

# Behavior of Cattle and Safe Handling

by Pat White, DVM

Safety when working around cattle is a favorite topic of mine, and lack of safety is a pet peeve. I have written a previous article titled *Working Safely with Cattle* and it is available on the Association website under the Education tab of Management articles. I would suggest reading it even though some of the information is repeated here.

Cattle behavior is a result of innate, unlearned, instinctual behavior as well as learned behavior. Instinctual behavior includes the suckling response at birth, although the ability to accomplish this task improves through repeated attempts. Similarly, an inexperienced bull is driven instinctually to mount and breed females but improves his technique through repeated attempts. Behavior in cattle can be better understood by evaluating how they investigate and view their world. The better we understand the reason for their behavior the better we can effectively change it or ward off any possible deleterious consequences of that behavior.

Cows have almost 360-degree vision around their head. Due to the placement of their eyes, they have limited binocular vision directly in front of them and it is at this location they have their best depth perception and ability to determine distance. The rest of their vision, though very expansive on either side of their head, is monocular, not allowing for the ability to determine distances. For this reason, rapid incursion into their field of vision may startle them. It is best to approach cattle from the side, but moving slowly. Cattle have a blind spot directly behind them. Moving into and out of this area can also startle the animal and lead to flighty or unpredictable behavior, such as kicking. These idiosyncrasies of cattle vision are one of the things that can be entirely frustrating particularly when trying to photograph a side view. As a general rule, as you approach a group of reasonably tame animals, they will turn head on to watch you. This permits them the best view to figure out exactly who you are and how close you are to them and the worst possible view for photography.

Because cattle have less ability to differentiate objects that differ slightly in light intensity, their color contrast is actually increased, making shadows look more extreme. A shadow can appear to be a large hole in the ground which they will avoid or simply balk at going over. Cattle move much better from dimly lit areas to those that are brightly lit, and will be far more difficult moving from a well-lit area into the dark.



*Bulls posturing to show dominance.*

Cattle have very sensitive hearing that is considerably better than ours, but they are often much slower in identifying the location of new sounds and use their vision to aid them in locating unidentified noises. Loud, high-pitched and unexpected noises can be especially annoying to cattle.

Like all prey animals, cattle have a very acute sense of smell; they avoid places that have been contaminated with urine from stressed animals and this can contribute to difficulty in moving a group of cattle through a previously used handling facility or chute. They also possess a vomeronasal organ, which enhances the ability to detect pheromones from sexually receptive females. This organ is located on the roof of the mouth and is evidenced by witnessing the “flehmen reaction” in bulls and some females as well. The head will be directed upwards, the mouth slightly open and the upper lips curled back. This is thought to allow more effective odor evaluation by exposing the roof of the mouth to more air during inhalation. Pheromones can be detected both in estrus females and also in fearful animals. This can lead to groups of animals essentially feeding on each other’s fears (or rather, smelling on each other’s fears).

Taste is broken down into four areas that appear to be recognizable to cattle: sweet (energy), salty (electrolyte balance) bitterness (toxins) and acid (pH balance). Cattle have 2-3 times more taste buds than humans and can be very

sensitive to taste. Food with unfamiliar tastes or smells may be refused or require learning. A classic example of this is the problem with water sources in new locations; often stock will refuse to drink chlorinated water found in many municipal water supplies, particularly those at show or sale barns. Caretakers often will add flavoring such as Kool-Aid to such water, or simply fill buckets and let the water naturally dechlorinate with exposure to UV light, air and time.

Touch is of course a very important sense in all species and cattle are no exception. Cattle use their mouths and tongues the same way we would use our fingers. Skin receptors are important in conveying messages to their brains about pressure, movement and temperature. Cattle are rarely affected by cold stress unless the temperature drops below about -10° F. Obviously, wind chill can effect this, and there is little doubt that a heavy (and dry) haircoat of the Highland allows them to be almost impervious to the cold. Heat above about 70° F may result in increased respirations and above 80° F cattle will often reduce feed intake which reduces the heat production that occurs during fermentation of forage in their rumen. The sense of touch also becomes important in the detection of low-level electric currents. This can be very critical in dairy herds exposed to electric machinery in the milking parlor but has ramifications for stray voltage and electrical shorts around the water tanks of beef cattle as well.

