struthers, Mark Deesing and Shannon Fitzgerald O'Connor. In this paper, the author has quoted from studies done at Texas A&M University by Don Lay and Ted Friend.


**Further Reading:** Grandin, T. 1993. Livestock Handling and Transport, CAB International, Wallingford, Oxon, United Kingdom.




Australian Style Cattle Corral