



AMPC

AUSTRALIAN MEAT PROCESSOR CORPORATION

HANDLING LIVESTOCK PRINCIPLES

REDUCING STRESS AND IMPROVING EFFICIENCY

Handling skills are essential for managing livestock. Good livestock handling can minimise stress and injury; improve time and effort required to move animals; reduce stress for both people and animals; make working with animals safer and more enjoyable; and improve productivity and meat quality. There are 6 basic principles to consider when handling livestock;

1. Flight zone
2. Balance point
3. Field of vision
4. Handler position
5. Animal behaviour and movement principles
6. Facilities and equipment

This circular will outline each of these principles.

FLIGHT ZONE

The flight zone is the animal's personal space; that is, the area around the animal that they do not want you to enter. The 'Flight Distance' is the distance between the edge of that zone and the animal in the centre; or the 'radius' of the flight zone.

Wild or extensively reared livestock that are less used to handling, may have a larger flight zone.

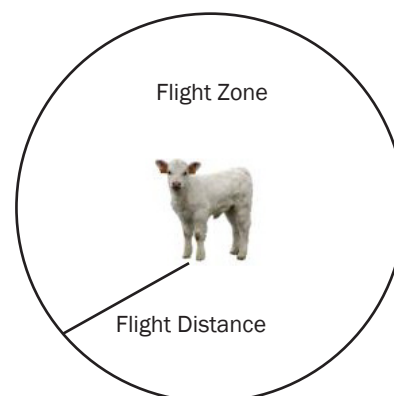
Tame animals, or those accustomed to handling or human contact, can have almost no flight zone.



BOX 1.

THE FLIGHT ZONE:

Imagine drawing a circle on the ground around an animal. This circle defines the 'flight zone'.



The size of the flight zone for each animal is affected by:

- the size of the enclosure the animal is held in
- the animal's previous experience with handling/humans and
- the angle/position of the handler
- eye contact with the handler



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POINT OF BALANCE

The point of balance is at the animal's shoulder.

If you watch closely, you will see that animals will position themselves just behind the shoulder (point of balance) of another animal. This is the same for the stockperson when using flight zone.

Handlers who can understand the concepts of flight zone and the point of balance within this zone will be able to move animals more easily and with less stress.

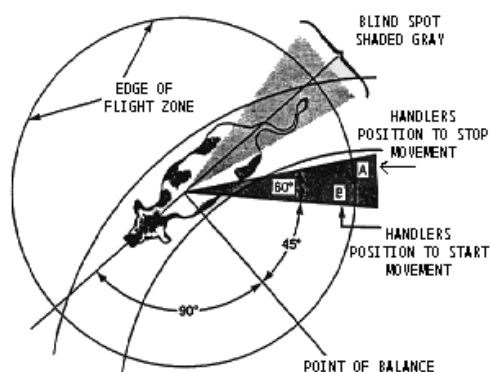


Diagram source: T. Grandin, 1997

FIELD OF VISION

The field of vision describes the animal's ability to see around them. The animal's blind spot is the area behind the animal's head where they cannot see – the size depends on whether the animal's head is up or down. When the head is down the blind spot is larger, when the animal's head is up the blind spot is smaller.

In addition, livestock have binocular vision in front of them, where they can focus and perceive depth, distance and speed; and monocular vision on the sides, which only allows them to see movement. Therefore, any sudden movement in their monocular field will frighten them. In addition, items or objects, such as flooring changes or piping/hose on the ground, may frighten livestock, causing them to baulk/stop moving.

HANDLER POSITIONING

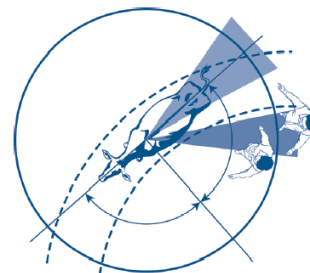
As discussed, the location of the handler will determine where livestock will move to when being handled. Movement into and out of the flight zone determines the speed of animal movement. The deeper the handler moves into the flight zone, the faster the animal will move away to try and maintain their flight distance.

It is important to remember that while groups of animals will have a collective flight zone and point of balance; individual animals can behave differently or unexpectedly from the group.