Cattle are large herd animals with a social safety net of other large herd animals. As large herbivores and being members of what is considered a prey species, their response when fearful can be a natural reversion to “fight or flight” behavior regardless of training. Cattle have an inherent fear of unfamiliar places, objects, noises or motions. They also have, it seems, unlimited curiosity about such things and this can be advantageous in training, if they are allowed time to adjust to new objects and noises in their environment. As with any herd animal, cattle can become very fearful in situations where they are isolated and alone. Cattle that are tied or confined to a small area are well aware that they cannot escape if faced with something that frightens them. Their only respite may be an attempt to attack that which scares them. A scared cow is a dangerous cow.

Cattle, as a general rule, have fewer behavioral problems when left in their natural environment. The more we work with cattle and with greater intensity, the greater the likelihood we are to see behavior that is indicative of poor health, stress or an outright danger to ourselves as well as the animal.

Prey animals are at a disadvantage if they show sickness, pain and discomfort, as from an evolutionary standpoint, such animals would be the first eaten by the wolves. As a result, signs of pain can be subtle. Indicators of sickness or pain can include an abnormal posture or gait. Most of us have seen a limping animal, but things like a tucked-up abdomen and tail, a hunched back or just standing in the same place for an extended period of time can all be indicative of illness or pain. Lying with the legs in an unusual position or hesitation in getting up and dog sitting may be evident in an attempt to relieve pain in one of the front legs. Although some think that dog sitting may be a normal variant of the posture taken to rise up off the ground, it is rare in animals. I have witnessed it in a couple of cows that would only dog sit when they were heavy in calf, as if this position was more comfortable only in this stage of their pregnancy. Grunting and soft mooing can indicate pain, as can the more obvious tail-swishing (very common in calves with flystrike) and kicking at the belly. Teeth grinding and reduced feed intake can also be evidence of pain.

As prey animals, fear can have dramatic effect on cattle behavior. They are already naturally reactive and novel smells, objects or locations can all be frightening to them. Being alone only exacerbates this tendency. Gentle handling and repeated exposure to novel situations and objects can have a great calming effect. Cattle normally calm in the presence of strangers may react differently with exposure to small children. They do not

necessarily equate a child with an immature human, particularly if they are not used to seeing children. Kids make strange noises, move quickly and these are attributes that can easily frighten cattle. Dogs are in the same category, except that that they may naturally be seen as predators. They also tend to get themselves in trouble chasing or barking at the cattle and then run and hide between their owners’ legs. Our own dogs have always been seen and mostly trusted by the cowherd, although that can change as calving season begins. In Great Britain, where public walking trails are often found through the middle of pasture land grazed by herds of cattle, leashing of dogs is required on open access land, but recommendations are to instantly unleash the dog if cattle become aroused by your presence and begin to chase. Numerous deaths have occurred in the UK when walkers are attacked by cattle and those were most frequently cows with calves. 94% of these fatal attacks were related to the presence of a dog.

Absolute abnormal behaviors in cattle can include a number of things that mimic the long amounts of grazing the ruminating would do if left to their own devices. Tongue rolling (playing) where the cow curls and uncurls its tongue inside or outside its mouth, licking at objects obsessively or bar biting (clamping the jaws around a bar and moving the head back and froth while chewing on the bar) are examples of abnormal behaviors that can be expressed by cattle. These would be extremely unusual in cattle allowed freedom of movement and access to pasture or hay. Cattle tied or tethered for extended periods of time may pace or sway as a result of the inability to move freely. Again, it would be very unlikely to see these behaviors in Highland cattle raised responsibly. However, in those situations where your cattle must be confined for long periods of time, for whatever reason, you may notice subtle changes that do indicate boredom and inability to move about freely. I have personally witnessed young stock that will briefly mouth the fence panels that confine them. This is more an indication of curiosity than anything else, but it is important to realize that should this behavior become common and prolonged, it indicates a problem with management that needs to be addressed.

The flight zone of the animal is an incredibly important concept to understand and respect. The flight zone (which could easily be relabeled as the “fight or flight zone” or more simply, “personal space”) is not a fixed area around each and every animal but is rather the space around a creature, that if penetrated will cause that animal to move. If it is a reasonably calm animal it will be motivated to move a relatively short distance to reestablish the limits of its flight zone. If it

is extremely flighty and given enough space, you may not see that animal again unless you go hunting for it. Occasionally encroaching into the flight zone may elicit the opposite reaction and it becomes the fight zone. This can be particularly evident in solitary animals confined in small pens with no ability to escape or just getting too close to a very confident herd member, such as the bull. The flight zone of each animal is unique, and varies with the age and sex of the animal and its previous experiences. New and novel situations will usually increase the individual flight zone, **as will unfamiliar people**. I can’t emphasize this last point enough. Your cattle will generally have a much smaller or even non-existent flight zone with you (assuming they trust you and have seen you on some ongoing basis) than they will with visitors to the herd. If you choose to scratch the forehead of your herd bull with no apparent harm (mind you, this is not an activity that I endorse) please do not assume that every Tom, Dick, and Harry can do the same and remain intact. There are, no doubt, plenty of examples of such foolishness but two anecdotes come to mind immediately. One involved a seasoned show cow standing in halter quietly while her owner was busy carrying on a conversation with a friend. The friend ended up just a little too close to the cow’s head and she abruptly butted him back several feet to remove him from her personal space. Her owner was horrified by her behavior, even though no harm was done and she butted the friend just once, and just enough to move him out of her comfort zone. The other incident involved a Highland owner with enough experience that he should have known better (isn’t that always the case, myself included). Visiting another breeder, they took a tour of the herd which included an up close and personal look at the herd bull. The bull was very well behaved with the owner but when the visitor got within horn reach, the bull showed his displeasure with a very quick and powerful shake of the head. This did require a trip to the emergency room and any number of stitches in the upper arm of the visitor. Another notable instance where the flight zone may change dramatically is at calving. While Highland cattle are noted for their calm and friendly behavior, the hormones present at calving may cause a total change in personality. Protective maternal instinct may kick in and you become a threat rather than a friend. Always approach a new mother with a great deal of caution and an exit strategy. In fact, when entering any pen with cattle, new mother or not, have an easy exit planned and available.

Cattle are social (herd) animals and evolution as a herd member reduces the risk of making oneself a meal for a predator. The larger the herd, the more sets of eyes, ears and nostrils are available to detect the wolfpack. Rapid

flight of the entire herd, or the stampede, is just one more method to provide safety in numbers and confusion to the enemy. The bottom line here is that isolation can be horrifyingly stressful to cattle. A panicked bovine is a dangerous bovine. It is always advantageous to keep several animals together for whatever activity you have in mind. This includes slaughter. Quality beef is not a byproduct of severely stressed cattle. We always arrange for two animals or more to go to the slaughterhouse; they are hauled, unloaded and penned together until death. If you know you have flighty animals that are headed to the butcher, try to pair them up with a calmer animal that may well be an unproductive old show cow or a mature bull. As bulls age they seem to become more and more comfortable in their own skin and can be a very calming influence on younger and more inexperienced animals. Unfortunately, the slaughterhouse may be the location of any number of novel and frightening noises and particularly smells. Again, cattle can smell the stressful pheromones deposited in other cattle's urine. They may also see, hear and smell other livestock that may not be at all familiar to them, such as sheep, goats and pigs. For some reason, pigs seem to elicit the most reaction from our own cattle. Whether it is the alien smell or the grunting and snorting that is so unlike ruminant noise, I do not know. A description of a very frightening experience at a slaughterhouse was relayed to me by a friend who made the mistake of getting into the trailer to offload a panicked steer that he had delivered alone on the trailer. Unfortunately, the escape door was still latched and the "help" didn't open it quite fast enough. The friend was beaten up by the steer before the escape door was finally opened and he made his getaway; bruised and sore but without long lasting damage. He was very lucky.

As a general rule, when working with any cattle, you need to pay attention to what they are doing at all times. They are much larger and much faster than any person. Their behavior can literally change in an instant.

A cow lying on the ground calving may seem busy and totally oblivious to your presence but the moment that calf is born, she can get up and change her entire outlook towards life, particularly yours. First calf heifers can be totally confused by this whole birthing thing; and either not have a clue what is going on or have a sudden surge of maternal instinct that says anything other than herself next to that calf is a threat. Always assume a new mother will be protective and could be dangerous. There are way too many stories of Highland owners entering a pen with that marvelous show cow that just calved, ending with trips to the hospital. Always have an escape route and be prepared to use it. I am

not disparaging show cows here, but very often it is the pet cow or well-handled cow that surprises you with their behavior. You become lackadaisical around them because they are so mild mannered and well behaved. Never let your guard down around cattle, regardless of the handling and training they have received. Instinctual behavior cannot be predicted. I will always remember the words of an auctioneer at an exotic sale decades ago. "It is the pet cow that will kill you". Not because they turn into killers but because we ignore the fact that they are cows and all cows can revert to pure instinct.