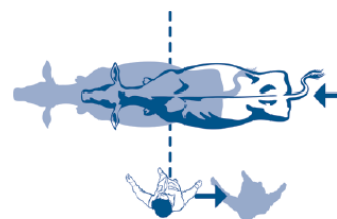
BOX 2.

UTILISING THE FLIGHT ZONE AND POINT OF BALANCE:

When you enter the flight zone, the animal will move or turn away. Moving through the balance point is the best way to move livestock.

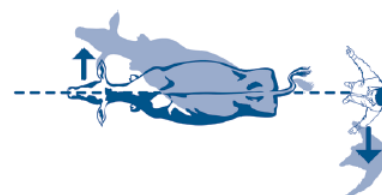


Moving towards the animal from behind the point of balance or extending your arm or a handling aid will cause the animal to move forwards. Moving backwards from the shoulder line will encourage the animal to move forwards.



Moving forwards through the shoulder to the head of the animal will encourage the animal to move backwards.

Moving left of the backbone (line vertically down the centre of the animals body) will cause the animal to move right and vice-versa.



Moving the animal right by moving left of the backbone centre line.

- When you stop moving or move out of the flight zone (retreat), the animal will stop moving.
- When the handler is not within the flight zone animals will turn and face the handler, and maintain a safe distance.

Handlers moving deep into the flight zone can trigger a flight or fight response from the animals.

If animals become excited, stressed (aroused) or are highly fearful, their flight zone may increase. Knowing the likely factors that will excite, stress or arouse livestock will assist in predicting their movements



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SOCIAL BEHAVIOUR AND HANDLING

There are 3 key things to remember when handling livestock:

1. Social Structure
2. Noise level
3. Fear and excitement

Social structure

Livestock are social animals. As such, they tend to move as a group. Generally, when livestock move as a group they maintain visual contact with one another to enable them to move together. Should individuals lose sight of other members of a group, they may stop or baulk.

The leading animals in the group are, therefore, the key to successful handling. These animals tend to be, although not always, the more dominant members of the group.

Noise

Research has shown that all livestock species are sensitive to high-frequency noises: they may become fearful or excitable and baulk. It is important to avoid loud and high-frequency noise (eg shouting, banging gates) when attempting to move livestock.

Several studies examining fear behaviour in livestock have shown that quiet talking combined with gentle touching on the back of the animal are more successful at moving livestock than shouting, banging or hitting animals (Hemsworth and Coleman, 2010). Furthermore, this research indicates that quiet, gentle handling improves ease of movement, general animal behaviour and reduces stress in both the animals and handler improving general production and meat quality.

Fear and excitement

Fear and excitement can influence the ease of handling in all livestock species.

Cattle, for example move away from people due to fear. The higher the fear (how close the threat is) the faster they will move.

Very highly fearful livestock can be indifferent to anything in their path and may attempt to escape, leading to dangerous handling situations for the stockperson.

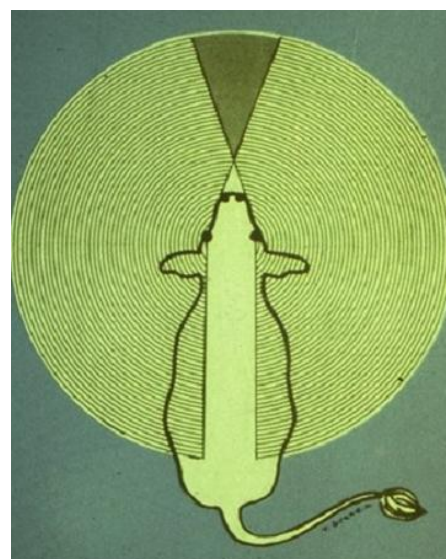
Fear or excitement in livestock is increased by hunger, sexual activity, noise, shouting, dogs barking or biting, beating, electric prods and other implements, painful, novel or strange items or surround. Fear can be reduced by low, even lighting, low frequency sounds, rhythmic sounds, silence, familiar stock handlers and environments

An animal's previous experience will affect its stress response to handling. Livestock that have had a negative experience in the past may be more stressed and fearful towards being handled.

BOX 3.