The bull in the pasture may give you some warning behavior to be aware of; the threat display often starts with a broadside view with his back arched in an attempt to make himself appear broader, bigger and more threatening. Progressing from there, his head may go down, sometimes shaking his head rapidly from side to side, his eyes may appear to get bigger and the hair on his back may stand up. I have seen my own bulls present a broadside view when I have approached, however they rapidly relax when they hear my voice and recognize who I am. Should any of these broadside views be followed by further evidence of threatening behavior, I would take them very seriously.

If the perceived opponent continues, the bull may circle and charge head to head or head to body. Should any bull demonstrate such threatening behavior towards humans, he should be avoided and everyone should exit the pasture, paddock or pen immediately. Always have an escape route preplanned. Disposal of the bull should occur at the earliest possible convenience.

Wise advice from the Iowa Fatality Assessment & Control Evaluation Program:

- Bulls often do not look at a person prior to charging.
- Bulls perform a 'broadside threat' before attacking – by turning sideways to expose it's full size to the rival, it may lower its head and turn it toward the rival, and flex its neck muscles to show its strength. Showing broadside threat is a warning of a bull attack.
- When a bull faces its "threat" head on, it will lower its head and may paw or stomp the ground, or jab its horns at the ground before charge.
- Bulls may or may not make snorting or vocalizing noises prior to attacking.
- From the bull's perspective, humans that bend low or kneel may be perceived as assuming a threatening pose. Humans that physically position themselves (knowingly or unknowingly) between the bull and a receptive cow (in estrus) are viewed as a rival and are at risk for attack.

- Aggressive behavior of mature bulls is based on asserting dominance over a perceived rival (another bull or a human) in the bull's cow herd. A dominant bull will try to chase away smaller or subordinate rivals from cows the bull wants to breed; bulls raised around humans perceive humans as their subordinate rivals.
- When a bull shows threatening behavior, the safest response is to move the head as if to look away from direct eye contact (but still keep watch on the bull) and slowly back away. One should never turn their back on a bull.

Bulls can be defensive when a cow is in heat or if you are attempting to move him away from his herd. Extra caution should be used in such events. If cattle are uneasy around you, they will watch your every move because they want to know where you are and what you are doing. Increasing unease may lead to an attempt to get rid of you. An animal that feels comfortable around you will not be on high alert.

Mistaken identity is another possible problem. Bulls sparring through a fence or even when housed together are on the defensive and trying to break up a fight can result in serious injury for any people involved, as well as the cattle. What was supposed to be a sharp reprimand from a two-by-four on the butt of a Highland bull sparring with a bull of another breed through the fence resulted in the owner being tossed over the fence. I believe this was a case of mistaken identity; the bull that was hit thought it was another bull attacking him, but when the adrenaline level is high in any animal (human too) they may not take to what would normally be an effective control method. If you witness a serious fight between bulls that you are compelled to break up, get on a tractor or some other large vehicle. No animal is worth your health or your life. When large animals are seriously fighting, or even just sparring, remember that they are totally unaware of your presence. If you don't pay attention or cannot move rapidly enough, it is easy to be pushed out of the way or even trampled on the ground; a result of no malice whatsoever on the part of the animals. Likewise, subordinate animals will move quickly out of the way of that pushy dominant cow, or for that matter, any one of the cows that is dominant to her. If you are the path of least resistance you can be seriously injured. Your cattle should learn to respect you as a dominant but not overbearing force in the pasture. When in the pasture or working cattle, I personally always carry a 5 foot sheep cane (crook) that provides a very long and hard "horn".

Needless to say, rough play is not a good idea for the young of any animal, but particularly for calves. Bull calves in particular and all

calves in general, should never be rubbed vigorously on the forehead or area of the horns. While this may induce an adorable bout of play butting in the calf, it is not so funny coming from an adult bull (or cow, for that manner). Rough handling and teasing is never appropriate.

Animals kept tied are particularly susceptible to terror if they are traumatized or teased. They cannot escape and some people derive great pleasure in mentally (and physically) torturing animals that are helpless. This can result in previously quiet perfectly behaved show heifers turning into vicious kicking and charging monsters. If they cannot flee from that which frightens them they will fight. Unfortunately, they also have a pretty good memory and this kind of treatment can scar them for a very long time. Care should be taken when animals are first tied to make the experience as atraumatic as possible.

Likewise, animals confined to a small pen and subject to fear, are far more likely to turn aggressive in an attempt to drive you away since they do not have the option of flight. It is never a good idea to go into a pen with a frightened animal unless it is securely tied. Even calm herd members can become panicky when they are separated and by themselves. Under ordinary circumstances you might treat them like a pet, but if frightened, do not assume that your presence inside a pen can sufficiently calm them down. You are much safer to stay on the outside of the pen and give comfort from a safe location. If the animal is not familiar with you then certainly stay within eyesight and earshot so you can talk to it and it can see and hear you, but try not to get so close that you invade its flight zone. It can't flee and you may be encouraging it to charge.

Animals at auction houses may be particularly at risk for this type of behavior. They can be very nervous with the hustle and bustle, noise and proximity of many individuals that are total strangers. These cattle may be perfectly behaved on pasture, but scared and dangerous in an auction type environment.

Stalking behavior is another somewhat scary occurrence. I have never experienced this with a bull but have with mother cows. It seems like they suspect you of harming their calf even if it is nowhere in your vicinity. You may enter a pasture and find that a cow is very high headed, watching your every move. As you progress around the pasture, she follows at a distance, always eyeing you or a group of strangers. If she is brave enough to get close, she may charge. These cattle are aggressive and should never be trusted. If it necessary to venture in with such an animal, make sure you

have plenty of trees to climb or get behind; take a vehicle if possible, for safe keeping (although it can end up the worse for wear). I will tolerate very protective behavior in my new mothers, but after a few days I expect them to return to normal behavior. If they remain excessively aggressive, they go on the cull list. I have retrained an aggressive cow after her calf was weaned, so that instead of stalking she would take off to the other side of the pasture. This permitted her to remain in the herd for several more years, ultimately being responsible for some of my finest cattle (without her aggressive tendencies) but it may not always be possible to safely attempt retraining. As it turned out, this cow was essentially a bully; she thought it was great if you were afraid of her, but not so great if you came after her. Once her calf was weaned, I would take our Polaris out to check cows and when I saw her, I would get out and literally chase her with a cane. If I got close enough, I would jab at her as if I were the boss cow. It took very few attempts and she would leave the area when I was on foot or in the Polaris. I still exercised great caution around her but she was never a problem in the pasture after that. Not all cows will be this easy. While many cows are testing you to see if you will leave, there are those that are all business.

Likewise, any animal that won't take its eyes off you is a concern. Be aware that this rapt attention may not be love (although it can be simply looking for the feed bucket) but rather severe distrust. These animals may also stalk and can charge. Other indications of potential aggression include bellowing and pacing the fence line. Remember too that a normal threat display is a warning, however, not all animals are so accommodating and can charge with no warning whatsoever.

If working with calves in an unprotected area, be aware that if that calf bawls when you tag or tattoo it (or just look at it wrong, in some cases) you may get not only a very protective mother heading your way in a big hurry, but the entire cow herd. There is nothing to get your heart racing quite as quickly as when you see a herd of Highlands stampeding towards you at the behest of a screaming baby. Standing your ground may be effective, but again, an escape route or a safety vehicle is highly recommended.

Severe injury and livestock related death are not always due to aggressive behavior but simply the size and strength of the animal involved. It is far too easy to get into a pen of cattle and end up crushed against a wall or gate. Sobering statistics demonstrate that working with cattle is dangerous work even without the added complication of animal aggression.

The bull deserves special mention: he is considered the most dangerous animal on the farm regardless of breed. Bulls are large, fast and unpredictable. While certainly I have expounded on numerous occasions about the incredibly good nature of Highland bulls, I am also adamant that no one should completely trust their bull, no matter how well behaved he has been in the past. Threats from other perceived rivals or detection of cows coming in to heat may all have a deleterious effect on his trustworthiness. Being enclosed in small spaces with a bull only increases the level of distrust one should have.