USING THE FIELD OF VISION FOR LOW STRESS STOCK HANDLING:

Light green area behind the animal's head is the blind spot.



HANDY HINTS:

- Avoid standing or trying to move animals from their blind spot. Staying in the blind spot will cause the animal to stop and turn around and look at you or become stressed because they do not know your exact position.
- Always remain in visual contact with livestock. Handling facilities with solid sides assist in moving livestock preventing them from seeing distractions that can cause them to baulk.
- Cattle, sheep, pigs, horses and goats are most comfortable with handlers standing at their side(s) or angles to the side(s) and least comfortable when handlers are directly in front or behind.
- Where possible using the herding instincts of livestock. Livestock prefer to follow a leader.



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HANDLING FACILITIES AND EQUIPMENT

Well-designed facilities will improve livestock movement and enable access by the handler in the correct position for the point of balance

When positioning to move livestock, keep in mind where the fences are. Fences can be utilised to facilitate movement. Make sure that facilities are well maintained and operational. Gates should be open to allow clear passage. Baulking can be reduced by:

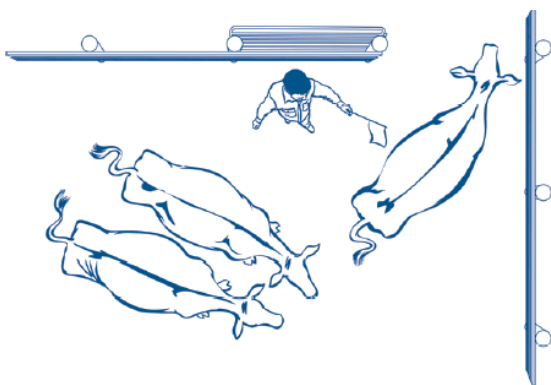
Good facilities – even flooring, solid race sides, lighting, no sharp turns. As stated earlier, solid race sides reduce distractions and improve forward movement. Removing items causing baulking/stress: for example, flapping items, hoses, boards and other distractions.

In order to further improve the standard of livestock handling at abattoirs, MINTRAC in conjunction with AMPC is developing new stock handling training courses and materials. These new courses will concentrate on the practical aspects of livestock handling.

BOX 4.

MOVING LIVESTOCK IN CONFINED AREAS:

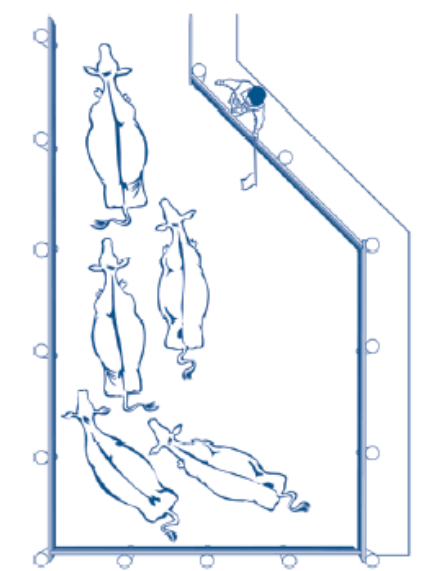
If you are behind the animals, be aware of the threat of being kicked. Distance yourself safely - when there is insufficient space it can be safer to be closer to the animals by their side.



Provide stock with an obvious escape avenue to follow.
Livestock that feel trapped and will react.

BOX 5.

Where possible, handlers should stay out of the pen and use point of balance and flight zone to move animals forward.



As part of this project MINTRAC will be collaborating with recognized industry experts to run professional development programs for trainers and managers in the advantages of low stress animal handling practices. The professional development programs for trainers and lairage supervisors will be run in the first half of 2012 and will advertised to AMPC members and via the MINTRAC website and networks.

Further reading

Grandin T, 1997. The design and construction of facilities of handling cattle. Livestock Production Science, 49: 103-119.

Grandin T, 2000. Livestock Handling and Transport, 2nd Edition, CABI International, Oxon, UK.

Hemsworth, P.H., Coleman, G.J., 2010. Human-Livestock Interactions: The stockperson and the Productivity and Welfare of Farmed Animals. 2nd Edition, CAB International, Oxon, UK.