And of course, anyone who knows me also recognizes my pet peeve: ignoring the reality concerning the dangers of bottle raised bulls. Many individuals are under the impression that if you take a newborn bull and hand raise it, away from its mother, it will be a wonderful pet and grow up knowing and trusting you, never to do you harm. While this can and does happen, the exact opposite becomes a far greater risk when compared to cow raised or group raised bulls. Bottle raised intact males of all ruminant species should be considered suspect. Noted animal behavioralists all rally behind the warning to castrate any orphan bull calf to be hand raised by bottle rather than risk the possible ramifications. The bull that has never been socialized to his own species does not recognize people as people. Hand rearing any animal offspring can adversely affect their adult behavior: bottle raised kittens are notorious for vicious attacks and biting of their human owners, bottle raised foals are avoided for their lack of social manners in the horse herd and to their human handlers. Bottle raised animals can all be obnoxious with poor manners but none may be as dangerous as the bottle raised bull calf.

Newborn calves that are bottle raised by people rather than by their mother may imprint upon their human caretakers. Imprinting is the process where animal young gain their sense of species identity. In the case of beef cattle, calves bond with and are raised by their mother, if all goes as nature intended. When raised by humans, the calves may imprint upon the person and identify their humans and themselves as members of the same species. While originally believed to be a phenomenon in certain birds, the process also occurs in cattle and other ruminants. A study in the 1990's that involved cross-fostering sheep with goats and vice versa, resulted in very confused animals of both species. The adopted animals preferred to mate with the species of their adoptive mother; the goats wanted to mate with sheep and the sheep with goats. **The most striking part of this is that the male animals were more affected by the imprinting** than the females and the

researchers found it much more difficult to reverse the imprinting in the males. After the first year of being raised by their adoptive species, the animals were regrouped with their own kind with no access to their adoptive species. Once per year they were then given access to their adoptive species to evaluate their reaction. The females reversed their sexual preference to their own kind within one to two years, however the males maintained a preference for their adoptive species even after 3 years.

The problem with imprinting on humans can be much more dramatic. There is a particular problem with the bull due to sheer size and ability to cause great bodily harm. The bottle raised bull may act very well behaved and stay that way throughout his life, but he also has a much greater chance of developing behavioral issues when he approaches or has reached social maturity. Male ruminants (bulls, stags, bucks and rams) all are genetically programmed to establish dominance and will aggressively attack challengers to their perceived rule. Females, while certainly capable of vile and detestable behavior to their herd mates are not genetically programmed to take out the competition. Bulls are. If people are perceived by the bull as a part of the herd, those people run the risk of being mounted by 2000 pounds of confusion, but more critically, if those people are perceived as competition, they will lose the bullfight. It is that simple. A bull that does not recognize a human as a human is incredibly dangerous particularly if that bull perceives an approaching person as a challenger. There are numerous case examples of bottle raised bulls that have turned on their owners and in all cases the owners have lost. This has been documented with Highland bottle-raised bulls as well as other breeds. Dairy bulls are notorious for aggressive behavior towards humans; historically this has been blamed on their breed, rather than the fact that they are bottle reared and often isolated from the herd until used for breeding with no opportunity to differentiate cattle from humanity. This mistaken belief is still prevalent and there are many examples of bottle raised bulls that never attack people. These animals are most likely raised with the herd or with groups of calves so that they do not imprint upon the humans that deliver their milk to them several times per day. The less exposure and attention the bottle-fed bull calf has from his own species the greater the likelihood that he will imprint on humans and become a nightmare as he matures. **This is not a matter of training; it is a matter of imprinting.** Fighting the competition is pure instinct on the part of the bull and if you are the perceived threat, you will lose. Instinct is not trained and is not something you can undo.

As animal caretakers, it is an unstated requirement that we take good care of our beasts. That necessitates that we always remember they are cattle; they think like cattle and they behave like cattle. They are undoubtedly their happiest when they are allowed to be cattle. We are also required to recognize those behaviors that may put us at risk. If we cannot accomplish this, we do ourselves and this incredible breed a horrid disservice. Stay safe my friends.

#### **A sobering afterthought:**

Farming is considered one of the most dangerous of all occupations in the world and agriculture was rated the most hazardous industry in the US between 2017-2018. While most injuries are due to machinery, don't discount animals as a cause of injury and death. There have been fatalities nationwide that have been directly or indirectly related to livestock handling. On average, 20 people per year are killed by cows in the United States. Analysis of many of these cases conclude that the animal purposefully struck the victim; ramming them, knocking them down, and/or goring them. Casualties may also have been trampled, kicked in the head or crushed against a solid object. I have been on the receiving end of both a heavy metal gate slamming into my forehead when it was kicked by a steer and being crushed by cattle against a gate. Neither caused serious injury, but did make me aware of the fact that I was very lucky and thus have become far more conservative in my approach to working with our cattle.

Statistically, most cattle-associated deaths occur from head or chest injuries, and the highest risk for injury from cattle is in older men (60+) with arthritis and hearing aids. No doubt they can't hear the animal coming and can't move fast enough to get out of the way. Actual deaths reported from cattle encounters include a number of scenarios already discussed and it is alarming that many times an animal was known to have exhibited aggressive behavior in the past (both bulls and cows). It is also alarming to see that there are a number of relatively young people (mostly men) included in these fatalities.

The following list is comprised of 17 case reports from government data from just a few states mostly between the years 2003 and 2008. To my knowledge, none of the first 17 deaths listed were caused by a Highland bull. The remaining 23 entries, occurring between 2007 and 2019 are gleaned from an internet search for "man killed by bull". Unfortunately, one death in 2015 was definitely the result of an injury presumed to be inflicted by the farmer's Highland bull although it could have been one of the cows. Another was

killed when his car struck a Highland bull. While not a result of aggressive behavior, cattle do wander onto roadways if they are not adequately contained and this is also a behavior of which we should be aware. When I wrote the first article on safely handling cattle, I was aware of the initial 17 deaths on the list. These were not published in the 2012 *Bagpipe* article. I thought I might just see how much additional data was on report since that time. I couldn't find a listing from the CDC or any government website but the search turned up these 23 incidents that occurred in the USA. If I had broadened the search to include the UK at a bare minimum there would be many, many more. I was awed by this information and think that anyone who owns cattle should be also. **These details should give us reason to pause; all of these instances resulted in death.** All it takes is one time.

1. A boy was killed after he wrapped his steer's lead rope around his hand and was subsequently dragged.
2. A woman aged 65 years was removing a dead, newborn calf from a pasture when a beef cow knocked her down, stomped her and butted her while she was lying on the ground.
3. A 65-year-old man was helping his son sort beef cattle for loading onto a truck. He was attempting to guide one of the animals toward the truck when it turned into him, crushing him against the barn door. According to witnesses, he stopped breathing immediately.
4. An 8-year-old boy was helping to castrate beef cattle when he was crushed against the side of a squeeze chute.
5. A 45-year-old man who was working alone in a pasture was attacked by a beef bull that had been bottle-fed and raised by the family but according to family members had become more aggressive recently. The attack was not witnessed but the man was able to call his wife for assistance on his cell phone before he died and told her he was attacked.
6. A 64-year-old veterinarian was attacked by a beef bull when vaccinating and applying insecticide on cattle.
7. A 74-year-old man was trampled by a beef bull being moved from one pasture to another.
8. A 71-year-old man was found fatally injured in a pen with 2 beef cows and a newborn calf.
9. A 62-year-old man was kicked in the head by a beef cow.
10. A 53-year-old man was mauled by a beef bull in the pasture while he was retrieving cows.
11. A 75-year-old man was gored while loading a beef bull into a trailer.
12. A 72-year-old man was rammed by a

- beef bull while feeding cattle.
13. A 38-year-old man was injected with Micotil from a syringe in his pocket when a beef cow pushed him down. He died in the hospital less than 1 hour later. There is no antidote for Micotil toxicity. It is a commonly used feedlot antibiotic which can be fatal when injected into pigs, primates including humans and possibly horses and goats. (I don't use Micotil.)
  14. A 47-year-old farmer was crushed in a pen when he was attacked by a beef cow with her calf.
  15. An 81-year-old man was attacked by a beef cow while working in a pen.
  16. A student was thrown from a bucking bull at the rodeo and trampled.
  17. A 77-year-old man was struck by a gate when beef cattle charged while being herded.
  18. February 2007: 70-year-old Minnesota man charged, mauled and killed by Holstein bull.
  19. July 2009: 66-year-old Oregon man died after being gored by a 1200 pound bull that later was killed by a sheriff's sniper when the animal charged a neighbor.
  20. March 2010: Pennsylvania man killed by his pet bull one day before his 53rd birthday. The bull had become increasingly 'temperamental' and the farm owners had encouraged the man to get rid of his pet. He had previously had several of his ribs broken in an attack by the bull the previous summer.
  21. August 2010: 52-year-old Wisconsin man died of traumatic injuries as a result of a bull attack. His body was found near a fenced area that contain large bulls with horns.
  22. November 2010: 78-year-old Massachusetts man killed while trying to move a Holstein bull into a pen. He was leading the bull across a field when it attacked him and another man. The other man was gored in the side but survived.
  23. Summer 2011: 53-year-old Iowa woman struck from behind and killed by dairy bull in the holding area of the milking parlor. Before she died she told her husband she didn't notice the bull in the pen with the milk cows. Her husband suspected that she inadvertently came between the bull and a cow in heat. To quote the National Ag Safety Database website that reported the investigation into her death: "Dairy bull calves are typically raised in pens, bucket-fed by humans and consequently lack the opportunity to imprint on other cattle in a social group to establish identity and behavior. By the time the dairy bull becomes sexually mature (around 1.5-2 years of age), it has imprinted on humans and will challenge humans for dominance. This may occur in open or enclosed areas, and during activities including feeding, milking or sorting."
  24. September 2012: 24-year-old Ohio man crushed by a bull at a Select Sires Farm. He was standing outside a pen while bulls were being cared for when the animal rammed a gate and pinned him behind it.
  25. October 2012: 44-year-old Montana man was killed by a Longhorn-Watusi cross bull. The neighbor saw the bull standing over the man's body. He had died of blunt force trauma and penetrating injuries to his torso.
  26. May 2014: 66-year-old Iowa man attacked, trampled and killed by bull he was loading onto a trailer. He was picking up the bull that had undergone veterinary testing at a local veterinary clinic and attempted to load it alone. No one witnessed the attack and one of the veterinarians found him face-down in the pen and called 911.
  27. May 2015: 51-year-old man was killed, presumably by a Highland bull on his family farm. Reports were that the small herd was aggressive and made for difficult search and recovery of his body. There were adult female cattle and presumably calves as well. There were no witnesses and police were unsure if he suffered an accident or a confrontation with the bull. His body had definitely been mangled by either the bull or a cow.
  28. July 2015: Connecticut man dies in car crash in Killington, Vermont when he hits an 1800 pound Highland bull in the middle of the road at night. Lawsuit ensues as the bull had been reported in the road on 4 separate occasions.
  29. January 2016: 61-year-old Virginia man dies of blunt force trauma received as a result of an attack by a bull on his farm. His wife was aware that their bull had gotten outside the fence of the pasture and into the yard earlier that day. He was going to get the bull back into the pasture. The bull, a large black Angus with 6-8 inch horns, was dispatched by friends at the direction of his wife.
  30. March 2016: 71-year-old Michigan man was killed after being attacked by the neighbor's bull. The bull was highly agitated and would not let police get to the victim. Officers shot 33 rounds from their shotguns at the bull before it was taken down. Fox 17 reports that all 33 rounds hit the animal. The farmer was pronounced dead at the scene.
  31. Sept 2016: 53-year-old Kentucky man gored and killed by a bull on his farm.
  32. November 2016: 60-year-old Michigan man attacked and killed by a bull. The bull was being loaded onto a trailer when it escaped and headed back into the barn, where the man was located. The bull hit the man's chest several times with its head.
  33. Sept 2017: 78-year-old Idaho man knocked to the ground and trampled by a bull. The victim was helping two other people get the bull and several cows back into their owner's pasture when the bull attacked him. The victim's wife shot and killed the bull, with the bull owner's permission.
  34. July 2018: 68-year-old New York man gored and killed by a bull on his farm. Owner had a bucket of grain with him. The bull had shown aggression in the past and was euthanized after the attack. The bull attacked him multiple times, pinning him to the ground and pushing him out of the pasture. A family member saw the attack in progress and called 911.
  35. August 2018: 72-year-old New York man struck and trampled by a one-year old bull and died.
  36. February 2019: 40-year-old Nebraska man attacked by a bull while checking on cows and carrying a bucket. He was found dead with evidence of severe trauma.
  37. May 2019: 69-year-old Ohio man checking a gas well gored by a bull in pasture in Pennsylvania and dies of blunt force trauma.
  38. June 2019: 41-year-old Minnesota man trampled to death by dairy bull or cows. He was going to get rid of the bull because it had shown signs of aggression.
  39. July 2019: 59-year-old Iowa man found dead in a pasture; determined a bull had attacked and killed him.
  40. July 2019: 84-year-old Mississippi man attacked, mauled and killed by bull.

*Editor's Note: The above list is not intended to frighten but rather remind producers to always be aware and never become complacent around cattle.*